2.13 Transportation and Traffic

This section describes the existing transportation and traffic setting of the project Site, identifies associated regulatory requirements, evaluates potential transportation and traffic impacts, and identifies mitigation measures related to implementation of the proposed Newland Sierra Project (project). This section is based on the following:

- Traffic Impact Analysis (TIA) prepared by Linscott, Law, & Greenspan Engineers (LLG) (Appendix R-1)
- Newland Sierra VMT Analysis to Respond to SB 743 prepared by Fehr & Peers (Appendix R-2)
- Newland Sierra TDM Program – VMT Reduction Evaluation prepared by Fehr & Peers (Appendix R-3)
- Transportation Modeling for the Newland Sierra Development letter prepared by SANDAG (Appendix R-4)

The above referenced documents are included as Appendix R to this environmental impact report (EIR).

Comments received in response to the Notice of Preparation (NOP) pertaining to traffic include: traffic generation, alternatives to the proposed roadway network improvements (refer to Chapter 4, Alternatives), Vehicle Miles Traveled (VMT), environmental impacts resulting from the widening of Deer Springs Road, transportation alternatives to single-occupancy vehicle trips, and transportation demand management. A copy of the NOP and comment letters received in response to the NOP are included in Appendix A of this EIR.

2.13.1 Summary

The project's Traffic Impact Analysis (TIA) (Appendix R) provides a detailed analysis of the existing conditions on the road network potentially impacted by the project, the project's trip generation, the project's trip distribution on the road network and the project's direct, cumulative, and construction-related traffic impacts. The analysis assesses potential impacts within the jurisdictions of the County of San Diego, City of San Marcos, City of Escondido and Caltrans. The TIA analyzes both near-term and buildout/horizon year scenarios and identifies mitigation measures for each of the project's direct and cumulative impacts or, where no feasible mitigation exists or the facility is under the jurisdiction of another agency, identifies the impact as significant and unavoidable.

The project would have significant direct and/or cumulative impacts to intersections and road segments along Deer Springs Road, Twin Oaks Valley Road, Buena Creek Road, Monte Vista

Drive, S. Santa Fe Avenue, Robelini Drive, Gopher Canyon Road, the I-15/Deer Springs Road Interchange, the I-15 freeway , and State Route 78 ("SR 78").

The project's most significant road improvements would be implemented along Deer Springs Road, between I-15 and its intersection with Twin Oaks Valley Road, and along Twin Oaks Valley, Road between Deer Springs Road and Buena Creek Road. The project proposes two mitigation options for impacts to Deer Springs Road, Option A and Option B. Option A would improve an approximately 6,600-foot-long section of the segment of Deer Springs Road between Sarver Lane and Mesa Rock Road to a 2.1B Community Collector (two lanes of travel with a continuous center turn lane). The balance of Deer Springs Road southwest into the City of San Marcos and east to I-15/Deer Springs Road Interchange, including the intersections with Sarver Lane and Mesa Rock Road, would be improved to a 4.1A Major Road (a four-lane road with a raised median).

If chosen by the Board of Supervisors, Option A would require the reclassification of Deer Springs Road in the County's General Plan Mobility Element (County of San Diego 2011a) from a 6.2 Prime Arterial classification (six-lane) to a 4.1A Major Road with Raised Median classification (i.e., a four-lane road) between the San Marcos City Limit (just north of the Twin Oaks Valley Road) and Sarver Lane; to a 2.1B Community Collector with Continuous Turn Lanes classification (i.e., a two-lane road) between Sarver Lane and Mesa Rock Road; and back to a 4.1A Major Road classification between Mesa Rock Road and the I-15 Southbound (SB) Ramps.

Option B would construct the entire length of the road from the I-15 SB Ramps to its intersection with Twin Oaks Valley Road as a four-lane road, with an approximately 7,600-foot-long section of the road between Sarver Lane and Mesa Rock Road as a 4.1B Major Road (four lanes of travel with intermittent center turn lanes), and the balance of the road, including its intersections with Sarver Lane and Mesa Rock Road, as a 4.1A Major Road. Option B would not require the reclassification of Deer Springs Road; the roadway would remain as a 6.2 Prime Arterial (six-lane) in the County's General Plan Mobility Element (County of San Diego 2011a) from I-15 to the San Marcos City Limit.

Both Option A and Option B would provide increased capacity on Deer Springs Road relative to existing conditions, although when considering Level of Service (LOS), only Option B would meet the County's LOS standards at project buildout. Option A would not fully mitigate the project's impacts to the segment of Deer Springs Road between Sarver Lane and Mesa Rock Road; however, Option A would have reduced environmental impacts compared to Option B. Option A would also require an amendment to the County's General Plan Mobility Element to reclassify Deer Springs Road based on the proposed improvements to each segment described above. Under both Options, the Mobility Element would need to be amended to change the bicycle route classification of the road from a Class III Bicycle Route to a Class II Bicycle Lane.

In addition to the improvements to Deer Springs Road discussed above, the project proposes to widen Twin Oaks Valley Road from its intersection with Deer Springs Road to its intersection with Buena Creek Road to City of San Marcos' Four-Lane Major Arterial standards. The project also proposes intersection improvements along Buena Creek Road, including the Buena Creek Road/Twin Oaks Valley Road intersection (in the City of San Marcos), the Buena Creek Road/Monte Vista Drive intersection, and the Buena Creek Road/S. Santa Fe Avenue intersection, to mitigate both direct and cumulative impacts to these intersections and corresponding segments. As it relates to the Buena Creek Road/Monte Vista Drive intersection, in response to the Twin Oaks Valley Sponsor Group's request that the County consider a roundabout at this intersection, this EIR identifies two mitigation options for this intersection, a conventional signalized intersection and a roundabout. Both mitigation options mitigate the project's impacts to less than significant.

The project also has impacts to a segment of S. Santa Fe Avenue (between Buena Creek Road and Robelini Drive, approximately 400 feet in length), to Robelini Drive (between S. Santa Fe Avenue and Sycamore Avenue, approximately one quarter mile in length), and the S. Santa Fe Avenue/Robelini Drive intersection, facilities which are over five miles from the project Site. As it relates to these facilities, due to significant right-of-way constraints, including environmental and private property impacts, it was determined that no feasible mitigation exists to fully mitigate the project's impacts that would be proportional to the level of the project's impacts. Furthermore, the County has prepared construction plans for the widening and realignment of S. Santa Fe Avenue and to connect Sycamore Avenue directly to Buena Creek Road in a single intersection with S. Santa Fe Avenue (S. Santa Fe CIP Project). When these improvements are constructed in the future, Robelini Drive will be closed to through traffic and likely become a cul de sac. The project is proposing partial mitigation for these impacts as further described below, however, for the purposes of this EIR, the project's direct impacts have been treated as significant and unavoidable.

In most cases, the project's cumulative impacts would be mitigated by the project's proposed improvements to mitigate for its direct impacts. However, in other cases, the project would have cumulative impacts to road segments and intersections not directly impacted by the project, including to Gopher Canyon Road, the Deer Springs Road/Sycamore Road intersection, Twin Oaks Valley Road between Buena Creek and Cassou and between Richmar Avenue and San Marcos Boulevard, the Twin Oaks Valley Road/Richmar Avenue intersection, and the Twin Oaks Valley Road/San Marcos Boulevard intersection. For cumulative impacts on road facilities within the County's jurisdiction, where those impacts are on County Traffic Impact Fee (TIF) Program Eligible Facilities, those impacts would be mitigated by the project's participation in the County's TIF Program. In the case of facilities in San Marcos, fair share contributions to specific improvements to these facilities have been identified herein to mitigate the project's cumulative impacts. In the case of the Deer Springs Road/Sycamore Road intersection, another project may

signalize this intersection in the near future, nevertheless, signalization of the intersection by the project is proposed as mitigation if signalization has not occurred by the time the project's cumulative impact would occur.

The project has traffic impacts to transportation facilities under the jurisdiction of two agencies other than the County of San Diego, the City of San Marcos and Caltrans. These agencies are wholly separate and thereby outside the jurisdiction and regulatory control of the County. The project's impacts to intersections and road segments along Twin Oaks Valley Road are within the City of San Marcos and, accordingly, implementation of the mitigation is under San Marcos' jurisdiction. Likewise, the project's impacts to the I-15 and SR 78 freeway mainlines and the I-15/Deer Springs Road Interchange are within Caltrans' rights-of-way and implementation of the mitigation by Newland Sierra would be ~~is~~ under Caltrans' jurisdiction. In the case of impacts within the City of San Marcos, the Traffic Impact Analysis and this EIR identify feasible mitigation measures for these impacts; however, implementation of these mitigation measures is subject to the concurrence and separate construction permit approval of San Marcos. Therefore, the impacts are treated as significant and unavoidable in this EIR.

As it relates to the I-15/Deer Springs Road interchange, the project has identified feasible mitigation in the form of upgrading or improving an existing ~~building a new~~ interchange and that mitigation measure is identified herein as M-TR-1. In the event the County approves development on-site, the interchange improvements would be a separate, privately-funded project, paid for by the project applicant, with Caltrans serving as the lead agency in the preparation of a joint environmental review document pursuant to CEQA and the National Environmental Policy Act (NEPA). Specifically, ~~The process of~~ implementing the mitigation for ~~the~~this separate ~~i~~Interchange project will be ~~is~~ subject to a three-phase process under the jurisdiction of Caltrans, and the project applicant is solely responsible for the funding and construction of this project. The first phase involves the preparation of a Project Initiation Document (PID) consisting of a Project Study Report-Project Development Support (PSR-PDS) document. The purpose of the PSR-PDS document is to define the purpose and need for any proposed improvements, identify a reasonable range of alternatives (i.e., interchange configurations), complete an Intersection Control Evaluation per Caltrans policy, and develop an action plan for implementation of the improvements. In 2014, in response to the project's traffic impact analysis, which identified significant direct and cumulative impacts to the Interchange, the project applicant initiated the PID process with Caltrans to begin evaluating different configurations for mitigating impacts to the Interchange.

After completion of the PID phase and approval of the PSR-PDS document, the process advances to the second phase known as the Project Approval and Environmental Document (PA&ED) process. The PA&ED process, also funded by the project applicant, includes an appropriate CEQA/NEPA environmental document for the proposed improvements, including

consideration of alternative configurations and a Project Report (PR), which constitutes an engineering technical document that serves as the basis for detailed construction plans.

At the conclusion of the PA&ED process, Caltrans will select ~~an~~a preferred Interchange configuration and the process enters the third phase, which involves the Plans, Specifications, and Estimates ~~Engineering Phase~~ (PS&E), where detailed engineering documents and construction plans are prepared for the Interchange. Finally, the PS&E phase is followed by the acquisition, if any, of any required right-of-way and construction of the upgraded or improved ~~new~~ Interchange.

All aspects included in the process of implementing the mitigation for the Interchange improvements are subject to Caltrans' review, oversight, and approval, with full funding provided by Newland Sierra. As of this writing, Newland Sierra ~~Caltrans~~ is within the first PID phase; it ~~. Caltrans~~ has not completed this phase nor initiated the PA&ED phase. To date, the PSR-PDS document includes preliminary interchange alternatives consisting of an expanded diamond interchange, a diverging diamond interchange, and a roundabout interchange.

The purpose of the Interchange improvements is to maintain or improve traffic operations at the Interchange with the improvements of Mesa Rock Road north of Deer Springs Road as part of the development of the project. In addition, the Interchange improvements would accommodate projected future traffic volumes based on the planning design year 2045 resulting in increased traffic demands at the existing interchange. The Interchange improvements propose to widen and reconfigure the existing interchange to improve traffic operations. The objectives of the Interchange improvements are to: (a) maintain or improve the traffic operations of the existing interchange based on forecasted future traffic volumes from the proposed development of the Newland Sierra project, (b) support anticipated regional growth and proposed local are projects, and (c) design an interchange that fits with the proposed improvements to Mesa Rock Road (which is the Newland Sierra eastern entrance). ~~increase intersection spacing to eliminate queue spillover, thus reducing congestion~~ The potential relocation/reconfiguration of the existing ramps could allow for expansion of the existing Park and Ride lots just northwest and northeast of the existing Interchange within the Caltrans right-of-way. Expanded Park and Ride lots could support and enhance transportation alternatives and traveler amenities such as ride sharing programs, car-share services, a transit stop, bicycle facilities, lockers for travelers, and similar amenities. The inclusion of ramp meters, the extension of acceleration and deceleration lanes, and ~~W~~whether and to what extent the Park and Ride lots are improved and/or enhanced as part of building an improved ~~new~~ Interchange will be evaluated by the project applicant and be subject to Caltrans review and concurrence ~~Caltrans~~ during the subsequent PA&ED phase.

Finally, also included in this section is an analysis of the project's potential impacts associated with home-based VMT. In 2013, California Governor Jerry Brown signed into law Senate Bill

743 (SB 743), which set in motion a new statewide approach to transportation and land use planning. A key aspect of this new approach looks at the relationship between new development and the VMT associated with that development. Since passage of SB 743, the state Office of Planning & Research (OPR) has been working to prepare draft revisions to the state's CEQA Guidelines. OPR has also issued, and subsequently revised, draft guidance documents describing how VMT analyses for individual projects could be conducted. In January 20, 2016, OPR issued the *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA* (Draft Proposal), which is the current operative document although it is only a draft document that represents the next step in the lengthy process to adopted revised CEQA Guidelines pursuant to SB 743.

OPR has received considerable input from both public and private entities and is in the process of further refining their proposed revisions to the state CEQA Guidelines and associated guidance. OPR is expected to issue a revised Draft Proposal within the next several months, which would be followed by further public review and comment. Following formal adoption of the revisions to the state's CEQA Guidelines, local cities and counties will, based on the current Draft Proposal, have up to two years to implement the revised guidelines. In summary, while not required at this time by CEQA, this section presents an evaluation of the potential VMT-related impacts associated with the proposed project consistent with the methodology and significance thresholds recommended by OPR in its current Draft Proposal.

2.13.1.1 Significant Direct Impacts to Intersections

The project would have significant direct impacts to each of the intersections listed below. The mitigation for each impact is also listed, as well as the significance conclusions after implementation of the identified mitigation.

- **Deer Springs Road/I-15 Interchange Northbound (NB) Ramps and Southbound (SB) Ramps (Caltrans):** These impacts would be mitigated by upgrading or improving the existing ~~building a new i~~Interchange at ~~the~~ I-15/Deer Springs Road ~~Interchange~~, to be fully funded and constructed by the project applicant. As explained above, the project applicant has initiated a three-phase process under the jurisdiction of Caltrans for the design and ultimate approval of these improvements. With implementation of these improvements, this impact would be mitigated to less than significant. However, because ~~as~~ the timing and implementation of the~~se~~ Interchange improvements are under the jurisdiction and control of Caltrans and, thereby, subject to its ~~their~~ concurrence and approval, for the purposes of this EIR, this impact is considered **significant and unavoidable**.
- **Deer Springs Road/Mesa Rock Road Intersection (County):** This impact would be mitigated through reconfiguration of the intersection with the following: southbound – two left-turn lanes, one shared through/right lane, westbound – one right-turn lane, one

shared through/right-turn lane, one through lane, and one left-turn lane, northbound – one through lane, one right-turn lane, and one left-turn lane, and eastbound – two left-turn lanes, one through lane, and one through/right-turn lane. This impact would be mitigated to **less than significant**.

- **Deer Springs Road/Sarver Lane Intersection (County):** This impact would be mitigated through reconfiguration of the intersection with the following: southbound – one left-turn lane and one right-turn lane, westbound – one shared through/right lane and one through lane, and eastbound – two through lanes and one left-turn lane. This impact would be mitigated to **less than significant**.
- **Twin Oaks Valley Road/Deer Springs Road Intersection (San Marcos):** This impact would be mitigated through reconfiguration of the intersection with the following: southbound – two through lanes and one right-turn lane, northbound – one left-turn lane and two through lanes, and eastbound – one left-turn lane and one right-turn lane. With implementation of these improvements, this impact would be mitigated to less than significant. However, as the timing and implementation of these improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, for the purposes of this EIR, this impact is considered **significant and unavoidable**.
- **Twin Oaks Valley Road/Buena Creek Road Intersection (San Marcos):** This impact would be mitigated through reconfiguration of the intersection with the following: southbound – one left-turn lane, two through lanes, and one right-turn lane, westbound – one shared left/through/right lane, northbound – one left-turn lane, one through lane, and one shared through/right lane, and eastbound – two left-turn lanes and one shared through/right lane. With implementation of these improvements, this impact would be mitigated to less than significant. However, as the timing and implementation of these improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, for the purposes of this EIR, this impact is considered **significant and unavoidable**.
- **Buena Creek Road/Monte Vista Drive Intersection (County):** Two mitigation options exist for this impact. This impact would be mitigated by providing a traffic signal and reconfiguring the intersection with the following: southbound – one shared left/right turn lane, westbound – one through lane, and one right-turn lane with right-turn-overlap phasing, and eastbound – one left-turn lane, and one through lane. Alternatively, this impact would be mitigated by building a roundabout at this intersection. Both of these mitigation options would provide adequate peak hour operations and mitigate the corresponding impact to **less than significant**.

- **Buena Creek Road/S. Santa Fe Avenue Intersection (County):** This impact would be mitigated by providing dedicated right and left turn lanes on southbound Buena Creek Road. This impact would be mitigated to **less than significant**.

  It should be noted that the S. Santa Fe Avenue intersections with Buena Creek Road and Robelini Drive operate under a single traffic controller. As additional mitigation, the signal timing plan would be modified and the intersection signal equipment would be upgraded.

- **Robelini Drive/S. Santa Fe Avenue Intersection (County):** The impact to this intersection would be mitigated by adding receiving lanes on each side of S. Santa Fe Avenue. A detailed review of the constraints to provide additional lanes at the intersection was conducted. These improvements would require widening S. Santa Fe Avenue where right-of-way does not exist and significant impacts to private property would result to acquire the necessary right-of-way. The increase in volume at this intersection due to the project is approximately eight percent (8%). Therefore, the required improvements would not be proportional to the level of impact the project has at this intersection, which is located over 5 miles from the Project site. Based on these factors, improvements at the Robelini Drive/S. Santa Fe Avenue intersection are considered infeasible.

  As noted above, the S. Santa Fe Avenue intersections with Buena Creek Road and Robelini Drive operate under a single traffic controller. The mitigation for the Buena Creek Road/S. Santa Fe Avenue intersection identified above would partially mitigate the project's impacts to the Robelini Drive/S. Santa Fe Avenue intersection. However, despite this partial mitigation, the project's impacts would not be fully mitigated and would instead remain significant. Therefore, this impact is considered **significant and unavoidable**.

2.13.1.2 Significant Direct Impacts to Road Segments

The project would have significant direct impacts to each of the street segments listed below. The mitigation for each impact is also listed, as well as the significance conclusions after implementation of the identified mitigation.

- **Deer Springs Road from Mesa Rock Road to I-15 SB Ramps (County and Caltrans):** This impact would be mitigated by widening this segment of Deer Springs Road to San Diego County 4.1A Major Road standards and to be consistent with the requirements set forth by Caltrans as part of their approval of the I-15/ Deer Springs Road interchange improvements. The improvements required to mitigate the project's impacts to this segment of Deer Springs Road would be done in coordination with the planning and construction of the upgraded or improved ~~new~~ interchange. With

implementation of these improvements, this impact would be mitigated to less than significant. However, as the timing and implementation of these improvements by Newland Sierra are partially ~~by Newland Sierra~~ under the jurisdiction and control of Caltrans and, thereby, subject to their concurrence and approval, for the purposes of this EIR, this impact is considered **significant and unavoidable**.

- **Deer Springs Road from Sarver Lane and Mesa Rock Road (County):** Mitigation for this impact would depend on whether Option A or Option B is selected by the Board of Supervisors for Deer Springs Road. If Option A is selected, this segment of Deer Springs Road between Sarver Lane and Mesa Rock Road would be built to a 2.1B Community Collector with a two-way center turn lane. To clarify, under this Option, the Sarver Lane and Mesa Rock Road intersections would be built to the 4.1A Major Road classification with transition areas east and west, respectively, of these intersections. If Option B is selected, this segment of Deer Springs Road between Sarver Lane and Mesa Rock Road would be built to San Diego County 4.1B Major Road classification. Under Option A, the impact to this segment would remain **significant and unavoidable** whereas, under Option B, the impact would be mitigated to less than significant.
- **Deer Springs Road from Twin Oaks Valley Road to Sarver Lane (County and San Marcos):** This impact would be mitigated by widening the segment of Deer Springs Road between Twin Oaks Valley Road and the San Marcos City Limits to the City's 4-Lane Major Arterial standard and the segment between the City Limits to Sarver Lane to the County's 4.1A Major Road standards. With implementation of these improvements, this impact would be mitigated to less than significant. However, as it pertains to the segment within the City of San Marcos, as the timing and implementation of these improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, for the purposes of this EIR, this impact is considered **significant and unavoidable**.
- **Twin Oaks Valley Road from Deer Springs Road to Buena Creek Road (San Marcos):** This impact would be mitigated by widening Twin Oaks Valley Road to be consistent with the City of San Marcos' 4-Lane Major Arterial standards between Deer Springs Road and Buena Creek Road. With implementation of these improvements, this impact would be mitigated to less than significant. However, as the timing and implementation of these improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval for purposes of this EIR, this impact is considered **significant and unavoidable**.
- **Twin Oaks Valley Road from Buena Creek Road to Cassou Road (San Marcos):** This impact would be mitigated by intersection improvements to the Twin Oaks Valley Road/Buena Creek Road intersection described above. With implementation of

these improvements, this impact would be mitigated to less than significant. However, as the timing and implementation of these improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, for the purposes of this EIR, this impact is considered **significant and unavoidable**.

- **Buena Creek Road from Twin Oaks Valley Road to Monte Vista Drive (San Marcos and County):** This impact would be mitigated by intersection improvements to the Twin Oaks Valley Road/Buena Creek Road and Buena Creek Road/Monte Vista Drive intersections described above. With implementation of these improvements, this impact would be mitigated to less than significant. However, as the timing and implementation of improvements to the Buena Creek Road/Twin Oaks Valley Road intersection are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, for the purposes of this EIR, the impact to this segment of Buena Creek Road is considered **significant and unavoidable**.
- **Buena Creek Road from Monte Vista Drive to S. Santa Fe Avenue (County):** This impact would be mitigated by intersection improvements to the Buena Creek Road/ S. Santa Fe Avenue and Buena Creek Road/Monte Vista Drive intersections described above. This impact would be mitigated to **less than significant**.
- **S. Santa Fe Avenue from Buena Creek Road to Robelini Drive (County):** This impact would be mitigated by widening S. Santa Fe Avenue to four lanes. As stated above, a review of the right-of-way constraints along this segment of S. Santa Fe Avenue indicates widening to four lanes is infeasible. In addition, the increase in volume on S. Santa Fe Avenue due to the Project is less than 13%. Therefore, full widening is not proportional to the level of impact the project has on this segment, which is located over 5 miles from the Project site.

  As noted above, the S. Santa Fe Avenue intersections with Buena Creek Road and Robelini Drive operate under a single traffic controller. The mitigation for the Buena Creek Road/S. Santa Fe Avenue intersection identified above would partially mitigate the project's impacts to this segment of Santa Fe Avenue. However, despite this partial mitigation, the project's impacts would not be fully mitigated and would instead remain significant. Therefore, this impact is considered **significant and unavoidable**.
- **Robelini Drive from Sycamore Avenue to S. Santa Fe Avenue (County):** This impact would be mitigated by widening Robelini Drive to meet the County's 4.1A Major Road classification. Robelini Drive in its existing condition is a two-lane road within a 50-foot-wide right-of-way approximately one quarter mile (0.25 mi.) in length. Improvement to four lanes would require acquisition of a minimum of 48 feet of additional right-of-way to meet the County's 4.1A Major Road standard from a combination of 16 residential and commercial property owners. Road widening would impact private improvements, mature

trees and landscaping, drainage structures and overhead utility lines, and would likely require the demolition of multiple existing residences. Improvements at the Robelini Drive/S. Santa Fe Avenue intersection are also considered infeasible since adding turn lanes on northbound Robelini Drive at S. Santa Fe Avenue would require widening S. Santa Fe Avenue (which also has right-of-way constraints) to provide receiving lanes.

Under current conditions, Robelini Drive operates over capacity without the Project traffic and the project increases the ADT by only about 10%. Therefore, the widening of Robelini Drive by the Project is not proportional to the Project's impact. In addition, Sycamore Avenue (which becomes Robelini Drive and, thereby, connects to S. Santa Fe Avenue) is proposed to be realigned opposite Buena Creek Road as part of the County's S. Santa Fe Avenue CIP project. Therefore, any improvements to Robelini Drive would potentially also be in conflict with the County's CIP project.

As noted above, the S. Santa Fe Avenue intersections with Buena Creek Road and Robelini Drive operate under a single traffic controller. The mitigation for the Buena Creek Road/S. Santa Fe Avenue intersection identified above would partially mitigate the project's impacts to this segment of Robelini Drive. However, despite this partial mitigation, the project's impacts would not be fully mitigated and would instead remain significant. Therefore, this impact is considered **significant and unavoidable**.

2.13.1.3 Significant Direct Impacts to Freeway Segments

The project would have a significant direct impact to the freeway segment listed below.

- **I-15 Mainline from Deer Springs Road to Pomerado Road (Caltrans):** These impacts would be mitigated by providing additional mainline capacity along this segment~~stretch~~ of I-15. However, there is no Caltrans program or project in place to add capacity to the mainline ~~implement the necessary improvements~~ into which the project could contribute a fair share ~~and, thus, there is no feasible mitigation that would reduce the identified impact to less than significant~~. Notwithstanding, the I-15/Deer Springs Road Interchange improvements (Interchange improvements), including the incorporation of ramp meters, the extension of acceleration/deceleration lanes, and improvements to the park-and-ride facility, all of which will be funded by the Project applicant, are effective traffic management strategies that would assist in maintaining an efficient freeway system. Additionally, the Project's Transportation Demand Management (TDM) Program, which also must be funded by the Project applicant, includes community sponsored shuttle services and other measures designed to reduce single occupancy vehicle trips that would assist in reducing the project's impacts to the mainline. Collectively, these measures are responsive to mainline impacts, although they

would not fully mitigate the project's significant impacts to the mainline; and, ~~T~~therefore, these impacts are considered **significant and unavoidable**.

2.13.1.4 Significant Cumulative Impacts to Intersections

The project would have significant cumulative impacts to each of the intersections listed below. The mitigation for each impact is also listed, as well as the significance conclusions after implementation of the identified mitigation.

- **Deer Springs Road/I-15 Interchange NB Ramps and SB Ramps (Caltrans):** The mitigation proposed above for the project's direct impact to the interchange would also mitigate the project's cumulative impact to less than significant. However, as the timing and implementation of these improvements by Newland Sierra are under the jurisdiction and control of Caltrans and, thereby, subject to their concurrence and approval, this impact is considered **significant and unavoidable**.
- **Deer Springs Road/Mesa Rock Road Intersection (County):** The mitigation proposed above for the project's direct impact to this intersection would also mitigate the project's cumulative impact to **less than significant**.
- **Deer Springs Road/Sarver Lane Intersection (County):** The mitigation proposed above for the project's direct impact to this intersection would also mitigate the project's cumulative impact to **less than significant**.
- **Deer Springs Road/Sycamore Road Intersection (County):** This impact would be mitigated to **less than significant** by the signalization of this intersection.
- **Twin Oaks Valley Road/Deer Springs Road Intersection (San Marcos):** The mitigation proposed above for the project's direct impact to this intersection would also mitigate the project's cumulative impact to less than significant. However, as the timing and implementation of these improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, this impact is considered **significant and unavoidable**.
- **Twin Oaks Valley Road/Buena Creek Road Intersection (San Marcos):** The mitigation proposed above for the project's direct impact to this intersection would also mitigate the project's cumulative impact to less than significant. However, as the timing and implementation of these improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, this impact is considered **significant and unavoidable**.
- **Twin Oaks Valley Road/Richmar Avenue (San Marcos):** This impact would be mitigated by a fair share contribution toward providing a dedicated southbound right-turn

lane on Twin Oaks Valley Road at Richmar Avenue. However, as the timing and implementation of these improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, this impact is considered **significant and unavoidable**.

- **Twin Oaks Valley Road/San Marcos Boulevard Intersection (San Marcos):** This impact would be mitigated by contribution of the project's fair share toward implementing an exclusive southbound right-turn lane and a third westbound left-turn lane at this intersection with appropriate signal modifications. However, as the timing and implementation of these improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, this impact is considered **significant and unavoidable**.
- **Buena Creek Road/Monte Vista Drive Intersection (County):** The mitigation proposed above for the project's direct impact to this intersection would also mitigate the project's cumulative impact to **less than significant**.
- **Buena Creek Road/S. Santa Fe Avenue Intersection (County):** The physical improvements included in the mitigation proposed above for the project's direct impact to this intersection would also mitigate the project's cumulative impact to **less than significant**. Additionally, the S. Santa Fe Avenue CIP project and the new intersection connecting Sycamore Avenue directly to Buena Creek Road are County TIF Program Eligible Facilities and part of the Regional Arterial System (RAS). Therefore, participation in the County's TIF Program by the project applicant, or its designee, would constitute additional mitigation for this impact.
- **Robelini Drive/S. Santa Fe Avenue Intersection (County):** Implementation of the S. Santa Fe Avenue CIP Project will remove this intersection from the network and thereby eliminate the impact with the realignment of Sycamore Avenue to connect directly to Buena Creek Road, thereby rerouting traffic off of Robelini Drive and through this new intersection connecting Buena Creek Road and S. Santa Fe Avenue traffic directly to Sycamore Avenue. The S. Santa Fe Avenue CIP project and the new intersection connecting Sycamore Avenue directly to Buena Creek Road are County TIF Program Eligible Facilities and part of the Regional Arterial System (RAS). Therefore, through participation in the County's TIF Program by the project applicant, or its designee, this impact would be reduced to **less than significant**.

2.13.1.5 Significant Cumulative Impacts to Road Segments

The project would have significant cumulative impacts to each of the street segments listed below. The mitigation for each impact is also listed, as well as the significance conclusions after implementation of mitigation.

- **Deer Springs Road from Mesa Rock Road to I-15 SB Ramps (County and Caltrans):** The mitigation proposed above for the project's direct impact to this segment would also mitigate the project's cumulative impact to less than significant. However, as the timing and implementation of these improvements by Newland Sierra are partially under the jurisdiction and control of Caltrans and, thereby, subject to their concurrence and approval, for the purposes of this EIR, this impact is considered **significant and unavoidable**.
- **Deer Springs Road from Sarver Lane to Mesa Rock Road (County):** Under Option B, the mitigation proposed above for the project's direct impact to this segment would also mitigate the project's cumulative impact to less than significant. However, Under Option A, the project's cumulative impact would remain **significant and unavoidable**.
- **Deer Springs Road from Twin Oaks Valley Road to Sarver Lane (County and San Marcos):** The mitigation proposed above for the project's direct impact to this segment would also mitigate the project's cumulative impact to less than significant. However, as it pertains to the segment within the City of San Marcos, as the timing and implementation of these improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, for the purposes of this EIR, this impact is considered **significant and unavoidable**.
- **Twin Oaks Valley Road from Deer Springs Road to Buena Creek Road (San Marcos):** The mitigation proposed above for the project's direct impact to this segment in addition to a fair share contribution toward an auxiliary right-turn only lane in the southbound direction along this segment would mitigate the project's cumulative impact to less than significant. However, as the timing and implementation of these improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, for the purposes of this EIR, this impact is considered **significant and unavoidable**.
- **Twin Oaks Valley Road from Buena Creek Road to Cassou Road (San Marcos):** The mitigation proposed above for the project's direct impact to this segment would also mitigate the project's cumulative impact to less than significant. However, as the timing and implementation of these improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, for the purposes of this EIR, this impact is considered **significant and unavoidable**.

- **Twin Oaks Valley Road from Richmar Avenue to San Marcos Boulevard (San Marcos):** This impact would be mitigated by contribution of the project's fair share toward implementing an exclusive southbound right-turn lane and a third westbound left-turn lane at the Twin Oaks Valley Road/San Marcos Boulevard intersection with appropriate signal modifications. However, as the timing and implementation of these improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, for the purposes of this EIR, this impact is considered **significant and unavoidable**.
- **Buena Creek Road from Monte Vista Drive to Twin Oaks Valley Road (County and San Marcos):** The mitigation proposed above for the project's direct impact to this segment would also mitigate the project's cumulative impact to less than significant. However, as the timing and implementation of a portion of these improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, for the purposes of this EIR, this impact is considered **significant and unavoidable**.
- **Buena Creek Road from S. Santa Fe Avenue to Monte Vista Drive (County):** The mitigation proposed above for the project's direct impact to this segment would also mitigate the project's cumulative impact to **less than significant**.
- **Monte Vista Drive from Foothill Drive to Buena Creek Road (County):** The mitigation proposed above for the project's direct impact to the intersection of Buena Creek Road and Monte Vista Drive would also mitigate the project's cumulative impact to **less than significant.**
- **S. Santa Fe Avenue from Robelini Drive to Buena Creek Road (County):** This segment of S. Santa Fe Avenue is a County TIF Program Eligible Facility and part of the Regional Arterial System (RAS). Therefore, through participation in the County's TIF Program by the project applicant, or its designee, this impact would be reduced to **less than significant**.
- **Robelini Drive from Sycamore Avenue to S. Santa Fe Avenue (County):** As explained previously, there are no feasible improvements that fully mitigate the project's direct impact to this segment. However, with the implementation of the S. Santa Fe Avenue CIP Project, this impact will be eliminated with the realignment of Sycamore Avenue to connect directly to Buena Creek Road, thereby rerouting traffic off of Robelini Drive and through this new intersection connecting Buena Creek Road and S. Santa Fe Avenue traffic directly to Sycamore Avenue. This segment of S. Santa Fe Avenue and the new intersection connecting Sycamore Avenue directly to Buena Creek Road are County TIF Program Eligible Facilities and part of the Regional Arterial System (RAS). Therefore, through

participation in the County's TIF Program by the project applicant, or its designee, this impact would be reduced to **less than significant**.

- **Gopher Canyon Road from Little Gopher Canyon Road to I-15 Ramps (County):** This segment of Gopher Canyon Road is a County TIF Program Eligible Facility and is part of the Regional Arterial System (RAS). Therefore, through participation in the County's TIF Program by the project applicant, or its designee, this impact would be reduced to **less than significant**.

2.13.1.6 Significant Cumulative Impacts to Freeway Segments

The project would have significant cumulative impacts to each of the freeway segments listed below. The mitigation for each impact is also listed, as well as the significance conclusions after implementation of mitigation.

- **I-15 Mainline from Old Highway 395 to Pomerado Road:** These impacts would be mitigated by providing additional mainline capacity along this segment~~stretch~~ of I-15. However, there is no Caltrans program or project in place to add capacity to the mainline ~~implement the necessary improvements~~ into which the project could contribute a fair share ~~and, thus, there is no feasible mitigation that would reduce the identified impact to less than significant~~. Notwithstanding, the I-15/Deer Springs Road Interchange improvements (Interchange improvements), including the incorporation of ramp meters, the extension of acceleration/deceleration lanes, and improvements to the park-and-ride facility, all of which will be funded by the Project applicant, are effective traffic management strategies that would assist in maintaining an efficient freeway system. Additionally, the Project's Transportation Demand Management (TDM) Program, which also must be funded by the Project applicant, includes demand responsive shuttle services and other measures designed to reduce single occupancy vehicle trips that would assist in reducing the project's impacts to the mainline. Collectively, these measures are responsive to mainline impacts, although they would not fully mitigate the project's significant impacts to the mainline; and, ~~T~~therefore, these impacts are considered **significant and unavoidable**.
- **SR 78 Mainline from Mar Vista Road to Sycamore Avenue:** These impacts would be mitigated by payment of a fair share contribution to Caltrans for the planned improvement to add high-occupancy-vehicle (HOV) lanes in both directions on State Route 78. However, as the timing and implementation of these improvements are under the jurisdiction and control of Caltrans and, thereby, subject to their concurrence and approval, for the purposes of this EIR, these impacts are considered **significant and unavoidable**.

2.13.1.7 Potential VMT-Related Impacts

As analyzed in Section 2.13.10, in accordance with OPR's *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA*, the project would potentially result in the following VMT-related impacts:

- **Project Home-Based VMT per Capita for Residential Uses:** With application of a region-wide threshold (Scenario 1), the project would result in a **potentially significant impact**. However, with application of a subregional threshold (Scenario 2), the project would result in a less than significant impact.
- **Travel Induced VMT, Near-Term Scenario:** The induced VMT as a result of the project's proposed off-Site road improvements would exceed the draft OPR-recommended threshold and, therefore, would result in a **potentially significant impact** in the near-term scenario.
- **Travel Induced VMT, Long-Term Scenario:** The induced VMT as a result of the project's proposed off-Site road improvements would exceed the draft OPR-recommended threshold and, therefore, would result in a **potentially significant impact** in the long-term scenario. However, the project's proposed road improvements are consistent with the County's General Plan Mobility Element, which is consistent with SANDAG's 2015 "San Diego Forward: The Regional Plan", a Regional Transportation Plan/Sustainable Communities Strategy (2015 RTP/SCS) for the San Diego Region. Therefore, in this regard, impacts would be considered less than significant.

2.13.2 Existing Conditions

2.13.2.1 Project Study Area

The project study area was determined using the San Diego County criteria, which require an analysis of all transportation facilities that would receive 25 or more peak hour trips from the proposed project. The 25 peak-hour trip threshold is based on the combined two-way (i.e., both directions, two-way peak hour total) traffic volume of the roadway segment for either the AM or PM peak period. Based on this criteria and the trip distribution developed using a Select Zone Assignment (SZA) plot obtained from the San Diego Association of Governments (SANDAG) (see Appendix R), the following intersections, street segments, freeway mainline segments and metered ramps, as shown in Figure 2.13-1, Project Study Area, were included in the study area:

Intersections

1. Champagne Boulevard/Gopher Canyon Road (*Signalized*)

2. Champagne Boulevard/Old Castle Road (*Signalized*)
3. Champagne Boulevard/Lawrence Welk Drive (*Unsignalized*)
4. Champagne Boulevard (N. Centre City Pkwy.)/Mountain Meadow Rd. (*Signalized*)
5. Deer Springs Road/(Interstate 15) I-15 NB Ramps (*Signalized*)
6. Deer Springs Road/I-15 SB Ramps (*Signalized*)
7. Deer Springs Road/Mesa Rock Road (Signalized)
9. Deer Springs Road/Sarver Lane (*Unsignalized*)
10. Deer Springs Road/Sycamore Road (*Unsignalized*)
11. Twin Oaks Valley Road/Camino Mayor (*Unsignalized*)
12. Twin Oaks Valley Road/Deer Springs Road (*Signalized*)
13. Twin Oaks Valley Road/Buena Creek Road (*Signalized*)
14. Twin Oaks Valley Road/Cassou Road (*Signalized*)
15. Twin Oaks Valley Road/La Cienega (*Signalized*)
16. Twin Oaks Valley Road/Del Roy Drive (*Signalized*)
17. Twin Oaks Valley Road/Windy Way (*Signalized*)
18. Twin Oaks Valley Road/Borden Road (*Signalized*)
19. Twin Oaks Valley Road/Richmar Drive (*Signalized*)
20. Twin Oaks Valley Road/San Marcos Boulevard (*Signalized*)
21. Twin Oaks Valley Road/State Route (SR) 78 Westbound (WB) Ramps *(Signalized*)
22. Twin Oaks Valley Road/SR 78 Eastbound (EB) Ramps (*Signalized*)
23. Robelini Drive/S. Santa Fe Avenue (*Signalized*)
24. Sycamore Avenue/SR 78 WB Ramps (*Signalized*)
25. Sycamore Avenue/SR 78 EB Ramps (*Signalized*)
26. Buena Creek Road/S. Santa Fe Avenue (*Signalized*)
27. Buena Creek Road/Monte Vista Drive (*Unsignalized*)
28. San Marcos Boulevard/Knoll Road/SR 78 WB Ramps (*Signalized*)
29. San Marcos Boulevard/ SR 78 EB Ramps (*Signalized*)
30. Mission Road/Vineyard Road (*Signalized*)

31. North Centre City Parkway/Mesa Rock Road (*Unsignalized*)
32. North Centre City Parkway/Country Club Lane (*Signalized*)
33. Twin Oaks Valley Road/Barham Drive/Discovery Street *(Signalized)*

Road Segments

Deer Springs Road

- Twin Oaks Valley Road to Sarver Lane
- Sarver Lane to Mesa Rock Road
- Mesa Rock Road to I-15 SB Ramps
- I-15 to Champagne Boulevard

Mountain Meadow Road

- East of Champagne Boulevard (N. Centre City Parkway)

Twin Oaks Valley Road

- Solar Lane to Deer Springs Road
- Deer Springs Road to Buena Creek Road
- Buena Creek Road to Cassou Road
- Cassou Road to La Cienega Road
- La Cienega Road to Windy Way
- Windy Way to Borden Road
- Borden Road to Richmar Avenue
- Richmar Avenue to San Marcos Boulevard
- San Marcos Boulevard to SR 78 WB Ramps
- SR 78 to Barham Drive/Discovery Street

Buena Creek Road

- S. Santa Fe Avenue to Monte Vista Drive
- Monte Vista Drive to Twin Oaks Valley Road

Monte Vista Drive

- Foothill Drive to Buena Creek Road

Mesa Rock Road

- Deer Springs Road to N. Centre City Parkway

Gopher Canyon Road

- Little Gopher Canyon Road to I-15 SB Ramps
- I-15 NB Ramps to Champagne Boulevard

Champagne Boulevard

- Old Castle Road to Lawrence Welk Drive
- Lawrence Welk Drive to Mountain Meadow Road

North Centre City Parkway

- Mountain Meadow Road to I-15 Ramps
- I-15 Ramps to Country Club Lane

Robelini Drive

- Sycamore Avenue to S. Santa Fe Avenue

S. Santa Fe Avenue

- Robelini Drive to Buena Creek Road

Sycamore Avenue

- SR 78 WB Ramps to University Drive

Freeway Mainline Segments

I-15

- Riverside County Boundary to Old Highway 395
- Old Highway 395 to SR-76

- SR-76 to Old Highway 395
- Old Highway 395 to Gopher Canyon Road
- Gopher Canyon Road to Deer Springs Road
- Deer Springs Road to N. Centre City Parkway
- N. Centre City Parkway to El Norte Parkway
- El Norte Parkway to SR 78
- SR 78 to W. Valley Parkway
- W. Valley Parkway to Auto Parkway
- Auto Parkway to W. Citracado Parkway
- W. Citracado Parkway to Via Rancho Parkway
- Via Rancho Parkway to Bernardo Drive
- Bernardo Drive to Rancho Bernardo Road
- Rancho Bernardo Road to Bernardo Center Drive
- Bernardo Center Drive to Camino Del Norte

SR 78

- Mar Vista Drive to Sycamore Drive
- Sycamore Drive to Rancho Santa Fe Drive
- Rancho Santa Fe Drive to Las Posas Road
- Las Posas Road to San Marcos Boulevard
- San Marcos Boulevard to Twin Oaks Valley Road

Metered Freeway On-Ramps

- Sycamore Avenue to WB SR 78
- WB San Marcos Boulevard to WB SR 78

2.13.2.2 Existing Conditions

Existing Roadway Conditions

The segments included in the study area are briefly described below.

Gopher Canyon Road is classified as a 4.1B Major Road in the County's General Plan Mobility Element. Currently, it is built as a two-lane road with shoulders between 3 and 6 feet wide. The posted speed limit is 50 miles per hour (mph). No curb, gutters or sidewalks exist.

Deer Springs Road is classified in the County's General Plan Mobility Element as a 6.2 Prime Arterial between the City of San Marcos and I-15 SB Ramps, and a 4.1B Major Road with intermittent turn lanes between the I-15 NB Ramps and N. Centre City Parkway. Deer Springs Road currently is constructed as a two-lane roadway within the project study area. Parking generally is prohibited. The shoulders are unimproved. Deer Springs Road has both horizontal and vertical curves. The posted speed limit is 45 mph from Twin Oaks Valley Road to Sarver Lane and 55 mph from Sarver Lane, to I-15. No bicycle lanes or sidewalks currently exist, however the road is classified as a Class III Bicycle Route in the County's General Plan Mobility Element. The southern terminus of Deer Springs Road is at Twin Oaks Valley Road inside the City of San Marcos.

Mountain Meadow Road is classified as a 4.1B Major Road in the County's General Plan Mobility Element. It is currently built as a four-lane undivided road with a striped median between Champagne Boulevard (N. Centre City Parkway) and High Mountain Drive. East of High Mountain Drive, a two-way left-turn lane is provided to Hidden Meadows Road. The posted speed limit is 50 mph. The shoulders are paved but no curb or sidewalks exist. Parking is not permitted.

Twin Oaks Valley Road is classified as a Four-Lane Major Arterial with Enhanced Bicycle/Pedestrian Facilities on the City of San Marcos General Plan Mobility Element north of Borden Road, and as a Four/Six-lane Arterial with Class II or III Bicycle Facilities and Sidewalks south of Borden Road.

Within the City of San Marcos, Twin Oaks Valley Road currently is constructed as a two-lane undivided roadway with a two-way left-turn lane from Deer Springs Road to Cassou Road. The existing condition of the various segments of Twin Oaks Valley Road between Twin Oaks Crest Drive and San Marcos Boulevard is described below:

- From Twin Oaks Crest Drive to Deer Springs Road, Twin Oaks Valley Road is constructed as a two-lane roadway.
- From Deer Springs Road to Buena Creek Road, Twin Oaks Valley Road is constructed as a two-lane roadway with a two-way-left-turn lane. Curb, gutter, and sidewalk generally exist on the east side, and there is a dirt shoulder on the west side of this segment. The posted speed limit is 35 mph. Curbside parking generally is not permitted. Trucks over 7 tons are prohibited.

- From Buena Creek Road to Cassou Road, Twin Oaks Valley Road is constructed as a two-lane roadway with a two-way-left-turn lane. Curb, gutter and sidewalk generally exist on the east side, and there is a dirt shoulder on the west side of this segment. The posted speed limit is 35 mph. Curbside parking generally is not permitted. Trucks over 7 tons are prohibited.
- The southern portion of Twin Oaks Valley Road between Cassou Road and La Cienega Road is constructed as a four-lane divided roadway with a two-way left-turn lane. Curb and gutter generally exist. No sidewalks are provided. The posted speed limit is 45 mph. Curbside parking generally is not permitted. Trucks over 7 tons are prohibited.
- From La Cienega Road to Windy Way, Twin Oaks Valley Road is a four-lane divided roadway with a raised median and a 50 mph speed limit. Curb and gutter exist on the east side but not on the west side. Curbside parking is not permitted.
- From Windy Way to Borden Road, Twin Oaks Valley Road is a four-lane undivided roadway with a center two-way-left-turn lane. Curb, gutter and sidewalk exist on the west side but not on the east side. Curbside parking is not permitted. There are existing bicycle lanes.
- From Borden Road to Richmar Avenue, Twin Oaks Valley Road is a four-lane undivided roadway with a center two-way-left-turn lane. Curb, gutter and sidewalk exist on the west side but not on the east side. Curbside parking is not permitted. There are existing bicycle lanes.
- From Richmar Avenue to San Marcos Boulevard, Twin Oaks Valley Road is constructed as a four-lane divided roadway with a raised median and a 45 mph speed limit. There are existing bicycle lanes.
- From San Marcos Boulevard to Barham Drive, Twin Oaks Valley Road is a six-lane divided roadway with a raised median and a 40 mph speed limit. Bicycle lanes exist in both directions of travel on this segment, and parking generally is prohibited. Twin Oaks Valley Road is grade-separated at Mission Road.

North of Deer Springs Road to Gopher Canyon Road, Twin Oaks Valley Road falls under the jurisdiction of the County and is designated as a 2.2C Light Collector with intermittent turn lanes in the County's General Plan Mobility Element. Currently, Twin Oaks Valley Road north of the intersection with Deer Springs Road is a public road through approximately 1,900 feet north of Par Valley Drive. A gate located at this point prevents through access on Twin Oaks Valley Road for a distance of approximately 7,000 feet. Farther north, Twin Oaks Valley Road continues as a public road to Gopher Canyon Road.

Buena Creek Road is classified as a 4.1B Major Road with intermittent turn lanes in the County's General Plan Mobility Element. Buena Creek Road currently is built as a rural two-

lane roadway with fronting farmland and residential property and a 50 mph posted speed limit. Curb, gutter, bicycle lanes and sidewalks generally do not exist.

Monte Vista Drive is classified as a 4.1B Major Road with intermittent turn lanes in the County's General Plan Mobility Element between Foothill Drive and Buena Creek Road. Monte Vista Drive currently is built as a two-lane roadway. Curbside parking generally is not allowed, and the posted speed limit is 45 mph in the project vicinity. Curb, gutter, bicycle lanes and sidewalks generally do not exist.

Champagne Boulevard is classified as a 4.1B Major Road with intermittent turn lanes in the County's General Plan Mobility Element within the project study area. Champagne Boulevard currently is constructed as a two-lane roadway within the project study area. Parking generally is prohibited. The shoulders are unimproved. The posted speed limit is 55 mph. Curb, gutter, and sidewalks generally do not exist.

Mesa Rock Road is classified as a 2.2E Light Collector in the County's General Plan Mobility Element. It currently is constructed as a two-lane undivided roadway. Parking generally is prohibited. There is no posted speed limit. Curb, gutter, and sidewalks generally do not exist.

N. Centre City Parkway is classified as a 4.1B Major Road with intermittent turn lanes on the County's General Plan Mobility Element. North Centre City Parkway currently is constructed as a two-lane roadway within the project study area. Parking generally is prohibited. The shoulders are unimproved. The posted speed limit is 55 mph. Curb, gutter, and sidewalks generally do not exist.

Robelini Drive is an unclassified two-lane roadway. Curbside parking is not allowed. Robelini Drive provides access to residences and to S. Santa Fe Avenue. The posted speed limit is 25 mph. Curb, gutter and sidewalks generally do not exist.

S. Santa Fe Avenue is classified as a 4.1A Major Road in the County's General Plan Mobility Element. S. Santa Fe Avenue currently is constructed as a two-lane roadway with a center two-way left turn lane within the study area. Parking generally is prohibited. The posted speed limit is 45 mph. Curb, gutter, bicycle lanes and sidewalks generally do not exist.

Sycamore Avenue is classified as a 6.2 Prime Arterial in the County's General Plan Mobility Element. Sycamore Avenue currently is constructed as a six-lane divided roadway north of SR 78 and a four-lane divided roadway south of SR 78. Parking generally is prohibited. Curbs, gutters, and sidewalks are provided. Sycamore Avenue provides access to commercial land uses. The posted speed limit is 40 mph. Curb, gutter, and sidewalks generally are present. Bicycle lanes also are present.

Interstate 15 is generally an eight-lane north/south freeway. Within the project study area ramp interchanges are provided at Centre City Parkway, Deer Springs Road, and Gopher Canyon Road.

State Route 78 is generally a six-lane east/west freeway connecting I-15 and I-5. Within the project study area, ramp interchanges are provided at Sycamore Avenue, San Marcos Boulevard, and Twin Oaks Valley Road.

Existing Bicycle Facilities

As described above, bicycle lanes do not existing along most of the study area roadways. Based on observation of existing conditions and a review of plans published by the City of San Marcos and County of San Diego, the following existing bicycle conditions in the project study area are noted.

Deer Springs Road

Per the County's General Plan Mobility Element (North County Metro subarea), Deer Springs Road is designated a Class III Bicycle Route along its entire length from the San Marcos City Limits to Champagne Boulevard (N. Centre City Parkway). The portion of Deer Springs Road inside the City of San Marcos does not have an existing bicycle classification in the City's Mobility Element, however the road is designated as an arterial with enhanced bicycle/pedestrian facilities.

Twin Oaks Valley Road

On Twin Oaks Valley Road, bicycle infrastructure consisting of Class I and/or Class II facilities generally exist between Buena Creek Road all the way into the San Elijo Hills Community where Twin Oaks Valley Road becomes San Elijo Road. Beginning at Buena Creek Road and heading south, Class II Bicycle Lanes exist on both sides of the roadway all the way to the intersection with La Cienega Road. South of La Cienega, a Class I Bicycle Path exists along the east side of the roadway along the entire length of the Twin Oaks Golf Course to a point approximately 300 feet north of the intersection with Windy Way where it becomes a Class II Bicycle Lane. From approximately 300 feet north of Windy Way, Class II Bicycle Lanes generally exist all the way into the San Elijo Hills Community. Based on the City of San Marcos General Plan Mobility Element, Twin Oaks Valley Road is designated as an arterial with enhanced bicycle/pedestrian facilities with existing Class II Bicycle Lanes and a future Class I Bicycle Path. North of La Cienega, significantly more intersections exist along Twin Oaks Valley Road, making a Class I Bicycle Path potentially less ideal compared to Class II Bicycle Lanes.

Sycamore Avenue

Class II bicycle lanes exist on both sides along Sycamore Avenue between SR 78 and Robelini Drive.

Existing Pedestrian Conditions

Most of the study area roadway segments do not have sidewalks or pathways, other than those described below.

Mesa Rock Road

There is an existing sidewalk on the east side of the roadway beginning at the existing ARCO gas station and continuing north to the current terminus of the roadway.

