APPENDIX 2.9-1

Traffic Impact Analysis

Transportation Impact Study

Otay Ranch Village 14 and Planning Areas 16 & 19

Draft Report

Prepared for:
Jackson Pendo Development Company
2245 San Diego Avenue, Suite 223
San Diego, CA 92110

Prepared by:
CHEN RYAN
3900 5th Avenue, Suite #210
San Diego, CA 92103

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Executive Summary

The purpose of this Transportation Impact Study (TIS) is to identify and document potential transportation impacts related to the development of the proposed Otay Ranch Village 14 and Planning Areas 16 & 19 Specific Plan (Proposed Project), as well as to recommend mitigation measures for any identified significant impacts associated with the Proposed Project.

ES.1 Study Purpose and Project Description

The Proposed Project (defined below) is part of Otay Ranch, an approximately 23,000-acre master-planned community in southern San Diego County designed as a series of villages and planning areas. The Proposed Project addressed by this technical report is located within Village 14 and Planning Areas 16/19 in the Proctor Valley area of Otay Ranch.

The underlying purpose of the Proposed Project is to implement the adopted Otay Ranch General Development Plan/Subregional Plan, Volume II (County of San Diego 1993), ("Otay Ranch GDP/SRP") and complete the planned development within Jackson Pendo Development Company's ("Applicant") ownership of Village 14 and Planning Areas 16/19. The Otay Ranch GDP/SRP is a component part of the County General Plan (County of San Diego 2011) and allows for a total of 2,123 homes in Otay Ranch Village 14 and Planning Areas 16/19. The Proposed Project's 1,119 homes represent a portion of the total 2,123 homes originally authorized in the Otay Ranch GDP/SRP.

The Proposed Project is designed to be consistent with the Otay Ranch GDP/SRP's Village Character Policy "to serve as a transitional area between urban densities to the west and Jamul to the east". The Proposed Project is therefore designed to provide a transitional village between the densities and character of eastern Chula Vista and the more rural community of Jamul. The Proposed Project proposes 1,119[1] homes of which 994[1] are in Village 14 and 125 homes in Planning Areas 16/19 as shown in Table 1 Site Utilization Plan Summary.

ES.2 Project Trip Generation

The Proposed Project is anticipated to generate a total of 12,765 daily vehicular trips, including 964 AM peak hour trips and 1,260 PM peak hour trips. To be conservative no project internal trip capture was assumed.

ES.3 Project Impacts and Mitigation Measures

Proposed Project related impacts were determined based on the significance criteria contained in the County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements and the City of Chula Vista Guidelines for Traffic Impact Studies for each respective

[1] Includes 97 residential units allocated to school site at 10 DU per Acre per Otay Ranch GDP/SRP policies in the event the school is not constructed. Each technical report evaluates the Proposed Project's impact assuming the more conservative land use, (i.e. the greater impact), as either an elementary school or as underlying allocated residential units. Footnote will not be repeated.

jurisdiction.

Impacts were analyzed under the four (4) scenarios:

- Existing Project Buildout Conditions
- Year 2025 Cumulative Conditions
- Year 2030 Cumulative Conditions
- Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property

Existing Plus Project Buildout

Intersection Impacts

The Proposed Project would have a direct impact on one (1) intersection within the County of San Diego that is under the jurisdiction and control of Caltrans, as well as a project specific impact on one (1) intersection within the City of Chula Vista. The following intersection improvements would be required to mitigate the identified traffic impacts:

- *SR-94 & Lyons Valley Road (Direct Impact, County of San Diego)* – Signalization by the 741st EDU would mitigate the direct impact at this intersection. A traffic signal warrant was conducted, and based upon 2014 MUTCD Figure 4C-103 (CA), this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants (provided in Appendix G). This intersection is a Caltrans facility in which the County does not have jurisdiction to permit or implement improvements. Therefore, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable. However, it should be noted that this improvement is part of the improvement project analyzed in the *Caltrans' State Route 94 Improvement Project Draft EIR, July 2015*. In addition, this improvement is also included as a mitigation measure in the Jamul Indian Village Final Environmental Evaluation.

- N*orthwoods Drive/Agua Vista Drive & Proctor Valley Road (Project Specific Impact, City of Chula Vista)* – Signalization by the 660th EDU would mitigate the project specific impact at this intersection. A traffic signal warrant was conducted, and based upon *2014 MUTCD Figure 4C-103 (CA)*, this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants (provided in Appendix G). However, this intersection is located within the City of Chula Vista and the County does not have the jurisdiction to permit or implement improvements. Therefore, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable. However, it should be noted that the signalization of this intersection is a condition of the Rolling Hills Ranch Plan and the signal mast arms have already been constructed at this intersection. Therefore, only minor improvements would be required to implement a signal at this intersection.

  The identification of the Proposed Project's significant impacts within the city of Chula Vista, with recommended mitigation, will be based on the future year analyses that take into account cumulative traffic growth, as well as the changing roadway network and land uses that accompany a long-range development project such as this. In this regard, under the 2030 Cumulative scenario,

the analysis identifies a significant project-specific impact at the Northwoods Drive/Agua Vista Drive & Proctor Valley Road intersection and mitigation is proposed. Therefore, the mitigation, including mitigation trigger identified above, is provided for informational purpose only.

Roadway Segment Impacts

The Proposed Project would have a project specific impact on one (1) roadway segment located in the City of Chula Vista under Existing Plus Project Buildout conditions. The following roadway improvements would be required to mitigate these impacts:

- *Proctor Valley Road, between Northwoods Drive and the City of Chula Vista Boundary (Project Specific Impact, City of Chula Vista)* – widen from a 2-lane roadway to a Class I Collector, by the 1,229th EDU. As per the City of Chula Vista Roadway Standards, a Class I collector is a four-lane roadway, typically divided by a two-way left-turn lane. The daily traffic capacity of a Class I Collector is 22,000 ADT (LOS C). With widening to a Class I Collector, the Project's significant impacts to this roadway segment would be fully mitigated as the segment would operate at LOS A once widened and no further mitigation would be required. Widening to a Class I Collector is consistent with the City of Chula Vista Circulation Plan, which designates the segment of Proctor Valley Road between Northwoods Drive and the City of Chula Vista boundary as a 4-Lane Major Street; improving the segment to a Class I Collector would not preclude the City from improving the segment to a 4-Lane Major at a future date when/if future traffic conditions warrant such action.

  However, because this roadway segment is located within the City of Chula Vista and the County does not have the jurisdiction to permit or implement any improvements, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable.

  It also is noted, and as previously explained, the City of Chula Vista does not consider impacts to its facilities identified under the Existing Plus Project conditions analysis as significant impacts requiring mitigation when the analysis is conducted in connection with a long-range development project such as the Proposed Project, which is not anticipated to reach full buildout until approximately 2028. As such, this analysis of the project's potential impacts to facilities located within the City of Chula Vista as measured against the existing conditions baseline is presented for disclosure, information and comparison purposes only. The identification of the project's significant impacts within the city of Chula Vista, with recommended mitigation, will be based on the future year analyses that take into account cumulative traffic growth, as well as the changing roadway network and land uses that accompany a long-range development project. In this regard, under the 2030 Cumulative scenario, the analysis identifies a significant project-specific impact at the segment of Proctor Valley Road between Northwoods Drive and the City of Chula Vista boundary and mitigation is proposed. Therefore, the mitigation, including mitigation trigger identified above, is provided for informational purpose only.

Year 2025 Cumulative Conditions

Intersection Impacts

The Proposed Project would have a cumulative impact on one (1) intersection within the County of San Diego that is under the jurisdiction and control of Caltrans, as well as a project specific impact on one (1) intersection in the City of Chula Vista. The following intersection improvements would be required to mitigate the identified traffic impacts:

- *SR-94 & Lyons Valley Road (Cumulative Impact, County of San Diego)* – Signalization by the 741st EDU would mitigate both the cumulative impact identified under the 2025 cumulative conditions scenario and the direct impact identified under Existing plus Project conditions at this intersection. A traffic signal warrant was conducted, and based upon 2014 MUTCD Figure 4C-103 (CA), this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants (provided in Appendix G). This intersection is a Caltrans facility in which the County does not have jurisdiction to permit or implement improvements. Therefore, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable. However, it should be noted that this improvement is part of the improvement project analyzed in the *Caltrans' State Route 94 Improvement Project Draft EIR, July 2015*. In addition, this improvement is also included as a mitigation measure in the Jamul Indian Village Final Environmental Evaluation.

- *Northwoods Drive/Agua Vista Drive & Proctor Valley Road (Project Specific, City of Chula Vista)* – Signalization by the 287th EDU would mitigate the project specific impact at this intersection. A traffic signal warrant was conducted, and based upon *2014 MUTCD Figure 4C-103 (CA),* this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants (provided in Appendix G). However, this intersection is located within the City of Chula Vista and the County does not have the jurisdiction to permit or implement improvements. Therefore, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable. It should be noted that the signalization of this intersection is a condition of the Rolling Hills Ranch Plan and the signal mast arms have already been constructed at this intersection. Therefore, only minor improvements would be required to implement a signal at this intersection.

Roadway Segment Impacts

The Proposed Project would impact one (1) roadway segment located in the City of Chula Vista. The Proposed Project would also impact two (2) roadway segments (cumulative impacts) within the County of San Diego under Year 2025 Cumulative conditions.

The following roadway improvements would be required to mitigate these impacts within the City of Chula Vista:

- *Proctor Valley Road, between Northwoods Drive and the City of Chula Vista Boundary (Project Specific, City of Chula Vista)* – widen from a 2-lane roadway to a Class I Collector, by the 563rd EDU. As per the City of Chula Vista Roadway Standards, a Class I collector is a four-lane roadway, typically divided by a two-way left-turn lane. The daily traffic capacity of for a Class I Collector is 22,000 ADT (LOS C). With widening to a Class I Collector, the Project's significant impacts to this roadway

segment would be fully mitigated as the segment would operate at LOS B once widened and no further mitigation would be required. Widening to a Class I Collector is consistent with the City of Chula Vista Circulation Plan, which designates the segment of Proctor Valley Road between Northwoods Drive and the City of Chula Vista boundary as a 4-Lane Major Street; improving the segment to a Class I Collector would not preclude the City from improving the segment to a 4-Lane Major at a future date when/if traffic conditions warrant such action. However, because this roadway segment is located within the City of Chula Vista and the County does not have the jurisdiction to permit or implement any improvements, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable.

County of San Diego Impacts (Cumulative) – The Proposed Project was identified to have a significant cumulative impact along the following segments of Proctor Valley Road, which are located along the project frontage:

- *Proctor Valley Road, between the City of Chula Vista Boundary and Project Driveway #1; and*
- *Proctor Valley Road, between Project Driveway #1 and Project Driveway #2.*

The Proposed Project applicant will pay the appropriate Transportation Impact Fee (TIF). However, utilizing the daily roadway segment volume to capacity analysis method, the four identified segments are projected to continue to operate at substandard LOS E under Year 2025 Cumulative conditions even after they are constructed to their ultimate classification as 2.2A facilities.

Because of the minimal interruption to traffic flows along Proctor Valley Road (i.e., minimal cross streets) between the City of Chula Vista Boundary and Project Driveway #4, it was determined that a more detailed arterial analysis of the four segments would be conducted to further assess future operating conditions. In this case, it was important to consider how performance of a roadway segment is heavily influenced by the ability of the arterial intersections to accommodate peak hour traffic.

Due to the minimal interruption along Proctor Valley Road, and the distance between Northwood Drive and Project's Driveway #1 being greater than 1 mile, it was determined that the Highway Capacity Software (HCS) 2000 developed by McTrans would be employed for the arterial analysis. The HCS arterial analysis methodology is based upon Chapter 20 (2-Lane Highway) of the Highway Capacity Manual (HCM) 2000, which determines average travel speed and facility level of service according to the roadway functional classification. The arterial analysis shows that the average travel speed along these four segments would be consistent with LOS D conditions when constructed to its ultimate classification as a 2.2A facility, since there are minimal to no interruptions along this corridor.

In addition, traffic control along Proctor Valley Road would include a number of roundabouts with implementation of the Proposed Project. It has been documented by the La Jolla Bird Rock roundabouts in the city of San Diego and other national-level research that 2 lanes of travel with roundabouts can carry up to 25,000 cars per day, which exceeds the projected 17,900 ADT for Proctor Valley Road. A multi-purpose trail is also provided along the eastside of Proctor Valley Road, which will greatly improve safety and comfort for pedestrians and bicyclists. Therefore, based on the supplemental analysis, the cumulative

impact at the four identified segments of Proctor Valley Road, between the City of Chula Vista Boundary and Project Driveway #4, is expected to be reduced to less than significant with construction of the segments to a 2.2A facility. However, based on the results of the volume to capacity analysis, and to be conservative, this impact is considered significant and unavoidable.

Year 2030 Cumulative Conditions

Intersection Impacts

The Proposed Project would have a cumulative impact on one (1) intersection within the County of San Diego that is under the jurisdiction and control of Caltrans, as well as a project specific impact on one (1) intersection in the City of Chula Vista. The following intersection improvements would be required to mitigate the identified traffic impact:

- *SR-94 & Lyons Valley Road (Cumulative Impact, County of San Diego)* – Signalization by the 741st EDU would mitigate both the cumulative impact identified under the 2030 cumulative scenario and the direct impact identified under Existing plus Project conditions at this intersection. A traffic signal warrant was conducted, and based upon 2014 MUTCD Figure 4C-103 (CA), this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants (provided in Appendix G). This intersection is a Caltrans facility in which the County does not have jurisdiction to permit or implement improvements. Therefore, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable. However, it should be noted that this improvement is part of the improvement project analyzed in the *Caltrans' State Route 94 Improvement Project Draft EIR, July 2015*. In addition, this improvement is also included as a mitigation measure in the Jamul Indian Village Final Environmental Evaluation.

- *Northwoods Drive/Agua Vista Drive & Proctor Valley Road (Project Specific, City of Chula Vista)* – Signalization by the 287th EDU would mitigate the project specific impact at this intersection. A traffic signal warrant was conducted, and based upon *2014 MUTCD Figure 4C-103 (CA),* this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants. However, this intersection is located within the City of Chula Vista and the County does not have the jurisdiction to permit or implement improvements. Therefore, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable. However, it should be noted that the signalization of this intersection is a condition of the Rolling Hills Ranch Plan and the signal mast arms have already been constructed at this intersection. Therefore, only minor improvements would be required to implement a signal at this intersection.

Roadway Segment Impacts

The Proposed Project would impact one (1) roadway segment located in the City of Chula Vista. The Proposed Project would also impact four (4) roadway segments (cumulative impacts) within the County of San Diego under Year 2030 Cumulative conditions. The following roadway improvements would be required to mitigate these impacts:

- *Proctor Valley Road, between Northwoods Drive and the City of Chula Vista Boundary (Project Specific, City of Chula Vista)* – widen from a 2-lane roadway to a Class I Collector, by the 563st EDU. As per the City of Chula Vista Roadway Standards, a Class I collector is a four-lane roadway, typically divided by a two-way left-turn lane. The daily traffic capacity of a Class I Collector is 22,000 ADT (LOS C). With widening to a Class I Collector, the Project's significant impacts to this roadway segment would be fully mitigated as the segment would operate at LOS B once widened and no further mitigation would be required. Widening to a Class I Collector is consistent with the City of Chula Vista Circulation Plan, which designates the segment of Proctor Valley Road between Northwoods Drive and the City of Chula Vista boundary as a 4-Lane Major Street; improving the segment to a Class I Collector would not preclude the City from improving the segment to a 4-Lane Major at a future date when/if future traffic conditions warrant such action. However, because this roadway segment is located within the City of Chula Vista and the County does not have the jurisdiction to permit or implement any improvements, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable.

County of San Diego Impacts (Cumulative) – The Proposed Project was identified to have a significant cumulative impact along the following four (4) segments of Proctor Valley Road, which are located along the project frontage:

- *Proctor Valley Road, between the City of Chula Vista Boundary and Project Driveway #1;*
- *Proctor Valley Road, between Project Driveway #1 and Project Driveway #2;*
- *Proctor Valley Road, between Project Driveway #2 and Project Driveway #3; and*
- *Proctor Valley Road, between Project Driveway #3 and Project Driveway #4.*

The Proposed Project applicant will pay the appropriate County of San Diego Transportation Impact Fee (TIF). However, utilizing the daily roadway segment volume to capacity analysis method, the four identified segments are projected to continue to operate at substandard LOS E under Year 2025 Cumulative conditions even after they are constructed to their ultimate classification as 2.2A facilities.

Because of the minimal interruption to traffic flows along Proctor Valley Road (i.e., minimal cross streets) between the City of Chula Vista Boundary and Project Driveway #4, it was determined that a more detailed arterial analysis of the four segments would be conducted to further assess future operating conditions. In this case, it was important to consider how performance of a roadway segment is heavily influenced by the ability of the arterial intersections to accommodate peak hour traffic.

Due to the minimal interruption along Proctor Valley Road, and the distance between Northwood Drive and Project's Driveway #1 being greater than 1 mile, it was determined that the Highway Capacity Software (HCS) 2000 developed by McTrans would be employed for the arterial analysis. The HCS arterial analysis methodology is based upon Chapter 20 (2-Lane Highway) of the Highway Capacity Manual (HCM) 2000, which determines average travel speed and facility level of service according to the roadway functional classification. The arterial analysis shows that the average travel speed along these four

segments would be consistent with LOS D conditions when constructed to its ultimate classification as a 2.2A facility, since there are minimal to no interruptions along this corridor.

In addition, traffic control along Proctor Valley Road would include a number of roundabouts with implementation of the Proposed Project. It has been documented by the La Jolla Bird Rock roundabouts in the city of San Diego and other national-level research that 2 lanes of travel with roundabouts can carry up to 25,000 cars per day, which exceeds the projected 17,900 ADT for Proctor Valley Road. A multi-purpose trail is also provided along the eastside of Proctor Valley Road, which will greatly improve safety and comfort for pedestrians and bicyclists. Therefore, based on the supplemental analysis, the cumulative impact at the four identified segments of Proctor Valley Road, between the City of Chula Vista Boundary and Project Driveway #4, is expected to be reduced to less than significant with construction of the segments to a 2.2A facility. However, based on the results of the volume to capacity analysis, and to be conservative, this impact is considered significant and unavoidable.

Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property

This scenario assumes that all of the additional dwelling units allowed under the approved Otay Ranch GDP/SRP, in the areas not included within the Proposed Project area, would be developed. This is a theoretical, highly unlikely scenario as the site of a majority of the additional dwelling units that would be developed under this scenario is located in Village 14 and Planning Area 16 on State property (Rancho Jamul Preserve). Accordingly, it is highly unlikely that these additional units would ever be developed. Nevertheless, the analysis of impacts associated with this scenario is presented in this study.

Intersection Impacts

The Proposed Project would have a cumulative impact on five (5) intersections within the County of San Diego, one of which is under the jurisdiction and control of Caltrans, as well as a significant impact on four (4) intersections in the City of Chula Vista. The following intersection improvements would be required to mitigate the identified impacts:

- *SR-94 & Lyons Valley Road (Cumulative Impact, County of San Diego)* – Signalization by the 741st EDU would mitigate both the cumulative impact identified under the 2030 cumulative full buildout scenario and the direct impact identified under Existing plus Project conditions at this intersection. A traffic signal warrant was conducted, and based upon 2014 MUTCD Figure 4C-103 (CA), this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants (provided in Appendix G). This intersection is a Caltrans facility in which the County does not have jurisdiction to permit or implement improvements. Therefore, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable. However, it should be noted that this improvement is part of the improvement project analyzed in the *Caltrans' State Route 94 Improvement Project Draft EIR, July 2015*. In addition, this improvement is also included as a mitigation measure in the Jamul Indian Village Final Environmental Evaluation.

- *Paseo Ranchero & East H Street (City of Chula Vista)* – Restriping the eastbound approach to include an exclusive right-turn lane would mitigate the Project Specific impact at this intersection. However, this intersection is located within the City of Chula Vista and the County does not have the jurisdiction to permit or implement improvements. Therefore, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable. It should be noted that this intersection is projected to operate at LOS E without the Proposed Project.

- *Mt Miguel Road & East H Street (City of Chula Vista)* – Restriping the westbound approach to include an exclusive right-turn lane by the 638th EDU would mitigate the Project Specific impact at this intersection. However, this intersection is located within the City of Chula Vista and the County does not have the jurisdiction to permit or implement improvements. Therefore, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable.

- *Lane Avenue & East H Street (City of Chula Vista)* – Adjusting the Median and restriping the westbound approach to include a second left-turn lane would mitigate the Project Specific impact at this intersection. However, this intersection is located within the City of Chula Vista and the County does not have the jurisdiction to permit or implement improvements. Therefore, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable. It should be noted that this intersection is projected to operate at LOS E without the Proposed Project.

- *Northwoods Drive/Agua Vista Drive & Proctor Valley Road (City of Chula Vista)* – Signalization by the 287th EDU would mitigate the cumulative impact at this intersection. A traffic signal warrant was conducted, and based upon *2014 MUTCD Figure 4C-103 (CA),* this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants. The signal warrant worksheet is (provided in Appendix G). However, this intersection is located within the City of Chula Vista and the County does not have the jurisdiction to permit or implement improvements. Therefore, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable. It should be noted that the signalization of this intersection is a condition of the Rolling Hills Ranch Plan and the signal mast arms have already been constructed at this intersection. Therefore, only minor improvements would be required to implement a signal at this intersection. It should be noted that this intersection is projected to operate at LOS F without the Proposed Project.

- *Proctor Valley Road & Project Driveway #1 (County of San Diego)* – Signalization would mitigate the cumulative impact at this intersection. A traffic signal warrant was conducted, and based upon *2014 MUTCD Figure 4C-103 (CA),* this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants. The signal warrant worksheet is provided in Appendix O. It should be noted that this impact will only occur with the development of the Rancho Jamul Preserve, which is not anticipated. This impact would occur with the full development of the Proposed Project as well as the development of 74 additional units within the Rancho Jamul Preserve. If the Rancho Jamul Preserve is developed the Proposed Project will pay its fair share of the proposed improvement costs.

- *Proctor Valley Road & Project Driveway #2 (County of San Diego)* –Widening Proctor Valley Road

from two to four lanes would mitigate the cumulative impact at this intersection. It should be noted that this impact will only occur with the development of the Rancho Jamul Preserve, which is not anticipated. This impact would occur with the full development of the Proposed Project as well as the development of 1,083 additional units within the Rancho Jamul Preserve. If the Rancho Jamul Preserve is developed the Proposed Project will pay its fair share of the proposed improvement costs.

- *Proctor Valley Road & Project Driveway #3 (County of San Diego)* – Signalization would mitigate the cumulative impact at this intersection. A traffic signal warrant was conducted, and based upon *2014 MUTCD Figure 4C-103 (CA),* this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants. The signal warrant worksheet is provided in Appendix O. It should be noted that this impact will only occur with the development of the Rancho Jamul Preserve, which is not anticipated. This impact would occur with the full development of the Proposed Project as well as the development of 397 additional units within the Rancho Jamul Preserve. If the Rancho Jamul Preserve is developed the Proposed Project will pay its fair share of the proposed improvement costs.

- *Proctor Valley Road & Project Driveway #4 (County of San Diego)* – Signalization would mitigate the cumulative impact at this intersection. A traffic signal warrant was conducted, and based upon *2014 MUTCD Figure 4C-103 (CA),* this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants. The signal warrant worksheet is provided in Appendix O. It should be noted that this impact will only occur with the development of the Rancho Jamul Preserve, which is not anticipated. This impact would occur with the full development of the Proposed Project as well as the development of 563 additional units within the Rancho Jamul Preserve. If the Rancho Jamul Preserve is developed the Proposed Project will pay its fair share of the proposed improvement costs.

- *Proctor Valley Road & Project Driveway #5 (County of San Diego)* – Signalization would mitigate the cumulative impact at this intersection. A traffic signal warrant was conducted, and based upon *2014 MUTCD Figure 4C-103 (CA),* this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants. The signal warrant worksheet is provided in Appendix O. It should be noted that this impact will only occur with the development of the Rancho Jamul Preserve, which is not anticipated. This impact would occur with the full development of the Proposed Project as well as the development of 481 additional units within the Rancho Jamul Preserve. If the Rancho Jamul Preserve is developed the Proposed Project will pay its fair share of the proposed improvement costs.

Roadway Segment Impacts

Proposed Project would also impact four (4) roadway segments (cumulative impacts) within the County of San Diego. The Proposed Project would impact two (2) roadway segment located in the City of Chula Vista under Year 2030 With Cumulative Units conditions. The following roadway improvements would be required to mitigate these impacts:

County of San Diego

- *Proctor Valley Road, between the City of Chula Vista Boundary and Project Driveway #1* - This impact would only occur with development of the Rancho Jamul Preserve; however, there currently is no application pending to develop within the Rancho Jamul Preserve, nor are there any known plans for development within the Preserve. Therefore, any development within the Rancho Jamul Preserve is not reasonably foreseeable at this point. In the event the Preserve were to be developed, to mitigate an over-capacity road segment, Proctor Valley Road could be widened from a 2-Lane Collector with Raised Median (2.2A) to a 4-Lane Major (4.1A). With widening to a 4-Lane Major, the Project's significant cumulative impacts to this roadway segment would be fully mitigated as the segment would operate at LOS C once widened and no further mitigation would be required. However, the County has no plans to amend the Circulation Element to accommodate a four lane Major on this segment because 1) there currently is no intention to develop the Rancho Jamul Reserve and 2) the County has proposed to accept 2-lane Proctor Valley Road LOS E/F operations consistent with Mobility Element finding (the Mobility Element identified Proctor Valley Road as a 2-lane roadway). Moreover, if the State of California does decide to sell or develop the Rancho Jamul Preserve at a later date, further study will need to be conducted at that time to determine the appropriate roadway facilities needed to accommodate the development, once the scale of that development is known. Therefore, because there are no plans in place to widen the road to a 4-Lane Major, nor is there a funding program for any such improvement due to the lack of a reasonably foreseeable development plan within the Ranch Jamul Preserve, implementation of the improvements to mitigate this impact is infeasible and the impact is considered significant and unavoidable.

- *Proctor Valley Road, between Project Driveway #1 and Project Driveway #2 - T*his impact would only occur with development of the Rancho Jamul Preserve; however, there currently is no application pending to develop within the Rancho Jamul Preserve, nor are there any known plans for development within the Preserve. Therefore, any development within the Rancho Jamul Preserve is not reasonably foreseeable at this point. In the event the Preserve were to be developed, to mitigate an over-capacity road segment, Proctor Valley Road could be widened from a 2-Lane Collector with Raised Median (2.2A) to a 4-Lane Major (4.1A). With widening to a 4-Lane Major, the Project's significant cumulative impacts to this roadway segment would be fully mitigated as the segment would operate at LOS C once widened and no further mitigation would be required. However, the County has no plans to amend the Circulation Element to accommodate a four lane Major on this segment because 1) there currently is no intention to develop the Rancho Jamul Reserve and 2) the County has proposed to accept 2-lane Proctor Valley

Road LOS E/F operations consistent with Mobility Element finding (the Mobility Element identified Proctor Valley Road as a 2-lane roadway). . Moreover, if the State of California does decide to sell or develop the Rancho Jamul Preserve at a later date, further study will need to be conducted at that time to determine the appropriate roadway facilities needed to accommodate the development, once the scale of that development is known. Therefore, because there are no plans in place to widen the road to a 4-Lane Major, nor is there a funding program for any such improvement due to the lack of a reasonably foreseeable development plan within the Ranch Jamul Preserve, implementation of the improvements to mitigate this impact is infeasible and the impact is considered significant and unavoidable.

- *Proctor Valley Road, between Project Driveway #2 and Project Driveway #3* - This impact would only occur with development of the Rancho Jamul Preserve; however, there currently is no application pending to develop within the Rancho Jamul Preserve, nor are there any known plans for development within the Preserve. Therefore, any development within the Rancho Jamul Preserve is not reasonably foreseeable at this point. In the event the Preserve were to be developed, to mitigate an over-capacity road segment, Proctor Valley Road could be widened from a 2-Lane Collector with Raised Median (2.2A) to a 4-Lane Major (4.1A). With widening to a 4-Lane Major, the Project's significant cumulative impacts to this roadway segment would be fully mitigated as the segment would operate at LOS C once widened and no further mitigation would be required. However, the County has no plans to amend the Circulation Element to accommodate a four lane Major on this segment because 1) there currently is no intention to develop the Rancho Jamul Reserve and 2) the County has proposed to accept 2-lane Proctor Valley Road LOS E/F operations consistent with Mobility Element finding (the Mobility Element identified Proctor Valley Road as a 2-lane roadway). . Moreover, if the State of California does decide to sell or develop the Rancho Jamul Preserve at a later date, further study will need to be conducted at that time to determine the appropriate roadway facilities needed to accommodate the development, once the scale of that development is known. Therefore, because there are no plans in place to widen the road to a 4-Lane Major, nor is there a funding program for any such improvement due to the lack of a reasonably foreseeable development plan within the Ranch Jamul Preserve, implementation of the improvements to mitigate this impact is infeasible and the impact is considered significant and unavoidable.

- *Proctor Valley Road, between Project Driveway #3 to Project Driveway #4 - T*his impact would only occur with development of the Rancho Jamul Preserve; however, there currently is no application pending to develop within the Rancho Jamul Preserve, nor are there any known plans for development within the Preserve. Therefore, any development within the Rancho Jamul Preserve is not reasonably foreseeable at this point. In the event the Preserve were to be developed, to mitigate an over-capacity road segment, Proctor Valley Road could be widened from a 2-Lane Collector with Raised Median (2.2A) to a 4-Lane Major (4.1A). With widening to a 4-Lane Major, the Project's significant cumulative impacts to this roadway segment would be fully mitigated as the segment would operate at LOS C once widened and no further mitigation would be required. However, the County has no plans to amend the Circulation Element to

accommodate a four lane Major on this segment because 1) there currently is no intention to develop the Rancho Jamul Reserve and 2) the County has proposed to accept 2-lane Proctor Valley Road LOS E/F operations consistent with Mobility Element finding (the Mobility Element identified Proctor Valley Road as a 2-lane roadway). . Moreover, if the State of California does decide to sell or develop the Rancho Jamul Preserve at a later date, further study will need to be conducted at that time to determine the appropriate roadway facilities needed to accommodate the development, once the scale of that development is known. Therefore, because there are no plans in place to widen the road to a 4-Lane Major, nor is there a funding program for any such improvement due to the lack of a reasonably foreseeable development plan within the Ranch Jamul Preserve, implementation of the improvements to mitigate this impact is infeasible and the impact is considered significant and unavoidable.

City of Chula Vista

- *Proctor Valley Road, between Hunte Parkway and Northwoods Drive (Project Specific Impact, City of Chula Vista)* – widen from a 4-lane roadway to a 6-Lane Major Street, by the 487th EDU. With widening to a 6-Lane Major Street, the Project's significant impacts to this roadway segment would be fully mitigated as the segment would operate at LOS C once widened and no further mitigation would be required.

  Preliminarily, as this segment is located within the city of Chula Vista, the County does not have jurisdiction to permit or implement improvements and, therefore, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable. Additionally, widening to a 6-Lane Major Street is not consistent with the City of Chula Vista Circulation Plan, which identifies the segment of Proctor Valley Road between Hunte Parkway and Northwoods Drive as a 4-Lane Major Street. Widening the segment from the 4-lanes configuration to 6-lanes, as recommended by the mitigation measure, would conflict with the City's long-range road widening plans (six lanes).

- *Proctor Valley Road, between Northwoods Drive and the City of Chula Vista Boundary (Project Specific, City of Chula Vista)* – widen from a 2-lane roadway to a Class I Collector. As per the City of Chula Vista Roadway Standards, a Class I collector is a four-lane roadway, typically divided by a two-way left-turn lane. The daily traffic capacity of a Class I Collector is 22,000 ADT (LOS C). With widening to a Class I Collector, the Project's significant impacts to this roadway segment would be fully mitigated as the segment would operate at LOS B once widened and no further mitigation would be required. Widening to a Class I Collector is consistent with the City of Chula Vista Circulation Plan, which designates the segment of Proctor Valley Road between Northwoods Drive and the City of Chula Vista boundary as a 4-Lane Major Street; improving the segment to a Class I Collector would not preclude the City from improving the segment to a 4-Lane Major at a future date when/if future traffic conditions warrant such action. However, because this roadway segment is located within the City of Chula Vista and the County does not have the jurisdiction to permit or implement any improvements, for purposes of this analysis, mitigation is considered

infeasible and the impact would remain significant and unavoidable. It should be noted that this roadway segment is projected to operate at LOS D without the Proposed Project.

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1.0 Introduction

1.1 Purpose of the Report

The purpose of this Transportation Impact Study (TIS) is to identify and document potential transportation impacts related to the development of the proposed Otay Ranch Village 14 and Planning Areas 16 & 19 Specific Plan (Proposed Project), as well as to recommend mitigation measures for any identified significant impacts associated with the Proposed Project.

1.2 Project Background

The Proposed Project (defined below) is part of the overall Otay Ranch, an approximately 23,000-acre master-planned community in southern San Diego County designed as a series of villages and planning areas. The Proposed Project addressed by this technical report is located within a portion of Otay Ranch Village 14 and Planning Areas 16/19 in the Proctor Valley area of Otay Ranch as shown on **Figure 1-1**.

The underlying purpose of the Proposed Project is to implement the adopted Otay Ranch General Development Plan/Subregional Plan, Volume II (County of San Diego 1993), ("Otay Ranch GDP/SRP") and complete the planned development within Jackson Pendo Development Company's ("Applicant") ownership of Village 14 and Planning Areas 16/19. The Otay Ranch GDP/SRP is a component part of the County General Plan (County of San Diego 2011) and allows for a total of 2,123 homes in Otay Ranch Village 14 and Planning Areas 16/19. The Proposed Project's 1,119 homes represent a portion of the total 2,123 homes originally authorized in the Otay Ranch GDP/SRP.

The Proposed Project is designed to be consistent with the Otay Ranch GDP/SRP's Village Character Policy "to serve as a transitional area between urban densities to the west and Jamul to the east". The Proposed Project is therefore designed to provide a transitional village between the densities and character of eastern Chula Vista and the more rural community of Jamul. The Proposed Project proposes 1,119[2] homes of which 994[1] are in Village 14 and 125 homes in Planning Areas 16/19.

The following describes the major components and characteristics of the Proposed Project.

1.2.1 Definitions

"County" Defined: The "County" is the County of San Diego jurisdiction.

"Project Area" Defined: The "Project Area" is the Applicant's ownership within Otay Ranch Village 14 and Planning Areas 16/19 in addition to certain off-site areas for infrastructure as depicted in **Figure 1-1**. The Project Area covers approximately 1,283.6 acres owned by the Applicant and approximately 85.4 acres of Off-site improvements described below, for a total of 1,369 acres.

"Proposed Project" Defined: The "Proposed Project" is the Applicant's ownership as depicted in **Figure 1-1**. The specific plan for the Proposed Project is titled "Otay Ranch Village 14 and Planning Areas 16/19

[2] Includes 97 residential units allocated to school site at 10 DU per Acre per Otay Ranch GDP/SRP policies in the event the school is not constructed. Each technical report evaluates the Proposed Project's impact assuming the more conservative land use, (i.e. the greater impact), as either an elementary school or as underlying allocated residential units. Footnote will not be repeated.

Specific Plan." The Proposed Project includes a Specific Plan, General Plan Amendments, EIR, Rezone, Tentative Map, and an Otay Ranch RMP Amendment. The Proposed Project is further defined in Section 1.0 of the EIR which is incorporated herein by reference. Except for the off-sites described below, the Proposed Project specifically excludes the State of California's ownership in Village 14 and Planning Areas 16, which remains approved for development per the County's General Plan and the Otay Ranch GDP/SRP. The underlying County General Plan and Otay Ranch GDP/SRP land uses on the State's property will remain unchanged. In addition, the "Inverted L" is excluded from this analysis as it is not owned by the Applicant and is in the City of Chula Vista, (the property is owned by Otay Water District and the United States Fish and Wildlife Service).

"Otay Ranch Village 14" Defined: "Otay Ranch Village 14" or "Village 14" as referred to herein is a discrete subset of the Proposed Project and reflects approximately 723.7 acres of the Applicant's ownership located exclusively within Village 14 as depicted in **Figure 1-2**. Approximately 994 homes are planned around a Village Core in this area.

"Otay Ranch Planning Areas 16/19" Defined: "Otay Ranch Planning Areas 16/19" or "Planning Areas 16/19" is a discrete subset of the Proposed Project and reflects approximately 559.8 acres of the Applicant's ownership located exclusively within Planning Areas 16/19 as depicted in **Figure 1-2**. Approximately 125 homes are planned on one-acre and three-acre average lots in this area. 127.1 acres of Limited Development Area ("LDA") is included within the private lots and open space.

"Offsite Improvements" Defined: "Offsite Improvements" as referred to herein include the following: Proctor Valley Road, including related wet and dry utilities, drainage facilities and trails; access roads in Planning Area 16; an off-site sewer pump station in the southern reach of Proctor Valley Road and off-site sewer facilities to connect to the Salt Creek Interceptor.

1.2.2 Proposed Specific Plan

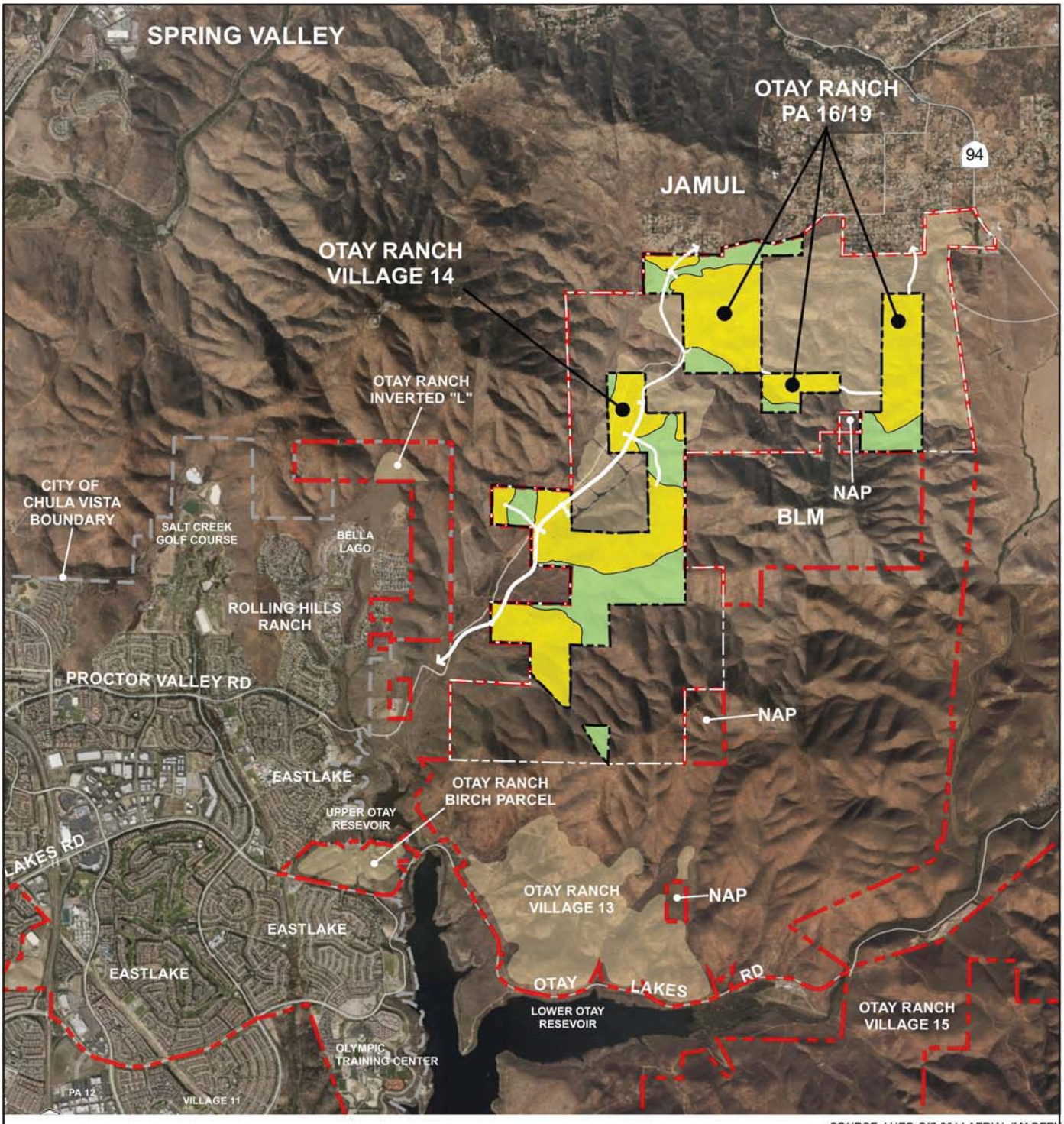
The adopted Otay Ranch GDP/SRP requires the preparation of a Specific Plan, which includes a Site Utilization Plan to describe the land uses for the Proposed Project. **Figure 1-2** and **Figure 1-3** depict the project boundary and site utilization plan, respectively.