Twin Oaks Valley Road

Sidewalk facilities exist along Twin Oaks Valley Road from approximately 300 feet south of its intersection with Deer Springs Road all the way into the San Elijo Hills Community where Twin Oaks Valley Road becomes San Elijo Road. Beginning approximately 300 feet south of the Deer Springs Road intersection to its intersection with Olive Street, a concrete sidewalk exists along the east side of the road. Between Olive Street and Cassou Road, no defined sidewalk exists, however there is a dirt and gravel walking path along the east side of the road. Between Cassou Road to approximately 300 feet north of Windy Way, there is a multi-use pathway on the east side of the road that is physically separated from the road by wooden fencing. The multi-use pathway merges with a sidewalk approximately 300 feet north of Windy Way. The pedestrian path continues as a standard sidewalk to Windy Way. Beginning approximately 1,000 feet south of the intersection with Del Roy Drive and exiting a small residential community across from Twin Oaks Golf Course, an elevated pathway exists along the west side of Twin Oaks Valley Road until it merges with a concrete sidewalk near the intersection with Legacy Drive. From Legacy Drive to Richmar Avenue, continuous sidewalks are provided on the west side of the roadway. From Richmar to the SR 78 ramps, sidewalks are provided on both sides of the roadway. South of SR 78 ramps, sidewalks or pedestrian pathways generally are provided on one or both sides of the roadway for the remaining portion of Twin Oaks Valley Road all the way into the San Elijo Hills Community.

Existing Transit Conditions

There are no public transit services which stop at or within the immediate vicinity of the project Site. Service could potentially be provided in the future by the North County Transit District (NCTD). It is also worth noting that the Riverside Transit Agency (RTA) currently operates a

Commuter Link Express Route (Route 217) along the I-15 corridor with morning and evening service between Hemet, Murrieta, Temecula, and the Escondido Transit Center.

2.13.2.3 Existing Traffic Conditions

This section describes the methodology used to assess existing traffic volumes and operations and the corresponding existing Level of Service (LOS) for the intersections, road segments, freeway segments, and freeway ramp meters analyzed by the project.

Intersections

Peak hour turning movement counts were conducted at the study area intersections during April 2015. Existing AM/PM peak-hour intersection volumes are shown in Table 2.13-1, Existing Intersection Peak-Hour Operations. Signal timing plans from the California Department of Transportation (Caltrans) for the I-15 and SR 78 ramp intersections and City of San Marcos signalized intersections also are included in Appendix R.

As shown in Table 2.13-1, the following intersections currently operate at LOS E or worse:

- Deer Springs Road/I-15 SB Ramps (LOS E during the PM peak hour)
- Robelini Drive/S. Santa Fe Avenue (LOS E during the AM peak hour)
- Buena Creek Road/S. Santa Fe Avenue (LOS F during the AM peak hour and LOS E during the PM peak hour)
- Buena Creek Road/Monte Vista Drive (LOS F during the PM peak hour)

Road Segments

Table 2.13-2, Existing Street Segment Operations, provides a summary of the average daily traffic (ADT) volumes derived from traffic counts conducted by LLG during April 2015. As shown in Table 2.13-2, the following segments currently operate at LOS E or worse:

- Deer Springs Road: Twin Oaks Valley Road to Sarver Lane (LOS F)
- Deer Springs Road: Sarver Lane to Mesa Rock Road (LOS F)
- Deer Springs Road: Mesa Rock Road to I-15 SB Ramps (LOS F)
- Twin Oaks Valley Road: Deer Springs Road to Buena Creek Road (LOS F)
- Twin Oaks Valley Road: Buena Creek Road to Cassou Road (LOS F)
- Gopher Canyon Road: Little Gopher Canyon Road to I-15 Ramps (LOS E)
- Robelini Drive: Sycamore Avenue to S. Santa Fe Avenue (LOS F)

- S. Santa Fe Avenue: Robelini Drive to Buena Creek Road (LOS E)

Freeway Segments

Table 2.13-3, Existing Freeway Segment Operations, summarizes the existing freeway mainline levels of service along the subject segments within the project study area. As shown in Table 2.13-3, the following freeway segments are currently calculated to operate at LOS E or worse:

- I-15: Riverside County Boundary to Old Highway 395
- I-15: Gopher Canyon Road to Pomerado Road
- SR 78: Mar Vista Road to Rancho Santa Fe Avenue
- SR 78: Las Posas Road to Twin Oaks Valley Road

Freeway Ramp Meters

Table 2.13-4, Existing Ramp Meter Operations, summarizes the existing ramp meter operations. As shown in Table 2.13-4, using the most restrictive discharge rates obtained from Caltrans, neither of the two subject metered on-ramps currently operate with delays of 15 minutes or more.

2.13.3 Regulatory Setting

2.13.3.1 County of San Diego General Plan Mobility Element

The Mobility Element establishes policies and implementation measures for the assessment and mitigation of traffic impacts of new development. An objective in the "Transportation" section is the goal of LOS D or better on County of San Diego (County) Mobility Element Roads. Projects that significantly increase traffic on roads already operating at, or causing them to operate at LOS E or F must provide mitigation. Mitigation can consist of physical road improvements, or a fair share contribution to an established program or project to mitigate the project's impacts. Select applicable General Plan goals and their corresponding policies are listed below:

- **Goal M-1 Balanced Road Network.** A safe and efficient road network that balances regional travel needs with the travel requirements and preferences of local communities.
    - **Policy M 1.1 Prioritized Travel within Community Planning Areas.** Provide a public road network that accommodates travel between and within community planning areas rather than accommodating overflow traffic from State highways and freeways that are unable to meet regional travel demands.
    - **Policy M 1.2 Interconnected Road Network.** Provide an interconnected public road network with multiple connections that improve efficiency by incorporating shorter

routes between trip origin and destination, disperse traffic, reduce traffic congestion in specific areas, and provide both primary and secondary

- **Policy M-1.3 Treatment of High-Volume Roadways.** Consider narrower rights-of-way, flexibility in design standards, and lower design speeds in areas planned for substantial development to avoid bisecting communities or town centers. Reduce noise, air, and visual impacts of new freeways, regional arterials, and Mobility Element roads, through landscaping, design, and/or careful location of facilities.

- **Goal M-2 Responding to Physical Constraints and Preservation Goals.** A road network that provides adequate capacity to reasonably accommodate both planned land uses and regional traffic patterns while supporting other General Plan goals such as providing environmental protections and enhancing community character.

  - **Policy M-2.1 Level of Service Criteria.** Require development projects to provide associated road improvements necessary to achieve a level of service of "D" or higher on all Mobility Element roads except for those where a failing level of service has been accepted by the County pursuant to the criteria specifically identified below (Criteria for Accepting a Road Classification with Level of Service E/F). When development is proposed on roads where a failing level of service has been accepted, require feasible mitigation in the form of road improvements or a fair share contribution to a road improvement program, consistent with the Mobility Element road network.

    Criteria for Accepting a Road Classification with Level of Service E/F

    Identified below are the applicable situations, and potential improvement options, for accepting a road classification where a Level of Service E/F is forecast. The instances described below specify when the adverse impacts of adding travel lanes do not justify the resulting benefit of increased traffic capacity. In addition, adding capacity to roads can be growth inducing in areas where additional growth is currently not planned, which is not consistent with County Global Climate Change strategies.

    Marginal Deficiencies

    When This Would Apply—Marginal deficiencies are characterized when only a short segment of a road is forecast to operate at LOS E or F, or the forecasted traffic volumes are only slightly higher than the LOS D threshold. Classifying the road with a designation that would add travel lanes for the entire road would be excessive and could adversely impact Community character and/or impede bicycle and pedestrian circulation. Also, in some instances, although underutilized alternate routes exist that could accommodate the excess traffic, they were not included in the traffic forecast model.

Potential Improvement Options—Rather than increase the number of travel lanes for the entire road segment to achieve a better LOS, it is more prudent to apply operational improvements only on the portion of the road operating at LOS E and F. This may require specifying a road classification "With Improvement Options" to retain sufficient right-of-way to construct any necessary operational improvements.

Town Center Impacts

When This Would Apply—This situation would apply when the right-of-way required to add travel lanes would adversely impact established land development patterns and/or impede bicycle and pedestrian circulation. The Community Development Model (see the General Plan's Guiding Principle #2) concept strives to establish a land development pattern with compact villages and town centers surrounded by areas of low and very low density development. The construction of large multi-lane roads could divide an established town center, even though the intent of the road would be to connect areas within the Community or improve access to areas within or surrounding the Community.

Potential Improvement Options—Traffic congestion impacts can be mitigated without adding travel lanes by establishing alternate parallel routes that would distribute the traffic volumes, such as a network of local public roads. Other means of mitigating traffic congestion impacts other than increasing the number of traffic lanes include promoting the use of alternate modes of travel in town centers to reduce single-occupant vehicle trips or maximizing the efficiency of a roadway with operational improvements, such as intersection improvements.

Regional Connectivity

When This Would Apply—Regional connectivity issues would apply when congestion on State freeways and highways causes regional travelers to use County roads, resulting in congestion on the County road network. Rather than widening County roads to accommodate this traffic, the deficiencies in the regional road network should be addressed.

Potential Improvement Options—Coordinate with SANDAG to identify the necessary improvements to the regional transportation network and to support appropriate priority in the Regional Transportation Plan to improve these congested freeways and highways, rather than contributing to increased congestion on County roads.

Impacts to Environmental and Cultural Resources

When This Would Apply—This situation would occur when adding travels lanes to a road that would adversely impact environmental and cultural resources such as significant habitat, wetlands, MSCP preserves, wildlife movement, historic landmarks, stands of

mature trees, or archaeological sites. This situation would also occur in areas with steep slopes where widening roads would require massive grading, which would result in adverse environmental impacts and other degradation of the physical environment.

Potential Improvement Options—Provide improvement options, such as passing lanes, to areas without significant environmental or cultural constraints. This may require specifying a road classification "With Improvement Options" to retain sufficient right-of-way to construct any necessary operational improvements.

- **Policy M-2.2 Access to Mobility Element Designated Roads.** Minimize direct access points to Mobility Element roads from driveways and other non-through roads to maintain the capacity and improve traffic operations.
- **Policy M-2.3 Environmentally Sensitive Road Design.** Locate and design public and private roads to minimize impacts to significant biological and other environmental and visual resources. Avoid road alignments through floodplains to minimize impacts on floodplain habitats and limit the need for constructing flood control measures. Design new roads to maintain wildlife movement and retrofit existing roads for that purpose. Use fencing to reduce road kill and to direct animals to under crossings.

- **Goal M-3 Transportation Facility Development.** New or expanded transportation facilities that are phased with and equitably funded by the development that necessitates their construction.
  - **Policy M-3.1 Public Road Rights-of-Way.** Require development to dedicate right-of-way for public roads and other transportation routes identified in the Mobility Element roadway network (see Mobility Element Network Appendix), Community Plans, or Road Master Plans. Require the provision of sufficient right-of-way width, as specified in the County Public Road Standards and Community Trails Master Plan, to adequately accommodate all users, including transit riders, pedestrians, bicyclists, and equestrians.
  - **Policy M-3.2 Traffic Impact Mitigation**. Require development to contribute its fair share toward financing transportation facilities, including mitigating the associated direct and cumulative traffic impacts caused by their project on both the local and regional road networks. Transportation facilities include road networks and related transit, pedestrian and bicycle facilities, and equestrian.
  - **Policy M-3.3 Multiple Ingress and Egress.** Require development to provide multiple ingress/egress routes in conformance with State law and local regulations.

- **Goal M-4 Safe and Compatible Roads.** Roads designed to be safe for all users and compatible with their context.
    - **Policy M-4.1 Walkable Village Roads.** Encourage multi-modal roads in Villages and compact residential areas with pedestrian-oriented development patterns that enhance pedestrian safety and walkability, along with other non-motorized modes of travel, such as designing narrower but slower speed roads that increase pedestrian safety.
    - **Policy M-4.2 Interconnected Local Roads.** Provide an interconnected and appropriately scaled local public road network in Village and Rural Villages that reinforces the compact development patterns promoted by the Land Use Element and individual community plans.
    - **Policy M-4.3 Rural Roads Compatible with Rural Character.** Design and construct public roads to meet travel demands in Semi-Rural and Rural Lands that are consistent with rural character while safely accommodating transit stops when deemed necessary, along with bicyclists, pedestrians, and equestrians. Where feasible, use rural road design features (e.g., no curb and gutter improvements) to maintain community character. [See applicable community plan for possible relevant policies.]
    - **Policy M-4.4 Accommodate Emergency Vehicles.** Design and construct public and private roads to allow for necessary access for appropriately-sized fire apparatus and emergency vehicles while accommodating outgoing vehicles from evacuating residents.
    - **Policy M-4.5 Context Sensitive Road Design.** Design and construct roads that are compatible with the local terrain and the uses, scale and pattern of the surrounding development. Provide wildlife crossings in road design and construction where it would minimize impacts in wildlife corridors.
    - **Policy M-4.6 Interjurisdictional Coordination.** Coordinate with adjacent jurisdictions so that roads within Spheres of Influence (SOIs) or that cross jurisdictional boundaries are designed to provide a consistent cross-section and capacity. To the extent practical, coordinate with adjacent jurisdictions to construct road improvements concurrently or sequentially to optimize and maintain road capacity.
- **Goal M-5 Safe and Efficient Multi-Modal Transportation System.** A multi-modal transportation system that provides for the safe, accessible, convenient, and efficient movement of people and goods within the unincorporated County.
    - **Policy M-5.2 Impact Mitigation for New Roadways and Improvements.** Coordinate with Caltrans to mitigate negative impacts from existing, expanded, or new State freeways or highways and to reduce impacts of road improvements and/or design modifications to State facilities on adjacent communities.

- **Goal M-8 Public Transit System.** A public transit system that reduces automobile dependence and serves all segments of the population.
    - **Policy M-8.6 Park and Ride Facilities.** Coordinate with SANDAG, Caltrans, and tribal governments to study transit connectivity and address improving regional opportunities for park-and-ride facilities and transit service to gaming facilities and surrounding rural areas to reduce congestion on rural roads.
- **Goal M-9 Effective Use of Existing Transportation Network.** Reduce the need to widen or build roads through effective use of the existing transportation network and maximizing the use of alternative modes of travel throughout the County.
    - **Policy M-9.2 Transportation Demand Management.** Require large commercial and office development to use TDM programs to reduce single-occupant vehicle traffic generation, particularly during peak periods to maximize the capacity of existing or improved road facilities.
    - **Policy M-9.4 Park-and-Ride Facilities.** Require developers of large projects to provide, or to contribute to, park-and-ride facilities near freeway interchanges and other appropriate locations that provide convenient access to congested regional arterials. Require park-and-ride facilities that are accessible to pedestrians and bicyclists, and include bicycle lockers and transit stops whenever feasible.
- **Goal M-10 Parking for Community Needs.** Parking regulations that serve community needs and enhance community character.
    - **Policy M-10.1** Parking Capacity. Require new development to:
        - Provide sufficient parking capacity for motor vehicles consistent with the project's location, use, and intensity
        - Provide parking facilities for motorcycles and bicycles
        - Provide staging areas for regional and community trails
    - **Policy M-10.2 Parking for Pedestrian Activity.** Require the design and placement of on-site automobile, motorcycle, and bicycle parking in Villages and Rural Villages that encourages pedestrian activity by providing a clear separation between vehicle and pedestrian areas and prohibit parking areas from restricting pedestrian circulation patterns.
    - **Policy M-10.3 Maximize On-street Parking.** Encourage the use of on-street parking in commercial and/or high density residential town center areas to calm traffic and improve pedestrian interaction. Traffic operations and pedestrian safety must not be compromised.

- **Policy M-10.4 Shared Parking.** Support town center plans, when desired by the community, that incorporate on street and/or shared vehicular parking facilities to reduce on-site parking requirements.
- **Policy M-10.5 Reduced Parking.** Accommodate appropriate reductions in on-site parking requirements in situations such as:
  - Development of low-income and senior housing
  - Development located near transit nodes
  - Employment centers that institute Transportation Demand Management programs
  - Development that integrates other parking demand reductions techniques such as parking cash out, when ensured by ongoing permit conditions
- **Policy M-10.6 On-Street Parking.** Minimize on-street vehicular parking outside Villages and Rural Villages where on-street parking is not needed, to reduce the width of paved shoulders and provide an opportunity for bicycle lanes to retain rural character in low-intensity areas. Where on-street parking occurs outside Villages and Rural Villages, require the design to be consistent with the rural character. [See applicable community plan for possible relevant policies.]

- **Goal M-11 Bicycle and Pedestrian Facilities:** Bicycle and pedestrian networks and facilities that provide safe, efficient, and attractive mobility options as well as recreational opportunities for County residents.
  - **Policy M-11.1 Bicycle Facility Design.** Support regional and community-scaled planning of pedestrian and bicycle networks.
  - **Policy M-11.2 Bicycle and Pedestrian Facilities in Development.** Require development and Town Center plans in Villages and Rural Villages to incorporate site design and on-site amenities for alternate modes of transportation, such as comprehensive bicycle and pedestrian networks and facilities, including both on-street facilities as well as off-street bikeways, to safely serve the full range of intended users, along with areas for transit facilities, where appropriate and coordinated with the transit service provider.
  - **Policy M-11.3 Bicycle Facilities on Roads Designated in the Mobility Element**. Maximize the provision of bicycle facilities on County Mobility Element roads in Semi-Rural and Rural Lands to provide a safe and continuous bicycle network in rural areas that can be used for recreation or transportation purposes, while retaining rural character.
  - **Policy M-11.4 Pedestrian and Bicycle Network Connectivity.** Require development in Villages and Rural Villages to provide comprehensive internal

pedestrian and bicycle networks that connect to existing or planned adjacent community and countywide networks.

- **Policy M-11.7 Bicycle and Pedestrian Facility Design.** Promote pedestrian and bicycle facility standards for facility design that are tailored to a variety of urban and rural contexts according to their location within or outside a Village or Rural Village.
- **Policy M-11.8 Coordination with the County Trails Program.** Coordinate the proposed bicycle and pedestrian network and facilities with the Community Trails Master Plan's proposed trails and pathways.

- **Goal M-12 County Trails Program.** A safe, scenic, interconnected, and enjoyable non-motorized multi-use trail system developed, managed, and maintained according to the County Trails Program, Regional Trails Plan, and the Community Trails Master Plan.
  - **Policy M-12.2 Trail Variety.** Provide and expand the variety of trail experiences that provide recreational opportunities to all residents of the unincorporated County, including urban/suburban, rural, wilderness, multi-use, staging areas, and support facilities.
  - **Policy M-12.3 Trail Planning.** Encourage trail planning, acquisition, development, and management with other public agencies that have ownership or jurisdiction within or adjacent to the County.
  - **Policy M-12.4 Land Dedication for Trails.** Require development projects to dedicate and improve trails or pathways where the development will occur on land planned for trail or pathway segments shown on the Regional Trails Plan or Community Trails Master Plan.
  - **Policy M-12.6 Trail Easements, Dedications, and Joint-Use Agreements.** Promote trail opportunities by obtaining easements, dedications, license agreements, or joint-use agreements from other government agencies and public and semi-public agencies.
  - **Policy M-12.8 Trails on Private Lands.** Maximize opportunities that are fair and reasonable to secure trail routes across private property, agricultural and grazing lands, from willing property owners.
  - **Policy M-12.9 Environmental and Agricultural Resources.** Site and design specific trail segments to minimize impacts to sensitive environmental resources, ecological system and wildlife linkages and corridors, and agricultural lands. Within the MSCP preserves, conform siting and use of trails to County MSCP Plans and MSCP resource management plans.
  - **Policy M-12.10 Recreational and Educational Resources.** Design trail routes that meet a public need and highlight the County's biological, recreational and educational resources, including natural, scenic, cultural, and historic resources

2.13.3.2 County of San Diego Transportation Impact Fee Program/Ordinance

The County Traffic Impact Fee (TIF) Program is a comprehensive road program to collect impact fees from new development and construct new or expanded road, highway, interchange, and intersection facilities in the unincorporated County necessary to accommodate new development. In so doing, the TIF Program is an impact fee program designed to facilitate compliance with CEQA by providing a funding mechanism for these new facilities which serve to mitigate the indirect, cumulative traffic impacts created by new development. The County TIF program fee requirement applies to all new development resulting in new/added traffic. The primary purpose of the TIF is twofold:

1. To fund the construction of identified roadway facilities needed to reduce, or mitigate, projected cumulative traffic impacts resulting from future development within the County; and
2. To allocate the costs of these roadway facilities proportionally among future developing properties based upon their individual cumulative traffic impacts.

TIF fees are deposited into local Community Planning Area accounts, regional accounts, and regional freeway ramp accounts. TIF funds are only used to pay for improvements to roadway facilities identified for inclusion in the TIF program, which includes both County roads and Caltrans highway facilities. TIF funds collected for a specific local or regional area must be spent in the same area. By ensuring TIF funds are spent for the specific roadway improvements identified in the TIF program, the CEQA mitigation requirement is satisfied, and the Mitigation Fee Act nexus is met.

As part of the TIF program process, the transportation infrastructure needs are characterized as existing deficiencies, direct impacts of future development, or indirect (cumulative) impacts of future development. Existing roadway deficiencies are the responsibility of existing developed land uses and government agencies and cannot be addressed using impact fees. The TIF program is not intended to mitigate direct impacts, which will continue to be the responsibility of individual development projects. The TIF program, therefore, is designed to address only the cumulative impacts associated with new growth on TIF eligible facilities. However, when projects make improvements for direct impacts to TIF eligible facilities, those projects can receive fee credits based on the value of those improvements against their TIF obligation.

The County's TIF Program also includes an impact fee component collected for the Regional Transportation Congestion Improvement Program (RTCIP). The RTCIP is an approximately $1 billion funding source established with the 2004 extension of the TransNet Program. Effective July 1, 2008, the RTCIP requires the 18 cities and the County to collect a development impact fee for every new market-rate single family and multifamily home built in the County to fund

improvements to the Regional Arterial System (RAS). The RAS is primarily a list of roads, highways, and freeway interchanges that require capacity enhancements, including widening, realignment, and signalization to accommodate existing and future growth through the year 2050.

The RTCIP impact fee was established as new development's fair share contribution to these improvements and also serves as a funding source for other transportation projects including railroad grade separation projects and improvements required for regional express bus ("Bus Rapid Transit" along the I-15 Corridor) and rail transit. In November of 2007, SANDAG completed a nexus study for the RTCIP fee entitled the "RTCIP Impact Fee Nexus Report—Final Report" establishing the nexus between the RTCIP fee and new development's impact on the Regional Arterial System as required by the Mitigation Fee Act, California Government Code §§ 66000, et seq.

As is typical with development impact fees, the RTCIP fee amount is adjusted on July 1st of each year based on an analysis of construction cost indices, such as the Engineering News Record, and the Caltrans Construction Cost Index (CCI), but by no less than 2 percent. The purpose of this annual adjustment is to ensure that the RTCIP retains its purchasing power to improve the RAS.

All local jurisdictions, including the County of San Diego, are required to implement the RTCIP. In addition to complying with the annual adjustment as described above, each year, the 18 cities within San Diego County and the County are required to submit a report to SANDAG demonstrating their implementation of the RTCIP and to meet reporting requirements including fee collection and accounting information, identification of projects on which the fees where expended, construction timing for improvements, and other related reporting requirements. Every two years, SANDAG adopts an updated five-year Regional Transportation Improvement Program with a detailed list of and funding reports on completed and planned improvements to the RAS along with other regionally significant and federal highway projects.

2.13.4 Guidelines for Determining Significance & Significance Thresholds

2.13.4.1 State CEQA Guidelines, Appendix G, XV, Transportation/Traffic

The County's *Guidelines for Determining Significance and Report Format and Content Requirements – Traffic and Transportation* (County of San Diego 2011a) (County Guidelines) address the following questions listed in the California Environmental Quality Act (CEQA) Guidelines, Appendix G, XV, Transportation/Traffic:

Would the project:

a) Conflict with an applicable plan, ordinance or policy establishing measures of the effectiveness for the performance of the circulation system, taking into

account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths and mass transit?

b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

The State CEQA Guidelines, Appendix G, XV Transportation/Traffic, list two other transportation/traffic-related questions (c and e), which are not addressed by the County Traffic/Transportation Guidelines. Question c states, "Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in locations that results in substantial safety risks?" Question c is concerned with airport traffic safety and is addressed under the *County's Guidelines for Determining Significance for Airport Hazards*. Question e states, "Would the project result in inadequate emergency access?" Question e is addressed under the *County's Guidelines for Determining Significance for Fire Protection Planning*, which addresses the needs of emergency service providers (e.g., fire and sheriff), including emergency access requirements. Please refer to sections 2.8 of this EIR for the analysis of the project's consistency with these guidelines.

2.13.4.2 Guidelines for the Determination of Significance, Direct and Cumulative Impacts

The County of San Diego is the lead agency for the environmental analysis conducted for the project. The project study area includes transportation facilities located primarily within the jurisdiction of the County. However, some facilities analyzed in this study area are located within neighboring jurisdictions (i.e., San Marcos, Escondido, and Caltrans). Per the County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements, Transportation and Traffic (County of San Diego 2011a):

> "If road segments, intersections, or other facilities (e.g., freeway ramps) will be affected by project traffic that are located in another jurisdiction or under the jurisdiction of Caltrans, identify the location and jurisdiction of these

> facilities and different significance guideline/methodology that will be used. In determining the significance of impacts for road segments and intersections outside of the County of San Diego's jurisdiction, the level of service standards and significance guidelines used by the applicable jurisdiction or agency shall be used."

Thus, the significance criteria of the jurisdiction within which a transportation facility is located was used to determine impact significance. Hence, the significance criteria for the following jurisdictions are included in this section:

- County of San Diego
- City of San Marcos
- City of Escondido
- Caltrans

County of San Diego

Intersections

For those intersections located within the jurisdiction of the County of San Diego, the County Guidelines apply to the direct and indirect impact analysis, as well as the cumulative impact analysis.

Under the County Guidelines, the proposed project would result in a significant volume and/or level of service traffic impact on a *signalized* intersection if:

> The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a signalized intersection currently operating at LOS E or LOS F, or will cause a signalized intersection to operate at a LOS E or LOS F as identified in Table 2.13-11, Measures of Significant Project Impacts to Intersections – Allowable Increases on Congested Intersections; or
>
> Based on an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance or other factors, the project would significantly impact the operations of the intersection.

A project will result in a significant volume and/or LOS traffic impact on an *unsignalized* intersection if:

a. The additional or redistributed ADT generated by the proposed project would add 21 or more Peak Hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate below LOS D;

b. The additional or redistributed ADT generated by the proposed project would add 21 or more Peak Hour trips to a critical movement of an unsignalized intersection and the unsignalized intersection currently operates at LOS E;

c. The additional or redistributed ADT generated by the proposed project would add six or more Peak Hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate at LOS F;

d. The proposed project would add six or more Peak Hour trips to a critical movement of an unsignalized intersection and the unsignalized intersection currently operates at LOS F; or

e. Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance and/or other factors, the project would significantly impact the operations of the intersection.

Street Segments

For those street segments located within the jurisdiction of the County of San Diego, the *County Guidelines* apply to the direct and indirect impact analysis, as well as the cumulative impact analysis.

Traffic volume and/or LOS traffic impacts on a road segments are considered significant if:

a. The additional or redistributed Average Daily Trips (ADT) generated by a project would cause an adjacent or nearby County Circulation Element Road or State Highway to operate below LOS C during peak traffic hours.

b. The additional or redistributed ADT generated by the project would cause a residential street to exceed its design capacity.

c. The additional or redistributed ADT generated by the project would significantly increase congestion on a County Circulation Element Road, or State Highway currently operating at LOS E or LOS F.

d. The additional or redistributed ADT generated by the proposed land development project will cause on-site Circulation Element Roads to operate below LOS C during peak traffic hours.

e. The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a Circulation Element Road or State Highway currently operating at LOS E or LOS F, or will cause a Circulation Element Road or State Highway to operate at a LOS E or LOS F as a result of the proposed project as identified in Table 2.13-14, Measures of Significant Project Impacts to Mobility Element Road Segments – Allowable Increases on Congested Road Segments.

f. The additional or redistributed ADT generated by the proposed project will cause a residential street to exceed its design capacity.

City of San Marcos

For those roads located within the jurisdiction of the City of San Marcos, a project is considered to have a significant impact if the addition of project traffic has decreased the operations of surrounding roadways by a defined threshold. The defined thresholds shown in Table 2.13-12, Traffic Impact Significance Thresholds – City of San Marcos/Caltrans, for roadway segments, intersections, and Caltrans freeway and ramp meter facilities are based on published San Diego Traffic Engineers' Council (SANTEC) guidelines (SANTEC 2000) and the City of San Marcos General Plan.

If the project exceeds the thresholds in Table 2.13-12, then the project may be considered to have a significant direct or cumulative impact. A significant impact can also occur if a project causes the Level of Service to degrade from D to E, even if the allowable increases in *Table 6–3* are not exceeded. Feasible mitigation measures would need to be identified to reduce the impact to fall below the identified thresholds (pre-project + allowable increase) or the impact would be considered significant and unavoidable.

The impact is designated either a "direct" or "cumulative" impact.

> *"Direct* traffic impacts are those projected to occur at the time a proposed development becomes operational, including other developments not presently operational but which are anticipated to be operational at that time (near term)."
>
> *"Cumulative* traffic impacts are those projected to occur at some point after a proposed development becomes operational, such as during subsequent phases of a project and when additional proposed developments in the area become operational (short-term cumulative) or when affected community plan area reaches full planned buildout (long-term cumulative)."

For intersections and roadway segments affected by a project, level of service (LOS) D or better is considered acceptable under both direct and cumulative conditions."

City of Escondido

As to those roads located within the jurisdiction of the City of Escondido, in accordance with the SANTEC/ITE *Guidelines for Traffic Impact Studies in the San Diego Region* (SANTEC 2000), the thresholds provided in Table 2.13-13, Traffic Impact Significance Thresholds – City of Escondido, are used to identify significant project impacts under any scenario within the City. Based on the SANTEC/ITE Guidelines, if the project's traffic causes the values in Table 2.13-13 to be exceeded on a roadway segment or at an intersection operating at LOS D or worse before the addition of project traffic, the impact is determined to be significant and the project will need to identify appropriate mitigation measures.

Caltrans

The SANTEC guidelines shown in Table 2.13-12, Traffic Impact Significance Thresholds – City of San Marcos/Caltrans, are applicable to Caltrans freeway segments and ramp meters (SANTEC 2000).

2.13.4.3 Guidelines for Determining Significance, Traffic Hazards

The *County Guidelines* apply to traffic hazard impact analysis, as well as the cumulative impact analysis.

According to County procedures, the determination of significant hazards relating to transportation design feature will be on a case-by-case basis, considering whether the project would:

- Design features/physical configurations of access roads may adversely affect the safe movement of all users along the roadway.
- The percentage or magnitude of increased traffic on the road due to the proposed project may affect the safety of the roadway.
- The physical conditions of the project site and surrounding area, such as curves, slopes, walls, landscaping or other barriers, may result in conflicts with other users or stationary objects.
- Conformance of existing and proposed roads to the requirements of the private or public road standards, as applicable.

According to County procedures, the determination of significant hazards to pedestrians or bicyclists also will be on a case-by-case basis, considering the following factors:

- Design features/physical configurations on a road segment or at an intersection that may adversely affect the visibility of pedestrians or bicyclists to drivers entering and exiting the Site, and the visibility of cars to pedestrians and bicyclists.
- The amount of pedestrian activity at the project access points that may adversely affect pedestrian safety.
- The preclusion or substantial hindrance of the provision of a planned bicycle lane or pedestrian facility on a roadway adjacent to the project Site.
- The percentage or magnitude of increased traffic on the road due to the proposed project that may adversely affect pedestrian and bicycle safety.
- The physical conditions of the project Site and surrounding area, such as curves, slopes, walls, landscaping or other barriers that may result in vehicle/pedestrian, vehicle/bicycle conflicts.
- Conformance of existing and proposed roads to the requirements of the private or public road standards, as applicable.
- The potential for a substantial increase in pedestrian or bicycle activity without the presence of adequate facilities

2.13.4.4 Alternative Transportation Policies of the County's General Plan

The *County Guidelines* apply to the analysis of alternative transportation impacts and provide that if a proposed project is not in conformance with applicable alternative transportation policies contained in the General Plan "a significant conflict with the County's alternative transportation policies may occur." For the purposes of this EIR, a significant impact to alternative transportation would occur if the project conflicts with the alternative transportation policies of the General Plan Mobility Element.

2.13.5 Network Options, Analysis Scenarios, and Methodology

This section includes a number of scenarios used to assess direct and cumulative impacts to the road network as well as buildout conditions in the County and the City of San Marcos. Some of these scenarios also include road network options that would affect the background traffic volumes along the roadways analyzed depending what portions of the road network are assumed to be complete.

2.13.5.1 Road Network Considerations & Options

Sierra Project Option A General Plan Reclassifications

Option A would reclassify Deer Springs Road in the County's General Plan to be a 4.1A Major Road between Twin Oaks Valley Road and Sarver Lane, to be a 2.1B Community Collector between Sarver Lane and Mesa Rock Road, and to be a 4.1B Major Road between Mesa Rock Road and the I-15 Northbound Ramps (along the east side of I-15) at the I-15/Deer Springs Road Interchange. For two of five County Long-Term GP 2030 scenarios described below, Deer Springs Road is modeled based on these reclassifications as proposed under Option A.

Existing County General Plan Deer Springs Road Classifications

For three of five County Long-Term GP 2030 scenarios and all of the City of San Marcos Horizon Year scenarios described below, Deer Springs Road is modeled based on its existing General Plan Mobility Element Classifications, as a 6.2 Prime Arterial from its terminus at Twin Oaks Valley Road to the I-15 Northbound Ramps (along the east side of I-15) at the I-15/Deer Springs Road Interchange and as a 4.1B Major Road between the I-15 Northbound Ramps at the Interchange and the N. Centre City Parkway/Champagne Boulevard.

Mountain Meadow Road Connection to Valley Center Road

The County of San Diego General Plan Mobility Element includes a connection of Mountain Meadow Road/Mirar de Valle Road between the current terminus of Mountain Meadow Road and Valley Center Road. This road connection would add a significant amount of traffic to Deer Springs Road although no funding or timetable has been identified to construct this road segment.

Although the Mountain Meadow Road extension does not currently exist, one of the two Existing Plus Project Plus Cumulative Projects scenarios and two of five County GP 2030 Long-Term scenarios were conducted without the connection of Mountain Meadow Road to the future Mirar de Valle, termed "Without Mountain Meadow Road Connection" in this report.

City of San Marcos Horizon Year Road Network Adjustments

The analysis of the project's direct and cumulative impacts to the County's road network was based on the existing road network, with the exception noted above as it relates to Mountain Meadow Road. The City of San Marcos also analyzes a horizon year/buildout scenario ("Horizon Year" scenarios as further explained below) to assess a project's potential create cumulative impacts under a buildout condition of the road network and the City's General Plan. There are several major future road network improvements within the vicinity of the project for which no

or limited funding presently exists and, in certain cases, environmental and land use constraints may present significant challenges to improving the road to its General Plan classification. These three network improvements include the following:

Buena Creek Road

The County General Plan Mobility Element classifies Buena Creek Road as a 4.1B Major Road. However, this road is currently constructed as a two-lane rural collector between Twin Oaks Valley Road and S. Santa Fe Avenue. For this "Alternative Horizon Year" Analysis, it is assumed that the improvement to a 4.1B Major Road would not be completed.

Las Posas Road Connection from San Marcos City Limits to Buena Creek Road

Buildout of the County's Mobility Element assumes Las Posas Road is extended from San Marcos City Limits to Buena Creek Road as a 2.2C Light Collector. For this "Alternative Horizon Year" Analysis, it is assumed that this extension from San Marcos City Limits to Buena Creek Road will not be completed.

Richmar Avenue Bridge Connection from Twin Oaks Valley Road to Woodward Street

Buildout of the City of San Marcos's road network assumes the Richmar Avenue Bridge is built, connecting Twin Oaks Valley Road to Woodward Street. This Project was removed from the City's latest Capital Improvement Program. For this "Alternative Horizon Year" Analysis, it is assumed that the Richmar Avenue Bridge connection between Twin Oaks Valley Road and Woodward Street would not be completed.

Removal of these network improvements form the Horizon Year analysis would be expected to cause traffic along Twin Oaks Valley Road to increase in the Horizon Year compared to full buildout of the road network for the same area. Therefore, as further explained below, "Horizon Year" analyses were conducted with and without these network improvements.

2.13.5.2 Analysis Scenarios

The traffic analysis in this section assesses the study area intersections, street segments, freeway mainline segments, and metered freeway on-ramps. The study area locations were analyzed in each of the following scenarios to determine the project's potential impacts to the road network:

- **Existing (described in Section 2.13.1.3):** This scenario contains the existing traffic volumes on the road network based on traffic counts performed for the Project and based on the existing condition of the road network. No improvements to the road network are assumed.

- **Existing + Project:** This scenario contains the existing traffic volumes plus the Project traffic volumes on the road network based on the existing condition of the road network and the distribution of Project traffic on the road network as generated by SANDAG Series 12 Model. No improvements to the road network are assumed.
- **Existing + Project + Cumulative:** This scenario contains the existing traffic volumes plus the Project traffic volumes plus the traffic volumes generated by cumulative projects (listed in *Table 9-1*) based on the existing road network.
- **Existing + Project + Cumulative Projects (With Mountain Meadow Road connection)**: This scenario contains the existing traffic volumes plus the Project traffic volumes plus the traffic volumes generated by cumulative projects (listed in *Table 9-1*) based on the existing road network with one exception, Mountain Meadow Road being connected to Valley Center Road. The connection of Mountain Meadow Road would result in increased background traffic along the road network analyzed by the Project.
- **Long-Term County GP Buildout with Existing General Plan Land Uses (Without Project):** This scenario contains the traffic volumes on the road network analyzed by the Project based on buildout of the County's General Plan Land Uses and the County's Mobility Element Road Network, assuming buildout of the Project Site consistent with the existing General Plan Land Uses for the Project Site.
- **Long-Term County GP Buildout With Project – Deer Springs Road Reclassified under Option A:** This scenario contains the traffic volumes on the road network analyzed by the Project based on buildout of the County's General Plan Land Uses and the County's Mobility Element Road Network, assuming buildout of the Project Site consistent with the Project's proposed Land Uses and Deer Springs Road is reclassified as proposed by the Project's Option A.
- **Long-Term County GP Buildout With Project – Deer Springs Road Reclassified under Option A, Without Mountain Meadow Road connection:** This scenario contains the traffic volumes on the road network analyzed by the Project based on buildout of the County's General Plan Land Uses and the County's Mobility Element Road Network, assuming buildout of the Project Site consistent with the Project's proposed Land Uses, Deer Springs Road is reclassified as proposed by the Project's Option A, and Mountain Meadow Road is not connected.
- **Long-Term County GP Buildout With Project – Deer Springs Road as a 6.2 Prime Arterial:** This scenario generates the traffic volumes on the road network analyzed by the Project based on buildout of the County's General Plan Land Uses and the County's Mobility Element Road Network, assuming buildout of the Project Site consistent with the Project's proposed Land Uses and Deer Springs Road is built to its existing General Plan Mobility Element Classification as a 6.2 Prime Arterial.

- **Long-Term County GP Buildout With Project – Deer Springs Road as a 6.2 Prime Arterial Without Mountain Meadow Road connection:** This scenario generates the traffic volumes on the road network analyzed by the Project based on buildout of the County's General Plan and the County's Mobility Element Road Network, assuming buildout of the Project Site consistent with the Project's proposed Land Uses, Deer Springs Road is built to its existing General Plan Mobility Element Classification as a 6.2 Prime Arterial, and Mountain Meadow Road is not connected.
- **City of San Marcos Horizon Year 2035 Without Project, Full Road Network Buildout:** This scenario generates traffic volumes on the road network within the City of San Marcos analyzed by the Project based on buildout of the City's General Plan, buildout of the Project Site consistent with the Project Site's existing General Plan Land Uses, and full buildout of the road network.
- **City of San Marcos Horizon Year 2035 With Project, Full Road Network Buildout:** This scenario generates traffic volumes on the road network within the City of San Marcos analyzed by the Project based on buildout of the City's General Plan, buildout of the Project Site consistent with the Project's proposed General Plan Land Uses, and full buildout of the road network.
- **City of San Marcos Horizon Year 2035 Without Project, Modified Road Network Buildout:** This scenario generates traffic volumes on the road network within the City of San Marcos analyzed by the Project based on buildout of the City's General Plan, buildout of the Project Site consistent with the Project Site's existing General Plan Land Uses, and buildout of the road network with the following exceptions: Los Posas Road would not be connected to Buena Creek, Buena Creek would not be widened and improved to a 4.1A Major Road Classification, and the Richmar Bridge would not be built.
- **City of San Marcos Horizon Year 2035 With Project, Modified Road Network Buildout:** This scenario generates traffic volumes on the road network within the City of San Marcos analyzed by the Project based on buildout of the City's General Plan, buildout of the Project Site consistent with the Project's proposed General Plan Land Uses, and buildout of the road network with the following exceptions: Los Posas Road would not be connected to Buena Creek, Buena Creek would not be widened and improved to a 4.1A Major Road Classification, and the Richmar Bridge would not be built.

2.13.5.3 Analysis Methodologies

The measure of effectiveness for intersection and segment operations is level of service (LOS), which denotes the operating conditions that occur at a given intersection or on a given roadway segment under various traffic volume loads.

LOS is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Levels of service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst.

LOS is typically assigned to road segments based on the theoretical capacity of the road based on the road's existing or proposed classification or physical condition. In the case of intersections, delay (seconds per vehicle) is often used as a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Delay is translated into a LOS for analysis purposes where LOS D or better is considered acceptable, LOS E is considered to be marginally deficient translating into poor progression, long cycle lengths, and high volume to capacity ratios for the intersection. LOS F is considered to be unacceptable to most drivers and typically denotes an intersection that is oversaturated (i.e., volume to capacity ratios exceed 1.00) with regular intersection cycle failures.

Street Segments

County of San Diego

Street segment analysis for streets within San Diego County is based on the comparison of daily traffic volumes (ADTs) to the County of San Diego's Roadway Classification corresponding Level of Service. Table 2.13-5, Average Daily Vehicle Trips and Level of Service – County of San Diego, provides segment capacities for different street classifications, based on traffic volumes and roadway characteristics.

City of Escondido

Street segment analysis for streets within the City of Escondido is based on the comparison of daily traffic volumes (ADTs) to the City of Escondido's *Proposed ADT Thresholds for Roadway Segments*. Table 2.13-6, Proposed ADT Thresholds for Roadway Segments – City of Escondido, provides segment capacities for different street classifications based on traffic volumes and roadway characteristics.

City of San Marcos

Street segment analysis for streets within the City of San Marcos is based on the comparison of daily traffic volumes (ADTs) to the City of San Marcos' Roadway Classification corresponding Level of Service. Table 2.13-7, Daily Street Segment Capacity – City of San Marcos, provides segment capacities for different street classifications, based on traffic volumes and roadway characteristics.

Caltrans

Freeway segments were analyzed for all analysis scenarios. Freeway segment LOS is based on the volume to capacity ratio on the freeway. The analysis of freeway segment LOS is based on the procedure developed by Caltrans District 11 based on methods described in the *Highway Capacity Manual*. The procedure involves comparing the peak hour volume of the mainline segment to the theoretical capacity of the roadway (V/C). Table 2.13-8, Caltrans District 11 – Freeway Segment Level of Service Operations, summarizes freeway segment level of service.

A ramp meter analysis was conducted at the metered ramps in the study area to which the project would add the specified amount of traffic. The following two metered on-ramps to SR 78 are analyzed since the project would add more than 20 peak hour trips to the on-ramps.

- Sycamore Drive to WB SR 78
- WB San Marcos Boulevard to WB SR 78

A full description of freeway segment and ramp meter analysis is found in Appendix R.

Intersections

Level of service designation is reported differently for signalized and unsignalized intersections, and for roadway segments. In the 2000 Highway Capacity Manual (HCM), level of service for signalized intersections is defined in terms of delay. The level of service analysis results in seconds of delay expressed in terms of letters A through F. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Table 2.13-9, Intersection Level of Service and Delay Ranges, outlines intersection LOS and corresponding delay ranges for use at intersections located both in the County of San Diego and City of San Marcos. A full description of analysis methodologies is provided in Appendix R.

2.13.6 Project Trip Generation

The project trip generation was calculated using the trip rates published by SANDAG in the *(Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002 ("SANDAG Guide"). Table 2.13-10, Project Trip Generation, summarizes total and net project related trips.

Gross Project Trips

The residential portion of the proposed project is calculated to generate a total of 17,530 ADT with 1,363 trips (356 inbound/1,007 outbound) during the AM peak hour and 1,714 trips (1,192 inbound/522 outbound) during the PM peak hour.

The non-residential portion, including commercial uses, a school, and parks, is calculated to generate a total of 11,332 ADT with 767 trips (451 inbound/316 outbound) during the AM peak hour and 1,117 trips (551 inbound/566 outbound) during the PM peak hour.

Thus, the full project is calculated to generate a total of 28,862 ADT with 2,130 trips (807 inbound/1,323 outbound) during the AM peak hour and 2,831 trips (1,743 inbound/ 1,088 outbound) during the PM peak hour.

Pass-By Trips

Trip generation rates are derived from counts taken at the driveways of the corresponding land uses. However, for many land uses, not all of the trips generated at the driveway represent new trips added to the roadways due, in part, to "pass-by" trips, which are trips made by vehicles already using the adjacent roadway that make an intermediate stop on the way to another destination (e.g., a stop at the dry cleaners on the way home from work). The trip is not "generated" by the land use at which the stop is made, and, thus, is not a new trip added to the transportation system. This pass-by factor is to be taken into account in devising a trip generation estimate.

To assist in accounting for pass-by trips as part of the analysis, the SANDAG Guide states that 40 percent of neighborhood shopping center PM peak-hour trips are pass-by trips. The SANDAG guide also reports that, for a community shopping center (as distinguished from a neighborhood shopping center), pass-by trips account for 22 percent of daily trips and 30 percent of PM peak hour trips. Thus, the PM peak hour pass-by rate for a *neighborhood* shopping center is 33 percent higher than for a *community* shopping center. Using this ratio, the daily pass-by rate for a neighborhood shopping center would be 29 percent. To be conservative, a 25 percent pass-by rate was applied to the daily trips. Also, Community shopping centers are generally 125,000 to 400,000 square feet, and neighborhood shopping centers are less than 125,000 square feet. The retail area proposed by the project is only 81,000 square feet, which satisfies the definition of a neighborhood shopping center in terms of size. Also, the retail as proposed by the project serves more local needs and, therefore, captures more local trips. Neighborhood centers also provide goods that are more likely to be of the type purchased by "pass-by" shoppers such as bread and milk. Community shopping centers are more likely to sell goods such as clothing, not typically purchased by "pass-by" shoppers. Hence, it has a higher pass-by rate than a community shopping center. For that reason, a 25 percent daily pass-by rate was used for the neighborhood shopping center, which represents a conservative 3 percent increase over the SANDAG reported daily rate for a community shopping center.

As to the AM peak hour, SANDAG does not provide a neighborhood shopping center pass-by rate for the AM peak hour. However, SANDAG does provide a neighborhood shopping center

pass-by rate for the PM peak hour, which is 40 percent. The AM peak hour rate would be expected to be similar to the PM since both periods are capturing trips generated during the work commute. Although a 40 percent rate would be reasonable, a lower AM peak hour pass-by rate of 25 percent was used.

Internal Capture

The ITE Trip Generation Handbook provides basic procedures for determining internal trips for mixed use projects. This procedure is applicable when the trip generation estimates use average trip generation rates or equations for stand-alone land uses, which is the case for the Newland Sierra Project. A summary of the procedure is:

1. Estimate the stand-alone trip generation for each land use within a mixed-use development using average trip generation rates or equations.
2. Determine which land uses interact with each other. For the Newland Sierra Project, the residential uses will interact with each of the other proposed land uses: commercial/retail, school, and parks. That is there will be internal trips between the residential uses and the retail/commercial, the residential uses and the school, and the residential uses and the parks.
3. Determine the percentage of trips that the residential land use will produce that can be attracted to each other land use and the resulting internal residential trips. As internal trips on the production side (residential) are always matched by an equal number of internal trips on the attraction side (e.g., the retail, school, and parks), a trip that is produced by the residential and attracted by the non-residential equates to two internal trips. For example, if 50 trips are internalized for the residential land use then an equal number, 50 trips, are also internalized on the attraction land use.

The Project includes several non-residential land uses, including neighborhood and community parks, a school site, and neighborhood serving retail uses that complement the residential uses and would reduce external vehicle trip generation from the Project as a whole. These non-residential uses allow residents to shop, recreate, and attend school within the Project site, as opposed to traveling away from the site to satisfy these needs; therefore, the vehicle trips associated with these activities would remain internal to the Project Site, reducing the total volume of trips the Project would generate on the external road network. The effect this mix of land uses (residential combined with retail, a school site, and parks) has on a project's net external trip generation is commonly referred to as "internal capture".

Specifically, the Project includes three non-residential land use types that will attract vehicle trips from the Project's residential uses: 35.9 acres of neighborhood and community parks, a 6-acre/555-student school site, and 81,000 square feet of retail. The ability of each non-residential

land use to attract vehicle trips from the residential uses varies by land use, and is described as follows. In the case of the parks, given that the parks are sized to support the recreational needs of the Project and are located predominantly within the Project's various neighborhoods, an internal capture rate of 75% was used for the parks to reflect the fact that the vast majority of the trips to the Project's parks would be generated by the Project's residential uses and would remain "internal" to the Project Site. Accordingly, the Trip Generation for the project (refer to Table 8-1) reflects that 75% of the trips generated by the parks would come from and remain within (i.e., internal) to the Project Site and 25% would constitute net external trips.

In the case of the school site, at buildout, the Project is estimated to generate 449 elementary school students and an additional 130 middle school students, or a total of 589 kindergarten through eighth grade (K-8) school students (see Table 2.16-2 in the Draft EIR, Section 2.16, Public Facilities). The proposed school site would accommodate 555 students, which is less than the estimated K-8 student generation of the Project. Therefore, the majority of the students attending the school would be expected live within the Project site. Vehicle trips associated with elementary/middle schools typically include:

- Trips generated by parents/guardians dropping off students and then returning home.
- Diverted trips generated by parents/guardians dropping off students as an intermediate stop on their way to another destination (such as work or shopping).
- Trips generated by staff and faculty.

As it relates to the Project, the school would generate a combination of internal trips (trips between the school and home that do not leave the Project Site), diverted trips, and completely external trips (trips from outside of the Project going to the school, for example faculty/staff trips). Although the Project's residential neighborhoods would cause the school to generate both internal and diverted trips, an internal capture rate of 33% was applied to the school's gross trip generation and no reduction was taken for the diverted trips to the school. Therefore, 67% of the trips generated by the school site are modeled as new external trips. Given the Project's estimated student generation as referenced above and the types of trips the school would generate as described; the 33% internal capture rate / 67% external trip rate for the school likely overstates the school's net external trip generation and understates the number of internal trips. Additionally, it is important to clarify that the highest trip generation rate for schools was used to estimate trip generation (the elementary school rate of 1.6 trips per student) even though the school would accommodate elementary and middle school students and middle schools generate 1.4 trips per student (see "*SANDAG Not So Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*"). This further contributes to the likelihood that the analysis overstates the school's net external trip generation. As such, the school's trip generation estimate likely results in overstating external vehicle trips.

In the case of the Project's retail uses, the proposed 81,000 square feet of retail would be neighborhood-serving with a grocery store, shops, and restaurants catering to the residents within the Project. A number of studies have been conducted establishing relationships between the amount of retail square footage a typical home generates, the internal capture that can be expected in mixed use projects that include retail with residential, and the amount of vehicle trips that can be replaced by non-motorized trips when you locate retail in close proximity to residential and other uses (such as schools).

In April 2002, SANDAG published their "*Not So Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*" (SANDAG Trip Generation Guide). Since its publication, the SANDAG Trip Generation Guide has served as the basis for estimating trip generation for various land uses and projects in the San Diego Region. At the time the Guide was published, the Guide allowed for a reduction in trip generation for projects that have access to transit and projects that include a mix of uses (such as residential with retail) up to 15%. Since 2002, a number of studies of mixed use projects have been conducted that show internal capture percentages are often considerably higher than the SANDAG Trip Generation Guide rates would produce.

For example, in 2010, SANDAG commissioned a comprehensive study of the trip reducing benefits of mixed use projects, entitled "Trip Generation for Smart Growth" (June 2010). The 2010 study analyzed Travel Behavior Survey trip records for 20 Smart Growth Opportunity Areas comprising a total of approximately 83,500 housing units, 30.3 million square feet of retail, 22.7 million square feet of office, and other smaller amounts of public and industrial uses. The study found an average 36% reduction in vehicle trips based on California Household Survey Data compared to the expected trip generation for these same uses as estimated by the SANDAG Trip Generation Guide. These trip reductions were driven primarily by the internal capture of trips when different land uses are included in close proximity to each other (e.g., residential, office, and retail). The 2010 SANDAG study also examined in more detail six Mixed Use/Transit Oriented Development sites within the San Diego region comprising a total of 1,831 housing units, 374,000 square feet of retail, 369,000 square feet of office space, as well as hotel, theater, and other uses. A comparison of the actual driveway trip counts for these six sites compared to the expected raw trip generation for the various uses (as calculated using the SANDAG Trip Generation Guide) showed an overall 21.3% reduction in trips with the internal capture rate ranging between 16.7% and 26.1% for the six sites.

Other comparable transportation planning agencies have conducted similar studies and established internal capture rates for mixed use projects. The Santa Clara Valley Transportation Authority (VTA) adopted Transportation Impact Analysis Guidelines in October 2014 that allow for trip reductions for mixed use projects. The VTA Guidelines specify a 15% internal capture rate for projects that include retail and residential uses. Additionally, the VTA Guidelines allow

for additional reductions to the external trip generation for projects that include Transportation Demand Management (TDM) measures similar to the TDM measures included in the Project.