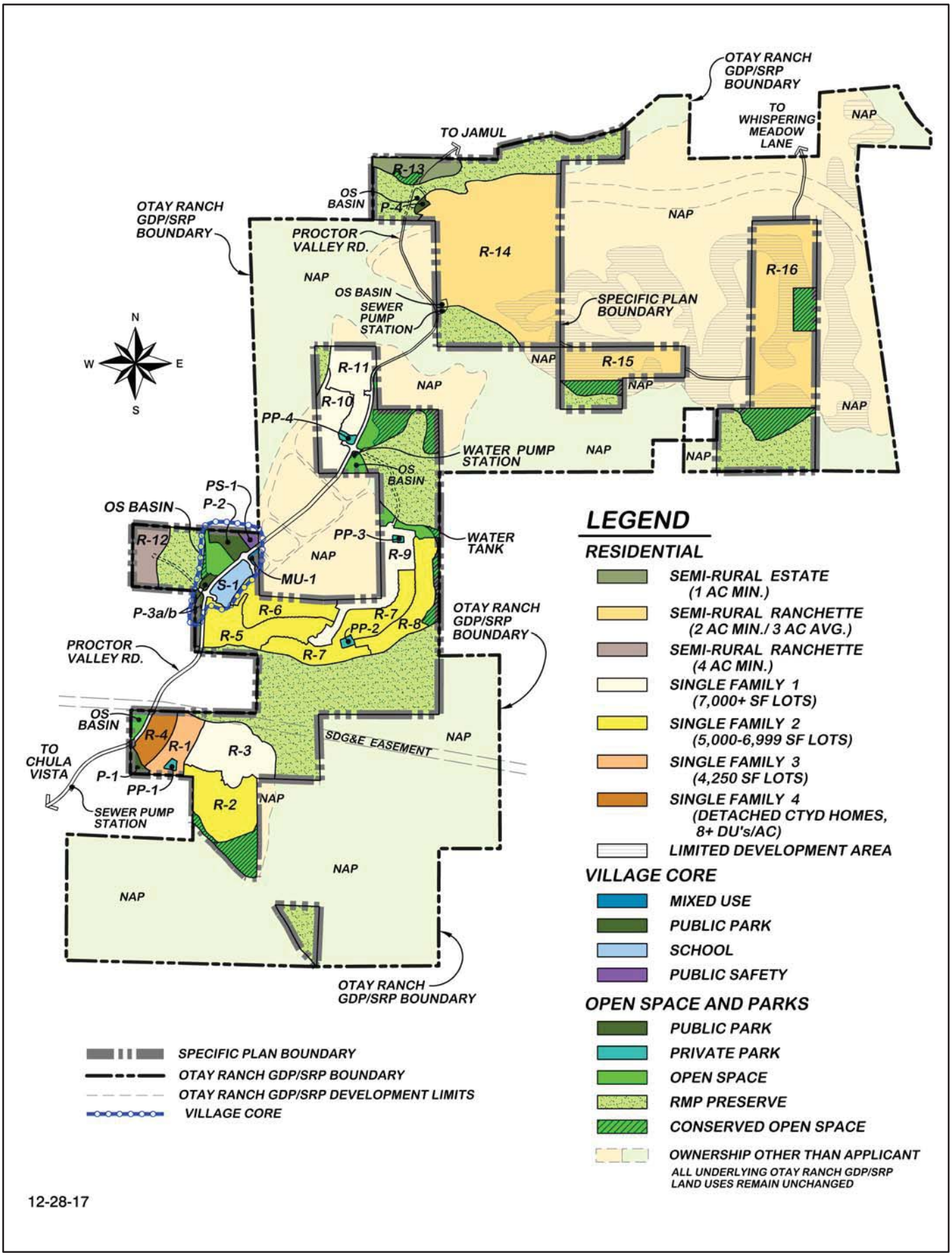
Approximately 994 homes are planned in Village 14, set in three distinct areas (referred to herein as the South, Central and North Village 14). 878 of these homes will be single-family homes located in gated enclaves and 116 will be detached courtyard homes. Twelve neighborhoods are planned with approximate densities ranging from 0.2 to 10.0 dwelling units per acre. Otay Ranch Village 14 is planned around a "Village Core", centrally located in the heart of the village. The Village Core is comprised of a 9.7-acre elementary school; a 7.2-acre Village Green (public park); a 1.7-acre Mixed Use Site with up to 10,000 square feet of commercial/retail uses; and a 2.3-acre public safety site for a fire station and satellite sheriff's facility. Additional public and private parks, swim clubs, trails and recreational facilities will be situated throughout South, Central and North Village 14.

Otay Ranch Village 14, 16 & 19
Transportation Impact Study
CHEN RYAN

Figure 1-1

Project Regional Location


SPRING VALLEY
OTAY RANCH PA 16/19
94
JAMUL
OTAY RANCH VILLAGE 14
OTAY RANCH INVERTED "L"
CITY OF CHULA VISTA BOUNDARY
SALT CREEK GOLF COURSE
BELLA LAGO
ROLLING HILLS RANCH
NAP
BLM
PROCTOR VALLEY RD
NAP
EASTLAKE
OTAY RANCH BIRCH PARCEL
UPPER OTAY RESEVOIR
LAKES RD
OTAY RANCH VILLAGE 13
NAP
EASTLAKE
EASTLAKE
OTAY LAKES RD
LOWER OTAY RESEVOIR
OTAY RANCH VILLAGE 15
OLYMPIC TRAINING CENTER
PA 12
VILLAGE 11
SOURCE: LUEG-GIS 2014 AERIAL IMAGERY
LEGEND
OTAY RANCH GDP/SRP BOUNDARY
PROPOSED SPECIFIC PLAN BOUNDARY
OTAY V14 & PA16/19 VILLAGE BOUNDARY
MUNICIPAL BOUNDARY
V14 & PA16/19 DEVELOPMENT AREAS
V14 & PA16/19 RMP OPEN SPACE
OTHER APPROVED DEVELOPMENT
N
W
E
S
0
2,300
4,600
SCALE IN FEET
Otay Ranch Village 14 and Planning Area 16/19
and Surrounding Land Uses



Otay Ranch Village 14, 16 & 19
Transportation Impact Study
CHEN RYAN

Figure 1-3

Site Utilization Plan

In addition to the homes in Village 14, there are 13 one-acre estate lots proposed in Planning Area 19 and 112 ranchettes averaging 3 acres in size located in Planning Area 16. Planning Area 16/19 homes will not be gated. The Limited Development Area may include public infrastructure, and/or be included in the private lots with a conservation easement.

The Proposed Project's Specific Plan is designed around an active lifestyle and wellness recreation theme and includes a park and recreation system including four public parks totaling approximately 15 acres. The remaining private recreation facilities include three private swim clubs, and numerous pocket parks totaling approximately 9.5 acres. An approximately 4.5 mile, 10-foot wide decomposed granite Community Pathway is proposed along Proctor Valley Road from Chula Vista to Jamul. The Proposed Project includes approximately 27.9 acres of open space, (exclusive of the 109.9 acres of open space included in the residential gross acres), 127.1 acres of LDA and 426.7 acres of MSCP Preserve within the Applicant's ownership. Of note, there is approximately 73.4 acres of Conserved Open Space with the potential to be conveyed to the MSCP Preserve in the future.

1.2.3 Circulation and Access

Regional access to Otay Ranch Village 14 is provided by State Route 125 (SR-125), located approximately three miles to the west. Interstate 805 (I-805), approximately eight miles to the west, provides secondary north/south access. State Route 54 (SR-54), located approximately six miles to the northwest, connects to SR-125 and I-805, and provides regional east/west access. SR-94, located approximately 3 miles to the northeast, provides access from the east through the Jamul community.

Proctor Valley Road would provide the main access to the Proposed Project. Four roundabouts in Village 14 and one roundabout in Planning Area 16/19 would identify the entrance into each residential area as well as provide traffic calming at key internal intersections. The internal circulation plan also includes a series of collectors and residential streets to provide access to the residential neighborhoods; with Planning Areas 16/19 designed to County Rural Road Standards. A secondary access to the easternmost portion of Planning Area 16 is the planned extension of existing Whispering Meadows Lane.

Proctor Valley Road is planned as a two-lane mobility element road and is designated as a scenic corridor. The northern connection of Otay Ranch Village 14 to the community of Jamul will remain substantially in the alignment of the existing partially-improved Proctor Valley Road and will be paved to provide both public access and secondary emergency access for the Proposed Project as well as for the community of Jamul.

"The Proposed Project includes three options for internal circulation: (1) the Proctor Valley Road North Option, (2) the Preserve Trails Option and (3) the Perimeter Trail Option. The Draft EIR assesses each of these options and their respective impacts. This will allow the County to select the option (or combination of options) it considers best for the Proposed Project and the environment. Each of the options summarized below. For detailed descriptions with exhibits, see the Specific Plan Section VIII. Internal Circulation Options.

Proctor Valley Road North Option: The Proctor Valley Road North Option applies to the portion of Proctor Valley Road from Street AA in the North Village to Echo Valley Road, and includes two dedicated bike lanes (one on each side of the road) instead of the "sharrows"[1] proposed in street section 10 of the Proposed Project. Generally, the Proctor Valley Road North Option would increase the right-of-way width from 40 feet to 64 feet starting from the intersection of Street AA northward to the Applicant's Village 14 ownership boundary; from 40 feet to 48 feet within the offsite improvement area owned by the State; and from 40 feet to 64 feet onsite within the Applicant's ownership north of the State's property to Echo Valley Road.

Preserve Trails Option: The Preserve Trails Option consists of two segments of existing, disturbed trails approximately 1.0-mile in length within the Project Area, east of the Development Footprint. These segments would be located within the Otay Ranch RMP Preserve. The Preserve Trails Option includes segments "A" & "B" as identified in the Otay Ranch GDP/SRP, which are also identified as segments 52 & 49 in the County of San Diego's Community Trails Master Plan (CTMP). Segment "A"/"52" is 2,350 lineal feet, located at the northern terminus of the Proctor Valley Community Pathway and extending east through the onsite Otay Ranch RMP Preserve to the eastern edge of the Echo Valley loop (CTMP Trail 53). Segment "B"/"49" is 2,328 lineal feet and is located between South and Central Village 14, along an existing, historic ranch road. This trail is located within onsite Otay Ranch RMP Preserve and bisects regional wildlife corridor R1. The Preserve Trails Option would retain these portions of trails in their existing conditions, which meet the CTMP primitive trail standard. No improvements to these Preserve Trails are contemplated.

Perimeter Trail Option: The Perimeter Trail Option is an approximately 3.6- mile perimeter trail located within the Development Footprint of South and Central Village 14. The Perimeter Trail Option is situated primarily within the Otay Ranch RMP 100-foot Preserve Edge. The Perimeter Trail Option is designed to CTMP primitive trail standards, and the trail tread varies from 2-6 feet. Due to topography, trail grades range from 2% to the maximum grade allowed of 30%. The Perimeter Trail Option requires the construction of approximately 19,000 lineal feet (0.7 miles) of 5 to-7-foot-high retaining walls due to steep topography and drainage constraints. The Perimeter Trail Option would be graded as part of overall project grading and does not encroach into the Otay Ranch RMP Preserve. The perimeter trail would be accessed at public parks and trailheads and would be maintained by the County of San Diego.

Chen Ryan Associates has evaluated these options and have determined that they would help to enhance the multi-modal connectivity within the Proposed Project site. However, since these facilities are optional they were not included in this study so that a worst-case scenario (i.e. providing less connectivity within the project site) was evaluated from a mobility stand point.

[1] **Sharrows** are road markings that guide bicyclists to bike routes between neighborhoods and alert motorists to the presence of bicyclists within the shared travel lane.

1.3 Analysis Scenarios

A total of five (5) scenarios were analyzed in this study, including:

1. Existing Conditions – utilized to establish the existing baseline traffic operations within the study area.

2. Existing Plus Project Buildout Conditions – represents the existing transportation network with the addition of traffic from buildout of the Proposed Project, which is expected to be completed by 2028.

3. Year 2025 Cumulative Conditions – represents 2025 conditions including cumulative traffic and traffic generated from the Proposed Project. The Proposed Project trip generation was determined based upon the number of units that are planned to be built by the beginning of Year 2025, based on the project's construction schedule.

4. Year 2030 Cumulative Conditions – represents projected long-range cumulative conditions for the Year 2030, with the addition of traffic from the buildout of the Proposed Project.

5. Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property – represents projected long-range cumulative conditions for the Year 2030, assuming all cumulative units from the Otay Ranch GDP/SRP would be developed, with the addition of traffic from the buildout of the Proposed Project.

1.4 Report Organization

The report is organized into the following sections:

1.0 Introduction - This chapter describes the Proposed Project and its background, and reviews the analysis scenario that were evaluated in this study.

2.0 Analysis Methodology – This chapter describes the methodologies and standards utilized to analyze roadway, intersection, and freeway traffic conditions.

3.0 Existing Conditions – This chapter describes the existing traffic network within the study area and provides analysis results for existing traffic conditions.

4.0 Project Description – This chapter describes the Proposed Project including project traffic generation.

5.0 Existing Plus Project Conditions – This chapter describes the existing traffic network with the addition of the full development of the Proposed Project. Mitigation measures, if necessary, for Proposed Project-related impacts are also identified.

6.0 Year 2025 Cumulative Traffic Conditions – This chapter includes Year 2025 development projects anticipated to generate additional study area trips by the Year 2025. Analysis results are provided

for the Year 2025 traffic conditions, along with recommended mitigation measures (if necessary).

7.0 Year 2030 Cumulative Traffic Conditions – This chapter describes projected long-range future traffic conditions. Traffic analysis results are presented for the Year 2030 traffic conditions, along with recommended mitigation measures for Proposed Project-related impacts, as appropriate.

8.0 Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property – This chapter describes projected long-range future traffic conditions with the assumption of the full build out of the Otay Ranch GDP/SRP, including the properties not controlled by the project applicant. Traffic analysis results are presented for the Year 2030 Cumulative Conditions with Full GDJP/SRP Buildout, along with recommended mitigation measures for Proposed Project-related impacts, as appropriate.

9.0 Hazards to Pedestrians and Bicyclists – This chapter describes existing and proposed pedestrian and bicycle facilities in the vicinity of the Proposed Project area, as well as potential impacts to cyclists and pedestrians.

10.0 Construction Traffic – This chapter identifies potential traffic impacts associated with construction of the Proposed Project and Preserve Specific Plan.

11.0 Transportation Demand Management – This chapter discusses the potential Transportation Demand Management (TDM) program developed to reduce vehicle trips in favor of alternative modes of transportation.

12.0 Findings and Recommendations – This chapter summarizes overall study findings and identifies recommended Proposed Project-related mitigation measures.

2.0 Analysis Methodology

The traffic analyses prepared for this study were performed in accordance with the County of San Diego Traffic Impact Guidelines, the California Environmental Quality Act (CEQA) project review process, the City of Chula Vista Traffic Impact Study Guidelines, and the SANTEC/ITE Guidelines for Traffic Impact Studies in San Diego.

The SANTEC/ITE guidelines require delineation of a project study area based on the following criteria:

- All local roadway segments, including all State surface routes, intersections, and mainline freeway locations where the Proposed Project will add 50 or more peak-hour trips in either direction to the existing roadway traffic.
- All freeway entrance and exit ramps where the Proposed Project will add a significant number of peak-hour trips that cause traffic queues to exceed ramp storage capacities.

In addition to the SANTEC/ITE requirements, County Guidelines require that the project study area also include all County Mobility Element roadways and intersections where the Proposed Project is projected to add 25 or more peak hour trips.

2.1 Level of Service Definition

Level of Service (LOS) is a quantitative measure describing operational conditions within a traffic stream, and the motorist's and/or passenger's perception of operations. A LOS definition generally describes these conditions in terms of such factors as delay, speed, travel time, freedom to maneuver, interruptions in traffic flow, queuing, comfort, and convenience. **Table 2.1** describes generalized definitions of the various LOS categories (A through F) as applied to roadway operations.

Table 2.1 Level of Service Definitions

LOS Category	Definition of Operation
A	This LOS represents a completely free-flow condition, where the operation of vehicles is virtually unaffected by the presence of other vehicles and only constrained by the geometric features of the highway and by driver preferences.
B	This LOS represents a relatively free-flow condition, although the presence of other vehicles becomes noticeable. Average travel speeds are the same as in LOS A, but drivers have slightly less freedom to maneuver.
C	At this LOS, the influence of traffic density on operations becomes marked. The ability to maneuver within the traffic stream is clearly affected by other vehicles.
D	At this LOS, the ability to maneuver is notably restricted due to traffic congestion, and only minor disruptions can be absorbed without extensive queues forming and the service deteriorating.
E	This LOS represents operations at or near capacity. LOS E is an unstable level, with vehicles operating with minimum spacing for maintaining uniform flow. At LOS E, disruptions cannot be dissipated readily thus causing deterioration down to LOS F.
F	At this LOS, forced or breakdown of traffic flow occurs, although operations appear to be at capacity, queues form behind these breakdowns. Operations within queues are highly unstable, with vehicles experiencing brief periods of movement followed by stoppages.

Source: Highway Capacity Manual 2010

2.2 Roadway Segment Level of Service

Roadway segment Level of Service standards and thresholds provide the basis for analysis of arterial roadway segment performance. The analysis of roadway segment Level of Service is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast Average Daily Traffic (ADT) volumes**. Table 2.2** and **Table 2.3** present the roadway segment capacity and Level of Service standards utilized to analyze roadway segments within the County of San Diego and the City of Chula Vista, respectively.

Table 2.2 County of San Diego Roadway Classification and LOS Standards

No.	Travel Lanes	Design Speed	Road Classification	Level of Service (in ADT)				
				A	B	C	D	E
6.1	6	65 mph	Expressway	36,000	54,000	70,000	86,000	108,000
6.2	6	65 mph	Prime Arterial	22,200	37,000	44,600	50,000	57,000
4.1A	4	55 mph	Major Road with Raised Median	14,800	24,700	29,600	33,400	37,000
4.1B			Major Road with Intermittent Turn Lanes	13,700	22,800	27,400	30,800	34,200
4.2A	4	40 mph	Boulevard with Raised Median	18,000	21,000	24,000	27,000	30,000
4.2B			Boulevard with Intermittent Turn Lane	16,800	19,600	22,500	25,000	28,000
2.1A	2	45 mph	Community Collector with Raised Median	10,000	11,700	13,400	15,000	19,000
2.1B			Community Collector w/ Continuous Turn Lane	3,000	6,000	9,500	13,500	19,000
2.1C			Community Collector w/ Intermittent Turn Lane	3,000	6,000	9,500	13,500	19,000
2.1D			Community Collector with Improvement Options	3,000	6,000	9,500	13,500	19,000
2.1E			Community Collector	1,900	4,100	7,100	10,900	16,200
2.2A	2	40 mph	Light Collector with Raised Median	3,000	6,000	9,500	13,500	19,000
2.2B			Light Collector with Continuous Turn Lane	3,000	6,000	9,500	13,500	19,000
2.2C			Light Collector with Intermittent Turn Lanes	3,000	6,000	9,500	13,500	19,000
2.2D			Light Collector with Improvement Options	3,000	6,000	9,500	13,500	19,000
2.2E			Light Collector	1,900	4,100	7,100	10,900	16,200
2.2F			Light Collector with Reduced Shoulder	5,800	6,800	7,800	8,700	9,700
2.3A	2	35 mph	Minor Collector with Raised Median	3,000	6,000	7,000	8,000	9,000
2.3B			Minor Collector with Intermittent Turn Lane	3,000	6,000	7,000	8,000	9,000
2.3C			Minor Collector	1,900	4,100	6,000	7,000	8,000

Source: County of San Diego Public Road Standards; March 2012

Note:
Bold numbers indicate the ADT thresholds for acceptable LOS.

Table 2.3 City of Chula Vista Roadway Classification and LOS Standards

Circulation Element Roadway Classification	Level of Service				
	A	B	C	D	E
Expressway (7 or 8-lane)	52,500	61,300	70,000	78,800	87,500
Gateway Street (6-lane)	40,800	47,600	54,400	61,200	68,000
Prime Arterial (6-lane)	37,500	43,800	50,000	56,300	62,500
Major Street (6-lane)	30,000	35,000	40,000	45,000	50,000
Major Street (4-lane)	22,500	26,300	30,000	33,800	37,500
Town Center Arterial (6-lane)	37,500	43,800	50,000	56,300	62,500
Town Center Arterial (4-lane)	22,500	26,300	30,000	33,800	37,500
Class I Collector (4-lane)	16,500	19,300	22,000	24,800	27,500
Class II Collector (3-lane)	9,000	10,500	12,000	13,500	15,000
Class III Collector (2-lane)	5,600	6,600	7,500	8,400	9,400

Source: City of Chula Vista

Note:
Bold numbers indicate the ADT thresholds for acceptable LOS.

These standards are generally used as long-range planning guidelines to determine the functional classification of roadways. The actual capacity of a roadway facility varies according to its physical attributes. Typically, the performance and Level of Service of a roadway segment are heavily influenced by the ability of the arterial intersections to accommodate peak hour volumes.

For the purposes of this traffic analysis, LOS D is considered acceptable for Mobility Element roadway segments within the County of San Diego. LOS C is considered acceptable for Circulation Element roadway segments within the City of Chula Vista. Per the Otay Ranch GDP/SRP (Page 104), LOS D is permitted within the Otay Ranch Villages.

2.3 Two-Lane State Highway Level of Service Standards and Thresholds

The two-lane state highway SR-94 was analyzed utilizing both the County of San Diego and Caltrans (or HCM 2000) methodologies.

As stated above, per County requirements, all facilities where the Proposed Project would add 25 or more peak hour trips were included in the study area. Thus, SR-94 from Lyons Valley Road to south of Otay Lakes Road was included in the analysis.

Table 2.4 displays the two-lane state highway ADT thresholds for LOS E and LOS F when signalized intersection spacing is over one mile. For facilities where signalized intersections are less than one mile apart, the Level of Service is determined to be that of the intersections along the subject highway.

Table 2.4 Two-Lane Highway LOS Thresholds – With Signalized Intersection Spacing Over One Mile

LOS	LOS Criteria
LOS E	> 16,200 ADT
LOS F	> 22,900 ADT

Source: County of San Diego

Note:
Where detailed data are available, the Director of Public Works may also accept a detailed level of service analysis based upon the two-lane highway analysis procedures provided in the Chapter 20 Highway Capacity Manual.

2.4 Peak Hour Intersection Level of Service Standards and Thresholds

This section presents the methodologies used to perform peak hour intersection capacity analysis, including both signalized and unsignalized intersections. The following assumptions were utilized in conducting all intersection level of service analyses:

- *Signal Timing:* Based on existing signal timing plans (as of March 2015) provided in **Appendix A.**
- *Peak Hour Factor*: Based on existing peak hour count data for existing conditions and 0.92, which is the default for all future conditions.

The County of San Diego and the City of Chula Vista both consider LOS D or better during the AM and PM peak hours to be acceptable for intersection LOS.

2.4.1 Signalized Intersection Analysis

The analysis of signalized intersections utilized the operational analysis procedures as outlined in the *2010 Highway Capacity Manual (HCM)*. This method defines LOS in terms of delay, or more specifically, average stopped delay per vehicle. Delay is a measure of driver and/or passenger discomfort, frustration, fuel consumption and lost travel time. This technique uses 1,900 vehicles per hour per lane (VPHPL) as the maximum saturation volume of an intersection. This saturation volume is adjusted to account for lane width, on-street parking, pedestrians, traffic composition (i.e., percentage trucks) and shared lane movements (i.e., through and right-turn movements originating from the same lane). The LOS criteria used for this technique are described in **Table 2.5.** The computerized analysis of intersection operations was performed utilizing *SYNCHRO 8.0* traffic analysis software.

2.4.2 Unsignalized Intersection Analysis

Unsignalized intersections, including two-way and all-way stop controlled intersections, were analyzed using the 2010 Highway Capacity Manual unsignalized intersection analysis methodology. The *SYNCHRO 8.0* Traffic Analysis software supports this methodology and was utilized to produce LOS results. The LOS for a side street stop controlled (SSSC) intersection is determined by the computed control delay and is defined for each minor movement. **Table 2.6** summarizes the LOS criteria for unsignalized intersections.

Table 2.5 Signalized Intersection LOS Criteria

Average Stopped Delay Per Vehicle (seconds)	Level of Service (LOS) Characteristics
<10.0	*LOS A* describes operations with very low delay. This occurs when progression is extremely favorable, and most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
10.1 – 20.0	*LOS B* describes operations with generally good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
20.1 – 35.0	*LOS C* describes operations with higher delays, which may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
35.1 – 55.0	*LOS D* describes operations with high delay, resulting from some combination of unfavorable progression, long cycle lengths, or high volumes. The influence of congestion becomes more noticeable, and individual cycle failures are noticeable.
55.1 – 80.0	*LOS E* is considered the limit of acceptable delay. Individual cycle failures are frequent occurrences.
>80.0	*LOS F* describes a condition of excessively high delay, considered unacceptable to most drivers. This condition often occurs when arrival flow rates exceed the LOS D capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes to such delay.

Source: 2010 Highway Capacity Manual

Table 2.6 Unsignalized Intersection LOS Criteria

Average Control Delay (sec/veh)	Level of Service (LOS)
≤10	A
>10 and ≤15	B
>15 and ≤25	C
>25 and ≤35	D
>35 and ≤50	E
>50	F

Source: 2010 Highway Capacity Manual

2.5 Freeway Mainline Analysis

Freeway level of service and performance analysis is based upon procedures developed by Caltrans District 11. The procedure for calculating freeway level of service involves estimating a peak hour volume to capacity (V/C) ratio. Peak hour volumes are estimated from the application of design hour ("K"), directional ("D") and truck ("T") factors to Average Daily Traffic (ADT) volumes. The base capacities utilized were 2,400 pc/h/ln for mainline and 1,200 pc/h/ln for auxiliary lane, respectively.

The resulting V/C is then compared to acceptable ranges of V/C values corresponding to the various levels of service for each facility classification, as shown in **Table 2.7**. The corresponding level of service represents an approximation of existing or anticipated future freeway operating conditions in the peak direction of travel during the peak hour.

LOS D or better is used in this study as the threshold for acceptable freeway operations based upon Caltrans and the SANDAG Regional Growth Management Strategy (RGMS) requirements.

For the purposes of this study, all of the traffic adjustment factors utilized in the analysis of existing and future conditions were obtained from Caltrans.

Table 2.7 Caltrans District 11 Freeway and State Highway Segment LOS

LOS	V/C	Congestion/Delay	Traffic Description
Free Flow Speed = 65 mi/h			
"A"	<0.30	None	Free flow.
"B"	0.30-0.50	None	Free to stable flow, light to moderate volumes.
"C"	0.50-0.71	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted.
"D"	0.71-0.89	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
"E"	0.89-1.00	Significant	Extremely unstable flow, maneuverability and psychological comfort extremely poor.
"F"	>1.00	Considerable	Forced or breakdown flow. Delay measured in average travel speed (MPH). Signalized segments experience delays >60.0 seconds/vehicle.

Source: Caltrans Guide for the Preparation of Traffic Impact Studies, December 2002

2.6 Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements, all signalized intersections at freeway ramps were analyzed using Intersecting Lane Volume (ILV) procedures as described in Topic 406 of the Caltrans *Highway Design Manual* (HDM). This methodology is based upon an assessment of each intersection as an isolated unit, without consideration of the effects from adjacent intersections. For this reason, the ILV analysis is utilized as an additional validation of signalized ramp intersection operations derived from the 2010 Highway Capacity Manual methodology. **Table 2.8** provides values of ILV/hr associated with various traffic flow thresholds. Neither Caltrans, the City of Chula Vista, nor the County uses ILV results in determining

significance of project impacts, and, therefore, the analyses are only included for informational purposes only.

Table 2.8 Traffic Flow Conditions at Ramp Intersections at Various Levels of Operation

Description
<1,200: (Under Capacity) Stable flow with slight, but acceptable delay. Occasional signal loading may develop. Free midblock operations.
1,200-1,500: (At Capacity) Unstable flow with considerable delays possible. Some vehicles occasionally wait two or more cycles to pass through the intersection. Continuous backup occurs on some approaches.
>1,500: (Over Capacity) Stop-and-go operation with severe delay and heavy congestion [(1)]. Traffic volume is limited by maximum discharge rates of each phase. Continuous backup in varying degrees occurs on all approaches. Where downstream capacity is restrictive, mainline congestion can impede orderly discharge through the intersection.

Source: Caltrans Highway Design Manual, Topic 406

Note:
[1]The amount of congestion depends on how much the ILV/hr value exceeds 1,500. Observed flow rates will normally not exceed 1,500ILV/hr, and the excess will be delayed in a queue.

2.7 Ramp Meter Analysis

Ramp metering analysis was conducted based upon the SANTEC/ITE Guidelines for Traffic Impact Studies in the San Diego region to calculate delays and queues at the study area freeway on-ramps. The demand per hour per lane was calculated using the following equation:

$$D_{vol} = \frac{(P_{vol} - H_{vol})}{N}$$

- D_{vol} (Demand Volume per hour per Lane): total peak hour demand expected to use the on-ramp (non-HOV lane only);
- P_{vol} (Peak Hour Ramp Volume): sum of all peak hour volumes using the on-ramp;
- H_{vol} (HOV lane volume): based on field observation, approximately 20% of the P_{vol} utilized the HOV lane; and
- N: number of non-HOV lanes at the on-ramp.

2.8 Determination of Significant Impacts

This section outlines the thresholds for determination of significant project-related impacts to roadways and intersections in the County of San Diego and the City of Chula Vista, as well as along freeway and state highway facilities within Caltrans' jurisdiction.

2.8.1 County of San Diego

Signalized Intersections

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or Level of Service traffic impact on a road segment:

- The additional or redistributed ADT generated by the Proposed Project will significantly increase congestion at a signalized intersection currently operating at LOS E or LOS F, as identified in **Table 2.9,** or will cause a signalized intersection to operate at LOS E or LOS F.

Table 2.9 Measures of Significant Project Impacts to Congestion at Intersections – Allowable Increases at Congested Intersections

Level of Service	Signalized	Unsignalized
LOS E	Delay of 2 seconds	20 peak hour trips on a critical movement
LOS F	Delay of 1 second, or 5 peak hour trips on a critical movement	5 peak hour trips on a critical movement

Source: County of San Diego

Notes:

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. Also if a project adds significant volume to a minor roadway approach, a gap study should be provided that details the headways between vehicles on the major roadway.
2. By adding Proposed Project trips to all other trips from a list of projects, these same tables are used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project is responsible for mitigating its share of the cumulative impact.
3. The County may also determine impacts have occurred on roads even when a project's direct or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining 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.

Unsignalized Intersections

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or Level of Service traffic impact on a road segment:

- The additional or redistributed ADT generated by the Proposed Project will add 20 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate below LOS D (see Table 2.9), or
- The additional or redistributed ADT generated by the Proposed Project will add 20 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS E (see Table 2.9), or
- The additional or redistributed ADT generated by the Proposed Project will add 5 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate at LOS F (see Table 2.9), or

- The additional or redistributed ADT generated by the Proposed Project will add 5 or more peak hour trips to a critical movement of an unsignalized intersection currently operating at LOS F (see Table 2.9), or
- Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, and sight distance or other factors, it is found that a project's generation rate ***less*** than those specified above would significantly impact the operations of the intersection.

Roadway Segments

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or Level of Service traffic impact on a roadway segment, unless specific facts show that there are other circumstances that mitigate or avoid such impacts:

- 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 as identified in **Table 2.10**, or will cause a Circulation Element Road or State Highway to operate at LOS E or LOS F as a result of the Proposed Project, or
- The additional or redistributed ADT generated by the Proposed Project will cause a residential street to exceed its design capacity.

Table 2.10 Measures of Significant Project Impacts to Congestion on 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

Source: County of San Diego

Notes:

1. By adding Proposed Project trips to all other trips from a list of projects, this same table must be used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project is responsible for mitigating its share of the cumulative impact.
2. 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.

Two-Lane Highways with Signalized Intersection Spacing Over One Mile

Traffic volume increases from public or private projects that result in the following criteria will have a significant traffic volume or Level of Service traffic impact on a two-lane highway facility with signalized intersection spacing over one mile:

- The additional or redistributed ADT generated by the Proposed Project will significantly increase congestion on a two-lane highway segment currently operating at LOS E or LOS F, as identified in **Table 2.11**Table 2.11, or will cause a two-lane highway segment to operate at LOS E or LOS F as a result of the Proposed Project.

Table 2.11 Measures of Significant Project Impacts to Congestion – Allowable Increases on Two-Lane Highways with Signalized Intersection Spacing Over One Mile

LOS	LOS Criteria	Impact Significance Level
LOS E	> 16,200 ADT	> 325 ADT
LOS F	> 22,900 ADT	> 225 ADT

Source: County of San Diego

Note:

Where detailed data are available, the Director of Public Works may also accept a detailed Level of Service analysis based upon the two-lane highway analysis procedures provided in the Chapter 20 Highway Capacity Manual.

Two-Lane Highways with Signalized Intersection Spacing Under One Mile

Traffic volume increases from public or private projects that result in one or more of the following criteria will have a significant traffic volume or Level of Service traffic impact on a two-lane highway facility with signalized intersection spacing under one mile:

- The additional or redistributed ADT generated by the Proposed Project will significantly increase congestion on a two-lane highway segment currently operating at LOS E or LOS F, as identified in **Table 2.12**, or will cause a two-lane highway segment to operate at LOS E or LOS F as a result of the Proposed Project.

Table 2.12 Measures of Significant Project Impacts to Congestion – Allowable Increases on Two-Lane Highways with Signalized Intersection Spacing Under One Mile

LOS	Impact Significance Level
LOS E	Intersection delay of 2 seconds
LOS F	Intersection delay of 1 second, or 5 peak hour trips on a critical movement

Source: County of San Diego

Notes:

1. A critical movement is one that is experiencing excessive queues.
2. By adding Proposed Project trips to all other trips from a list of projects, this same table is used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes any trips must mitigate a share of the cumulative impacts.
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.

2.8.2 City of Chula Vista

Project impacts will be defined as either project specific impacts or cumulative impacts. Project specific impacts are those impacts for which the addition of project trips result in an identifiable degradation in level of service on freeway segments, roadway segments, or intersections, triggering the need for specific project-related improvement strategies. Cumulative impacts are those in which the project trips contribute to a poor level of service, at a nominal level.

Study horizon year as used herein is intended to describe a future period of time in the traffic studies,

which corresponds to SANDAG's traffic model years, and are meant to synchronize study impacts to be in line with typical study years of 2025 and 2030.

Criteria for determining whether the Proposed Project results in either project specific or cumulative impacts on freeway segments, roadway segments, or intersections are as follows:

Short-term (Study Horizon Year 0 to 4)

For purposes of the short-term analysis, roadway sections may be defined as either links or segments. A link is typically that section of roadway between two adjacent Circulation Element intersections and a segment is defined as that combination of contiguous links used in the Growth Management Plan Traffic Monitoring Program. Analysis of roadway links under short-term conditions may require a more detailed analysis using the Growth Management Oversight Committee (GMOC) methodology if the typical planning analysis using volume to capacity ratios on an individual link indicates a potential impact to that link. The GMOC analysis uses the Highway Capacity Manual (HCM) methodology of average travel speed based on actual measurements on the segments as listed in the Growth Management Plan Traffic Monitoring Program.

Intersections

(a) Project specific impact if both the following criteria are met:
   i. Level of service is LOS E or LOS F.
   ii. Project trips comprise 5% or more of entering volume.

(b) Cumulative impact if only #1 is met.

Street Links/Segments

If the planning analysis using the volume to capacity ratio indicates LOS C or better, there is no impact. If the planning analysis indicates LOS D, E or F, the GMOC method should be utilized. The following criteria would then be utilized.

(a) Project specific impact if all the following criteria are met:
   i. Level of service is LOS D for more than 2 hours or LOS E/F for 1 hour
   ii. Project trips comprise 5% or more of segment volume.
   iii. Project adds greater than 800 ADT to the segment.

(b) Cumulative impact if only #1 is met.

Long-term (Study Horizon Year 5 and later)

Intersections

(a) Project specific impact if both the following criteria are met:
   i. Level of service is LOS E or LOS F.
   ii. Project trips comprise 5% or more of entering volume.

(b) Cumulative impact if only #1 is met.

Street Segments

Use the volume to capacity ratio methodology only. The GMOC analysis methodology is not applicable beyond a four-year horizon.

(a) Project specific impact if all three of the following criteria are met:
   i. Level of service is LOS D, LOS E, or LOS F.
   ii. Project trips comprise 5% or more of total segment volume.
   iii. Project adds greater than 800 ADT to the segment.

(b) Cumulative impact if only #1 is met. However, if the intersections along a LOS D or LOS E segment all operate at LOS D or better, the segment impact is considered not significant since intersection analysis is more indicative of actual roadway system operations than street segment analysis. If segment Level of Service is LOS F, impact is significant regardless of intersection LOS.Notwithstanding the foregoing, if the impact identified in paragraph a. above occurs at study horizon year 10 or later, and is offsite and not adjacent to the project, the impact is considered cumulative. Study year 10 may be that typical SANDAG model year which is between 8 and 13 years in the future. For example, in the case of a traffic study being performed in the period of 2000 to 2002, because the typical model will only evaluate traffic at years divisible by 5 (i.e. 2005, 2010, 2015 and 2020) study horizon year 10 would correspond to the SANDAG model for year 2010 and would be 8 years in the future. If the model year is less than 7 years in the future, study horizon year 10 would be 13 years in the future.