The SANDAG Guide, 2010 Smart Growth Study, and the Santa Clara VTA Guidelines provide foundational support for the Project's internal capture rates. Accordingly, an internal capture rate of 15% was utilized for the Project's retail uses: 15% of the trips generated by the Project's retail uses would come from and return to the Project's residential neighborhoods. As discussed in detail in the Specific Plan and elsewhere in this report, in addition to the project's mix of land uses, the project's TDM measures would also contribute to a reduction in project trips, including a community-sponsored electric bike-share program, shuttle services throughout the Project and to the Escondido Transit Center, subsidized transit passes for the project's residents, and a network of pedestrian pathways, trails, and bicycle routes.

Taken in combination, the Project's internal capture rates for the parks, the school site, and the retail uses would result in an overall internal capture rate of 15.9% of the Project (i.e., 15.9% of the Project's gross trips would remain internal to the Project Site). Trip generation estimates were also performed for the Project using the SANDAG Series 12 Model select zone analysis to validate the 15.9% internalization rate. The SANDAG Model resulted in an overall internal capture rate of 17.7%, higher than and, therefore, further substantiating the rates used for the analysis in this report. Therefore, in light of the foregoing, the individual rates used above and the Project's overall rate are considered conservative for the purposes of forecasting the Project's net external trips and associated impacts on the external roadway network.

Net Project Trip Generation

Table 2.13-10 tabulates the net project traffic generation. This is the total traffic that would be added to the regional roadway network, taking into account internal trip capture and pass-by trips. As explained above, the internal capture trips would remain within and not leave the project Site, and the pass-by trips are trips that are already on the adjacent off-site roadways (Deer Springs Road) and are not new to the street network.

As shown in Table 2.13-10, the residential portion of the development is calculated to generate a net of 15,236 ADT with 1,140 trips (229 inbound/911 outbound) during the AM peak hour and 1,493 trips (1,084 inbound/ 409 outbound) during the PM peak hour.

The non-residential portion of the development is calculated to generate a total of 6,972 ADT with 461 trips (275 inbound/187 outbound) during the AM peak hour and 566 trips (278 inbound/ 288 outbound) during the PM peak hour.

The full project is calculated to generate a total of 22,209 ADT with 1,601 trips (504 inbound/1,098 outbound) during the AM peak hour and 2,059 trips (1,362 inbound/ 697 outbound) during the PM peak hour.

2.13.7 Project Trip Distribution

The project Site is located primarily within Traffic Analysis Zone (TAZ) 444 in the SANDAG model. The proposed project would be developed as seven neighborhoods: six of these neighborhoods would include residential uses and parks, and the seventh would include single-family clusters, retail uses, and a school. The residential and non-residential land uses each have different trip distribution characteristics and, hence, the non-residential (i.e., retail uses) were included in a separate TAZ. TAZ 444 was split into seven TAZs, which allows for the assignment of traffic generated by each neighborhood, resulting in a realistic assignment of project traffic. This methodology ensures that traffic is split appropriately between the three access points at Mesa Rock Road, Sarver Lane, and Camino Mayor. The distribution of project traffic is illustrated in Figures 2.13-2 and 2.13-3, which separately depict project traffic distribution for the residential and non-residential uses, respectively.

Thirty five percent of the residential traffic would be distributed to the west of Sarver Lane, and 62 percent to the east of Mesa Rock Road, on Deer Springs Road. Therefore, most of the traffic destined to the west would use Sarver Lane and most of the traffic destined to the east would use Mesa Rock Road. Depending on the point of origin on Site and the proximity to the two access roads, drivers would use the nearest access point to their home.

The project residential and non-residential traffic was assigned separately using the trip distribution percentages. Traffic was assigned to the three driveways Mesa Rock Road, Sarver Lane and Camino Mayor based on the location of the development within the Site and the destination of the trips.

2.13.8 Consistency with Applicable Plans, Policies, and Ordinances

In accordance with the California Environmental Quality Act (CEQA) Guidelines, Appendix G, XV, Transportation/Traffic, the following two questions pertain to this consistency analysis:

Would the project:

a) Conflict with an applicable plan, ordinance or policy establishing measures of the effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not

limited to intersections, streets, highways and freeways, pedestrian and bicycle paths and mass transit?

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

A detailed analysis of the project's consistency with the County's General Plan Guiding Principles, Goals, and Policies, including the various applicable Mobility Element Goals and Policies outlined in Section 2.13.3.1 above, is contained in Appendix DD to this EIR. A more focused analysis related to the two questions outlined above is contained herein.

A comprehensive transportation system is planned as part of the project. The system has been designed to serve vehicles, bicycles, pedestrians, and equestrians, and to accommodate future transit riders. The street network within the project Site was designed with respect to the rural character of the surrounding area. Street widths would be narrow and bicycle lanes would be integral to the street network. Large rights-of-way would be provided to offer landscaped setbacks that reinforce the rural identity of the project Site. The project Site would have two primary access points along Deer Springs Road at Mesa Rock Road and Sarver Lane, with an additional access point at Camino Mayor off of Twin Oaks Valley Road to the north. The primary access road at Mesa Rock Road would be a four-lane entry road with a median that transitions into a four-lane undivided road, and then a two-lane undivided road farther into the project Site. On-site roadways would be constructed within and between the different planning areas where development would occur. These roadways would primarily consist of a loop road with a pavement width of 34 feet that mostly runs between the developed planning areas, and residential streets approximately 32 to 40 feet wide that generally traverse within a planning area. Site planning for the proposed project took into account existing landforms and topography by concentrating development between and away from ridgelines. Where possible, streets were designed to parallel topography and were inspired by watershed patterns on the Site.

Each neighborhood was designed with an enhanced parkway that would include landscaping, a trail, and often a decorative "dry creek" drainage swale to further enhance the rural character of the Site. These greenbelts would include a multi-use pathway to include equestrian uses and provide connectivity through the project Site between the equestrian facility at Walnut Grove Park and an equestrian staging area that is proposed on Camino Mayor. Internally within neighborhoods, open space greenbelts would include a loop trail and be wider in some areas to accommodate integrated water quality basins. These basins would provide a buffer between the residences and streets. A designated park or open space area would be situated within 0.25 mile of each residence. An electric bike-share program would be included to further link the

neighborhoods to one another and reduce internal vehicle trips. The project would include an network of trails, multi-use pathways, and bicycle lanes streets.

Off-site roadway improvements would occur to Deer Springs Road, Twin Oaks Valley Road, Mesa Rock Road, Sarver Lane, and Camino Mayor to ensure safe and efficient means of travel for project residents, emergency vehicles, and nearby land uses. The applicant would coordinate with the City of San Marcos on improvements to Twin Oaks Valley Road to minimize inconsistencies with public road standards between the two jurisdictions.

The project would be consistent with Mobility Element Goal M-3 and related policies. The project's TIA has analyzed potential impacts and identified mitigation as necessary to mitigate the project's significant direct and cumulative impacts. The project would either dedicate or acquire rights-of-way for Deer Springs Road so that it can be improved consistent with the Mobility Element classification. The street section would incorporate a pathway. Specific to Policy M-3.3, the project would have access on Deer Springs Road, Sarver Lane, and Camino Mayor, as described above.

Consistent with Goal M-9, the proposed roadway improvements and mitigation would be limited to specific locations and segments of roadways. The project includes features to encourage alternative transportation, reducing project trips and the need to widen existing roadways. The project would consist of a substantial TDM program, including an electric bike-share program, coordination of a ride share/shuttle system, a park-and-ride lot, subsidized transit passes for residents and employees, mobility hubs as a means of resident outreach and education, and continued coordination with SANDAG and NCTD for the siting of future transit infrastructure. The applicant is actively working with Caltrans to expand the existing park-and-ride facility and to incorporate the design of the facility into the Town Center concept plan. Furthermore, the applicant is working with NCTD to design the facility to accommodate future transit use~~.~~, and, as part of its 2015 RTP/SCS, SANDAG plans the extension of its Bus *Rapid* Transit Service (future *Rapid* Route 235 and formerly Route 610) from Temecula to Escondido. The design of the expanded park-and-ride would include bicycle lockers.

Consistent with Goal M-10 and its subsequent policies, the project has parking requirements as appropriate to the proposed uses, and parking facilities for motorcycles and bicycles would be included in the overall parking design. Sufficient parking capacity would be provided for each land use consistent with the zoning ordinance. For commercial and other public uses, parking spaces would be provided either on the street or within parking lots. Additionally, space would be provided for bicycle parking. The Community's pathway network would reduce the reliance on single-occupant vehicle trips. On-street parking would be provided in the Town Center area where appropriate. On-street parking is encouraged where possible to reduce the need for large parking areas and to provide traffic calming along streets to improve the pedestrian environment.

Consistent with Goal M-12 and it subsequent policies, a trail network is proposed through the open space that would be coordinated with the County Trails Program and Community Trails Master Plan. There is no direct connection to any regional trails. No motorized vehicles would be permitted on the trails. A substantial portion of the Site would be preserved in perpetuity as a part of the County MSCP program and managed through an endowment. Trails through this open space would establish connections east and west to a greater regional trail network. Design of the proposed project was also informed by the unique cultural resources on the Site. Several permanent displays would be erected in public viewing areas to provide information on the cultural sensitivity of the area, including descriptions of Native American and historic occupants. These displays would include imagery and text as a method of public outreach to enhance appreciation of the diversity that has characterized the region.

For consistency with Mobility Element Goals M-5, M-8, and M-11, refer to Section 2.13.9.7, Alternative Transportation Policies of the County's General Plan.

2.13.9 Impact Analysis

The analysis of project impacts presented below separately addresses potential construction and operational impacts.

2.13.9.1 Construction Traffic Impact Analysis

This section provides a general overview of the project's onsite and offsite grading and construction activities, an analysis of the project's estimated construction traffic impacts, and the measures that will be incorporated into Construction Traffic Control Plans (TCPs) required for the project's onsite and offsite improvements.

Overview

Onsite grading and construction of backbone infrastructure will occur in two major phases. Construction activities will include demolition, clearing and grubbing, blasting, screening, and grading necessary to grade roads and lots and install backbone infrastructure. Construction-related traffic, including construction worker traffic, will be required to access the Project Site through either Mesa Rock Road or Sarver Lane.

Roadway improvements along Deer Springs Road will be required prior to issuance of a certificate of occupancy for the 58th dwelling unit in the Project. Significant construction impacts would be limited to the period of time during the widening of Deer Springs Road and the construction of an upgraded or improved ~~new~~ interchange at the I-15/Deer Springs Road interchange. Throughout this period of construction activity, two lanes of travel will be maintained on Deer Springs Road.

The Deer Springs Road construction traffic would overlap with the initial part of the Newland Sierra Phase I construction traffic, however, the majority of construction trips would be generated during the housing construction phases of the project, after Deer Springs Road has been widened and improved.

Traffic Control Plans Requirements

The California Manual on Uniform Traffic Control Devices (MUTCD) states that the TCP "provides for the reasonably safe and efficient movement of road users through or around temporary traffic control zones while reasonably protecting workers, responders to traffic incidents, and equipment." TCPs define the locations of all roads that would need to be temporarily closed or subject to traffic control due to construction activities, including hauling of oversized loads by truck or delivery vehicle, truck routes, and permitted hours for construction vehicles to be operating. The TCPs define the use of warning signs, lights, barricades, cones, direction of travel, posted speed limit, location of temporary barricades, no parking restrictions, etc., according to standard guidelines outlined in the Caltrans Traffic Manual for Construction and Maintenance Work Zones (1996 edition, Revision 2), the Standard Specifications for Public Works Construction, the MUTCD, and the Work Area Traffic Control Handbook (WATCH).

The project would be required to prepare, for County approval prior to issuance of the first grading permit and as required for individual grading and construction permits associated with off-Site improvements, Construction Traffic Control Plans (TCPs) to manage construction-related traffic. The TCP has been incorporated into project design as PDF-39 (refer to the specific measures outlined in Project-Specific Traffic Control Measures below).

On-Site Construction Traffic Activities

To minimize the impact of haul trucks on the offsite road network and avoiding the need to import or export dirt, grading for the Project has been designed to achieve an overall earthwork balance (i.e., the volume of cut within the Project area, including offsite improvements, equals the volume of fill). The widening of Deer Springs Road requires the removal of approximately 102,800 cubic yards of cut material and transport of that material to the Project site. The transport of that material to the Project site will remain confined to construction work area established for Deer Springs Road to avoid impacts to through traffic on the road.

As described in further detail in the Project Description of this EIR, the project proposes onsite construction of 2,135 single family and multifamily homes, 81,000 square feet of commercial uses, parks and recreational amenities, roads, trails, and other infrastructure, and a school site. This onsite construction would take place in two major phases. Phase 1 is anticipated to take place over a four-year period. This phase will consist of 1,151 residential units in the Hillside

neighborhood and portions of the Mesa, Valley, Knolls, and Terraces neighborhoods. Phase 2 is anticipated to occur over a three-year period and will include the Summit and Town Center neighborhoods and the balance of the Mesa, Valley, Knolls, and Terraces neighborhoods, which would result in the development of 984 residential units, the school, and 81,000 SF of general commercial.

Off-Site Construction Traffic Activities

As part of the project, improvements would be made to Deer Springs Road and portions of Twin Oaks Valley Road, including intersections along these two roads, intersections along Buena Creek Road, and to the I-15/Deer Springs Road interchange. The estimated duration of grading and improvements for these off-site improvements is 30 to 36 months (2.5 to 3 years). This estimate assumes a substantial amount of this off-Site work occurring simultaneously or with significant overlap. All off-Site work would be subject to Traffic Control Plan measures as described further below. All roadways subject to construction shall remain open at all times during the construction process. Therefore, any potential traffic-related impacts associated with the road improvements would be temporary.

Deer Springs Road

The improvements to Deer Springs Road that would be constructed as part of the project would extend between the Deer Springs Road/Mesa Rock Road intersection to approximately 400 feet south of the Deer Springs Road/Twin Oaks Valley Road intersection.

Deer Springs Road will be built in three phases. The first phase will include the north side of the road and utilities, the second phase will include the south side of the road and utilities, and the third phase will complete the construction on the north side by removing temporary paving and finishing other details. The construction phases will be separated by K-rail barriers or other traffic control measures where necessary.

The majority of the "cut" will be generated from the removal of the slope west of the Deer Springs Road/Mesa Rock Road intersection and will occur in the first phase of work along the north side of Deer Springs Road. Part of this material will be used as fill for other portions of the road improvements and the balance, approximately 102,800 cubic yards, will be transported to the Project site.

Once the first phase is completed, traffic will be routed onto the north side of Deer Springs Road and Phase II will commence on the south side of the road. It is expected that grading for the south side of Deer Springs Road will be close to a cut/fill balance. However, it may be necessary to transport “fill” across the operational side of Deer Springs Road during the construction of

improvements along the south side of the road, in which case, these trips would be confined to non-peak hours as part of the TCP.

The third phase of construction will remove temporary pavement on the north side of the road and construct the final northerly curbing, pathway, and driveway connections. The total timeframe for the improvements to Deer Springs Road are anticipated to take between one year and 18 months to complete.

As stated above, the transport of cut material to the Project site will remain confined to construction work area established for Deer Springs Road to avoid impacts to through traffic on the road. Where possible, construction vehicles, contractors, and workers will use the work area for movement throughout the construction zone to minimize impacts on those portions of the road that remain open to through traffic.

Twin Oaks Valley Road

The improvements to Twin Oaks Valley Road that would be constructed as part of the project extend between approximately 400 feet south of the Deer Springs Road/Twin Oaks Valley Road intersection to approximately 1,000 feet south of the Cassou Road intersection. Twin Oaks Valley Road would be built in two phases. Only minor grading for the widening, shoulder, and roadbed is anticipated for these improvements.

During the first phase of the construction schedule, the outer lanes and shoulder improvements would be constructed. Traffic flow would continue on the existing pavement. Once the pavement and curb improvements constructed as part of the first phase are complete, northbound and southbound traffic would be routed onto the east and west sides of Twin Oaks Valley Road, respectively, so that construction of the inside lanes and median could commence under the second phase of the construction schedule.

Where possible, construction vehicles, contractors, and workers will use the work area for movement throughout the construction zone to minimize impacts on those portions of the road that remain open to through traffic. The total timeframe for the improvements to Twin Oaks Valley Road are anticipated to take between nine and 15 months to complete.

Buena Creek Road/Monte Vista Drive and Buena Creek Road/S. Santa Fe Ave Intersection Improvements

The limits of construction related to these two intersections are approximately 300 to 400 feet on each leg of the intersection proposed for improvements by the project. Appropriate traffic controls measures (e.g., K-rails, etc.) will be placed where needed to implement the necessary improvements. Only minor grading for the widening, shoulder, and roadbed improvements is

anticipated for these intersection improvements. Where possible, construction vehicles, contractors, and workers will be required to use the work area for movement throughout the construction zone to minimize impacts on those portions of the road that remain open to through traffic. These improvements are anticipated to take between six to nine months.

I-15/Deer Springs Road Interchange Improvements

As described in Section 2.13.1, in the event the County approves development on-site, the project's improvements to the Interchange will be fully funded and constructed by the project applicant and governed by a separate three-phase process under the jurisdiction of Caltrans, with Caltrans serving as the lead agency for the joint environmental documents required under CEQA and NEPA. It is anticipated that appropriate traffic controls measures (e.g., K-rails, etc.) will be required throughout the construction process to implement the necessary improvements. It is also anticipated that grading and related improvements will be required for the relocation of the interchange ramps and the construction of a new overpass and associated improvements. The detailed construction, staging, and traffic control requirements will be addressed through the separate three-phase process under Caltrans' jurisdiction based on the ultimate interchange configuration chosen by Caltrans. Where possible, construction vehicles, contractors, and workers will use the work area for movement throughout the construction zone to minimize impacts on those portions of the road that remain open to through traffic. It is anticipated that construction of an upgraded or improved ~~new~~ interchange will take between 18 months and 2 years.

Construction Traffic Trip Generation

Table 2.13-15, Construction Trip Generation, summarizes the maximum average daily construction trips. This table indicates the duration of each activity in number of days. The majority of construction activities would be expected to occur simultaneously or overlap.

Haul trucks used in site preparation, grading, and reservoir construction activities will operate on-site only and not operate on the County roadway network; hence, they are not included in the trip generation calculations.

Based on the proposed construction schedule, during Phase 1 construction, a maximum of 1,580 trips (1,416 worker trips and 164 vendor trips) are estimated for a period of 130 days. Fewer construction trips may be generated for longer periods (four quarters or 313 working days).

During Phase 2 construction, a maximum of 708 trips (616 worker trips and 92 vendor trips) are estimated for a period of 65 days. Fewer construction trips may be generated for longer periods (five quarters or 380 working days).

Project-Specific Traffic Control Measures

As noted above, approval of a Construction TCP would be required prior to the issuance of the first grading permit and individual TCPs shall be required for specific off-Site road improvement projects (e.g., the widening of Deer Springs Road). Accordingly, the project includes the following Project Design Feature:

PDF-39: Each TCP for the project will be prepared consistent with the MUTCD, Caltrans Manual, Greenbook, and WATCH, and, where applicable, shall incorporate the following specific measures:

- During peak periods of construction activity, construction shifts shall be staggered to the extent feasible such that worker and contractor arrivals and departures from the project Site avoid the peak hours of the day (i.e., arrive by 7:00 a.m. and leave by 4:00 p.m.).
- The TCP shall identify delivery vehicle routes for all vehicles delivering materials and equipment to the project Site or off-site work zones. Unless directed otherwise by the Director of Public Works, heavy trucks and the delivery of heavy equipment shall use the nearest interchange and/or arterial road (e.g., the Deer Springs Road/I-15 interchange) to gain access to and from the project Site and off-site construction zones. To the extent feasible, the delivery of materials and equipment shall occur outside the AM and PM peak hours of traffic.
- In off-site construction zones, where possible, construction vehicles, contractors, and workers shall remain confined to active work areas for movement throughout the construction zone to minimize impacts on those portions of the road that remain open to through traffic.
- Vehicular access to nearby communities shall be maintained at all times. To the extent feasible, one lane in each direction on all roadways subject to construction shall remain open at all times. In the event that temporary lane closures require that only a single lane can be open for traffic in both directions, such a condition shall be limited to off peak hours and temporary traffic signals/stop lights and flaggers shall be used as a traffic control measure.
- Where applicable, the TCP shall include traffic control measures specific to each phase or sub-phase of work associated with the improvements.
- The TCP shall identify sufficiently sized staging areas and construction worker parking areas. Construction worker parking along off-site roads (outside of designated construction worker parking areas as described in the TCP) shall be prohibited.

- Construction activities requiring travel on local roads, including worker commute trips, shall be limited to off-peak hours to the extent possible.
- Temporary traffic signals/stop lights, if necessary, shall be installed in the event traffic volumes and safety concerns warrant such an installation.
- Signage for advance noticing of pending major construction activities or any temporary lane closures shall be placed along affected roadways in accordance with the Traffic Control Plan at least two weeks prior to the start of construction.
- The disruption of use for any pedestrians and/or bicyclists along the affected roadway shall be limited to the extent feasible. Wherever possible, along roads with existing sidewalk improvements, safe, through pedestrian access shall be maintained on one side of the affected roadway at all times. Temporary closures of pedestrian access along both sides of a roadway shall be noticed at least two weeks in advance. Permanent pedestrian access improvements shall be constructed as soon as is feasible in the construction process.

Analysis

Phase 1 work would begin with the widening of Deer Springs Road from Twin Oaks Valley Road to the I-15/Deer Springs Road interchange and with the site preparation and grading work within the Project site, during which period only a fraction of the maximum daily trips as shown in Table 2.13-15 would occur. During Phase 1, the majority of these construction-related trips would occur outside of the peak hours of the day and would enter and exit the project site at the Deer Springs Road/Mesa Rock Road intersection, which is operating at an acceptable LOS in the AM peak period. Construction traffic coming from I-15 would not utilize the segment of Deer Springs Road between Sarver Lane and Mesa Rock Road and construction traffic coming from San Marcos would be traveling in the opposite direction of the predominant flow of traffic in the morning and evening periods for the roadway. Those specific construction-related worker trips involved with the widening of Deer Springs Road and Twin Oaks Valley Road would utilize the active work areas to access this construction zone, thereby avoiding travel within the open/improved portions of the road used by local and regional traffic. The higher construction-related trips estimated under Phase 1 would occur after these key road improvements are completed. In light of these specific circumstances and through implementation of the project-specific traffic control measures identified above, construction-related trips during Phase 1 would have a **less than significant impact** on the affected intersections and road segments.

By the time the project enters Phase 2, the project's improvements to Deer Springs Road, Twin Oaks Valley Road, the I-15/Deer Springs Road interchange, and other off-site road improvements identified as mitigation in this report are reasonably anticipated to be completed. Therefore, construction-related trips during Phase 2 would have a **less than significant impact** on the affected intersections and road segments.

2.13.9.2 Internal Project Site Circulation Analysis

Analysis of the operations of the project Site's internal intersections was conducted under the project buildout scenario. Project residential and non-residential traffic was assigned separately for each neighborhood and then added together to obtain the total peak hour intersection traffic. All on-site intersections were analyzed as Minor Street STOP Controlled (MSSC) except two. The Mesa Rock Road/Street "TC-2" and Mesa Rock Road/Street "TC-1" were analyzed as signalized intersections. Mesa Rock Way will be a one-way (eastbound) street with only northbound right-turns permitted from Mesa Rock Road.

Table 2.13-20, Internal Intersection Operations, summarizes the results of the on-site internal intersections analysis. As shown in the table, with the geometry and traffic control recommended by the traffic engineer, all on-site intersections would operate at LOS D or better during the AM and PM peak hours. Hence adequate intersection geometry would be provided at all internal intersections and impacts would be **less than significant**. Refer to Appendix R for the peak hour analysis worksheets for the internal intersections.

Table 2.13-21, Internal Street Segment Operations, summarizes the results of the internal roadway segments analysis. As shown in the table, based on the estimated project traffic values on the internal roadways, Camino Mayor and Sarver Lane are estimated to carry minimal traffic, and the Mesa Rock Road Extension is estimated to carry most of the traffic; as shown in the table, all segments of the internal roads would operate at LOS D or better.

Also as shown in Table 2.13-21, as part of the analysis, the capacities of the internal roadways have been reduced by 10 percent because reduced shoulder widths were assumed, although the pavement width is not reduced and standard lane widths would be provided. The reduced shoulder widths will serve as bicycle lanes with parking restrictions within the project Site. As shown in Table 2.13-21, all internal roadways would operate at LOS D or better. Hence, adequate internal circulation roadways would be provided and impacts would be **less than significant**. Refer to Appendix R for the analysis worksheets for internal street segments.

2.13.9.3 Existing Plus Project Impact Analysis

Intersections

Table 2.13-16, Existing + Project Intersection Operations, summarizes the results of the Existing + Project intersections operations analysis. The existing intersection geometry and traffic control were assumed in the analysis. As shown in the table, under this scenario, the following intersections would operate at LOS E or worse with the addition of the project traffic and, therefore, the project would result in **potentially significant direct impacts.**

- Deer Springs Road/I-15 NB Ramps (LOS F during the PM peak hour) **(Impact TR-1A)**
- Deer Springs Road/I-15 SB Ramps (LOS F during the PM peak hour) **(Impact TR-1B)**
- Deer Springs Road/Mesa Rock Road (LOS F in the AM and PM peak hours) **(Impact TR-2)**
- Deer Springs Road/Sarver Lane (LOS F during the AM and PM peak hours) **(Impact TR-3)**
- Twin Oaks Valley Road/Deer Springs Road (LOS F during the AM and PM peak hours) **(Impact TR-4)**
- Twin Oaks Valley Road/Buena Creek Road (LOS E during the AM and PM peak hours) **(Impact TR-5)**
- Buena Creek Road/Monte Vista Drive (LOS F during the AM and PM peak hours) **(Impact TR-6)**
- Buena Creek Road/S. Santa Fe Avenue (LOS F during the AM and PM peak hour) **(Impact TR-7)**
- Robelini Drive/S. Santa Fe Avenue (LOS F during the AM peak hour) (**Impact TR-8**)

Street Segments

Table 2.13-17, Existing + Project Street Segment Operations, summarizes the results of the Existing + Project segment operations analysis. As shown in the table, under this scenario, the following segments would operate at LOS E or worse with the addition of project traffic and, therefore, the project would result in **potentially significant direct impacts**.

- **Deer Springs Road:** Mesa Rock Road to I-15 SB Ramps (LOS F) **(Impact TR-9)**
- **Deer Springs Road:** Sarver Lane to Mesa Rock Road (LOS F) **(Impact TR-10)**
- **Deer Springs Road:** Twin Oaks Valley Road to Sarver Lane (LOS F) **(Impact TR-11)**
- **Twin Oaks Valley Rd.:** Deer Springs Rd. to Buena Creek Rd. (LOS F) **(Impact TR-12)**

- **Twin Oaks Valley Road:** Buena Creek Road to Cassou Road (LOS F) **(Impact TR-13)**
- **Buena Creek Rd.:** Monte Vista Dr. to Twin Oaks Valley Rd. (LOS E) **(Impact TR-14)**
- **Buena Creek Road:** S. Santa Fe Ave. to Monte Vista Dr. (LOS E) **(Impact TR-15)**
- **S. Santa Fe Avenue:** Robelini Drive to Buena Creek Road (LOS E) **(Impact TR-16)**
- Robelini Drive: Sycamore Avenue to S. Santa Fe Avenue (LOS F) (Impact TR-17)

Freeway Segments

Table 2.13-18, Existing + Project Freeway Segment Operations, summarizes the results of the Existing + Project freeway mainline levels of service. As shown in the table, under this scenario, with the addition of project traffic, the following sections of the freeway are calculated to operate at LOS E or worse:

- I-15: Riverside County Boundary to Old Highway 395
- I-15: Gopher Canyon Road to Deer Springs Road
- SR 78: Mar Vista Road to Rancho Santa Fe Avenue
- SR 78: Las Posas Road to Twin Oaks Valley Road

Direct significant impacts are calculated on segments where the project traffic would result in an increase in the volume to capacity ratio (v/c ratio) of more than 0.01 on segments operating at LOS E and 0.005 on segments operating at LOS F. Therefore, the project would result in a **potentially significant impact** on the following segment:

- I-15: Deer Springs Road to Pomerado Road (Impact TR-18)

Ramp Meter

Table 2.13-19, Existing + Project and Cumulative Ramp Meter Operations, summarizes the results of the Existing + Project ramp meter operations analysis. As shown in the table, using the most restrictive discharge rates obtained from Caltrans, with the addition of project traffic none of the metered ramps would operate with delays of 15 minutes or more with the addition of project traffic since the demand is less than the most restrictive flow rate. Therefore, impacts would be **less than significant.**

2.13.9.4 Cumulative Impact Analysis

This analysis is based on a combination of the existing traffic volumes plus the project traffic volumes plus the cumulative projects traffic volumes on the road network analyzed by the

project. Based on research of potential projects to be developed in the project area, and consultations between County staff and LLG, a two-step process was used to estimate total cumulative projects volumes. The first step was to use the SANDAG Series 12 model, which incorporates the reasonably foreseeable cumulative projects to be constructed within the County of San Diego. Because the model did not include a comprehensive listing of cumulative projects within the City of San Marcos, the next step was to estimate the total cumulative traffic that would be generated by city projects and manually add that traffic to the volumes obtained from the 2020 model. The resulting model includes all reasonably foreseeable development that may be constructed by project buildout. Specifically, 171 projects in San Diego County and 22 projects within the City of San Marcos are included in the model. Refer to Section 9.1 and Table 9-1 of the TIA for detailed discussion of cumulative project trip volume methodology and a full list of cumulative projects used for the analysis (Appendix R).

As described below, two cumulative analyses including the project at buildout were conducted, one based on the existing road network only and the other with Mountain Meadow Road connected to the community of Valley Center (via Mirar de Valle Road).

2.13.9.4.1 Existing Plus Project Plus Cumulative Projects (Existing Road Network)

This analysis is based on the existing roadway network and assumes no connection of Mountain Meadow Road (Mirar de Valle) to the east.

Intersections

Table 2.13-26, Cumulative Intersection Operations, summarizes the results of the Existing + Project + Cumulative Projects intersections operations analysis under the Without Mountain Meadow Road connection scenario. The existing intersection geometry and traffic control were assumed in the analysis.

As shown in the table, under this scenario the following intersections would operate at LOS E or worse and the project would result in **potentially significant cumulative impacts:**

- Deer Springs Road/I-15 NB Ramps (LOS E during the AM and LOS F during the PM peak hours) **(Impact TR-19A)**
- Deer Springs Road/I-15 SB Ramps (LOS F during the PM peak hour) **(Impact TR-19B)**
- Deer Springs Rd./Mesa Rock Rd. (LOS F during the AM and PM peak hours) **(Impact TR-20)**
- Deer Springs Road/Sarver Lane (LOS F during the AM and PM peak hours) **(Impact TR-21)**

- Deer Springs Road/Sycamore Road (LOS F during the AM and PM peak hours) **(Impact TR-22)**
- Twin Oaks Valley Rd./Deer Springs Rd. (LOS F during the AM and PM peak hours) **(Impact TR-23)**
- Twin Oaks Valley Rd./Buena Creek Rd. (LOS E during the AM and LOS F in the PM peak hours) **(Impact TR-24)**
- Twin Oaks Valley Road/San Marcos Blvd. (LOS F during the AM and PM peak hours) **(Impact TR-25)**
- Buena Creek Rd./Monte Vista Dr. (LOS F during the AM and PM peak hours) **(Impact TR-26)**
- Buena Creek Road/S. Santa Fe Ave. (LOS F during the AM and PM peak hours) **(Impact TR-27)**
- Robelini Drive/S. Santa Fe Avenue (LOS F during the AM peak hours) (**Impact TR-28**)

Street Segments

Table 2.7-27, Cumulative Segment Operations Without Mountain Meadow Road Connection, summarizes the results of the Existing + Project + Cumulative projects segment operations analysis under the Without Mountain Meadow Road Connection. As shown in the table, the following segments are calculated to operate at LOS E or worse and the project would result in **potentially significant cumulative impacts:**

- Deer Springs Road: Mesa Rock Road to I-15 SB Ramps (LOS F) **(Impact TR-29)**
- Deer Springs Road: Sarver Lane to Mesa Rock Road (LOS F) **(Impact TR-30)**
- Deer Springs Road: Twin Oaks Valley Road to Sarver Lane (LOS F) **(Impact TR-31)**
- Twin Oaks Valley Road: Deer Springs Rd. to Buena Creek Rd. (LOS F) **(Impact TR-32)**
- Twin Oaks Valley Road: Buena Creek Road to Cassou Road (LOS F) **(Impact TR-33)**
- Twin Oaks Valley Road: Richmar Ave. to San Marcos Blvd. (LOS E) **(Impact TR-34)**
- Buena Creek Road: Monte Vista Dr. to Twin Oaks Valley Rd. (LOS F) **(Impact TR-35)**
- Buena Creek Road: S. Santa Fe Avenue to Monte Vista Drive (LOS F) **(Impact TR-36)**
- Monte Vista Drive: Foothill Drive to Buena Creek Road (LOS E) **(Impact TR-37)**
- S. Santa Fe Avenue: Robelini Drive to Buena Creek Road (LOS E) **(Impact TR-38)**
- Robelini Drive: Sycamore Avenue to S. Santa Fe Avenue (LOS F) **(Impact TR-39)**

- Gopher Canyon Road: Little Gopher Canyon Rd. to I-15 (LOS F) **(Impact TR-40)**

Freeway Segments

Table 2.13-28, Cumulative Freeway Segment Operations Without Mountain Meadow Road Connection, summarizes the results of the freeway mainline levels of service analysis for Existing + Project + Cumulative projects for the Without Mountain Meadow Road Connection scenario.

As shown in the table, for the Existing + Cumulative Projects + Project scenario, the following segments are calculated to operate at LOS E or worse, but are not considered significant:

- I-15: Riverside County Boundary to Pomerado Road
- SR 78: Mar Vista Road to Rancho Santa Fe Avenue
- SR 78: Las Posas Road Twin to Oaks Valley Road

Significant cumulative impacts are calculated on segments where the project traffic results in an increase in the v/c ratio of more than 0.01 on segments operating at LOS E and 0.005 on segments operating at LOS F. Therefore, as shown on the table, **potentially significant cumulative impacts** would occur on the following freeway segments:

- I-15: Old Highway 395 to Pomerado Road (**Impact TR-41**)
- SR 78: Mar Vista Road to Sycamore Avenue (**Impact TR-42**)

Freeway Ramp Meters

Table 2.13-19, Existing + Project and Cumulative Ramp Meter Operations, summarizes the results of the Existing + Project + Cumulative projects ramp meter analysis under the Without Mountain Meadow Road Connection scenario. As shown in the table, using the most restrictive discharge rates obtained from Caltrans, since the demand would be less than the most restrictive flow rate, none of the study area metered ramps would operate with delays of 15 minutes or more with the addition of project traffic. Therefore, impacts associated with freeway ramp meters would be **less than significant.**

2.13.9.4.2 Existing Plus Project Plus Cumulative Projects (With Mountain Meadow Road Connection)

The cumulative impact analysis presented in this section assumes the existing road network with one modification, the connection of Mountain Meadow Road (Mirar de Valle) to the Valley Center.

Intersections

Table 2.13-26, Cumulative Intersection Operations, summarizes the results of the Existing + Project + Cumulative Projects intersections operations analysis under the With Mountain Meadow Road Connection scenario. The existing intersection geometry and traffic control were assumed in the analysis. As shown in the table, the following intersections would operate at worse than LOS D with the addition of project traffic and, therefore, the project would result in **potentially significant cumulative impacts.**

- Deer Springs Road/I-15 NB Ramps (LOS E during the AM, LOS F during the PM peak hours) **(Impact TR-19A)**
- Deer Springs Road/I-15 SB Ramps (LOS F during the PM peak hour) **(Impact TR-19B)**
- Deer Springs Rd./Mesa Rock Rd. (LOS F during the AM and PM peak hours) **(Impact TR-20)**
- Deer Springs Road/Sarver Lane (LOS F during the AM and PM peak hours) **(Impact TR-21)**
- Deer Springs Road/Sycamore Road (LOS F during the AM and PM peak hours) **(Impact TR-22)**
- Twin Oaks Valley Rd./Deer Springs Rd. (LOS F during the AM and PM peak hours) **(Impact TR-23)**
- Twin Oaks Valley Rd./Buena Creek Rd. (LOS E during the AM and LOS F during the PM peak hours) **(Impact TR-24)**
- Twin Oaks Valley Road/San Marcos Blvd. (LOS F during the AM and PM peak hours) **(Impact TR-25)**
- Buena Creek Rd./Monte Vista Dr. (LOS F during the AM and PM peak hours) **(Impact TR-26)**
- Buena Creek Road/S. Santa Fe Ave. (LOS F during the AM and PM peak hours) **(Impact TR-27)**
- Robelini Drive/S. Santa Fe Avenue (LOS F during the AM peak hours) (**Impact TR-28**)

Street Segments

Table 2.13-29, Cumulative Street Segment Operations With Mountain Meadow Road Connection, summarizes the results of the segment operations analysis for Existing + Project + Cumulative projects under the With Mountain Meadow Road Connection scenario. As shown in the table, the following segments would operate at worse than LOS D and, with the addition of project traffic, therefore, the project would result in **potentially significant cumulative impacts**.

- **Deer Springs Road:** Mesa Rock Road to I-15 SB Ramps (LOS F) **(Impact TR-29)**
- **Deer Springs Road:** Sarver Lane to Mesa Rock Road (LOS F) **(Impact TR-30)**
- **Deer Springs Road:** Twin Oaks Valley Road to Sarver Lane (LOS F) **(Impact TR-31)**
- **Twin Oaks Valley Rd.:** Deer Springs Rd. to Buena Creek Rd. (LOS F) **(Impact TR-32)**
- **Twin Oaks Valley Road:** Buena Creek Road to Cassou Road (LOS F) **(Impact TR-33)**
- **Twin Oaks Valley Road:** Richmar Ave. to San Marcos Blvd. (LOS E) **(Impact TR-34)**
- **Buena Creek Rd.:** Monte Vista Dr. to Twin Oaks Valley Rd. (LOS F) **(Impact TR-35)**
- **Buena Creek Road:** S. Santa Fe Avenue to Monte Vista Drive (LOS F) **(Impact TR-36)**
- **Monte Vista Drive:** Foothill Drive to Buena Creek Road (LOS E) **(Impact TR-37)**
- **S. Santa Fe Avenue:** Robelini Drive to Buena Creek Road (LOS E) **(Impact TR-38)**
- **Robelini Drive:** Sycamore Avenue to S. Santa Fe Avenue (LOS F) **(Impact TR-39)**
- **Gopher Canyon Road:** Little Gopher Canyon Rd. to I-15 (LOS F) **(Impact TR-40)**

Freeway Segments

Table 2.13-30, Cumulative Freeway Segment Operations With Mountain Meadow Road Connection, summarizes the results of the freeway mainline levels of service analysis for Existing + Project + Cumulative projects for the With Mountain Meadow Road Connection scenario.

As shown in the table, the following segments are calculated to operate at LOS E or worse, but are not considered significant:

- I-15: Riverside County Boundary to Pomerado Road
- SR 78: Mar Vista Road to Rancho Santa Fe Avenue
- SR 78: Las Posas Road to Twin Oaks Valley Road

Significant cumulative impacts are calculated on segments where the project traffic results in an increase in the v/c ratio of more than 0.01 on segments operating at LOS E and 0.005 on segments operating at LOS F. Therefore, as shown on the table, **potentially significant cumulative impacts** would occur on the following freeway segments:

- I-15: Old Highway 395 to Pomerado Road (**Impact TR-41**)
- SR 78: Mar Vista Road to Sycamore Avenue (**Impact TR-42**)

Freeway Ramp Meters

Table 2.13-19, Existing + Project and Cumulative Ramp Meter Operations, summarizes the results of the Existing + Project + Cumulative projects ramp meter analysis under the Without Mountain Meadow Road Connection scenario. As shown in the table, using the most restrictive discharge rates obtained from Caltrans, since the demand would be less than the most restrictive flow rate, none of the study area metered ramps would operate with delays of 15 minutes or more with the addition of project traffic. Therefore, impacts associated with freeway ramp meters would be **less than significant.**

2.13.9.4.3 Comparison of Cumulative Scenarios (Existing Road Network vs. With Mountain Meadow Road Connection)

As illustrated above, the potentially significant cumulative impacts identified under the Existing + Project + Cumulative analyses are the same whether or not Mountain Meadow Road is assumed to be connected to Mirar de Valle into the community of Valley Center . However, the ADTs, intersection delays, and v/c ratios would higher along many of the road segments and at many of the intersections analyzed by the project under this scenario. Therefore, as the project's cumulative impacts would occur at an earlier point in the project's buildout, the mitigation for cumulative impacts has been developed based on the project's impacts under the cumulative scenario which includes the Mountain Meadow Road Connection.

As it relates to I-15, the Mountain Meadow Road Connection would result in a slight decrease in the daily traffic volumes from Deer Springs Road to El Norte Parkway and a slight increase in the daily volumes from Gopher Canyon Road to Deer Springs Road with the balance of the freeway unaffected. As it relates to SR 78, the Mountain Meadow Road Connection would result in an increase in the daily volumes from Mar Vista Road to Twin Oaks Valley Road. As it relates to the two metered freeway ramps analyzed by the project (Westbound SR 78 at Sycamore Avenue and Westbound SR 78 at San Marcos Boulevard), peak hour volumes at these ramps would be slightly higher with the Mountain Meadow Road Connection. Despite the slight differences in peak hour volumes, no new impacts to Caltrans facilities would result under the cumulative scenario which includes the Mountain Meadow Road Connection.

2.13.9.4.4 City of San Marcos Horizon Year (Cumulative) Analysis

Horizon Year analyses of City of San Marcos roadways were conducted using City of San Marcos guidelines. The intersections and segments located within the jurisdiction of the City were analyzed separately in this section using SANDAG's Series 12 Year 2035 buildout scenario for the City of San Marcos. One analysis assumes full buildout of the road network whereas a separate analysis assumes certain planned road improvements will not be implemented due to

lack of funding and/or significant environmental constraints. This latter analysis would be expected to increase Horizon Year traffic volumes along Twin Oaks Valley Road.

City of San Marcos Horizon Year 2035 Analysis (Full Road Network Buildout)

Horizon Year Volumes

A Series 12 Year 2035 model with the project land uses was obtained from SANDAG. The volumes from this model are used in the Horizon Year analysis. Project volumes were removed from the corresponding segment volumes to obtain the Horizon Year Volumes "without the project."

The SANDAG model outputs daily segment and peak hour volumes. However, the SANDAG model output is not as accurate in determining peak hour intersection turn movements. Therefore, Year 2035 peak hour turning movement volumes (without the project) were estimated using the relationship between existing peak hour turn movements and the existing ADT volumes. This same relationship can be assumed to generally continue in the future. For example, if the segment ADT on the roadway is forecast to double by the Year 2035, it is reasonable to assume that the peak hour intersection turning movement volumes will generally double. The project peak-hour volumes were added to the Horizon Year 2035 without project volumes to obtain the Horizon Year "with the project" peak-hour volumes.

Horizon Year Without Project Analysis

The Horizon Year 2035 without project intersection and segment operations are described in the sections below.

Intersections

Table 2.13-35, City of San Marcos Horizon Year 2035, Full Road Network Buildout Intersection Operations, summarizes the Horizon Year 2035 Without Project peak hour intersection operations. As shown in the, all intersections within the City of San Marcos are calculated to operate at LOS D or better in the Horizon Year Without Project except the following:

- Twin Oaks Valley Road/San Marcos Boulevard (LOS E during the PM peak hour)
- Twin Oaks Valley Road/Barham Drive/Discovery Street (LOS E during the AM peak hour and LOS F during the PM peak hour)

Street Segments

Table 2.13-36, City of San Marcos Horizon Year 2035, Full Road Network Buildout Segment Operations, summarizes the Horizon Year 2035 Without Project peak hour segment operations.

As seen in Table 2.13-36, all segments within the City of San Marcos are calculated to operate at LOS D or better in the Horizon Year Without Project, except the following:

- Twin Oaks Valley Road: Deer Springs Road to Buena Creek Road (LOS F)

Horizon Year With Project Analysis

Intersections

Table 2.13-35 summarizes the Horizon Year 2035 With Project peak hour intersection operations. As shown in the table, with the addition of project traffic, all intersections within the City of San Marcos are calculated to operate at LOS D or better in the Horizon Year With Project, except the following:

- Twin Oaks Valley Road/San Marcos Boulevard (LOS E during the PM peak hour)
- Twin Oaks Valley Road/Barham Drive/Discovery Street (LOS E during the AM peak hour and LOS F during the PM peak hour)

Although these intersections would operate at a deficient LOS with the project, the increase in delay due to project traffic is less than 2 seconds and hence, no significant impacts are determined at the above two intersections.

Street Segments

Table 2.13-36 summarizes the Horizon Year 2035 With Project peak hour segment operations. As shown in the table, with the addition of project traffic, all segments within the City of San Marcos are calculated to operate at LOS D or better except the following segment, resulting in a **potentially significant cumulative impact**:

- **Twin Oaks Valley Rd.:** Deer Springs Rd. to Buena Creek Rd. (LOS F) **(Impact TR-43)**

City of San Marcos Horizon Year 2035 Analysis (Modified Road Network Buildout)

Network Modifications

There are several major future road network improvements within the vicinity of the project for which no or limited funding presently exists and, in certain cases, environmental and land use constraints may present significant challenges to improving the road to its General Plan classification. Removal of these network improvements would be expected to cause traffic along Twin Oaks Valley Road to increase in the Horizon Year comparted to full buildout of the

road network for the same area. Hence, a separate "Alternate Horizon Year" analysis was conducted without these network improvements.

These three network improvements are described below:

Buena Creek Road

The County General Plan Mobility Element classifies Buena Creek Road as a 4.1B Major Road. However, this road is currently constructed as a two-lane rural collector between Twin Oaks Valley Road and S. Santa Fe Avenue. For this "Alternative Horizon Year" Analysis, it is assumed that the improvement to a 4.1B Major Road would not be completed.

Las Posas Road Connection from San Marcos City Limits to Buena Creek Road

Buildout of the County's Mobility Element assumes Las Posas Road is extended from San Marcos City Limits to Buena Creek Road as a 2.2C Light Collector. For this "Alternative Horizon Year" Analysis, it is assumed that this extension from San Marcos City Limits to Buena Creek Road will not be completed.

Richmar Avenue Bridge Connection from Twin Oaks Valley Road to Woodward Street

Buildout of the City of San Marcos's road network assumes the Richmar Avenue Bridge is built, connecting Twin Oaks Valley Road to Woodward Street. This project was removed from the City's latest Capital Improvement Program. For this "Alternative Horizon Year" Analysis, it is assumed that the Richmar Avenue Bridge connection between Twin Oaks Valley Road and Woodward Street would not be completed.

Horizon Year 2035, Modified Road Network Buildout Volumes

A Series 12 Year 2035 "Alternate Horizon Year" model with the project land uses and without these three network improvements described above was obtained from SANDAG. The volumes from this model are used in the analysis presented herein. The project volumes were removed from the corresponding segment volumes to obtain the Alternate Horizon Year Volumes "without the project."

Horizon Year 2035, Modified Road Network Buildout Without Project Analysis

Intersections

Table 2.13-37 summarizes the Horizon Year 2035 Without Project peak hour intersection operations. As shown in the table, all intersections within the City of San Marcos are calculated to operate at LOS D or better in the Horizon Year Without Project except the following:

- Twin Oaks Valley Road/Richmar Avenue (LOS E during the PM peak hour)
- Twin Oaks Valley Road/San Marcos Boulevard (LOS E during the PM peak hour)
- Twin Oaks Valley Road/Barham Drive/Discovery Street (LOS E during the AM peak hour and LOS F during the PM peak hour)

Street Segments

Table 2.13-38 summarizes the Horizon Year 2035 Without Project peak hour segment operations. As shown in the table, all segments within the City of San Marcos are calculated to operate at LOS D or better in the Horizon Year Without Project.

Horizon Year 2035, Modified Road Network Buildout With Project Analysis

Intersections

Table 2.13-37 summarizes the Horizon Year 2035 With Project peak hour intersection operations. As shown in the table, with the addition of project traffic, all intersections within the City of San Marcos are calculated to operate at LOS D or better in the Horizon Year With Project, with the exception of the following:

- Twin Oaks Valley Rd./Richmar Ave. (LOS E during the PM peak hour) (Impact TR-44)
- Twin Oaks Valley Road/San Marcos Boulevard (LOS E during the PM peak hour)
- Twin Oaks Valley Road/Barham Drive/Discovery Street (LOS E during the AM peak hour and LOS F during the PM peak hour)

The intersections of Twin Oaks Valley Road/San Marcos Boulevard and Twin Oaks Valley Road/Barham Drive/Discovery Street would operate at a deficient LOS with the project, however, the increase in delay due to project traffic would be less than 2 seconds, therefore the project's cumulative impacts at these intersections would be less than significant. In the case of the Twin Oaks Valley Road/Richmar Avenue intersection, the increase in delay due to the project would exceed 2 seconds, therefore, a **potentially significant cumulative impact** would occur, resulting in **Impact TR-44**.

Street Segments

Table 2.13-38 summarizes the Horizon Year 2035 Without Project peak hour segment operations. As shown in the table, with the addition of project traffic, all segments within the City of San Marcos are calculated to operate at LOS D or better with the exception of the following segment, resulting in a potentially significant cumulative impact:

- Twin Oaks Valley Road: Deer Springs Road to Buena Creek Road (LOS F) **(Impact TR-45)**

2.13.9.5 County General Plan Buildout Analysis

The purpose of the General Plan Buildout Analysis is to determine whether the project's proposed land uses and alternate scenarios for Deer Springs Road are consistent with the buildout classification for the County's roadway network as established by the County's General Plan Mobility Element. The analysis presented in this section is for the determination of General Plan Mobility Element consistency and is not used by the County for a determination of significant impacts under CEQA. As such, no significance determinations are provided for these scenarios analyzing buildout of the County's General Plan with and without the project.

It should be noted that separate horizon year scenarios were conducted for the City of San Marcos roadways using the City's guidelines. As San Marcos evaluates cumulative impacts in the long-term (i.e., based on buildout of their General Plan), significance determinations are provided related to those analyses. Please refer to Section 2.13.9.4.4 above for the San Marcos Horizon Year analysis.

Five different Long-Term scenarios were conducted, one scenario assuming buildout of the County's existing General Plan with no changes to the land uses for the project Site and no changes to the County's Mobility Element roadway network, two scenarios assuming buildout of the County's General Plan with the proposed land uses for the project Site and Deer Springs Road reclassified as proposed by the project's Option A, and two scenarios assuming buildout of the County's General Plan with the proposed land uses for the project Site and no changes to the existing Mobility Element classification for Deer Springs Road (i.e., Deer Springs Road is modeled as a 6.2 Prime Arterial). Finally, County Network Adjustments, one of each of the scenarios addressing the different Deer Springs Road classifications (Option A vs. the General Plan ME classification) assumes Mountain Meadow Road is not connected.

2.13.9.5.1 Land Uses – General Plan versus Proposed Project

Table 2.13-31, Comparison of Trip Generation – General Plan Land Uses Versus Proposed Project, presents a comparison of the trip generation under the County General Plan presently adopted land uses for the project Site with the proposed project trip generation. As shown in the table, the existing General Plan Land Uses are estimated to generate a net of 21,247 daily trips with 2,507 AM peak hour trips and 2,528 PM peak hour trips. In comparison, the proposed project is estimated to generate a net of 22,209 daily trips with 1,601 AM peak hour trips and 2,059 PM peak hour trips. Thus, the proposed project would generate 986 more daily trips than

the General Plan land uses, but 904 fewer trips in the AM peak hour and 466 fewer trips in the PM peak hour.

2.13.9.5.2 County General Plan Buildout Without Project

The segment analysis results using the County General Plan Update (GPU) Model (no project) are summarized in Table 2.13-32, County General Plan Buildout Segment Analysis. As shown in Table 2.13-32, the following segments would operate at LOS E or worse under without project conditions:

- Deer Springs Road from Twin Oaks Valley Road to San Marcos City Limits (LOS F)
- Deer Springs Road from Mesa Rock Road to I-15 SB Ramps (LOS E)
- Deer Springs Road from I-15 Ramps to Champagne Boulevard (LOS F)

2.13.9.5.3 County General Plan Buildout with Project – Deer Springs Road Reclassified under Option A (With Mountain Meadow Road Connection)

Under this scenario, "with project" traffic volumes were determined by adding the net increase in traffic between the project Site's current General Plan volumes and the project volumes.

The change in volumes that would result from the reclassification of Deer Springs Road from a 6.2 Prime Arterial to a four-lane/two-lane roadway were determined by comparing the two SANDAG Series 12 Model runs with differing number of lanes on Deer Springs Road. The percent change was determined and used to estimate the volumes for Option A.

The segment analysis results for Option A are summarized in Table 2.13-32. As shown in the table, under this scenario the following segments would operate at LOS E or worse:

- Deer Springs Road from Sarver Lane to Mesa Rock Road (LOS F)
- North Centre City Parkway from Mountain Meadow Road to I-15 Ramps (LOS E)

2.13.9.5.4 County General Plan Buildout with Project – Deer Springs Road Reclassified under Option A (Without Mountain Meadow Road Connection)

The analysis presented here is a variation of Option A without the planned eastward connection of Mountain Meadow Road (Mirar de Valle Road).

As shown in Table 2.13-32, County General Plan Buildout Segment Analysis, under Option A, without the Mountain Meadow Road Connection, the following segments would operate at LOS E or worse:

- Deer Springs Road from Sarver Lane to Mesa Rock Road (LOS F)
- North Centre City Parkway Mountain Meadow Road to I-15 Ramps (LOS F)

2.13.9.5.5 County General Plan Buildout with Project – Deer Springs Road as 6.2 Prime Arterial (With Mountain Meadow Road Connection)

Under this scenario, Deer Springs Road would remain classified as a 6.2 Prime Arterial (six-lane) in the Mobility Element of the County General Plan. The results of the analysis under are summarized in Table 2.13-32, County General Plan Buildout Segment Analysis. As shown in the table, the following segments would operate at LOS E or worse:

- Deer Springs Road from Twin Oaks Valley Road to San Marcos City Limits (LOS F)
- Deer Springs Road from Mesa Rock Road to I-15 SB Ramps (LOS E)
- Deer Springs Road from I-15 NB Ramps to Champagne Boulevard (LOS F)

2.13.9.5.6 County General Plan Buildout with Project – Deer Springs Road as 6.2 Prime Arterial (Without Mountain Meadow Road Connection)

This scenario is a variation of County General Plan Buildout with Project – Deer Springs Road as a 6.2 Prime Arterial (With Mountain Meadow Road Connection) described above, however it assumes the planned eastward connection of Mountain Meadow Road to Mirar de Valle Road is not added to the County's roadway network. As shown in Table 2.13-32, County General Plan Buildout Segment Analysis, and without the Mountain Meadow Road Connection, the following segments would operate at LOS E or worse:

- Deer Springs Road from Twin Oaks Valley Road to San Marcos City Limits (LOS F)
- Deer Springs Road from I-15 NB Ramps to Champagne Boulevard (LOS E)
- North Centre City Parkway from Mountain Meadow Road to I-15 Ramps (LOS E)

2.13.9.5.7 Comparison of the General Plan Buildout Scenarios

As discussed above, with Deer Springs Road reclassified as proposed by Option A, two segments of Deer Springs Road are calculated to operate at LOS E or worse at buildout of the County's General Plan, both with and without the Mountain Meadow Road connection, with the two-lane segments operating at LOS F.

With Deer Springs Road remaining as a 6.2 Prime Arterial, three segments of Deer Springs Road and one segment of Twin Oaks Valley Road would operate at LOS E or F. Two of the Deer Springs Road segments are designated as four-lane major roads, and one segment is a six-lane prime arterial. Without the Mountain Meadow Road connection, the six-lane prime arterial segment would operate at LOS D, and the remaining two segments of Deer Springs Road and one segment of North Centre City Parkway would operate at LOS E or worse.

In general, Deer Springs Road built to its ultimate General Plan Mobility Element classification as a 6.2 Prime Arterial results in a greater number of LOS E/F operating locations when compared to Deer Springs Road being built to the classifications proposed under Option A. The additional capacity available on the road (as a 6.2 Prime Arterial) is forecasted to have the effect of attracting more vehicle trips along the road, thereby resulting in reduced Levels of Service along certain segments. Additionally, whether Deer Springs Road is reclassified under Option A or built to its ultimate Mobility Element classification, with Mountain Meadow Road connected to Mirar de Valle into Valley Center, segment volumes are generally higher on the road network analyzed by the project.

As it relates to the freeway operations under the County General Plan Buildout scenarios, Tables 2.13-33, County General Plan Buildout (Deer Springs Road Reclassified Under Option A) – Freeway Segment Operations, and Table 2.13.34, County General Plan Buildout (Deer Springs Road as a 6.2 Prime Arterial) – Freeway Segment Operations contain the freeway segment conditions for the AM and PM peak hour periods.

As shown in Tables 2.13-33 and 2.13-34, whether Deer Springs Road is built as proposed under Option A or as a 6.2 Prime Arterial consistent with its current General Plan Mobility Element classification, the following freeway segments would operate at LOS E or worse:

- All three segments of I-15 between Gopher Canyon Road and El Norte Parkway in the southbound direction during the AM peak hour, and in the northbound direction during the PM peak hour
- The westbound segment of SR 78 between Las Posas Road and San Marcos Boulevard during the PM peak hour

A comparison of the freeway mainline volumes at buildout of the County's General Plan shows that with Deer Springs Road built as proposed by Option A, the freeway mainline volumes on I-15 are generally higher than with Deer Springs Road built to its ultimate existing General Plan Mobility Element classification, a 6.2 Prime Arterial. This shows that less traffic would utilize Deer Springs Road as a two-lane road as the capacity of the road would be lower, and hence the traffic on mainline I-15 is higher than if Deer Springs Road were built to its ultimate six-lane classification.

2.13.9.6 Traffic Hazards Analysis

Guidelines for the Determination of Significance

The *County Guidelines* apply to traffic hazard impact analysis, as well as the cumulative impact analysis.

According to County procedures, the determination of significant hazards relating to transportation design feature will be on a case-by-case basis, considering the following factors:

- Design features/physical configurations of access roads may adversely affect the safe movement of all users along the roadway.
- The percentage or magnitude of increased traffic on the road due to the proposed project may affect the safety of the roadway.
- The physical conditions of the project site and surrounding area, such as curves, slopes, walls, landscaping or other barriers, may result in conflicts with other users or stationary objects.
- Conformance of existing and proposed roads to the requirements of the private or public road standards, as applicable.

According to County procedures, the determination of significant hazards to pedestrians or bicyclists also will be on a case-by-case basis, considering the following factors:

- Design features/physical configurations on a road segment or at an intersection that may adversely affect the visibility of pedestrians or bicyclists to drivers entering and exiting the Site, and the visibility of cars to pedestrians and bicyclists.
- The amount of pedestrian activity at the project access points that may adversely affect pedestrian safety.
- The preclusion or substantial hindrance of the provision of a planned bicycle lane or pedestrian facility on a roadway adjacent to the project Site.
- The percentage or magnitude of increased traffic on the road due to the proposed project that may adversely affect pedestrian and bicycle safety.
- The physical conditions of the project Site and surrounding area, such as curves, slopes, walls, landscaping or other barriers that may result in vehicle/pedestrian, vehicle/bicycle conflicts.
- Conformance of existing and proposed roads to the requirements of the private or public road standards, as applicable.

- The potential for a substantial increase in pedestrian or bicycle activity without the presence of adequate facilities.

Analysis

Within the project site, all internal roadways, bicycle lanes, trails, and other portions of the proposed project's internal circulation network, as described in Section 1.2.1.2 of this EIR, would comply with the County *Public Road Standards* (County of San Diego 2012), including any design exceptions granted as part of the approval, to ensure adequate safety of travel and use by motorists, cyclists, and pedestrians.

The project proposes a number of transportation demand management measures and project design features to reduce automobile trips and increase the use of alternative forms of transportation. The project would include a network of pathways and trails that would enhance the walkability of the project and enable residents to move between neighborhoods away from the project's internal network of roads. The project would also include an electric bike-share program to further link the neighborhoods to one another and to reduce motorized vehicle trips internal to the project Site. Finally, the project would include shuttle services from the project Site to the Escondido Transit Center, a North County transit hub, along with subsidized transit passes for its residents. These measures would have the effect of reducing automobile trips generated by the project, both internally and externally.

All off-site roadway and intersection improvements to Deer Springs Road, Twin Oaks Valley Road, Sarver Lane, Mesa Rock Road, Camino Mayor, Buena Creek Road, and the I-15/Deer Springs Road interchange also would comply with applicable public road standards (e.g., County's *Public Road Standards, City of San Marcos Urban Street Design Criteria, etc.)* or other engineering design requirements, including any design exceptions granted as part of the approval, of the agency having jurisdiction over the improvements to ensure adequate safety of travel and use by motorists, cyclists, and pedestrians

The project's proposed improvements to Deer Springs Road and Twin Oaks Valley Road include a ten-foot-wide multi-use pathway and dedicated bicycle lanes that would connect directly to the project's internal network of pathways and trails, and the bicycle lanes on Sarver Lane and Mesa Rock Road as well as to the existing multi-use pathway and bicycle path along Twin Oaks Valley Road heading into the City of San Marcos. Compared to existing conditions where facilities do not exist or only partially exist, these pedestrian and bicycle improvements would create safer conditions for these two alternative forms of travel along the project's off-Site road improvements.

As it relates to other projects, including projects included on the list of cumulative projects analyzed by the project, all reasonably foreseeable cumulative projects that would provide new public/private roadways, points of ingress/egress, intersections, bicycle lanes, pedestrian facilities, and other mobility network features would be required to comply with the County's *Public Road Standards* for roadways and circulation networks to ensure safety of all motorists, pedestrians, cyclists, and other users.

The following General Plan policies are applicable to the analysis:

Policy M-4.2 (Interconnected Local Roads): Provide an interconnected and appropriately scaled local public road network in Village and Rural Villages that reinforces the compact development patterns promoted by the Land Use Element and individual community plans.

> The project Site would have two primary access roads along Deer Springs Road at Mesa Rock Road and Sarver Lane, with an additional access point at Camino Mayor off of Twin Oaks Valley Road to the north. The primary access road at Mesa Rock Road would be a four lane entry road with median that transitions into a four lane undivided road farther into the project Site. On-site roadways would be constructed within and between the different planning areas where development would occur. These roadways would primarily consist of a loop road, with a pavement width of 34 feet, that provides access primarily between the developed planning areas; residential streets approximately 32 to 40 feet wide that generally traverse within a planning area; and private paseo roads that typically end at smaller clusters of residential units within a planning area.

Policy M-4.6 (Context Sensitive Road Design): Design and construct roads that are compatible with the local terrain and the uses, scale and pattern of the surrounding development. Provide wildlife crossings in road design and construction where it would minimize impacts in wildlife corridors.

> Site planning for the proposed project takes into account existing landforms and topography by concentrating development between and away from ridge lines. Prominent ridges and landforms were mapped, and each neighborhood has been designed to minimize disturbance to prominent peaks and landforms. Each neighborhood is designed to be compact and clustered, reducing the impact of development on open space. Where possible, streets are designed to parallel topography and are inspired by watershed patterns on the Site.

Compliance with the applicable *Public Road Standards*, the County's Mobility Element safety-related policies, and other applicable engineering requirements, and incorporation of the project's TDM measures and transportation-related project design features would ensure that the project results in **less than significant impacts** related to traffic hazards. Additionally, as each cumulative project would reasonably be expected to comply with

established road and engineering standards, cumulative impacts relating to traffic hazards would be **less than significant**.

2.13.9.7 Alternative Transportation Policies of the County's General Plan

Guidelines for the Determination of Significance

The *County Guidelines* apply to the analysis of alternative transportation impacts and provide that if a proposed project is not in conformance with applicable alternative transportation policies contained in the General Plan "a significant conflict with the County's alternative transportation policies may occur." For the purposes of this EIR, a significant impact to alternative transportation would occur if the project conflicts with the alternative transportation policies of the General Plan Mobility Element.

Analysis

A detailed analysis of the project's consistent with the General Plan Guiding Principles, Goals, and Policies is contained in Appendix DD. The following three goals of the Mobility Element are applicable to the proposed project as they relate to alternative transportation.

Goal M-5 Safe and Efficient Multi-Modal Transportation System: A multi-modal transportation system that provides for the safe, accessible, convenient, and efficient movement of people and goods within the unincorporated County.

> A comprehensive transportation system is planned as part of the project. The system was designed to serve vehicles, bicycles, pedestrians, and equestrians, and to accommodate future transit riders. The project Site would have two primary access roads along Deer Springs Road at Mesa Rock Road and Sarver Lane, with an additional access point at Camino Mayor off of Twin Oaks Valley Road to the north. The primary access road at Mesa Rock Road would be a four-lane entry road with a median that transitions into a four-lane undivided road, and then a two-lane undivided road farther into the project Site. On-site roadways would be constructed within and between the different planning areas where development would occur. Off-site roadway improvements would occur to Deer Springs Road, Twin Oaks Valley Road, Mesa Rock Road, Sarver Lane, and Camino Mayor to ensure safe and efficient means of travel for the project residents and nearby land uses. Discussion regarding public transit, pedestrian, and bicycle facilities is found below under Goals M-8 and M-11.

Goal M-8 Public Transit System: A public transit system that reduces automobile dependence and serves all segments of the population.

The existing park-and-ride lot in the northeast quadrant of Deer Springs Road/Mesa Rock Road is being incorporated into the Town Center design and is proposed for expansion. This will allow for enhanced ride-sharing and public transit opportunities. Additionally, the project would include a shuttle service that partners with large employers in the vicinity. The shuttle service would stop at the Town Center and would be limited to residents and guests of the Community.

Goal M-11 Bicycle and Pedestrian Facilities: Bicycle and pedestrian networks and facilities that provide safe, efficient, and attractive mobility options, as well as recreational opportunities for County residents. See also Goals and Policies in the Conservation and Open Space Element, and Biological Resources section, which address the protection of sensitive biological resources and habitat areas.

An electric bike-share program would be included to further link the neighborhoods to one another and reduce internal vehicle trips. The electric bike-share program would include the placement of a kiosk in proximity to each planning area to allow electric bikes to be taken from one kiosk and left at another, encouraging sustainable transportation between planning areas within the project Site. Additionally, the project would include bicycle lanes, an extensive trail system consisting of roadside pathways within the linear greenbelts, and multi-use trails. The project would include approximately 3.7 miles of bicycle lanes; an extensive trail system, including 6.9 miles of multi-use pathways along the loop road; 5.7 miles of internal trails within neighborhoods; 3.1 miles of secondary trails within neighborhoods; 2.0 miles of multi-purpose trails through the open space area; and 1.5 miles of secondary trails through the open space area. With incorporation of these internal circulation features, the project would provide residents the opportunity to access employment, education, and recreational and commercial uses via multiple modes of transportation.

The project would comply with the applicable alternative transportation policies in the County's Mobility Element as addressed above and in more detail in Appendix DD of this EIR. Therefore, the project would result in **less than significant impacts** related to alternative transportation. Additionally, as each cumulative project would reasonably be expected to comply with the same policies, cumulative impacts would be **less than significant**.

2.13.10 VMT Analysis

Although not yet required by CEQA, this section presents an evaluation of the potential VMT-related impacts associated with the proposed project consistent with the methodology and

significance thresholds recommended by OPR in its *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA.*

2.13.10.1 Regulatory Framework

Senate Bill 743

Senate Bill 743, approved in 2013, initiated a process that when completed is expected to change the way transportation impact analyses are conducted under CEQA. These changes, which presently are in the process of being drafted, will eliminate auto delay, level of service (LOS), and similar measurements of vehicular roadway capacity and traffic congestion as the basis for determining significant impacts, and replace them with automobile vehicle miles traveled, or VMT, as the new CEQA transportation metric.

SB 743 required that OPR prepare and submit to the Secretary of the Natural Resources Agency revisions to the CEQA Guidelines that establish criteria for determining the significance of transportation impacts within transit priority areas. (Legislative Counsel's Digest, (2).) "Transit priority areas" means, generally, an area within one-half mile of a major transit stop.[1] SB 743 did not require OPR to establish such criteria for areas *outside* of the one-half mile major transit stop locale, although it gave OPR the discretion to apply the new criteria to these areas.

In support of SB 743, the Legislature found that transportation analyses under CEQA "typically study changes in automobile delay. New methodologies under [CEQA] are needed for evaluating transportation impacts that are better able to promote the state's goals of reducing greenhouse gas emissions and traffic-related air pollution, promoting the development of a multimodal transportation system, and providing clean, efficient access to destinations." (SB 743, Section 1(a)(2).) With that, the Legislature declared its intent to: "(1) Ensure that the environmental impacts of traffic, such as noise, air pollution, and safety concerns, continue to be properly addressed and mitigated through [CEQA]; and (2) More appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions." (SB 743, Section 1(b)(1) and (2).)

[1] "'Transit priority areas' means an area within one-half mile of a major transit stop that is existing or planned, if the planned stop is scheduled to be completed within the planning horizon included in a Transportation Improvement Program adopted pursuant to Section 450.216 or 450.322 of Title 23 of the Code of Federal Regulations." (Public Resources Code Section 21099(a)(7).) A "major transit stop" is "a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods." (Public Resources Code Section 21064.3.)

To implement the identified legislative intent, SB 743 included the following directive to OPR, as included in newly added Pub. Resources Code Section 21099:

> (b) (1) The Office of Planning and Research *shall* prepare, develop, and transmit to the Secretary of the Natural Resources Agency for certification and adoption proposed revisions to the guidelines adopted pursuant to Section 21083 [CEQA Guidelines] establishing criteria for determining the significance of transportation impacts of projects *within* transit priority areas. Those criteria shall promote the reduction of greenhouse gas emissions, the development of multi modal transportation networks, and a diversity of land uses. In developing the criteria, the office shall recommend potential metrics to measure transportation impacts that may include, but are not limited to, vehicle miles traveled, vehicle miles traveled per capita, automobile trip generation rates, or automobile trips generated. The office may also establish criteria for models used to analyze transportation impacts to ensure the models are accurate, reliable, and consistent with the intent of this section.
>
> (2) Upon certification of the guidelines by the Secretary of the Natural Resources Agency pursuant to this section, automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to this division [CEQA], except in locations specifically identified in the guidelines, if any.
>
> (c) (1) The Office of Planning and Research *may* adopt guidelines pursuant to Section 21083 establishing alternative metrics to the metrics used for traffic levels of service for transportation impacts *outside* transit priority areas. The alternative metrics may include the retention of traffic levels of service, where appropriate and as determined by the office. (Italics added.)

Thus, the Legislature directed OPR to establish revised criteria for determining the significance of transportation impacts within transit priority areas; however, as to those areas *outside* of transit priority areas, such as the area within which the proposed project would be developed, the Legislature stated that OPR "may" adopt guidelines establishing alternative metrics.

Draft Proposed OPR Guidelines

As directed by SB 743, in August 2014, OPR issued draft proposed CEQA guideline revisions for public review and comment in the *Preliminary Discussion Draft of Updates to the CEQA Guidelines Implementing SB 743* (*Preliminary Discussion Draft*). Following review of the public comments and subsequent OPR revisions, OPR revised the *Preliminary Discussion Draft* and on

January 20, 2016, issued the *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA* (*Draft Proposal*).

As of this writing, the *Draft Proposal* issued in January 2016 is the current operative document although it is only a *draft* document that represents the next step in the lengthy process to adopt revised CEQA Guidelines pursuant to SB 743. OPR is expected to make further revisions to the *Draft Proposal* and issue those revisions by the third quarter of 2017. Thereafter, the revised proposed guidelines will be circulated again for public review, with final certification and adoption by the Secretary of the Natural Resources Agency expected sometime later in 2017. Thus, the proposed guidelines presently are in draft form only and final proposed guidelines have neither been issued nor formally adopted.

The January 2016 *Draft Proposal* consists of three component sections: (1) explanation of Revised Updates to the CEQA Guidelines Implementing Senate Bill 743; (2) revised Proposed Changes to the CEQA Guidelines; and (3) technical advisory on Evaluating Transportation Impacts in CEQA.

As to the proposed changes to the CEQA Guidelines, the *Draft Proposal* would add new Section 15064.3, Determining the Significance of Transportation Impacts, to the CEQA Guidelines. As presented in the *Draft Proposal*, Section 15064.3 would provide as follows:

(a) Purpose

> Section 15064 contains general rules governing the analysis, and the determination of significance of, environmental effects. Specific considerations involving transportation impacts are described in this section. Generally, vehicle miles traveled is the most appropriate measure of a project's potential transportation impacts. For the purposes of this section, "vehicle miles traveled" refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel and the safety of all travelers. A project's effect on automobile delay does not constitute a significant environmental impact.

(b) Criteria for Analyzing Transportation Impacts

> Lead agencies may use thresholds of significance for vehicle miles traveled recommended by other public agencies or experts provided the threshold is supported by substantial evidence.
>
> (1) Vehicle Miles Traveled and Land Use Projects. A development project that results in vehicle miles traveled exceeding an applicable threshold of

significance may indicate a significant impact. Generally, development projects that locate within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor may be presumed to cause a less than significant transportation impact. Similarly, development projects that decrease vehicle miles traveled in the project area compared to existing conditions may be considered to have a less than significant transportation impact.

(2) Induced Vehicle Travel and Transportation Projects. Additional lane miles may induce automobile travel, and vehicle miles traveled, compared to existing conditions. Transportation projects that reduce, or have no impact on, vehicle miles traveled may be presumed to cause a less than significant transportation impact. To the extent that the potential for induced travel has already been adequately analyzed at a programmatic level, a lead agency may incorporate that analysis by reference.

(3) Qualitative Analysis. If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations (such as homes, employment and services), area demographics, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.

(4) Methodology. The lead agency's evaluation of the vehicle miles traveled associated with a project is subject to a rule of reason. A lead agency should not confine its evaluation to its own political boundary. A lead agency may use models to estimate a project's vehicle miles traveled, and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project.

(c) Applicability. The provisions of this section shall apply prospectively as described in Section 15007. A lead agency may elect to be governed by the provisions of this section immediately provided that it updates its own procedures pursuant to Section 15022 to conform to the provisions of this section. After [2 years from expected adoption date], the provisions of this section shall apply statewide.

Thus, in addition to the fact that the proposed guidelines are presently in draft form only, even after adoption, lead agencies, such as the County of San Diego, will have up to 2 years to conform to the requirements of the new guidelines.

As to the CEQA Guidelines Appendix G criteria, as proposed, Section XVI, Transportation, would read as follows (new criterion shown in underline):

XVI. Transportation – Would the project:

a) Conflict with a plan, ordinance or policy addressing the safety or performance of the circulation system, including transit, roadways, bicycle lanes and pedestrian paths (except for automobile level of service)?

b) Cause substantial additional vehicle miles traveled (per capita, per service population, or other appropriate efficiency measure)?

c) Substantially induce additional automobile travel by increasing physical roadway capacity in congested areas (i.e., by adding new mixed-flow lanes) or by adding new roadways to the network?

d) Result in inadequate emergency access?

Lastly, as noted above, the *Draft Proposal* includes a *Technical Advisory on Evaluating Transportation Impacts in CEQA* (*Technical Advisory*). The *Technical Advisory* contains recommended methodologies for conducting a VMT analysis, along with recommended significance thresholds. In brief, the *Technical Advisory* provides that a residential component of a project would result in a significant traffic-related impact if the project's household VMT per capita is greater than 15 percent below the existing household VMT per capita. As to induced travel, the *Draft Proposal Technical Advisory* states that if a roadway project generates 2,075,220 VMT annually, the impact is significant.

Caltrans has anticipated that the "regulatory language changes to CEQA will be adopted in late 2017 by the Natural Resources Agency and that statewide implementation will occur in late 2019." Thus, in this "interim period" identified by Caltrans, it has released its *Local Development – Intergovernmental Review Program Interim Guidance* (revised November 9, 2016; *interim guidance*).

According to Caltrans, the purpose of its *interim guidance* "was to assist Caltrans staff with shifting focus away from vehicle delay and level of service … and towards VMT, including emphasis on appropriate transportation demand measures … and how best to address multimodal operational issues for transportation analysis within CEQA." Caltrans has identified its *interim guidance* as a "desk reference for Caltrans staff — a first step in evolving Caltrans [Local

Development, Intergovernmental Review] program in anticipation of SB 743 implementation." Further, Caltrans has stated it is committed to "referencing a future Governor's Office of Planning and Research … approved technical advisory when released along with the future approved changes to CEQA."

Importantly, Caltrans has stated that its *interim guidance* "should not be used or interpreted as a requirement in either the utilization of VMT, CEQA conformity, or the implementation of SB 743 by local land use authorities." Though Caltrans will continue to comment under CEQA, it also has clarified that its *interim guidance* "is not a policy document mandating the inclusion of VMT analysis, or the development of thresholds for VMT in corresponding mitigation requirements, but rather serves as a staff desk reference to evolve into a future world of SB 743 implementation and the evolving changes to CEQA's regulatory framework." In addition, Caltrans has alerted the County of San Diego it "will not be requiring [the County] to utilize VMT for the purposes of their CEQA determination and discretionary approval, but will continue to have an active role in recommending and providing guidance towards the implementation of SB 743 to local agencies and stakeholders in land development."

In summary, while not required by CEQA, this section presents an evaluation of the potential VMT-related impacts associated with the proposed project consistent with the methodology and significance thresholds recommended by OPR in its *Draft Proposal*.

This subsection presents an analysis of the project's vehicle miles traveled (VMT) based on draft guidance issued by the state Office of Planning and Research (OPR) pursuant to Senate Bill 743. As explained above, the OPR guidance is in draft form only, subject to further revisions and public comment, and is not expected to be adopted by the California Natural Resources Agency until later this year and, therefore, is not presently in effect. Nonetheless, while not legally required, this section presents an analysis of the potential VMT-related impacts associated with the proposed project consistent with the methodology and thresholds recommended in the draft OPR guidance.

As previously noted, the draft proposed guidelines do not require a specific methodology to be used when calculating VMT. Instead, the *Draft Proposal* states that "a lead agency should not confine its evaluation to its own political boundary," that "a lead agency may use models to estimate a project's vehicle miles traveled, and may revise those estimates to reflect professional judgment based on substantial evidence," and that "any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project." (Proposed CEQA Guidelines Section 15064.3(b)(4).) In essence, the *Draft Proposal* defers to a local agency's professional judgment, as supported by substantial evidence, when deciding how best to evaluate VMT, stating that "a

lead agency's evaluation of the vehicle miles traveled with a project is subject to a rule of reason." (*Ibid.*)

As with most other California counties and cities, the County of San Diego has not yet adopted methodologies for performing VMT analysis under SB 743 since the OPR *Draft Proposal* is not yet final nor has it been approved or adopted by the Natural Resources Agency. Therefore, in the absence of adopted County methodologies, the methodologies suggested in the OPR *Draft Proposal* are applied to the analysis presented in this section.

Proposed Appendix G Criterion (a)

As to proposed Appendix G criterion (a), would the project "cause substantial additional vehicle miles traveled (per capita, per service population, or other appropriate efficiency measure)," the OPR *Draft Proposal* recommended methodology generally requires comparison of a project's VMT per capita with a threshold VMT. If the project VMT per capita exceeds the threshold, a significant impact is identified; if the project VMT is below the threshold, impacts are less than significant. Based on the OPR *Draft Proposal Technical Advisory* the threshold may be calculated by first determining a "baseline," and then identifying the number 15 percent below the baseline to arrive at the OPR recommended significance threshold. (Draft Proposal, p. III:20.)

One point worth noting at the outset. As noted above, the methodology utilized in the *Draft Proposal* and the analysis presented here is based on the metric "VMT per capita," which is the average number of miles traveled by each person (i.e., per capita) during a specified time period. The VMT per capita utilized in the analysis of *residential* land uses is further specified as the "home-based automobile VMT per capita," which is the sum of all distances of all automobile trips per weekday originating from or destined for a residential land use (i.e., the trip crosses the home's driveway) within a defined area, divided by the population of the area. This metric is specific to the SB 743 VMT analysis and is to be distinguished from other metrics used elsewhere in the EIR, such as home-based VMT, total project VMT, or average trip length (Appendix R for further discussion of the various VMT-related metrics).

As to calculation of the two numbers essential to the analysis (baseline VMT per capita and project VMT per capita), within San Diego County, there are two primary sources for calculating these numbers: (i) the SANDAG regional travel demand model, or (ii) region/sub-region specific household survey data. In this case, because the SANDAG Series 12 regional travel demand model, which was used to generate total project VMT for the analysis of the project's impacts relative to air quality, greenhouse gas emissions, and energy, is not capable of isolating home-based automobile VMT per capita for either the project or the region, household survey data and the project trip generation as reported in the *Sierra Traffic Impact Analysis* (see EIR, Appendix R) were used to calculate the baseline VMT and project VMT.

2.13.10.2 Baseline VMT

In calculating the baseline VMT and corresponding significance threshold, two sources are available, both of which are utilized in the analysis presented here -- the SANDAG Regional average, and the North County East Sub-Region average:

1. *SANDAG Region Average Home-Based VMT/Capita*: The OPR *Draft Proposal* indicates that for a residential use in an unincorporated area, the suggested baseline is the regional average. This baseline is referred to here as Scenario 1. Per the OPR *Draft Proposal*, the Scenario 1 significance threshold is 15 percent below the regional baseline.
2. *North County East Sub-Region Average Home-Based VMT/Capita*: This baseline is based on a census-designated Major Statistical Area that includes the site of the proposed project, as well as the cities of Escondido, San Marcos, and Vista, and the unincorporated communities of Twin Oaks, Bonsall, Hidden Meadows, Valley Center, Fallbrook, and Rainbow. This baseline is referred to here as Scenario 2. Per the OPR *Draft Proposal*, the Scenario 2 significance threshold is 15 percent below the sub-regional baseline.

As previously explained, the OPR *Draft Proposal* does not require a specific methodology to be used when calculating VMT; rather, the *Draft Proposal* defers to a local agency's professional judgment supported by substantial evidence when deciding how best to model VMT.

While using a sub-regional area to establish baseline values for home-based VMT per capita is not specified in the *Draft Proposal*, use of the North County East Sub-Region to determine existing VMT is presented here because the overall intent of SB 743 is to evaluate how a project would perform relative to existing proximate land uses. The larger SANDAG region is comprised of 18 cities and 107 towns and communities in the unincorporated area, with a land area over 4,500 square miles in size. As a result, travel characteristics vary widely across the region, as well as between individual cities and communities. In contrast, the North County East Sub-region represents a smaller geographic area that includes existing land uses proximate to the Site of the proposed project. Thus, the sub-region is more representative of existing land uses in the project area than is the larger SANDAG region.

For these reasons, application of the North County East Sub-Region home-based VMT per capita as the baseline to derive the significance threshold is consistent with the overall intent of SB 743 and the OPR *Draft Proposal*, which is to evaluate how a project would perform relative to existing proximate land uses. As such, use of the sub-region as compared to the entire SANDAG region provides a more accurate baseline against which to assess impacts since it results in a comparison to residential uses in a similar context. For additional details regarding the calculation of Baseline VMT per capita, please see Appendix R.

2.13.10.3 Project VMT per Capita

Project VMT per capita was calculated using several different inputs, including project trip rates and trip internalization based on Appendix R, trip purpose ratios based on Highway Research Program data, average external trip lengths based on California Household Travel Survey data, and the expected project population of 6,063 persons (2,135 dwelling units x 2.84 residents per household). For additional details regarding the calculation of project VMT per capita, please see EIR Appendix R.

The OPR *Draft Proposal* suggests that the VMT analysis be conducted for each individual land use within a project. In this instance, the proposed project includes four general categories of land uses relevant to the SB 743 VMT analysis: residential, retail/commercial, school, and parks. The effect of each land use relative to VMT is analyzed below.

Proposed Appendix G Criterion (b)

As to proposed criterion (b), would the project "substantially induce additional automobile travel by increasing physical roadway capacity in congested areas (i.e., by adding new mixed-flow lanes) or by adding new roadways to the network," an elasticity-based analysis technique described in the OPR *Draft Proposal* is used to analyze these induced travel effects.

The elasticity-based analysis is derived directly from academic research on the topic of induced travel and estimates the percent change in baseline (i.e., existing) VMT based on the percent change in lane-miles associated with the project. The elasticity data includes short-term and long-term effects. Because the elasticity relationship is one where a positive increase in lane miles will always result in a positive increase in VMT, the methodology is not fully sensitive to travel time and related distance changes. For example, a new bridge or interchange could shorten both the distance and time for existing trips, thereby reducing VMT, but the elasticity method would only be sensitive to how many lane-miles were added and, as a result, report a positive increase; as such, this methodology may, depending on the circumstances, overstate induced VMT.

The impact analysis presented below separately addresses potential impacts relative to the VMT generated by the proposed project as well as induced travel VMT resulting from related road improvements.

2.13.10.4 Project VMT Analysis

As noted above, the *Draft Proposal* would add the following criterion to CEQA Guidelines Appendix G:

> Would the project cause substantial additional vehicle miles traveled (per capita, per service population, or other appropriate efficiency measure)?

As previously explained, the proposed project includes four major land use types relevant to the SB 743 analysis: residential, retail/commercial, school, and parks/open space. Analysis of the potential impacts associated with the VMT that would be generated by each land use type follows below.

Residential Uses

Significance Threshold

The analysis of residential uses addresses each of the three different housing types that would be developed as part of the proposed project: single-family, multi-family, and age-qualified. Further, as described above, two baseline scenarios are included in this analysis: the SANDAG region average automobile home-based VMT per capita and the North County East Sub-region average automobile home-based VMT per capita. Table 2.13-22, Residential Daily Home-Based Automobile VMT Per Capita Baseline and Threshold Values, illustrates the residential daily home-based automobile VMT per capita baseline and the corresponding recommended significance thresholds based on the OPR *Draft Proposal.*

Impact Analysis

Table 2.13-23, Residential Daily Home-Based Automobile VMT Per Capita, summarizes the project's home-based automobile VMT per capita for each of the three residential land use types (single-family, multi-family, and age-qualified), along with the corresponding significance thresholds under Scenarios 1 (region-wide) and 2 (sub-region). Detailed calculations are provided in Appendix R. Table 2.13-23 also illustrates whether project VMT per capita would exceed the applicable thresholds, thereby resulting in a potentially significant impact.

As shown in Table 2.13-23, the project VMT per capita for the residential land use types would exceed the corresponding thresholds for each residential type under Scenarios 1 and 2. Specifically, under Scenario 1 (region-wide threshold), project VMT would exceed the thresholds by approximately 17 percent for single-family and 30 percent for multi-family and age-qualified residences. Under Scenario 2 (sub-region threshold), absent VMT-reduction strategies, project VMT capita would exceed the corresponding thresholds for single-family

residential types by approximately 6 percent, and by approximately 4 percent for multi-family and age-qualified residential. As a result, based on the recommended thresholds provided in the OPR *Draft Proposal*, the proposed project would result in a potentially significant impact related to home-based automobile VMT per capita for all residential land use types when compared to either the SANDAG region-wide threshold or the North County East sub-region threshold.

Implementation of the TDM Program (PDF- 1 through PDF- 20) would result in a 6.1 percent reduction in project VMT attributable to residential land uses. Table 2.13-24, Home-Based Automobile VMT per Capita with TDM Program, summarizes the project's residential home-based automobile VMT per capita with the 6.1 percent reduction for implementation of the TDM Program applied. The table also shows the corresponding significance thresholds under Scenario 1 (region-wide) and Scenario 2 (sub-region).

As shown on Table 2.13-24, with implementation of the TDM Program, project home-based automobile VMT per capita for the residential uses would continue to exceed the corresponding thresholds for all residential types under the region-wide scenario, Scenario 1. Specifically, under Scenario 1, project home-based automobile VMT would exceed the region-wide thresholds by approximately 5 percent for single-family and approximately 16 percent for multi-family and age-qualified residences, and would result in a **potentially significant impact (Impact TR-46)**. However, project home-based automobile VMT per capita for all three residential use types with implementation of the TDM Program would be *lower* than the existing region-wide average. Further, under Scenario 2, project home-based automobile VMT per capita for all residential types would be below the corresponding thresholds with implementation of the TDM Program. Therefore, using the sub-regional thresholds, impacts associated with project home-based automobile VMT per capita for all residential types would be reduced to **less than significant**.

Retail/Commercial Uses

Methodology

The proposed project includes 81,000 square feet of commercial/retail uses. While the OPR *Draft Proposal* recommends that VMT analysis be performed for all commercial/retail centers that are greater than 50,000 square feet in size, OPR does not provide a recommended methodology. Because one of the reasons the retail/commercial land uses are included in the project is to reduce off-site residential trips by providing retail opportunities within the project Site, the transportation engineer determined that the effect that these retail/commercial land uses would have on the project's home-based automobile VMT per capita would be evaluated for the analysis.

To calculate that effect, the project home-based automobile VMT per capita for all residential types, which is a weighted average of 21.54 VMT per capita,[2] is compared to the home-based automobile VMT per capita result *without* the retail/commercial uses. The analysis is intended to address whether the retail/commercial uses would result in an increase or decrease in the project's home-based automobile VMT per capita. That is, without the retail/commercial uses, would the project's home-based automobile VMT per capita be higher because a portion of the residential home-based other trips that are internal to the project Site would now need to travel farther away to satisfy retail/commercial needs. An increase in home-based VMT would require further analysis to determine whether the increase is a significant impact, while a decrease in VMT would indicate a less than significant impact.

Impact Analysis

The resulting analysis determined that if the project did not include a retail/commercial component, the residential home-based automobile VMT per capita would be 23.24 as compared to 21.54 with the retail/commercial uses. This number is calculated by eliminating all internal retail trips and re-assigning those trips as external retail trips.

Because external trips have a longer trip length than internal trips, the resulting home-based automobile VMT per capita increases with elimination of the retail uses. Specifically, if the retail/commercial uses were removed from the project, the residential home-based automobile VMT per capita would increase from 21.54 to 23.24 miles, an increase of approximately 8 percent. Therefore, the project's retail/commercial uses would have a beneficial effect on the project's residential home-based automobile VMT per capita and impacts related to retail/commercial uses would be **less than significant**. Additionally, by providing a closer place to shop for the communities of Twin Oaks, Hidden Meadows, Champagne Village, and the Lawrence Welk Resorts, the project's retail/commercial uses also would reduce VMT for these existing communities.

School Uses

Methodology

The proposed project includes a school site that is expected to serve approximately 555 students. The OPR *Draft Proposal* does not provide guidance for evaluating VMT associated with schools for SB 743 purposes. Because one of the reasons the school is included within the project Site is to reduce off-site residential trips, the transportation engineer determined that the effect that the

[2] The weighted average home-based automobile VMT per capita for all residential types is calculated by summing the Project's total home-based VMT for each residential land use type and dividing the resulting amount by the total Project population. 124,016 [Project total home-based automobile VMT] / 6,603 [Project population] = 21.54 VMT/capita. See Appendix R (F&P SB 743 Analysis) for additional calculation details.

school would have on the project's home-based automobile VMT per capita would be evaluated for the analysis.

To calculate that effect, the project home-based automobile VMT per capita for all residential types, the weighted average of 21.54 VMT per capita, is compared to the home-based automobile VMT per capita without the school. The analysis is intended to address whether the school would result in an increase or decrease in the project's home-based automobile VMT per capita. That is, without the school, would the project's home-based automobile VMT per capita be higher because a portion of the residential home-based other trips that are internal to the project Site would need to travel farther away to satisfy school trips. An increase in home-based VMT would require further analysis to determine whether the increase is a significant impact, while a decrease in VMT would indicate a less than significant impact.

Impact Analysis

The resulting analysis determined that if the school component were not constructed as part of the project, the residential home-based automobile VMT per capita would be 21.88 as compared to 21.54 with the school. This number is calculated by eliminating all internal school trips and assigning those trips as external school trips. Because external trips have a longer trip length than internal trips, the resulting home-based automobile VMT per capita increases with elimination of the school. Thus, if the school was removed from the project, the residential home-based automobile VMT per capita would increase from 21.54 to 21.88 miles, a VMT per capita increase of approximately 2 percent. Therefore, the school would have a beneficial effect on the project's residential home-based automobile VMT per capita and impacts related to school uses would be **less than significant**.

Park Uses

Methodology

The proposed project includes approximately 37 acres of parks. The OPR *Draft Proposal* does not provide guidance related to evaluating VMT associated with parks for SB 743 purposes. Therefore, because one of the reasons the parks are included within the project Site is to reduce off-site residential trips related to park use, the transportation engineer determined, as with the retail/commercial and school uses, that the effect the parks would have on the project's home-based automobile VMT per capita is evaluated for the analysis.

To calculate the effect, the project home-based automobile VMT per capita for all residential types, the weighted average of 21.54 VMT per capita, is compared to the home-based automobile VMT per capita without the parks. The analysis is intended to address whether the parks would result in an increase or decrease in the project's home-based automobile VMT per

capita. That is, without the parks, would the project's home-based automobile VMT per capita be higher because a portion of the residential home-based other trips that are internal to the project Site would now need to travel farther away to satisfy recreation needs. An increase in home-based VMT would require further analysis to determine whether the increase is a significant impact, while a decrease in VMT would indicate a less than significant impact.

Impact Analysis

The resulting analysis determined that if the project did not include a park component, the residential home-based automobile VMT per capita would be 22.17 as compared to 21.54 with the parks. This number is calculated by eliminating all internal park trips and assigning those trips as external park/recreation trips. Because external trips have a longer trip length than internal trips, the resulting home-based automobile VMT per capita increases with elimination of the parks. Thus, if the parks were removed from the project, the residential home-based automobile VMT per capita would increase from 21.54 to 22.17 miles, a VMT per capita increase of approximately 3 percent. Therefore, the parks have a beneficial effect on the project's residential home-based automobile VMT per capita and impacts related to park uses would be **less than significant**.

2.13.10.5 Induced Travel VMT Analysis

The OPR *Draft Proposal* recommends that a VMT analysis be conducted for roadway capacity expansion projects and that the analysis address potential induced travel effects. Specifically, proposed revised Appendix G asks "Would the project substantially induce additional automobile travel by increasing physical roadway capacity in congested areas (i.e., by adding new mixed-flow lanes) or by adding new roadways to the network?"

The proposed project includes the widening of Deer Springs Road/Twin Oaks Valley Road, a capacity expansion improvement. Additionally, Caltrans presently is working with the applicant through a separate project study process in connection with the design and construction of improvements to the I-15/Deer Springs Road ~~i~~Interchange, to be fully funded by the project applicant. These improvements would provide expanded capacity and, therefore, are the focus of the analysis.

Baseline

Elasticity data exists for short-term and long-term conditions so that a range of VMT changes can be estimated based on the project's alterations to the baseline roadway network. For purposes of this analysis, the baseline roadway network includes all public roadway lane-miles in San Diego County as measured in the *2014 California Public Road Data*, Statistical Information derived from the Highway Performance Monitoring System, Caltrans. 2014 is the latest year for

available data. For San Diego County, the total maintained lane-miles was 10,370.11, with a total daily VMT of 77,484,940.

Project Roadway Capacity Expansion VMT

The Deer Springs Road/Twin Oaks Valley Road widening, and the I-15/Deer Springs Road interchange expansion to be undertaken by Caltrans, will add a combined 6.04 publicly maintained lane-miles within San Diego County.

The projected change in VMT related to the increased lane-miles, based on the OPR elasticity method, is shown in Table 2.13-25, Roadway Capacity Expansion Projects Daily VMT. As shown, short-term daily VMT increases would range from 4,513 to 27,078, and the long-term VMT increase under this method would be 46,484.

Near-Term Analysis

Determining whether the increase in VMT reported in Table 2.13-25 constitutes a significant impact requires consideration of a number of factors. The first factor to consider is whether, upon opening, the roadway capacity expansion improvement projects would generate new VMT. Per the OPR *Draft Proposal*, if a roadway project generates 2,075,220 VMT annually, the impact is significant.

Based on the information presented in Table 2.13-25 the capacity expansion improvements would generate 1,647,245 to 9,883,470 VMT annually (daily VMT multiplied by 365 days) under the short-term scenario. Therefore, under the short-term, low range estimate (1,647,245), induced VMT would be below the 2,075,220 threshold and impacts would be less than significant. However, under the high end short-term range VMT estimate (9,883,470), VMT would exceed the threshold (2,075,220). As noted above, the project includes implementation of a TDM Program that would implement all feasible TDM strategies. However, implementation of these strategies would only reduce the residential component of the project's VMT by 6.1 percent, to a range of approximately 1,546,763 (1,647,763 less 6.1 percent) to 9,280,578 (9,883,470 less 6.1 percent) under the Near Term scenario. Therefore, the near term impact would be a **potentially significant impact (Impact TR-47).**

Long-Term Analysis

The OPR *Draft Proposal* provides that the analysis can be conducted in either of two ways, either by evaluating the improvement's cumulative long-term induced VMT, or by evaluating the improvement's consistency with the 2015 Regional Transportation Plan/Sustainable Communities Strategy (2015 RTP/SCS) – if the subject improvement is included in the 2015 RTP/SCS (which is designed to achieve satisfactory environmental conditions for air quality and

greenhouse gas emissions) and the regional travel model, no further analysis is required and the impact is considered less than significant.

Under the first method, as shown on Table 2.13-27, the roadway capacity expansion would generate 16,966,660 VMT under the long-term scenario. With TDM measures, VMT would be reduced by 6.1 percent to 15,931,694. Therefore, under this method, the long-term estimate would exceed the threshold (2,075,220) and the impact would be a **potentially significant impact significant (Impact TR-48)**.

Under the second method, the focus is whether the subject roadway capacity expansion is included in the 2015 RTP/SCS prepared by SANDAG. Through the 2015 RTP/SCS process, SANDAG demonstrates the region's ability to achieve federal air quality conformity and meet state greenhouse gas reduction targets. In this case, the subject roadway capacity expansion improvement to be undertaken by the project (Deer Springs Road/Twin Oaks Valley Road widening) is included in the County General Plan, incorporated into the SANDAG 2015 RTP/SCS, and included in the SANDAG Series 12 and Series 13 regional travel demand models for horizon year 2020 and beyond. As to the I-15 interchange improvements to be undertaken and fully funded by the project applicant, with oversight and approval by Caltrans, because I-15 is a Caltrans facility under the jurisdiction of Caltrans, the County General Plan does not include improvements to the I-15/Deer Springs Road interchange, although the improvements are identified in the Caltrans *I-15 Transportation Concept Summary* (June 2012) and the Caltrans *Ramp Metering Development Plan* (May 2016). Additionally, the I-15/Deer Springs Road ~~i~~Interchange improvements are included in the County's *Transportation Impact Fee* (TIF)/*Transportation Needs Assessment Report* (2012) as a necessary improvement that will be funded partially by development.

Therefore, under this methodology, since the I-15/Deer Springs Road interchange widening is included in the Caltrans *I-15 Transportation Concept Summary*, *Ramp Metering Development Plan*, and County's TIF program, and the Deer Springs Road/Twin Oaks Valley Road widening is included in the County General Plan, referenced in the 2015 RTP/SCS, and included in the SANDAG Series 12 and 13 regional travel demand models, impacts associated with induced demand are **less than significant**.

2.13.11 Significance of Impacts Prior to Mitigation

2.13.11.1 Direct Impacts

As described in Section 2.13.9, under the Existing + Project Scenario, the proposed project would have significant direct impacts to the following intersections and street segments:

Intersections

- Deer Springs Road/I-15 NB Ramps **(Impact TR-1A)**
- Deer Springs Road/I-15 SB Ramps **(Impact TR-1A)**
- Deer Springs Road/Mesa Rock Road **(Impact TR-2)**
- Deer Springs Road/Sarver Lane **(Impact TR-3)**
- Twin Oaks Valley Road/Deer Springs Road **(Impact TR-4)**
- Twin Oaks Valley Road/Buena Creek Road **(Impact TR-5)**
- Buena Creek Road/Monte Vista Drive **(Impact TR-6)**
- Buena Creek Road/S. Santa Fe Avenue **(Impact TR-7)**
- Robelini Drive/S. Santa Fe Avenue (**Impact TR-8**)

Street Segments

- **Deer Springs Road:** Mesa Rock Road to I-15 SB Ramps **(Impact TR-9)**
- **Deer Springs Road:** Sarver Lane to Mesa Rock Road **(Impact TR-10)**
- **Deer Springs Road:** Twin Oaks Valley Road to Sarver Lane **(Impact TR-11)**
- **Twin Oaks Valley Rd.:** Deer Springs Rd. to Buena Creek Rd. **(Impact TR-12)**
- **Twin Oaks Valley Road:** Buena Creek Road to Cassou Road **(Impact TR-13)**
- **Buena Creek Rd.:** Monte Vista Dr. to Twin Oaks Valley Rd. **(Impact TR-14)**
- **Buena Creek Road:** S. Santa Fe Ave. to Monte Vista Dr. **(Impact TR-15)**
- **S. Santa Fe Avenue:** Robelini Drive to Buena Creek Road **(Impact TR-16)**
- **Robelini Drive:** Sycamore Avenue to S. Santa Fe Avenue **(Impact TR-17)**

Freeway Segments

- I-15: Deer Springs Road to Pomerado Road (**Impact TR-18**)

2.13.11.2 Cumulative Impacts

Under both Existing + Project + Cumulative Projects With and Without the Mountain Meadow Road Connection scenarios, the project would result in significant cumulative impacts of the following intersections, street segments, and freeway mainline segments:

Intersections

- Deer Springs Road/I-15 NB Ramps **(Impact TR-19A)**
- Deer Springs Road/I-15 SB Ramps **(Impact TR-19B)**
- Deer Springs Road/Mesa Rock Road **(Impact TR-20)**
- Deer Springs Road/Sarver Lane **(Impact TR-21)**
- Deer Springs Road/Sycamore Road **(Impact TR-22)**
- Twin Oaks Valley Road/Deer Springs Road **(Impact TR-23)**
- Twin Oaks Valley Road/Buena Creek Road **(Impact TR-24)**
- Twin Oaks Valley Road/San Marcos Boulevard **(Impact TR-25)**
- Buena Creek Road/S. Santa Fe Avenue **(Impact TR-26)**
- Robelini Drive/S. Santa Fe Avenue (**Impact TR-27**)
- Buena Creek Road/Monte Vista Drive **(Impact TR-28)**

Street Segments

- **Deer Springs Road:** Mesa Rock Road to I-15 SB Ramps **(Impact TR-29)**
- **Deer Springs Road:** Sarver Lane to Mesa Rock Road **(Impact TR-30)**
- **Deer Springs Road:** Twin Oaks Valley Road to Sarver Lane **(Impact TR-31)**
- **Twin Oaks Valley Rd.:** Deer Springs Rd. to Buena Creek Rd. **(Impact TR-32)**
- **Twin Oaks Valley Road:** Buena Creek Road to Cassou Road **(Impact TR-33)**
- **Twin Oaks Valley Road:** Richmar Road to San Marcos Boulevard **(Impact TR-34)**
- **Buena Creek Road:** Monte Vista Drive to Twin Oaks Valley Road **(Impact TR-35)**
- **Buena Creek Road:** S. Santa Fe Avenue to Monte Vista Drive **(Impact TR-36)**
- **Monte Vista Drive:** Foothill Drive to Buena Creek Road **(Impact TR-37)**
- **S. Santa Fe Avenue:** Robelini Drive to Buena Creek Road **(Impact TR-38)**
- **Robelini Drive:** Sycamore Avenue to S. Santa Fe Avenue **(Impact TR-39)**

- **Gopher Canyon Road:** Little Gopher Canyon Road to I-15 Ramps **(Impact TR-40)**

Freeway Segments

- I-15: Old Highway 395 to Pomerado Road (**Impact TR-41**)
- SR 78: Mar Vista Road to Sycamore Avenue (**Impact TR-42**)

Under the City of San Marcos Horizon Year 2035, Full Road Network Buildout scenarios, the project would result in a significant cumulative impact to the following street segment:

- **Twin Oaks Valley Road:** Deer Springs Road to Buena Creek Road (**Impact TR-43**)

Under the City of San Marcos Horizon Year 2035, Modified Road Network Buildout scenarios, the project would result in significant cumulative impacts to the following intersection and street segment:

- Twin Oaks Valley Road/Richmar Avenue (**Impact TR-44**)
- **Twin Oaks Valley Road:** Deer Springs Road to Buena Creek Road (**Impact TR-45**)

2.13.11.3 VMT Impacts

The project would result in the following potentially significant VMT impacts:

- **Project Home-Based VMT per Capita for Residential Uses:** With application of a region-wide threshold (Scenario 1), the project would result in a **potentially significant impact (Impact TR-46)**. However, with application of a subregional threshold (Scenario 2), the project would result in a less than significant impact.
- **Travel Induced VMT, Near-Term Scenario:** The induced VMT as a result of the project's proposed off-Site road improvements would exceed the draft OPR-recommended threshold and, therefore, would result in a **potentially significant impact (Impact TR-47)** in the near-term scenario.
- **Travel Induced VMT, Long-Term Scenario:** The induced VMT as a result of the project's proposed off-Site road improvements would exceed the draft OPR-recommended threshold and, therefore, would result in a **potentially significant impact (Impact TR-48)** in the long-term scenario. However, the project's proposed road improvements are consistent with the County's General Plan Mobility Element, which is consistent with SANDAG's 2015 "San Diego Forward: The Regional Plan", a Regional Transportation Plan/Sustainable Communities Strategy (2015 RTP/SCS) for the San Diego Region. Therefore, in this regard, impacts would be considered less than significant.

2.13.12 Mitigation Measures

This section identifies the mitigation measures, including road improvements, necessary to mitigate the project's identified significant impacts. The timing of implementing each mitigation measure is based on the number of "Equivalent Dwelling Units" (EDU) that would trigger the significant impact.

For each significant impact that would result in the City of San Marcos and/or Caltrans jurisdictions, implementation of the recommended improvements is outside the jurisdiction and control of the County of San Diego. However, in the case of San Marcos, the project applicant is expected to gain the concurrence and approval of the City of San Marcos to build and contribute funding as mitigation for the identified improvements to Twin Oaks Valley Road and associated intersections, thereby resulting in mitigation of the project's direct and cumulative impacts in San Marcos to less than significant.

In the case of Caltrans, as previously stated in Section 2.13.1 above, the planning, environmental review, design, and construction of the I-15/Deer Springs Road interchange are subject to a three-phase process that will involve separate CEQA/NEPA review under the jurisdiction of Caltrans. At the conclusion of that process, the project applicant anticipates approval from Caltrans to build the upgraded or improved ~~new I~~interchange. Construction of the improved ~~a new I~~interchange would mitigate the project's impacts at the interchange to less than significant.

Nevertheless, while the project applicant is working with the City of San Marcos and Caltrans towards implementation of those road improvements necessary to mitigate the project's identified significant direct and cumulative impacts within the respective jurisdiction, because the County does not have jurisdiction and control over the construction of these improvements, the County cannot be assured of their timely and effective implementation. As such, for purposes of this EIR, significant impacts within the City of San Marcos and Caltrans jurisdictions are considered **significant and unavoidable**.

2.13.12.1 Direct Impacts

Intersections

Impacts TR-1A and TR-1B: Deer Springs Road Intersections with I-15 NB and SB Ramps

The following mitigation measure would mitigate these impacts to the Deer Springs Road/I-15 NB Ramps and Deer Springs Road/I-15 SB Ramps to less than significant:

M-TR-1 Prior to the issuance of the certificate of occupancy for the 370th EDU, ~~T~~the project applicant, or its designee, shall coordinate with the California Department

of Transportation (Caltrans) to implement ~~improve~~ the Interstate 15/Deer Springs Road ~~i~~Interchange improvements ~~to implement the lane configuration~~ ultimately selected by Caltrans as part of the Caltrans ~~subject to their~~ PID, PA&ED, and PS&E processes required for the planning, environmental review, design, and construction of the upgraded or improved ~~new i~~Interchange.