(c) In the event a direct identified project specific impact in paragraph a. above occurs at study horizon year 5 or earlier and the impact is offsite and not adjacent to this project, but the property immediately adjacent to the identified project specific impact is also proposed to be developed in approximately the same time frame, an additional analysis may be required to determine whether or not the identified project specific impact would still occur if the development of the adjacent property does not take place. If the additional analysis concludes that the identified project specific impact is no longer a direct impact, then the impact shall be considered cumulative.

2.8.3 SANTEC/ITE Guidelines

The analysis of facilities located within other jurisdictions or Caltrans, within the County of San Diego, should comply with the traffic study requirements identified in the SANTEC/ITE Guidelines, as summarized in **Table 2.13.**

Table 2.13 SANTEC/ITE Measure of Significant Project Traffic Impacts

Level of Service (LOS) with Project	Allowable Change Due to Impact					
E & F (or ramp meter delays above 15 min.)	Freeways		Roadway Segments		Intersections	Ramp Metering
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec)	Delay (min.)
	0.01	1	0.02	1	2	2

Source: SANTEC/ITE Guidelines for TIS in the San Diego Region

3.0 Existing Conditions

This section describes the study area roadway, two-lane highway, and freeway segment daily traffic volumes, as well as intersection peak hour traffic volumes. Level of service analysis results for all study area facilities under Existing conditions are also presented.

3.1 Existing Roadway Facilities

Several regionally and locally significant roadways, including state highways and freeways, traverse the study area. Each of the roadways, and associated intersections within the study area, is discussed below.

3.1.1 Study Intersections

The SANDAG Series 11 Transportation Model was utilized to perform a Select Zone Analysis, which identified the number of project-related peak hour trips distributed across the transportation network. All intersections and roadways where the Proposed Project would add 50 or more peak hour trips in either direction to the existing traffic were included for analysis. In addition, the study area also includes intersections and roadways where the Proposed Project would add 25 peak hour trips on County facilities. A total of 41 study area intersections, including 5 in the County of San Diego, 28 in the City of Chula Vista, and 9 project access points (also in the County of San Diego) were analyzed in this study, as shown below:

1. SR-94 & Lyons Valley Road
2. Proctor Valley Road/Jefferson Road & SR-94
3. Proctor Valley Road & Maxfield Road
4. Proctor Valley Road & Melody Road
5. SR-94 & Melody Road
6. San Miguel Ranch Road & SR-125 SB Ramps
7. San Miguel Ranch Road & SR-125 NB Ramp
8. I-805 SB Ramp & East H Street
9. I-805 NB Ramp & East H Street
10. Terra Nova Drive & East H Street
11. East H Street & Del Rey Boulevard
12. Paseo Del Rey & East H Street
13. Paseo Ranchero & East H Street
14. Otay Lakes Road & East H Street
15. SR-125 SB Ramp & East H Street
16. SR-125 NB Ramp & Proctor Valley Road
17. Mt Miguel Road & Proctor Valley Road
18. Lane Avenue & Proctor Valley Road
19. Hunte Parkway & Proctor Valley Road
20. Agua Vista Drive/Northwoods Drive & Proctor Valley Road
21. Eastlake Parkway & Fenton Street
22. Lane Avenue & Fenton Street
23. Heritage Road/Paseo Ranchero & Telegraph Canyon Road
24. La Media Road & Telegraph Canyon Road/ Otay Lakes Road
25. SR-125 SB Ramps & Otay Lakes Road
26. SR-125 NB Ramps & Otay Lakes Road
27. Eastlake Parkway & Otay Lakes Road
28. Lane Avenue & Otay Lakes Road
29. Hunte Parkway & Otay Lakes Road
30. Fenton Street & Otay Lakes Road
31. Eastlake Parkway & Olympic Parkway
32. Hunte Parkway & Olympic Parkway
33. Eastlake Parkway & Hunte Parkway
34. Proctor Valley Road & Project Driveway #1
35. Proctor Valley Road & Project Driveway #2
36. Proctor Valley Road & Project Driveway #3
37. Proctor Valley Road & Project Driveway #4
38. Proctor Valley Road & Project Driveway #5
39. Proctor Valley Road & Project Driveway #6
40. Proctor Valley Road & Project Driveway #7
41. Proctor Valley Road & Project Driveway #8

Figure 3-1 displays the location of the study area intersections, roadway segments and the Proposed Project. **Figure 3-2** and **Figure 3-3** display the current roadway and intersection geometrics, respectively.

3.1.2 County of San Diego Roadway Facilities

North-South Facilities

Proctor Valley Road – Proctor Valley Road is a 2-lane undivided roadway that extends from Chula Vista's eastern boundary to SR-94 in the Community of Jamul, in the County, with posted speed limits ranging between 40 and 45 mph. There are no sidewalk or bicycle facilities along either side of the roadway. Within the County of San Diego, Proctor Valley Road is classified as 2-lane Light Collector (2.2E) in the County of San Diego's currently adopted General Plan Circulation Element Update. A portion of Proctor Valley Road is currently an unpaved road within the County of San Diego boundaries.

Jefferson Road – Jefferson Road is a 2-lane undivided roadway between Lyons Valley Road and SR-94 in the County of San Diego. There are no sidewalk or bicycle facilities along either side of the roadway. Jefferson Road is classified as a 2-lane Light Collector with Raised Median (2.2A) in the County of San Diego's currently adopted General Plan Circulation Element Update.

East West-Facilities

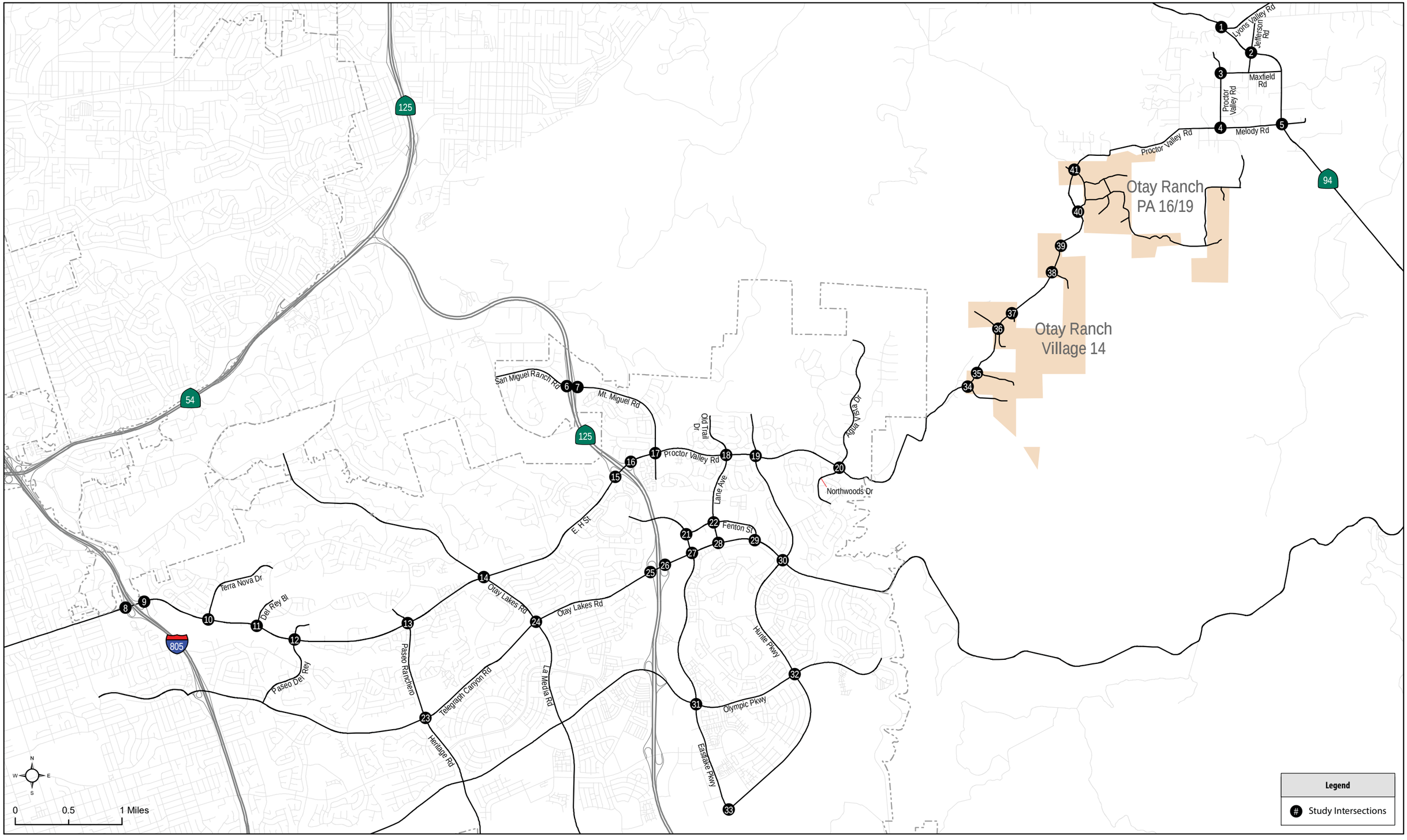
Lyons Valley Road - Lyons Valley Road is a 2-lane undivided roadway with a 45 mph posted speed limit between SR-94 and Jefferson Road in the County of San Diego. Sidewalks and bicycle facilities are not present on either side of the roadway. Parking is prohibited on both sides of the roadway. Lyons Valley Road is classified as a 2-lane Light Collector with a Continuous Turn-Lane (2.2B) in the County of San Diego's currently adopted General Plan Circulation Element Update.

Melody Road – Melody Road is a 2-lane undivided roadway with no posted speed limit signs present between Proctor Valley Road and SR-94, in the Community of Jamul. There are no sidewalk or bicycle facilities along either side of the roadway. There is 245 feet of permitted parking to the east of Calle Mesquite. Melody Road is classified as a 2-lane Light Collector (2.2E) in the County of San Diego's currently adopted General Plan Circulation Element Update.

3.1.3 City of Chula Vista Roadway Facilities

North-South Facilities

Otay Lakes Road – The north/south portion of Otay Lakes Road runs from Bonita Road to Telegraph Canyon Road where it becomes La Media Road. Within the Proposed Project study area, Otay Lakes Road is a 6-lane roadway with a raised median between Ridgeback Road and Telegraph Canyon Road. Posted speed limits of 40 and 45 mph are present between Ridgeback Road and Telegraph Canyon, and between Telegraph Canyon and East Palomar Street, respectively. This roadway is currently classified as a 6-lane Prime Arterial in the Chula Vista General Plan Circulation Element. Sidewalk and Class II bicycle facilities are present on both sides of the roadway.



Otay Ranch Village 14, 16 & 19
Transportation Impact Study
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Figure 3-1
Study Area Intersection Locations

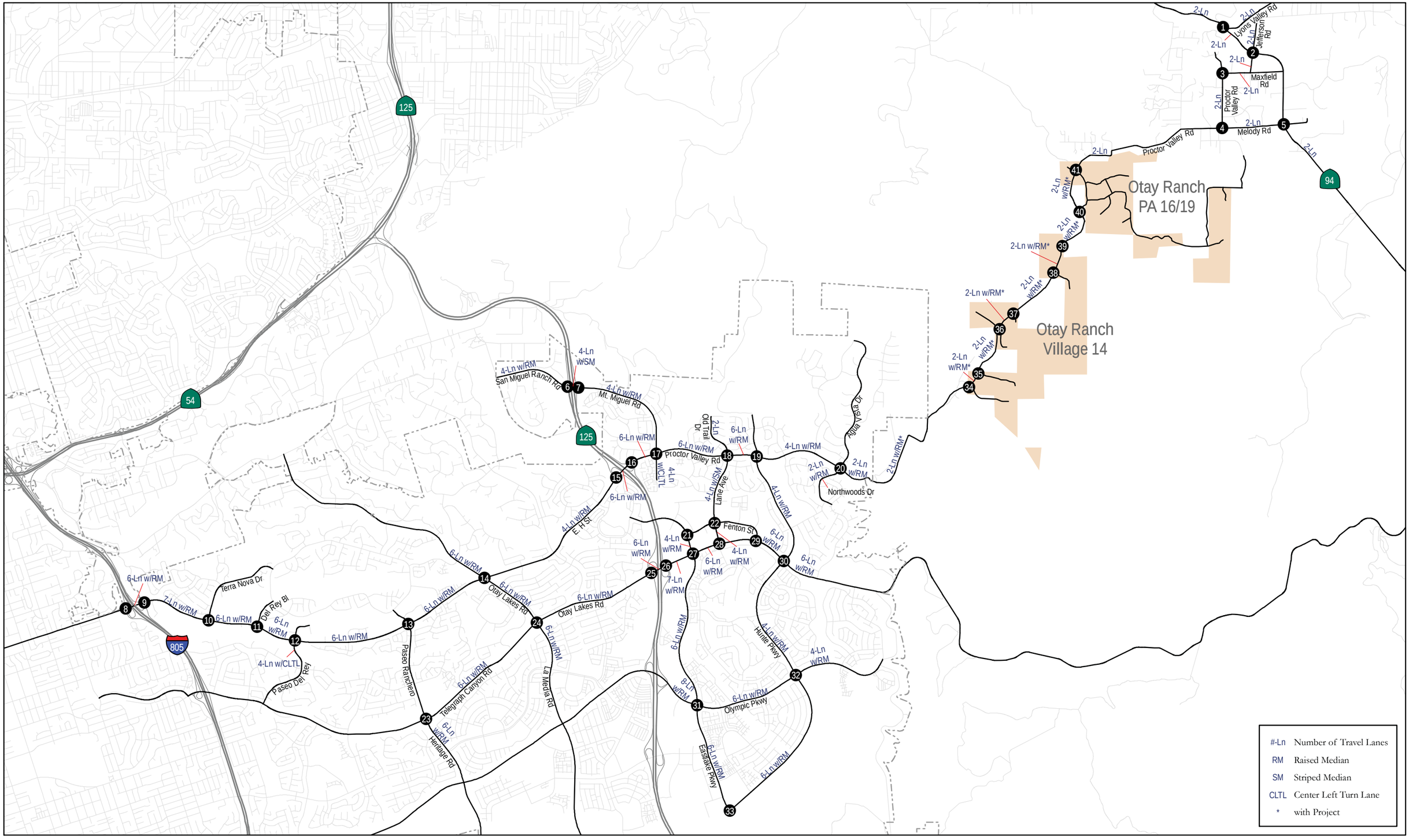

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Figure 3-2
Roadway Geometry - Existing Conditions

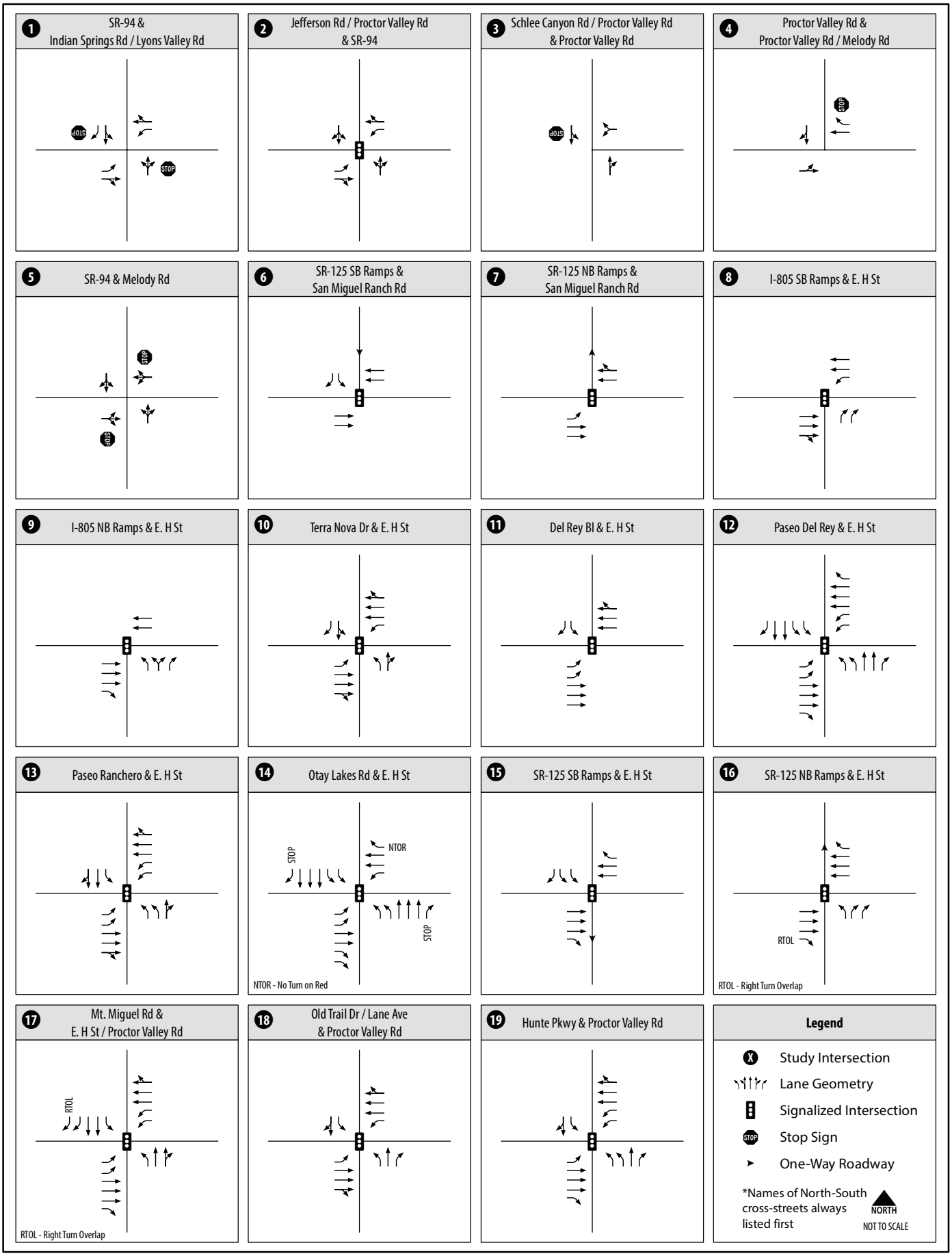

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Figure 3-3

Intersection Geometry - Existing Conditions (Intersections 1-19)

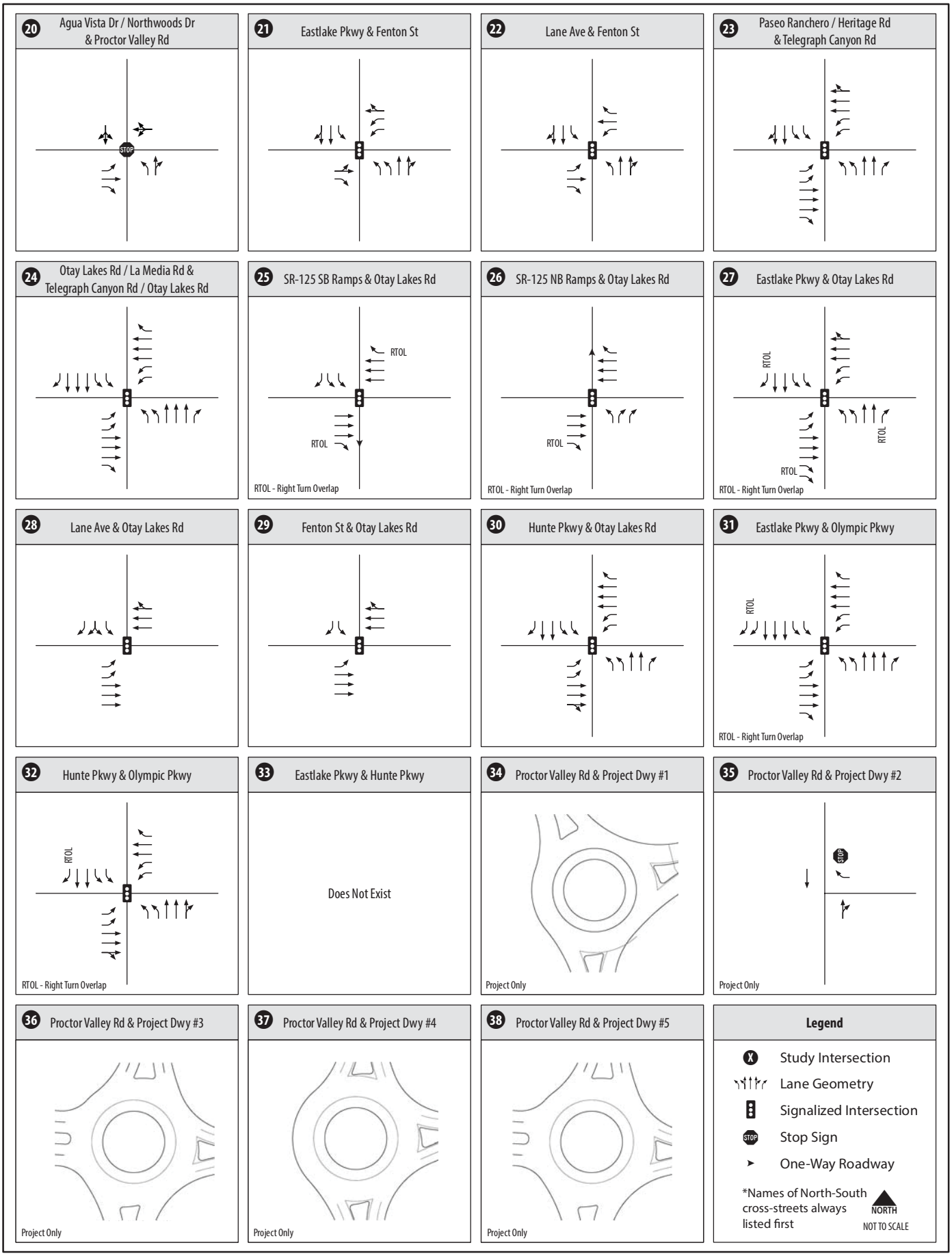

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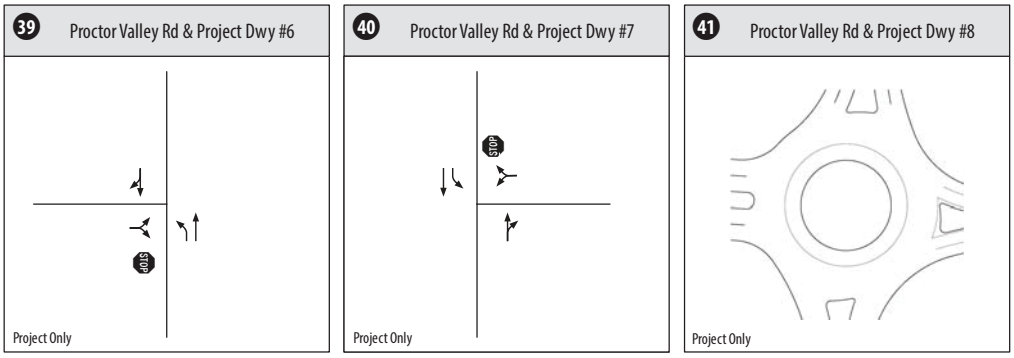
Figure 3-3

Intersection Geometrics - Existing Conditions (Intersections 20-38)



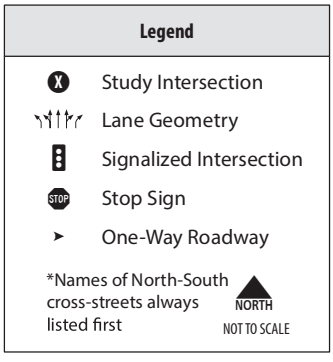


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Figure 3-3

Intersection Geometrics - Existing Conditions (Intersections 39-41)

Eastlake Parkway – Eastlake Parkway is a 4-lane roadway with a landscaped raised median and a 40 mph posted speed limit between Miller Drive and Corte Vista. It then transitions into a 6-lane roadway with a landscaped raised median and posted speed limits of 40 and 50 mph between Corte Vista and Olympic Parkway, and between Olympic Parkway and Hunte Parkway, respectively. Sidewalk as well as Class II bicycle facilities are present on both sides of the roadway. Parking is prohibited on both sides of the roadway. Eastlake Parkway is currently classified as a 4-lane Major Arterial between Miller Drive and Corte Vista, a 6-lane Prime Arterial between Corte Vista and Olympic Parkway, and as a 6-Lane Major Arterial between Olympic Parkway and Hunte Parkway in the Chula Vista General Plan Circulation Element.

Lane Avenue – Lane Avenue is a 4-lane roadway with a painted median and a 40 mph posted speed limit between Proctor Valley Road and Boswell Road, and then it transitions into a 4-lane roadway with a continuous left-turn-lane median and a 35 mph posted speed limit between Boswell Road and Otay Lakes Road. Sidewalk as well as Class II bicycle facilities are present on both sides of the roadway. Parking is prohibited on both sides of the roadway. Lane Avenue is classified as a 4-lane Collector in the City of Chula Vista General Plan Circulation Element.

Hunte Parkway – Hunte Parkway is a 4-lane roadway with a landscaped raised median and a 45 mph posted speed limit between Proctor Valley Road and Olympic Parkway. Hunte Parkway transitions into a 6-lane roadway with a landscaped raised median and a 50 mph posted speed limit between Olympic Parkway and its current southern terminus. Sidewalk as well as Class II bicycle facilities are present on both sides of the roadway. Parking is prohibited on both sides of the roadway. Hunte Parkway is classified in the City of Chula Vista General Plan Circulation Element as a 4-lane Major Street between Proctor Valley Road and Olympic Parkway, and a 6-lane Prime Arterial south of Olympic Parkway.

Northwoods Drive – Northwoods Drive is a 2-lane roadway with a raised median and no posted speed limit signs present between Proctor Valley Road and Blue Ridge Drive. Sidewalk as well as Class II bicycle facilities are present on both sides of the roadway. Parking is prohibited on both sides of the roadway. Northwoods Drive is not classified as a circulation element roadway in the Chula Vista General Plan Circulation Element.

Mountain Miguel Road/ San Miguel Ranch – Mountain Miguel Road is a 4-lane roadway with a landscaped raised median and a 40 mph posted speed limit between Proctor Valley Road/East H Street and Plaza Palmera. Sidewalk as well as Class II bicycle facilities are present on both sides of the roadway. Parking is prohibited on both sides of the roadway. Mountain Miguel Road / San Miguel Ranch Road is classified as a Class I Collector in the Chula Vista General Plan Circulation Element.

Paseo Del Rey – Paseo Del Rey is a 4-lane roadway with a continuous-left-turn-lane median and a 35 mph posted speed limit between East H Street and East J Street. Sidewalk as well as Class II bicycle facilities are present on both sides of the roadway. A continuous barrier (guard rail) to protect pedestrians from vehicular traffic is present on both sides of the roadway. Parking is prohibited on both sides of the roadway. Paseo Del Rey is classified as a Class I Collector in the Chula Vista General Plan Circulation Element.

Heritage Road – Heritage Road is a 6-lane roadway with a landscaped raised median and a 40 mph posted speed limit between Telegraph Canyon Road and Olympic Parkway. Sidewalk as well as Class II bicycle facilities are present on both sides of the roadway. Parking is prohibited on both sides of the roadway. Heritage Road is classified as a 6-lane Prime Arterial between Telegraph Canyon Road and Olympic Parkway in the Chula Vista General Plan Circulation Element.

La Media Road – La Media Road is a 6-lane roadway with a landscaped raised median and a 45 mph posted speed limit between Telegraph Canyon Road/Otay Lakes Road and East Palomar Street. Sidewalk as well as Class II bicycle facilities are present on both sides of the roadway. Parking is prohibited on both sides of the roadway. La Media Road is classified as a 6-lane Prime Arterial in the Chula Vista General Plan Circulation Element.

Old Trail Drive - Old Trail Drive is a 2-lane undivided residential roadway between North Trail Court and Proctor Valley Road in the City of Chula Vista. There are no posted speed limit signs along the entire extent of Old Trail Drive. Sidewalks are present on both sides of the roadway but bicycle facilities are not. Parking is permitted on both sides of the roadway.

East/West Facilities

Proctor Valley Road – Proctor Valley Road is a 6-lane roadway with a landscaped raised median and a 45 mph posted speed limit in the City of Chula Vista. Meandering pedestrian facilities (sidewalks) as well as Class II bicycle facilities are present on both sides of the roadway. Parking is prohibited on both sides of the roadway. East of Agua Vista Drive/Northwoods Drive, Proctor Valley Road is a 2-way roadway with a paved width of 15 feet. However, the asphalt along this segment has not been maintained and has dig rated significantly at this point. Proctor Valley Road is classified as a 6-lane Prime Arterial between SR-125 and Hunte Parkway, and as a 4-lane Major Road between Hunte Parkway and the City's eastern border with the County of San Diego.

East H Street – East H Street is a 4-lane roadway between Hilltop Drive and the I-805 SB Ramps, a 5-lane roadway between the I-805 ramps, a 7-lane roadway with 50 mph posted speed limit between the I-805 NB Ramps and Terra Nova Drive, a 6-lane roadway between Terra Nova and Otay Lakes Road, and a 4-lane roadway between Otay Lakes Road and the SR-125 ramps. Sidewalk as well as Class II bicycle facilities are present on both sides of the roadway except on the roadway segment between Hilltop Drive and the I-805 ramps, where no bicycle facilities are present on either side. Parking is prohibited on both sides of the roadway. East H Street is classified as a 6-lane Gateway Street between Hilltop Drive and the I-805 SB ramps, as a 6-lane Prime Arterial between the I-805 NB Ramps and Otay Lakes Road, and as a 4-Lane Major Arterial between Otay Lakes Road and the SR-125 SB ramps in the Chula Vista General Plan Circulation Element.

San Miguel Ranch Road – San Miguel Ranch Road is a 4-lane roadway with a landscaped raised median and a 40 mph posted speed limit between Proctor Valley Road and Plaza Palmera. Sidewalk as well as Class II bicycle facilities are present on both sides of the roadway. Parking is prohibited on both sides of the roadway. San Miguel Ranch Road is classified as a Class I Collector in the Chula Vista General Plan

Circulation Element.

Telegraph Canyon Road – Telegraph Canyon Road is a 7-lane roadway between I-805 and Oleander Avenue with a 40 mph posted speed limit, and a 6-lane roadway with a landscaped raised median between Oleander Avenue and Otay Lakes Road with a 45 mph posted speed limit. Sidewalk as well as Class II bicycle facilities are present on both sides of the roadway. Parking is prohibited on both sides of the roadway. Telegraph Canyon Road is classified in the Chula Vista General Plan Circulation Element as a 7-lane Expressway between I-805 and Oleander Avenue, and a 6-lane Prime Arterial between Oleander Avenue and Otay Lakes Road.

Otay Lakes Road – Otay Lakes Road is a 6-lane roadway with a landscaped raised median and a posted speed limit of 50 mph between Telegraph Canyon Road and the eastern boundary of Chula Vista, just east of Wueste Road. Sidewalk as well as Class II bicycle facilities are present on both sides of the roadway. Parking is prohibited on both sides of the roadway. Otay Lakes Road is classified as a 6-lane Prime Arterial, with the exception of the segment between I-805 and Eastlake Parkway, which is classified as a 7-lane Expressway in the Chula Vista General Plan Circulation Element.

Olympic Parkway – Olympic Parkway between La Media Road and Hunte Parkway is a 6-lane roadway with a raised median, with the exception of the segment between the SR-125 NB Ramps and Eastlake Parkway, which is an 8-lane roadway with a raised median. Between Hunte Parkway and Wueste Drive, Olympic Parkway narrows to a 4-lane roadway with a raised median. Sidewalk as well as Class II bicycle facilities are present on both sides of the roadway. Parking is prohibited on both sides of the roadway. Olympic Parkway is classified as a 6-lane Prime Arterial between I-805 and the SR-125, an 8-lane Expressway between SR-125 and Eastlake Parkway, a 6-lane Prime Arterial between Eastlake Parkway and Hunte Parkway, and a 4-lane Major Street between Hunte Parkway and Wueste Road.

3.1.4 Freeway and State Highway Facilities

Four (4) Caltrans freeway and state highway facilities traverse the study area, as follows:

I-805 – I-805 ranges from 8-lanes to 10-lanes within the study area, between Home Avenue and SR-905. Construction of two new High Occupancy Vehicle (HOV) lanes on I-805, between Home Avenue and East Palomar Street, has been recently completed.

SR-125 – SR-125 is a 4-lane state highway between East H Street and SR-905. It will operate as a toll road through the Year 2035. However, SANDAG has recently purchased this facility and could potentially convert this facility to a freeway sooner than the Year 2035.

SR-94 – Within the project study area, SR-94 is a 2-lane state highway between Lyons Valley Road and the community of Tecate. There are currently no improvements planned by Caltrans to the portions of SR-94 located within the study area. However, the Jamul Indian Village Environmental Evaluation has identified several capacity enhancing improvements that they will implement along key study segments of SR-94. Caltrans is also proposing to implement several operational improvements along the study area segment

of the SR-94 corridor. Implementation of these improvements is anticipated to begin in early 2016.

SR-54 – SR-54 is 6-lanes within the study area between I-805 and SR-125, with HOV lanes between Briarwood Road and SR-125.

3.2 Existing Intersection and Roadway Volumes

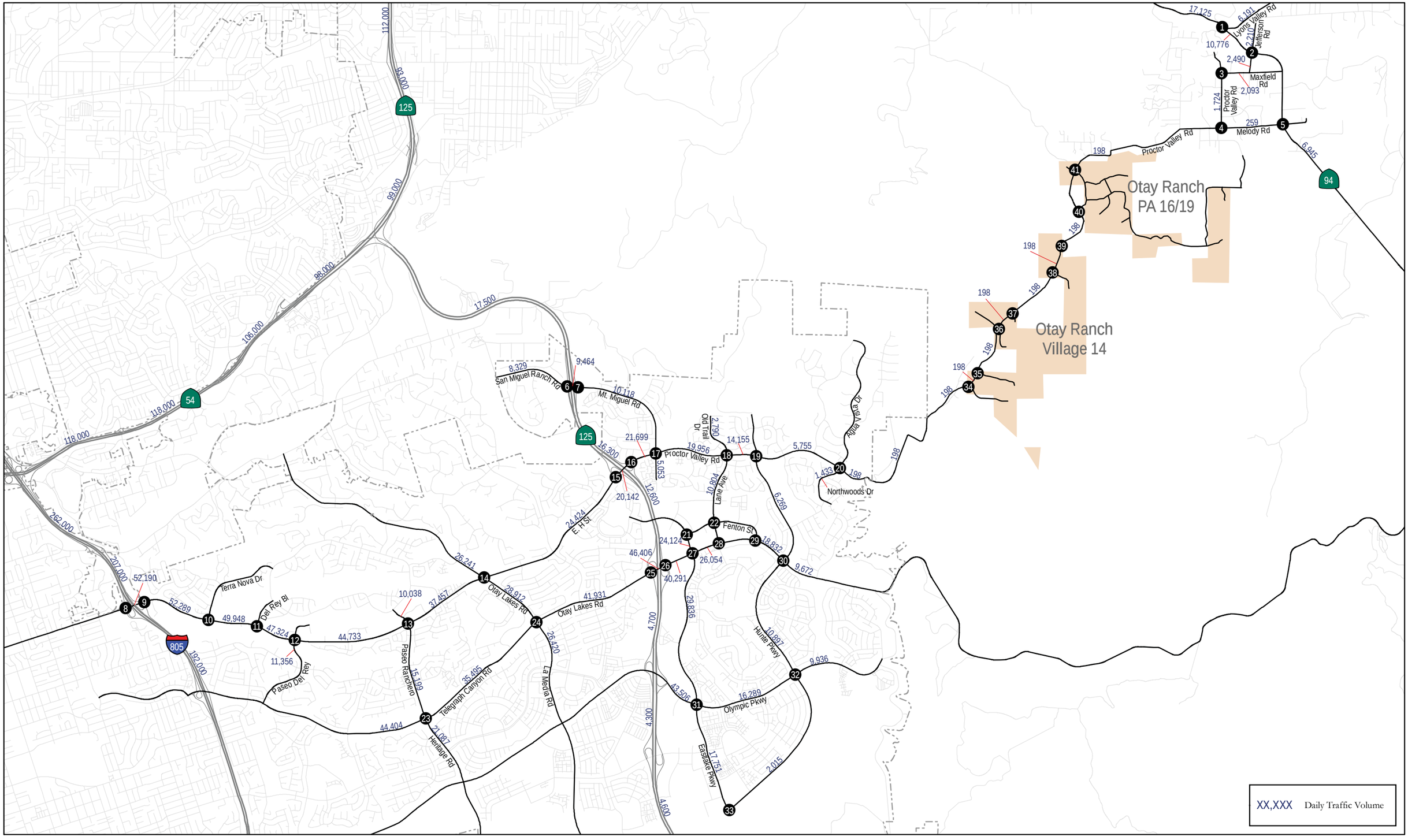
Figure 3-4 and **Figure 3-5** show the existing ADT volumes for study area roadway segments and the AM/PM peak hour traffic volumes for the study area intersections, respectively. The study area roadway segment and intersection traffic counts were conducted in April 2014 and March 2015. Count worksheets are provided in **Appendix A**.

In light of the recent opening of the Hollywood Casino on the Jamul Indian Village and the related potential effect on traffic patterns in the study area, additional traffic counts were collected in January 2017 to determine whether the original counts remain valid. Specifically, to validate the counts utilized in the Proposed Project TIS, which were collected in March 2015, the January 2017 counts were compared to the March 2015 counts to determine whether there have been any substantial changes in the study area traffic volumes since the original counts were taken.

This traffic validation exercise was documented in the "Otay Ranch Village 14 and Planning Area 16 & 19 Traffic Count Validation" memorandum prepared by Chen Ryan, dated May 2, 2017. The traffic validation analysis found that there has been an overall decrease in traffic volumes along most of the roadway segments in the study area with the limited exception of some single digit increases along a couple of segments of Telegraph Canyon Road and Otay Lakes Road that do not affect the TIS analysis. The only major change in volumes that has occurred is an increase of 42% along SR-94 between Lyons Valley Road & Jefferson Road. As a result, the TIS and related analysis was revised to reflect the new counts along this segment of SR-94. As to the other study area segments, based on the validation counts, it is reasonable to conclude that the traffic counts used in the TIS are still valid and even slightly conservative (i.e., overstate volumes) since volumes on most segments have decreased since the original counts were taken.