Subject to Caltrans concurrence, the Interchange improvements would include ramp meters, acceleration/deceleration lanes, and improvements to the existing park-and-ride facility. Newland Sierra shall provide full funding for the construction of all Interchange improvements, including costs incurred by Caltrans with regard to the associated planning, environmental review, and design of such improvements, with Caltrans serving as the lead agency for the joint environmental documents required under CEQA and NEPA.

As stated previously, the project applicant has initiated, and is fully funding, the~~is three~~ three-phase PID, PA&ED, and PS&E process with Caltrans. At the conclusion of this process, the project applicant will provide full funding to build the necessary ~~i~~Interchange improvements. Thus, the Interchange improvements would be a privately-funded project with Caltrans serving as the lead agency with regard to preparation of the joint environmental document under CEQA and NEPA. However, because implementation of the improvements is not within the County of San Diego's jurisdiction and control, for purposes of this EIR, the impacts are considered **significant and unavoidable**.

As described above, the I-15 ~~i~~Interchange improvements constitute an off-site mitigation measure improvement of the project. As the lead agency for the I-15 interchange improvement project, Caltrans can and should prepare, or cause to be prepared, a traffic and transportation assessment as part of the project applicant's privately-funded Interchange project, in combination with the analysis provided in this EIR. In addition, the Caltrans interchange improvements may require staged temporary lane closures and detouring, and Caltrans can and should ensure standard measures to minimize such temporary effects are implemented.

Impact TR-2: Deer Springs Road/Mesa Rock Road Intersection

The following mitigation measure would mitigate the identified significant impact to this intersection to less than significant:

M-TR-2 Prior to the issuance of the certificate of occupancy for the 900th equivalent dwelling unit (EDU), the project applicant, or its designee, shall reconstruct the Deer Springs Road/Mesa Rock Road intersection to provide the following intersection configuration.

- Southbound – Two left-turn lanes, one shared through/right lane

- Westbound – One right-turn lane, one shared through/right lane, one through lane, and one left-turn lane
- Northbound – One through lane, one right lane and one left-turn lane
- Eastbound – Two left-turn lanes, one through lane, and one through/right lane

Impact TR-3: Deer Springs Road/Sarver Lane Intersection

The following mitigation measure would mitigate the identified significant impact to this intersection to less than significant:

M-TR-3 Prior to the issuance of the certificate of occupancy for the 350th equivalent dwelling unit, the project applicant, or its designee, shall reconstruct the Deer Springs Road/Sarver Lane intersection to provide the following intersection configuration:

- Southbound – One left-turn lane and one right-turn lane
- Westbound – One shared through/right lane and one through lane
- Eastbound – Two through lanes and one left-turn lane

Impact TR-4: Twin Oaks Valley Road/Deer Springs Road Intersection

The following mitigation measure would mitigate the identified significant impact to this intersection to less than significant:

M-TR-4 Prior to the issuance of the certificate of occupancy for the 280th equivalent dwelling unit, the project applicant, or its designee, shall reconstruct the Twin Oaks Valley Road/Deer Springs Road intersection to provide the following intersection configuration:

- Southbound – Two through lanes and one right-turn lane
- Northbound – One left-turn lane and two through lanes
- Eastbound – One left-turn lane and one right-turn lane

With implementation of the identified improvements, this impact would be mitigated to less than significant. However, as the timing and implementation of these improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, for the purposes of this EIR, this impact is considered **significant and unavoidable**.

Impact TR-5: Twin Oaks Valley Road/Buena Creek Road Intersection

The following mitigation measure would mitigate the identified significant impact to this intersection to less than significant**:**

M-TR-5 Prior to the issuance of the certificate of occupancy for the 80th equivalent dwelling unit, the project applicant, or its designee, shall reconstruct the Twin Oaks Valley Road/Buena Creek Road intersection to provide the following intersection configuration:

- Southbound – One left-turn lane, two through lanes, and one right-turn lane
- Westbound – One shared left/through/right lane
- Northbound – One left-turn lane, one through lane, and one shared through/right lane
- Eastbound – Two left-turn lanes and one shared through/right lane

With implementation of the identified improvements, the impacts would be mitigated to less than significant. However, as the timing and implementation of these improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, for the purposes of this EIR, this impact is considered **significant and unavoidable**.

Impact TR-6: Buena Creek Road/Monte Vista Drive Intersection

The following mitigation measure would mitigate the identified significant impact to this intersection to **less than significant:**

M-TR-6 Prior to the issuance of the certificate of occupancy for the 165th equivalent dwelling unit, the project applicant, or its designee, shall implement one of the following mitigation options:

1. provide a traffic signal and the following lane configuration improvements at the intersection of Buena Creek Road/Monte Vista Drive:
   - Southbound – One shared left/right turn lane
   - Westbound – One through lane, and one right-turn lane with right-turn-overlap
   - Eastbound – One left-turn lane, and one through lane
2. Build a roundabout at this intersection.

Impact TR-7: Buena Creek Road/S. Santa Fe Avenue Intersection

The following mitigation measure would mitigate the identified significant impact to this intersection **(Impact TR-7)** to **less than significant:**

M-TR-7 Prior to the issuance of the certificate of occupancy for the 273th equivalent dwelling unit, the project applicant, or its designee, shall improve the Buena Creek Road/ S. Santa Fe Avenue intersection to provide dedicated right and left turn lanes on southbound Buena Creek Road. As the S. Santa Fe Avenue intersections with Buena Creek Road and Robelini Drive operate under a single traffic controller, as additional mitigation, the signal timing plan would be modified and the intersection signal equipment would be upgraded.

Impact TR-8: Robelini Drive/S. Santa Fe Avenue Intersection

The impact to this intersection would be mitigated by adding receiving lanes on each side of S. Santa Fe Avenue. A detailed review of the constraints to provide additional lanes at the intersection was conducted. These improvements would require widening S. Santa Fe Avenue where right-of-way does not exist and significant impacts to private property would result to acquire the necessary right-of-way. The increase in volume at this intersection due to the project is approximately eight percent (8%). Therefore, the required improvements would not be proportional to the level of impact the project has at this intersection, which is located over 5 miles from the Project site. Based on these factors, improvements at the Robelini Drive/S. Santa Fe Avenue intersection are considered infeasible.

It should be noted that the S. Santa Fe Avenue intersections with Buena Creek Road and Robelini Drive operate under a single traffic controller. The improvements at the Buena Creek Road/S. Santa Fe Avenue intersection identified above in Mitigation Measure **M-TR-7** would partially mitigate the project's impacts to the Robelini Drive/S. Santa Fe Avenue intersection, however, **M-TR-7** would not fully mitigate the impact identified herein. Therefore, this impact to the Robelini Drive/S. Santa Fe Avenue intersection is considered **significant and unavoidable**.

Street Segments

Impact TR-9: Deer Springs Road: Mesa Rock Road to I-15 SB Ramps

The following mitigation measure would mitigate the identified significant impacts to this segment of Deer Springs Road to less than significant:

M-TR-8 Prior to the issuance of the certificate of occupancy for the 24th equivalent dwelling unit, the project applicant, or its designee, shall widen the segment of Deer Springs Road between Mesa Rock Road and I-15 to San Diego County 4.1A

Major Road standards, and to be consistent with the requirements set forth in the Caltrans Project Study Report prepared for the Deer Springs Road I-15 interchange improvements.

As stated in Section 2.13.1 of this EIR, the project applicant presently is coordinating with Caltrans on the preparation of a Project Study Report-Project Development Support (PSR-PDS) document for the design and ultimate construction of improvements at the I-15/ Deer Springs Road interchange that, once implemented, would mitigate the Project's identified significant impacts. As part of that coordination, the Project applicant will construct the necessary improvements. The improvements required to mitigate the project's impacts to this segment of Deer Springs Road would be done in coordination with the planning and construction of the upgraded or improved ~~new~~ I~~i~~nterchange. With implementation of these improvements, this impact would be mitigated to less than significant.

However, as the timing and implementation of these improvements by Newland Sierra are partially under the jurisdiction and control of Caltrans and, thereby, subject to their concurrence and approval, for the purposes of this EIR, this impact is considered **significant and unavoidable.**

Impact TR-10: Deer Springs Road: Sarver Lane to Mesa Rock Road

Two mitigation options are proposed for this impact to this segment of Deer Springs Road, Option A and Option B (refer to Section 2.13.1 above). As such, the following mitigation measure would mitigate the identified significant impacts to the segment of Deer Springs Road between Sarver Lane and Mesa Rock Road**:**

M-TR-9 If Option A is approved, prior to the issuance of the certificate of occupancy for the 58th EDU, the Project applicant, or its designee, shall widen Deer Springs Road between Sarver Lane and Mesa Rock Road to a San Diego County 2.1B Community Collector with a two-way center turn lane standards.

Or,

If Option B is approved, prior to the issuance of the certificate of occupancy for the 58th EDU, the Project applicant, or its designee, shall widen Deer Springs Road to San Diego County 4.1B Major Road standards between Sarver Lane and Mesa Rock Road.

Under Option A, this significant impact would not be fully mitigated; the impact would remain **significant and unavoidable.** Under Option B, the impact would be mitigated to **less than significant**.

Impact TR-11: Deer Springs Road: Twin Oaks Valley Road to Sarver Lane

The following mitigation measure would mitigate the identified significant impacts to this segment of Deer Springs Road to less than significant:

M-TR-10 Prior to the issuance of the certificate of occupancy for the 40th equivalent dwelling unit, the project applicant, or its designee, shall widen the segment of Deer Springs Road between Twin Oaks Valley Road and the City of San Marcos (City) limits to City four-lane major arterial standards, and shall widen the segment between the San Marcos City Limits to Sarver Lane to the County's 4.1A Major Road standards.

The improvements to the Deer Springs Road section within San Diego County will mitigate the corresponding impact to less than significant. As to the segment within the City of San Marcos, with implementation of these improvements, this impact would be mitigated to less than significant. However, as the timing and implementation of the improvements to this segment are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, for the purposes of this EIR, these impacts are considered **significant and unavoidable.**

Impact TR-12: Twin Oaks Valley Road: Deer Springs Road to Buena Creek Road

The following mitigation measure would mitigate the identified significant impact to this segment of Twin Oaks Valley Road to less than significant:

M-TR-11 Prior to the issuance of the certificate of occupancy for the 41st EDU, the project applicant, or its designee, shall widen Twin Oaks Valley Road to City of San Marcos 4-Lane Major Arterial standards between Deer Springs Road and Buena Creek Road.

With implementation of the identified improvements, the impacts would be mitigated to less than significant. However, as the timing and implementation of these improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, for the purposes of this EIR, this impact is considered **significant and unavoidable.**

Impact TR-13: Twin Oaks Valley Road: Buena Creek Road to Cassou Road

The intersection improvements identified in Mitigation Measure **M-TR-5** would mitigate the identified significant impact to this segment of Twin Oaks Valley Road to less than significant. However, as the timing and implementation of these improvements are under the jurisdiction and

control of the City of San Marcos and, thereby, subject to their concurrence and approval, for the purposes of this EIR, this impact is considered **significant and unavoidable**.

Impact TR-14: Buena Creek Road: Monte Vista Drive to Twin Oaks Valley Road

The intersection improvements identified in Mitigation Measures **M-TR-5 and M-TR-6** would mitigate the identified significant impact to this segment of Buena Creek Road to less than significant. However, as the timing and implementation of the Twin Oaks Valley Road/ Buena Creek Road intersection improvements (**M-TR-5**) is under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, for the purposes of this EIR, this impact is considered **significant and unavoidable**.

Impact TR-15: Buena Creek Road: S. Santa Fe Avenue to Monte Vista Drive

Mitigation measures **M-TR-6** and **M-TR-7** would mitigate the identified significant impacts to this segment of Buena Creek Road to **less than significant**.

Impact TR-16: S. Santa Fe Avenue: Robelini Drive to Buena Creek Road

Mitigation of this impact to less than significant would require adding a second lane along each side of S. Santa Fe Avenue (refer to **Impact TR-8**). As stated above, a review of the right-of-way constraints along this section of S. Santa Fe Avenue indicates widening the road to add lanes would result in significant impacts to private property. In addition, the increase in volume on S. Santa Fe Avenue due to the project is less than 13%. Therefore, the widening of S. Santa Fe Avenue, which is over 5 miles from the project Site, is not proportional to the project's impact.

It should be noted that the S. Santa Fe Avenue intersections with Buena Creek Road and Robelini Drive operate under a single traffic controller. The improvements at the Buena Creek Road/Santa Fe Avenue intersection (refer to **M-TR-7**) would partially mitigate the project's impacts to this segment of S. Santa Fe Avenue. However, Mitigation Measure **M-TR-7** would not fully mitigate the impact. Therefore, this impact is considered **significant and unavoidable**.

Impact TR-17: Robelini Drive: Sycamore Avenue to S. Santa Fe Avenue

Mitigation of this impact to less than significant would require the widening of Robelini Drive to four lanes. Robelini Drive in its existing condition is a two-lane road within a 50-foot-wide right-of-way approximately one quarter mile (0.25 mi.) in length. Improvement to four lanes would require acquisition of a minimum of 48 feet of additional right-of-way to meet the County's 4.1A Major Road standard from a combination of close to 20 residential and commercial property owners. Road widening would impact private improvements, mature trees and landscaping, drainage structures and overhead utility lines, and would likely require the demolition of multiple

existing residences. Improvements at the Robelini Drive/S. Santa Fe Avenue intersection are also considered infeasible since adding turn lanes on northbound Robelini Drive at S. Santa Fe Avenue would require widening S. Santa Fe Avenue (which also has right-of-way constraints) to provide receiving lanes (refer to D-8 above).

Under current conditions, Robelini Drive operates over capacity without the Project traffic and the project increases the ADT by only about 10%. Therefore, the widening of Robelini Drive by the Project is not proportional to the Project's impact. In addition, Sycamore Avenue (which becomes Robelini Drive and thereby connects to S. Santa Fe Avenue) is proposed to be realigned opposite Buena Creek Road as part of the County's S. Santa Fe Avenue CIP project. Therefore, any improvements to Robelini Drive would potentially also be in conflict with the County's CIP project.

It should be noted that the S. Santa Fe Avenue intersections with Buena Creek Road and Robelini Drive operate under a single traffic controller. The improvements at the Buena Creek Road/S. Santa Fe Avenue intersection (refer to **M-TR-7**) identified above would partially mitigate the project's impacts to Robelini Drive. However, Mitigation Measure **M-TR-7** would not fully mitigate the impact. Therefore, this impact is considered **significant and unavoidable.**

Freeway Segments

Impact TR-18: I-15 Mainline: Deer Springs to Pomerado

The improvements necessary to mitigate the identified impacts are to provide additional mainline capacity along this stretch of I-15. However, based on a review of the available information sources, there are no present plans to provide or fund such additional capacity within the Project horizon timeframe:

- *San Diego Forward: The Regional Plan* (Regional Plan; October 2015), which is a long-range blueprint prepared by SANDAG that identifies transportation infrastructure improvements within the SANDAG region through year 2050, includes a project that would expand I-15 from 8 freeway lanes to 8 freeway lanes plus 4 toll lanes. The Regional Plan includes a 2050 completion year for such improvements and lists the cost at $1.029 billion, and no specific funding source is identified. (See http://www.sdforward.com/pdfs/RP_final/AppendixA_B_C.pdf, accessed September 7, 2017; Appendix A, Tables A.1 and A.2.)
- SANDAG's *Regional Transportation Improvement Program* (RTIP; September 2016), which is a multi-year program identifying proposed major transportation projects in the San Diego region, includes two projects relating to the I-15 freeway segment from Deer Springs Road to Pomerado Road. The first project is the I-15 Managed Lanes (Middle)

project, which involves the construction of managed lanes, including three Direct Access Ramps (DARs), from SR 56 to Centre City Parkway. The second project is the I-15 Managed Lanes-North Segment, which involves the construction of managed lanes and the addition of a northbound auxiliary lane from Valley Parkway to one-half mile north of SR 78. However, both of these improvements have been completed and are incorporated into the analysis presented here. As such, neither is available to provide the necessary *additional* mainline capacity. (See http://www.sandag.org/uploads/publicationid/publicationid 2071 21174.pdf, accessed September 7, 2017.)

- Caltrans District 11, which includes San Diego and Imperial Counties and, therefore, encompasses the subject segment of I-15, does not list any ongoing, planned, or funded I-15 mainline projects from Deer Springs Road to Pomerado Road. (See http://www.dot.ca.gov/d11/projects, accessed September 7, 2017.) In addition, for the subject I-15 mainline segment (i.e., Deer Springs Road to Pomerado Road) there is no planned or funded project in the California Transportation Commission's (CTC) State Transportation Improvement Program (STIP), which is the biennial five-year plan adopted by the CTC for future allocations of state transportation projects. (See http://www.catc.ca.gov/programs/stip.htm, accessed September 7, 2017.)

Accordingly, based on the above information, there are no mainline improvements to the I-15 segment between Deer Springs Road and Pomerado Road that are planned to be implemented within the Project's horizon timeframe or within the typical 5-10 year period that a mitigation agreement would cover. Moreover, there is no adopted Caltrans or SANDAG program in place for the Project to contribute fair share funds toward I-15 mainline improvements provide funding and implement the necessary improvements into which the Project could contribute a fair share, and, thus, ~~there is no feasible mitigation that would reduce the identified impacts to less than significant. Therefore,~~ the impacts are considered **significant and unavoidable.**

Notwithstanding, the proposed Project incorporates all feasible measures to reduce the Project's contribution to I-15 traffic. Mitigation measure **M-TR-1**, the mitigation identified for the project's impacts to the I-15/Deer Springs Road Interchange (Interchange improvements), incorporates ramp meters, the extension of acceleration/deceleration lanes, and improvements to the existing park-and-ride facility, all of which will be funded by the project applicant, are effective traffic management strategies that would assist in maintaining an efficient freeway system, improve mobility, and minimize total delay within the transportation corridor. Final plans and solutions for these measures will be coordinated and finalized with Caltrans in the PA/ED phase of the I-15/Deer Springs Road Interchange project. In addition, the project's TDM measures would further contribute to a reduction in project trips, including a community-sponsored electric bike-share program, shuttle services throughout the project and to the Escondido Transit Center, subsidized transit passes for the project's residents, and a network of

pedestrian pathways, trails, and bicycle routes. As such, the proposed project incorporates all feasible measures to reduce vehicle trips, generally, including I-15 related trips.

2.13.12.2 Cumulative Impacts

As explained in Section 2.13.3, the County has adopted and is implementing a Traffic Impact Fee (TIF) Program to collect impact fees from new development and construct new or expanded road, highway, interchange, and intersection facilities in the unincorporated County necessary to accommodate new development planned under the County's General Plan. In so doing, the TIF Program is an impact fee program designed to facilitate compliance with CEQA by providing a funding mechanism for these new facilities which serve to mitigate the indirect, cumulative traffic impacts created by new development. Accordingly, where the project would result in cumulative impacts to TIF Eligible Facilities, compliance with the County's TIF Program would serve as mitigation for those impacts.

As explained in Section 2.13.1, for each impact located in the City of San Marcos and Caltrans jurisdictions, the improvements are outside the jurisdiction and control of the County of San Diego. Thus, the County cannot be assured of their timely and effective implementation. As such, for purposes of this EIR, each impact within the City of San Marcos and Caltrans jurisdictions is considered **significant and unavoidable**.

Intersections

Impacts TR-19A and TR-19B: Deer Springs Road Intersection with I-15 NB and SB Ramps

Mitigation measure **M-TR-1** would mitigate the identified significant cumulative impacts to the intersections of Deer Springs Road with the I-15 NB Ramps and SB Ramps to less than significant. However, because implementation of the improvements is not within the County of San Diego's jurisdiction and control, for purposes of this EIR, the impacts are considered **significant and unavoidable**.

Impact TR-20: Deer Springs Road/Mesa Rock Road Intersection

Mitigation measure **M-TR-2** would mitigate the identified significant cumulative impact to this intersection to **less than significant.**

Impact TR-21: Deer Springs Road/Sarver Lane Intersection

Mitigation measure **M-TR-3** would mitigate the identified significant cumulative impact to this intersection to **less than significant.**

Impact TR-22: Deer Springs Road/Sycamore Road Intersection

The following mitigation measure would mitigate the identified significant cumulative impact to this intersection to **less than significant**:

M-TR-12 The project applicant, or its designee, shall signalize the ~~this~~ intersection of Deer Springs Road and Sycamore Road if the intersection is not yet signalized by issuance of the certificate of occupancy for the 40th EDU.

Impact TR-23: Twin Oaks Valley Road/Deer Springs Road Intersection

Mitigation measure **M-TR-4** would mitigate the identified significant cumulative impacts to this intersection to less than significant**.** However, as the timing and implementation of these improvements are under the jurisdiction and control of the City of San Macros, and, thereby subject to their concurrence and approval, for the purposes of this EIR, this impact is considered **significant and unavoidable.**

Impact TR-24: Twin Oaks Valley Road/Buena Creek Road Intersection

Mitigation measure **M-TR-5** also would mitigate the identified significant cumulative impact to this intersection to less than significant**.** However, as the timing and implementation of these improvements are under the jurisdiction and control of the City of San Macros, and, thereby subject to their concurrence and approval, for the purposes of this EIR, impacts are considered **significant and unavoidable.**

Impact TR-25: Twin Oaks Valley Road/San Marcos Boulevard Intersection

The following mitigation measure would mitigate the identified significant cumulative impact to this intersection to less than significant:

M-TR-13 The project applicant, or its designee, shall contribute the project's fair share toward implementing a dedicated southbound right-turn lane and a third westbound left-turn lane at the ~~this~~ intersection of Twin Oaks Valley Road and San Marcos Boulevard with appropriate signal modifications prior to the issuance of the first certificate of occupancy in the project.

Mitigation measure **M-TR-13** would mitigate the identified significant cumulative impacts to this intersection to less than significant**.** However, as the timing and implementation of these improvements are under the jurisdiction and control of the City of San Macros, and, thereby subject to their concurrence and approval, for the purposes of this EIR, impacts are considered **significant and unavoidable.**

Impact TR-26: Buena Creek Road/Monte Vista Drive Intersection

Mitigation measure **M-TR-6** also would mitigate the identified significant cumulative impact to this intersection to **less than significant**.

Impact TR-27: Buena Creek Road/S. Santa Fe Avenue Intersection

Mitigation measure **M-TR-7** also would mitigate the identified significant cumulative impact to this intersection to **less than significant.**

Impact TR-28: Robelini Drive/S. Santa Fe Avenue Intersection

As explained previously, there are no feasible improvements that fully mitigate the project's direct impact to this intersection. However, with the implementation of the S. Santa Fe Avenue CIP Project, this impact will be eliminated with the realignment of Sycamore Avenue to connect directly to Buena Creek Road, thereby rerouting traffic off of Robelini Drive and through this new intersection connecting Buena Creek Road and S. Santa Fe Avenue traffic directly to Sycamore Avenue. S. Santa Fe Avenue and the new intersection connecting Sycamore Avenue directly to Buena Creek Road are County TIF Program Eligible Facilities and part of the Regional Arterial System (RAS). Therefore, the following mitigation measure would mitigate this cumulative impact to **less than significant**:

M-TR-14 The Project applicant, or its designee, shall participate in the County TIF Program.

Street Segments

Impact TR-29: Deer Springs Road from Mesa Rock Road to I-15 SB Ramps

Mitigation Measure **M-TR-8** also would mitigate the identified significant cumulative impacts to this segment of Deer Springs Road. However, as a portion of the mitigation is under the jurisdiction and control of Caltrans and, thereby subject to their concurrence and approval, for purposes of this EIR, impacts are considered **significant and unavoidable**.

Impact TR-30: Deer Springs Road from Sarver Lane to Mesa Rock Road

The improvements under Deer Springs Road Option B as outlined in Mitigation Measure **M-TR-9** would mitigate the identified significant cumulative impact to this segment of Deer Springs Road to **less than significant.** If Deer Springs Road Option A is implemented, the identified cumulative impact would remain significant and unavoidable.

Impact TR-31: Deer Springs Road from Twin Oaks Valley Road to Sarver Lane

Mitigation Measure **M-TR-10** also would mitigate the identified significant cumulative impact to this segment of Deer Springs Road. However, as a portion of the mitigation is under the jurisdiction

and control of the City of San Marcos, and, thereby subject to their concurrence and approval, for purposes of this EIR, this cumulative impact is considered **significant and unavoidable**.

Impact TR-32: Twin Oaks Valley Road from Deer Springs Road to Buena Creek Road

Mitigation Measure **M-TR-11** would mitigate the identified cumulative impact to this segment of Twin Oaks Valley Road to less than significant. However, as the timing and implementation of these improvements are under the jurisdiction and control of the City of San Macros, and, thereby subject to their concurrence and approval, for purposes of this EIR, impacts are considered **significant and unavoidable**.

Impact TR-33: Twin Oaks Valley Road from Buena Creek Road to Cassou Road

Mitigation Measure **M-TR-5** would mitigate the identified significant cumulative impact to this segment of Twin Oaks Valley Road**.** However, as the timing and implementation of these improvements are under the jurisdiction and control of the City of San Macros, and, thereby subject to their concurrence and approval, for purposes of this EIR, impacts are considered **significant and unavoidable**.

Impact TR-34: Twin Oaks Valley Road from Richmar to San Marcos Boulevard

Mitigation Measure **M-TR-13** also would mitigate the identified significant cumulative impact to this segment of Twin Oaks Valley Road**.** However, as the timing and implementation of these improvements are under the jurisdiction and control of the City of San Macros, and, thereby subject to their concurrence and approval, for purposes of this EIR, impacts are considered **significant and unavoidable**.

Impact TR-35: Buena Creek Road from Monte Vista Drive to Twin Oaks Valley Road

Mitigation Measures **M-TR-5** and **M-TR-6** also would mitigate the identified significant cumulative impact to this segment of Buena Creek Road to less than significant. However, as the timing and implementation of the improvements identified in Mitigation Measure **M-TR-5** are under the jurisdiction and control of the City of San Macros, and, thereby subject to their concurrence and approval, for purposes of this EIR, impacts are considered **significant and unavoidable**.

Impact TR-36: Buena Creek Road from S. Santa Fe Avenue to Monte Vista Drive

Mitigation Measures **M-TR-6** and **M-TR-7** also would mitigate the identified significant cumulative impact to this segment of Buena Creek Road to **less than significant**.

Impact TR-37: Monte Vista Drive from Foothill Drive to Buena Creek Road

Mitigation measure **M-TR-6** also would mitigate the identified significant cumulative impact to this segment of Monte Vista Drive to **less than significant**.

Impact TR-38: S. Santa Fe Avenue from Robelini Drive to Buena Creek Road

This segment of S. Santa Fe Avenue is a County TIF Program Eligible Facility and part of the Regional Arterial System (RAS). Therefore, Mitigation Measure **M-TR-14** would mitigate this cumulative impact to **less than significant**.

Impact TR-39: Robelini Drive from Sycamore Avenue to S. Santa Fe Avenue

As explained previously, there are no feasible improvements that fully mitigate the project's direct impact to this segment. However, with the implementation of the S. Santa Fe Avenue CIP Project, this impact will be eliminated with the realignment of Sycamore Avenue to connect directly to Buena Creek Road, thereby rerouting traffic off of Robelini Drive and through this new intersection connecting Buena Creek Road and S. Santa Fe Avenue traffic directly to Sycamore Avenue. This segment of S. Santa Fe Avenue and the new intersection connecting Sycamore Avenue directly to Buena Creek Road are County TIF Program Eligible Facilities and part of the Regional Arterial System (RAS). Therefore, Mitigation Measure **M-TR-14** would mitigate this cumulative impact to **less than significant**.

Impact TR-40: Gopher Canyon Road from Little Gopher Canyon Road to I-15

This segment of Gopher Canyon Road is a County TIF Program Eligible Facility and part of the Regional Arterial System (RAS). Therefore, Mitigation Measure **M-TR-14** would mitigate this cumulative impact to **less than significant**.

Freeway Segments

Impact TR-41: I-15 Mainline from Old Highway 395 to Pomerado Road

~~As described previously for the project's direct impacts to I-15, the improvements necessary to mitigate the identified cumulative impacts are to provide additional mainline capacity along this segment of I-15. However, there is no Caltrans program in place to implement the necessary improvements into which the project could contribute a fair share and, thus, there is no feasible mitigation that would reduce the identified impact to less than significant. Therefore, the impacts are considered **significant and unavoidable**.~~As described previously for the project's direct impacts to the I-15 mainline, the project's cumulative impacts to this stretch of the I-15 mainline also would be mitigated by providing additional mainline capacity. However, there is no Caltrans program or project in place to add capacity to the mainline into which the project could contribute a fair share. Notwithstanding, the I-15/Deer Springs Road Interchange improvements

(Interchange improvements), including the incorporation of ramp meters, the extension of acceleration/deceleration lanes, and improvements to the park-and-ride facility, all of which will be funded by the project applicant, are effective traffic management strategies that would assist in maintaining an efficient freeway system. Additionally, the project's Transportation Demand Management (TDM) Program, which also must be funded by the project applicant, includes community sponsored shuttle services and other measures designed to reduce single occupancy vehicle trips that would assist in reducing the project's impacts to the mainline. Collectively, these measures are responsive to mainline impacts, although they would not fully mitigate the project's significant impacts to the mainline; and,–therefore, these impacts are considered **significant and unavoidable**.

Impact TR-42: SR 78 Mainline from Mar Vista Road to Sycamore Avenue

This impact would be mitigated by payment of a fair share contribution to Caltrans for the planned improvement to add high-occupancy-vehicle (HOV) lanes in both directions on State Route 78. However, as the timing and implementation of these improvements are under the jurisdiction and control of Caltrans and, thereby, subject to their concurrence and approval, for purposes of this EIR, this impact is considered **significant and unavoidable**.

San Marcos Horizon Year Cumulative Impacts

Impact TR-43: Twin Oaks Valley Road from Deer Springs Road to Buena Creek Road

The following mitigation measure would mitigate the identified significant cumulative impact to this segment of Twin Oaks Valley Road to less than significant:

M-TR-15 Prior to the issuance of the first certificate of occupancy, the project applicant, or its designee, shall pay a fair share towards providing a third southbound lane on Twin Oaks Valley Road between Deer Springs Road and Buena Creek Road.

As the timing and implementation of this mitigation measure is under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, for purposes of this EIR, this impact is considered **significant and unavoidable**.

Impact TR-44: Twin Oaks Valley Road/Richmar Avenue Intersection

The following mitigation measure would mitigate the identified significant cumulative impact to less than significant:

M-TR-16 Prior to the issuance of the first certificate of occupancy, the project applicant, or its designee, shall pay a fair share towards providing a dedicated southbound right-turn lane on Twin Oaks Valley Road at Richmar Avenue.

As the timing and implementation of this mitigation measure is under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, for purposes of this EIR, this impact is considered **significant and unavoidable**.

Impact TR-45: Twin Oaks Valley Road from Deer Springs Road to Buena Creek Road

Mitigation measure **M-TR-15** would also mitigate the identified significant cumulative impact to this segment of Twin Oaks Valley Road. However, as the timing and implementation of this mitigation measure is under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, for purposes of this EIR, this impact is considered **significant and unavoidable**.

VMT Analysis Impacts

Impact TR-46: Project VMT Analysis (Residential Uses)

With implementation of the TDM Program, project home-based automobile VMT per capita for the residential uses would continue to exceed the corresponding thresholds for all residential types under the region-wide scenario and no feasible mitigation measures are available to mitigate impacts under Scenario 1 and impacts would be **significant and unavoidable**.

Under Scenario 2, project home-based automobile VMT per capita for all residential types would be below the corresponding thresholds with implementation of the TDM Program. Therefore, using the sub-regional thresholds, impacts associated with project home-based automobile VMT per capita for all residential types would be reduced to **less than significant**.

Impact TR-47: Induced Travel VMT (Near Term)

Implementation of a TDM Program would implement all feasible TDM strategies. However, implementation of these strategies would only reduce the residential VMT by 6.1 percent, to a range of approximately 1,546,763 to 9,280,578 under the Near Term scenario which exceeds the threshold of below the 2,075,220 VMT. No feasible mitigation exists to ensure VMT are reduced to less than 2,075,220. Therefore, this impact would be a **significant and unavoidable.**

Impact TR-48: Induced Travel VMT (Long Term)

Under the first method, Implementation of a TDM Program would implement all feasible TDM strategies. However, implementation of these strategies would only reduce residential VMT by

6.1 percent, to 15,931,694. Therefore, under this method, the long-term estimate would exceed the threshold (2,075,220) this impact would be a **significant and unavoidable**.

Under the second method, since the I-15/Deer Springs Road interchange widening is included in the Caltrans *I-15 Transportation Concept Summary*, *Ramp Metering Development Plan*, and the County's TIF program, and the Deer Springs Road/Twin Oaks Valley Road widening is included in the County General Plan, referenced in the 2015 RTP/SCS, and included in the SANDAG Series 12 and 13 regional travel demand models, impacts associated with induced demand are **less than significant**.

I-15 Interchange Improvements

While the final configuration and design of the Caltrans interchange improvements are not known at this time, to ensure potential impacts to transportation and traffic remain less than significant, this EIR recommends the following measure:

M-TR-17 Pursuant to California Public Resources Code Section 21081(a)(2), in coordination with the I-15 interchange improvement project, which is to be fully funded and constructed by the project applicant though is within the ~~responsibility and~~ jurisdiction of Caltrans to approve, Caltrans can and should prepare, or cause to be prepared, a traffic and transportation assessment as part of the CEQA/NEPA process. In addition, Caltrans can and should require temporary traffic control to minimize such temporary effects as a result of the interchange improvements.

Project Design Features

M-TR-18 The project applicant, or its designee, shall implement PDF-39 prior to issuance of the first grading permit and as required for individual grading and construction permits associated with off-site improvements.

2.13.13 Conclusion

2.13.13.1 Direct Impacts

Table 2.13-39, Existing + Project Mitigation Analysis – Intersections, and Table 2.13-40, Existing + Project Mitigation Analysis – Street Segments, summarize the analysis of direct circulation network impacts pre- and post-mitigation. The project has direct impacts to road facilities in the County, the City of San Marcos, and within Caltrans right-of-way. Following is a summary of the project's direct impacts, the project's proposed mitigation measures that would mitigate direct impacts to less than significant, and the significance determination related to each impact:

Mitigation Measure **M-TR-1** would mitigate the project's impacts to Deer Springs Road/I-15 NB Ramps (**Impact TR-1A**) and Deer Springs Road/I-15 SB Ramps (**Impact TR-1B**). If the I-15/Deer Springs Road interchange improvements are implemented, these improvements would mitigate the corresponding impact to less than significant. However, because the improvements are under the jurisdiction and control of Caltrans and, thereby, subject to their concurrence and approval, **Impacts TR-1A and TR-1B** are considered **significant and unavoidable**.

Mitigation Measure **M-TR-2** would mitigate the project's impact to the intersection of Deer Springs Road/Mesa Rock Road **(Impact TR-2)** to **less than significant**.

Mitigation Measure **M-TR-3** would mitigate the project's impact to the intersection of Deer Springs Road/Sarver Lane **(Impact TR-3)** to **less than significant**.

Mitigation Measure **M-TR-4** would mitigate the project's impact to the intersection of Twin Oaks Valley Road/Deer Springs Road **(Impact TR-4)** to less than significant. However, because the improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, for the purposes of this EIR, **Impact TR-4** is considered **significant and unavoidable**.

Mitigation Measure **M-TR-5** would mitigate the project's impact to the intersection of Twin Oaks Valley Road/Buena Creek Road **(Impact TR-5)** to less than significant**.** However, because the improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, for the purposes of this EIR, **Impact TR-5** is considered **significant and unavoidable**..

Mitigation Measure **M-TR-6** would mitigate the project's impact to the intersection of Buena Creek Road/Monte Vista Drive **(Impact TR-6)** to **less than significant**.

Mitigation Measure **M-TR-7** would mitigate the project's impact to the intersection of Buena Creek Road/S. Santa Fe Avenue **(Impact TR-7)** to **less than significant**.

Although Mitigation Measure **M-TR-7** would constitute partial mitigation, no feasible mitigation exists to fully mitigate the project's impact to the Robelini Drive/S. Santa Fe Avenue intersection **(Impact TR-8)**. Therefore, **Impact TR-8** is considered **significant and unavoidable**.

Mitigation Measure **M-TR-8** would mitigate the project's impact to the segment of Deer Springs Road from Mesa Rock Road to the I-15 SB Ramps **(Impact TR-9)** to less than significant**.** However, because a portion of the Newland Sierra project improvements are under the jurisdiction and control of Caltrans and, thereby, subject to their concurrence and approval, for the purposes of this EIR, **Impact TR-9** is considered **significant and unavoidable**.

Mitigation Measure **M-TR-9** would mitigate the project's impact to the segment of Deer Springs Road from Sarver Lane to Mesa Rock Road **(Impact TR-10)**. Under Deer Springs Road Option A, Mitigation Measure **M-TR-9** would reduce **Impact TR-10** but not to less than significant, and therefore, impacts would remain **significant and unavoidable.** Under Deer Springs Road Option B, mitigation measure **M-TR-9** would reduce **Impact TR-10** to **less than significant.**

Mitigation Measure **M-TR-10** would mitigate the project's impact to the segment of Deer Springs Road from Twin Oaks Valley Road to Sarver Lane **(Impact TR-11).** However, because a portion of the improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, **Impact TR-11** is considered **significant and unavoidable**.

Mitigation Measure **M-TR-11** would mitigate the project's impact to the segment of Twin Oaks Valley Road from Deer Springs Road to Buena Creek Road **(Impact TR-12)** to less than significant. However, because the improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, **Impact TR-12** is considered **significant and unavoidable**.

Mitigation Measure **M-TR-5** would mitigate the project's impact to the segment of Twin Oaks Valley Road from Buena Creek Road to Cassou Road **(Impact TR-13)** to less than significant**.** However, because the improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, **Impact TR-13** is considered **significant and unavoidable**.

Mitigation Measures **M-TR-5** and **M-TR-6** would mitigate the project's impact to the segment of Buena Creek Road from Monte Vista Drive to Twin Oaks Valley Road **(Impact TR-14)** to less than significant. However, because the improvements identified in **M-TR-5** are under the jurisdiction and control of San Marcos and, thereby, subject to their concurrence and approval, for the purposes of this EIR, **Impact TR-14** is considered **significant and unavoidable**.

Mitigation Measures **M-TR-6** and **M-TR-7** would mitigate the project's impact to the segment of Buena Creek Road from Monte Vista Drive to S. Santa Fe Avenue **(Impact TR-15)** to **less than significant**.

Although Mitigation Measure **M-TR-7** would constitute partial mitigation, no feasible mitigation exists to fully mitigate the project's impact to the segment of S. Santa Fe Avenue from Robelini Drive to Buena Creek Road **(Impact TR-16)**. Therefore, **Impact TR-16** is considered **significant and unavoidable**.

Although Mitigation Measure **M-TR-7** would constitute partial mitigation, no feasible mitigation exists to fully mitigate the project's impact to the segment of Robelini Drive from Sycamore

Avenue to S. Santa Fe Avenue (**Impact TR-17)**. Therefore, **Impact TR-17** is considered **significant and unavoidable**.

No feasible mitigation exists to fully mitigate the project's impact to the segment of Robelini Drive from Sycamore Avenue to S. Santa Fe Avenue (**Impact TR-17)**. Therefore, **Impact TR-17** is considered **significant and unavoidable**.

No feasible mitigation exists in the form of increasing the capacity of the freeway mainline to mitigate the project's impact to the segment of I-15 between Deer Springs Road and Pomerado Road (**Impact TR-18)**. Notwithstanding, the I-15/Deer Springs Road Interchange improvements (Interchange improvements), including the incorporation of ramp meters, the extension of acceleration/deceleration lanes, and improvements to the park-and-ride facility, all of which will be funded by the project applicant, are effective traffic management strategies that would assist in maintaining an efficient freeway system. Additionally, the project's Transportation Demand Management (TDM) Program, which also must be funded by the project applicant, includes community sponsored shuttle services and other measures designed to reduce single occupancy vehicle trips that would assist in reducing the project's impacts to the mainline. Collectively, these measures are responsive to mainline impacts, although they would not fully mitigate the project's significant impacts to the mainline; and, ~~T~~therefore, these impacts are considered **significant and unavoidable**.

2.13.13.2 Cumulative Impacts

Table 2.13-41, Existing + Project + Cumulative Projects Mitigation Analysis – Intersections, and Table 2.13-42, Existing + Project + Cumulative Project Mitigation Analysis – Street Segments, summarize the analysis of the project's cumulative circulation network impacts pre- and post-mitigation. The project would result in cumulative impacts to road facilities in the County, the City of San Marcos, and within Caltrans right-of-way. Following is a summary of the project's cumulative impacts, the project's proposed mitigation measures that would mitigate cumulative impacts to less than significant, and the significance determination related to each impact:

Mitigation Measure **M-TR-1** would mitigate the project's cumulative impacts to Deer Springs Road/I-15 NB Ramps (**Impact TR-19A**) and Deer Springs Road/I-15 SB Ramps (**Impact TR-19B**). If the I-15/Deer Springs Road interchange improvements are implemented, these improvements would mitigate the corresponding cumulative impact to less than significant. However, because the Newland Sierra project improvements are under the jurisdiction and control of Caltrans and, thereby, subject to their concurrence and approval, **Impacts TR-1A and TR-1B** are considered **significant and unavoidable**.

Mitigation Measure **M-TR-2** would mitigate the project's cumulative impact to the intersection of Deer Springs Road/Mesa Rock Road **(Impact TR-20)** to **less than significant**.

Mitigation Measure **M-TR-3** would mitigate the project's cumulative impact to the intersection of Deer Springs Road/Sarver Lane **(Impact TR-21)** to **less than significant**.

Mitigation Measure **M-TR-12** would mitigate the project's cumulative impact to the intersection of Deer Springs Road/Sycamore Road **(Impact TR-22)** to **less than significant**.

Mitigation Measure **M-TR-4** would mitigate the project's cumulative impact to the intersection of Twin Oaks Valley Road/Deer Springs Road **(Impact TR-23)** to **less than significant**. However, because the improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, for the purposes of this EIR, **Impact TR-23** is considered **significant and unavoidable**.

Mitigation Measure **M-TR-5** would mitigate the project's cumulative impact to the intersection of Twin Oaks Valley Road/Buena Creek Road **(Impact TR-24)** to less than significant**.** However, because the improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, for the purposes of this EIR, **Impact TR-24** is considered **significant and unavoidable**.

Mitigation Measure **M-TR-13** would mitigate the project's cumulative impact to the intersection of Twin Oaks Valley Road/San Marcos Boulevard **(Impact TR-25)** to less than significant**.** However, because the improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, for the purposes of this EIR, **Impact TR-25** is considered **significant and unavoidable**.

Mitigation Measure **M-TR-6** would mitigate the project's cumulative impact to the intersection of Buena Creek Road/Monte Vista Drive **(Impact TR-26)** to **less than significant**.

Mitigation Measure **M-TR-7** would mitigate the project's cumulative impact to the intersection of Buena Creek Road/S. Santa Fe Avenue **(Impact TR-27)** to **less than significant**.

Mitigation Measure **M-TR-14** would mitigate the project's cumulative impact to the intersection of Robelini Drive/S. Santa Fe Avenue **(Impact TR-28)** to **less than significant**.

Mitigation Measure **M-TR-8** would mitigate the project's cumulative impact to the segment of Deer Springs Road from Mesa Rock Road to the I-15 SB Ramps **(Impact TR-29)** to less than significant**.** However, because a portion of the Newland Sierra project improvements are under the jurisdiction and control of Caltrans and, thereby, subject to their concurrence and approval, for the purposes of this EIR, **Impact TR-9** is considered **significant and unavoidable**.

Mitigation Measure **M-TR-9** would mitigate the project's cumulative impact to the segment of Deer Springs Road from Sarver Lane to Mesa Rock Road **(Impact TR-30)**. Under Deer Springs Road Option A, Mitigation Measure **M-TR-9** would reduce **Impact TR-30** but not to less than significant, and therefore, impacts would remain **significant and unavoidable.** Under Deer Springs Road Option B, mitigation measure **M-TR-9** would reduce **Impact TR-30** to **less than significant.**

Mitigation Measure **M-TR-10** would mitigate the project's cumulative impact to the segment of Deer Springs Road from Twin Oaks Valley Road to Sarver Lane **(Impact TR-31).** However, because a portion of the improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, **Impact TR-31** is considered **significant and unavoidable**.

Mitigation Measure **M-TR-11** would mitigate the project's cumulative impact to the segment of Twin Oaks Valley Road from Deer Springs Road to Buena Creek Road **(Impact TR-32)** to less than significant. However, because the improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, **Impact TR-32** is considered **significant and unavoidable**.

Mitigation Measure **M-TR-5** would mitigate the project's cumulative impact to the segment of Twin Oaks Valley Road from Buena Creek Road to Cassou Road **(Impact TR-33)** to less than significant**.** However, because the improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, **Impact TR-33** is considered **significant and unavoidable**.

Mitigation Measure **M-TR-13** would mitigate the project's cumulative impact to the segment of Twin Oaks Valley Road from Richmar Avenue to San Marcos Boulevard **(Impact TR-34)** to less than significant**.** However, because the improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, **Impact TR-34** is considered **significant and unavoidable**.

Mitigation Measures **M-TR-5** and **M-TR-6** would mitigate the project's cumulative impact to the segment of Buena Creek Road from Monte Vista Drive to Twin Oaks Valley Road **(Impact TR-35)** to less than significant. However, because a portion of the improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, **Impact TR-35** is considered **significant and unavoidable**.

Mitigation Measures **M-TR-6** and **M-TR-7** would mitigate the project's cumulative impact to the segment of Buena Creek Road from S. Santa Fe Avenue to Monte Vista Drive **(Impact TR-36)** to **less than significant**.

Mitigation Measures **M-TR-6** would mitigate the project's cumulative impact to the segment of Monte Vista Drive from Foothill Drive to Buena Creek Road **(Impact TR-37)** to **less than significant**.

Mitigation Measure **M-TR-14** would mitigate the project's cumulative impact to the segment of S. Santa Fe Avenue from Robelini Drive to Buena Creek Road **(Impact TR-38)** to **less than significant**.

Mitigation Measure **M-TR-14** would mitigate the project's cumulative impact to the segment of Robelini Drive from Sycamore Avenue to S. Santa Fe Avenue **(Impact TR-39)** to **less than significant**.

Mitigation Measure **M-TR-14** would mitigate the project's cumulative impact to the segment of Gopher Canyon Road from Little Gopher Canyon Road to the I-15 Ramps **(Impact TR-40)** to **less than significant**.

~~As it relates to the project's cumulative impact to the segment of I-15 between Old Highway 395 and Pomerado Road (**Impact TR-41)**, no feasible mitigation exists to mitigate the project's impact to less than significant. Therefore, **Impact TR-41** is considered **significant and unavoidable.**~~No feasible mitigation exists in the form of increasing the capacity of the freeway mainline to mitigate the project's cumulative impact to the segment of I-15 between Old Highway 395 and Pomerado Road (**Impact TR-41)**. Notwithstanding, the I-15/Deer Springs Road Interchange improvements (Interchange improvements), including the incorporation of ramp meters, the extension of acceleration/deceleration lanes, and improvements to the park-and-ride facility, all of which will be funded by the project applicant, are effective traffic management strategies that would assist in maintaining an efficient freeway system. Additionally, the project's Transportation Demand Management (TDM) Program, which also must be funded by the project applicant, includes community sponsored shuttle services and other measures designed to reduce single occupancy vehicle trips that would assist in reducing the project's impacts to the mainline. Collectively, these measures are responsive to mainline impacts, although they would not fully mitigate the project's significant impacts to the mainline; and, therefore, these impacts are considered **significant and unavoidable**.

As it relates to the project's cumulative impact to the segment of SR 78 between Mar Vista Road and Sycamore Avenue (**Impact TR-42**), potentially feasible mitigation exists in the form of a fair share contribution to Caltrans for the planned improvement to add high-occupancy-vehicle (HOV) lanes in both directions on State Route 78. However, as the timing and implementation of these improvements are under the jurisdiction and control of Caltrans and, thereby, subject to their concurrence and approval, **Impact TR-42** is considered **significant and unavoidable**.

Mitigation Measure **M-TR-15** would mitigate the project's San Marcos Horizon Year Full Road Network Buildout cumulative impact to the segment of Twin Oaks Valley Road from Deer Springs Road to Buena Creek Road (**Impact TR-43**). However, because the improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, **Impact TR-43** is considered **significant and unavoidable**.

Mitigation Measure **M-TR-16** would mitigate the project's San Marcos Horizon Year Modified Road Network cumulative impact to the intersection of Twin Oaks Valley Road/Richmar Avenue (**Impact TR-44**). However, because the improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, **Impact TR-44** is considered **significant and unavoidable**.

Mitigation Measure **M-TR-15** would mitigate the project's San Marcos Horizon Year Modified Road Network cumulative impact to the segment of Twin Oaks Valley Road from Deer Springs Road to Buena Creek Road (**Impact TR-45**). However, because the improvements are under the jurisdiction and control of the City of San Marcos and, thereby, subject to their concurrence and approval, **Impact TR-45** is considered **significant and unavoidable**.

2.13.13.3 VMT Impacts

Project Home-Based VMT per Capita for Residential Uses

With application of a region-wide threshold (Scenario 1), the project would result in a **significant and unavoidable impact (Impact TR-46)**. With application of a subregional threshold (Scenario 2), the project would result in a **less than significant** impact.

Travel Induced VMT (Near-Term Scenario)

The induced VMT as a result of the project's proposed off-site road improvements would exceed the draft OPR-recommended threshold in the near-term scenario and no feasible mitigation exists to mitigate the project's impact to travel-induced VMT; therefore, **Impact TR-47** is considered **significant and unavoidable impact**.

Travel Induced VMT (Long-Term Scenario)

The induced VMT as a result of the project's proposed off-site road improvements would exceed the draft OPR-recommended threshold in the long-term scenario and no feasible mitigation exists to mitigate the project's impact to travel-induced VMT; therefore, **Impact TR-48** is considered **significant and unavoidable**. However, under the second method, the project's proposed road improvements are consistent with the County's General Plan Mobility Element, which is consistent with SANDAG's 2015 "San Diego Forward: The Regional Plan," a Regional Transportation Plan/Sustainable Communities Strategy (2015 RTP/SCS) for the San Diego Region. Therefore, in this regard, impacts would be considered **less than significant**.

Table 2.13-1
Existing Intersection Operations

	Intersection	Jurisdiction	Traffic Control	Peak Hour	Delay [a]	LOS [b]
1.	Champagne Blvd/Gopher Canyon Road	County	Signal	AM	32.9	C
				PM	33.6	C
2.	Champagne Blvd/Old Castle Road	County	Signal	AM	11.4	B
				PM	23.5	C
3.	Champagne Blvd/Lawrence Welk Dr	County	MSSC [c]	AM	11.3	B
				PM	16.8	C
4.	Mtn Meadow Road/Champagne Blvd	County	Signal	AM	16.1	B
				PM	20.5	C
5.	Deer Springs Road/I-15 NB Ramps	Caltrans	Signal	AM	28.6	C
				PM	38.4	D
6.	Deer Springs Road/I-15 SB Ramps	Caltrans	Signal	AM	27.5	C
				PM	**60.8**	**E**
7.	Deer Springs Road/Mesa Rock Road	County	Signal	AM	23.3	C
				PM	22.5	C
8.	Deer Springs Road/Sarver Lane	County	MSSC	AM	23.1	C
				PM	30.1	D
9.	Deer Springs Road/Sycamore Road	County	MSSC	AM	14.4	B
				PM	22.6	C
10.	Twin Oaks Valley Road/Camino Mayor	County	~~Signal~~MSSC	AM	8.6	A
				PM	8.5	A
11.	Twin Oaks Valley Road/Deer Springs Road	San Marcos	Signal	AM	44.1	D
				PM	18.6	B
12.	Twin Oaks Valley Road/Buena Creek Road	San Marcos	Signal	AM	24.1	C
				PM	26.2	C
13.	Twin Oaks Valley Road/Cassou Road	San Marcos	Signal	AM	29.9	C
				PM	15.6	B
14.	Twin Oaks Valley Road/La Cienega	San Marcos	Signal	AM	13.2	B
				PM	11.7	B
15.	Twin Oaks Valley Road/Del Roy Dr	San Marcos	Signal	AM	12.7	B
				PM	9.3	A
16.	Twin Oaks Valley Road/Windy Way	San Marcos	Signal	AM	7.0	A
				PM	6.9	A
17.	Twin Oaks Valley Road/Borden Road	San Marcos	Signal	AM	26.1	C
				PM	29.3	C
18.	Twin Oaks Valley Road/Richmar Ave	San Marcos	Signal	AM	22.4	C
				PM	28.5	C
19.	Twin Oaks Valley Road/San Marcos Blvd	San Marcos	Signal	AM	34.8	C
				PM	50.8	D
20.	Twin Oaks Valley Road/SR 78 WB Ramps	Caltrans	Signal	AM	11.7	B
				PM	12.9	B

Table 2.13-1
Existing Intersection Operations

	Intersection	Jurisdiction	Traffic Control	Peak Hour	Delay [a]	LOS [b]
21.	Twin Oaks Valley Road/SR 78 EB Ramps	Caltrans	Signal	AM	26.6	C
				PM	19.5	B
22.	Robelini Dr /S. Santa Fe Ave	County	Signal	AM	**65.3**	**E**
				PM	28.0	C
23.	Sycamore Ave/SR78 WB Ramps	Caltrans	Signal	AM	36.6	D
				PM	32.7	C
24.	Sycamore Ave/SR 78 EB Ramps	Caltrans	Signal	AM	30.0	C
				PM	23.3	C
25.	Buena Creek Road/S. Santa Fe Ave	County	Signal	AM	**93.3**	**F**
				PM	**72.5**	**E**
26.	Buena Creek Road/Monte Vista Drive	County	AWSC [d]	AM	34.2	D
				PM	**70.2**	**F**
27.	San Marcos Blvd/ Knoll Road/WB Off Ramp	Caltrans	Signal	AM	36.7	D
				PM	33.5	C
28.	San Marcos Blvd/EB Off Ramp	Caltrans	Signal	AM	10.8	B
				PM	12.5	B
29.	Mission Road/Vineyard Road	County	Signal	AM	27.4	C
				PM	32.7	C
30.	North Centre City Pkwy/Mesa Rock Road	County	Signal	AM	10.6	B
				PM	9.5	A
31.	North Centre City Pkwy /Country Club Lane	Escondido	Signal	AM	24.4	C
				PM	21.0	C
32.	Twin Oaks Valley Rd/Barham Dr/Discovery St	San Marcos	Signal	AM	38.0	D
				PM	51.7	D

a. Average delay per vehicle in seconds
b. Level of service
c. MSSC - Minor Street STOP-Controlled intersection. Minor street delay and LOS are reported.
d. AWSC – All Way STOP-Controlled intersection. Overall delay and LOS are reported.

Signalized	
Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

Unsignalized	
Delay	LOS
0.0 ≤ 10.0	A
10.1 to 15.0	B
15.1 to 25.0	C
25.1 to 35.0	D
35.1 to 50.0	E
≥ 50.1	F

Table 2.13-2
Existing Street Segment Operations

Street Segment	Jurisdiction	Functional Classification [a]	LOS E Capacity [b]	Volume [c]	LOS [d]	V/C [e]
Deer Springs Road						
Twin Oaks Valley Road to Sarver Lane	San Marcos and County	2.2E Lt Col	16,200	**18,800**	**F**	**1.160**
Sarver Lane to Mesa Rock Road	County	2.2E Lt Col	16,200	**19,400**	**F**	**1.198**
Mesa Rock Road to I-15 SB Ramps	County	2.2E Lt Col	16,200	**22,600**	**F**	**1.395**
I-15 to Champagne Boulevard	County	4.2B Blvd	28,000	12,100	A	0.432
Mountain Meadow Road						
East of Champagne Blvd	County	42A Blvd	30,000	8,000	A	0.267
Twin Oaks Valley Road						
Solar Lane to Deer Springs Road	County	2.2E Lt Col	16,200	3,000	B	0.185
Deer Springs Road to Buena Creek Road	San Marcos	2 Ln Col	15,000	**20,700**	**F**	**1.380**
Buena Creek Road to Cassou Road	San Marcos	2 Ln Col	15,000	**18,400**	**F**	**1.227**
Cassou Road to La Cienega Road	San Marcos	4 Ln Sec Art	30,000	18,000	C	0.600
La Cienega Road to Windy Way	San Marcos	4 Ln Major Art	40,000	20,300	B	0.508
Windy Way to Borden Road	San Marcos	4 Ln Major Art	40,000	21,100	C	0.528
Borden Road to Richmar Ave	San Marcos	4 Ln Major Art	40,000	29,000	C	0.725
Richmar Ave to San Marcos Blvd	San Marcos	4 Ln Major Art	40,000	31,000	D	0.775
San Marcos Blvd to SR 78 WB Ramps	San Marcos	Prime Art	60,000	39,100	C	0.652
SR 78 to Barham Dr/Discovery St	San Marcos	Prime Art	70,000	46,800	C	0.669
Buena Creek Road						
S. Santa Fe Ave to Monte Vista Dr	County	2.2E Lt Col	16,200	9,200	D	0.568
Monte Vista Dr to Twin Oaks Valley Road	County	2.2E Lt Col	16,200	10,400	D	0.642
Monte Vista Drive						
Foothill Dr to Buena Creek Road	County	2.2E Lt Col	16,200	9,100	D	0.562
Mesa Rock Road						
Deer Springs Road to N. Centre City Pkwy	County	2.2E Lt Col	16,200	1,000	A	0.062
Gopher Canyon Road						
Little Gopher Canyon Road to I-15 Ramps	County	2.2E Lt Col	16,200	**16,000**	**E**	**0.988**
I-15 Ramps to Champagne Blvd	County	4.2B Blvd	28,000	14,400	A	0.514
Champagne Boulevard						
Old Castle Road to Lawrence Welk Dr	County	2.2E Lt Col	16,200	5,400	C	0.333
Lawrence Welk Dr to Mtn Meadow Road	County	2.2E Lt Col	16,200	7,400	D	0.457
North Centre City Parkway						
Mountain Meadow Road to I-15 Ramps	County	2.2E Lt Col	16,200	5,800	C	0.358
I-15 Ramps to Country Club Lane	Escondido	4 Ln Col	34,200	10,900	A	0.319
Robelini Drive						
Sycamore Ave to S. Santa Fe Ave	County	2.2E Lt Col	16,200	**16,900**	**F**	**1.043**

Table 2.13-2
Existing Street Segment Operations

Street Segment	Jurisdiction	Functional Classification [a]	LOS E Capacity [b]	Volume [c]	LOS [d]	V/C [e]
S. Santa Fe Avenue						
Robelini Dr to Buena Creek Road	County	2.1B Com Col	19,000	**15,900**	**E**	**0.837**
Sycamore Avenue						
SR 78 WB Ramps to University Dr	County	6.2 Prime Art	57,000	34,100	B	0.598

a. The existing roadway class.
b. Capacity of the existing roadway per the County *Table 1, Average Daily Vehicle Trips*.
c. Existing Average Daily Traffic (ADT) volumes.
d. Level of Service.
e. Volume/Capacity ratio.

General Note:
Bold indicates LOE E or worse operations.

Table 2.13–3
Existing Freeway Mainline Operations

Freeway Segment	Dir.	# of Lanes	Hourly Capacity [a]	AADT [b]	Peak Hour Volume [c]		Truck Factor [d]	Peak Hour Volumes Factored for Trucks [e]		V/C [f]		LOS	
					AM	*PM*		*AM*	*PM*	*AM*	*PM*	*AM*	*PM*
Interstate 15													
Riverside County Boundary to Mission Rd	NB	4M	8,000	142,000	2,066	6,795	0.9325	2,216	7,287	0.277	0.911	A	D
	SB				7,916	3,344		8,489	3,586	1.061	0.448	F(0)	B
Mission Rd to SR-76	NB	4M	8,000	132,000	2,129	6,638	0.9186	2,318	7,226	0.290	0.903	A	D
	SB				7,454	3,354		8,114	3,652	1.014	0.456	F(0)	B
SR-76 to Old Highway 395	NB	4M	8,000	121,000	1,952	6,085	0.9168	2,129	6,637	0.266	0.830	A	D
	SB				6,833	3,075		7,453	3,354	0.932	0.419	E	B
Old Highway 395 to Gopher Cyn Rd	NB	4M	8,000	120,000	2,205	6,472	0.8977	2,456	7,209	0.307	0.901	A	D
	SB				6,471	3,272		7,209	3,645	0.901	0.456	D	B
Gopher Canyon Rd to Deer Springs Rd	NB	4M	8,000	127,000	2,333	6,849	0.8680	2,688	7,891	0.336	0.986	A	E
	SB				6,849	3,463		7,890	3,990	0.986	0.499	E	B
Deer Springs Rd to N. Centre City Pkwy	NB	4M	8,000	125,000	2,296	6,742	0.8680	2,646	7,767	0.331	0.971	A	E
	SB				6,741	3,408		7,766	3,927	0.971	0.491	E	B
N. Centre Pkwy to El Norte Pkwy	NB	4M	8,000	119,000	1,703	6,374	0.8680	1,962	7,344	0.245	0.918	A	D
	SB				6,389	3,217		7,360	3,706	0.920	0.463	E	B
El Norte Pkwy to SR 78	NB	4M	8,000	135,000	1,932	7,232	0.8990	2,149	8,044	0.269	1.005	A	F(0)
	SB				7,248	3,649		8,062	4,059	1.008	0.507	F(0)	B
SR 78 to W. Valley Pkwy	NB	4M+2A	10,400	238,000	5,320	11,734	0.9290	5,727	12,630	0.551	1.214	B	F(0)
	SB	5M+1A	11,200		10,935	7,521		11,771	8,095	1.051	0.723	F(0)	C
Interstate 15													
W. Valley Pkwy to Auto Park Way	NB	5M+2ML	12,400	221,000	4,940	10,895	0.9290	5,318	11,728	0.429	0.946	B	E
	SB				10,154	6,983		10,930	7,517	0.881	0.606	D	B
Auto Park Way to W. Citracado Pkwy	NB	5M+2ML	12,400	222,000	4,963	10,945	0.9290	5,342	11,781	0.431	0.950	B	E
	SB	4M+1A+ 2ML	11,600		10,200	7,015		10,979	7,551	0.947	0.651	E	C

Table 2.13–3
Existing Freeway Mainline Operations

Freeway Segment	Dir.	# of Lanes	Hourly Capacity [a]	AADT [b]	Peak Hour Volume [c]		Truck Factor [d]	Peak Hour Volumes Factored for Trucks [e]		V/C [f]		LOS	
					AM	*PM*		*AM*	*PM*	*AM*	*PM*	*AM*	*PM*
W. Citracado Pkwy to Via Rancho Pkwy	NB	5M+2ML	12,400	212,000	4,163	10,629	0.9290	4,481	11,441	0.361	0.923	A	E
	SB	4M+1A+ 2ML	11,600		10,635	6,861		11,448	7,386	0.987	0.637	E	C
Via Rancho Pkwy to Pomerado Rd	NB	4M+1A+ 2ML	11,600	217,000	6,309	10,067	0.9290	6,791	10,837	0.585	0.934	B	E
	SB	5+2ML	12,400		9,880	6,642		10,635	7,149	0.858	0.577	D	B
Pomerado Rd to Rancho Bernardo Rd	NB	5M+2 ML	12,400	206,000	4,311	9,327	0.9290	4,640	10,039	0.374	0.810	A	D
	SB	5M+1A+ 2ML	13,600		9,676	6,597		10,416	7,101	0.766	0.522	C	B
Rancho Bernardo Rd to Bernardo Center Drive	NB	5M+1A+ 2ML	13,600	211,000	4,416	9,553	0.9290	4,753	10,283	0.349	0.756	A	C
	SB	5M+2ML	12,400		9,911	6,757		10,669	7,274	0.860	0.587	D	B
Bernardo Ctr Drive to Camino Del Norte	NB	5M+1A+ 2ML	13,600	220,000	4,604	9,960	0.9290	4,956	10,722	0.364	0.788	A	C
	SB				10,334	7,046		11,124	7,584	0.818	0.558	D	B
SR 78													
Mar Vista Rd to Sycamore Ave	WB	3M	6,000	131,000	4,291	5,523	0.9557	4,490	5,779	0.748	0.963	C	E
	EB				5,429	4,368		5,680	4,570	0.947	0.762	E	C
Sycamore Ave to Rancho Santa Fe Ave	WB	3M	6,000	137,000	4,488	5,776	0.9557	4,696	6,044	0.783	1.007	C	F(0)
	EB				5,677	4,568		5,941	4,779	0.990	0.797	E	C
Rancho Santa Fe Ave to Las Posas Rd	WB	3M+1A	7,200	143,000	5,254	6,054	0.9557	5,497	6,335	0.764	0.880	C	D
	EB				5,786	4,556		6,054	4,767	0.841	0.662	D	C
Las Posas Rd to San Marcos Blvd	WB	3M	6,000	144,000	5,289	6,097	0.9557	5,535	6,379	0.922	1.063	E	F(0)
	EB				5,827	4,588		6,098	4,801	1.016	0.800	F(0)	D
San Marcos Blvd to Twin Oaks Valley Rd	WB	3M+1A	7,200	170,000	6,244	7,198	0.9557	6,534	7,531	0.907	1.046	D	F(0)
	EB				6,880	5,416		7,198	5,668	1.000	0.787	E	C

Footnotes:

[a.] Capacity calculated at 2,000 vehicles per hour (vph) per mainline lane (M); 1,200 per Managed lane (ML); and 1,200 vph per Auxiliary (A) lane.

b. Existing Average Annual Daily Traffic Volumes from Caltrans Traffic Census, 2015).
c. Truck Factor from "2015 Annual Average Daily Truck Traffic on the California State Highway System".
d. Peak Hour Volumes factored using Passenger Car Equivalent (PCE) for trucks.
e. V/C = (Peak Hour volume/Truck Factor/Capacity).

Table 2.13-4
Existing Ramp Meter Operations

Location/Condition	Peak Hour	Demand D [a] (veh/hr/ln)	Meter Rate R [b] (veh/hr/ln)	Calculated (Most Restrictive)		
				Excess Demand E [c] (veh/hr/ln)	*Delay [d] (min/ln)*	*Queue [e] (ft)*
Sycamore Ave/SR 78 Interchange					*(2 SOV+1 HOV)*	
Sycamore Ave to SR 78 WB	AM	247	418	0	0	0
San Marcos Blvd/SR 78 Interchange					*(1 SOV + 1 HOV)*	
San Marcos Blvd SB to SR 78 WB	AM	231	301	0	0	0

a. Demand "D" is the traffic that desires to enter the freeway at this on-ramp during the peak hour.
b. Meter Rate "R" is the *most restrictive* rate at which the ramp meter (signal) discharges traffic on to the freeway (see Appendix A of the Traffic Impact Analysis for the ramp meter data obtained from Caltrans).
c. Excess Demand "E" is the difference between the Demand and the Peak Hour Flow.
d. Delay in minutes per lane experienced by each vehicle, calculated as the ratio of the Excess Demand and the Peak Hour Flow in one minute.
e. Queue is calculated as 25 feet per vehicle (E).

Table 2.13-5
Average Daily Vehicle Trips and Level of Service – County of San Diego

Circulation Element Roads		No. of Travel Lanes	Levels Of Service*				
Roadway Classification			*A*	*B*	*C*	*D*	*E*
Expressway (6.1)		6	<36,000	<54,000	<70,000	<86,000	<108,000
Prime Arterial (6.2)		6	<22,200	<37,000	<44,600	<50,000	<57,000
Major Road	(4.1A)	4	<14,800	<24,700	<29,600	<33,400	<37,000
	W/ Intermittent Turn Lanes (4.1B)	4	<13,700	<22,800	<27,400	<30,800	<34,200
Collector		4	<13,700	<22,800	<27,400	<30,800	<34,200
Boulevard	W/ Raised Median (4.2A)	4	<18,000	<21,000	<24,000	<27,000	<30,000
	W/ Intermittent Turn Lanes (4.2B)	4	<16,800	<19,600	<22,500	<25,000	<28,000
Town Collector		2	<3,000	<6,000	<9,500	<13,500	<19,000
Community Collector	W/ Raised Median (2.1)	2	<10,000	<11,700	<13,400	<15,000	<19,000
	W/ Continuous Left-Turn Lane (2.1B)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	W/ Intermittent Turn Lanes (2.1C)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	W/ Passing Lane (2.1D)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	No Median (2.1E)	2	<1,900	<4,100	<7,100	<10,900	<16,200
Light Collector	W/ Raised Median (2.2A)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	W/ Continuous Left-Turn Lane (2.2B)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	W/ Intermittent Turn Lanes (2.2C)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	W/ Passing Lane (2.2D)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	No Median (2.2E)	2	<1,900	<4,100	<7,100	<10,900	<16,200
		2	<1,900	<4,100	<7,100	<10,900	<16,200
	W/ Reduced Shoulder	2	<5,800	<6,800	<7,800	<8,700	<9,700
Rural Collector	Collector	2	<1,900	<4,100	<7,100	<10,900	<16,200
Rural Light Collector		2	<1,900	<4,100	<7,100	<10,900	<16,200

Table 2.13-5
Average Daily Vehicle Trips and Level of Service – County of San Diego

Circulation Element Roads		No. of Travel Lanes	Levels Of Service*				
Roadway Classification			*A*	*B*	*C*	*D*	*E*
Rural Mountain		2	<1,900	<4,100	<7,100	<10,900	<16,200
Recreational Parkway		2	<1,900	<4,100	<7,100	<10,900	<16,200
Minor Collector	W/ Raised Median (2.3A)	2	<3,000	<6,000	<7,000	<8,000	<9,000
	W/ Intermittent (Turn Lane (2.3B)	2	<3,000	<6,000	<7,000	<8,000	<9,000
	No Median (2.3CE)	2	<1,900	<4,100	<6,000	<7,000	<8,000
Non-Circulation Element Roads**			**Levels Of Service**				
Residential Collector		2	-	-	<4,500	-	-
Rural Residential Collector ***		2	-	-	<4,500	-	-
Residential Road		2	-	-	<1,500	-	-
Rural Residential Road ***		2	-	-	<1,500	-	-
Residential Cul-de-Sac or Loop Road		2	-	-	<200	-	-

Source: Appendix R

* The values shown are subject to adjustment based on the geometry of the roadway side frictions and other relevant factors as determined by the Director, Department of Public Works.

** Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

*** Rural Residential Collectors and Rural Residential Roads are intended to serve areas with lot sizes of 2 acres or more that do not have a demand for on-street parking. On-street parking is not assured for these cross-sections. Additional right-of-way is needed if on-street parking is in paved area.

Table 2.13-6
Proposed ADT Thresholds For Roadway Segments – City of Escondido

Street Classification	Lanes	Cross Sections (feet)	TIA Trigger-Points (ADT generation)
Prime Arterial	(8 lanes) (6 lanes)	116/136 (NP) 106/126 (NP)	900 800
Major Road	(6 lanes) (4 lanes)	90/110 (NP) 82/102 (NP)	700 500
Collector	(4 lanes) (4 lanes)	64/84 (NP) (WP)	500 250
Local Collector and other	(2 lanes) (2 lanes)	42/66 (NP) (WP)	200

Table 2.13-7
Daily Street Segment Capacity – City of San Marcos

Street Typology	Typical Lane Configuration	Vehicular Level of Service[4]				
		LOS A	*LOS B*	*LOS C*	*LOS D*	*LOS E*
Existing Roadway Classifications/Standards						
Prime Arterial	7 to 8 lanes	29,200	40,800	58,300	64,200	70,000

Table 2.13-7
Daily Street Segment Capacity – City of San Marcos

Street Typology	Typical Lane Configuration	Vehicular Level of Service[4]				
		LOS A	*LOS B*	*LOS C*	*LOS D*	*LOS E*
Prime Arterial	6 lanes	25,000	35,000	50,000	55,000	60,000
Major Arterial	5 lanes	18,000	25,000	35,000	40,000	45,000
Major Arterial	4 lanes	15,000	21,000	30,000	35,000	40,000
Secondary Arterial	5 lanes	12,500	17,500	25,000	31,300	37,500
Secondary Arterial	4 lanes	10,000	14,000	20,000	25,000	30,000
Secondary Arterial	3 lanes	7,500	10,500	15,000	18,000	22,500
Collector	2 lanes plus TWLTL	5,000	7,000	10,000	13,000	15,000
Collector	2 lanes	2,500	3,500	5,000	6,500	8,000
General Plan Complete Street Typology Standards						
Arterial	8 lanes	29,200	40,800	58,300	64,200	70,000
Arterial	6 lanes	25,000	35,000	50,000	55,000	60,000
Arterial with Class II or Class III Bicycle Lanes	4 lanes	15,000	21,000	30,000	35,000	40,000
Arterial with enhanced Bicycle facilities	4 lanes	15,000	21,000	30,000	35,000	40,000
Multi-Way Boulevard	4 lanes for through trips, two lanes for local serving trips[1]	16,800	25,200	31,500	37,800	42,000
Industrial Collector	4 lanes	10,000	14,000	20,000	25,000	30,000
Collector and Main Street	2 lanes plus TWLTL	5,000	7,000	10,000	13,000	15,000
Collector and Main Street	2 lanes[2]	2,500	3,000	5,000	6,500	8,000
Freeway	Mixed-Flow Lane[3]	–	–	1,760	1,980	2,200
Freeway	HOV Lanes[3]	–	–	1,440	1,620	1,800

Source: Appendix R
TWLTL = two-way-left-turn lane
These are general capacities for planning purposes. Specific operational characteristics, such as signal coordination, can enhance operations significantly.

1. LOS thresholds were calculated based on V/C ratios of the daily threshold volumes for the corresponding roadway classification. Multi-way Boulevard
2. Capacity assumes a similar capacity as a four-lane arterial plus an additional 1,000 ADT capacity per lane for the local service roadway.
3. With fronting commercial or residential property
4. Per-lane capacities presented.

Table 2.13-8
Caltrans District 11 – Freeway Segment Level Of Service Operations

LOS	V/C	Congestion/Delay	Traffic Description
Used for Freeways, Expressways and Conventional Highways			
A	<0.41	None	Free flow
B	0.42–0.62	None	Free to stable flow, light to moderate volumes.
C	0.63–0.80	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted
D	0.81–0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.

Table 2.13-8
Caltrans District 11 – Freeway Segment Level Of Service Operations

LOS	V/C	Congestion/Delay	Traffic Description
E	0.93–1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
Used for Freeways and Expressways			
F(0)	1.01–1.25	Considerable 0–1 hour delay	Forced flow, heavy congestion, long queues form behind breakdown points, stop and go.
F(I)	1.26–1.35	Severe 1–2 hour delay	Very heavy congestion, very long queues.
F(2)	1.36–1.45	Very Severe 2–3 hour delay	Extremely heavy congestion, longer queues, more numerous breakdown points, longer stop periods.
F(3)	**>1.46**	**Extremely Severe : 3+ hours of delay**	**Gridlock**

Table 2.13-9
Intersection Level of Service and Delay Ranges

LOS	Delay (seconds per vehicle)	
	Signalized Intersections	*Unsignalized Intersections*
A	≤ 10.0	≤ 10.0
B	10.1 to 20.0	10.1 to 15.0
C	20.1 to 35.0	15.1 to 25.0
D	35.1 to 55.0	25.1 to 35.0
E	55.1 to 80.0	35.1 to 50.0
F	≥ 80.1	≥ 50.1

Source: Appendix R

Table 2.13-10
Project Trip Generation

Land Use	Quantity		Rate [a]		ADT	AM Peak Hour					PM Peak Hour				
						% of ADT	In: Out Split	Volume In	Volume Out	Volume Total	% of ADT	In: Out Split	Volume In	Volume Out	Volume Total
Non-Residential															
Community Parks	12.1	Acres	50	/Acre	605	13%	5:5	40	39	79	9%	5:5	27	27	54
Neighborhood Parks	23.8	Acres	5	/Acre	119	13%	5:5	8	7	15	9%	5:5	6	5	11
Retail	81	KSF [c]	120	/KSF	9,720	4%	6:4	233	156	389	10%	5:5	486	486	972
School	555	Students	1.6	/Student	888	32%	6:4	170	114	284	9%	4:6	32	48	80
Gross Non-Residential					**11,332**			**451**	**316**	**767**			**551**	**566**	**1,117**
Non-Residential Internal Capture & Pass-By															
Parks Internal Capture (75%)					(543)	13%	5:5	(36)	(35)	(71)	9%	5:5	(25)	(24)	(49)
Retail Internal Capture (15%)					(1,458)	4%	6:4	(35)	(23)	(58)	10%	5:5	(73)	(73)	(146)
School Internal Capture (33%)					(293)	32%	6:4	(56)	(38)	(94)	9%	4:6	(10)	(16)	(26)
Non-Residential Internal Capture [d]					**(2,294)**			**(127)**	**(96)**	**(223)**			**(108)**	**(113)**	**(221)**
Retail Pass-By [e] (Non-Project Trips captured from Deer Springs Road)					**(2,066)**			**(50)**	**(33)**	**(83)**			**(165)**	**(165)**	**(330)**
Net Non-Residential (Net of Internal Capture and Pass-By)					**6,972**			**275**	**187**	**461**			**278**	**288**	**566**
Residential															
Single Family	875	DU [b]	10	/DU	8,750	8%	3:7	210	490	700	10%	7:3	613	262	875
Multi Family	935	DU	8	/DU	7,480	8%	2:8	120	478	598	10%	7:3	524	224	748
Senior	325	DU	4	/DU	1,300	5%	4:6	26	39	65	7%	6:4	55	36	91
Gross Residential	2,135	DU			**17,530**			**356**	**1,007**	**1,363**			**1,192**	**522**	**1,714**
Residential Internal Capture [d]					***(2,294)***			***(127)***	***(96)***	***(223)***			***(108)***	***(113)***	***(221)***
Net Residential (Net of Internal Capture)					**15,236**			**229**	**911**	**1,140**			**1,084**	**409**	**1,493**
Gross Project					**28,862**			**807**	**1,323**	**2,130**			**1,743**	**1,088**	**2,831**
Net Project					**22,209**			**504**	**1,098**	**1,601**			**1,362**	**697**	**2,059**

Footnotes:

[a.] Rates obtained from a "Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region", April 2002, published by SANDAG.

b. DU – Dwelling Units
c. KSF - 1,000 SF
d. Non-Residential internal capture for project is 2,294 ADT. The residential internal capture is therefore also 2,294 by definition. Thus, the total internal capture is (2 x 2,294 ADT, 15.9% of total Gross Trips).
e. Pass-by trips percentages: 25% of Daily, 25% AM peak hour, and 40% of PM peak hour of Retail trips net of Retail internal capture.

Table 2.13-11
Measures of Significant Project Impacts to Intersections – Allowable Increases on Congested Intersections

Level of Service	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

1 A critical movement is an intersection movement (right-turn, left-turn, and through-movement) that experiences excessive queues, which typically operate at LOS F.

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 County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road 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 result in a significant impact.

Table 2.13-12
Traffic Impact Significance Thresholds – City of San Marcos/Caltrans

Level of Service with Project [a]	Allowable Increase Due to Project Impacts [b]					
	Freeways		*Roadway Segments*		*Intersections*	*Ramp Metering*
	V/C	*Speed (mph)*	*V/C*	*Speed (mph)*	*Delay (sec.)*	*Delay (min.)*
E and F(or ramp meter delays above 15 minutes)	0.01	1	0.02	1	2	2c

a. All level of service measurements are based on Highway Capacity Manual (HCM) procedures for peak-hour conditions. However, V/C ratios for Roadway Segments may be estimated on an ADT/24-hour traffic volume basis (using Table 2.13-11 or a similar LOS chart for each jurisdiction). The acceptable LOS for freeways, roadways, and intersections is generally "D" ("C" for undeveloped or not densely developed locations per jurisdiction definitions). For metered freeway ramps, LOS does not apply. However, ramp meter delays above 15 minutes are considered excessive.

b. If a proposed project's traffic causes the values shown in the table to be exceeded, the impacts are deemed to be significant. These impact changes may be measured from appropriate computer programs or expanded manual spreadsheets. The project applicant shall then identify feasible mitigations (within the Traffic Impact Analysis [TIA] report) that will maintain the traffic facility at an acceptable LOS. If the LOS with the proposed project becomes unacceptable (see note a above), or if the project adds a significant amount of peak hour trips to cause any traffic queues to exceed on- or off-ramp storage capacities, the project applicant shall be responsible for mitigating significant impact changes.

c. The impact is only considered significant if the total delay exceeds 15 minutes.

V/C = volume-to-capacity ratio

Speed = arterial speed measured in miles per hour

Delay = Average stopped delay per vehicle measured in seconds for intersections, or minutes for ramp meters

Table 2.13-13
Traffic Impact Significance Thresholds – City of Escondido

Level of Service With Project	Allowable Change due to Project Impact		
	Roadway Segments		*Intersections*
	V/C	*Speed Reduction (mph)*	*Delay (sec.)*
D, E, or F	0.02	1	2

Table 2.13-14
Measures of Significant Project Impacts to Mobility Element Road Segments – Allowable Increases on Congested Road Segments

Level of Service	Two-Lane Road	Four-Lane Road	Six-Lane Road
LOS E	200 ADT	400 ADT	600 ADT
LOS F	100 ADT	200 ADT	300 ADT

Notes:
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.
The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.

Table 2.13-15
Construction Trip Generation

Construction Phase	Worker Trips		Vender Trips		Haul Trucks		Total Trips (Construction Activities Occurring simultaneously)	Duration (Days)
	# of Workers (per day)	*Daily Worker Trips*	*Number of Workers (per day)*	*Daily Vendor Trips*	*Number of Workers (per day)*	*Daily Truck Trips*		
Phase 1								
Site Preparation [a]	12	24	4	8	180	360		26
Grading [a]	75	150[1]	18	36[1]	600	1,200		742
Trenching	39	78[1]	16	32[1]	—	—		545
Reservoir Construction [b]	22	44	2	4	100	200		657
Brush Management	96	192[1]	14	28[1]	—	—		135
Paving	18	36[1]	10	20[1]	—	—		701
Building Construction	400	800[1]	20	40[1]	—	—		1,231
Architectural Coatings	80	160[1]	4	8[1]	—	—		1,145
Average Phase 1		**1,416**		**164**			**1,580**	**130**
Phase 2								
Site Preparation [a]	18	36	4	8	192	384		21
Grading [a]	48	96[2]	14	28[2]	400	800		480
Trenching	22	44	12	24	—	—		413
Brush Management	48	96[2]	8	16[2]	—	—		581
Paving	12	24[2]	8	16[2]	—	—		719
Building Construction	200	400[2]	16	32[2]	—	—		737
Architectural Coatings	40	80	4	8	—	—		608
Average Phase 2		**616**		**92**			**708**	**65**

a The truck trips associated with these activities are internal (on-site) and will not use the roadway network. Hence, they ae not included in the construction trips.

General Notes:

1 Activities occurring simultaneously in Phase 1

2 Activities occurring simultaneously in Phase 2

Table 2.13-16
Existing + Project Intersection Operations

	Intersection	Jurisdiction	Traffic Control	Peak Hour	Existing		Existing + Project		Project Traffic/Δ Delay [c]	Impact Type
					Delay [a]	*LOS* [b]	*Delay*	*LOS*		
1	Champagne Blvd/ Gopher Canyon Road	County	Signal	AM	32.9	C	34.3	C	1.4	None
				PM	33.6	C	35.0	D	1.4	None
2	Champagne Blvd/ Old Castle Road	County	Signal	AM	11.4	B	11.8	B	0.4	None
				PM	23.5	C	24.5	C	1.0	None
3	Champagne Blvd/ Lawrence Welk Drive	County	MSSC [d]	AM	11.3	B	12.4	B	0	None
				PM	16.8	C	20.9	C	0	None
4	Mtn Meadow Road/ Champagne Blvd	County	Signal	AM	16.1	B	19.2	B	3.1	None
				PM	20.5	C	24.5	C	4.0	None
5	Deer Springs Road/ I-15 NB Ramps	County	Signal	AM	28.6	C	47.5	D	18.9	None
				PM	38.4	D	**>100.0**	**F**	**>10.0**	**Direct**
6	Deer Springs Road/ I-15 SB Ramps	County	Signal	AM	27.5	C	30.3	C	2.8	None
				PM	60.8	E	**85.1**	**F**	**24.3**	**Direct**
7	Deer Springs Road/ Mesa Rock Road	County	Signal	AM	23.3	C	**>100.0**	**F**	**>10.0**	**Direct**
				PM	22.5	C	**99.1**	**F**	**>10.0**	**Direct**
8	Deer Springs Road/ Sarver Lane	County	Signal	AM	23.1	C	**>100.0**	**F**	**114**	**Direct**
				PM	30.1	D	**>100.0**	**F**	**53**	**Direct**
9	Deer Springs Road/ Sycamore Road	County	MSSC	AM	14.4	B	25.9	D	0	None
				PM	22.6	C	>100.0	F	0	None [c]
10	Twin Oaks Valley Road/ Camino Mayor	County	MSSC	AM	8.6	A	8.8	A	28	None
				PM	8.5	A	8.8	A	41	None
11	Twin Oaks Valley Road/ Deer Springs Road	San Marcos	Signal	AM	44.1	D	**>100.0**	**F**	**>10.0**	**Direct**
				PM	18.6	B	**>100.0**	**F**	**>10.0**	**Direct**
12	Twin Oaks Valley Road/ Buena Creek Road	San Marcos	Signal	AM	24.1	C	**57.2**	**E**	**33.1**	**Direct**
				PM	26.2	C	**69.7**	**E**	**43.5**	**Direct**
13	Twin Oaks Valley Road/ Cassou Road	San Marcos	Signal	AM	29.9	C	44.3	D	14.4	None
				PM	15.6	B	24.5	C	8.9	None

Table 2.13-16
Existing + Project Intersection Operations

	Intersection	Jurisdiction	Traffic Control	Peak Hour	Existing		Existing + Project		Project Traffic/Δ Delay [c]	Impact Type
					Delay [a]	*LOS* [b]	*Delay*	*LOS*		
14	Twin Oaks Valley Road/ La Cienega	San Marcos	Signal	AM	13.2	B	14.0	B	0.8	None
				PM	11.7	B	12.7	B	1.0	None
15	Twin Oaks Valley Road/ Del Roy Drive	San Marcos	Signal	AM	12.7	B	13.3	B	0.6	None
				PM	9.3	A	9.7	A	0.4	None
16	Twin Oaks Valley Road/ Windy Way	San Marcos	Signal	AM	7.0	A	7.4	A	0.4	None
				PM	6.9	A	6.9	A	0.0	None
17	Twin Oaks Valley Road/ Borden Road	San Marcos	Signal	AM	26.1	C	28.1	C	2.0	None
				PM	29.3	C	31.6	C	2.3	None
18	Twin Oaks Valley Road/ Richmar Ave	San Marcos	Signal	AM	22.4	C	23.1	C	0.7	None
				PM	28.5	C	29.3	C	0.8	None
19	Twin Oaks Valley Road/ San Marcos Blvd	San Marcos	Signal	AM	34.8	C	38.0	D	3.2	None
				PM	50.8	D	54.2	D	3.4	None
20	Twin Oaks Valley Road/ SR 78 WB Ramps	Caltrans	Signal	AM	12.2	B	12.4	B	0.2	None
				PM	12.6	B	13.0	B	0.4	None
21	Twin Oaks Valley Road/ SR 78 EB Ramps	Caltrans	Signal	AM	26.6	C	26.7	C	0.1	None
				PM	19.5	B	20.3	C	0.8	None
22	Robelini Drive / S. Santa Fe Ave	County	Signal	AM	65.3	E	**96.4**	**F**	**31.1**	**Direct**
				PM	28.0	C	29.0	C	1.0	None
23	Sycamore Ave/ SR78 WB Ramps	Caltrans	Signal	AM	37.1	D	37.7	D	0.6	None
				PM	32.7	C	33.0	C	0.3	None
24	Sycamore Ave/ SR 78 EB Ramps	Caltrans	Signal	AM	31.2	C	31.3	C	0.1	None
				PM	23.3	C	25.8	C	2.5	None
25	Buena Creek Road/ S. Santa Fe Ave	County	Signal	AM	93.3	F	**>100.0**	**F**	**>10.0**	**Direct**
				PM	72.5	E	**>100.0**	**F**	**>10.0**	**Direct**
26	Buena Creek Road/ Monte Vista Drive	County	AWSC [e]	AM	34.2	D	**94.2**	**F**	**29**	**Direct**
				PM	70.2	F	**>100.0**	**F**	**54**	**Direct**

Table 2.13-16
Existing + Project Intersection Operations

	Intersection	Jurisdiction	Traffic Control	Peak Hour	Existing		Existing + Project		Project Traffic/Δ Delay [c]	Impact Type
					Delay [a]	*LOS* [b]	*Delay*	*LOS*		
27	San Marcos Blvd/ Knoll Road/78 WB Ramps	Caltrans	Signal	AM	35.7	D	35.7	D	0.0	None
				PM	33.5	C	33.5	C	0.0	None
28	San Marcos Blvd/ 78 EB Ramps	Caltrans	Signal	AM	10.8	B	11.0	B	0.2	None
				PM	12.5	B	13.4	B	0.9	None
29	Mission Road/ Vineyard Road	County	Signal	AM	27.4	C	27.5	C	0.1	None
				PM	32.7	C	33.6	C	0.9	None
30	North Centre City Pkwy/Mesa Rock Road	County	Signal	AM	10.6	B	11.0	B	24	None
				PM	9.5	A	9.7	A	17	None
31	North Centre City Pkwy/Country Club Lane	Escondido	Signal	AM	24.4	C	24.5	C	0.1	None
				PM	21.0	C	21.4	C	0.4	None
32	Twin Oaks Valley Rd/Barham Dr/Discovery St	San Marcos	Signal	AM	38.0	D	38.6	D	0.6	None
				PM	51.7	D	52.4	D	0.7	None

a. Average delay per vehicle in seconds
b. Level of service
c. Increase in traffic in the critical movement due to project at unsignalized intersections in San Diego County and increase in delay in the critical movement at unsignalized intersections in the City of San Marcos and the City of Escondido. Increase in delay due to project at signalized intersections.
d. MSSC = Minor Street STOP-Controlled intersection. Minor street delay and LOS are reported.
e. AWSC = All Way STOP-Controlled intersection. Overall delay and LOS are reported.
f. The project does not add traffic to the critical movement at this unsignalized County location and hence the project does not have a significant impact.

Bold indicates potential significant impact.

Signalized	
Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

Unsignalized	
Delay	LOS
0.0 ≤ 10.0	A
10.1 to 15.0	B
15.1 to 25.0	C
25.1 to 35.0	D
35.1 to 50.0	E
≥ 50.1	F

Table 2.13-17
Existing + Project Street Segment Operations

Street Segment	Jurisdiction	Functional Classification [a]	LOS E Capacity [b]	Existing			Existing + Project			Δ V/C / Project Traffic	Impact Type
				Vol [c]	LOS [d]	V/C [e]	Vol	LOS	V/C		
Deer Springs Road											
Twin Oaks Valley Road to Sarver Lane	San Marcos & County	2 Ln Coll/2.2E Lt Col	16,200	18,800	F	1.160	**26,990**	**F**	**1.666**	**8,190**	**Direct**
Sarver Lane to Mesa Rock Road	County	2.2E Lt Col	16,200	19,400	F	1.198	**25,000**	**F**	**1.543**	**5,600**	**Direct**
Mesa Rock Road to I-15 SB Ramps	County	2.2E Lt Col	16,200	22,600	F	1.395	**35,950**	**F**	**2.219**	**13,350**	**Direct**
I-15 to Champagne Boulevard	County	4.1B Major Rd	34,200	12,100	A	0.354	15,520	A	0.454	3,420	None
Mountain Meadow Road											
East of Champagne Blvd	County	4.1B Major Rd	34,200	8,000	A	0.234	9,740	A	0.285	1,740	None
Twin Oaks Valley Road											
Solar Lane to Deer Springs Road	County	2.2E Lt Coll	16,200	3,000	B	0.185	3,430	B	0.212	430	None
Deer Springs Road to Buena Creek Road	San Marcos	2 Ln Coll	15,000	20,700	F	1.380	**28,700**	**F**	**1.913**	**0.533**	**Direct**
Buena Creek Road to Cassou Road	San Marcos	2 Ln Coll	15,000	18,400	F	1.227	**22,440**	**F**	**1.496**	**0.269**	**Direct**
Cassou Road to La Cienega Road	San Marcos	4 Ln Sec Art	30,000	18,000	C	0.600	21,460	D	0.715	0.115	None
La Cienega Road to Windy Way	San Marcos	4 Ln Major Art	40,000	20,300	B	0.508	23,410	C	0.585	0.078	None
Windy Way to Borden Road	San Marcos	4 Ln Major Art	40,000	21,100	C	0.528	24,140	C	0.604	0.076	None
Borden Road to Richmar Ave	San Marcos	4 Ln Major Art	40,000	29,000	C	0.725	31,900	D	0.798	0.073	None
Richmar Ave to San Marcos Blvd	San Marcos	4 Ln Major Art	40,000	31,000	D	0.775	33,440	D	0.836	0.061	None
San Marcos Blvd to SR 78 WB Ramps	San Marcos	Prime Art	60,000	39,100	C	0.652	40,620	C	0.677	0.025	None
SR 78 to Barham Dr / Discovery St	San Marcos	8-Ln Prime Art	70,000	46,800	C	0.669	48,320	C	0.690	0.022	None
Buena Creek Road											
S. Santa Fe Ave to Monte Vista Dr	County	2.2E Lt Coll	16,200	9,200	D	0.568	**11,590**	**E**	**0.715**	**2,390**	**Direct**
Monte Vista Dr to Twin Oaks Valley Road	County	2.2E Lt Coll	16,200	10,400	D	0.642	**14,360**	**E**	**0.886**	**3,960**	**Direct**
Monte Vista Drive											
Foothill Dr to Buena Creek Road	County	2.2E Lt Coll	16,200	9,100	D	0.562	10,120	D	0.625	1,020	None
Mesa Rock Road											
Deer Springs Road to N. Centre City Pkwy	County	4 Ln Major Art	16,200	1,000	A	0.062	1,520	A	0.094	520	None

Table 2.13-17
Existing + Project Street Segment Operations

Street Segment	Jurisdiction	Functional Classification [a]	LOS E Capacity [b]	Existing			Existing + Project			Δ V/C / Project Traffic	Impact Type
				Vol [c]	*LOS* [d]	*V/C* [e]	*Vol*	*LOS*	*V/C*		
Gopher Canyon Road											
Little Gopher Canyon Road to I-15 Ramps	County	2.2E Lt Coll	16,200	16,000	E	0.988	16,110	E	0.994	110	None [f]
I-15 Ramps to Champagne Blvd	County	2.2B Blvd	28,000	14,400	A	0.514	14,510	A	0.518	110	None
Champagne Boulevard											
Old Castle Road to Lawrence Welk Dr	County	2.2E Lt Coll	16,200	5,400	C	0.333	6,290	C	0.388	890	None
Lawrence Welk Dr to Mtn Meadow Road	County	2.2E Lt Coll	16,200	7,400	D	0.457	8,580	D	0.530	1,180	None
North Centre City Parkway											
Mountain Meadow Road to I-15 Ramps	County	2.2E Lt Coll	16,200	5,800	C	0.358	6,300	C	0.389	500	None
I-15 Ramps to Country Club Lane	Escondido	4 Ln Col	34,200	10,900	A	0.319	11,920	B	0.349	0.030	None
Robelini Drive											
Sycamore Ave to S. Santa Fe Ave	County	2.2E Lt Coll	16,200	16,900	F	1.043	**18,580**	**F**	**1.147**	**1,680**	**Direct**
S. Santa Fe Avenue											
Robelini Dr to Buena Creek Road	County	2.1B Com Coll	19,000	15,900	E	0.837	**17,880**	**E**	**0.941**	**1980**	**Direct**
Sycamore Avenue											
SR 78 WB Ramps to University Drive	County	6.2 Prime Art	57,000	34,100	B	0.598	35,780	B	0.628	1,680	None

Footnotes:

a. The existing roadway class.
b. Capacity of the existing roadway per the County Table 1, Average Daily Vehicle Trips.
c. Existing Average Daily Traffic (ADT) volumes.
d. Level of Service.
e. Volume/Capacity ratio.
f. Not a significant impact since the project adds 120 ADT to the segment, less than the allowable threshold of 200 ADT.

Bold indicates potential significant impact.

Table 2.13-18
Existing + Project Freeway Segment Operations

Freeway Segment	Dir.	# of Lanes	Hourly Capacity [a]	Peak Hour Traffic						V/C [e]				LOS		Δ V/C [g]	
				Existing [b]		Project [c]		Existing + Project [d]		Existing [f]		Existing + Project					
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Interstate 15																	
Riverside County Boundary to Mission Rd	NB	4M	8,000	2,216	7,287	57	41	2,273	7,328	0.277	0.911	0.284	0.916	A	D	0.007	0.005
	SB			8,489	3,586	31	72	8,520	3,658	1.061	0.448	1.065	0.457	F(0)	B	0.004	0.009
Mission Rd to SR-76	NB	4M	8,000	2,318	7,226	57	41	2,375	7,267	0.290	0.903	0.297	0.908	A	D	0.007	0.005
	SB			8,114	3,652	31	72	8,145	3,724	1.014	0.456	1.018	0.465	F(0)	B	0.004	0.009
SR-76 to Old Highway 395	NB	4M	8,000	2,129	6,637	57	41	2,186	6,678	0.266	0.830	0.273	0.835	A	D	0.007	0.005
	SB			7,453	3,354	31	72	7,484	3,426	0.932	0.419	0.935	0.428	E	B	0.004	0.009
Old Highway 395 to Gopher Cyn Rd	NB	4M	8,000	2,456	7,209	76	54	2,532	7,263	0.307	0.901	0.316	0.908	A	D	0.009	0.007
	SB			7,209	3,645	41	96	7,250	3,741	0.901	0.456	0.906	0.468	D	B	0.005	0.012
Gopher Canyon Rd to Deer Springs Rd	NB	4M	8,000	2,688	7,891	95	68	2,783	7,959	0.336	0.986	0.348	0.995	A	E	0.012	0.009
	SB			7,890	3,990	51	120	7,941	4,110	0.986	0.499	0.993	0.514	E	B	0.006	0.015
Deer Springs Rd to N. Centre City Pkwy	NB	4	8,000	2,646	7,767	151	519	2,797	8,286	0.331	0.971	0.350	1.036	A	**E**	0.019	**0.065**
	SB			7,766	3,927	428	231	8,194	4,158	0.971	0.491	1.024	0.520	**E**	B	**0.053**	0.029
N. Centre Pkwy to El Norte Pkwy	NB	4	8,000	1,962	7,344	151	519	2,113	7,863	0.245	0.918	0.264	0.983	A	D	0.019	0.065
	SB			7,360	3,706	476	231	7,836	3,937	0.920	0.463	0.980	0.492	**E**	B	**0.060**	0.029
El Norte Pkwy to SR 78	NB	4	8,000	2,149	8,044	151	519	2,300	8,563	0.269	1.005	0.288	1.070	A	**F(0)**	0.019	**0.065**
	SB			8,062	4,059	428	231	8,490	4,290	1.008	0.507	1.061	0.536	**F(0)**	B	**0.053**	0.029

Table 2.13-18
Existing + Project Freeway Segment Operations

Freeway Segment	Dir.	# of Lanes	Hourly Capacity [a]	Peak Hour Traffic						V/C [e]				LOS		Δ V/C [g]	
				Existing [b]		Project [c]		Existing + Project [d]		Existing [f]		Existing + Project					
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Interstate 15																	
SR 78 to W. Valley Pkwy	NB	4M+2A	10,400	5,727	12,630	136	467	5,863	13,097	0.551	1.214	0.564	1.259	B	**F(0)**	0.013	**0.045**
	SB	5M+1A	11,200	11,771	8,095	385	208	12,156	8,303	1.051	0.723	1.085	0.741	**F(0)**	C	**0.034**	0.019
W. Valley Pkwy to Auto Park Way	NB	5M+ 2ML	12,400	5,318	11,728	122	420	5,440	12,148	0.429	0.946	0.439	0.980	B	**E**	0.010	**0.034**
	SB			10,930	7,517	347	187	11,277	7,704	0.881	0.606	0.909	0.621	D	B	0.028	0.015
Auto Park Way to W. Citracado Pkwy	NB	5M+ 2ML	12,400	5,342	11,781	110	378	5,452	12,160	0.431	0.950	0.440	0.981	B	**E**	0.009	**0.031**
	SB	4M+1A +2ML	11,600	10,979	7,551	312	168	11,291	7,720	0.947	0.651	0.973	0.665	**E**	C	**0.027**	0.015
W. Citracado Pkwy to Via Rancho Pkwy	NB	5M+ 2ML	12,400	4,481	11,441	99	341	4,580	11,781	0.361	0.923	0.369	0.950	A	**E**	0.008	**0.027**
	SB	4M+1A +2ML	11,600	11,448	7,386	281	152	11,729	7,537	0.987	0.637	1.011	0.650	**E**	C	**0.024**	0.013
Via Rancho Pkwy to Pomerado Rd	NB	4M+1A +2ML	11,600	6,791	10,837	89	306	6,880	11,143	0.585	0.934	0.593	0.961	B	**E**	0.008	**0.026**
	SB	5M+ 2ML	12,400	10,635	7,149	253	136	10,887	7,286	0.858	0.577	0.878	0.588	D	B	0.020	0.011
Pomerado Rd to Rancho Bernardo Rd	NB	5M+ 2ML	12,400	4,640	10,039	80	276	4,721	10,315	0.374	0.810	0.381	0.832	A	D	0.006	0.022
	SB	5M+1A +2ML	13,600	10,416	7,101	227	123	10,643	7,224	0.766	0.522	0.783	0.531	C	B	0.017	0.009
Rancho Bernardo Rd to Bernardo Ctr Dr	NB	5M+1A +2ML	13,600	4,753	10,283	72	248	4,825	10,531	0.349	0.756	0.355	0.774	A	C	0.005	0.018
	SB	5M+ 2ML	12,400	10,669	7,274	205	110	10,874	7,384	0.860	0.587	0.877	0.596	D	B	0.017	0.009

Table 2.13-18
Existing + Project Freeway Segment Operations

Freeway Segment	Dir.	# of Lanes	Hourly Capacity [a]	Peak Hour Traffic						V/C [e]				LOS		Δ V/C [g]	
				Existing [b]		Project [c]		Existing + Project [d]		Existing [f]		Existing + Project					
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Bernardo Ctr Dr to Camino Del Norte	NB	5M+1A +2ML	13,600	4,956	10,722	65	223	5,021	10,945	0.364	0.788	0.369	0.805	A	C	0.005	0.016
	SB			11,124	7,584	184	99	11,308	7,683	0.818	0.558	0.831	0.565	D	B	0.014	0.007
SR 78																	
Mar Vista Rd to Sycamore Ave	WB	3M	6,000	4,490	5,779	136	61	4,626	5,840	0.748	0.963	0.771	0.973	C	E	0.023	0.010
	EB			5,680	4,570	34	162	5,714	4,732	0.947	0.762	0.952	0.789	E	C	0.006	0.027
Sycamore Ave to Rancho Santa Fe Ave	WB	3M	6,000	4,696	6,044	54	24	4,750	6,068	0.783	1.007	0.792	1.011	C	F(0)	0.009	0.004
	EB			5,941	4,779	13	162	5,954	4,941	0.990	0.797	0.992	0.824	E	C	0.002	0.027
Rancho Santa Fe Ave to Las Posas Rd	WB	3M + 1A	7,200	5,497	6,335	54	24	5,551	6,359	0.764	0.880	0.771	0.883	C	D	0.007	0.003
	EB			6,054	4,767	13	65	6,067	4,832	0.841	0.662	0.843	0.671	D	C	0.002	0.009
Las Posas Rd to San Marcos Blvd	WB	3M	6,000	5,535	6,379	54	24	5,589	6,403	0.922	1.063	0.931	1.067	E	F(0)	0.009	0.004
	EB			6,098	4,801	13	65	6,111	4,866	1.016	0.800	1.018	0.811	F(0)	D	0.002	0.011
San Marcos Blvd to Twin Oaks Valley Rd	WB	3M + 1A	7,200	6,534	7,531	18	8	6,552	7,539	0.907	1.046	0.910	1.047	D	F(0)	0.002	0.001
	EB			7,198	5,668	4	22	7,202	5,690	1.000	0.787	1.000	0.790	E	C	0.001	0.003

Footnotes:

a. Capacity calculated at 2,000 vehicles per hour (vph) per mainline lane (M); 1,200 per Managed lane (ML); and 1,200 vph per Auxiliary (A) lane.
b. Peak Hour Volumes from Table 7-3 in Appendix R.
c. Project traffic added to the freeway segments.
d. Total Existing + Project peak Hour volumes.
e. V/C = (Peak Hour volume/Truck Factor/Capacity)
f. Existing V/C ratio from Table 7-3 in Appendix R.
g. Increase in V/C ratio due to Project traffic.

LOS	v/c
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

Table 2.13-19
Existing + Project + Cumulative Projects Ramp Meter Operations

Location/Condition	Peak Hour	Demand D [a] (veh/hr/ln)	Meter Rate R [b] (veh/hr/ln)	Calculated (Most Restrictive)		
				Excess Demand E [c] (veh/hr/lane)	*Delay [d] (min/lane)*	*Queue [e] (feet)*
Sycamore Ave/SR 78 Interchange						
Sycamore Ave to SR 78 WB				(2 SOV+1 HOV)		
Existing	AM	247	418	0	0	0
Existing + Project	AM	282	418	0	0	0
Project Increase		35		0	0	0
Existing + Project + Cumulative Projects						
Without Mountain Meadow Road Connection	AM	293	418	0	0	0
Project Increase		35		0	0	0
With Mountain Meadow Road Connection	AM	306	418	0	0	0
Project Increase		35		0	0	0
San Marcos Blvd/SR 78 Interchange						
San Marcos Blvd SB to SR 78 WB				(1 SOV + 1 HOV)		
Existing	AM	231	301	0	0	0
Existing + Project	AM	262	301	0	0	0
Project Increase		31		0	0	0
Existing + Project + Cumulative Projects						
Without Mountain Meadow Road Connection	AM	266	301	0	0	0
Project Increase		31		0	0	0
With Mountain Meadow Road Connection	AM	292	301	0	0	0
Project Increase		31		0	0	0

a. Demand "D" is the traffic that desires to enter the freeway at this on-ramp during the peak hour.
b. Meter Rate "R" is the most restrictive rate at which the ramp meter (signal) discharges traffic on to the freeway (see Appendix A of the Traffic Impact Analysis) for the ramp meter data obtained from Caltrans).
c. Excess Demand "E" is the difference between the Demand and the Peak Hour Flow.
d. Delay in minutes per lane experienced by each vehicle, calculated as the ratio of the Excess Demand and the Peak Hour Flow in one minute.
e. Queue is calculated as 25 feet per vehicle (E).