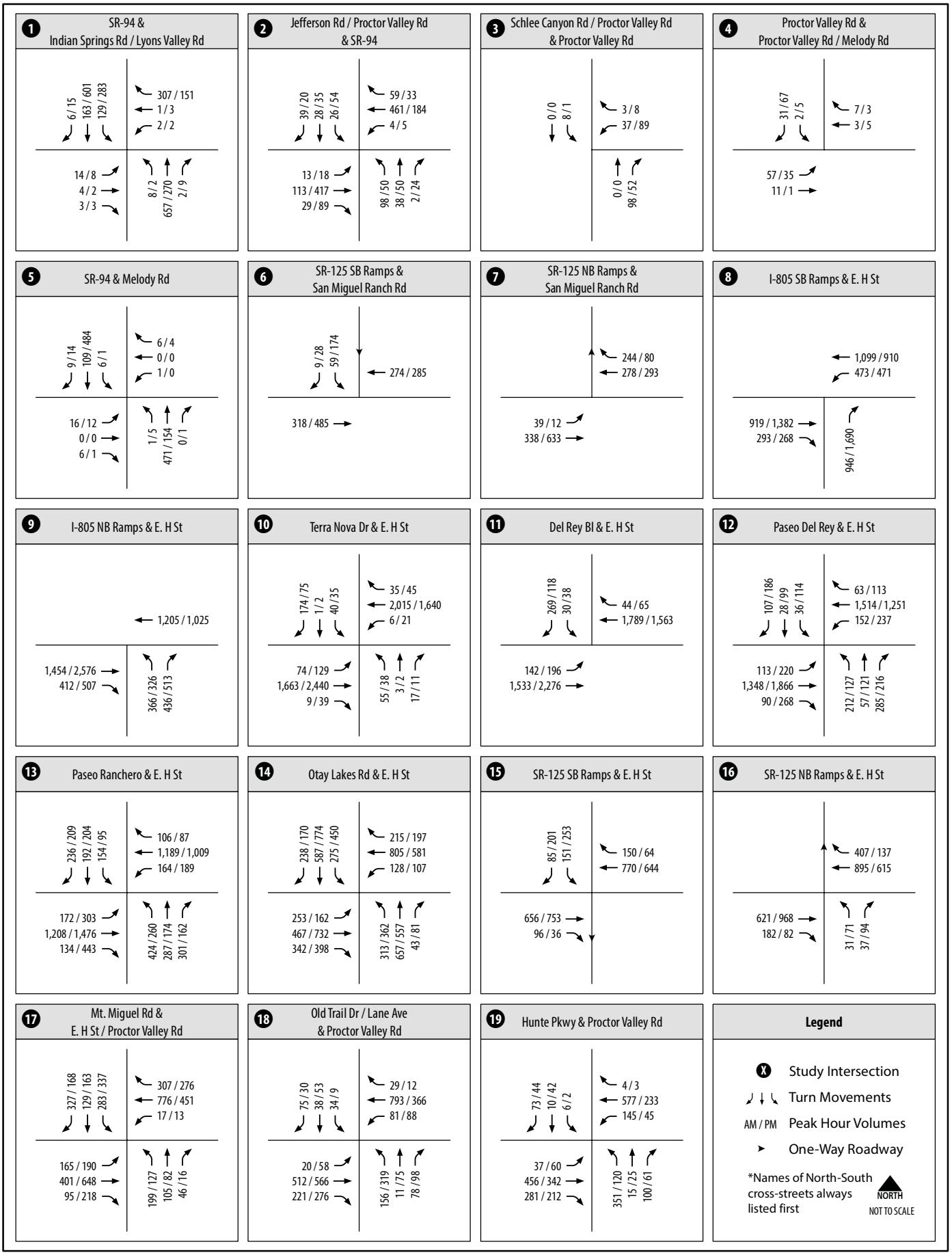
3.3 Existing Conditions Traffic Operations Analysis

Level of service analyses under Existing conditions were conducted using the methodologies described in Chapter 2.0. Intersection, roadway segment, and freeway mainline level of service, as well as freeway ramp intersection ILV analysis results, are discussed separately below.



Otay Ranch Village 14, 16 & 19
Transportation Impact Study
CHEN RYAN

Figure 3-4
Roadway Traffic Volumes - Existing Conditions



Otay Ranch Village 14, 16 & 19
Transportation Impact Study

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Figure 3-5

Peak Hour Intersection Traffic Volumes - Existing Conditions (Intersections 1-19)

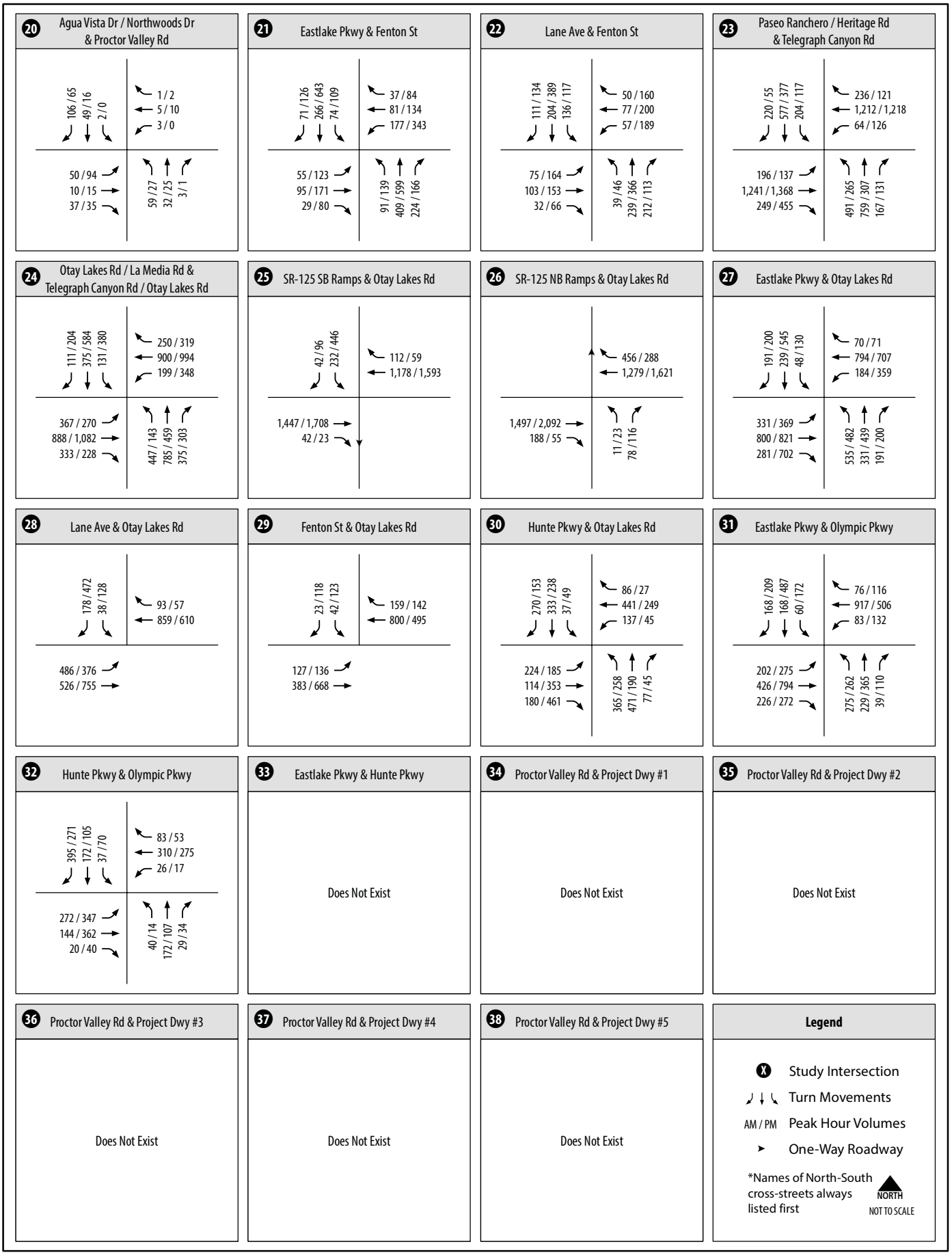

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Figure 3-5

Peak Hour Intersection Traffic Volumes - Existing Conditions (Intersections 20-38)

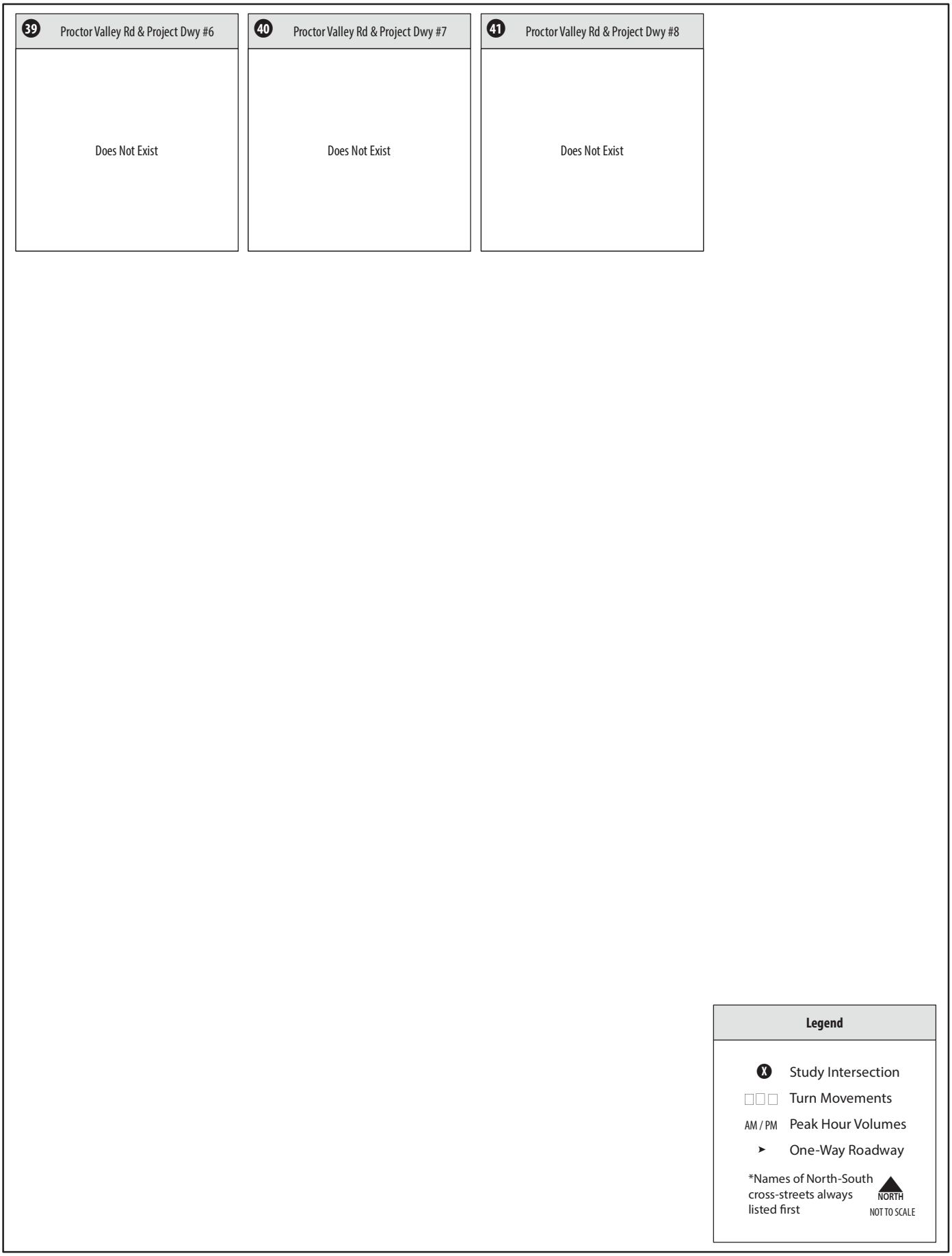

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Figure 3-5

Peak Hour Intersection Traffic Volumes - Existing Conditions (Intersections 39-41)

3.3.1 Intersection Analysis

Table 3.1 displays intersection level of service and average vehicle delay results for the study area intersections under Existing conditions. All intersections are signalized unless otherwise noted. Level of service calculation worksheets for Existing conditions are provided in **Appendix B**.

As shown, all study area intersections currently operate at LOS D or better, with the exception of the SR-94 / Lyons Valley Road intersection, which operates at LOS F during both the AM and PM peak hours.

Table 3.1 Peak Hour Intersection LOS Results - Existing Conditions

				AM Peak Hour		PM Peak Hour	
#	Intersection	Control	Jurisdiction	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
1	SR-94 & Lyons Valley Road	SSSC	Caltrans	81.5	F	79.7	F
2	Proctor Valley Road/Jefferson Road & SR-94	Signal	County	10.6	B	10.0	B
3	Proctor Valley Road & Maxfield Road	SSSC	County	9.0	A	9.0	A
4	Proctor Valley Road & Melody Road	SSSC	County	8.4	A	8.4	A
5	SR-94 & Melody Road	SSSC	Caltrans	13.6	B	18.1	C
6	San Miguel Ranch Road & SR-125 SB Ramps	Signal	Caltrans	21.7	C	18.8	B
7	San Miguel Ranch Road & SR-125 NB Ramp	Signal	Caltrans	16.7	B	13.3	B
8	I-805 SB Ramp & East H Street	Signal	Caltrans	7.8	A	9.7	A
9	I-805 NB Ramp & East H Street	Signal	Caltrans	9.8	A	11.4	B
10	Terra Nova Drive & East H Street	Signal	Chula Vista	13.0	B	11.0	B
11	Del Rey Boulevard & East H Street	Signal	Chula Vista	11.1	B	8.5	A
12	Paseo Del Rey & East H Street	Signal	Chula Vista	19.9	B	25.7	C
13	Paseo Ranchero & East H Street	Signal	Chula Vista	50.8	D	42.6	D
14	Otay Lakes Road & East H Street	Signal	Chula Vista	37.2	D	29.2	C
15	SR-125 SB Ramp & East H Street	Signal	Caltrans	5.0	A	6.1	A
16	SR-125 NB Ramp & Proctor Valley Road	Signal	Caltrans	3.4	A	4.0	A
17	Mt Miguel Road & Proctor Valley Road	Signal	Chula Vista	23.7	C	20.3	C
18	Lane Avenue & Proctor Valley Road	Signal	Chula Vista	16.8	B	23.0	C
19	Hunte Parkway & Proctor Valley Road	Signal	Chula Vista	18.9	B	13.6	B
20	Agua Vista Drive / Northwoods Drive & Proctor Valley Road	AWSC	Chula Vista	8.6	A	8.4	A
21	Eastlake Parkway & Fenton Street	Signal	Chula Vista	18.2	B	31.4	C
22	Lane Avenue & Fenton Street	Signal	Chula Vista	17.8	B	24.9	C
23	Heritage Road/Paseo Ranchero & Telegraph Canyon Road	Signal	Chula Vista	45.4	D	24.9	C
24	La Media Road & Telegraph Canyon Road / Otay Lake Road	Signal	Chula Vista	27.1	C	26.8	C
25	SR-125 SB Ramps & Otay Lakes Road	Signal	Caltrans	9.6	A	10.9	B
26	SR-125 NB Ramps & Otay Lakes Road	Signal	Caltrans	8.4	A	8.8	A

Table 3.1 Peak Hour Intersection LOS Results - Existing Conditions

#	Intersection	Control	Jurisdiction	AM Peak Hour		PM Peak Hour	
				Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
27	Eastlake Parkway & Otay Lakes Road	Signal	Chula Vista	31.9	C	32.6	C
28	Lane Avenue & Otay Lakes Road	Signal	Chula Vista	11.3	B	25.4	C
29	Fenton Street & Otay Lakes Road	Signal	Chula Vista	8.8	A	9.0	A
30	Hunte Parkway & Otay Lakes Road	Signal	Chula Vista	23.1	C	17.2	B
31	Eastlake Parkway & Olympic Parkway	Signal	Chula Vista	17.0	B	19.7	B
32	Hunte Parkway & Olympic Parkway	Signal	Chula Vista	15.8	B	13.9	B
33	Eastlake Parkway & Hunte Parkway	Signal	Chula Vista	Does Not Exist			

Source: NDS, Chen Ryan Associates; January 2017

Notes:
AWSC: All-way stop controlled intersection.
SSSC: Side-Street stop controlled intersection, the delay shown is the worst delay experienced by any of the approaches.
Bold indicates LOS E or F.

3.3.2 Roadway Segment Analysis

Table 3.2a displays the level of service analysis results for the study area roadway segments located within the County of San Diego under Existing conditions.

Table 3.2a Roadway Segment LOS Results – Existing Conditions – County of San Diego

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS D)	LOS
Proctor Valley Rd	City of Chula Vista Boundary to Melody Rd	2-Ln	198	8,700	A
	Melody Rd to Schlee Canyon Rd	2-Ln	1,724	8,700	B
	Schlee Canyon Rd to Maxfield Rd	2-Ln	2,093	8,700	B
	Maxfield Rd to SR-94	2-Ln	2,490	8,700	B
Melody Rd	Proctor Valley Rd to SR-94	2-Ln	259	8,700	A
Jefferson Rd	SR-94 to Olive Vista Dr	2-Ln	2,210	8,700	B
Lyons Valley Rd	SR-94 to Olive Vista Dr	2-Ln	6,191	8,700	B

Source: NDS, Chen Ryan Associates; January 2017

As shown, all study area roadway segments within the County of San Diego currently operate at LOS B or better.

Table 3.2b displays the LOS analysis results for study area roadway segments within the City of Chula Vista under Existing conditions.

Table 3.2b Roadway Segment LOS Results – Existing Conditions – City of Chula Vista

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS
San Miguel Ranch Rd	Proctor Valley Rd to SR-125 SB Ramp	4-Ln w/ RM	8,329	22,000	A
	SR-125 SB Ramp to SR-125 NB Ramp	4-Ln w/ RM	9,464	22,000	A
San Miguel Ranch / Mt Miguel Rd	SR-125 NB Ramp to Proctor Valley Rd	4-Ln w/ RM	10,118	22,000	A
Mt Miguel Rd	Proctor Valley Rd to Mackenzie Creek Rd	4-Ln w/ CLTL	5,053	22,000	A
H St	I-805 SB Ramps to I-805 NB Ramps	6-Ln w/ RM	52,190	50,000	D
	I-805 NB Ramps to Terra Nova Dr	7-Ln w/ RM	52,289	70,000	A
	Terra Nova Dr to Del Rey Blvd	6-Ln w/ RM	49,948	50,000	C
	Del Rey Blvd to Paseo Del Rey	6-Ln w/ RM	47,324	50,000	C
	Paseo Del Rey to Paseo Ranchero	6-Ln w/ RM	44,733	50,000	C
	Paseo Ranchero to Otay Lakes Rd	6-Ln w/ RM	37,457	50,000	A
	Otay Lakes Rd to SR-125 SB Ramps	4-Ln w/ RM	24,424	30,000	B
Proctor Valley Rd	SR-125 SB Ramps to SR-125 NB Ramps	6-Ln w/ RM	20,142	50,000	A
	SR-125 NB Ramps to Mt Miguel Rd	6-Ln w/ RM	21,699	50,000	A
	Mt Miguel Rd to Lane Ave	6-Ln w/ RM	19,956	50,000	A
	Lane Ave to Hunte Pkwy	6-Ln w/ RM	14,155	50,000	A
	Hunte Pkwy to Agua Vista Dr / Northwood Dr	4-Ln w/ RM	5,755	30,000	A
	Agua Vista Dr / Northwoods Dr to County of San Diego Boundary	2-Ln w/ RM	198	12,000	A
Telegraph Canyon Rd	Paseo Ranchero to Otay Lakes Rd	6-Ln w/ RM	35,495	50,000	A
Otay Lakes Rd	Ridgeback Rd to E. H St	6-Ln w/ RM	26,241	50,000	A
	E. H St to Otay Lakes Rd	6-Ln w/ RM	28,912	50,000	A
	Telegraph Canyon Rd to SR-125 SB Ramps	6-Ln w/ RM	41,931	50,000	B
	SR-125 SB Ramps to SR-125 NB Ramps	6-Ln w/ RM	46,406	50,000	C
	SR-125 NB Ramps to Eastlake Pkwy	6-Ln w/ RM	40,291	50,000	B
	Eastlake Pkwy to Lane Ave	6-Ln w/ RM	26,054	50,000	A
	Lane Ave to Hunte Pkwy	6-Ln w/ RM	18,832	50,000	A
	Hunte Pkwy to Woods Dr	6-Ln w/ RM	9,672	50,000	A
Olympic Pkwy	SR-125 NB Ramps to Eastlake Pkwy	8-Ln w/ RM	43,506	70,000	A
	Eastlake Pkwy to Hunte Pkwy	6-Ln w/ RM	16,289	50,000	A
	Hunte Pkwy to Olympic Vista Rd	4-Ln w/ RM	9,936	30,000	A
Paseo Del Rey	E. H St to E. J St	4-Ln w/ CLTL	11,356	22,000	A
Heritage Rd	Telegraph Canyon Rd to E. Palomar St	6-Ln w/ RM	21,087	50,000	A

Table 3.2b Roadway Segment LOS Results – Existing Conditions – City of Chula Vista

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS
La Media Rd	Otay Lakes Rd to E. Palomar St	6-Ln w/ RM	26,420	50,000	A
Eastlake Pkwy	Miller Rd to Otay Lakes Rd	4-Ln w/ RM	24,124	30,000	B
	Otay Lakes Rd to Olympic Pkwy	6-Ln w/ RM	29,836	50,000	A
	Olympic Pkwy to Hunte Pkwy	6-Ln w/ RM	17,751	40,000	A
Old Trail Dr	N Trail Ct to Proctor Valley Rd	2-Ln	2,790	7,500	A
Lane Ave	Proctor Valley Rd to Otay Lakes Rd	4-Ln w/ SM	10,804	22,000	A
Hunte Pkwy	Proctor Valley Rd to Otay Lakes Rd	4-Ln w/ RM	6,269	30,000	A
	Otay Lakes Rd to Olympic Pkwy	4-Ln w/ RM	10,897	30,000	A
	Olympic Pkwy to Eastlake Pkwy	6-Ln w/ RM	2,015	50,000	A
Northwoods Dr	Proctor Valley Rd to Blue Ridge Dr	2-Ln	1,433	7,500	A

Source: NDS, Chen Ryan Associates; January 2017

Note:
Bold Indicates LOS D, E or F.

As shown, all study area roadway segments within the City of Chula Vista currently operate at LOS C or better, with the exception of East H Street, between the I-805 SB Ramps and the I-805 NB Ramps (LOS D).

3.3.3 Two-Lane Highway Segment Analysis

Table 3.3 displays two-lane highway level of service analysis results for SR-94 under Existing conditions. This analysis was performed using the County of San Diego methodologies as described in Chapter 2.0.

Table 3.3 Two-Lane Highway Segment LOS Results – Existing Conditions

Highway	Segment	LOS Threshold (LOS D)	ADT	LOS
SR-94	Vista Sage Ln to Lyons Valley Rd	16,200	17,125	E
	Lyons Valley Rd to Jefferson Rd		15,246	D or better
	Jefferson Rd to Maxfield Rd		9,049	D or better
	Maxfield Rd to Melody Rd		8,024	D or better
	Melody Rd to Otay Lakes Rd		6,945	D or better

Source: NDS, Chen Ryan Associates; January 2017

As shown, all study area two-lane highway segments within the County of San Diego currently operate at LOS D or better, with the exception of SR-94 between Vista Sage Lane and Lyons Valley Road, which operates at LOS E.

3.3.4 Freeway Mainline Analysis

Table 3.4 displays freeway level of service analysis results for the study area freeway mainline facilities under Existing conditions. The freeway/state highway segment level of service analysis was performed utilizing the methodology presented in Section 2.0.

Table 3.4 Freeway/State Highway Segment LOS Results – Existing Conditions

Freeway	Segment	ADT	K	Peak Hour Volume	D	Lanes Per Direction	PHF	HVF	Volume (pc/h/ln)	V/C	LOS
I-805	Home Ave to SR-94	220,000	7.9%	17,292	0.58	4M	0.95	6.0%	2,813	1.172	F
	SR-94 to Market St	219,000	8.0%	17,586	0.60	4M	0.95	6.0%	2,943	1.226	F
	Market St to Imperial Ave	227,000	8.0%	18,228	0.60	4M + 1 HOV + 1 Aux	0.95	6.0%	2,440	1.017	F
	Imperial Ave to E Division St	209,000	8.0%	16,783	0.60	5M + 1 HOV	0.95	6.0%	2,042	0.851	D
	E Division St to Plaza Blvd	198,000	8.0%	15,919	0.60	5M + 1 HOV + 1 Aux	0.95	6.0%	1,793	0.747	D
	Plaza Blvd to SR-54	206,000	8.0%	16,562	0.60	5M + 1 HOV	0.95	6.0%	2,035	0.848	D
	SR-54 to Bonita Rd	262,000	8.0%	20,986	0.57	4M + 1 HOV + 1 Aux	0.95	7.3%	2,702	1.126	F
	Bonita Rd to East H St	207,000	8.0%	16,581	0.57	4M + 1 HOV + 1 Aux	0.95	7.3%	2,135	0.889	D
	East H St to Telegraph Canyon Rd	192,000	8.0%	15,379	0.57	5M + 1 HOV	0.95	7.3%	1,800	0.750	D
SR-125	SR-94 Junction to Jamacha Rd	112,000	8.8%	9,811	0.56	3M	0.95	4.4%	2,004	0.835	D
	Jamacha Rd to Paradise Valley Rd	93,000	8.8%	8,147	0.56	3M	0.95	4.4%	1,664	0.693	C
	Paradise Valley Rd to SR-54 Junction	99,000	8.8%	8,672	0.56	3M + 1 HOV	0.95	4.4%	1,518	0.633	C
	SR-54 to Mt. Miguel Rd	17,500	7.0%	1,225	0.59	2M	0.95	1.9%	388	0.162	A
	Mt. Miguel Rd to Proctor Valley Rd	16,300	7.0%	1,141	0.59	2M	0.95	1.9%	361	0.150	A
	Proctor Valley Rd to Otay Lakes Rd	12,600	7.0%	882	0.59	2M	0.95	1.9%	279	0.116	A
	Otay Lakes Rd to Olympic Pkwy	4,700	7.0%	329	0.59	2M	0.95	1.9%	104	0.043	A
	Olympic Pkwy to Birch Rd	4,300	7.0%	301	0.59	2M	0.95	1.9%	95	0.040	A
	Birch Rd to Main St	4,600	7.0%	322	0.59	2M	0.95	1.9%	102	0.042	A
	Main St to Otay Valley Rd	4,600	7.0%	322	0.59	2M	0.95	1.9%	102	0.042	A
	Otay Valley Rd to Lone Star Rd	4,600	7.0%	322	0.59	2M	0.95	1.9%	102	0.042	A
	Lone Star Rd to Otay Mesa Rd	4,600	7.0%	322	0.59	2M	0.95	1.9%	102	0.042	A
SR-54	I-805 to Reo Dr/Plaza Bonita Center Wy	118,000	8.2%	9,711	0.58	3M	0.95	1.9%	2,005	0.836	D
	Reo Dr/Plaza Bonita Center Wy to Woodman St	118,000	8.3%	9,818	0.55	3M	0.95	1.9%	1,936	0.806	D

Table 3.4 Freeway/State Highway Segment LOS Results – Existing Conditions

Freeway	Segment	ADT	K	Peak Hour Volume	D	Lanes Per Direction	PHF	HVF	Volume (pc/h/ln)	V/C	LOS
SR-54	Woodman St to Briarwood Rd	106,000	8.3%	8,766	0.55	3M	0.95	1.9%	1,728	0.720	C
	Briarwood Rd to SR-125 Junction	98,000	8.5%	8,281	0.52	3M + 1 HOV	0.95	1.9%	1,313	0.547	C

Source: Chen Ryan Associates; January 2017

Notes:
K = Percent of Traffic during the peak hour.
D = Directional split.
HVF = Percent of heavy vehicles.
PHF =Peak Hour Factor
M = Mainline lane.
HOV = High Occupancy Vehicle Lane.
Aux = Auxiliary lane.
Bold Indicates E or F.

As shown, all study area freeway segments currently operate at LOS D or better with the exception of the following segments:

- I-805, between Home Avenue and SR-94 (LOS F);
- I-805, between SR-94 and Market Street (LOS F);
- I-805, between Market Street and Imperial Avenue (LOS F); and
- I-805, between SR-54 and Bonita Road (LOS F).

3.3.5 Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements, the signalized ramp intersections within the project study area were analyzed using ILV procedures, as described in Section 2.6. ILV analysis results are displayed in **Table 3.5** and analysis worksheets for Existing conditions are provided in **Appendix B**.

Table 3.5 Ramp Intersection Capacity Analysis – Existing Conditions

Intersection	Peak Hour	ILV/hour	Capacity
SR-125 SB / Mt. Miguel Road	AM	218	Under Capacity
	PM	417	Under Capacity
SR-125 NB / Mt. Miguel Road	AM	300	Under Capacity
	PM	317	Under Capacity
I-805 SB / H Street	AM	1,350	At Capacity
	PM	1,866	Over Capacity
I-805 NB / H Street	AM	870	Under Capacity
	PM	792	Under Capacity

Table 3.5 Ramp Intersection Capacity Analysis – Existing Conditions

Intersection	Peak Hour	ILV/hour	Capacity
SR-125 SB / H Street	AM	470	Under Capacity
	PM	523	Under Capacity
SR-125 NB / H Street	AM	329	Under Capacity
	PM	276	Under Capacity
SR-125 SB / Mt. Miguel Road	AM	598	Under Capacity
	PM	792	Under Capacity
SR-125 NB / Otay Lakes Road	AM	538	Under Capacity
	PM	755	Under Capacity

Source: Chen Ryan Associates; January 2017

As shown, all study area freeway ramp intersections are currently operating either at or under capacity, with the exception of I-805 SB / H Street during the PM peak hour, which is currently over capacity.

3.3.6 Ramp Meter Analysis

Table 3.6 displays the ramp metering analysis conducted at study area freeway ramps under Existing conditions. Existing ramp meter rates were obtained from Caltrans. Ramp meter excess demand, delay and queuing results were calculated using the methodologies outlined in Section 2.7.

Table 3.6 Ramp Metering Analysis – Existing Conditions

Location	Peak Hour	Peak Hour Volume	Meter Rate[1]	Excess Demand[2]	Delay[3] (min)	Queue[4] (ft)
I-805 NB On-Ramp @ WB H Street	AM	665	934	0	0	0
I-805 NB On-Ramp @ EB H Street	AM	330	369	0	0	0

Source: Chen Ryan Associates; January 2017

Notes:
1. Meter Rate is the peak hour capacity expected to be processed through the ramp meter (veh/hr). This value was obtained from Caltrans.
2. Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater (veh/hr).
3. Delay = (Excess Demand / Meter Rate) X 60 min/hr.
4. Queue = (Excess Demand) X 29 ft/veh.

As shown, the current peak hour ramp volumes do not exceed the current ramp meter rates at both study area on-ramps that are metered.

4.0 Proposed Project

This section describes the Proposed Project, including land uses and estimated trip generation.

4.1 Project Description

The Proposed Project is located along Proctor Valley Road north of the City of Chula Vista city limits in the Jamul Community Planning Area of the unincorporated County of San Diego. The Proposed Project will be comprised of 1,119 single family dwelling units, 10,000 square feet of neighborhood commercial, 15.2 acres of public parks, 4.5 acres of community facilities and a fire station.

4.2 Project Trip Generation

Trip generation rates for the Proposed Project were developed utilizing SANDAG's Guide to Vehicular Traffic Generation Rates for the San Diego Region (SANDAG, April 2002) (SANDAG Trip Generation Manual). **Table 4.1** displays daily, as well as AM and PM peak hour, project trip generation.

Table 4.1 Project Trip Generation – Buildout

Land Use	Units	Trip Rate	ADT	%	AM Peak Hour					PM Peak Hour			
					Trips	Split	In	Out	%	Trips	Split	In	Out
Estate	125 DU	12/DU	1,500	8%	120	(3:7)	36	84	10 %	150	(7:3)	105	45
Single Family Detached Housing[3]	994 DU	10/DU	9,940	8%	795	(3:7)	238	557	10 %	994	(7:3)	697	297
Neighborhood/County Park (Undeveloped)	15.2 AC	5/AC	76	4%	3	(5:5)	1	1	8%	6	(5:5)	3	3
Community Facility	4.5 AC	30/AC	135	5%	7	(5:5)	4	3	8%	11	(5:5)	5	5
Fire Station & Satellite Sheriff's Facility	3 Staff	5.33/Staff	16	-	6	(6:4)	3	3	-	0	(5:5)	0	0
Mixed Use: Commercial /Residential	10 KSF	110/KSF	1,100	3%	33	(6:4)	20	13	9%	99	(5:5)	50	50
		Total	12,767		964		303	661		1,260		859	401

Source: SANDAG's Guide to Vehicular Traffic Generation Rates for the San Diego Region (SANDAG, April 2002)

As shown, the Proposed Project is anticipated to generate a total of 12,767 daily trips, including 964 (303-in / 661-out) AM peak hour trips and 1,260 (859-in / 401-out) PM peak hour trips under buildout

[3] As a worst-case scenario, this analysis assumes that 97 additional single family dwelling units would be constructed instead of the proposed elementary school. This was assumed to be a worst-case scenario since the 97 single-family dwelling units will generate more traffic than the proposed 8-acre school site (970 ADT vs 720 ADT). Additionally, the removal of the school site significantly limits the possibility for internal trip capture within the Proposed Project area.

If the 8-acre school site is developed in lieu of the additional 97 single family units, the Proposed Project would generate 12,517 daily trips, with 1,117 (419-in/698-out) during the AM peak hour, and 1,228 (817-in/411-out) during the PM peak hour. It should be noted that these calculations do not assume an internal trip capture (which would be around 10%).

conditions.

4.3 Project Equivalent Dwelling Units (EDU)

The metric Equivalent Dwelling Units (EDU) is used to determine the number of homes the Proposed Project can construct prior to triggering each of its identified significant impact(s), and when the recommended mitigation measure(s) will need to be implemented. EDUs are calculated by converting the total average daily trips (ADT) generated by the Proposed Project land use(s) into an equivalent single family dwelling unit. This conversion is calculated by dividing the number of ADT generated by each particular land use type by the number of trips generated by a single family dwelling unit (10 ADT). For example, a development consisting of 10 multi-family dwelling units would generate 80 ADT (10 MF units x 8 trips / unit = 80 ADT), which is equivalent to 8 single family dwelling units (80 ADT / 10 trips = 8 sf units) or 8 EDU. Table 4.2 summarizes the total EDUs for the Proposed Project.

Table 4.2 Project Equivalent Dwelling Units

Land Use	Units	ADT	EDUs
Estate	125 DU	1,500	150
Single Family Detached Housing	994 DU	9,940	994
Neighborhood/County Park (Undeveloped)	15.2 AC	76	8
Community Facility	4.5 AC	135	14
Fire Station	3 Staff	16	2
Mixed Use: Commercial /Residential	10 KSF	1,100	110
	Total	12,767	1,278

Source: Chen Ryan Associates; June 2017

As shown, under build-out conditions, the proposed project will have 1,278 EDUs.

4.4 Project Trip Distribution and Assignment

A Proposed Project trip Select Zone Assignment was utilized to estimate how project trips would likely distribute across the study area roadway network. As to Proctor Valley Road, the paved portion of the road presently terminates east of the Northwoods Drive/Agua Vista Drive intersection within the city of Chula Vista. As part of the Proposed Project, Proctor Valley Road would be constructed (i.e., paved): (1) as a Light Collector with a Raised Median (2.2A) between its current eastern terminus point within the City of Chula Vista across the County boundary to Project Driveway 5; (2) as a Light Collector (2.2E) between Project Driveway 5 and the Village 14 boundary and (3) as a two-lane interim roadway (28 feet paved on a 40-foot right-of-way) between the Village 14 Boundary and its current western terminus point located in the community of Jamul. Therefore, for purposes of the analysis, Proctor Valley Road was analyzed as a two-lane facility with a speed limit of 35 mph (2.2A) south of the Proposed Project and as a Local Public Road with a 25 mph speed limit along its current alignment, to the north of the Proposed Project. The Select Zone Assignment results are provided in **Appendix C**.

Based on a review of the Select Zone Assignment project trip distribution and assignment results to the larger study area, some inaccuracies and anomalies were discovered, particularly within the Jamul Community Planning Area. Manual adjustments were therefore made to the Select Zone Assignment

distribution and were documented in a memorandum entitled the *Proctor Valley Village 14 and Preserve - Project Vehicular Trip Distribution, March 9, 2015,* which was reviewed and approved by both the County of San Diego and City of Chula Vista and is included in **Appendix D**.

Since the anticipated development patterns (both land use and roadway network) in the areas around the Proposed Project area vary across the multiple analytical timeframes presented in this report, the Proposed Project trip distribution and assignment also vary for each analyzed future timeframe (Year 2025 and 2030 conditions). For that reason, Proposed Project trip distribution and assignment patterns are discussed and documented separately for each timeframe in their respective chapters.

4.5 Whispering Meadows Lane

As noted in the Project Description, the proposed project will include an access point via a new connection to Whispering Meadows Lane. The new connection point will extend from an internal project roadway, which provides access to the 125 estate homes located in PA 16/19, and connects to Proctor Valley Road to the west. Due to the location of the connection, and the resulting circuitous route that would be required for residents within the Village 14 portion of the project (994 single family homes) to access the connection (residents would need to drive out of direction approximately 1.1 miles to reach Melody Road), it is anticipated that this connection will be utilized primarily by the 125 estate homes in PA 16/19, and only those accessing the Jamul area (which is 6% of the total traffic generated from PA 16/19). The 125 estate homes would generate a total of 120 AM peak hour trips; thus, a total of 7 trips in the AM peak hour (120 total peak hour trips X 6%) and 9 trips in the PM peak hour (150 total peak hour trips X 6%) would utilize the Whispering Meadows connection on a typical day (See Table 4.1 of the TIS for detailed project trip generation calculations).

The County of San Diego traffic study guidelines require the analysis of all local roadway segments, including all State surface routes, intersections, and mainline freeway locations, where the Proposed Project would add 20 or more peak-hour trips in either direction to the existing roadway traffic. The reasoning behind the 20 peak-hour threshold is because it is reasonable to conclude that projects that would generate less than 20 peak hour trips at a particular location would not result in significant impacts at that location. Therefore, based on the calculations provided in the previous paragraph and the minimal number of peak hour trips that potentially would use the subject access point, the traffic added to Whispering Meadows Lane by the Proposed Project would be less than the 20 trip minimum. Therefore, no significant project related impacts are anticipated along Whispering Meadows Lane.

4.6 Project Phasing

The Proposed Project will be constructed in the following five (5) separate phases (South Village, Central Village, North Village, Planning Area 16 and Planning Area 19). However, it should be noted that these phases represent different sub-areas within the project area and do not necessarily correlate to the timing of the project development. As shown in the Project Construction Timeline, included in **Appendix E**, the development of the various project phases/areas overlap throughout project construction process, making it so there are no distinct construction timing phases. Instead, project construction will be continuous throughout multiple areas of the project area between the years 2021 through 2028. Since

the project phases are area based and not timing based, no phased project analysis was conducted. Instead an interim year (Year 2025) was analyzed to identify the project related impacts that may occur as the project is developed and impact triggers are defined based on the number of units that could be developed by the Proposed Project prior to the impact occurring. Table 4.3 summarizes the Public Roadway Improvements the proposed project will construct, as well as the timeframe by which the improvements will be implemented.

Table 4.3 Project Public Roadway Improvement Features

Project Design Feature	Timing of Implementation
Construction of Proctor Valley Road: • A Light Collector with a Raised Median (2.2A) between the City of Chula Vista to Project Driveway 5; • Light Collector between Project Driveway 5 and the Village 14 Boundary • Two-lane interim roadway (28 feet paved on a 40-foot right-of-way)[1] between the Village 14 Boundary and its current western terminus point located in the community of Jamul.	The Proposed Project will improve portions of Proctor Valley Road, connecting between the project area and the City of Chula Vista or the community of Jamul[2].
Project Driveway #1 – Roundabout	Prior to the occupancy of the South Village 14
Project Driveway #2 – Side Street Stop Controlled	Prior to the occupancy of the South Village 14
Project Driveway #3 – Roundabout	Prior to the occupancy of the Central Village 14
Project Driveway #4 – Roundabout	Prior to the occupancy of the Central Village 14
Project Driveway #5 – Roundabout	Prior to the occupancy of the North Village 14
Project Driveway #6 - Side Street Stop Controlled	Prior to the occupancy of the North Village 14
Project Driveway #7 - Side Street Stop Controlled	Prior to the occupancy of PA 16/19
Project Driveway #8 – Roundabout	Prior to the occupancy of PA 16/19

Source: Chen Ryan Associates; June 2017

Note

[1] The traffic index for an interim road is the same as the ultimate Mobility Element classification; therefor in the case of Proctor Valley Road (2.2A Light Collector) the traffic index is 6.5 with 3" asphaltic concrete over 8" aggregate base.

[2] Proctor Valley Road will be improved to adequate public roadway standards prior to the occupancy of the first dwelling unit, or such later date as may be approved by the County Director of Public Works. All of Proctor Valley Road will be improved prior to buildout of the Proposed Project, as per the Tentative Map Conditions.

5.0 Existing Plus Project Conditions

This section provides an analysis of existing traffic conditions with the addition of the Proposed Project. This section also describes the anticipated trip distribution and assignment for the Proposed Project under Existing Plus Project conditions.

5.1 Existing Plus Project Buildout Roadway Network and Traffic Volumes (All Facilities)

Roadway and intersection geometrics under Existing Plus Project Buildout conditions would be identical to the existing geometries displayed in Figure 3-2, with the addition of the following improvements that would be constructed by the Project:

- The Proposed Project will construct Proctor Valley Road as follows:
  - A Light Collector with a Raised Median (2.2A) between its current eastern terminus within the City of Chula Vista to Project Driveway 5;
  - A Light Collector between Project Driveway 5 and the Village 14 Boundary; and
  - As a two-lane interim roadway (28 feet paved on a 40-foot right-of-way) between the Village 14 Boundary and its current western terminus point located in the community of Jamul.
- The Proposed Project will extend Whispering Meadows Lane to the South, as a Rural Road, to provide a secondary access point for Planning Area 16.
- All Project Driveways and access points.

Project Buildout trip assignment was derived by assigning the project buildout trip generation estimates to the surrounding roadway network based on trip distribution patterns discussed in Section 4.4 and displayed in **Figure 5-1**. **Figure 5-2** and **Figure 5-3** display the assumed Project Buildout trip assignment for study area roadways and intersections, respectively. Existing Plus Project Buildout traffic volumes were derived by adding the project trip assignment volumes to the existing traffic volumes (displayed in Figure 3-3). Existing Plus Project Buildout daily roadway and peak hour intersection volumes are displayed in **Figure 5-4** and **Figure 5-5**, respectively.

5.1.1 Existing Plus Project Buildout Conditions Traffic Operations Analysis

Analyses were conducted using the methodologies described in Chapter 2.0. Intersection, roadway segment, two-lane highway segment, and freeway mainline Level of Service analysis, as well as freeway ramp intersection ILV analysis results are discussed separately below.

Intersection Analysis

Table 5.1 displays intersection Level of Service and average vehicle delay results under Existing Plus Project Buildout conditions. Level of Service calculation worksheets for the Existing Plus Project Buildout conditions are provided in **Appendix F.**

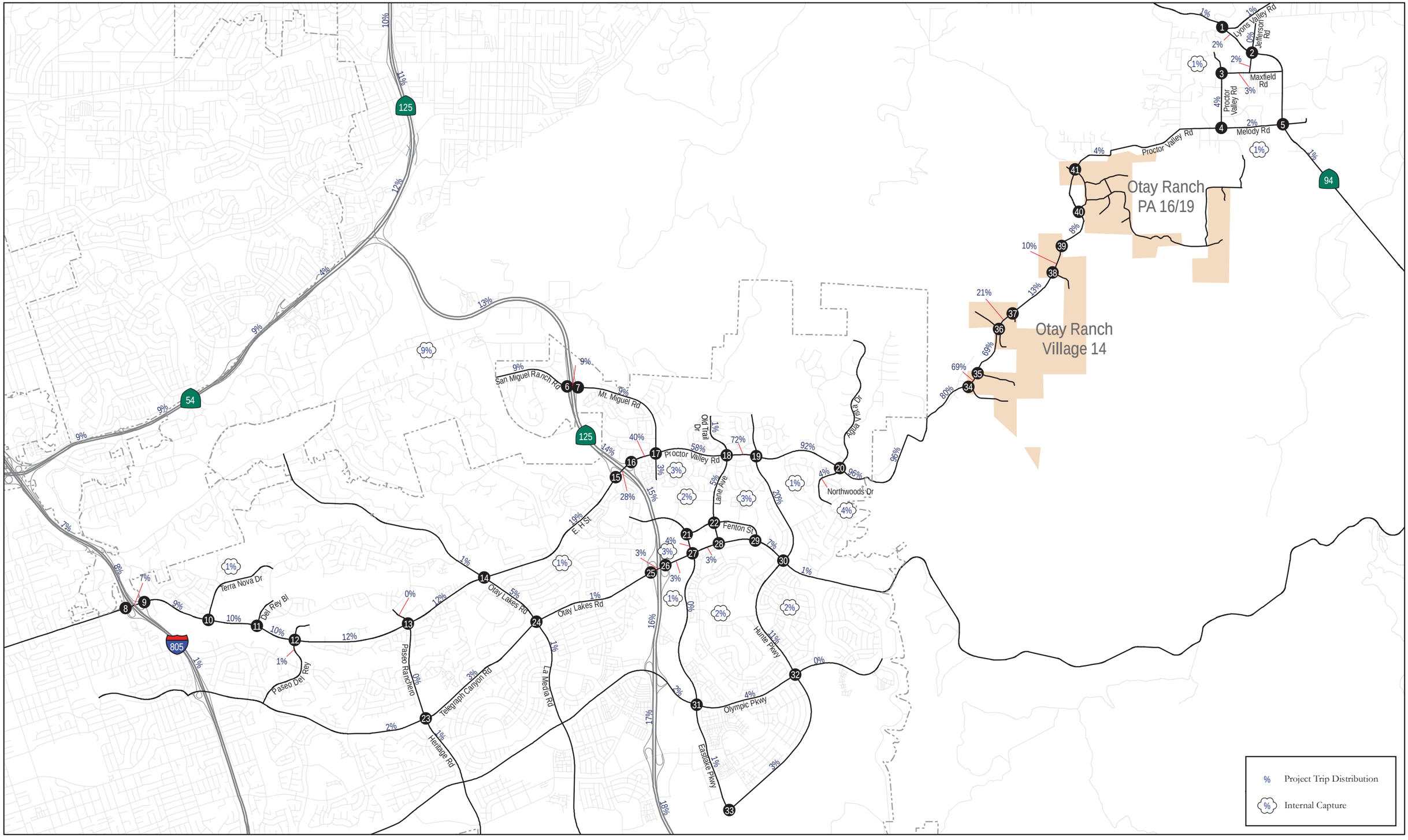

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Figure 5-1
Project Trip Distribution - Existing Conditions

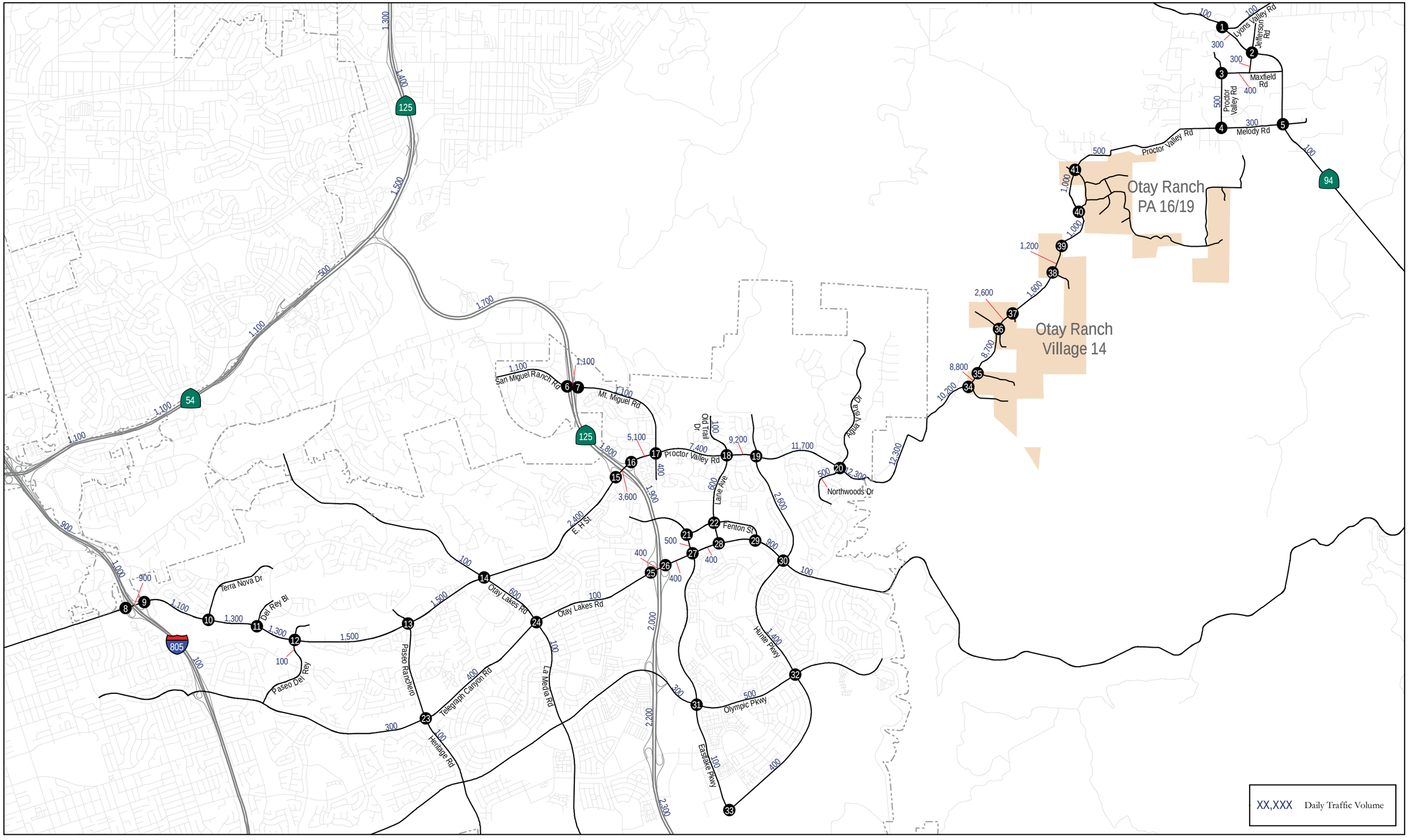

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Figure 5-2

Proposed Project Daily Roadway Trip Assignment - Existing Plus Project Buildout Conditions

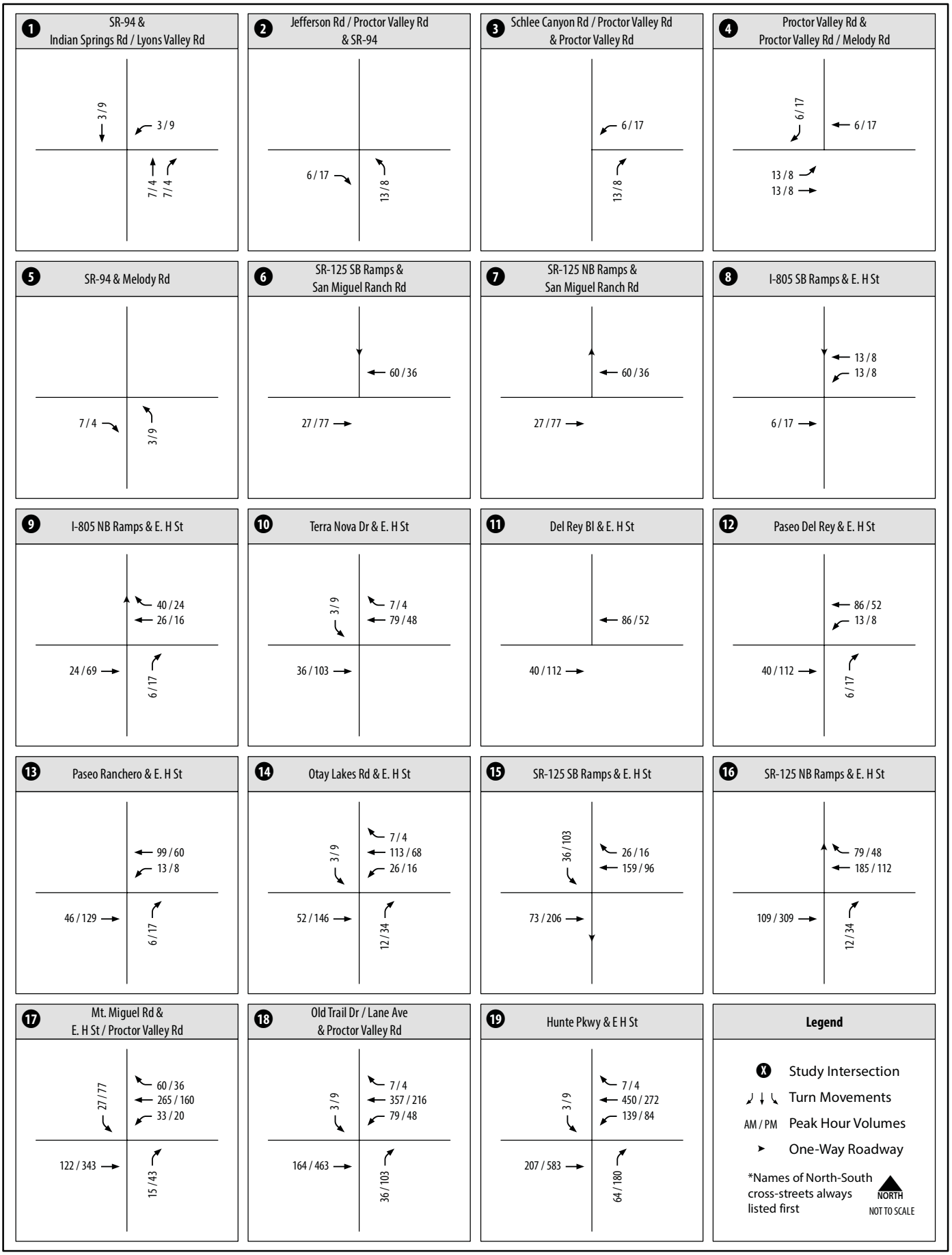

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Figure 5-3

Proposed Project Peak Hour Intersection Trip Assignment - Existing Plus Project Buildout Conditions (Intersections 1-19)

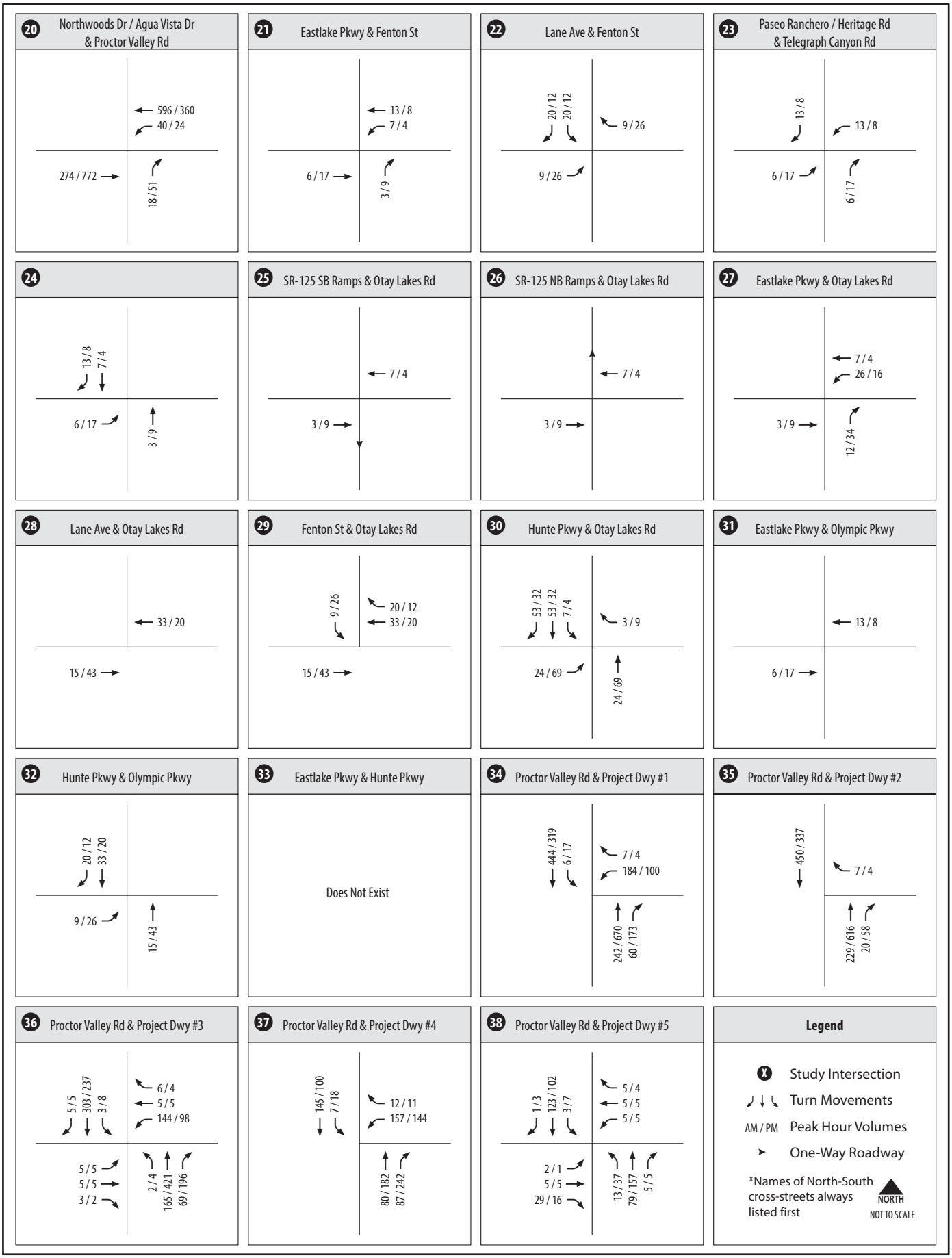

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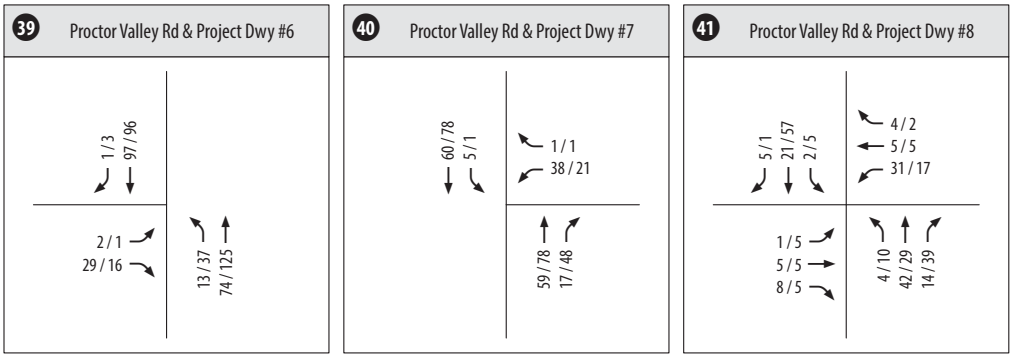
Figure 5-3

Proposed Project Peak Hour Intersection Trip Assignment - Existing Plus Project Buildout Conditions (Intersections 20-38)



Legend

- X — Study Intersection
- Turn Movements
- AM / PM — Peak Hour Volumes
- One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH

NOT TO SCALE

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Figure 5-3

Proposed Project Peak Hour Intersection Trip Assignment - Existing Plus Project Buildout Conditions (Intersections 39-41)

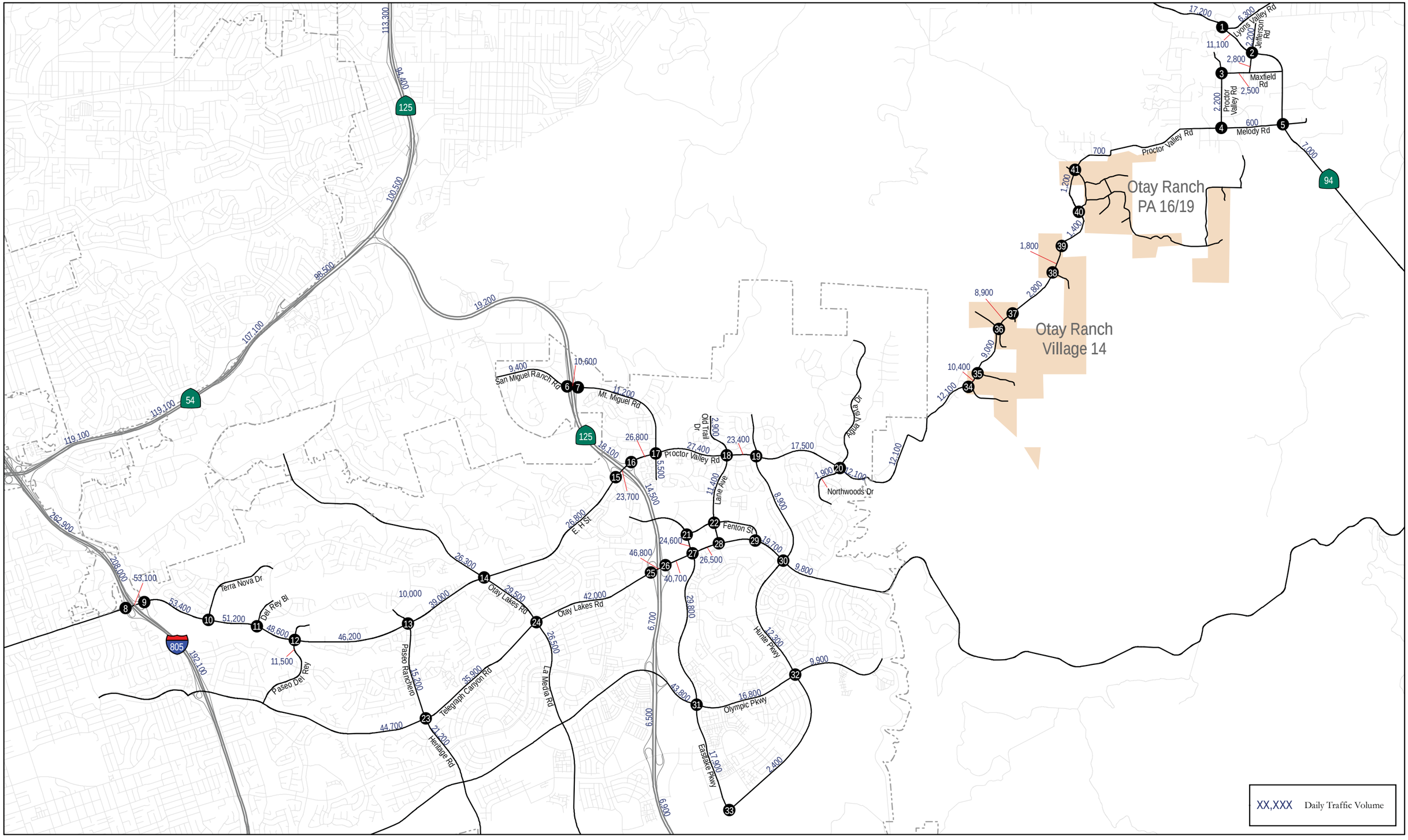

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Figure 5-4

Daily Roadway Traffic Volumes -
Existing Plus Project Buildout Conditions

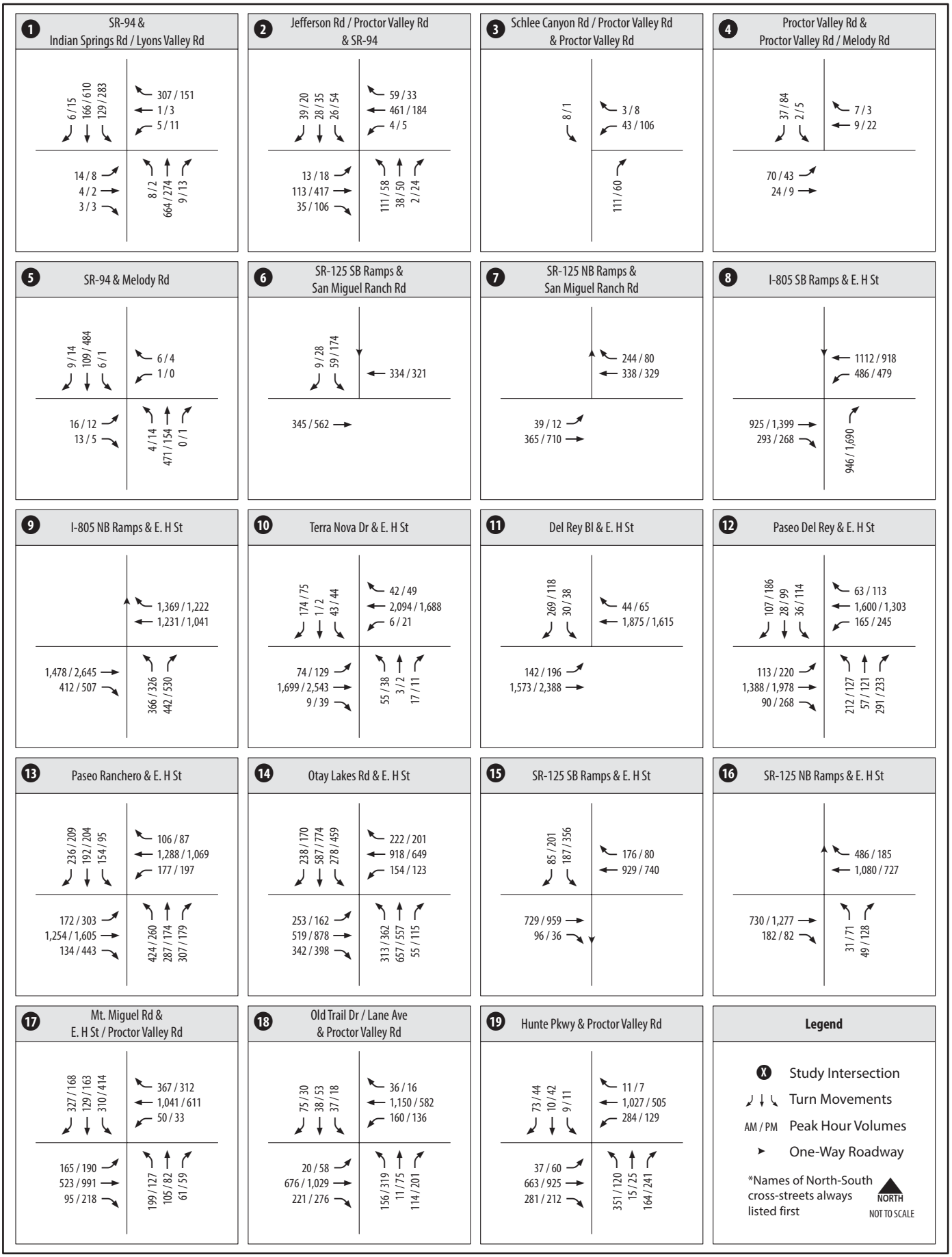

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Figure 5-5

Peak Hour Intersection Traffic Volumes - Existing Plus Project Buildout Conditions (Intersections 1-19)

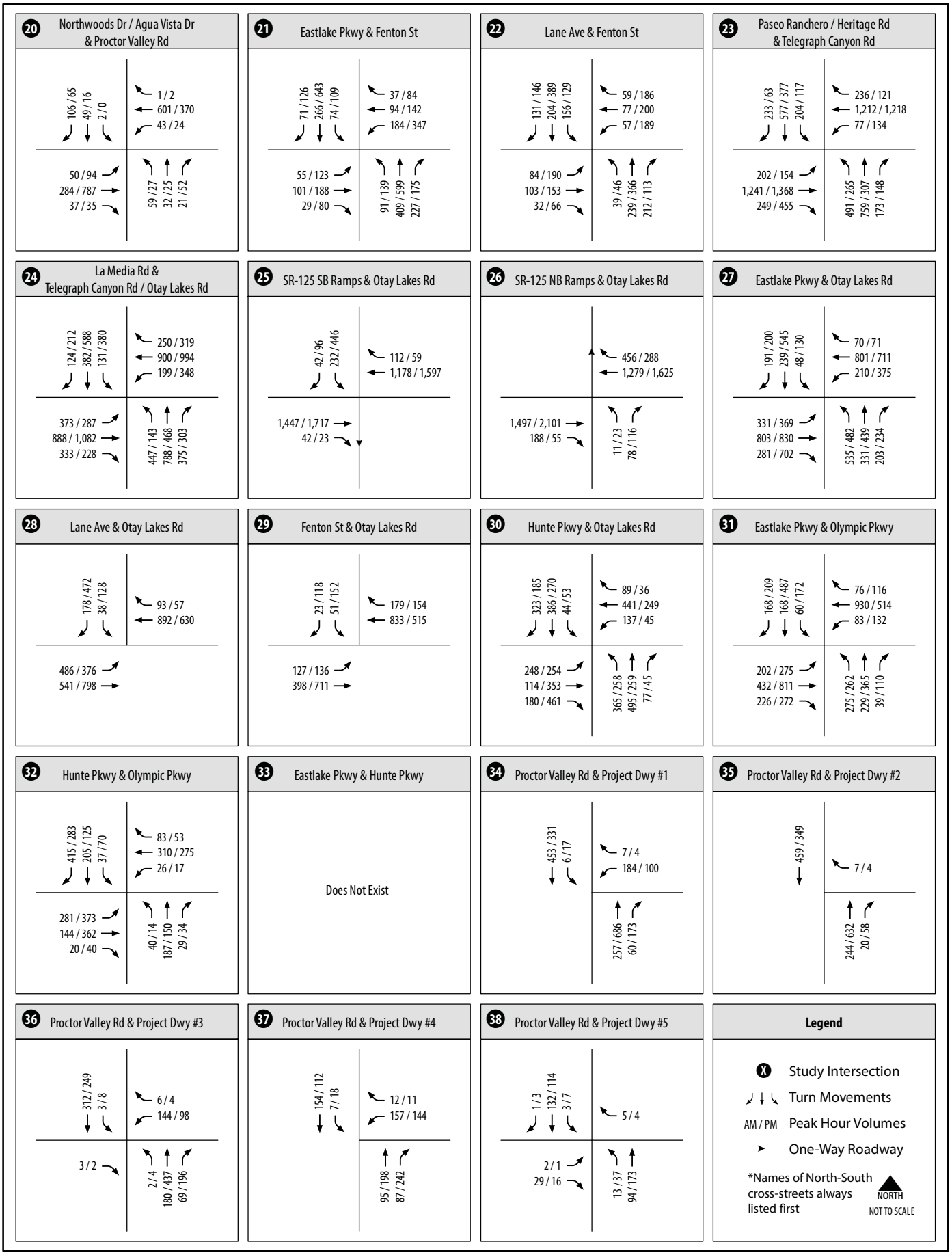

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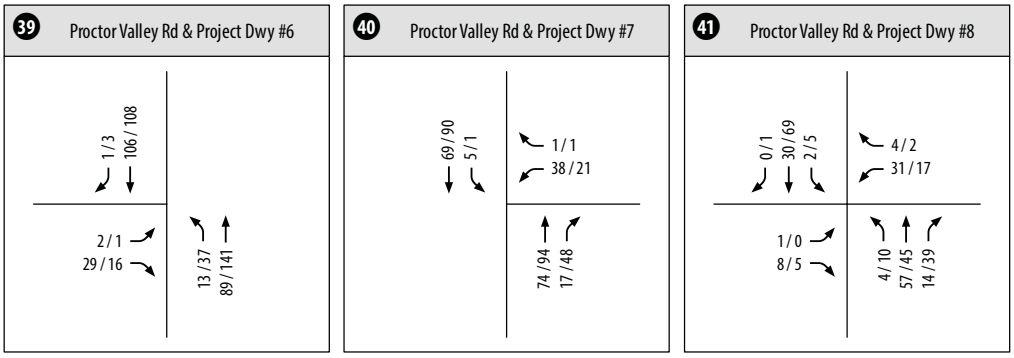
Figure 5-5

Peak Hour Intersection Traffic Volumes - Existing Plus Project Buildout Conditions (Intersections 20-38)



Legend

- X — Study Intersection
- Turn Movements
- AM / PM — Peak Hour Volumes
- One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH
NOT TO SCALE

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Figure 5-5

Peak Hour Intersection Traffic Volumes -
Existing Plus Project Buildout Conditions (Intersections 39-41)

Table 5.1 Peak Hour Intersection LOS Results – Existing Plus Project Buildout Conditions

#	Intersection	Control	Existing + Project				Existing		Impact Criteria by Jurisdiction			Significant Impact?
			AM Peak Hour		PM Peak Hour		Avg. Delay (sec.)	LOS	Caltrans/ San Diego	Chula Vista	County	
			Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	AM/PM	AM/PM	AM/PM	AM/PM	AM/PM	
1	SR-94 & Lyons Valley Road	SSSC	86.8	F	82.8	F	81.5 / 79.7	F / F	5.3 / 3.1			Yes (Direct)
2	Proctor Valley Road/Jefferson Road & SR-94	Signal	10.8	B	10.2	B	10.6 / 10.0	B / B	0.2 / 0.2			No
3	Proctor Valley Road & Maxfield Road	SSSC	9.0	A	9.1	A	9.0 / 9.0	A / A				No
4	Proctor Valley Road & Melody Road	SSSC	8.6	A	8.5	A	8.4 / 8.4	A / A				No
5	SR-94 & Melody Road	SSSC	13.6	B	18.1	C	13.6 / 18.1	B / C	0.0 / 0.0			No
6	San Miguel Ranch Road & SR-125 SB Ramps	Signal	21.8	C	18.9	B	21.7 / 18.8	C / B		11.6% / 10.4%		No
7	San Miguel Ranch Road & SR-125 NB Ramp	Signal	16.9	B	13.5	B	16.7 / 13.3	B / B		8.8% / 10.0%		No
8	I-805 SB Ramp & East H Street	Signal	8.2	A	10.1	B	7.8 / 9.7	A / A		0.9% / 0.7%		No
9	I-805 NB Ramp & East H Street	Signal	10.0	A	12.0	B	9.8 / 11.4	A / B		1.8% / 2.0%		No
10	Terra Nova Drive & East H Street	Signal	13.9	B	12.0	B	13.0 / 11.0	B / B		3.0% / 3.5%		No
11	Del Rey Boulevard & East H Street	Signal	11.6	B	8.7	A	11.1 / 8.5	B / A		3.2% / 3.7%		No
12	Paseo Del Rey & East H Street	Signal	20.8	C	28.5	C	19.9 / 25.7	B / C		3.5% / 3.8%		No
13	Paseo Ranchero & East H Street	Signal	51.7	D	48.2	D	50.8 / 42.6	D / D		3.5% / 4.4%		No
14	Otay Lakes Road & East H Street	Signal	42.6	D	33.4	C	37.2 / 29.2	D / C		4.7% / 5.7%		No
15	SR-125 SB Ramp & East H Street	Signal	5.5	A	6.9	A	5.0 / 6.1	A / A		13.4% / 17.7%		No
16	SR-125 NB Ramp & Proctor Valley Road	Signal	3.3	A	4.1	A	3.4 / 4.0	A / A		15.1% / 20.4%		No
17	Mt Miguel Road & Proctor Valley Road	Signal	33.8	C	28.3	C	23.7 / 20.3	C / C		15.5% / 20.2%		No
18	Lane Avenue & Proctor Valley Road	Signal	27.2	C	40.2	D	16.8 / 23.0	B / C		24.0% / 30.2%		No

Table 5.1 Peak Hour Intersection LOS Results – Existing Plus Project Buildout Conditions

#	Intersection	Control	Existing + Project				Existing		Impact Criteria by Jurisdiction			Significant Impact?
			AM Peak Hour		PM Peak Hour		Avg. Delay (sec.)	LOS	Caltrans/ San Diego	Chula Vista	County	
			Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	AM/PM	AM/PM	AM/PM	AM/PM	AM/PM	
19	Hunte Parkway & Proctor Valley Road	Signal	33.6	C	16.2	B	18.9 / 13.6	B / B		29.7% / 48.8%		No
20	Agua Vista Drive / Northwoods Drive & Proctor Valley Road	AWSC	55.4	F	40.2	E	8.6 / 8.4	A / A		72.2% / 80.6%		Yes (Direct)
21	East Lake Parkway & Fenton Street	Signal	18.8	B	33.1	C	18.2 / 31.4	B / C		1.8% / 1.4%		No
22	Lane Avenue & Fenton Street	Signal	18.3	B	27.3	C	17.8 / 24.9	B / C		4.2% / 3.5%		No
23	Heritage Road/Paseo Ranchero & Telegraph Canyon Road	Signal	46.6	D	25.4	C	45.4 / 24.9	D / C		0.7% / 1.1%		No
24	La Media Road & Telegraph Canyon Road / Otay Lakes Road	Signal	27.6	C	27.2	C	27.1 / 26.8	C / C		0.6% / 0.7%		No
25	SR-125 SB Ramps & Otay Lakes Road	Signal	9.6	A	11.0	B	9.6 / 10.9	A / B		0.0% / 0.3%		No
26	SR-125 NB Ramps & Otay Lakes Road	Signal	8.4	A	8.8	A	8.4 / 8.8	A / A		0.0% / 0.3%		No
27	East Lake Parkway & Otay Lakes Road	Signal	32.2	C	33.1	C	31.9 / 32.6	C / C		1.4% / 1.2%		No
28	Lane Avenue & Otay Lakes Road	Signal	11.5	B	35.6	D	11.3 / 25.4	B / C		2.2% / 2.6%		No
29	Fenton Street & Otay Lakes Road	Signal	8.9	A	9.8	A	8.8 / 9.0	A / A		4.8% / 5.7%		No
30	Hunte Parkway & Otay Lakes Road	Signal	26.1	C	18.5	B	23.1 / 17.2	C / B		5.7% / 8.7%		No
31	East Lake Parkway & Olympic Parkway	Signal	17.0	B	19.7	B	17.0 / 19.7	B / B		0.7% / 0.7%		No
32	Hunte Parkway & Olympic Parkway	Signal	16.0	B	14.3	B	15.8 / 13.9	B / B		4.3% / 5.6%		No
33	East Lake Parkway & Hunte Parkway	Signal	Does Not Exist				Does Not Exist			-		No
34	Proctor Valley Road & Project Driveway #1	RA	8.6	A	16.7	C	Does Not Exist					No
35	Proctor Valley Road & Project Driveway #2	SSSC	9.7	A	13.2	B	Does Not Exist					No

Table 5.1 Peak Hour Intersection LOS Results – Existing Plus Project Buildout Conditions

#	Intersection	Control	Existing + Project				Existing		Impact Criteria by Jurisdiction			Significant Impact?
			AM Peak Hour		PM Peak Hour		Avg. Delay (sec.)	LOS	Caltrans/ San Diego	Chula Vista	County	
			Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	AM/PM	AM/PM	AM/PM	AM/PM	AM/PM	
36	Proctor Valley Road & Project Driveway #3	RA	6.5	A	9.7	A	Does Not Exist					No
37	Proctor Valley Road & Project Driveway #4	RA	5.2	A	7.2	A	Does Not Exist					No
38	Proctor Valley Road & Project Driveway #5	RA	4.3	A	4.8	A	Does Not Exist					No
39	Proctor Valley Road & Project Driveway #6	SSSC	9.0	A	9.0	A	Does Not Exist					No
40	Proctor Valley Road & Project Driveway #7	SSSC	9.6	A	9.8	A	Does Not Exist					No
41	Proctor Valley Road & Project Driveway #8	RA	3.8	A	4.0	A	Does Not Exist					No

Source: Chen Ryan Associates; January 2017

Notes:
AWSC: All-way stop controlled intersection.
SSSC: Side Street stop controlled intersection, the delay shown is the worst delay experienced by any of the approaches.
RA: Roundabout.
Bold Indicates LOS E or F.