Table 2.13-20
Internal Intersection Operations

	Intersection	Traffic Control	Peak Hour	Delay [a]	LOS [b]
1	Mesa Rock Road/Street "K-10"	MSSC [c]	AM	8.5	A
			PM	8.4	A
2	Mesa Rock Road/Street "S-1"	MSSC	AM	9.3	A
			PM	9.4	A
3	Mesa Rock Road/Street "K-9"	MSSC	AM	9.2	A
			PM	8.9	A
4	Mesa Rock Road/Street "K-1"	MSSC	AM	9.6	A
			PM	9.1	A
5	Mesa Rock Road/Street "M-2"	MSSC	AM	11.6	B
			PM	12.5	B
6	Mesa Rock Road/Sarver Lane	MSSC	AM	9.7	A
			PM	11.7	B
7	Sarver Lane/Street "V-3"	MSSC	AM	11.5	B
			PM	11.3	B
8	Sarver Lane/Street "V-5"	MSSC	AM	12.9	B
			PM	12.5	B
9	Sarver Lane/Street "V-1"	MSSC	AM	11.8	B
			PM	10.9	B
10	Mesa Rock Road/Street "H-2"	MSSC	AM	12.0	B
			PM	14.3	B
11	Mesa Rock Road/Street "H-1"	MSSC	AM	14.9	B
			PM	19.2	C
12	Mesa Rock Road/Street "T-1" North	MSSC	AM	12.4	B
			PM	10.3	B
13	Mesa Rock Road/Street "T-1" South	MSSC	AM	17.5	C
			PM	11.6	B
14	Mesa Rock Road/Street "TC-3"	MSSC	AM	27.2	D
			PM	32.4	D
15	Mesa Rock Road/Street "TC-2"	Signal	AM	8.1	A
			PM	13.2	B
16	Mesa Rock Road/Street "TC-1"	Signal	AM	10.7	B
			PM	19.2	B
17	Mesa Rock Road/Mesa Rock Way	MSSC	AM	9.7	A
			PM	13.2	B

a. Average delay per vehicle in seconds
b. Level of Service
c. Minor Street STOP Control – Minor street left-turn delay and LOS reported.

Table 2.13-21
Internal Street Segment Operations

Segment	Functional Classification [a]	LOS E Capacity [b]	Volume	LOS
Camino Mayor				
Twin Oaks Valley Road to Sierra Summit	Modified 2.2 E Light Collector	14,600	200	A
Mesa Rock Road				
Sierra Summit to Sierra Knolls	Mod 2.2 E Light Collector	14,600	1,200	A
Sierra Knolls to Sarver Lane	Mod 2.2 E Light Collector	14,600	4,900	C
Sarver Lane to Sierra Hillside	Mod 2.2 E Light Collector	14,600	5,900	C
Sierra Hillside to Sierra Terraces	Mod 2.2 E Light Collector	14,600	6,600	D
Sierra Terraces to Sierra Town Center	2.2 Light Collector	27,000	10,300	D
Sierra Town Center to Deer Springs Road	Mod 4.2 B Boulevard W Median	27,000	~~19,300~~20, 100	C
Sarver Lane				
Mesa Rock Road to Sierra Valley	2.2 Light Collector	16,200	4,600	C
Sierra Valley to Deer Springs Road	2.2 Light Collector	16,200	6,300	C

a. Classification of the roadway
b. Capacity of the roadway. A lower (90%) capacity is assumed since it is a modified roadway

Table 2.13-22
Residential Daily Home-Based Automobile VMT Per Capita Baseline and Threshold Values

Residential Land Use Type	Scenario 1 SANDAG Region Home Based VMT/Capita		Scenario 2 North County East Sub-Region Home Based VMT/Capita	
	Region Average	*Threshold (15% below region average)*	*Sub-Region Average*	*Threshold (15% below sub-region average)*
Single-Family	26.37	22.41	28.61	24.32
Multi-Family	18.14	15.42	24.28	20.64
Age-Qualified	9.07	7.71	12.14	10.32

Source: Fehr & Peers 2017.

Table 2.13-23
Residential Daily Home-Based Automobile VMT Per Capita

Residential Land Use Type	Project Home-Based VMT/Capita	Scenario 1 Region Home Based VMT/Capita			Scenario 2 Sub-Region Home Based VMT/Capita		
		Region Average	*Threshold*	*Significant Impact?*	*Sub-Region Average*	*Threshold*	*Significant Impact?*
Single-Family	25.73	26.37	22.41	Yes	28.61	24.32	Yes
Multi-Family	21.39	18.14	15.42	Yes	24.28	20.64	Yes
Age-Qualified	10.69	9.07	7.71	Yes	12.14	10.32	Yes

Source: Fehr & Peers, 2017.

Table 2.13-24
Home-Based Automobile VMT per Capita with TDM Program

Residential Land Use Type	Project Home-Based VMT/Capita With TDM Mitigation	Scenario 1 Region Home Based VMT/Capita			Scenario 2 Sub-Region Home Based VMT/Capita		
		Region Average	*Threshold*	*Significant Impact?*	*Sub-Region Average*	*Threshold*	*Significant Impact?*
Single Family	24.16	26.37	22.41	Yes	28.61	24.32	No
Multi Family	20.08	18.14	15.42	Yes	24.28	20.64	No
Age-Qualified	10.04	9.07	7.71	Yes	12.14	10.32	No

Source: Fehr & Peers, 2017.

Table 2.13-25
Roadway Capacity Expansion Projects Daily VMT

Variable	Short-Term VMT (Low)	Short-Term VMT (High)	Long-Term VMT
Baseline Lane-Miles (a)	10,370.11 miles		
Project Added Lane-Miles	6.04 miles		
Percent Change in Lane-Miles	0.058%		
Baseline VMT (a)	77,484,940		
Elasticity (b)	0.1	0.6	1.03
Induced Daily VMT (c)	4,513	27,078	46,484
Induced Annual VMT (d)	1,647,245	9,883,470	16,966,660

Source: Fehr & Peers, 2016

Notes:

a. *2014 California Public Road Data, Statistical Information Derived from the Highway Performance Monitoring System*, Caltrans.

b. Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Green House Gas Emissions, Policy Brief, Susan Handy and Marion G. Boarnet, Air Resources Board, September 20014. Individual elasticity estimates based on Table 1, Page 4.

c. Induced VMT Calculation = Percent Change in Lane-Miles * Baseline VMT * Elasticity

d. Induced Daily VMT x 365 days

Table 2.13-26
Cumulative Intersection Operations ~~(Existing Road Network)~~

	Intersection	Jurisdiction	Traffic Control	Peak Hour	Existing + Project		Project Traffic / Δ Delay [c]	Existing + Project + Cumulative Projects					
								~~Without Mountain Meadow Road Connection~~Existing Road Network			*With Mountain Meadow Road Connection*		
					Delay [a]	*LOS [b]*		*Delay*	*LOS*	*Impact*	*Delay*	*LOS*	*Impact*
1	Champagne Blvd / Gopher Canyon Rd	County	Signal	AM	34.3	C	1.4	~~41.4~~41.5	D	None	~~41.5~~40.9	D	None
				PM	35.0	D	1.4	~~47.4~~45.6	D	None	~~45.6~~44.5	D	None
2	Champagne Blvd / Old Castle Rd	County	Signal	AM	11.8	B	0.4	14.6	B	None	~~14.6~~12.7	B	None
				PM	24.5	C	1.0	31.8	C	None	~~31.8~~33.0	C	None
3	Champagne Blvd / Lawrence Welk Dr	County	MSSC	AM	12.4	B	0	13.6	B	None	~~13.6~~13.3	B	None
				PM	20.9	C	0	~~33.5~~32.8	D	None	~~32.8~~24.4	~~D~~C	None
4	Mountain Meadow Rd / Champagne Blvd	County	Signal	AM	19.2	B	3.1	~~21.4~~21.2	C	None	~~21.2~~24.9	C	None
				PM	24.4	C	3.9	~~28.3~~28.5	C	None	~~28.5~~37.4	~~C~~D	None
5	Deer Springs Rd / I-15 NB Ramps	Caltrans	Signal	AM	47.5	D	18.9	**~~56.2~~59.1**	**E**	**Cumulative**	**~~59.1~~59.3**	**E**	**Cumulative**
				PM	**>100.0**	**F**	**>10.0**	**>100.0**	**F**	**Cumulative**	**>100.0**	**F**	**Cumulative**
6	Deer Springs Rd / I-15 SB Ramps	Caltrans	Signal	AM	30.3	C	2.8	~~42.0~~50.1	D	None	~~50.1~~39.8	D	None
				PM	**85.1**	**F**	**24.3**	**~~96.3~~>100.0**	**F**	**Cumulative**	**~~>100.0~~71.8**	**~~F~~E**	**Cumulative**
7	Deer Springs Rd / Mesa Rock Rd	County	Signal	AM	**>100.0**	**F**	**>10.0**	**>100.0**	**F**	**Cumulative**	**>100.0**	**F**	**Cumulative**
				PM	**99.1**	**F**	**>10.0**	**>100.0**	**F**	**Cumulative**	**>100.0**	**F**	**Cumulative**
9	Deer Springs Rd / Sarver Ln	County	MSSC	AM	**>100.0**	**F**	**91**	**>100.0**	**F**	**Cumulative**	**>100.0**	**F**	**Cumulative**
				PM	**>100.0**	**F**	**41**	**>100.0**	**F**	**Cumulative**	**>100.0**	**F**	**Cumulative**
10	Deer Springs Rd / Sycamore Rd	County	MSSC	AM	25.9	D	0	**>100.0**	**F**	**Cumulative**	**>100.0**	**F**	**Cumulative**
				PM	>100.0	F	0	**>100.0**	**F**	**Cumulative**	**>100.0**	**F**	**Cumulative**
11	Twin Oaks Valley Rd / Camino Mayor	County	MSSC	AM	8.8	A	20	10.4	B	None	~~10.4~~10.5	B	None
				PM	8.8	A	15	9.5	A	None	~~9.5~~9.6	A	None
12	Twin Oaks Valley Rd / Deer Springs Rd	San Marcos	Signal	AM	**>100.0**	**F**	**>10.0**	**>100.0**	**F**	**Cumulative**	**>100.0**	**F**	**Cumulative**
				PM	**>100.0**	**F**	**>10.0**	**>100.0**	**F**	**Cumulative**	**>100.0**	**F**	**Cumulative**
13	Twin Oaks Valley Rd /	San Marcos	Signal	AM	**57.2**	**E**	**33.1**	**~~69.8~~82.6**	**~~E~~F**	**Cumulative**	**~~82.6~~84.0**	**~~E~~F**	**Cumulative**

Table 2.13-26
Cumulative Intersection Operations ~~(Existing Road Network)~~

	Intersection	Jurisdiction	Traffic Control	Peak Hour	Existing + Project		Project Traffic / Δ Delay [c]	Existing + Project + Cumulative Projects					
								~~Without Mountain Meadow Road Connection~~Existing Road Network			*With Mountain Meadow Road Connection*		
					Delay [a]	*LOS [b]*		*Delay*	*LOS*	*Impact*	*Delay*	*LOS*	*Impact*
	Buena Creek Rd			PM	**69.7**	**E**	**43.5**	**~~99.0~~>100.0**	**F**	**Cumulative**	**~~>100.0~~97.5**	**F**	**Cumulative**
14	Twin Oaks Valley Rd / Cassou Rd	San Marcos	Signal	AM	44.3	D	14.4	~~49.7~~50.8	D	None	~~50.8~~49.7	D	None
				PM	24.5	C	8.9	~~33.1~~34.6	C	None	~~34.6~~31.8	C	None
15	Twin Oaks Valley Rd / La Cienega Rd	San Marcos	Signal	AM	14.0	B	0.8	~~14.5~~15.7	B	None	~~15.7~~15.4	B	None
				PM	12.7	B	1.0	~~13.4~~15.0	B	None	~~15.0~~15.1	B	None
16	Twin Oaks Valley Rd / Del Roy Dr	San Marcos	Signal	AM	13.3	B	0.6	~~14.6~~14.8	B	None	~~14.8~~18.9	B	None
				PM	9.7	A	0.4	~~18.8~~19.0	B	None	~~19.0~~13.1	B	None
17	Twin Oaks Valley Rd / Windy Wy	San Marcos	Signal	AM	7.4	A	0.4	~~8.5~~8.6	A	None	~~8.6~~9.8	A	None
				PM	6.9	A	0.0	7.2	A	None	~~7.2~~7.5	A	None
18	Twin Oaks Valley Rd / Borden Rd	San Marcos	Signal	AM	28.1	C	2.0	~~37.7~~37.9	D	None	~~37.9~~38.1	D	None
				PM	31.6	C	2.3	~~42.7~~42.9	D	None	~~42.9~~43.1	D	None
19	Twin Oaks Valley Rd / Richmar Ave	San Marcos	Signal	AM	23.1	C	0.7	~~29.0~~29.3	C	None	~~29.3~~29.0	C	None
				PM	29.3	C	0.8	~~41.4~~40.8	D	None	~~40.8~~41.7	D	None
20	Twin Oaks Valley Rd / San Marcos Blvd	San Marcos	Signal	AM	38.0	D	3.2	**~~85.3~~85.6**	**F**	**Cumulative**	**~~85.6~~82.3**	**F**	**Cumulative**
				PM	54.2	D	3.4	**>100.0**	**F**	**Cumulative**	**>100.0**	**F**	**Cumulative**
21	Twin Oaks Valley Rd / SR 78 WB Ramps	Caltrans	Signal	AM	12.4	B	0.2	~~15.5~~15.2	B	None	~~15.2~~15.5	B	None
				PM	13.0	B	0.4	~~15.6~~16.8	B	None	~~16.8~~15.5	B	None
22	Twin Oaks Valley Rd / SR 78 EB Ramps	Caltrans	Signal	AM	26.7	C	0.1	~~34.7~~34.8	C	None	~~34.8~~34.5	C	None
				PM	20.3	C	0.8	~~47.7~~49.0	D	None	~~49.0~~47.9	D	None
23	Robelini Dr/ S. Santa Fe Ave	County	Signal	AM	**96.4**	**F**	**31.1**	**>100.0**	**F**	**Cumulative**	**>100.0**	**F**	**Cumulative**
				PM	29.0	C	1.0	30.9	C	None	**~~30.9~~>100.0**	**~~C~~F**	**~~None~~Cumulative**
24	Sycamore Ave/	Caltrans	Signal	AM	37.7	D	0.6	~~39.1~~39.3	D	None	~~39.3~~39.1	D	None

Table 2.13-26
Cumulative Intersection Operations ~~(Existing Road Network)~~

	Intersection	Jurisdiction	Traffic Control	Peak Hour	Existing + Project		Project Traffic / Δ Delay [c]	Existing + Project + Cumulative Projects					
								~~*Without Mountain Meadow Road Connection*~~*Existing Road Network*			*With Mountain Meadow Road Connection*		
					Delay [a]	*LOS* [b]		*Delay*	*LOS*	*Impact*	*Delay*	*LOS*	*Impact*
	SR78 WB Ramps			PM	33.0	C	0.3	33.1	C	None	33.1	C	None
25	Sycamore Ave/ SR 78 EB Ramps	Caltrans	Signal	AM	31.3	C	0.1	~~46.9~~49.6	D	None	~~49.6~~46.4	D	None
				PM	25.8	C	2.5	~~30.5~~32.3	C	None	~~32.3~~30.3	C	None
26.	Buena Creek Rd/ S. Santa Fe Ave	County	Signal	AM	**>100.0**	**F**	**>10.0**	**>100.0**	**F**	**Cumulative**	**>100.0**	**F**	**Cumulative**
				PM	**>100.0**	**F**	**>10.0**	**>100.0**	**F**	**Cumulative**	**>100.0**	**F**	**Cumulative**
27	Buena Creek Rd/ Monte Vista Dr	County	AWSC [e]	AM	**94.2**	**F**	**29**	**>100.0**	**F**	**Cumulative**	**>100.0**	**F**	**Cumulative**
				PM	**>100.0**	**F**	**54**	**>100.0**	**F**	**Cumulative**	**>100.0**	**F**	**Cumulative**
28	San Marcos Blvd/ Knoll Rd / SR 78 WB Off Ramp	Caltrans	Signal	AM	35.7	D	0.0	41.5	D	None	41.5	D	None
				PM	33.5	C	0.0	~~43.4~~43.7	D	None	~~43.7~~48.3	D	None
29	San Marcos Blvd / SR 78 EB Off Ramp	Caltrans	Signal	AM	11.0	B	0.2	~~15.9~~17.6	B	None	~~17.6~~15.8	B	None
				PM	13.4	B	0.9	~~17.6~~19.3	B	None	~~19.3~~17.5	B	None
30	Mission Rd/ Vineyard Rd	San Marcos	Signal	AM	27.5	C	0.1	~~30.8~~33.7	C	None	~~33.7~~30.8	C	None
				PM	33.6	C	0.9	~~50.7~~50.8	D	None	~~50.8~~50.7	D	None
31	North Centre City Pkwy/ Mesa Rock Rd	County	Signal	AM	11.0	B	24	12.5	B	None	~~12.5~~13.8	B	None
				PM	9.7	A	17	~~11.4~~10.8	B	None	~~10.8~~11.2	B	None
32	North Centre City Pkwy/ Country Club Ln	Escondido	Signal	AM	24.5	C	0.1	~~30.5~~29.9	C	None	~~29.9~~29.8	C	None
				PM	21.4	C	0.4	27.9	C	None	27.9	C	None
33	Twin Oaks Valley Rd / Barham Dr / Discovery St	San Marcos	Signal	AM	38.6	D	0.6	~~42.5~~43.5	D	None	~~43.5~~44.1	D	None
				PM	52.4	D	0.7	~~54.5~~54.6	D	None	54.6	D	None

Footnotes:

a. Average delay per vehicle in seconds

b. Level of service

c. Increase in traffic in the critical movement due to Project at unsignalized intersections in San Diego County and increase in delay in the critical movement at unsignalized intersections in the City of San Marcos and the City of Escondido. Increase in delay due to Project at signalized intersections.

Signalized	
Delay	LOS
0.0 ≤ 10.0	A
10.1 to 20.0	B
20.1 to 35.0	C
35.1 to 55.0	D
55.1 to 80.0	E
≥ 80.1	F

Unsignalized	
Delay	LOS
0.0 ≤ 10.0	A
10.1 to 15.0	B
15.1 to 25.0	C
25.1 to 35.0	D
35.1 to 50.0	E
≥ 50.1	F

d. MSSC - Minor Street STOP-Controlled intersection. Minor street delay and LOS are reported.
e. AWSC – All Way STOP-Controlled intersection. Overall delay and LOS are reported.

General Notes:
Bold indicates potential impact.

Table 2.13-27
Cumulative Segment Operations (Existing Road Network)

Street Segment	Jurisdiction	Functional Classification [a]	LOS E Capacity [b]	Existing + Project			Existing + Project + Cumulative Projects			Impact Type
				Volume	*LOS [c]*	*V/C [d]*	*Volume*	*LOS*	*V/C*	
Deer Springs Road										
Twin Oaks Valley Rd to Sarver Ln	County	2.2E Lt Col	16,200	**26,990**	**F**	**1.666**	**30,190**	**F**	**1.864**	**Cumulative**
Sarver Lane to Mesa Rock Road	County	2.2E Lt Col	16,200	**25,000**	**F**	**1.543**	**27,600**	**F**	**1.704**	**Cumulative**
Mesa Rock Rd to I-15 SB Ramps	County	2.2E Lt Col	16,200	**35,950**	**F**	**2.219**	**36,750**	**F**	**2.269**	**Cumulative**
I-15 to Champagne Boulevard	County	~~4.2B Blvd~~4.1B Major Rd	~~28,000~~34,200	15,520	B	0.454	16,920	B	~~0.604~~0.495	None
Mountain Meadow Road										
East of Champagne Blvd	County	42A Blvd	30,000	9,740	A	0.285	10,640	A	~~0.355~~0.311	None
Twin Oaks Valley Road										
Solar Ln to Deer Springs Rd	County	2.2E Lt Col	16,200	3,430	B	0.212	4,230	C	0.261	None
Deer Springs Rd to Buena Cr Rd	San Marcos	2 Ln Col	15,000	**28,700**	**F**	**1.913**	**30,400**	**F**	**2.027**	**Cumulative**
Buena Creek Rd to Cassou Rd	San Marcos	2 Ln Col	15,000	**22,440**	**F**	**1.496**	**23,040**	**F**	**1.536**	**Cumulative**
Cassou Rd to La Cienega Rd	San Marcos	4 Ln Sec Art	30,000	21,460	D	0.715	22,280	D	0.743	None
La Cienega Rd to Windy Wy	San Marcos	4 Ln Sec Art	40,000	23,410	C	0.585	28,040	C	0.701	None
Windy Wy to Borden Rd	San Marcos	4 Ln Sec Art	40,000	24,140	C	0.604	28,670	C	0.717	None
Borden Rd to Richmar Ave	San Marcos	4 Ln Sec Art	40,000	31,900	D	0.798	34,630	D	0.866	None
Richmar Ave to San Marcos Blvd	San Marcos	4 Ln Sec Art	40,000	33,440	D	0.836	**37,160**	**E**	**0.929**	**Cumulative**
San Marcos Blvd to SR 78	San Marcos	Prime Art	60,000	40,620	C	0.677	45,020	C	0.750	None
SR 78 to Barham Dr/Discovery St	San Marcos	Prime Art	70,000	48,320	C	0.690	61,660	D	0.881	None
Buena Creek Road										
S. Santa Fe Ave to Monte Vista Dr	County	2.2E Lt Col	16,200	**11,590**	**E**	**0.715**	**19,190**	**F**	**1.185**	**Cumulative**
Monte Vista Dr to Twin Oaks Valley ~~Deer Springs Rd~~	County	2.2E Lt Col	16,200	**14,360**	**E**	**0.886**	**17,460**	**F**	**1.078**	**Cumulative**
Monte Vista Drive										
Foothill Dr to Buena Creek Rd	County	2.2E Lt Col	16,200	10,120	D	0.625	**11,620**	**E**	**0.717**	**Cumulative**

Table 2.13-27
Cumulative Segment Operations (Existing Road Network)

Street Segment	Jurisdiction	Functional Classification [a]	LOS E Capacity [b]	Existing + Project			Existing + Project + Cumulative Projects			Impact Type
				Volume	*LOS [c]*	*V/C [d]*	*Volume*	*LOS*	*V/C*	
Mesa Rock Road										
Deer Springs Rd to N. Centre City Pkwy	County	2.2E Lt Col	16,200	1,520	A	0.094	2,420	B	0.149	None
Gopher Canyon Road										
Little Gopher Canyon Rd to I-15	County	2.2E Lt Col	16,200	16,110	E	0.994	**17,110**	**F**	**1.056**	**Cumulative**
I-15 Ramps to Champagne Blvd	County	2.2B Blvd	28,000	14,510	A	0.518	~~15,610~~2 4,410	~~A~~D	~~0.558~~0.872	None
Champagne Boulevard										
Old Castle Rd to Lawrence Welk Dr	County	2.2E Lt Col	16,200	6,290	C	0.388	7,790	D	0.481	None
Lawrence Welk Dr to Mtn Meadow Rd	County	2.2E Lt Col	16,200	8,580	D	0.530	9,480	D	0.585	None
North Centre City Parkway										
Mountain Meadow Rd to I-15 Ramps	County	2.2E Lt Col	16,200	6,300	C	0.389	8,000	D	0.494	None
I-15 Ramps to Country Club Ln	Escondido	4 Ln Col	34,200	11,920	B	0.349	14,020	B	0.410	None
Robelini Drive										
Sycamore Ave to S. Santa Fe Ave	County	2.2E Lt Col	16,200	**18,580**	**F**	**1.147**	**19,180**	**F**	**1.184**	**Cumulative**
S. Santa Fe Avenue										
Robelini Dr to Buena Creek Rd	County	2.1B Com Col	19,000	**17,880**	**E**	**0.941**	**18,480**	**E**	**0.973**	**Cumulative**
Sycamore Avenue										
SR 78 WB Ramps to University Dr	County	6.2 Prime Art	57,000	35780	B	0.628	39,780	C	0.698	None

Footnote:

a. The existing roadway class. Capacity of the existing roadway per the County Table 1, Average Daily Vehicle Trips.
b. Roadway capacity at LOS E
c. Level of Service.
d. Volume / Capacity ratio.
~~e. The increase in V/C ratio due to the Project at this segment in the City of San Marcos is less than the allowable threshold of 0.02 and hence the Project does not have a significant impact.~~
~~f. Not a significant impact since the Project adds 120 ADT to the segment, less than the allowable threshold of 200 ADT.~~

General Notes:

Bold indicates potential impact.

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Table 2.13-28
Cumulative Freeway Segment Operations (Existing Road Network)

Freeway Segment	Dir.	# of Lanes	Hourly Cap. [a]	Cumulative Projects Peak Hour Vol [d]		Existing + Cumulative Projects [f]						Existing + Cumulative Projects + Project [fe]						Δ V/C	
						Peak Hour Vol		V/C		LOS		Peak Hour Vol		V/C [b]		LOS [c]			
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Interstate 15																			
Riverside Co. Line to Mission Rd	NB	4	8,000	1,043	3,429	3,259	10,716	0.407	1.340	A	F(1)	3,316	10,757	0.414	1.345	B	F(1)	0.007	0.005
	SB	4	8,000	3,995	1,688	12,485	5,273	1.561	0.659	F(3)	C	12,516	5,345	1.564	0.668	F(3)	C	0.004	0.009
Mission Rd to SR-76	NB	4	8,000	1,800	5,610	4,118	12,836	0.515	1.605	B	F(3)	4,175	12,877	0.522	1.610	B	F(3)	0.007	0.005
	SB	4	8,000	6,300	2,835	14,414	6,487	1.802	0.811	F(3)	D	14,445	6,559	1.806	0.820	F(3)	D	0.004	0.009
SR-76 to Old Highway 395	NB	4	8,000	961	2,995	3,090	9,632	0.386	1.204	A	F(0)	3,147	9,673	0.393	1.209	A	F(0)	0.007	0.005
	SB	4	8,000	3,363	1,513	10,816	4,867	1.352	0.608	F(2)	B	10,847	4,939	1.356	0.617	F(2)	B	0.004	0.009
Old Highway 395 to Gopher Cyn Rd	NB	4	8,000	1,101	3,232	3,557	10,442	0.445	1.305	B	**F(1)**	3,633	10,496	0.454	1.312	B	**F(1)**	0.010	**0.007**
	SB	4	8,000	3,232	1,634	10,441	5,279	1.305	0.660	F(1)	C	10,482	5,375	1.310	0.672	F(1)	C	0.005	0.012
Gopher Cyn Rd to Deer Springs Rd	NB	4	8,000	59	174	2,747	8,065	0.343	1.008	A	**F(0)**	2,842	8,133	0.355	1.017	A	**F(0)**	0.012	**0.009**
	SB	4	8,000	174	88	8,064	4,077	1.008	0.510	**F(0)**	B	8,115	4,197	1.014	0.525	**F(0)**	B	**0.006**	0.015
Deer Springs Rd to N. Centre City	NB	4	8,000	53	155	2,699	7,922	0.337	0.990	A	**E**	2,850	8,441	0.356	1.055	A	**F(0)**	0.019	**0.065**
	SB	4	8,000	155	79	7,922	4,005	0.990	0.501	**E**	B	8,350	4,236	1.044	0.530	**F(0)**	B	**0.054**	0.029
N. Centre Pkwy to El Norte Pkwy	NB	4	8,000	61	228	2,023	7,572	0.253	0.947	A	**E**	2,174	8,091	0.272	1.011	A	**F(0)**	0.019	**0.065**
	SB	4	8,000	229	115	7,589	3,821	0.949	0.478	**E**	B	8,065	4,052	1.008	0.507	**F(0)**	B	**0.060**	**0.029**
El Norte Pkwy to SR 78	NB	4	8,000	657	2,458	2,806	10,502	0.351	1.313	A	**F(1)**	2,957	11,021	0.370	1.378	A	**F(2)**	0.019	**0.065**
	SB	4	8,000	2,463	1,240	10,525	5,300	1.316	0.662	**F(1)**	C	10,953	5,531	1.369	0.691	**F(2)**	C	**0.054**	0.029
Interstate 15																			
SR 78 to W. Valley Pkwy	NB	4+2A	10,400	558	1,230	6,285	13,860	0.604	1.333	B	**F(1)**	6,420	14,327	0.617	1.378	B	**F(2)**	0.013	**0.045**
	SB	5+1A	11,200	1,146	788	12,917	8,884	1.153	0.793	**F(0)**	C	13,302	9,091	1.188	0.812	**F(0)**	D	**0.034**	0.019
W. Valley Pkwy to Auto Park Wy	NB	5+2ML	12,400	461	1,016	5,779	12,744	0.466	1.028	B	**F(0)**	5,901	13,164	0.476	1.062	B	**F(0)**	0.010	**0.034**
	SB	5+2ML	12,400	947	651	11,877	8,168	0.958	0.659	**E**	C	12,223	8,355	0.986	0.674	**E**	C	**0.028**	0.015
Auto Park Way to W. Citracado Pkwy	NB	5+2ML	12,400	434	957	5,776	12,738	0.466	1.027	B	**F(0)**	5,886	13,116	0.475	1.058	B	**F(0)**	0.009	**0.031**
	SB	4+1A+2ML	11,600	892	613	11,871	8,165	1.023	0.704	**F(0)**	C	12,183	8,333	1.050	0.718	**F(0)**	C	**0.027**	0.015
W. Citracado Pkwy to Via Rancho Pkwy	NB	5+2ML	12,400	238	607	4,718	12,048	0.381	0.972	A	**E**	4,818	12,389	0.389	0.999	A	**E**	0.008	**0.027**
	SB	4+1A+2ML	11,600	607	392	12,055	7,778	1.039	0.670	**F(0)**	C	12,336	7,929	1.063	0.684	**F(0)**	C	**0.024**	0.013
Via Rancho Pkwy to Pomerado Rd	NB	4+1A+2ML	11,600	1,234	1,969	8,024	12,805	0.692	1.104	C	**F(0)**	8,113	13,112	0.699	1.130	C	**F(0)**	0.008	**0.026**
	SB	5+2ML	12,400	1,671	1,299	12,306	8,448	0.992	0.681	**E**	C	12,558	8,585	1.013	0.692	**F(0)**	C	**0.020**	0.011
Pomerado Rd to Rch Bernardo Rd	NB	5+2ML	12,400	264	572	4,905	10,611	0.396	0.856	A	D	4,985	10,887	0.402	0.878	A	D	0.006	0.022
	SB	5+1A+2ML	13,600	593	404	11,009	7,506	0.809	0.552	D	B	11,237	7,629	0.826	0.561	D	B	0.017	0.009
Rch Bernardo Rd to Bernardo Ctr Dr	NB	5+1A+2ML	13,600	121	261	4,874	10,544	0.358	0.775	A	C	4,946	10,792	0.364	0.794	A	C	0.005	0.018
	SB	5+2ML	12,400	271	184	10,939	7,458	0.882	0.601	D	B	11,144	7,569	0.899	0.610	D	B	0.017	0.009
Bernardo Ctr Dr to Camino Del Norte	NB	5+1A+2ML	13,600	32	70	4,988	10,792	0.367	0.794	A	C	5,053	11,015	0.372	0.810	A	D	0.005	0.016
	SB	5+1A+2ML	13,600	73	50	11,197	7,634	0.823	0.561	D	B	11,381	7,733	0.837	0.569	D	B	0.014	0.007
State Route 78																			
Mar Vista Rd to Sycamore Ave	WB	3	6,000	311	400	4,801	6,179	0.800	1.030	D	**F(0)**	4,937	6,240	0.823	**1.040**	D	**F(0)**	0.023	**0.010**
	EB	3	6,000	393	316	6,074	4,887	1.012	0.814	**F(0)**	D	6,108	5,049	**1.018**	0.841	**F(0)**	D	**0.006**	0.027

Table 2.13-28
Cumulative Freeway Segment Operations (Existing Road Network)

Freeway Segment	Dir.	# of Lanes	Hourly Cap. [a]	Cumulative Projects Peak Hour Vol [d]		Existing + Cumulative Projects [f]						Existing + Cumulative Projects + Project [fe]						Δ V/C	
						Peak Hour Vol		V/C		LOS		Peak Hour Vol		V/C [b]		LOS [c]			
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Sycamore Ave to Rancho Santa Fe ~~Ave~~Rd	WB	3	6,000	124	160	4,820	6,204	0.803	1.034	D	F(0)	4,874	6,228	0.812	1.038	D	F(0)	0.009	0.004
	EB	3	6,000	157	127	6,098	4,906	1.016	0.818	F(0)	D	6,111	5,068	1.018	0.845	F(0)	D	0.002	0.027
Rancho Santa Fe ~~Ave~~ Rd to Las Posas Rd	WB	3 + 1A	7,200	151	174	5,648	6,509	0.784	0.904	C	D	5,702	6,533	0.792	0.907	C	D	0.007	0.003
	EB	3 + 1A	7,200	166	131	6,220	4,898	0.864	0.680	D	C	6,233	4,963	0.866	0.689	D	C	0.002	0.009
Las Posas Rd to San Marcos Blvd	WB	3	6,000	209	241	5,743	6,620	0.957	1.103	E	F(0)	5,797	6,644	0.966	1.107	E	F(0)	0.009	0.004
	EB	3	6,000	230	181	6,328	4,982	1.055	0.830	F(0)	D	6,341	5,047	1.057	0.841	F(0)	D	0.002	0.011
San Marcos Blvd to Twin Oaks Valley Rd	WB	3 + 1A	7,200	301	347	6,835	7,878	0.949	1.094	E	F(0)	6,853	7,886	0.952	1.095	E	F(0)	0.003	0.001
	EB	3 + 1A	7,200	332	261	7,530	5,929	1.046	0.823	F(0)	D	7,534	5,951	1.046	0.826	F(0)	D	0.001	0.003

Footnotes:

a. Capacity calculated at 2,000 vehicles per hour (vph) per mainline lane (M); 1,200 per Managed lane (ML); and 1,200 vph per Auxiliary (A) lane.
b. Volume / Capacity ratio.
c. Level of Service
~~d. Existing + Project peak hour volumes from Table 10-3 in Appendix R.~~
ed. Cumulative Projects peak hour volumes
fe. Peak Hour Existing + Project + Cumulative Projects traffic volumes
~~g. Existing + Projects + Cumulative Projects V/C ratio.~~

LOS	v/c
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

General Notes:
Bold indicates potential impact.

Table 2.13-29
Cumulative Segment Operations (With Mountain Meadow Road Connection)

Street Segment	Jurisdiction	Functional Classification [a]	LOS E Capacity [b]	Existing + Project			Existing + Project + Cumulative Projects			Impact Type
				Volume	*LOS [c]*	*V/C [d]*	*Volume*	*LOS*	*V/C*	
Deer Springs Road										
Twin Oaks Valley Rd to Sarver Ln	County	2.2E Lt Col	16,200	**26,990**	**F**	**1.666**	~~**32,690**~~ **30,990**	**F**	~~**2.018**~~ **1.913**	**Cumulative**
Sarver Lane to Mesa Rock Road	County	2.2E Lt Col	16,200	**25,000**	**F**	**1.543**	~~**30,100**~~ **29,100**	**F**	~~**1.858**~~ **1.796**	**Cumulative**
Mesa Rock Road to I-15 SB Ramps	County	2.2E Lt Col	16,200	**35,950**	**F**	**2.219**	~~**38,350**~~ **37,350**	**F**	~~**2.367**~~ **2.306**	**Cumulative**
I-15 to Champagne Boulevard	County	4.2B Blvd	28,000	15,520	B	0.454	~~17,320~~ 21,420	B	~~0.619~~ 0.626	None
Mountain Meadow Road										
East of Champagne Blvd	County	42A Blvd	30,000	9,740	A	0.285	~~10,740~~ 16,340	~~A~~ B	~~0.358~~ 0.478	None
Twin Oaks Valley Road										
Solar Ln to Deer Springs Rd	County	2.2E Lt Col	16,200	3,430	B	0.212	4,230	C	0.261	None
Deer Springs Rd to Buena Creek Rd	San Marcos	2 Ln Col	15,000	**28,700**	**F**	**1.913**	~~**32,700**~~ **31,900**	**F**	~~**2.180**~~ **2.127**	**Cumulative**
Buena Creek Rd to Cassou Rd	San Marcos	2 Ln Col	15,000	**22,440**	**F**	**1.496**	~~**24,040**~~ **23,840**	**F**	~~**1.603**~~ **1.589**	**Cumulative**
Cassou Rd to La Cienega Rd	San Marcos	4 Ln Sec Art	30,000	21,460	D	0.715	~~22,980~~ 23,480	D	~~0.766~~ 0.783	None
La Cienega Rd to Windy Wy	San Marcos	4 Ln Sec Art	40,000	23,410	C	0.585	~~28,440~~ 27,840	C	~~0.711~~ 0.696	None
Windy Wy to Borden Rd	San Marcos	4 Ln Sec Art	40,000	24,140	C	0.604	~~30,070~~ 29,470	~~D~~ C	~~0.752~~ 0.737	None
Borden Rd to Richmar Ave	San Marcos	4 Ln Sec Art	40,000	31,900	D	0.798	~~34,830~~ 34,730	D	~~0.871~~ 0.868	None
Richmar Ave to San Marcos Blvd	San Marcos	4 Ln Sec Art	40,000	33,440	D	0.836	~~**37,560**~~ **36,760**	**E**	~~**0.939**~~ **0.919**	**Cumulative**
San Marcos Blvd to SR 78	San Marcos	Prime Art	60,000	40,620	C	0.677	~~45,120~~ 44,620	C	~~0.752~~ 0.744	None

Table 2.13-29
Cumulative Segment Operations (With Mountain Meadow Road Connection)

Street Segment	Jurisdiction	Functional Classification [a]	LOS E Capacity [b]	Existing + Project			Existing + Project + Cumulative Projects			Impact Type
				Volume	*LOS [c]*	*V/C [d]*	*Volume*	*LOS*	*V/C*	
SR 78 to Barham Dr / Discovery St	San Marcos	Prime Art	70,000	48,320	C	0.690	61,660	D	0.881	None
Buena Creek Road										
S. Santa Fe Ave to Monte Vista Dr	County	2.2E Lt Col	16,200	**11,590**	**E**	**0.715**	~~**19,490**~~ **19,290**	**F**	~~**1.203**~~ **1.191**	**Cumulative**
Monte Vista Dr to Deer Springs Rd	County	2.2E Lt Col	16,200	**14,360**	**E**	**0.886**	~~**18,360**~~ **18,560**	**F**	~~**1.133**~~ **1.146**	**Cumulative**
Monte Vista Drive										
Foothill Dr to Buena Creek Rd	County	2.2E Lt Col	16,200	10,120	D	0.625	**11,620**	**E**	**0.717**	**Cumulative**
Mesa Rock Road										
Deer Springs Rd to N. Centre City Pkwy	County	2.2E Lt Col	16,200	1,520	A	0.094	~~2,520~~ 2,420	B	~~0.156~~ 0.149	None
Gopher Canyon Road										
Little Gopher Canyon Rd to I-15 Ramps	County	2.2E Lt Col	16,200	16,110	E	0.994	~~**17,010**~~ **18,110**	**F**	~~**1.050**~~ **1.118**	**Cumulative**
I-15 Ramps to Champagne Blvd	County	2.2B Blvd	28,000	14,510	A	0.518	~~15,110~~ 23,910	~~A~~ D	~~0.540~~ 0.854	None
Champagne Boulevard										
Old Castle Rd to Lawrence Welk Dr	County	2.2E Lt Col	16,200	6,290	C	0.388	~~7,990~~ 8,390	D	~~0.493~~ 0.518	None
Lawrence Welk Dr to Mtn Meadow Rd	County	2.2E Lt Col	16,200	8,580	D	0.530	~~9,680~~ 8,880	D	~~0.598~~ 0.548	None
North Centre City Parkway										
Mountain Meadow Rd to I-15 Ramps	County	2.2E Lt Col	16,200	6,300	C	0.389	~~8,500~~ 10,400	D	~~0.525~~ 0.642	None
I-15 Ramps to Country Club Ln	Escondido	4 Ln Col	34,200	11,920	B	0.349	~~14,020~~ 12,320	B	~~0.410~~ 0.360	None

Table 2.13-29
Cumulative Segment Operations (With Mountain Meadow Road Connection)

Street Segment	Jurisdiction	Functional Classification [a]	LOS E Capacity [b]	Existing + Project			Existing + Project + Cumulative Projects			Impact Type
				Volume	*LOS [c]*	*V/C [d]*	*Volume*	*LOS*	*V/C*	
Robelini Drive										
Sycamore Ave to S. Santa Fe Ave	County	2.2E Lt Col	16,200	**18,550**	**F**	**1.147**	**~~19,680~~ 19,380**	**F**	**~~1.215~~ 1.196**	**Cumulative**
S. Santa Fe Avenue										
Robelini Dr to Buena Creek Rd	County	2.1B Com Col	19,000	**17,880**	**E**	**0.941**	**~~18,480~~ 20,580**	**~~E~~ F**	**~~0.973~~1.083**	**Cumulative**
Sycamore Avenue										
SR 78 WB Ramps to University Dr	County	6.2 Prime Art	57,000	35,920	B	0.630	~~39,780~~ 40,580	C	~~0.698~~ 0.712	None

Footnote:

a. The existing roadway class. Capacity of the existing roadway per the County Table 1, Average Daily Vehicle Trips.
b. Roadway capacity at LOS E
c. Level of Service.
d. Volume / Capacity ratio.
e. The increase in V/C ratio due to the Project at this segment in the City of San Marcos is less than the allowable threshold of 0.02 and hence the Project does not have a significant impact.
f. Not a significant impact since the Project adds 120 ADT to the segment, less than the allowable threshold of 200 ADT.

General Notes:

Bold indicates potential impact.

Table 2.13-30
Cumulative Freeway Segment Operations (With Mountain Meadow Road Connection)

Freeway Segment	Dir.	# of Lanes	Hourly Cap. a	Cumulative Projects Peak Hour Vol d		Existing + Cumulative Projects f						Existing + Cumulative Projects + Project f						Δ V/C	
						Peak Hour Vol		V/C		LOS		Peak Hour Vol		V/C [b]		LOS [c]			
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Interstate 15																			
Riverside Boundry to Mission Rd	NB	4	8,000	1,043	3,429	3,259	10,716	0.407	1.340	A	F(1)	3,316	10,757	0.414	1.345	B	F(1)	0.007	0.005
	SB	4	8,000	3,995	1,688	12,485	5,273	1.561	0.659	F(3)	C	12,516	5,345	1.564	0.668	F(3)	C	0.004	0.009
Mission Rd to SR-76	NB	4	8,000	1,800	5,610	4,118	12,836	0.515	1.605	B	F(3)	4,175	12,877	0.522	1.610	B	F(3)	0.007	0.005
	SB	4	8,000	6,300	2,835	14,414	6,487	1.802	0.811	F(3)	D	14,445	6,559	1.806	0.820	F(3)	D	0.004	0.009
SR-76 to Old Hwy 395	NB	4	8,000	~~961~~959	~~2,995~~2,989	~~3,090~~3,088	~~9,632~~9,626	0.386	~~1.204~~1.203	A	F(0)	~~3,147~~ 3,145	~~9,673~~ 9,667	0.393	~~1.209~~1.208	A	F(0)	0.007	0.005
	SB	4	8,000	~~3,363~~3,357	~~1,513~~1,511	~~10,816~~10,810	~~4,867~~4,865	~~1.352~~1.351	0.608	F(2)	B	~~10,847~~ 10,841	~~4,939~~ 4,937	~~1.356~~1.355	0.617	F(2)	B	0.004	0.009
Old Hwy 395 to Gopher Cyn Rd	NB	4	8,000	~~1,101~~1,099	~~3,232~~3,226	~~3,557~~3,555	~~10,442~~10,436	~~0.445~~0.444	~~1.305~~1.304	B	F(1)	~~3,633~~ 3,631	~~10,496~~ 10,490	0.454	~~1.312~~1.311	B	**F(1)**	~~0.010~~0.009	**0.007**
	SB	4	8,000	~~3,232~~3,226	~~1,634~~1,631	~~10,441~~10,435	~~5,279~~5,276	~~1.305~~1.304	0.660	F(1)	C	~~10,482~~ 10,476	~~5,375~~ 5,372	~~1.310~~1.309	0.672	F(1)	C	0.005	0.012
Gopher Cyn Rd to Deer Springs Rd	NB	4	8,000	63	186	2,751	8,078	0.344	1.010	A	F(0)	2,846	8,146	0.356	1.018	A	**F(0)**	0.012	**0.008**
	SB	4	8,000	186	94	8,077	4,084	1.010	0.510	F(0)	B	8,128	4,204	1.016	0.525	**F(0)**	B	0.006	0.015
Deer Springs Rd to N. Ctr City Pkwy	NB	4	8,000	~~28~~72	~~81~~211	~~2,673~~2,718	~~7,848~~7,978	~~0.334~~0.340	~~0.981~~0.997	A	E	~~2,824~~ 2,869	~~8,367~~ 8,497	~~0.353~~0.359	~~1.046~~1.062	A	**F(0)**	0.019	**0.065**
	SB	4	8,000	~~81~~211	~~41~~107	~~7,847~~7,977	~~3,968~~4,033	~~0.981~~0.997	~~0.496~~0.504	E	B	~~8,275~~ 8,405	~~4,199~~ 4,264	~~1.034~~1.051	~~0.525~~0.533	**F(0)**	B	**0.053**	0.029
N. Centre Pkwy to El Norte Pkwy	NB	4	8,000	~~46~~157	~~173~~586	~~2,009~~2,119	~~7,517~~7,930	~~0.251~~0.265	~~0.940~~0.991	A	E	~~2,160~~ 2,270	~~8,036~~ 8,449	~~0.270~~0.284	~~1.004~~1.056	A	**F(0)**	0.019	**0.065**
	SB	4	8,000	~~173~~588	~~87~~296	~~7,533~~7,948	~~3,793~~4,002	~~0.942~~0.993	~~0.474~~0.500	E	B	~~8,009~~ 8,424	~~4,024~~ 4,233	~~1.001~~1.053	~~0.503~~0.529	**F(0)**	B	**~~0.060~~0.059**	0.029
El Norte Pkwy to SR 78	NB	4	8,000	~~657~~703	~~2,458~~2,631	~~2,806~~2,852	~~10,502~~10,675	~~0.351~~0.357	~~1.313~~1.334	A	F(1)	~~2,957~~ 3,003	~~11,021~~ 11,194	~~0.370~~0.375	~~1.378~~1.399	A	**F(2)**	0.019	**0.065**
	SB	4	8,000	~~2,463~~2,637	~~1,240~~1,328	~~10,525~~10,698	~~5,300~~5,387	~~1.316~~1.337	~~0.662~~0.673	F(1)	C	~~10,953~~ 11,126	~~5,531~~ 5,618	~~1.369~~1.391	~~0.691~~0.702	**F(2)**	C	**~~0.054~~0.053**	0.029
Interstate 15																			
SR 78 to W. Valley Pkwy	NB	4+2A	10,400	~~558~~620	~~1,230~~1,368	~~6,285~~6,347	~~13,860~~13,998	~~0.604~~0.610	~~1.333~~1.346	B	F(1)	~~6,420~~ 6,483	~~14,327~~ 14,465	~~0.617~~0.623	~~1.378~~1.391	~~B~~C	**F(2)**	0.013	**0.045**
	SB	5+1A	11,200	~~1,146~~1,275	~~788~~877	~~12,917~~13,045	~~8,884~~8,972	~~1.153~~1.165	~~0.793~~0.801	F(0)	~~C~~D	~~13,302~~ 13,430	~~9,091~~ 9,180	~~1.188~~1.199	~~0.812~~0.820	**F(0)**	D	**0.034**	0.019
W. Valley Pkwy to Auto Park Way	NB	5+2ML	12,400	~~461~~521	~~1,016~~1,148	~~5,779~~5,839	~~12,744~~12,876	~~0.466~~0.471	~~1.028~~1.038	B	F(0)	~~5,901~~ 5,961	~~13,164~~ 13,297	~~0.476~~0.481	~~1.062~~1.072	B	**F(0)**	0.010	**0.034**
	SB	5+2ML	12,400	~~947~~1,070	~~651~~736	~~11,877~~12,000	~~8,168~~8,253	~~0.958~~0.968	~~0.659~~0.666	E	C	~~12,223~~ 12,347	~~8,355~~ 8,440	~~0.986~~0.996	~~0.674~~0.681	**E**	C	**0.028**	0.015
Auto Park Way to W. Citracado Pkwy	NB	5+2ML	12,400	~~434~~492	~~957~~1,084	~~5,776~~5,834	~~12,738~~12,865	~~0.466~~0.470	~~1.027~~1.038	B	F(0)	~~5,886~~ 5,944	~~13,116~~ 13,244	~~0.475~~0.479	~~1.058~~1.068	B	**F(0)**	0.009	**0.031**
	SB	4+1A+2ML	11,600	~~892~~1,010	~~613~~695	~~11,871~~11,990	~~8,165~~8,246	~~1.023~~1.034	~~0.704~~0.711	F(0)	C	~~12,183~~ 12,302	~~8,333~~ 8,415	~~1.050~~1.061	~~0.718~~0.725	**F(0)**	C	**0.027**	0.015
W. Citracado Pkwy to Via Rancho Pkwy	NB	5+2ML	12,400	~~238~~286	~~607~~731	~~4,718~~4,767	~~12,048~~12,172	~~0.381~~0.384	~~0.972~~0.982	A	E	~~4,818~~ 4,866	~~12,389~~ 12,513	~~0.389~~0.392	~~0.999~~1.009	A	**~~E~~F(0)**	0.008	**0.027**

Table 2.13-30
Cumulative Freeway Segment Operations (With Mountain Meadow Road Connection)

Freeway Segment	Dir.	# of Lanes	Hourly Cap. a	Cumulative Projects Peak Hour Vol d		Existing + Cumulative Projects f						Existing + Cumulative Projects + Project f						Δ V/C	
						Peak Hour Vol		V/C		LOS		Peak Hour Vol		V/C [b]		LOS [c]			
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
	SB	4+1A+2ML	11,600	~~607~~732	~~392~~472	~~12,055~~12,180	~~7,778~~7,858	~~1.039~~1.050	~~0.670~~0.677	F(0)	C	~~12,336~~ 12,460	~~7,929~~ 8,009	~~1.063~~1.074	~~0.684~~0.690	**F(0)**	C	**0.024**	0.013
Via Rancho Pkwy to Pomerado Rd	NB	4+1A+2ML	11,600	~~1,234~~1,293	~~1,969~~2,063	~~8,024~~8,084	~~12,805~~12,900	~~0.692~~0.697	~~1.104~~1.112	C	F(0)	~~8,113~~ 8,173	~~13,112~~ 13,206	~~0.699~~0.705	~~1.130~~1.138	C	**F(0)**	0.008	**0.026**
	SB	5+2ML	12,400	1,671	~~1,299~~1,361	12,306	~~8,448~~8,511	0.992	~~0.681~~0.686	E	C	12,558	~~8,585~~ 8,647	1.013	~~0.692~~0.697	**F(0)**	C	**0.020**	0.011
Pomerado Rd to Rancho Bernardo Rd	NB	5+2ML	12,400	~~264~~305	~~572~~659	~~4,905~~4,945	~~10,611~~10,699	~~0.396~~0.399	~~0.856~~0.863	A	D	~~4,985~~ 5,025	~~10,887~~ 10,975	~~0.402~~0.405	~~0.878~~0.885	A	D	0.006	0.022
	SB	5+1A+2ML	13,600	~~593~~684	~~404~~466	~~11,009~~11,100	~~7,506~~7,568	~~0.809~~0.816	~~0.552~~0.556	D	B	~~11,237~~ 11,328	~~7,629~~ 7,691	~~0.826~~0.833	~~0.561~~0.565	D	B	0.017	0.009
Rancho Bernardo Rd to Bernardo Center Drive	NB	5+1A+2 ML	13,600	~~121~~159	~~261~~344	~~4,874~~4,912	~~10,544~~10,627	~~0.358~~0.361	~~0.775~~0.781	A	C	~~4,946~~ 4,984	~~10,792~~ 10,875	~~0.364~~0.366	~~0.794~~0.800	A	C	0.005	0.018
	SB	5+2ML	12,400	~~271~~356	~~184~~243	~~10,939~~11,025	~~7,458~~7,517	~~0.882~~0.889	~~0.601~~0.606	D	B	~~11,144~~ 11,230	~~7,569~~ 7,627	~~0.899~~0.906	~~0.610~~0.615	D	B	0.017	0.009
Bernardo Ctr Drive to Camino Del Norte	NB	5+1A+2 ML	13,600	~~32~~68	~~70~~148	~~4,988~~5,024	~~10,792~~10,870	~~0.367~~0.369	~~0.794~~0.799	A	C	~~5,053~~ 5,089	~~11,015~~ 11,093	~~0.372~~0.374	~~0.810~~0.816	A	D	0.005	0.016
	SB	5+1A+2 ML	13,600	~~73~~154	~~50~~105	~~11,197~~11,278	~~7,634~~7,689	~~0.823~~0.829	~~0.561~~0.565	D	B	~~11,381~~ 11,462	~~7,733~~ 7,788	~~0.837~~0.843	~~0.569~~0.573	D	B	0.014	0.007
State Route 78																			
Mar Vista Rd to Sycamore Ave	WB	3	6,000	~~321~~307	~~413~~396	~~4,811~~4,798	~~6,191~~6,175	~~0.802~~0.800	~~1.032~~1.029	~~D~~C	F(0)	~~4,947~~ 4,934	~~6,252~~ 6,236	~~0.824~~0.822	~~1.042~~1.039	D	**F(0)**	0.023	**0.010**
	EB	3	6,000	~~406~~389	~~326~~313	~~6,086~~6,069	~~4,896~~4,883	~~1.014~~1.012	~~0.816~~0.814	F(0)	D	~~6,120~~ 6,103	~~5,058~~ 5,045	~~1.020~~1.017	~~0.843~~0.841	**F(0)**	D	**0.006**	0.027
Sycamore Ave to Rancho Santa Fe ~~Ave~~Rd	WB	3	6,000	~~124~~121	~~159~~156	~~4,820~~4,817	~~6,203~~6,199	0.803	~~1.034~~1.033	D	F(0)	~~4,874~~ 4,871	~~6,227~~ 6,223	0.812	~~1.038~~1.037	D	F(0)	0.009	0.004
	EB	3	6,000	~~156~~153	~~126~~123	~~6,097~~6,093	~~4,905~~4,902	1.016	~~0.818~~0.817	F(0)	D	~~6,110~~ 6,106	~~5,067~~ 5,064	1.018	~~0.845~~0.844	F(0)	D	0.002	0.027
Rancho Santa Fe ~~Ave~~ Rd to Las Posas Rd	WB	3+1A	7,200	~~150~~166	~~173~~192	~~5,647~~5,663	~~6,508~~6,527	~~0.784~~0.787	~~0.904~~0.906	C	D	~~5,701~~ 5,717	~~6,532~~ 6,551	~~0.792~~0.794	~~0.907~~0.910	C	D	0.007	0.003
	EB	3+1A	7,200	~~165~~183	~~130~~144	~~6,219~~6,237	~~4,897~~4,912	~~0.864~~0.866	~~0.680~~0.682	D	C	~~6,232~~ 6,250	~~4,962~~ 4,977	~~0.866~~0.868	~~0.689~~0.691	D	C	0.002	0.009
Las Posas Rd to San Marcos Blvd	WB	3	6,000	~~247~~217	~~284~~250	~~5,781~~5,751	~~6,664~~6,629	~~0.964~~0.959	~~1.111~~1.105	E	F(0)	~~5,835~~ 5,805	~~6,688~~ 6,653	~~0.973~~0.968	~~1.115~~1.109	E	F(0)	0.009	0.004
	EB	3	6,000	~~272~~239	~~214~~188	~~6,369~~6,336	~~5,015~~4,989	~~1.062~~1.056	~~0.836~~0.831	F(0)	D	~~6,382~~ 6,349	~~5,080~~ 5,054	~~1.064~~1.058	~~0.847~~0.842	F(0)	D	0.002	0.011
San Marcos Blvd to Twin Oaks Valley Rd	WB	3+1A	7,200	~~265~~313	~~306~~360	~~6,799~~6,846	~~7,837~~7,891	~~0.944~~0.951	~~1.088~~1.096	E	F(0)	~~6,817~~ 6,864	~~7,845~~ 7,899	~~0.947~~0.953	~~1.090~~1.097	E	F(0)	0.002	0.001
	EB	3+1A	7,200	~~292~~344	~~230~~271	~~7,491~~7,543	~~5,898~~5,939	~~1.040~~1.048	~~0.819~~0.825	F(0)	D	~~7,495~~ 7,547	~~5,920~~ 5,961	~~1.041~~1.048	~~0.822~~0.828	F(0)	D	0.001	0.003

Footnotes:
a. Capacity calculated at 2,000 vehicles per hour (vph) per mainline lane (M); 1,200 per Managed lane (ML); and 1,200 vph per Auxiliary (A) lane.
b. Volume / Capacity ratio.
c. Level of Service
d. Existing + Project peak hour volumes from Table 10-3 in Appendix R
e. Cumulative Projects peak hour volumes

LOS	v/c
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

f. Peak Hour Existing + Project + Cumulative Projects traffic volumes
g. Existing + Projects + Cumulative Projects V/C ratio.