As shown in the table, all study area intersections are projected to operate at LOS D or better under Existing Plus Project Buildout conditions with the exception of the following:

- SR-94 & Lyons Valley Road (LOS F during the AM and PM peak hours); and
- Northwoods Drive / Agua Vista Drive & Proctor Valley Road (LOS F - AM peak hour / LOS E - PM peak hour).

Based on the significance criteria outlined in Section 2.8, the traffic associated with the Proposed Project would cause a significant direct impact at SR-94 & Lyons Road and a significant project-specific impact at Northwoods Drive / Agua Vista Drive & Proctor Valley Road.

Roadway Segment Analysis

Table 5.2a displays the Level of Service analysis results for the study area roadway segments located within the County of San Diego under Existing Plus Project Buildout conditions.

Table 5.2a Roadway Segment LOS Results – Existing Plus Project Buildout Conditions – County of San Diego

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS D)	LOS w/ Project	LOS w/o Project	Project ADT	Significant Impact?
Proctor Valley Rd	City of Chula Vista boundary to Project Driveway #1	2-Ln w/ RM	12,100	13,500	D	A	11,900	No
	Project Driveway #1 to Project Driveway #2	2-Ln w/ RM	10,400	13,500	D	A	10,200	No
	Project Driveway #2 to Project Driveway #3	2-Ln w/ RM	9,000	13,500	C	A	8,800	No
	Project Driveway #3 to Project Driveway #4	2-Ln w/ RM	8,900	13,500	C	A	8,700	No
	Project Driveway #4 to Project Driveway #5	2-Ln w/ RM	2,800	13,500	A	A	2,600	No
	Project Driveway #5 to Project Village 14 boundary	2-Ln	1,800	10,900	A	A	1,600	No
	Village 14 boundary to Project Driveway #7	2-Ln	1,400	10,900	A	A	1,200	No
	Project Driveway #7 to Project Driveway #8	2-Ln	1,200	10,900	A	A	1,000	No
	Project Driveway #8 to Melody Rd	2-Ln	700	8,700	A	A	500	No
	Melody Rd to Schlee Canyon Rd	2-Ln	2,200	8,700	A	A	500	No
	Schlee Canyon Rd to Maxfield Rd	2-Ln	2,500	8,700	A	A	400	No
	Maxfield Rd to SR-94	2-Ln	2,800	8,700	A	A	300	No
Melody Rd	Proctor Valley Rd to SR-94	2-Ln	600	8,700	A	A	300	No
Jefferson Rd	SR-94 to Olive Vista Dr	2-Ln	2,200	8,700	A	B	0	No

Table 5.2a Roadway Segment LOS Results – Existing Plus Project Buildout Conditions – County of San Diego

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS D)	LOS w/ Project	LOS w/o Project	Project ADT	Significant Impact?
Lyons Valley Rd	SR-94 to Olive Vista Dr	2-Ln	6,300	8,700	B	B	100	No

Source: Chen Ryan Associates; January 2017

As shown in the table, all study area roadway segments within the County of San Diego are projected to operate at LOS D or better within the addition of project traffic.

Based on the County of San Diego significance criteria outlined in Section 2.8, the traffic associated with the Proposed Project would not cause any significant changes in roadway segment operations under Existing Plus Project Buildout conditions. Therefore, no significant project related impacts were identified within the county of San Diego and no mitigation is required.

Table 5.2b displays the Level of Service analysis results for study area roadway segments within the City of Chula Vista under Existing Plus Project Buildout conditions. As shown in the table, all study area roadway segments are anticipated to continue to operate at LOS C or better with the exception of the following segments, with the Proposed Project resulting in a significant impact at one of the segments:

- *East H Street between I-805 SB Ramps and I-805 NB Ramps (LOS D):*
  - Proposed buildout project trips would comprise 1.69% (less than 5%) of the total segment volume;
  - Proposed buildout project trips would add 900 ADT (more than 800 ADT);
  - The intersections of East H Street / I-805 SB Ramps and East H Street / I-805 NB Ramps are both projected to operate at LOS B or better during peak hours;
  - Therefore, the Proposed Project **would not have a significant** impact to this roadway segment.
- *East H Street between Terra Nova Drive and Del Rey Boulevard (LOS D):*
  - Proposed buildout project trips would comprise 2.54% (less than 5%) of the total segment volume;
  - Proposed buildout project trips would add 1,300 ADT (more than 800 ADT);
  - The intersections of East H Street / Terra Nova Drive and East H Street / Del Rey Boulevard are both projected to operate at LOS B or better during peak hours.
  - Therefore, the Proposed Project **would not have a significant impact** to this roadway segment.
- *Proctor Valley Road between Northwoods Drive to the City of Chula Vista Boundary (LOS D):*
  - Proposed buildout project trips would comprise 98.40% (more than 5%) of the total segment volume;
  - Proposed buildout project trips would add 12,300 ADT (more than 800 ADT);
  - The intersection of Northwoods Drive/Agua Vista Drive & Proctor Valley Road is projected to operate at LOS F during the AM peak hour and LOS E during the PM peak hour;
  - Therefore, the Proposed Project **would have a significant direct impact** to this roadway segment.

Table 5.2b Roadway Segment LOS Results – Existing Plus Project Buildout Conditions – City of Chula Vista

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project ADT > 800?	Project Traffic ≥ 5%?	Peak Hour Operations	Significant Impact?
San Miguel Ranch Rd	Proctor Valley Rd to SR-125 SB Ramp	4-Ln w/ RM	9,400	22,000	A	1,100	11.70%	-	No
	SR-125 SB Ramp to SR-125 NB Ramp	4-Ln w/ RM	10,600	22,000	A	1,100	10.38%	-	No
San Miguel Ranch / Mt Miguel Rd	SR-125 NB Ramp to Proctor Valley Rd	4-Ln w/ RM	11,200	22,000	A	1,100	9.82%	-	No
Mt Miguel Rd	Proctor Valley Rd to Mackenzie Creek Rd	4-Ln w/ CLTL	5,500	22,000	A	400	7.27%	-	No
H St	I-805 SB Ramps to I-805 NB Ramps	6-Ln w/ RM	53,100	50,000	D	900	1.69%	Yes	No
	I-805 NB Ramps to Terra Nova Dr	7-Ln w/ RM	53,400	70,000	B	1,100	2.06%		No
	Terra Nova Dr to Del Rey Blvd	6-Ln w/ RM	51,200	50,000	D	1,300	2.54%	Yes	No
	Del Rey Blvd to Paseo Del Rey	6-Ln w/ RM	48,600	50,000	C	1,300	2.67%	-	No
	Paseo Del Rey to Paseo Ranchero	6-Ln w/ RM	46,200	50,000	C	1,500	3.25%	-	No
	Paseo Ranchero to Otay Lakes Rd	6-Ln w/ RM	39,000	50,000	B	1,500	3.85%	-	No
	Otay Lakes Rd to SR-125 SB Ramps	4-Ln w/ RM	26,800	30,000	C	2,400	8.96%	-	No
Proctor Valley Rd	SR-125 SB Ramps to SR-125 NB Ramps	6-Ln w/ RM	23,700	50,000	A	3,600	15.19%	-	No
	SR-125 NB Ramps to Mt Miguel Rd	6-Ln w/ RM	26,800	50,000	A	5,100	19.03%	-	No
	Mt Miguel Rd to Lane Ave	6-Ln w/ RM	27,400	50,000	A	7,400	27.01%	-	No
	Lane Ave to Hunte Pkwy	6-Ln w/ RM	23,400	50,000	A	9,200	39.32%	-	No
	Hunte Pkwy to Agua Vista Dr / Northwood Dr	4-Ln w/ RM	17,500	30,000	A	11,700	66.86%	-	No
	Agua Vista Dr / Northwoods Dr to County of San Diego Boundary	2-Ln w/ RM	12,500	12,000	D	12,300	98.40%	No	Yes (Direct)

Table 5.2b Roadway Segment LOS Results – Existing Plus Project Buildout Conditions – City of Chula Vista

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project ADT > 800?	Project Traffic ≥ 5%?	Peak Hour Operations	Significant Impact?
Telegraph Canyon Rd	Paseo Ranchero to Otay Lakes Rd	6-Ln w/ RM	35,900	50,000	A	400	1.11%	-	No
Otay Lakes Rd	Ridgeback Rd to E. H St	6-Ln w/ RM	26,300	50,000	A	100	0.38%	-	No
	E. H St to Otay Lakes Rd	6-Ln w/ RM	29,500	50,000	A	600	2.03%	-	No
	Telegraph Canyon Rd to SR-125 SB Ramps	6-Ln w/ RM	42,000	50,000	B	100	0.24%	-	No
	SR-125 SB Ramps to SR-125 NB Ramps	6-Ln w/ RM	46,800	50,000	C	400	0.85%	-	No
	SR-125 NB Ramps to Eastlake Pkwy	6-Ln w/ RM	40,700	50,000	B	400	0.98%	-	No
	Eastlake Pkwy to Lane Ave	6-Ln w/ RM	26,500	50,000	A	400	1.51%	-	No
	Lane Ave to Hunte Pkwy	6-Ln w/ RM	19,700	50,000	A	900	4.57%	-	No
	Hunte Pkwy to Woods Dr	6-Ln w/ RM	9,800	50,000	A	100	1.02%	-	No
Olympic Pkwy	SR-125 NB Ramps to Eastlake Pkwy	8-Ln w/ RM	43,800	70,000	A	300	0.68%	-	No
	Eastlake Pkwy to Hunte Pkwy	6-Ln w/ RM	16,800	50,000	A	500	2.98%	-	No
	Hunte Pkwy to Olympic Vista Rd	4-Ln w/ RM	9,900	30,000	A	0	0.00%	-	No
Paseo Del Rey	E. H St to E. J St	4-Ln w/ CLTL	11,500	22,000	A	100	0.87%	-	No
Heritage Rd	Telegraph Canyon Rd to E. Palomar St	6-Ln w/ RM	21,200	50,000	A	100	0.47%	-	No
La Media Rd	Otay Lakes Rd to E. Palomar St	6-Ln w/ RM	26,500	50,000	A	100	0.38%	-	No
Eastlake Pkwy	Miller Rd to Otay Lakes Rd	4-Ln w/ RM	24,600	30,000	B	500	2.03%	-	No
	Otay Lakes Rd to Olympic Pkwy	6-Ln w/ RM	29,800	50,000	A	0	0.00%	-	No

Table 5.2b Roadway Segment LOS Results – Existing Plus Project Buildout Conditions – City of Chula Vista

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project	Project ADT > 800?	Project Traffic ≥ 5%?	Peak Hour Operations	Significant Impact?
Eastlake Pkwy	Olympic Pkwy to Hunte Pkwy	6-Ln w/ RM	17,900	40,000	A	100	0.56%	-	No
Old Trail Dr	N Trail Ct to Proctor Valley Rd	2-Ln	2,900	7,500	A	100	3.45%	-	No
Lane Ave	Proctor Valley Rd to Otay Lakes Rd	4-Ln w/ SM	11,400	22,000	A	600	5.26%	-	No
Hunte Pkwy	Proctor Valley Rd to Otay Lakes Rd	4-Ln w/ RM	8,900	30,000	A	2,600	29.21%	-	No
	Otay Lakes Rd to Olympic Pkwy	4-Ln w/ RM	12,300	30,000	A	1,400	11.38%	-	No
	Olympic Pkwy to Eastlake Pkwy	6-Ln w/ RM	2,400	50,000	A	400	16.67%	-	No
Northwoods Dr	Proctor Valley Rd to Blue Ridge Dr	2-Ln	1,900	7,500	A	500	26.32%	-	No

Source: Chen Ryan Associates; January 2017

Notes:
Peak Hour Operations: Do intersections along the roadway segment operate at LOS D or better during the peak hours? – For segments operating at D, E or F.
Bold Indicates LOS D, E or F.

Two-Lane Highway Segment Analysis

Table 5.3 displays two-lane highway Level of Service analysis results for SR-94 under Existing Plus Project Buildout conditions. This analysis was performed using the County of San Diego methodologies as described in Chapter 2.0.

Table 5.3 Two-Lane Highway Segment LOS Results – Existing Plus Project Conditions

Highway	Segment	LOS Threshold (LOS D)	ADT	LOS w/ Project	LOS w/o Project	Project ADT	Significant Impact?
SR-94	Vista Sage Ln to Lyons Valley Rd	16,200	17,200	E	E	100	No
	Lyons Valley Rd to Jefferson Rd		15,600	D or better	D or better	300	No
	Jefferson Rd to Maxfield Rd		9,000	D or better	D or better	0	No
	Maxfield Rd to Melody Rd		8,000	D or better	D or better	0	No
	Melody Rd to Otay Lakes Rd		7,000	D or better	D or better	100	No

Source: Chen Ryan Associates; January 2017

Note:
Bold Indicates LOS E or F.

As shown, all two-lane highway segments within the County of San Diego are projected to operate at LOS D or better with the addition of Proposed Project traffic, with the exception of SR-94 between Vista Sage Lane and Lyons Valley Road, which would operate at LOS E.

However, based on the County of San Diego significance criteria outlined in Section 2.8, the traffic associated with the Proposed Project would not cause any significant changes in two-lane highway operations under Existing Plus Project Buildout conditions (the project adds fewer than 325 daily trips). Therefore, no significant project related impacts were identified and no mitigation is required.

Freeway Mainline Analysis

Table 5.4 displays freeway Level of Service analysis results for the study area freeway mainline facilities under Existing Plus Project Buildout conditions. The freeway/state highway segment Level of Service analysis was performed utilizing the methodology presented in Section 2.5. The percent of traffic during the peak hour (K), directional split (D) and percent of heavy vehicles (HV) are expected to be the same as those under Existing conditions (see Table 3.4).

As shown in the table, all study area freeway mainline segments are projected to operate at LOS D or better with the addition of project traffic, with the exception of the following:

- I-805 between Home Avenue and SR-94 (LOS F);
- I-805 between SR-94 and Market Street (LOS F);
- I-805 between Market Street and Imperial Avenue (LOS F); and
- I-805 between SR-54 and Bonita Road (LOS F).

Table 5.4 Freeway/State Highway Segment LOS Results – Existing Plus Project Buildout Conditions

Freeway	Segment	ADT	K	Peak Hour Volume	D	Lanes Per Direction	PHF	HVF	Volume (pc/h/ln)	V/C	LOS	Δ V/C	LOS w/o Project	Significant Impact?
I-805	Home Ave to SR-94	220,100	7.86%	17,300	0.58	4M	0.95	6.00%	2,814	1.173	F	0.001	F	No
	SR-94 to Market St	219,300	8.03%	17,610	0.60	4M	0.95	6.00%	2,947	1.228	F	0.002	F	No
	Market St to Imperial Ave	227,400	8.03%	18,260	0.60	4M + 1 HOV + 1 Aux	0.95	6.00%	2,444	1.018	F	0.002	F	No
	Imperial Ave to E Division St	209,500	8.03%	16,823	0.60	5M + 1 HOV	0.95	6.00%	2,047	0.853	D	0.002	D	No
	E Division St to Plaza Blvd	198,600	8.04%	15,967	0.60	5M + 1 HOV + 1 Aux	0.95	6.00%	1,799	0.749	D	0.002	D	No
	Plaza Blvd to SR-54	206,800	8.04%	16,627	0.60	5M + 1 HOV	0.95	6.00%	2,043	0.851	D	0.003	D	No
	SR-54 to Bonita Rd	262,900	8.01%	21,058	0.57	4M + 1 HOV + 1 Aux	0.95	7.32%	2,711	1.130	F	0.004	F	No
	Bonita Rd to East H St	208,000	8.01%	16,661	0.57	4M + 1 HOV + 1 Aux	0.95	7.32%	2,145	0.894	D	0.004	D	No
	East H St to Telegraph Canyon Rd	192,100	8.01%	15,387	0.57	5M + 1 HOV	0.95	7.32%	1,801	0.750	D	0.000	D	No
SR-125	SR-94 Junction to Jamacha Rd	113,300	8.76%	9,925	0.56	3M	0.95	4.40%	2,027	0.845	D	0.010	D	No
	Jamacha Rd to Paradise Valley Rd	94,400	8.76%	8,269	0.56	3M	0.95	4.40%	1,689	0.704	C	0.010	C	No
	Paradise Valley Rd to SR-54 Junction	100,500	8.76%	8,804	0.56	3M + 1 HOV	0.95	4.40%	1,541	0.642	C	0.010	C	No
	SR-54 to Mt. Miguel Rd	19,200	7.00%	1,344	0.59	2M	0.95	1.90%	425.43055	0.177	A	0.016	A	No
	Mt. Miguel Rd to Proctor Valley Rd	18,100	7.00%	1,267	0.59	2M	0.95	1.90%	401.05692	0.167	A	0.017	A	No
	Proctor Valley Rd to Otay Lakes Rd	14,500	7.00%	1,015	0.59	2M	0.95	1.90%	321.2887	0.134	A	0.018	A	No
	Otay Lakes Rd to Olympic Pkwy	6,700	7.00%	469	0.59	2M	0.95	1.90%	148.45754	0.062	A	0.018	A	No
	Olympic Pkwy to Birch Rd	6,500	7.00%	455	0.59	2M	0.95	1.90%	144.02597	0.060	A	0.020	A	No
	Birch Rd to Main St	6,900	7.00%	483	0.59	2M	0.95	1.90%	152.8891	0.064	A	0.021	A	No
	Main St to Otay Valley Rd	7,000	7.00%	490	0.59	2M	0.95	1.90%	155.10489	0.065	A	0.022	A	No

Table 5.4 Freeway/State Highway Segment LOS Results – Existing Plus Project Buildout Conditions

Freeway	Segment	ADT	K	Peak Hour Volume	D	Lanes Per Direction	PHF	HVF	Volume (pc/h/ln)	V/C	LOS	Δ V/C	LOS w/o Project	Significant Impact?
SR-125	Otay Valley Rd to Lone Star Rd	7,200	7.00%	504	0.59	2M	0.95	1.90%	159.53646	0.066	A	0.024	A	No
	Lone Star Rd to Otay Mesa Rd	7,300	7.00%	511	0.59	2M	0.95	1.90%	161.75224	0.067	A	0.025	A	No
SR-54	I-805 to Reo Dr/Plaza Bonita Center Wy	119,100	8.23%	9,802	0.58	3M	0.95	1.90%	2,024	0.843	D	0.008	D	No
	Reo Dr/Plaza Bonita Center Wy to Woodman St	119,100	8.32%	9,909	0.55	3M	0.95	1.90%	1,954	0.814	D	0.008	D	No
	Woodman St to Briarwood Rd	107,100	8.27%	8,857	0.55	3M	0.95	1.90%	1,746	0.728	C	0.007	C	No
	Briarwood Rd to SR-125 Junction	98,500	8.45%	8,323	0.52	3M + 1 HOV	0.95	1.90%	1,320	0.550	C	0.003	C	No

Source: Chen Ryan Associates; January 2017

Notes:
K = Percent of Traffic during the peak hour.
D = Directional split.
HVF = Percent of heavy vehicles.
PHF =Peak Hour Factor
M = Mainline lane.
HOV = High Occupancy Vehicle Lane.
Aux = Auxiliary lane.
Bold Indicates LOS E or F.

Based on the Freeway Mainline significance criteria outlined in Section 2.8, the traffic associated with the Proposed Project would not increase the V/C ratio by more than 0.01 of on any freeway segments operating at LOS E or F under Existing Plus Project Buildout conditions. Therefore, no significant project related impacts were identified and no mitigation is required.

Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements, the signalized ramp intersections within the project study area were analyzed using ILV procedures, as described in Section 2.6. ILV analysis results are displayed in **Table 5.5** and analysis worksheets for Existing Plus Project Buildout conditions are provided in **Appendix F**.

Table 5.5 Ramp Intersection Capacity Analysis – Existing Plus Project Buildout Conditions

Intersection	Peak Hour	ILV/hour	Capacity
SR-125 SB / Mt. Miguel Road	AM	232	Under Capacity
	PM	455	Under Capacity
SR-125 NB / Mt. Miguel Road	AM	330	Under Capacity
	PM	355	Under Capacity
I-805 SB / H Street	AM	892	Under Capacity
	PM	1,035	Under Capacity
I-805 NB / H Street	AM	885	Under Capacity
	PM	806	Under Capacity
SR-125 SB / H Street	AM	558	Under Capacity
	PM	571	Under Capacity
SR-125 NB / H Street	AM	391	Under Capacity
	PM	313	Under Capacity
SR-125 SB / Mt. Miguel Road	AM	598	Under Capacity
	PM	795	Under Capacity
SR-125 NB / Otay Lakes Road	AM	538	Under Capacity
	PM	758	Under Capacity

Source: Chen Ryan Associates; January 2017

As shown, with the addition of project traffic all study area ramp interchanges will continue to operate at or under capacity.

Ramp Meter Analysis

Table 5.6 displays the ramp metering analysis conducted at study area freeway ramps under Existing Plus Project Buildout conditions. Existing ramp meter rates were obtained from Caltrans and are expected to be the same under Existing Plus Project Buildout conditions. Ramp meter excess demand, delay and queuing results were calculated using the methodologies outlined in Section 2.7.

Table 5.6 Ramp Metering Analysis – Existing Plus Project Buildout Conditions

Location	Peak Hour	Peak Hour Volume	Meter Rate[1]	Excess Demand[2]	Delay[3] (min)	Queue[4] (ft)	Existing Delay/ Queue	S?
I-805 NB On-Ramp @ WB H Street	AM	685	934	0	0	0	0	No
I-805 NB On-Ramp @ EB H Street	AM	330	369	0	0	0	0	No

Source: Chen Ryan Associates; January 2017

Notes:
1. Meter Rate is the peak hour capacity expected to be processed through the ramp meter (veh/hr). This value was obtained from Caltrans.
2. Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater (veh/hr).
3. Delay = (Excess Demand / Meter Rate) X 60 min/hr.
4. Queue = (Excess Demand) X 29 ft/veh.

S?: Significant Impact?

As shown in the table, the projected peak hour ramp volumes under Existing Plus Project conditions are not anticipated to exceed the current ramp meter rates at either metered study area freeway ramp.

Based on the City of Chula Vista significance criteria, outlined in Section 2.8, the traffic associated with the Proposed Project would not cause any significant change or further deterioration in ramp meter operations under Existing Plus Project Buildout conditions. Therefore, no significant project related impacts were identified and no mitigation is required.

5.1.2 Impact Significance and Mitigation

This section identifies required mitigation measures for intersection and roadway facilities that would be significantly impacted by project-related traffic under Existing Plus Project Buildout conditions.

Intersections

The Proposed Project would have a direct impact on one (1) intersection in the County of San Diego, as well as one (1) project-specific impact on an intersection in the City of Chula Vista. The following intersection improvements would be required to mitigate the identified significant traffic impacts:

- *SR-94 & Lyons Valley Road (Caltrans)* – Signalization by the 741th EDU would mitigate the direct impact at this intersection. A traffic signal warrant was conducted, and based upon *2014 MUTCD Figure 4C-103 (CA),* this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants. The signal warrant worksheet is provided in **Appendix G**. However, this intersection is a Caltrans facility in which the County does not have jurisdiction to permit or implement improvements. Therefore, for purposes of this analysis, mitigation is considered infeasible and the impacts would remain significant and unavoidable. However, it should be noted that this improvement is part of the improvement project analyzed in the *Caltrans' State Route 94 Improvement Project Draft EIR, July 2015*. In addition, this improvement is also included as a mitigation measure in the Jamul Indian Village Final Environmental Evaluation.

- *Northwoods Drive / Agua Vista Drive & Proctor Valley Road (City of Chula Vista)* – Signalization by the 660th EDU would mitigate the direct impact at this intersection. A traffic signal warrant was conducted, and based upon *2014 MUTCD Figure 4C-103 (CA),* this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants. The signal warrant worksheet is provided in **Appendix G**. However, this intersection is located within the City of Chula Vista and the County does not have the jurisdiction to permit or implement improvements. Therefore, for purposes of this analysis, mitigation is considered infeasible and the impacts would remain significant and unavoidable. However, it should be noted that the signalization of this intersection is a condition of the Rolling Hills Ranch Plan and the signal mast arms have already been constructed at this intersection. Therefore, only minor improvements would be required to implement a signal at this intersection.

Table 5.7 displays Level of Service analysis results for the mitigated intersection under Existing Plus Project Buildout conditions. Calculation worksheets for the intersection analysis are provided in **Appendix G**.

Table 5.7 Mitigated Intersection LOS Existing Plus Project Buildout Conditions

Intersection	Before Mitigation				After Mitigation			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Avg. Delay (Sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
SR-94 & Lyons Valley Road	86.8	F	82.8	F	47.6	D	13	B
Agua Vista Drive / Northwoods Drive & Proctor Valley Road	55.4	F	40.2	E	30.7	C	14.8	B

Source: Chen Ryan Associates; January 2017

Note:
Bold Indicates LOS E or F.

As shown in the table, after implementation of the identified improvements, the impacted intersections would operate at acceptable LOS D or better during both peak hours.

Roadway Segments

The Proposed Project would have a significant project specific impact on one (1) roadway segment, located in the City of Chula Vista, under Existing Plus Project Buildout conditions. The following roadway improvements would be required to mitigate this impact:

- *Proctor Valley Road, between Northwoods Drive and the City of Chula Vista Boundary (Project Specific Impact, City of Chula Vista)* – widen from a 2-lane roadway to a Class I Collector by the 1229th EDU. As per the City of Chula Vista Roadway Standards, a Class I collector is a four-lane roadway, typically divided by a two-way left-turn lane. The daily traffic capacity of a Class I Collector is 22,000 ADT (LOS C). With widening to a Class I Collector, the Project's significant impacts to this roadway segment would be fully mitigated as the segment would operate at LOS A once widened and no further mitigation would be required.

Widening to a Class I Collector is consistent with the City of Chula Vista Circulation Plan, which identifies the segment of Proctor Valley Road between Northwoods Drive and the City of Chula Vista boundary as a 4-Lane Major Street. Widening the segment from the 2-lane configuration to four lanes, as recommended by the mitigation measure, would not conflict with the City's long-range road widening plans (four lanes) because the mitigation improvement (widen from two to four lanes) does not foreclose or conflict with the City's ultimate build-out plans or programs, and would not preclude the City from improving the segment to a 4-Lane Major at a future date when/if future traffic conditions warrant such action.

As shown in **Table 5.8,** the proposed improvement would fully mitigate the Proposed Project's project specific impact to the segment of Proctor Valley Road, between Northwoods Drive and the City of Chula Vista boundary. However, because this roadway segment is located within the City of Chula Vista and the County does not have the jurisdiction to permit or implement any improvements, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable.

Table 5.8 Mitigated Roadway Segment LOS Existing Plus Project Buildout Conditions

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project
Proctor Valley Road	Agua Vista Drive / Northwoods Drive and the City of Chula Vista Boundary	Class I Collector	12,500	22,000	A

Source: Chen Ryan Associates; January 2017

6.0 Year 2025 Traffic Conditions

This section provides an analysis of Year 2025 traffic conditions both with and without the Proposed Project.

6.1 Year 2025 Project Trip Generation, Distribution and Assignment

Project construction is anticipated to begin in Year 2021, with full project buildout occurring in Year 2028. Therefore, Year 2025 Cumulative conditions assume the partial development of the Proposed Project. Based on the project's construction schedule and market conditions, it is anticipated that by the start of Year 2025, the following project land uses would be developed and occupied:

- 809 Single Family Units;
- 6.7 Acres of Public Park Space;
- 3.7 Acres of Community Public Facilities; and
- 10,000 sf of Commercial Space.

Table 6.1 displays the anticipated project trip generation under Year 2025 Cumulative conditions.

Table 6.1 Project Trip Generation - Year 2025 Cumulative Conditions

Land Use	Units	Trip Rate	ADT	%	AM Peak Hour				PM Peak Hour				
					Trips	Split	In	Out	%	Trips	Split	In	Out
Estate	21 Units	12/Units	252	8%	20	(3:7)	6	14	10%	25	(7:3)	18	8
Single Family Detached Housing	788 Units	10/Units	7,880	8%	630	(3:7)	189	441	10%	788	(7:3)	552	236
Park (Undeveloped)	6.7 Acres	5/Acres	34	4%	2	(5:5)	1	1	8%	3	(5:5)	1	1
Community Facility	3.7 Acres	30/Acres	111	5%	5	(5:5)	3	2	8%	9	(5:5)	4	4
Mixed Use: Commercial	10 KSF	110/KSF	1,100	3%	33	(6:4)	20	13	9%	99	(5:5)	50	50
		Total	9,377		690		219	471		924		625	299

Source: SANDAG Trip Generation Manual, Chen Ryan Associates; January 2017

As shown, under Year 2025 Cumulative conditions the Proposed Project is anticipated to generate a total of 9,377 daily trips, including 690 (219-in / 471-out) AM peak hour trips, and 924 (625-in / 299-out) PM peak hour trips.

Year 2025 Project trip assignments were derived by assigning the Proposed Project buildout trip generation estimates to the surrounding roadway network, based on the Year 2025 project trip distribution patterns displayed in **Figure 6-1**. The Year 2025 Proposed Project trip distribution patterns were derived based upon a SANDAG Series 11 Year 2025 Select Zone Assignment, which is provided in Appendix C. **Figure 6-2** and **Figure 6-3** display the Year 2025 project trip assignment for study area roadway segments and intersections, respectively.

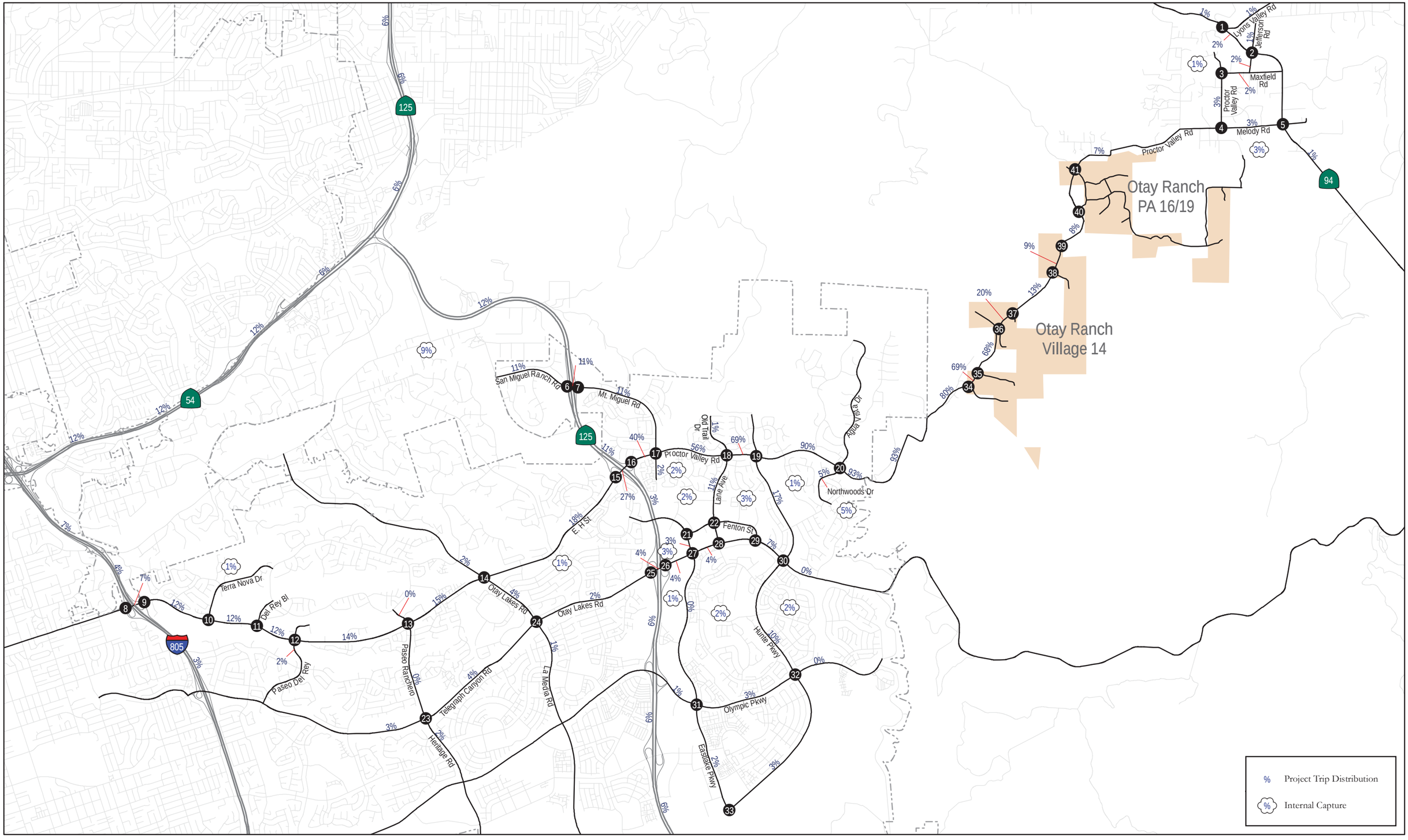

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Figure 6-1
Project Trip Distribution (Year 2025 Cumulative Conditions - Project Buildout)

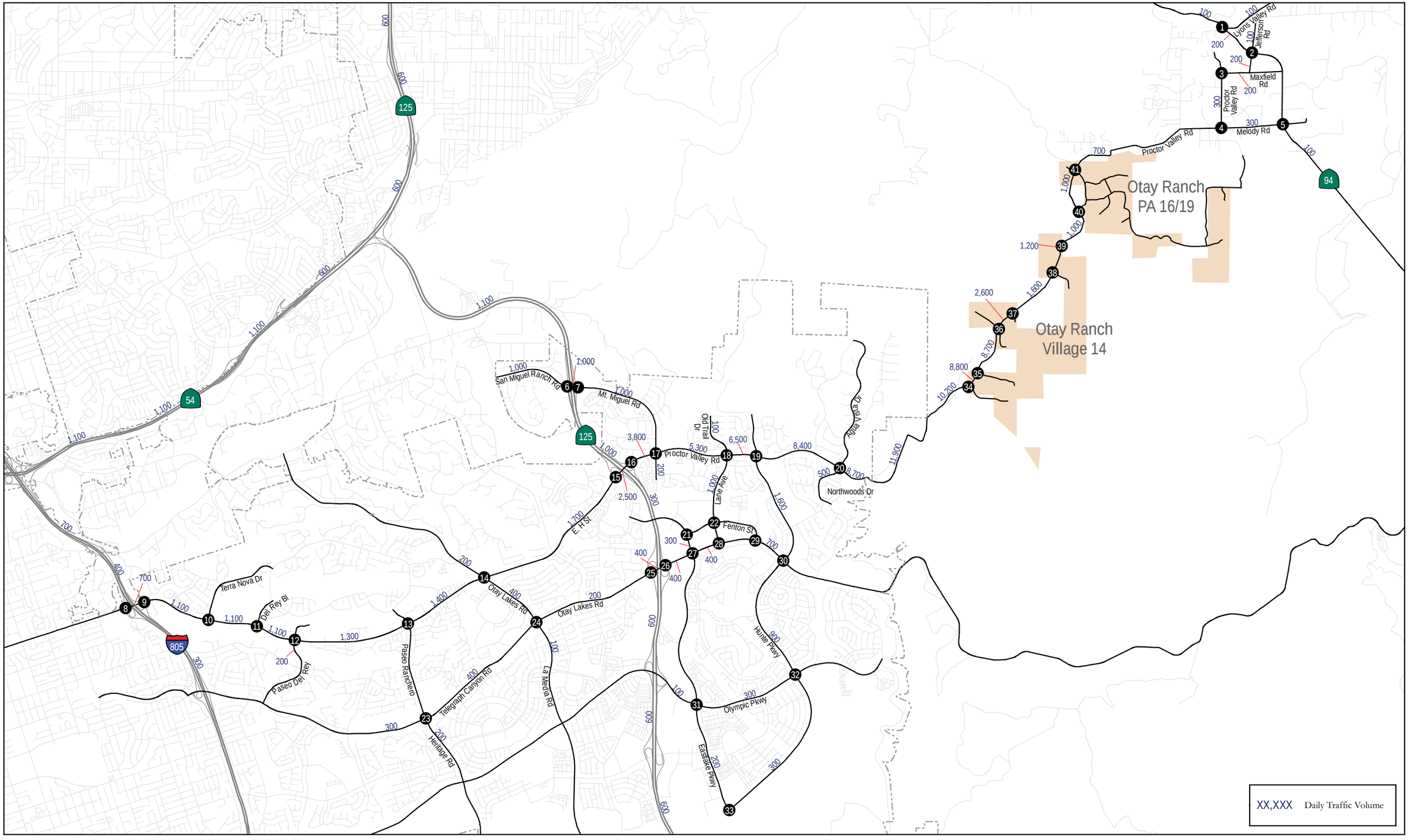

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Figure 6-2
Proposed Project Daily Roadway Segment Trip Assignment (Year 2025 Cumulative Conditions - Project Buildout)

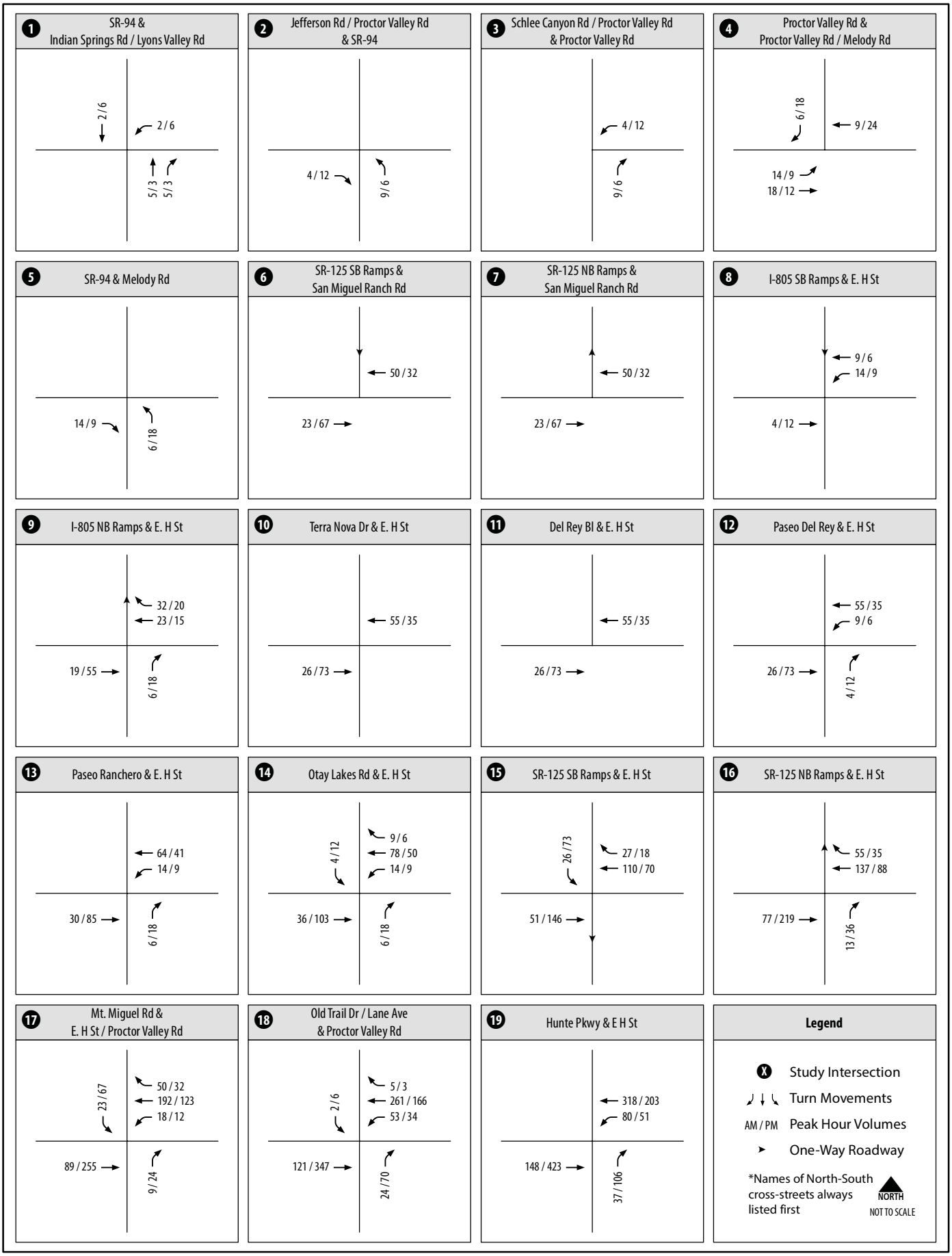

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Figure 6-3

Proposed Project Peak Hour Intersection Trip Assignment - (Year 2025 Cumulative Conditions - Project Buildout) (Intersections 1-19)

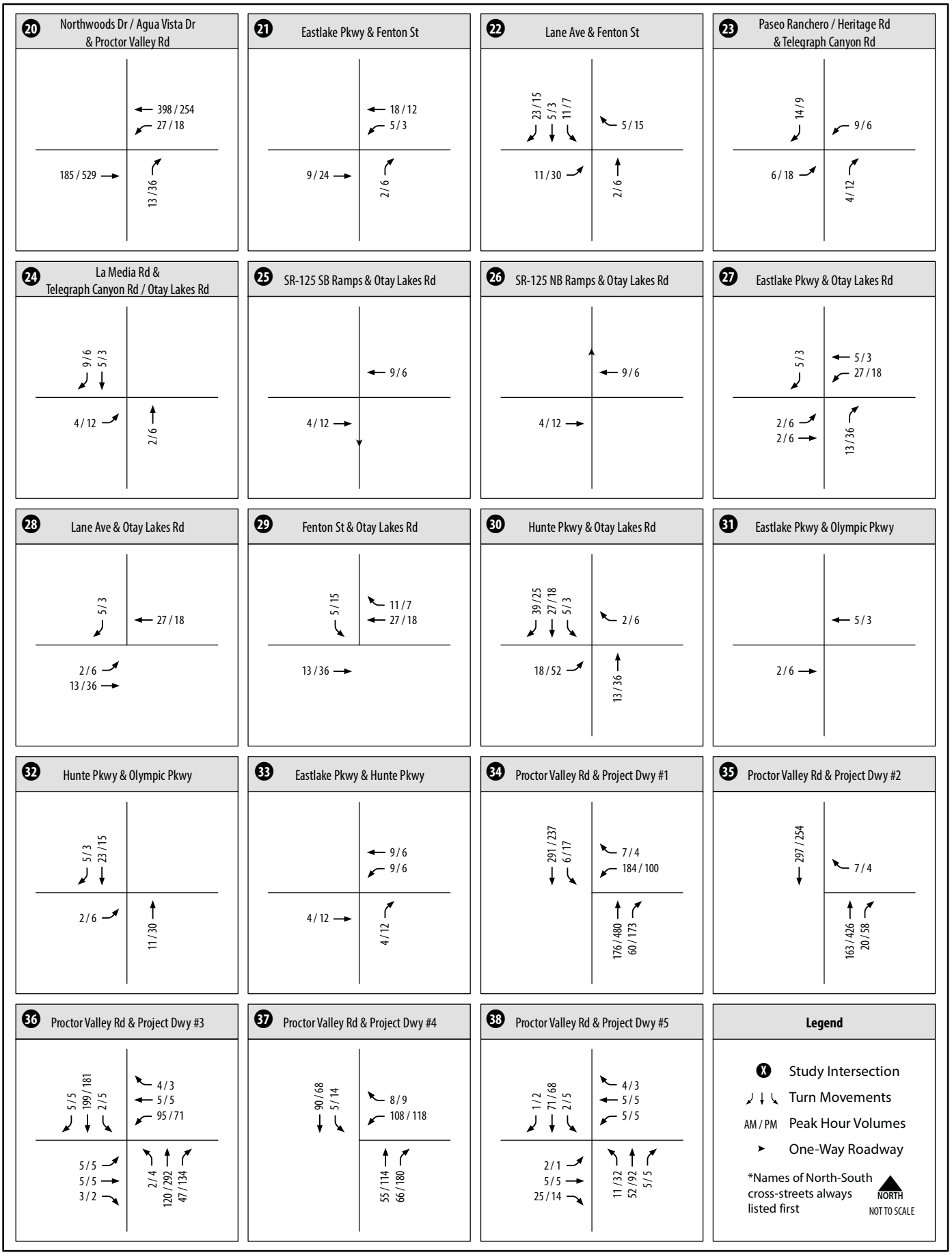

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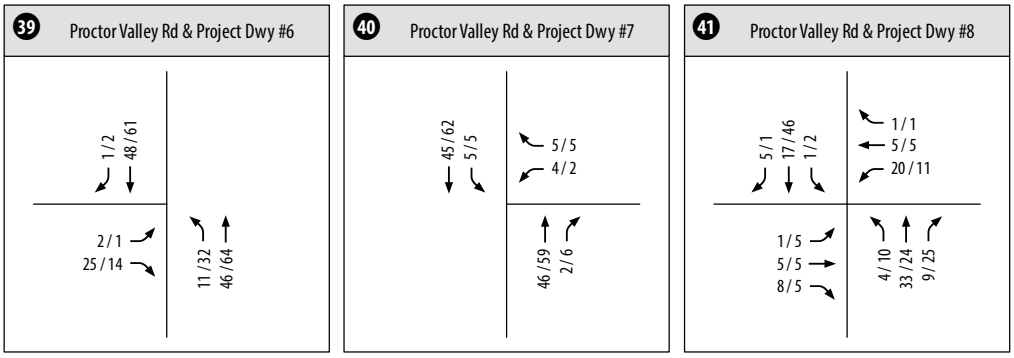
Figure 6-3

Proposed Project Peak Hour Intersection Trip Assignment - (Year 2025 Cumulative Conditions - Project Buildout) (Intersections 20-38)



Legend

- X — Study Intersection
- Turn Movements
- AM / PM — Peak Hour Volumes
- One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH
NOT TO SCALE

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Figure 6-3

Proposed Project Peak Hour Intersection Trip Assignment -
(Year 2025 Cumulative Conditions - Project Buildout) (Intersections 39-41)

6.2 Year 2025 Roadway Network and Traffic Volumes

The Year 2025 roadway network is similar to the existing roadway network with the following exceptions:

To Be Constructed by the Project:

- The Proposed Project will construct Proctor Valley Road as follows:
  - A Light Collector with a Raised Median (2.2A) between its current eastern terminus within the City of Chula Vista to Project Driveway 5;
  - A Light Collector between Project Driveway 5 and the Village 14 Boundary; and
  - As a two-lane interim roadway (28 feet paved on a 40-foot right-of-way) between the Village 14 Boundary and its current western terminus point located in the community of Jamul.
- The Proposed Project will extend Whispering Meadows Lane to the South, as a Rural Road, to provide a secondary access point for Planning Area 16.
- All Project Driveways and access points.

To Be Constructed by Others:

- Heritage Road, south of Main Street to the City of Chula Vista city limit – this facility is included as its ultimate classification by 2020. As indicated in the City's currently adopted General Plan Circulation Element, the ultimate classification designed for Heritage Road south of Main Street is a 6-lane Prime Arterial. This improvement project (STM364 - Heritage Road Bridge Replacement) is included in the Chula Vista adopted FY 2012-13 through FY 2016-17 Capital Improvement Program (CIP) and will be funded by a mix of the Highway Bridge Program, Transportation Development Impact Fees, and other miscellaneous transportation grants. For additional information, see **Appendix H**. (Assumptions consistent with traffic analyses prepared by and for the City of Chula Vista.)
- Otay Lakes Road, between H Street and Telegraph Canyon Road – this facility is included as being widened from a 4-lane Major Road to a 6-lane Prime Arterial consistent with the classification identified in the City's currently adopted General Plan Circulation Element. This improvement project (STM355 – Otay Lakes Road Widening) is included in the Chula Vista adopted FY 2012-13 through FY 2016-17 Capital Improvement Program (CIP) and will be funded by the Transportation Development Impact Fees. For additional information, see **Appendix H**. (Assumptions consistent with traffic analyses prepared by and for the City of Chula Vista.)

The Year 2025 roadway segment and intersection geometrics are displayed in **Figure 6-4.** and **Figure 6-5**, respectively.

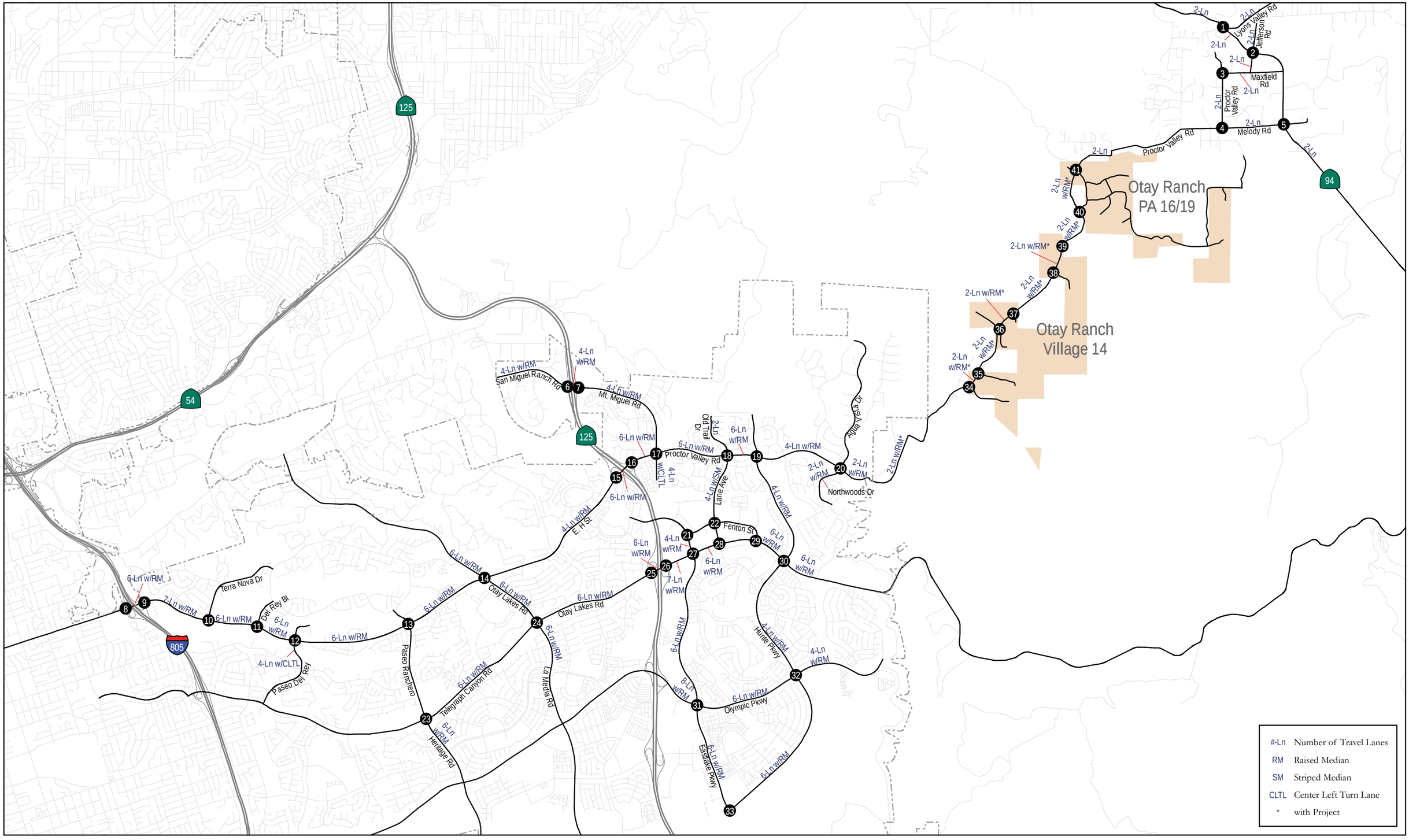

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Figure 6-4
Year 2025 Roadway Segment Geometry

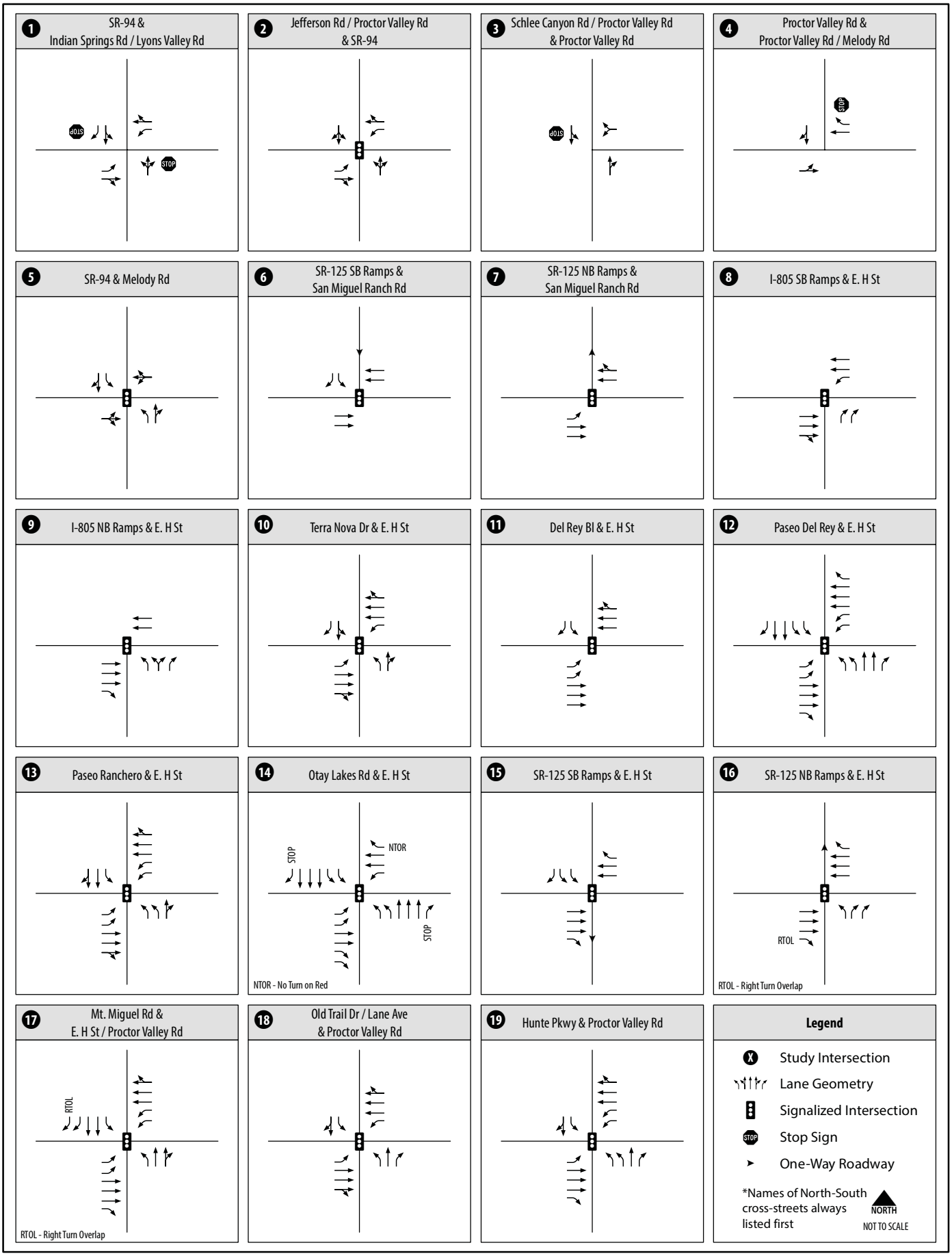

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Figure 6-5

Year 2025 Cumulative Conditions Geometry
(Intersections 1-19)

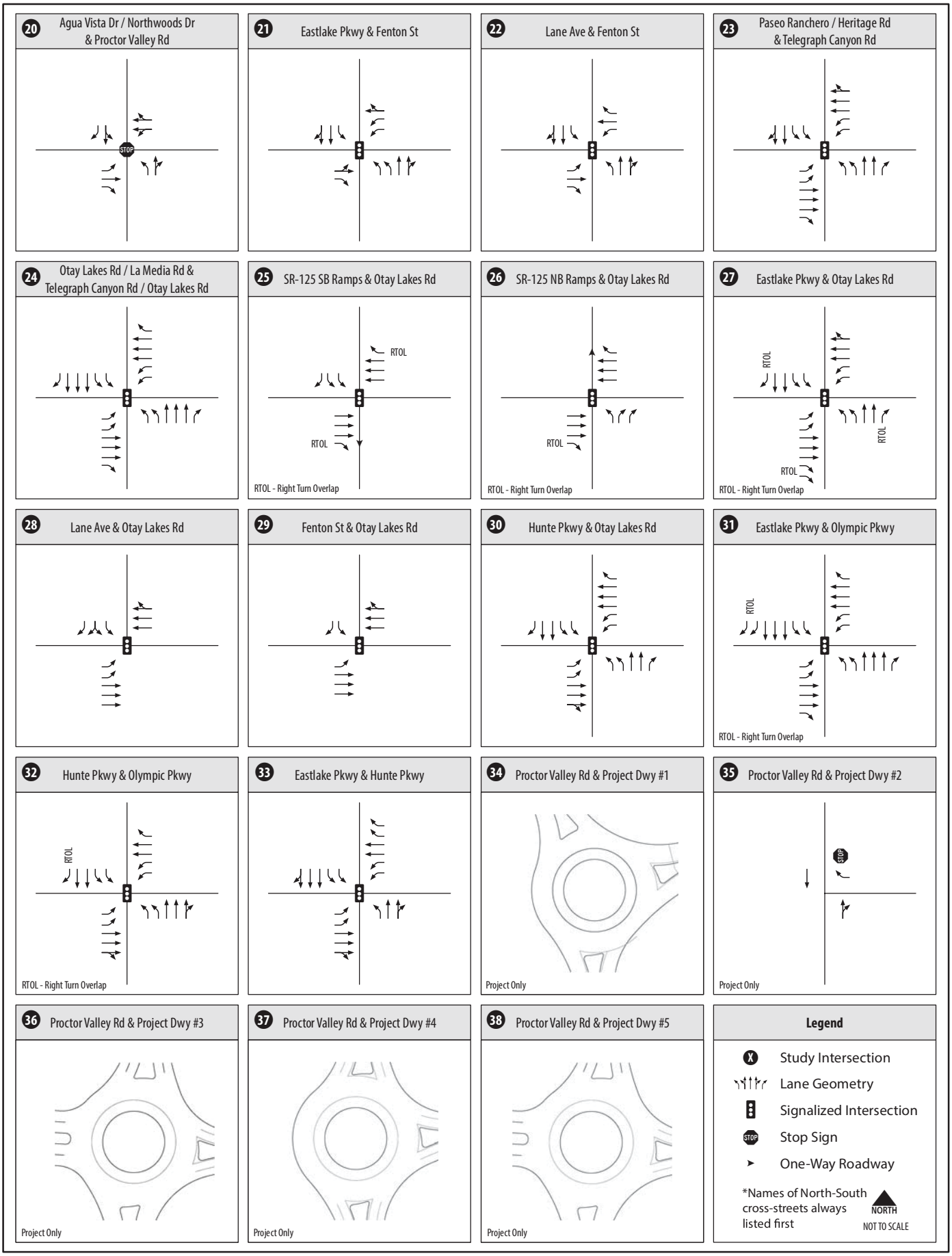

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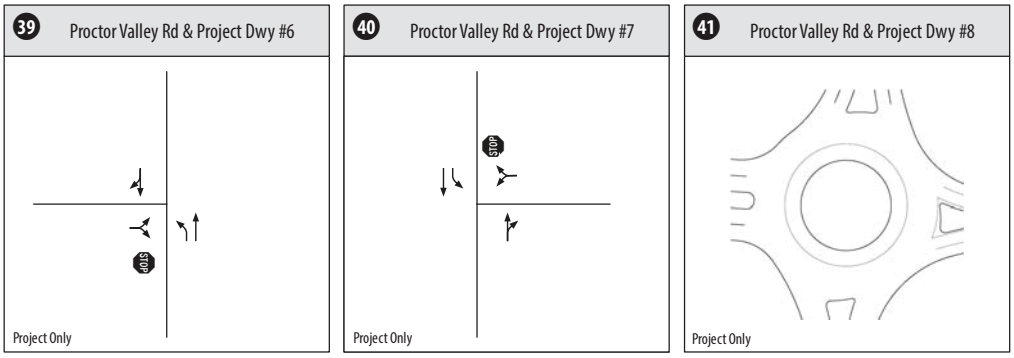
Figure 6-5

Year 2025 Cumulative Conditions Intersection Geometry (Intersections 20-38)



Legend

- Study Intersection
- Lane Geometry
- Signalized Intersection
- Stop Sign
- One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH

NOT TO SCALE

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Figure 6-5

Year 2025 Cumulative Conditions Intersection Geometry (Intersections 39-41)

6.3 Year 2025 Traffic Volumes

Figure 6-6 and **Figure 6-7** show the daily roadway segment and peak hour intersection volumes, respectively, under Year 2025 with project conditions. Traffic volumes for the Year 2025 scenario were developed utilizing the SANDAG Series 11 "Southbay 2" Year 2025 model. Thus, the most recent City of Chula Vista approved model (developed for the Otay Ranch Village Two Comprehensive SPA Amendment project) was utilized as a starting point to ensure the accuracy of the modeling assumptions within the City's jurisdiction. Land use assumptions for the Otay Ranch Village Two Comprehensive SPA Amendment project model were developed in coordination with City of Chula Vista's staff, and include estimated growth for all of the Otay Ranch villages, as well as the future university, the eastern urban center, and other developments. Year 2025 model land use assumptions are provided in **Appendix I**.

Outside of Chula Vista, SANDAG Year 2025 land use assumptions were examined and updated to ensure that anticipated land development projects identified by both the County and City of San Diego in the vicinity of the Proposed Project were accurately reflected in the model. Cumulative projects shown in **Table 6.2** were incorporated into the Year 2025 model.

6.4 Year 2025 Traffic Conditions

Level of service analyses for the Year 2025 with project conditions were conducted using the methodologies described in Chapter 2.0. Intersection, roadway segment, two-lane highway segment, and freeway mainline level of service results, as well as ramp intersection capacity and ramp meter analyses, are discussed below.

6.4.1 Intersection Analysis

Table 6.2 displays intersection Level of Service and average vehicle delay results for the study area intersections under Year 2025 Cumulative conditions. All intersections are signalized unless otherwise noted. Level of Service calculation worksheets for Year 2025 Cumulative conditions are provided in **Appendix J**.

As shown in the table, all study area intersections are projected to operate at LOS D or better under Year 2025 with project conditions with the exception of the following:

- SR-94 & Lyons Valley Road (LOS F – during both the AM & PM peak hours).
- Northwoods Drive/Agua Vista Drive & Proctor Valley Road (LOS F – during the AM peak hour and LOS E – during the PM peak hour).

Based on the significance criteria outlined in Section 2.8, the traffic associated with the Proposed Project would cause a significant direct impact to the intersection listed above.

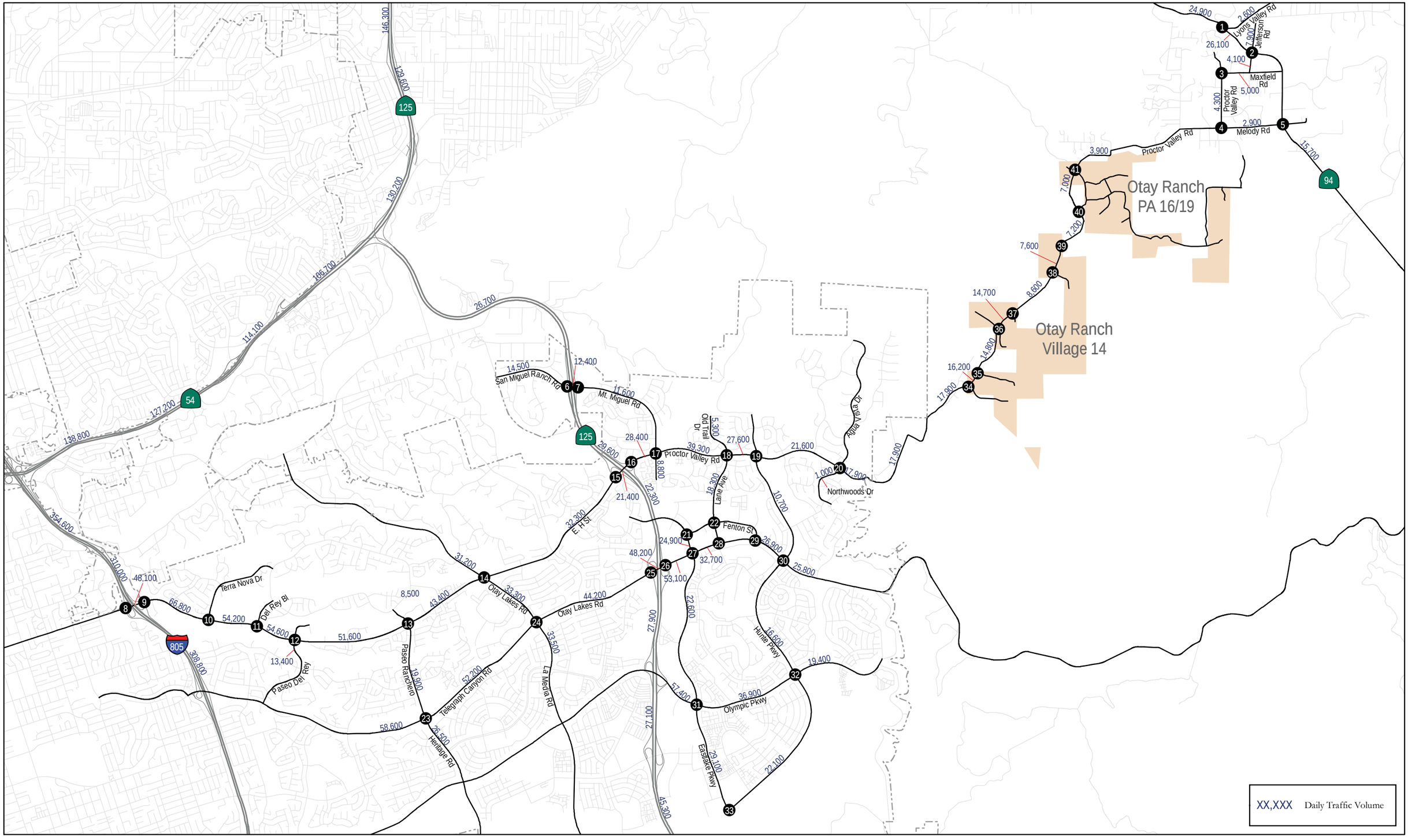

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Figure 6-6
Daily Roadway Segment Traffic Volumes - Year 2025 Cumulative Conditions

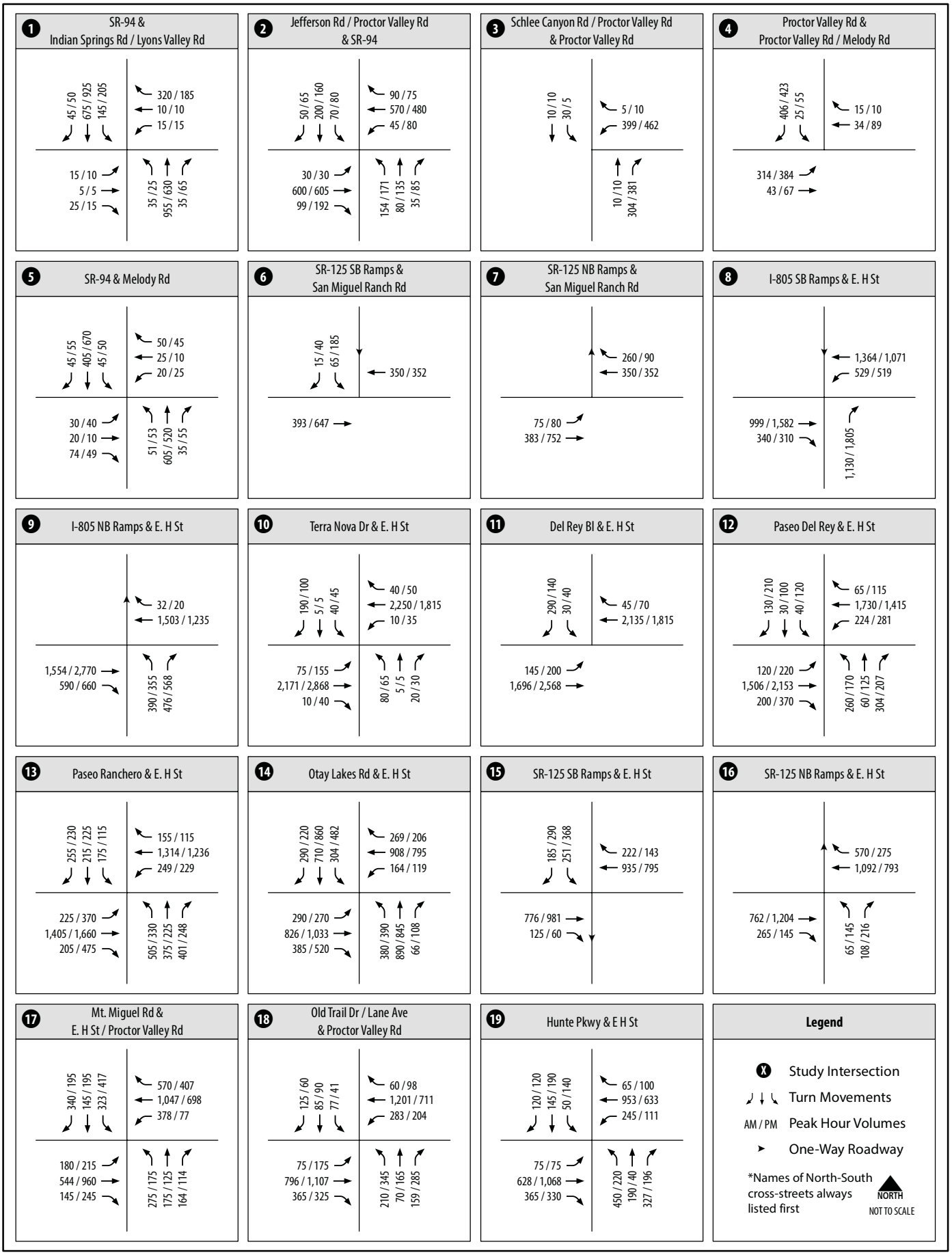

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Figure 6-7

Peak Hour Intersection Traffic Volumes - Year 2025 Cumulative Conditions (Intersections 1-19)

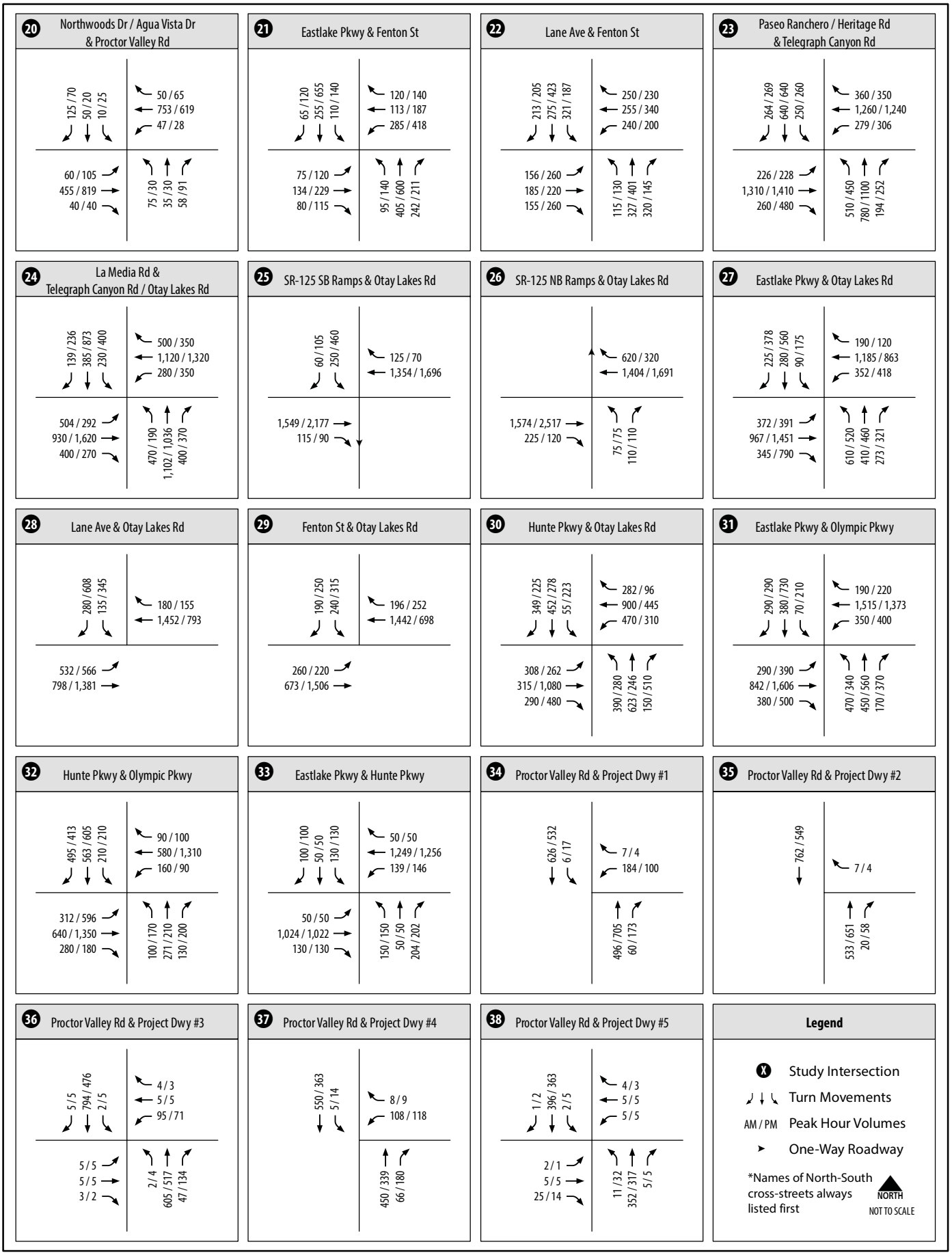

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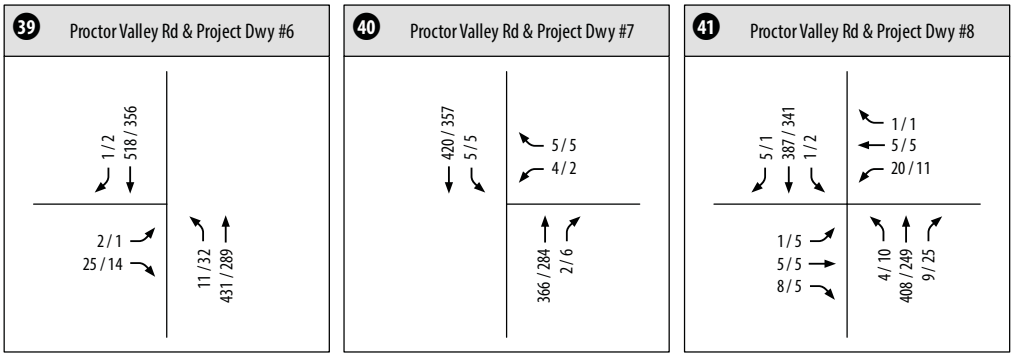
Figure 6-7

Peak Hour Intersection Traffic Volumes - Year 2025 Cumulative Conditions (Intersections 20-38)



Legend

- X — Study Intersection
- Turn Movements
- AM / PM — Peak Hour Volumes
- One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH
NOT TO SCALE

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Figure 6-7

Peak Hour Intersection Traffic Volumes - Year 2025 Cumulative Conditions (Intersections 39-41)

Table 6.2 Peak Hour Intersection LOS Results – Year 2025 Cumulative Conditions

			Year 2025				Impact Criteria by Jurisdiction			
			AM Peak Hour		PM Peak Hour		Caltrans/ San Diego Change in Delay (seconds)	Chula Vista (Project % of Entering Volume)	County	
	Intersection	Control	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	AM/PM	AM/PM	AM/PM	Significant Impact?
1	SR-94 & Lyons Valley Road	SSSC	>500	F	>500	F	-			Yes
2	Proctor Valley Road/Jefferson Road & SR-94	Signal	29.1	C	37.3	D	N/A			No
3	Proctor Valley Road & Maxfield Road	SSSC	12.2	B	13.3	B	N/A			No
4	Proctor Valley Road & Melody Road	SSSC	8.7	A	9.1	A	N/A			No
5	SR-94 & Melody Road	Signal	13.6	B	18.1	C	N/A			No
6	San Miguel Ranch Road & SR-125 SB Ramps	Signal	22.1	C	19.3	B		8.9% / 8.1%		No
7	San Miguel Ranch Road & SR-125 NB Ramp	Signal	17.4	B	14.8	B		6.8% / 7.8%		No
8	I-805 SB Ramp & East H Street	Signal	9.7	A	13.1	B		0.6% / 0.5%		No
9	I-805 NB Ramp & East H Street	Signal	10.2	B	13.8	B		1.8% / 1.9%		No
10	Terra Nova Drive & East H Street	Signal	14.4	B	17.0	B		1.7% / 2.1%		No
11	Del Rey Boulevard & East H Street	Signal	13.2	B	9.3	A		1.9% / 2.2%		No
12	Paseo Del Rey & East H Street	Signal	20.9	C	29.5	C		2.0% / 2.3%		No
13	Paseo Ranchero & East H Street	Signal	52.1	D	49.0	D		2.1% / 2.8%		No
14	Otay Lakes Road & East H Street	Signal	38.4	D	41.6	D		2.7% / 3.4%		No
15	SR-125 SB Ramp & East H Street	Signal	6.2	A	7.4	A		8.6% / 11.6%		No
16	SR-125 NB Ramp & Proctor Valley Road	Signal	3.8	A	5.3	A		9.9% / 13.6%		No
17	Mt Miguel Road & Proctor Valley Road	Signal	38.0	D	30.3	C		8.9% / 13.4%		No

Table 6.2 Peak Hour Intersection LOS Results – Year 2025 Cumulative Conditions

	Intersection	Control	Year 2025				Impact Criteria by Jurisdiction			Significant Impact?
			AM Peak Hour		PM Peak Hour		Caltrans/ San Diego Change in Delay (seconds)	Chula Vista (Project % of Entering Volume)	County	
			Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	AM/PM	AM/PM	AM/PM	
18	Lane Avenue & Proctor Valley Road	Signal	31.2	C	36.7	D		13.3% / 17.4%		No
19	Hunte Parkway & Proctor Valley Road	Signal	26.8	C	21.9	C		16.1% / 24.3%		No
20	Agua Vista Drive / Northwoods Drive & Proctor Valley Road	AWSC	57.2	F	44.6	E		35.4% / 43.1%		Yes
21	East Lake Parkway & Fenton Street	Signal	25.3	C	44.3	D		1.7% / 1.5%		No
22	Lane Avenue & Fenton Street	Signal	35.2	D	35.9	D		2.0% / 2.5%		No
23	Heritage Road/Paseo Ranchero & Telegraph Canyon Road	Signal	52.2	D	52.9	D		0.5% / 0.6%		No
24	La Media Road & Telegraph Canyon Road / Otay Lakes Road	Signal	47.0	D	53.6	D		0.3% / 0.4%		No
25	SR-125 SB Ramps & Otay Lakes Road	Signal	11.7	B	11.4	B		0.4% / 0.4%		No
26	SR-125 NB Ramps & Otay Lakes Road	Signal	9.2	A	12.5	B		0.3% / 0.4%		No
27	East Lake Parkway & Otay Lakes Road	Signal	41.9	D	49.5	D		1.0% / 1.1%		No
28	Lane Avenue & Otay Lakes Road	Signal	20.9	C	35.0	D		1.4% / 1.6%		No
29	Hunte Parkway & Otay Lakes Road	Signal	19.2	B	26.1	C		1.9% / 2.3%		No
30	Fenton Street & Otay Lakes Road	Signal	29.6	C	53.0	D		2.3% / 3.2%		No
31	East Lake Parkway & Olympic Parkway	Signal	27.3	C	33.4	C		0.1% / 0.1%		No
32	Hunte Parkway & Olympic Parkway	Signal	20.5	C	44.4	D		1.1% / 1.0%		No
33	East Lake Parkway & Hunte Parkway	Signal	29.8	C	30.1	C		0.8% / 1.1%		No

Table 6.2 Peak Hour Intersection LOS Results – Year 2025 Cumulative Conditions

			Year 2025				Impact Criteria by Jurisdiction			
			AM Peak Hour		PM Peak Hour		Caltrans/ San Diego Change in Delay (seconds)	Chula Vista (Project % of Entering Volume)	County	
	Intersection	Control	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	AM/PM	AM/PM	AM/PM	Significant Impact?
34	Proctor Valley Road & Project Driveway #1	RA	13.2	B	17.8	C			N/A	No
35	Proctor Valley Road & Project Driveway #2	SSSC	12	B	13.5	B			N/A	No
36	Proctor Valley Road & Project Driveway #3	RA	17.3	C	10.4	B			N/A	No
37	Proctor Valley Road & Project Driveway #4	RA	10.1	B	8.4	A			N/A	No
38	Proctor Valley Road & Project Driveway #5	RA	7	A	6.9	A			N/A	No
39	Proctor Valley Road & Project Driveway #6	SSSC	12	B	10.5	B			N/A	No
40	Proctor Valley Road & Project Driveway #7	SSSC	13	B	11.1	B			N/A	No
41	Proctor Valley Road & Project Driveway #8	RA	3.8	A	6.3	A			N/A	No

Source: Chen Ryan Associates; January 2017

Notes:

AWSC: All-way stop controlled intersection.