General Notes:

Bold indicates potential impact.

Table 2.13-31
Comparison of Trip Generation - General Plan Land Uses Versus Proposed Project

Land Use	Quantity		Rate [a]		Daily Trip Ends (ADT)	AM Peak Hour		PM Peak Hour	
						% of ADT	*Vol*	*% of ADT*	*Vol*
A. Existing General Plan Land Uses									
Non-Residential									
General Commercial	4.64	Acres	1,200	/Acre	5,568	4%	223	10%	557
Office Professional	53.64	Acres	300	/Acre	16,092	14%	2,253	13%	2,092
Gross Non-Residential					*21,660*		*2,476*		*2,649*
Non-Residential Internal Capture & Pass-By									
Retail Internal Trips (5%) [b]					*(278)*		*(11)*		*(28)*
Passby Reduction [c] (25% Daily and AM and 40% PM of Retail only)					**(1,323)**		**(53)**		**(212)**
Net Non-Residential					**20,059**		**2,412**		**2,409**
Residential									
Residential (Estate)	99	DU [d]	12	/DU	1,188	8%	95	10%	119
Gross Residential					**1,188**		**95**		**119**
Residential Internal Capture [e]					***(278)***		***(11)***		***(28)***
Net Residential					**910**		**84**		**91**
Gross Project					**22,848**		**2,571**		**2,768**
Net Existing General Plan					**20,969**		**2,496**		**2,500**
B. Proposed Project [f]					**22,208**		**1,~~602~~601**		**2,059**
Net Increase(+) / Decrease (-)					**1,240**		**-895**		**-441**

Footnotes:

a. Rates obtained from a "Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region", April 2002, published by SANDAG.

b. 5% internal trips is assumed for retail.

c. Pass-by trips percentages: 25% of Daily and AM peak hour, and 40% of PM peak hour of Retail trips (post Retail internal capture).

d. DU – Dwelling Units

e. Equal reduction applies to Residential. Total internal capture for project is 556 ADT (2 x 278 ADT). Refer to Section 8.1.3 of this report for more information on calculating internal capture.

f. Please refer to *Table 2.13-15* for Sierra Project trip generation summary.

Table 2.13-32
County General Plan Buildout Segment Analysis

Street Segment	Mobility Element Classification a	LOS E Cap b	General Plan Land Uses, Mobility Element Classification (Deer Springs Road as a 6.2 Prime Arterial)		With Project							
					Deer Springs Road as a 2.1B Com Collector between Sarver Lane and Mesa Rock Road [d]				*Deer Springs Road as a 6.2 Prime Arterial* [e]			
					With Mountain Meadow Road		*Without Mountain Meadow Road*		*With Mountain Meadow Road*		*Without Mountain Meadow Road*	
			Vol	*LOS* [f]	*Vol*	*LOS*	*Vol*	*LOS*	*Vol*	*LOS*	*Vol*	*LOS*
Deer Springs Road												
Twin Oaks Vly Rd to San Marcos CL	4 Lane Maj Arterial	40,000	**40,700**	**F**	30,700	D	26,400	C	**41,130**	**F**	**35,370**	**E**
San Marcos City Limits to Sarver Ln	6.2 Prime Art [g]	57,000	44,000	C	32,840	D	28,240	C	44,430	C	38,210	C
Sarver Ln to Mesa Rock Rd	6.2 Prime Art [i]	57,000	44,500	C	**29,640**	**F**	**25,490**	**F**	44,720	D	38,460	C
Mesa Rock Rd to I-15 SB Ramps	6.2 Prime Art [g]	57,000	**52,300**	**E**	38,190	C	32,840	B	**53,070**	**E**	45,640	D
I-15 NB Ramps to Champagne Blvd	4.1 B Maj Rd	34,200	**45,100**	**F**	38,280	D	32,920	C	**45,240**	**F**	**38,910**	**E**
Mountain Meadow Road												
East of Champagne Blvd	4.1 B Maj Rd	34,200	28,600	D	27,020	C	23,240	C	28,660	D	24,650	C
Twin Oaks Valley Road												
Solar Ln to Deer Springs Rd	2.2C Light Coll	19,000	4,800	C	6,730	C	5,790	C	4,810	C	4,140	C

Table 2.13-32
County General Plan Buildout Segment Analysis

Street Segment	Mobility Element Classification a	LOS E Cap b	General Plan Land Uses, Mobility Element Classification (Deer Springs Road as a 6.2 Prime Arterial)		With Project							
					Deer Springs Road as a 2.1B Com Collector between Sarver Lane and Mesa Rock Road [d]				*Deer Springs Road as a 6.2 Prime Arterial* [e]			
					With Mountain Meadow Road		*Without Mountain Meadow Road*		*With Mountain Meadow Road*		*Without Mountain Meadow Road*	
			Vol	*LOS* [f]	*Vol*	*LOS*	*Vol*	*LOS*	*Vol*	*LOS*	*Vol*	*LOS*
Buena Creek Road												
S. Santa Fe Ave to Monte Vista Dr	4.1 B Maj Rd	34,200	27,000	C	24,560	C	24,560	C	27,060	C	27,060	C
Monte Vista Dr to Las Posas Rd	4.1 B Maj Rd	34,200	22,700	B	19,820	B	19,820	B	22,800	B	22,800	B
Las Posas Rd to Deer Springs Rd	4.1 B Maj Rd	34,200	27,300	C	22,610	B	22,610	B	27,490	D	27,490	D
Monte Vista Drive												
Foothill Dr to Buena Creek Rd	4.1 B Maj Rd	34,200	19,000	B	18,420	B	18,420	B	19,040	B	19,040	B
Las Posas Road												
Buena Creek Rd to Borden Rd	2.2C Lt Coll	19,000	13,200	D	12,250	D	12,250	D	13,290	D	13,290	D
Borden Rd to S. Santa Fe Ave	4 Ln Maj Road	40,000	20,400	B	19,730	B	19,730	B	20,490	B	20,490	B
S. Santa Fe Ave to SR 78 Ramps	4 Ln Maj Road	40,000	34,400	D	34,360	D	34,360	D	34,490	D	34,490	D

Table 2.13-32
County General Plan Buildout Segment Analysis

Street Segment	Mobility Element Classification a	LOS E Cap b	General Plan Land Uses, Mobility Element Classification (Deer Springs Road as a 6.2 Prime Arterial)		With Project							
					Deer Springs Road as a 2.1B Com Collector between Sarver Lane and Mesa Rock Road [d]				*Deer Springs Road as a 6.2 Prime Arterial* [e]			
					With Mountain Meadow Road		*Without Mountain Meadow Road*		*With Mountain Meadow Road*		*Without Mountain Meadow Road*	
			Vol	*LOS* [f]	*Vol*	*LOS*	*Vol*	*LOS*	*Vol*	*LOS*	*Vol*	*LOS*
Mesa Rock Road												
Deer Springs Rd to N. Centre City Pkwy	2.2E Lt Col	16,200	2,900	B	2,830	B	2,430	B	2,930	B	2,930	B
Gopher Canyon Road												
West of I-15 Ramps	4.1 B Maj Rd	34,200	21,600	B	23,130	C	19,890	B	21,600	B	18,580	B
I-15 Ramps to SR 395 / Champagne Blvd	4.1 B Maj Rd	34,200	18,900	B	21,770	B	18,720	B	18,930	B	16,280	B
Champagne Boulevard												
Old Castle Rd to Lawrence Welk Dr	4.1 B Maj Rd	34,200	21,300	B	19,460	B	22,770	B	21,350	B	24,980	C
Lawrence Welk Dr to Mtn Meadow Rd	4.1 B Maj Rd	34,200	21,400	B	18,700	B	21,880	B	21,460	B	25,110	C

Table 2.13-32
County General Plan Buildout Segment Analysis

Street Segment	Mobility Element Classification a	LOS E Cap b	General Plan Land Uses, Mobility Element Classification (Deer Springs Road as a 6.2 Prime Arterial)		With Project							
					Deer Springs Road as a 2.1B Com Collector between Sarver Lane and Mesa Rock Road [d]				Deer Springs Road as a 6.2 Prime Arterial [e]			
					With Mountain Meadow Road		Without Mountain Meadow Road		With Mountain Meadow Road		Without Mountain Meadow Road	
			Vol	LOS [f]	Vol	LOS	Vol	LOS	Vol	LOS	Vol	LOS
North Centre City Parkway												
Mountain Meadow Rd to I-15 Ramps	4.1 B Maj Rd	34,200	30,700	D	**32,060**	**E**	**34,540**	**F**	30,710	D	**33,090**	**E**
I-15 Ramps to Country Club Dr	4.1 B Maj Rd	34,200	19,000	B	19,300	B	19,300	B	19,040	B	19,040	B

Footnote:

a. The roadway classification at which the facility operates.
b. Capacity of the existing roadway per the County *Table 1, Average Daily Vehicle Trips*.
c. GP 2030 Without Project segment volumes
d. Option A - 4.1A Deer Springs Road and a 2.1B Community Collector with a continuous left-turn lane between Sarver Lane and Mesa Rock Road.
e. Per San Diego County Mobility Element.
f. Level of Service.

Table 2.13-33
County General Plan Buildout (Deer Springs Road Reclassified Under Option A) – Freeway Segment Operations

Freeway Segment	Dir.	# of Lanes	Hourly Capacity a	ADT b	% K c		% D c		Truck Factor d	Peak Hour Volume e		V/C f		LOS	
					AM	PM	AM	PM		AM	PM	AM	PM	AM	PM
Interstate 15															
Gopher Canyon Rd to Deer Springs Rd	NB	4M+1ML	9,200	246,610	0.0798	0.0865	0.2417	0.6477	0.8680	4,129	11,993	0.449	**1.304**	B	**F(1)**
	SB				0.0798	0.0865	0.7583	0.3523		12,953	6,523	**1.408**	0.709	**F(2)**	C

Table 2.13-33
County General Plan Buildout (Deer Springs Road Reclassified Under Option A) – Freeway Segment Operations

Freeway Segment	Dir.	# of Lanes	Hourly Capacity [a]	ADT [b]	% K [c]		% D [c]		Truck Factor [d]	Peak Hour Volume [e]		V/C [f]		LOS	
					AM	*PM*	*AM*	*PM*		*AM*	*PM*	*AM*	*PM*	*AM*	*PM*
Deer Springs Rd to N. Centre City Pkwy	NB	4M+1ML	9,200	255,760	0.0798	0.0865	0.2417	0.6477	0.8680	4,282	12,438	0.465	**1.352**	B	**F(2)**
	SB				0.0798	0.0865	0.7583	0.3523		13,434	6,765	1.460	0.735	**F(3)**	C
N. Centre Pkwy to El Norte Pkwy	NB	4M+1ML	9,200	256,320	0.0798	0.0865	0.2417	0.6477	0.8680	4,291	12,465	0.466	**1.355**	B	**F(2)**
	SB				0.0798	0.0865	0.7583	0.3523		13,463	6,780	**1.463**	0.737	**F(3)**	C
SR 78															
Mar Vista Rd to Sycamore Ave	WB	3M+1HOV	7,200	154,260	0.0722	0.0780	0.4836	0.5323	0.9483	5,108	6,074	0.709	0.844	C	D
	EB				0.0722	0.0780	0.5164	0.4677		5,454	5,337	0.758	0.741	C	C
Sycamore Ave to Rancho Santa Fe Ave	WB	3M+1HOV	7,200	160,050	0.0722	0.0780	0.4836	0.5323	0.9483	5,299	6,302	0.736	0.875	C	D
	EB				0.0722	0.0780	0.5164	0.4677		5,659	5,537	0.786	0.769	C	C
Rancho Santa Fe Ave to Las Posas Rd	WB	3M+1HOV+1A	8,400	176,610	0.0722	0.0780	0.4836	0.5323	0.9483	5,848	6,954	0.696	0.828	C	D
	EB				0.0722	0.0780	0.5164	0.4677		6,244	6,110	0.743	0.727	C	C
Las Posas Rd to San Marcos Blvd	WB	3M+1HOV	7,200	178,940	0.0722	0.0780	0.4836	0.5323	0.9483	5,925	7,045	0.823	**0.979**	D	**E**
	EB				0.0722	0.0780	0.5164	0.4677		6,327	6,190	0.879	0.860	D	D
San Marcos Blvd to Twin Oaks Valley Rd	WB	3M+1HOV+1A	8,400	193,490	0.0722	0.0780	0.4836	0.5323	0.9483	6,407	7,618	0.763	0.907	C	D
	EB				0.0722	0.0780	0.5164	0.4677		6,841	6,694	0.814	0.797	D	C

Footnotes:

a. Capacity calculated at 2000 vph per lane, and 1200 vph per Auxiliary lane, Managed Lane (ML) and High Occupancy (HOV) lane.
b. Option A GP 2030 Volumes with Project Volumes
c. Peak Hour Percentage (K) and Direction Split (D) from CALTRANS, 2013
d. Truck Factor from "2013 Annual Average Daily Truck Traffic on the California State Highway System".
e. Peak Hour Volume = ((ADT)(K)(D)/Truck Factor)
f. V/C = ((ADT)(K)(D)/Truck Factor/Capacity)
g. **Bold** indicates LOS E or worse operations.

LOS	v/c
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

Table 2.13-34
County General Plan Buildout (Deer Springs Road as a 6.2 Prime Arterial) – Freeway Segment Operations

Freeway Segment	Dir.	# of Lanes	Hourly Capacity [a]	ADT [b]	% K [c]		% D [c]		Truck Factor [d]	Peak Hour Volume [e]		V/C [f]		LOS	
					AM	*PM*	*AM*	*PM*		*AM*	*PM*	*AM*	*PM*	*AM*	*PM*
Interstate 15															
Gopher Canyon Rd to Deer Springs Rd	NB	4M+1ML	9,200	248,080	0.0798	0.0865	0.2417	0.6477	0.8680	4,153	12,064	0.451	**1.311**	B	**F(1)**
	SB				0.0798	0.0865	0.7583	0.3523		13,030	6,562	**1.416**	0.713	**F(2)**	C
Deer Springs Rd to N. Centre City Pkwy	NB	4M+1ML	9,200	249,420	0.0798	0.0865	0.2417	0.6477	0.8680	4,176	12,129	0.454	**1.318**	B	**F(1)**
	SB				0.0798	0.0865	0.7583	0.3523		13,101	6,598	**1.424**	0.717	**F(2)**	C
N. Centre Pkwy to El Norte Pkwy	NB	4M+1ML	9,200	249,420	0.0798	0.0865	0.2417	0.6477	0.8680	4,176	12,129	0.454	**1.318**	B	**F(1)**
	SB				0.0798	0.0865	0.7583	0.3523		13,101	6,598	**1.424**	0.717	**F(2)**	C
SR 78															
Mar Vista Rd to Sycamore Ave	WB	3M+1H OV	7,200	154,160	0.0722	0.0780	0.4836	0.5323	0.9483	5,104	6,070	0.709	0.843	C	D
	EB				0.0722	0.0780	0.5164	0.4677		5,451	5,333	0.757	0.741	C	C
Sycamore Ave to Rancho Santa Fe Ave	WB	3M+1H OV	7,200	159,050	0.0722	0.0780	0.4836	0.5323	0.9483	5,266	6,262	0.731	0.870	C	D
	EB				0.0722	0.0780	0.5164	0.4677		5,623	5,502	0.781	0.764	C	C
Rancho Santa Fe Ave to Las Posas Rd	WB	3M+1H OV+1A	8,400	175,050	0.0722	0.0780	0.4836	0.5323	0.9483	5,796	6,892	0.690	0.821	C	D
	EB				0.0722	0.0780	0.5164	0.4677		6,189	6,056	0.737	0.721	C	C
Las Posas Rd to San Marcos Blvd	WB	3M+1H OV	7,200	176,050	0.0722	0.0780	0.4836	0.5323	0.9483	5,829	6,932	0.810	**0.963**	D	**E**
	EB				0.0722	0.0780	0.5164	0.4677		6,225	6,090	0.865	0.846	D	D

Table 2.13-34
County General Plan Buildout (Deer Springs Road as a 6.2 Prime Arterial) – Freeway Segment Operations

Freeway Segment	Dir.	# of Lanes	Hourly Capacity [a]	ADT [b]	% K [c]		% D [c]		Truck Factor [d]	Peak Hour Volume [e]		V/C [f]		LOS	
					AM	*PM*	*AM*	*PM*		*AM*	*PM*	*AM*	*PM*	*AM*	*PM*
San Marcos Blvd to Twin Oaks Valley Rd	WB	3M+1H OV+1A	8,400	191,010	0.0722	0.0780	0.4836	0.5323	0.9483	6,324	7,521	0.753	0.895	C	D
	EB				0.0722	0.0780	0.5164	0.4677		6,753	6,608	0.804	0.787	D	C

Footnotes:

a. Capacity calculated at 2000 vph per lane, and 1200 vph per Auxiliary lane, Managed Lane (ML) and High Occupancy (HOV) lane.
b. Option A GP 2030 Volumes with Project Volumes
c. Peak Hour Percentage (K) and Direction Split (D) from Caltrans, 2013
d. Truck Factor from "2013 Annual Average Daily Truck Traffic on the California State Highway System".
e. Peak Hour Volume = ((ADT)(K)(D)/Truck Factor)
f. V/C = ((ADT)(K)(D)/Truck Factor/Capacity)
g. Bold indicates LOS E or worse operations.

LOS	v/c
A	<0.41
B	0.62
C	0.8
D	0.92
E	1
F(0)	1.25
F(1)	1.35
F(2)	1.45
F(3)	>1.46

Table 2.13-35
City of San Marcos Horizon Year 2035, Full Road Network Buildout
Intersection Operations

Intersection		Traffic Control	Peak Hour	Horizon Year Without Project		Horizon Year With Project		Δ Delay [c]	Impact Type
				Delay [a]	*LOS* [b]	*Delay*	*LOS*		
12.	Twin Oaks Valley Rd / Deer Springs Rd	Signal	AM	17.6	B	23.5	C	5.9	None
			PM	14.3	B	20.0	B	5.7	None
13.	Twin Oaks Valley Rd / Buena Creek Rd	Signal	AM	24.2	C	35.2	D	11.0	None
			PM	33.6	C	53.8	D	20.2	None
14.	Twin Oaks Valley Rd / Cassou Rd	Signal	AM	26.2	C	28.4	C	2.2	None
			PM	15.5	B	16.1	B	0.6	None
15.	Twin Oaks Valley Rd / La Cienega Rd	Signal	AM	15.3	B	16.5	B	1.2	None
			PM	13.0	B	16.2	B	3.2	None

Table 2.13-35
City of San Marcos Horizon Year 2035, Full Road Network Buildout
Intersection Operations

Intersection		Traffic Control	Peak Hour	Horizon Year Without Project		Horizon Year With Project		Δ Delay [c]	Impact Type
				Delay [a]	*LOS* [b]	*Delay*	*LOS*		
16.	Twin Oaks Valley Rd / Del Roy Dr	Signal	AM	18.3	B	19.5	B	1.2	None
			PM	16.2	B	16.8	B	0.6	None
17.	Twin Oaks Valley Rd / Windy Wy	Signal	AM	9.0	A	9.6	A	0.6	None
			PM	7.6	A	7.8	A	0.2	None
18.	Twin Oaks Valley Rd / Borden Rd	Signal	AM	39.1	D	40.7	D	1.6	None
			PM	34.6	C	39.0	D	4.4	None
19.	Twin Oaks Valley Rd / Richmar Ave	Signal	AM	35.9	D	40.3	D	4.4	None
			PM	51.1	D	54.0	D	2.9	None
20.	Twin Oaks Valley Rd / San Marcos Blvd	Signal	AM	48.9	D	52.3	D	3.4	None
			PM	110.8	F	112.6	F	1.8	None [d]
21.	Twin Oaks Valley Rd / SR 78 WB Ramps	Signal	AM	15.2	B	15.2	B	0.0	None
			PM	18.9	B	19.2	B	0.3	None
22.	Twin Oaks Valley Rd / SR 78 EB Ramps	Signal	AM	37.4	D	37.8	D	0.4	None
			PM	48.0	D	49.1	D	1.1	None
28.	San Marcos Blvd / Knoll Rd / SR 78 WB Ramps	Signal	AM	~~43.9~~43.0	D	~~44.1~~43.2	D	0.2	None
			PM	45.9	D	46.6	D	0.7	None
29.	San Marcos Blvd / SR 78 EB Ramps	Signal	AM	~~16.8~~15.4	B	~~16.8~~15.4	B	0.0	None
			PM	~~15.5~~14.0	B	~~16.3~~14.8	B	0.8	None
30.	Mission Rd / Vineyard Rd	Signal	AM	28.4	C	28.6	C	0.2	None
			PM	34.8	C	36.4	D	1.6	None
33.	Twin Oaks Valley Rd / Barham Dr / Discovery St	Signal	AM	64.9	E	66.3	E	1.4	None [d]
			PM	111.0	F	112.7	F	1.7	None [d]

Footnotes:
a. Delay in seconds per vehicle.
b. Level of Service

c. Increase in delay due to project traffic.
d. Not a significant impact since increase in delay due to project traffic is less than 2 seconds.

Table 2.13-36
City of San Marcos Horizon Year 2035, Full Road Network Buildout Segment Operations

Street Segment	Mobility Element Classification [a]	LOS E Cap [b]	Year 2035 Without Project			Year 2035 With Project			Δ V/C [f]	Impact Type
			Volume [c]	*LOS* [d]	*V/C* [e]	*Volume*	*LOS*	*V/C*		
Twin Oaks Valley Road										
Deer Springs Rd to Buena Creek Rd	4 Lane Major Arterial	40,000	**37,600**	**~~F~~ E**	**0.940**	**45,600**	**F**	**1.140**	**0.200**	**Cumulative**
Buena Creek Rd to Cassou Rd	4 Lane Major Arterial	40,000	13,360	B	0.334	17,400	C	0.435	0.101	None
Cassou Rd to La Cienega Rd	4 Lane Major Arterial	40,000	14,550	C	0.364	18,000	C	0.450	0.086	None
La Cienega Rd to Windy Wy	4 Lane Major Arterial	40,000	24,630	C	0.616	27,800	C	0.695	0.079	None
Windy Wy to Borden Rd	4 Lane Major Arterial	40,000	25,230	C	0.631	28,200	C	0.705	0.074	None
Borden Rd to Richmar Ave	4 Lane Major Arterial	40,000	25,000	C	0.625	27,900	C	0.698	0.073	None
Richmar Ave to San Marcos Blvd	4 Lane Major Arterial	40,000	29,860	C	0.747	32,300	D	0.808	0.061	None
San Marcos Blvd to SR 78	6 Ln Prime Arterial	60,000	43,780	C	0.730	45,300	C	0.755	0.025	None
SR 78 to Barham Dr / Discovery St	6 Ln Prime Arterial	70,000	55,080	C	0.787	56,600	C	0.809	0.022	None
Las Posas Road										
Buena Creek Rd to Borden Rd	2.2C Light Collector	19,000	8,440	C	0.444	10,200	D	0.537	0.093	None
Borden Rd to Santa Fe Ave	4 Lane Major Road	40,000	22,640	C	0.566	24,400	C	0.610	0.044	None
Santa Fe Ave to SR 78 Ramps	4 Lane Major Road	40,000	25,040	C	0.626	26,800	C	0.670	0.044	None

Footnote:
a. The Mobility Element roadway classification.
b. Capacity of the roadway per the City Roadway Capacity Table.
c. Horizon Year 2035 Without Project segment volumes (SANDAG Series 12)
d. Level of Service.
e. Volume / capacity ratio.
f. Increase in V/C ratio due to Project traffic.

Table 2.13-37
City of San Marcos Horizon Year 2035, Modified Road Network Buildout Intersection Operations

Intersection		Traffic Control	Peak Hour	Horizon Year Without Project		Horizon Year With Project		Δ Delay [c]	Impact Type
				Delay [a]	*LOS* [b]	*Delay*	*LOS*		
12.	Twin Oaks Valley Rd / Deer Springs Rd	Signal	AM	16.1	B	19.8	B	3.7	None
			PM	12.9	B	14.5	B	1.6	None
13.	Twin Oaks Valley Rd / Buena Creek Rd	Signal	AM	18.4	B	21.8	C	3.4	None
			PM	20.8	C	28.1	C	7.3	None
14.	Twin Oaks Valley Rd / Cassou Rd	Signal	AM	28.2	C	30.9	C	2.7	None
			PM	15.4	B	16.5	B	1.1	None
15.	Twin Oaks Valley Rd / La Cienega Rd	Signal	AM	16.8	B	18.5	B	1.7	None
			PM	15.2	B	17.9	B	2.7	None
16.	Twin Oaks Valley Rd / Del Roy Dr	Signal	AM	20.6	C	24.7	C	4.1	None
			PM	17.2	B	18.4	B	1.2	None
17.	Twin Oaks Valley Rd / Windy Wy	Signal	AM	10.3	B	11.9	B	1.6	None
			PM	8.0	A	8.1	A	0.1	None
18.	Twin Oaks Valley Rd / Borden Rd	Signal	AM	46.0	D	48.6	D	2.6	None
			PM	41.4	D	48.0	D	6.6	None
19.	Twin Oaks Valley Rd / Richmar Ave	Signal	AM	36.9	D	46.4	D	9.5	None
			PM	**59.0**	**E**	**65.8**	**E**	**6.8**	**Cumulative**
20.	Twin Oaks Valley Rd / San Marcos Blvd	Signal	AM	48.0	D	51.1	D	3.1	None
			PM	104.8	F	106.6	F	1.8	None
21.	Twin Oaks Valley Rd / SR 78 WB Ramps	Signal	AM	15.5	B	15.5	B	0.0	None
			PM	19.3	B	19.6	B	0.3	None
22.	Twin Oaks Valley Rd / SR 78 EB Ramps	Signal	AM	39.2	D	39.8	D	0.6	None
			PM	46.3	D	47.7	D	1.4	None
28.	San Marcos Blvd / Knoll Rd/WB Off Ramp	Signal	AM	41.9	D	42.0	D	0.1	None
			PM	41.0	D	41.3	D	0.3	None
29.	San Marcos Blvd / WB Off	Signal	AM	14.7	B	14.7	B	0.0	None

Table 2.13-37
City of San Marcos Horizon Year 2035, Modified Road Network Buildout Intersection Operations

	Intersection	Traffic Control	Peak Hour	Horizon Year Without Project		Horizon Year With Project		Δ Delay [c]	Impact Type
				Delay [a]	*LOS* [b]	*Delay*	*LOS*		
	Ramp		PM	14.2	B	14.8	B	0.6	None
30.	Mission Rd / Vineyard Rd	Signal	AM	29.1	C	29.2	C	0.1	None
			PM	37.0	D	37.9	D	0.9	None
33.	Twin Oaks Valley Rd / Barham Dr / Discovery St	Signal	AM	66.7	E	68.5	E	1.8	None
			PM	114.7	F	116.6	F	1.9	None

Footnotes:

a. Delay in seconds per vehicle.
b. Level of Service
c. Increase in delay due to project traffic.
d. Not a significant impact since increase in delay due to Project traffic is less than 2 seconds.

Table 2.13-38
City of San Marcos Horizon Year 2035, Modified Road Network Buildout Segment Operations

Street Segment	Mobility Element Classification [a]	LOS E Cap [b]	Year 2035 Without Project			Year 2035 With Project			ΔV/C [f]	Impact Type
			Volume [c]	*LOS* [d]	*V/C* [e]	*Volume*	*LOS*	*V/C*		
Twin Oaks Valley Road										
Deer Springs Rd to Buena Creek Rd	4 Lane Major Road	40,000	28,300	C	0.708	**36,300**	**E**	**0.908**	**0.200**	**Cumulative**
Buena Creek Rd to Cassou Rd	4 Lane Major Road	40,000	18,560	B	0.464	22,600	C	0.565	0.101	None
Cassou Rd to La Cienega Rd	4 Lane Major Road	40,000	20,250	B	0.506	23,700	C	0.593	0.086	None
La Cienega Rd to Windy Wy	4 Lane Major Road	40,000	29,830	C	0.746	33,000	D	0.825	0.079	None
Windy Wy to Borden Rd	4 Lane Major Road	40,000	31,430	D	0.786	34,400	D	0.860	0.074	None
Borden Rd to Richmar Ave	4 Lane Major Road	40,000	29,200	C	0.730	32,100	D	0.803	0.073	None
Richmar Ave to San Marcos Blvd	4 Lane Major Road	40,000	28,960	C	0.724	31,400	D	0.785	0.061	None
San Marcos Blvd to SR 78	6 Ln Prime Art	60,000	44,480	C	0.741	46,000	C	0.767	0.025	None
SR 78 to Barham Dr / Discovery St	6 Ln Prime Art	70,000	46,880	C	0.670	48,400	C	0.691	0.022	None

Table 2.13-38
City of San Marcos Horizon Year 2035, Modified Road Network Buildout Segment Operations

Street Segment	Mobility Element Classification [a]	LOS E Cap [b]	Year 2035 Without Project			Year 2035 With Project			ΔV/C [f]	Impact Type
			Volume [c]	*LOS* [d]	*V/C* [e]	*Volume*	*LOS*	*V/C*		
Las Posas Road										
Buena Creek Rd to Borden Rd	2.2C Light Collector	19,000	DNE [g]							None
Borden Rd to Santa Fe Ave	4 Lane Major Road	40,000	22,640	C	0.566	24,400	C	0.610	0.044	None
Santa Fe Ave to SR 78 Ramps	4 Lane Major Road	40,000	25,040	C	0.626	26,800	C	0.670	0.044	None

Footnote:
a. The Mobility Element roadway classification.
b. Capacity of the roadway per the City Roadway Capacity Table.
c. Horizon Year 2035 Without Project segment volumes (SANDAG Series 12)
d. Level of Service.
e. Volume / capacity ratio.
f. Increase in V/C ratio due to Project traffic.
g. Does Not Exist (DNE).

Table 2.13-39
Existing + Project Mitigation Analysis - Intersections

Intersection		Traffic Control [a]	Peak Hour	Pre Mitigation [b]		Post Mitigation [c]	
				Delay	*LOS*	*Delay*	*LOS*
5.	Deer Springs Rd / I-15 NB Ramps	Signal	PM	>100.0	F	[d]	[d]
6.	Deer Springs Rd / I-15 SB Ramps	Signal	PM	85.1	F	[d]	[d]
7.	Deer Springs Rd / Mesa Rock Rd	Signal	AM	>100.0	F	~~d~~30.4	~~d~~C
			PM	99.1	F	~~d~~28.0	~~d~~C
9.	Deer Springs Rd / Sarver Ln	Signal	AM	>100.0	F	22.8	C
			PM	>100.0	F	18.7	B
12.	Deer Springs Rd/Twin Oaks Valley Rd	Signal	AM	>100.0	F	14.0	B
			PM	>100.0	F	11.9	B
13.	Buena Creek Rd/ Twin Oaks Valley Rd	Signal	AM	57.2	E	15.4	B
			PM	69.7	E	17.0	B

Table 2.13-39
Existing + Project Mitigation Analysis - Intersections

Intersection		Traffic Control [a]	Peak Hour	Pre Mitigation [b]		Post Mitigation [c]	
				Delay	*LOS*	*Delay*	*LOS*
26.	Buena Creek Rd/S. Santa Fe Ave	Signal	AM	>100.0	F	51.8	D
			PM	~~75.8~~>100.0	E	~~52.5~~54.6	D
27.	Buena Creek Rd/Monte Vista Dr	Signal	AM	94.2	F	15.8	B
			PM	>100.0	F	24.3	C

Footnotes:
a. Mitigated traffic control shown in **Bold**.
b. Delay and level of service without Project traffic and prior to the implementation of mitigation.
c. Delay and level of service with Project traffic and mitigation.
d. The Delay and LOS of the I-15/DSR Interchange will be a function of the specific mitigation for the ramp intersections determined by Caltrans.

Table 2.13-40
Existing + Project Mitigation Analysis - Segments

Street Segment	Prior to Mitigation [a]				Post Mitigation [b]			
	Functional Classification [c]	*LOS E Capacity* [d]	*Volume* [e]	*LOS* [f]	*Roadway Classification* [g]	*LOS E Capacity*	*Volume*	*LOS*
Deer Springs Road								
Twin Oaks Valley Road to Sarver Ln	2 Ln Coll/2.2E	15,000	26,990	F	4 Ln Major Art/4.1A Major Rd	40,000	26,990	C
Sarver Ln to Mesa Rock Rd (Option A)	2.2E Lt Coll	16,200	25,000	F	2.1B Comm Coll	19,000	25,000	F [h]
Sarver Ln to Mesa Rock Rd (Option B)	2.2E Lt Coll	16,200	25,000	F	4.1 B Major Road	34,200	25,000	C
Mesa Rock Rd to I-15 SB Ramps	2.2E Lt Coll	16,200	35,950	F	4.1 A Major Road (w/Aux Ln) [i]	46,250	35,950	C
Twin Oaks Valley Road								
Deer Springs Rd to Buena Creek Rd	2 Lane Collector	15,000	28,700	F	4 Lane Major Arterial	40,000	28,700	C
Buena Creek Rd to Cassou Rd	2 Lane Collector	15,000	22,440	F	4 Lane Major Arterial	40,000	22,440	C
Robelini Drive								
Sycamore Avenue to S. Santa Fe Ave	2.2E Lt Col	16,200	18,580	F	No Change to Existing	16,200	18,580	F [j]

Table 2.13-40
Existing + Project Mitigation Analysis - Segments

Street Segment	Prior to Mitigation [a]				Post Mitigation [b]			
	Functional Classification [c]	*LOS E Capacity* [d]	*Volume* [e]	*LOS* [f]	*Roadway Classification* [g]	*LOS E Capacity*	*Volume*	*LOS*
S. Santa Fe Avenue								
Woodward Ave to Buena Creek Rd	2.1 B Com Coll	19,000	17,880	E	No Change to Existing	19,000	17,880	E [j]

Footnote:

a. Delay and level of service without Project traffic, prior to the implementation of mitigation.
b. Delay and level of service with Project traffic and mitigation.
c. The existing roadway classification at which the facility operates, prior to mitigation.
d. Capacity of the roadway per the County *Table 1, Average Daily Vehicle Trips*.
e. Existing volume (without Project traffic)
f. Level of Service.
g. The mitigated roadway classification.
h. Segment impact not mitigated to less than significant under Option A.
i. A westbound auxiliary lane is recommended between Mesa Rock Road and I-15 Ramps. Therefore a higher LOS E capacity of this segment was assumed (an additional 25% capacity of a Major Road)
j. There is no feasible mitigation for this segment impact. Therefore, this impact remains significant and unavoidable.

Table 2.13-41
Existing + Project + Cumulative Projects Mitigation Analysis – Intersections

Intersection		Traffic Control [a]	Peak Hour	Delay [b]	LOS [b]
5.	Deer Springs Road/I-15 NB Ramps	Signal	AM	c	c
			PM	c	c
6.	Deer Springs Road/I-15 SB Ramps	Signal	AM	c	c
			PM	c	c
7.	Deer Springs Road/Mesa Rock Road	Signal	AM	~~43.2~~41.0	D
			PM	~~39.0~~34.8	~~D~~C
8.	Deer Springs Road/Sarver Lane	**Signal**	AM	~~23.4~~22.5	C
			PM	~~18.6~~18.3	B
9.	Deer Springs Road/Sycamore Road	**Signal**	AM	~~6.0~~5.9	A
			PM	~~3.5~~3.4	A
11.	Deer Springs Road/Twin Oaks Valley Road	Signal	AM	~~24.3~~22.2	B
			PM	~~19.2~~18.1	B
12.	Buena Creek Road/Twin Oaks Valley Road	Signal	AM	~~26.3~~26.0	B
			PM	~~33.2~~31.9	C
19.	San Marcos Blvd/Twin Oaks Valley Road	Signal	AM	~~50.5~~50.0	D
			PM	~~93.0~~92.0	F
25.	Buena Creek Road/S. Santa Fe Ave	Signal	AM	~~91.7~~87.4	F
			PM	~~40.4~~39.3	D
26.	Buena Creek Road/Monte Vista Drive	**Signal**	AM	~~16.5~~16.0	B
			PM	~~24.0~~23.9	C

a. Mitigated traffic control shown in **Bold**.
b. Delay and level of service with mitigation.
c. Mitigation for the ramp intersections will be known only after the PSR being prepared for this interchange is approved by Caltrans.

Table 2.13-42
Existing + Project + Cumulative Projects Mitigation Analysis – Street Segments

Street Segment	Recommended Mitigation [a]	LOS E Capacity	Volume [b]	LOS [c]
Deer Springs Road				
Twin Oaks Valley Rd to San Marcos Limits	4 Lane Major Arterial	40,000	~~30,190~~30,990	D
Sarver Ln to Mesa Rock Rd (Option A)	2.1B Comm Coll	19,000	~~27,600~~29,100	F[d]
Sarver Ln to Mesa Rock Rd (Option B)	4.1 B Major	37,000	~~27,600~~29,100	D
Mesa Rock Rd to I-15 SB Ramps	4.1 A Major	46,250	~~36,750~~37,350	C
Twin Oaks Valley Road				
Deer Springs Rd to Buena Creek Rd	4 Lane Major	40,000	~~30,400~~31,900	D
Buena Creek Rd to Cassou Rd	4 Lane Major	40,000	~~23,040~~23,840	C
Richmar Ave to San Marcos Blvd	4 Lane Major	40,000	e	e
Gopher Canyon Road				
Little Gopher Canyon Rd to I-15	4.1 B Major [f]	34,200	~~17,110~~18,110	B
Robelini Drive				
Sycamore Avenue to S. Santa Fe. Ave	2.2 E Light Coll	16,200	19,~~680~~ 380 [g]	F

Table 2.13-42
Existing + Project + Cumulative Projects Mitigation Analysis – Street Segments

Street Segment	Recommended Mitigation [a]	LOS E Capacity	Volume [b]	LOS [c]
S. Santa Fe Avenue				
~~Woodward Ave~~Robelini Dr to Buena Creek Rd	4.1A Major Rd [f]	37,000	~~18,480~~20,580	B

Footnote:

a. The mitigated roadway classification. The fair share (City of San Marcos) and TIF payments (San Diego County) are towards the implementation of the Mobility Element. Hence the level of service after implementation of the Mobility Element is shown.

b. Existing + Project + Cumulative Projects volumes from Table 10-6 in Appendix R.

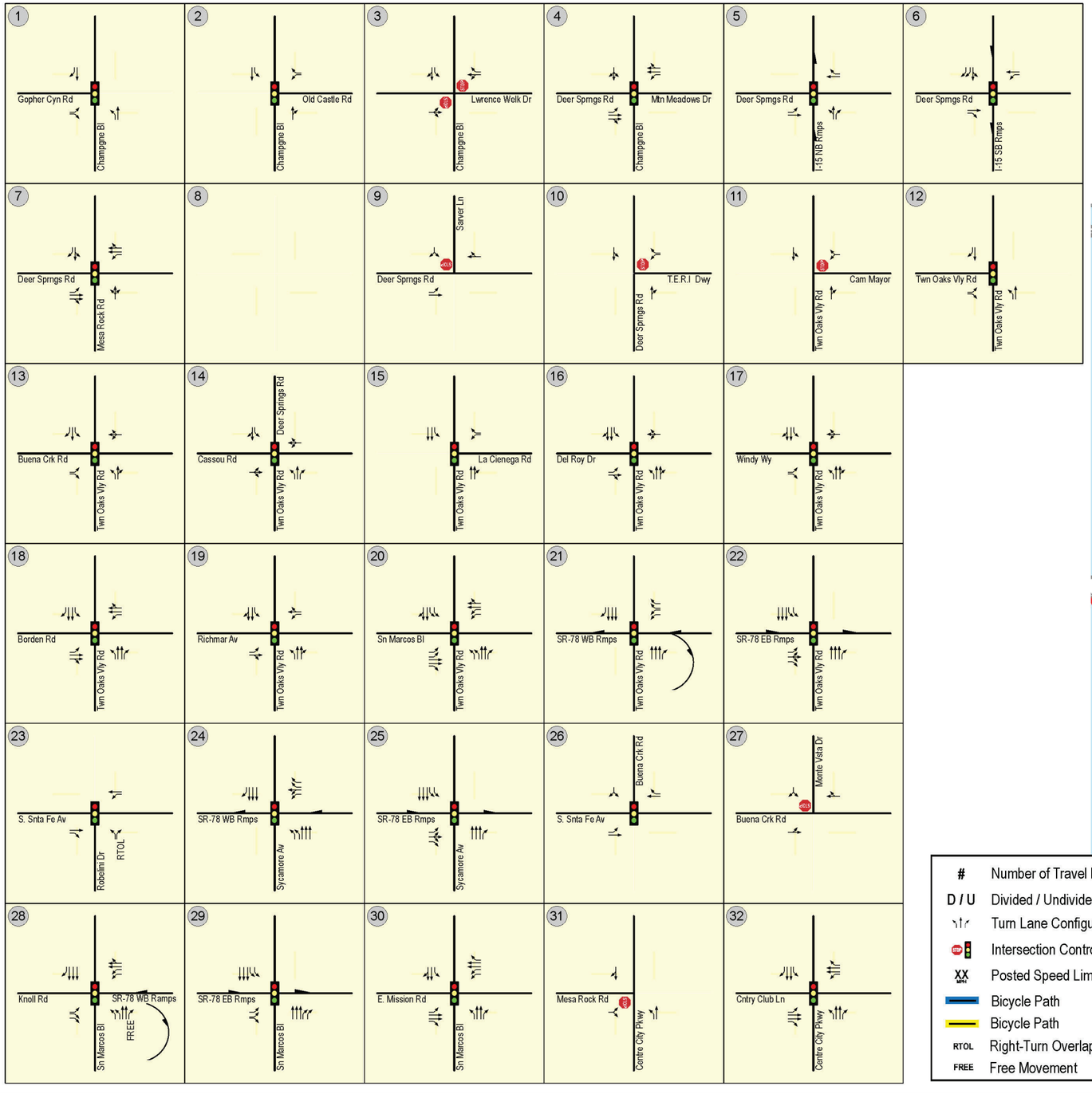
c. Level of Service.

d. Segment impact not mitigated

e. With the installation of a southbound right-turn lane at the Twin Oaks Valley Road / San Marcos Boulevard, the flow on Twin Oaks Valley Road will improve, mitigating this impact.

f. Payment of TIF to General Plan Mobility Element.

g. With implementation of the S. Santa Fe Ave. CIP Project, a TIF Program Eligible Project, Robelini Drive will be removed from the Mobility Element, become a cul de sac, and open to local traffic only. Therefore, the volume shown is not representative of the future condition with implementation of this CIP project. Instead, the future volume would be a product of local traffic only and is expected to be substantially lower.



SOURCE: Linscott Law & Greenspan 2015

FIGURE 2.13-1

Project Study Area

Newland Sierra Environmental Impact Report

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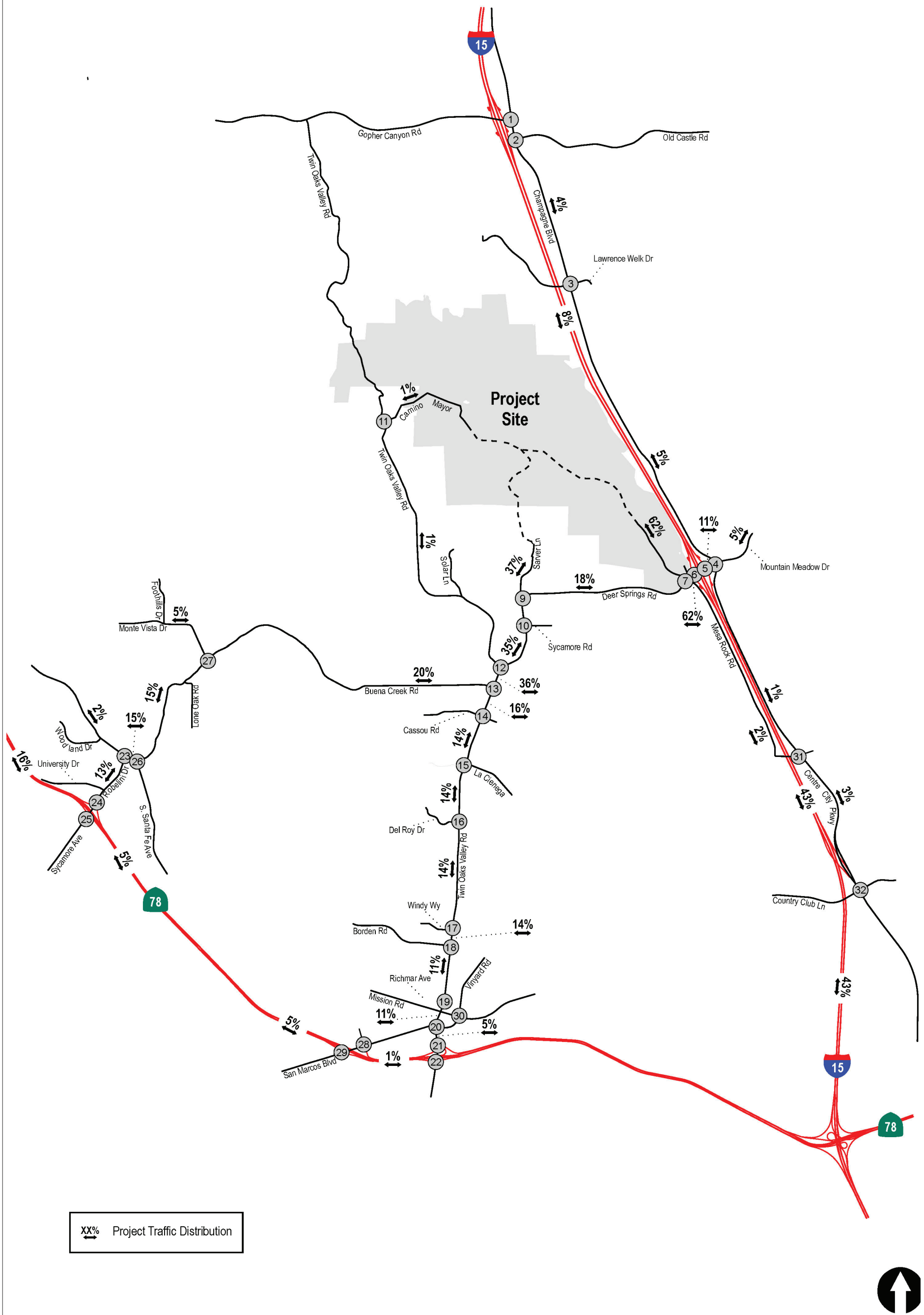

SOURCE: Linscott Law & Greenspan 2015

FIGURE 2.13-2

Project Traffic Distribution–Residential

Newland Sierra Environmental Impact Report

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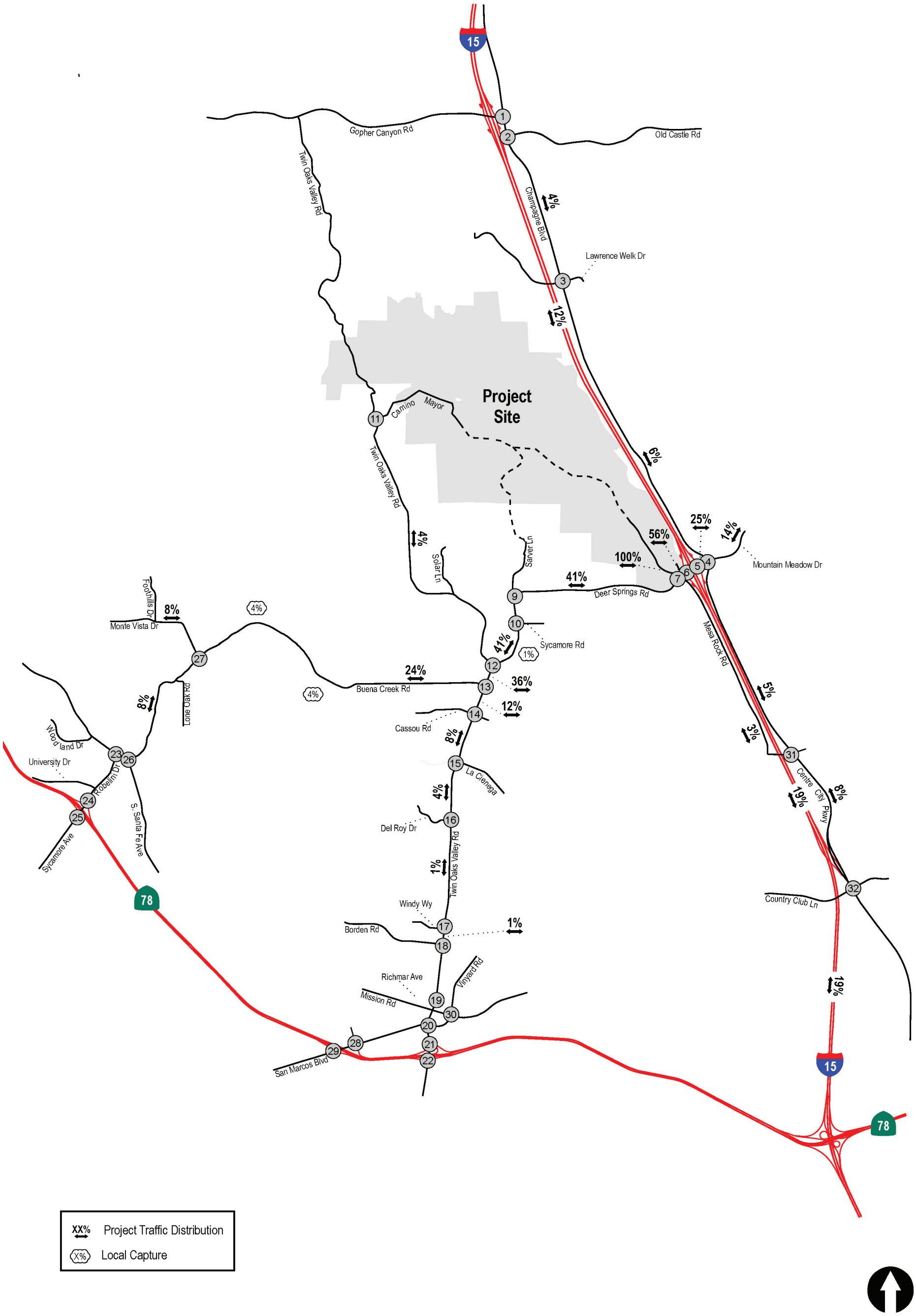

SOURCE: Linscott Law & Greenspan 2015

FIGURE 2.13-3

Project Traffic Distribution–Non-Residential

Newland Sierra Environmental Impact Report

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