SSSC: Side Street stop controlled intersection, the delay shown is the worst delay experienced by any of the approaches.

RA: Roundabout.

Bold Indicates LOS E or F.

N/A: Impact Criteria not applicable because intersection is projected to operate at an acceptable level.

>500: More than 500 seconds of delay, meaning the traffic at the SSSC is too high for HCS 2010 to accurately calculate

6.4.2 Roadway Segment Analysis

As to County of San Diego roadway segments, **Table 6.3a** displays the Level of Service analysis results for the study area roadway segments located within the County of San Diego under Year 2025 Cumulative conditions.

Table 6.3a Roadway Segment LOS Results – Year 2025 Cumulative Conditions – County of San Diego

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS D)	LOS w/ Project	Project ADT	Significant Impact?
Proctor Valley Rd	City of Chula Vista boundary to Project Driveway #1	2-Ln w/ RM	15,100	13,500	E	8,700	Yes (Cumulative)
	Project Driveway #1 to Project Driveway #2	2-Ln w/ RM	13,800	13,500	E	7,400	Yes (Cumulative)
	Project Driveway #2 to Project Driveway #3	2-Ln w/ RM	12,000	13,500	D	6,400	No
	Project Driveway #3 to Project Driveway #4	2-Ln w/ RM	11,900	13,500	D	6,400	No
	Project Driveway #4 to Project Driveway #5	2-Ln w/ RM	5,800	13,500	B	1,900	No
	Project Driveway #5 to Project Village 14 boundary	2-Ln w/ RM	4,800	13,500	B	1,200	No
	Village 14 boundary to Project Driveway #7	2-Ln	4,400	10,900	C	900	No
	Project Driveway #7 to Project Driveway #8	2-Ln	4,200	8,700	A	700	No
	Project Driveway #8 to Melody Rd	2-Ln	6,700	8,700	B	500	No
	Melody Rd to Schlee Canyon Rd	2-Ln	5,000	8,700	A	200	No
	Schlee Canyon Rd to Maxfield Rd	2-Ln	4,300	8,700	A	100	No
	Maxfield Rd to SR-94	2-Ln	4,100	8,700	A	100	No
Melody Rd	Lyons Valley Rd to Jefferson Rd	2-Ln	2,900	8,700	A	200	No
Jefferson Rd	Jefferson Rd to Maxfield Rd	2-Ln	7,900	8,700	D	100	No
Lyons Valley Rd	Maxfield Rd to Melody Rd	2-Ln	2,600	8,700	A	100	No

Source: Chen Ryan Associates; January 2017

Note:
Bold Indicates LOS E or F.

As shown, all study area roadway segments within the County of San Diego are projected to operate at LOS D or better within the addition of Proposed Project traffic, with the exception of the following:

- Proctor Valley Road, between City of Chula Vista boundary to Project Driveway #1 (LOS E); and
- Proctor Valley Road, between Project Driveway #1 to Project Driveway #2 (LOS E).

Based on the County of San Diego significance criteria outlined in Section 2.8, the addition of trips generated by the Proposed Project would cause significant cumulative impacts under Year 2025 Cumulative conditions along the following roadway segments:

- Proctor Valley Road, between City of Chula Vista boundary to Project Driveway #1; and
- Proctor Valley Road, between Project Driveway #1 to Project Driveway #2.

As to City of Chula Vista roadway segments, **Table 6.3b** displays the Level of Service analysis results for study area roadway segments within the City of Chula Vista under Year 2025 Cumulative conditions.

As shown in the table, all study area roadway segments within the City of Chula Vista are projected to operate at LOS C or better under Year 2025 Cumulative conditions within the exception of the following segments. Whether the Project would result in a significant impact at each segment is identified.

- *East H Street between Terra Nova Drive and Del Rey Boulevard (LOS D)*:
    - Proposed buildout project trips would comprise 1.60% (less than 5%) of the total segment volume;
    - Proposed buildout project trips would add 800 ADT (equal to 800 ADT);
    - The intersections of E. H Street / Terra Nova Drive and E. H Street / Del Rey Boulevard are both projected to operate at LOS B or better during both peak hours;
    - Therefore, the Proposed Project **would not have a significant impact** to this roadway segment.
- *East H Street between Del Rey Boulevard and Paseo Del Rey (LOS D)*:
    - Proposed project buildout trips would comprise 1.60% (less than 5%) of the total segment volume;
    - Proposed project buildout trips would add 800 ADT (equal to 800 ADT);
    - The intersections of E. H Street / Del Rey Boulevard and E. H Street / Paseo Del Rey are both projected to operate at LOS C or better during both peak hours;
    - Therefore, the Proposed Project **would not have a significant impact** to this roadway segment.
- *East H Street between Paseo Del Rey and Paseo Ranchero (LOS D):*
    - Proposed buildout project trips would comprise 1.80% (less than 5%) of the total segment volume;
    - Proposed buildout project trips would add 900 ADT (more than 800 ADT);
    - The intersections of East H Street / Del Rey Boulevard and East H Street / Paseo Del Rey are both projected to operate at LOS D or better during both peak hours;
    - Therefore, the Proposed Project **would not have a significant impact** to this roadway segment.

Table 6.3 b Roadway Segment LOS Results – Year 2025 Cumulative Conditions – City of Chula Vista

Roadway	From	Cross-Section	ADT w/ Project	ADT Threshold (LOS C)	LOS w/ Project	Project ADT (< 800)	Project Contribution (≥ 5%)	Peak Hour Operations	Significant Impact?
San Miguel Ranch Rd	Proctor Valley Rd to SR-125 SB Ramp	4-Ln w/ RM	14,500	22,000	A	700	3.18%	-	No
	SR-125 SB Ramp to SR-125 NB Ramp	4-Ln w/ RM	12,400	22,000	A	700	3.18%	-	No
San Miguel Ranch / Mt Miguel Rd	SR-125 NB Ramp to Proctor Valley Rd	4-Ln w/ RM	11,600	22,000	A	700	3.18%	-	No
Mt Miguel Rd	Proctor Valley Rd to Mackenzie Creek Rd	4-Ln w/ CLTL	8,800	22,000	A	100	0.45%	-	No
H St	I-805 SB Ramps to I-805 NB Ramps	6-Ln w/ RM	48,100	50,000	C	500	1.00%	-	No
	I-805 NB Ramps to Terra Nova Dr	7-Ln w/ RM	66,800	70,000	C	800	1.14%	-	No
	Terra Nova Dr to Del Rey Blvd	6-Ln w/ RM	54,200	50,000	D	800	1.60%	Yes	No
	Del Rey Blvd to Paseo Del Rey	6-Ln w/ RM	54,600	50,000	D	800	1.60%	Yes	No
	Paseo Del Rey to Paseo Ranchero	6-Ln w/ RM	51,600	50,000	D	900	1.80%	Yes	No
	Paseo Ranchero to Otay Lakes Rd	6-Ln w/ RM	43,400	50,000	B	1,000	2.00%	-	No
	Otay Lakes Rd to SR-125 SB Ramps	4-Ln w/ RM	32,300	30,000	D	1,200	4.00%	Yes	No
Proctor Valley Rd	SR-125 SB Ramps to SR-125 NB Ramps	6-Ln w/ RM	21,400	50,000	A	1,800	3.60%	-	No
	SR-125 NB Ramps to Mt Miguel Rd	6-Ln w/ RM	28,400	50,000	A	2,800	5.60%	-	No
	Mt Miguel Rd to Lane Ave	6-Ln w/ RM	39,300	50,000	B	3,900	7.80%	-	No
	Lane Ave to Hunte Pkwy	6-Ln w/ RM	27,600	50,000	A	4,700	9.40%	-	No
	Hunte Pkwy to Agua Vista Dr / Northwood Dr	4-Ln w/ RM	21,600	30,000	A	6,100	20.33%	-	No
	Agua Vista Dr / Northwoods Dr to City of Chula Vista / County Boundary	2-Ln w/ RM	12,400	12,000	D	6,400	53.33%	No	Yes (Direct)

Table 6.3 b Roadway Segment LOS Results – Year 2025 Cumulative Conditions – City of Chula Vista

Roadway	From	Cross-Section	ADT w/ Project	ADT Threshold (LOS C)	LOS w/ Project	Project ADT (< 800)	Project Contribution (≥ 5%)	Peak Hour Operations	Significant Impact?
Telegraph Canyon Rd	Paseo Ranchero to Otay Lakes Rd	6-Ln w/ RM	52,200	50,000	D	300	0.60%	Yes	No
Otay Lakes Rd	Ridgeback Rd to E. H St	6-Ln w/ RM	31,200	50,000	A	100	0.20%	-	No
	E. H St to Otay Lakes Rd	6-Ln w/ RM	33,300	50,000	A	300	0.60%	-	No
	Telegraph Canyon to SR-125 SB Ramps	6-Ln w/ RM	44,200	50,000	C	100	0.20%	-	No
	SR-125 SB Ramps to SR-125 NB Ramps	6-Ln w/ RM	48,200	50,000	C	300	0.60%	-	No
	SR-125 NB Ramps to Eastlake Pkwy	6-Ln w/ RM	53,100	50,000	D	300	0.60%	Yes	No
	Eastlake Pkwy to Lane Ave	6-Ln w/ RM	32,700	50,000	A	300	0.60%	-	No
	Lane Ave to Hunte Pkwy	6-Ln w/ RM	26,900	50,000	A	500	1.00%	-	No
	Hunte Pkwy to Woods Dr	6-Ln w/ RM	25,800	50,000	A	0	0.00%	-	No
Olympic Pkwy	SR-125 NB Ramps to Eastlake Pkwy	8-Ln w/ RM	57,400	70,000	B	100	0.14%	-	No
	Eastlake Pkwy to Hunte Pkwy	6-Ln w/ RM	36,900	50,000	A	200	0.40%	-	No
	Hunte Pkwy to Olympic Vista Rd	4-Ln w/ RM	19,400	30,000	A	0	0.00%	-	No
Paseo Del Rey	E. H St to E. J St	4-Ln w/ CLTL	13,400	22,000	A	100	0.45%	-	No
Heritage Rd	Telegraph Canyon Rd to E. Palomar St	6-Ln w/ RM	26,500	50,000	A	100	0.20%	-	No
La Media Rd	Otay Lakes Rd to E. Palomar St	6-Ln w/ RM	33,500	50,000	A	100	0.20%	-	No
Eastlake Pkwy	Miller Rd to Otay Lakes Rd	4-Ln w/ RM	24,900	30,000	B	200	0.67%	-	No
	Otay Lakes Rd to Olympic Pkwy	6-Ln w/ RM	22,600	50,000	A	0	0.00%	-	No
	Olympic Pkwy to Hunte Pkwy	6-Ln w/ RM	29,100	40,000	A	100	0.25%	-	No

Table 6.3 b Roadway Segment LOS Results – Year 2025 Cumulative Conditions – City of Chula Vista

Roadway	From	Cross-Section	ADT w/ Project	ADT Threshold (LOS C)	LOS w/ Project	Project ADT (< 800)	Project Contribution (≥ 5%)	Peak Hour Operations	Significant Impact?
Old Trail Dr	N Trail Ct to Proctor Valley Rd	2-Ln	5,300	7,500	A	100	1.33%	-	No
Lane Ave	Proctor Valley Rd to Otay Lakes Rd	4-Ln w/ SM	18,300	22,000	B	700	3.18%	-	No
Hunte Pkwy	Proctor Valley Rd to Otay Lakes Rd	4-Ln w/ RM	10,700	30,000	A	1,200	4.00%	-	No
	Otay Lakes Rd to Olympic Pkwy	4-Ln w/ RM	16,600	30,000	A	700	2.33%	-	No
	Olympic Pkwy to Eastlake Pkwy	6-Ln w/ RM	22,100	50,000	A	200	0.40%	-	No
Northwoods Dr	Proctor Valley Rd to Blue Ridge Dr	2-Ln	1,000	7,500	A	400	5.33%	-	No

Source: Chen Ryan Associates; January 2017

Notes:
Peak Hour Operations: Do intersections along the roadway segment operate at LOS D or better during the peak hours? – For segments operating at D, E or F.
Bold Indicates LOS D, E, or F.

- *East H Street between Otay Lakes Road and SR-125 SB Ramps (LOS D)*:
    - Proposed buildout project trips would comprise 4.00% (less than 5%) of the total segment volume;
    - Proposed buildout project trips would add 1,200 ADT (more than 800 ADT);
    - The intersections of East H Street / Otay Lakes Road and East H Street / SR-125 SB are both projected to operate at LOS D or better during both peak hours.
    - Therefore, the Proposed Project **would not have a significant impact** to this roadway segment.

- *Proctor Valley Road between Northwoods Drive to the City of Chula Vista Boundary (LOS F):*
    - Proposed buildout project trips would comprise 53.33% (more than 5%) of the total segment volume;
    - Proposed buildout project trips would add 6,400 ADT (more than 800 ADT);
    - The intersections of Northwoods Drive/Agua Vista Drive & Proctor Valley Road is projected to operate at LOS F during both the AM and PM peak hours;
    - Therefore, the Proposed Project **would have a significant direct impact** to this roadway segment.

- *Telegraph Canyon Road between Paseo Ranchero to Otay Lakes Road (LOS D)*:
    - Proposed buildout project trips would comprise 0.60% (less than 5%) of the total segment volume;
    - Proposed buildout project trips would add 300 ADT (less than 800 ADT);
    - The intersections of Telegraph Canyon Road / Paseo Ranchero and Telegraph Canyon Road / Otay Lakes Road are both projected to operate at LOS D or better during both peak hours;
    - Therefore, the Proposed Project **would not have a significant i**mpact to this roadway segment.

- *Otay Lakes Road between SR-125 NB Ramps and Eastlake Parkway (LOS D)*:
    - Proposed buildout project trips would comprise 0.60% (less than 5%) of the total segment volume;
    - Proposed buildout project trips would add 300 ADT (less than 800 ADT);
    - The intersections of Otay Lakes Road / SR-125 NB and Otay Lakes Road / Eastlake Parkway are both projected to operate at LOS D or better during both peak hours;
    - Therefore, the Proposed Project **would not have a significant impact** to this roadway segment.

6.4.3 Two-Lane Highway Segment Analysis

Table 6.4 displays two-lane highway Level of Service analysis results for SR-94 under Year 2025 Cumulative conditions. This analysis was performed using the County of San Diego methodologies as described in Chapter 2.0. Two segments of SR-94 (between Jefferson Road and Maxfield Road, and between Maxfield Road and Melody Road) were not included as a part of this analysis, since the distance between these signalized intersections is less than one mile, the Level of Service for these highway segments is determined based on the intersections' Level of Service along these segments.

Table 6.4 Two-Lane Highway Segment LOS Results – Year 2025 Cumulative conditions

Highway	Segment	LOS Threshold (LOS D)	ADT	LOS w/ Project	LOS w/o Project	Project ADT	Significant Impact?
SR-94	Vista Sage Ln to Lyons Valley Rd	16,200	25,100	F	F	100	No
	Lyons Valley Rd to Jefferson Rd		26,100	F	F	100	No
	Melody Rd to Otay Lakes Rd		15,800	D or better	D or better	100	No

Source: Chen Ryan Associates; January 2017

Note:
Bold Indicates LOS E or F.

As shown, all two-lane highway segments within the County of San Diego are projected to operate at LOS D or better with the addition of Proposed Project traffic, with the exception of SR-94 between Vista Sage Lane and Lyons Valley Road, and SR-94 between Lyons Valley Road and Jefferson Road, both of which are projected to operate at LOS F.

Based on the County of San Diego significance criteria outlined in Section 2.8, the traffic associated with the Proposed Project would not have a significant cumulative impact on SR-94 within the project study area (Proposed Project will add less than 225 daily trips).

6.4.4 Freeway Mainline Analysis

Table 6.5 displays freeway Level of Service analysis results for the study area freeway mainline facilities under Year 2025 Cumulative conditions. The freeway/state highway segment Level of Service analysis was performed utilizing the methodology presented in Section 2.5.

As shown in the table, the following 12 study area freeway mainline segments are projected to operate at LOS E or F under Year 2025 Cumulative conditions.

- I-805, between Home Avenue and SR-94 (LOS F);
- I-805, between SR-94 and Market Street (LOS F);
- I-805, between Market Street and Imperial Avenue (LOS F);
- I-805, between Imperial Avenue and E Division Street (LOS F);
- I-805, between E Division Street and Plaza Boulevard (LOS F);
- I-805, between Plaza Boulevard to SR-54 (LOS F);
- I-805, between SR-54 and Bonita Road (LOS F);
- I-805, between Bonita Road and East H Street (LOS F);
- I-805, between East H Street and Telegraph Canyon Road (LOS F);
- SR-125, between SR-94 Junction and Jamacha Road (LOS F);
- SR-125, between Jamacha Road and Paradise Valley Road (LOS E); and
- SR-54, between I-805 and Reo Drive/Plaza Bonita Center Way (LOS E).

Based on the Freeway Mainline significance criteria outlined in **Section 2.5**, the traffic associated with the Proposed Project would not increase the V/C ratio on any freeway segments operating at LOS E or F under Year 2025 Cumulative conditions. Therefore, no significant Proposed Project related impacts were identified and no mitigation is required.

Table 6.5 Freeway/State Highway Segment LOS Results – Year 2025 Cumulative Conditions

Freeway	Segment	ADT	K	Peak Hour Volume	D	Lanes Per Direction	PHF	HVF	Volume (pc/h/ln)	V/C	LOS	Δ V/C	LOS w/o Project	Significant Impact?
I-805	Home Ave to SR-94	285,700	7.86%	22,456	0.58	4M	0.95	6.00%	3,653	1.522	F	0.005	F	No
	SR-94 to Market St	285,700	8.03%	22,942	0.60	4M	0.95	6.00%	3,839	1.600	F	0.005	F	No
	Market St to Imperial Ave	349,400	8.03%	28,057	0.60	4M + 1 HOV + 1 Aux	0.95	6.00%	3,756	1.565	F	0.005	F	No
	Imperial Ave to E Division St	348,100	8.03%	27,952	0.60	5M + 1 HOV	0.95	6.00%	3,402	1.418	F	0.004	F	No
	E Division St to Plaza Blvd	333,600	8.04%	26,821	0.60	5M + 1 HOV + 1 Aux	0.95	6.00%	3,022	1.259	F	0.004	F	No
	Plaza Blvd to SR-54	323,900	8.04%	26,042	0.60	5M + 1 HOV	0.95	6.00%	3,200	1.333	F	0.005	F	No
	SR-54 to Bonita Rd	354,600	8.01%	28,403	0.57	4M + 1 HOV + 1 Aux	0.95	7.30%	3,657	1.524	F	0.003	F	No
	Bonita Rd to East H St	310,000	8.01%	24,831	0.57	4M + 1 HOV + 1 Aux	0.95	7.30%	3,197	1.332	F	0.002	F	No
	East H St to Telegraph Canyon Rd	308,800	8.01%	24,735	0.57	5M + 1 HOV	0.95	7.30%	2,895	1.206	F	0.001	F	No
SR-125	SR-94 Junction to Jamacha Rd	146,300	8.76%	12,816	0.56	3M	0.95	4.40%	2,618	1.091	F	0.005	F	No
	Jamacha Rd to Paradise Valley Rd	129,600	8.76%	11,353	0.56	3M	0.95	4.40%	2,319	0.966	E	0.005	E	No
	Paradise Valley Rd to SR-54 Junction	130,200	8.76%	11,406	0.56	3M + 1 HOV	0.95	4.40%	1,997	0.832	D	0.004	D	No
	SR-54 to Mt. Miguel Rd	26,700	7.00%	1,869	0.59	2M	0.95	1.90%	592	0.247	A	0.010	A	No
	Mt. Miguel Rd to Proctor Valley Rd	29,600	7.00%	2,072	0.59	2M	0.95	1.90%	656	0.273	A	0.009	A	No
	Proctor Valley Rd to Otay Lakes Rd	22,300	7.00%	1,561	0.59	2M	0.95	1.90%	494	0.206	A	0.003	A	No
	Otay Lakes Rd to Olympic Pkwy	27,900	7.00%	1,953	0.59	2M	0.95	1.90%	618	0.258	A	0.005	A	No
	Olympic Pkwy to Birch Rd	27,100	7.00%	1,897	0.59	2M	0.95	1.90%	600	0.250	A	0.005	A	No

Table 6.5 Freeway/State Highway Segment LOS Results – Year 2025 Cumulative Conditions

Freeway	Segment	ADT	K	Peak Hour Volume	D	Lanes Per Direction	PHF	HVF	Volume (pc/h/ln)	V/C	LOS	Δ V/C	LOS w/o Project	Significant Impact?
SR-125	Birch Rd to Main St	45,300	7.00%	3,171	0.59	2M	0.95	1.90%	1,004	0.418	B	0.006	B	No
	Main St to Otay Valley Rd	45,300	7.00%	3,171	0.59	2M	0.95	1.90%	1,004	0.418	B	0.006	B	No
	Otay Valley Rd to Lone Star Rd	45,700	7.00%	3,199	0.59	2M	0.95	1.90%	1,013	0.422	B	0.006	B	No
	Lone Star Rd to Otay Mesa Rd	45,700	7.00%	3,199	0.59	2M	0.95	1.90%	1,013	0.422	B	0.006	B	No
SR-54	I-805 to Reo Dr/Plaza Bonita Center Wy	138,800	8.23%	11,423	0.58	3M	0.95	1.90%	2,359	0.983	E	0.008	E	No
	Reo Dr/Plaza Bonita Center Wy to Woodman St	127,200	8.32%	10,583	0.55	3M	0.95	1.90%	2,086	0.869	D	0.007	D	No
	Woodman St to Briarwood Rd	114,100	8.27%	9,436	0.55	3M	0.95	1.90%	1,860	0.775	D	0.008	D	No
	Briarwood Rd to SR-125 Junction	106,700	8.45%	9,016	0.52	3M + 1 HOV	0.95	1.90%	1,430	0.596	C	0.003	C	No

Source: Chen Ryan Associates; January 2017

Notes:
K = Percent of Traffic during the peak hour.
D = Directional split.
HVF = Percent of heavy vehicles.
PHF =Peak Hour Factor
M = Mainline lane.
HOV = High Occupancy Vehicle lane.
Aux = Auxiliary lane.
Bold Indicates LOS E or F.

6.4.5 Ramp Intersection Capacity Analysis

Consistent with Caltrans' requirements, the signalized ramp intersections within the project study area were analyzed using ILV procedures, as described in Section 2.6. ILV analysis results are displayed in **Table 6.6** and analysis worksheets for Year 2025 Cumulative conditions are provided in **Appendix J**.

Table 6.6 Ramp Intersection Capacity Analysis – Year 2025 Cumulative Conditions

Intersection	Peak Hour	ILV/hour	Capacity
SR-125 SB / Mt. Miguel Road	AM	262	Under Capacity
	PM	509	Under Capacity
SR-125 NB / Mt. Miguel Road	AM	380	Under Capacity
	PM	376	Under Capacity
I-805 SB / H Street	AM	975	Under Capacity
	PM	1,150	Under Capacity
I-805 NB / H Street	AM	1,040	Under Capacity
	PM	925	Under Capacity
SR-125 SB / H Street	AM	653	Under Capacity
	PM	688	Under Capacity
SR-125 NB / H Street	AM	429	Under Capacity
	PM	409	Under Capacity
SR-125 SB / Mt. Miguel Road	AM	641	Under Capacity
	PM	956	Under Capacity
SR-125 NB / Otay Lakes Road	AM	695	Under Capacity
	PM	914	Under Capacity

Source: Chen Ryan Associates; January 2017

As shown, all freeway ramp interchange intersections are projected to operate at or under capacity under Year 2025 Cumulative conditions.

6.4.6 Ramp Meter Analysis

Table 6.7 displays the ramp metering analysis conducted at study area freeway ramps under Year 2025 Cumulative conditions. Ramp meter rates are expected to be the same in Year 2025 as under Existing conditions. Ramp meter excess demand, delay, and queuing results were calculated using the methodologies outlined in Section 2.7.

As shown in the table, under Year 2025 Cumulative conditions, the peak hour ramp volumes are anticipated to exceed the current ramp meter rate at the I-805 NB On-Ramp @ EB H Street during the AM peak hour, resulting in approximately 17 minutes of delay. However, since the Proposed Project is located to the east of this ramp, Proposed Project traffic would access northbound I-805 from the westbound direction only. Therefore, the Proposed Project would not add any additional traffic to the I-805 NB On-

Ramp @ EB H Street and, and as a result, would not contribute to impacts at this ramp.

Table 6.7 Ramp Metering Analysis – Year 2025 Cumulative Conditions

Location	Peak Hour	With Project					Without Project				S?
		Peak Hour Volume	Meter Rate[1]	Excess Demand[2]	Delay[3] (min)	Queue[4] (ft)	Peak Hour Volume	Excess Demand[2]	Delay[3] (min)	Queue[4] (ft)	
I-805 NB On-Ramp @ WB H Street	AM	811	934	0	0	0	795	0	0	0	No
I-805 NB On-Ramp @ EB H Street	AM	472	369	103	16.75	2,987	472	103	16.75	2,987	No

Source: Chen Ryan Associates; January 2017

Notes:
1. Meter Rate is the peak hour capacity expected to be processed through the ramp meter (veh/hr). This value was obtained from Caltrans.
2. Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater (veh/hr).
3. Delay = (Excess Demand / Meter Rate) X 60 min/hr.
4. Queue = (Excess Demand) X 29 ft/veh.

6.5 Impact Significance and Mitigation

This section identifies required mitigation measures for intersection and roadway facilities that would be significantly impacted by Proposed Project-related traffic under Year 2025 Cumulative conditions.

6.5.1 Intersection

The Proposed Project would have a cumulative impact on one (1) intersection within the County of San Diego that is under the jurisdiction and control of Caltrans, as well as a project specific impact on one (1) intersection in the City of Chula Vista. The following intersection improvements would be required to mitigate the identified traffic impacts:

- *SR-94 & Lyons Valley Road (Direct Impact, County of San Diego)* – Signalization by the 741st EDU would mitigate the direct impact at this intersection. A traffic signal warrant was conducted, and based upon 2014 MUTCD Figure 4C-103 (CA), this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants (provided in Appendix G). This intersection is a Caltrans facility in which the County does not have jurisdiction to permit or implement improvements. Therefore, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable. However, it should be noted that this improvement is part of the improvement project analyzed in the *Caltrans' State Route 94 Improvement Project Draft EIR, July 2015*. In addition, this improvement is also included as a mitigation measure in the Jamul Indian Village Final Environmental Evaluation.

- *Northwoods Drive/Agua Vista Drive & Proctor Valley Road (City of Chula Vista)* – Signalization by the 287th EDU would mitigate the significant project-specific impact at this intersection. A traffic signal warrant was conducted, and based upon *2014 MUTCD Figure 4C-103 (CA),* this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants. The

signal warrant worksheet is provided in Appendix G. However, this intersection is located within the City of Chula Vista and the County does not have the jurisdiction to permit or implement improvements. Therefore, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable. However, it should be noted that the signalization of this intersection is a condition of the Rolling Hills Ranch Plan and the signal mast arms have already been constructed at this intersection. Therefore, only minor improvements would be required to implement a signal at this intersection.

Table 6.8 displays Level of Service analysis results for the mitigated intersection under Year 2025 Cumulative conditions. Calculation worksheets for the intersection analysis are provided in **Appendix K**.

As shown in the table, after implementation of the identified improvements, the impacted intersections will operate at acceptable LOS D or better during both peak hours, which would reduce the Proposed Project related impacts to less than significant.

Table 6.8 Mitigated Intersection LOS Year 2025 Cumulative Conditions

Intersection	Before Mitigation				After Mitigation			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Avg. Delay (Sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
SR-94 & Lyons Valley Road	>500	F	>500	F	37.9	D	22.9	C
Northwoods Drive / Agua Vista Drive & Proctor Valley Road	57.2	F	44.6	E	17.7	B	13.8	B

Source: Chen Ryan Associates; January 2017

Note:
Bold Indicates LOS E or F.

6.5.2 Roadway Segments

The Proposed Project would significantly impact one (1) roadway segment located in the City of Chula Vista and four (4) roadway segments within the County of San Diego under Year 2025 Cumulative conditions. The following improvements would be required to mitigate these impacts:

The Proposed Project would impact one (1) roadway segment located in the City of Chula Vista under Year 2025 Cumulative conditions. The following roadway improvements would be required to mitigate these impacts:

- *Proctor Valley Road, between Northwoods Drive and the City of Chula Vista Boundary (Project Specific Impact, City of Chula Vista)* – widen from a 2-lane roadway to a Class I Collector, by the 563rd EDU. As per the City of Chula Vista Roadway Standards, a Class I collector is a four-lane roadway, typically divided by a two-way left-turn lane. The daily traffic capacity of a Class I Collector is 22,000 ADT (LOS C). With widening to a Class I Collector, the Project's significant impacts to this roadway segment would be fully mitigated as the segment would operate at LOS A once widened and no further mitigation would be required.

Widening to a Class I Collector is consistent with the City of Chula Vista Circulation Plan, which identifies the segment of Proctor Valley Road between Northwoods Drive and the City of Chula Vista boundary as a 4-Lane Major Street. Widening the segment from the 2-lane configuration to four lanes, as recommended by the mitigation measure, would not conflict with the City's long-range road widening plans (four lanes) because the mitigation improvement (widen from two to four lanes) does not foreclose or conflict with the City's ultimate build-out plans or programs, and would not preclude the City from improving the segment to a 4-Lane Major at a future date when/if future traffic conditions warrant such action.

As shown in **Table 6.9**, the proposed improvement would fully mitigate the Proposed Project's project specific impact to the segment of Proctor Valley Road, between Northwoods Drive and the City of Chula Vista boundary. However, because this roadway segment is located within the City of Chula Vista and the County does not have the jurisdiction to permit or implement any improvements, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable.

Table 6.9 Mitigated Roadway Segment LOS Year 2025 Cumulative Conditions

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project
Proctor Valley Road	Northwoods Drive and the City of Chula Vista Boundary	Class I Collector	12,400	22,000	A

Source: Chen Ryan Associates; January 2017

County of San Diego – The Proposed Project was identified to have a significant cumulative impact along the following segments of Proctor Valley Road along the Proposed Project frontage:

- *Proctor Valley Road, between the City of Chula Vista Boundary and Project Driveway #1; and*
- *Proctor Valley Road, between Project Driveway #1 and Project Driveway #2.*

the Proposed Project applicant will pay the appropriate Transportation Impact Fee (TIF). However, based on the daily roadway segment volume to capacity analysis method, the four identified segments are projected to continue to operate at substandard LOS E under Year 2025 Cumulative conditions even after the segments are constructed to their ultimate classification as a 2.2A facility. Based on the arterial analysis shown in **Appendix K**, and summarized in **Table 6.10** below, when constructed to 2.2A, the average travel speed along these segments will be around 30 mph, which is just under the roadway design speed of 40 mph since there are minimal to no interruptions along this corridor.

Table 6.10 Arterial LOS Results After Mitigation Year 2025 Cumulative conditions

Arterial	AM Peak Hour		PM Peak Hour	
	Speed (mph)	Design Speed (mph)	Speed (mph)	Design Speed (mph)
Proctor Valley Road, between the City of Chula Vista Boundary and Project Driveway #1	33.0	40	31.7	40
Proctor Valley Road, between Project Driveway #1 and Project Driveway #2	33.5	40	34.3	40

Source: Chen Ryan Associates; January 2017

Due to the minimal interruptions along Proctor Valley Road, and the distance between Northwood Drive and Project Driveway #1 as greater than 1 mile, it was determined that a more detailed arterial analysis of the four segments would be conducted to further assess future operating conditions. Specifically, the Highway Capacity Software (HCS) 2000 developed by McTrans was utilized to conduct a supplemental arterial analysis. The HCS arterial analysis methodology is based upon Chapter 20 (2-Lane Highway) of the Highway Capacity Manual (HCM) 2000, which determines average travel speed and facility level of service according to the roadway functional classification. Based on the analysis, the average travel speed along these segments would be LOS D when constructed to ultimate classification as a 2.2A facility since there are minimal to no interruptions along this corridor.

In addition, implementation of the Proposed Project traffic control along Proctor Valley Road would include a number of roundabouts. It has been documented by the La Jolla Bird Rock roundabouts in the city of San Diego and other national-level research that 2 lanes of travel with roundabouts can carry up to 25,000 cars per day, which exceeds the projected 17,900 ADT for Proctor Valley Road. Additionally, multi-purpose trail would be provided along the eastside of Proctor Valley Road, which would greatly improve safety and comfort for pedestrians and bicyclists. Therefore, based on the supplemental analysis, the cumulative impact at the three identified segments of Proctor Valley Road, between the City of Chula Vista boundary and Project Driveway #3, is expected to be reduced to less than significant with construction of the segments to a 2.2A facility. However, based on the results of the volume to capacity analysis, and to be conservative, this impact is considered significant and unavoidable.

7.0 Year 2030 Cumulative Conditions

This section provides an analysis of Year 2030 Cumulative traffic conditions with the Proposed Project. Since the Proposed Project land uses are less than those provided for in the County of San Diego General Plan, the Proposed Project is necessarily consistent with the General Plan and no long-range General Plan consistency assessment is required for the Proposed Project. It should be noted that this scenario does not include the remaining undeveloped dwelling units, outside of the proposed project, within the Village 14 and Planning Areas 16/19 allowed by Otay Ranch GDP/SRP. The following section provides an analysis of the full buildout of Village 14 and Planning Areas 16/19 under Year 2030 Cumulative conditions. However, since the remaining lands within these areas are owned by the State and are currently targeted as preserve lands, it is not anticipated that they will be developed.

7.1 Year 2030 Cumulative Project Trip Generation, Distribution and Assignment

Year 2030 Cumulative Project trip assignment was derived by assigning the Proposed Project buildout trip generation estimates (Table 4.1) to the surrounding roadway network based on the Year 2030 Cumulative Proposed Project trip distribution patterns displayed in **Figure 7-1** The Year 2030 Cumulative Proposed Project trip distribution patterns were derived using the SANDAG Series 11 Year 2030 Cumulative Select Zone assignment, which is provided in **Appendix C**. **Figure 7-2** and **Figure 7-3** display the Year 2030 Cumulative project trip assignment at study area roadway segments and intersections, respectively.

7.2 Year 2030 Cumulative Roadway Network

The Year 2030 Cumulative roadway network is based on buildout of the County Circulation Element, the proposed City of Chula Vista General Plan Circulation Element, as well as the City of San Diego's adopted Community Plan Circulation Element. The following additional network specific improvements were also assumed:

To Be Constructed by the Project:

- The Proposed Project will construct Proctor Valley Road as a Light Collector with a Raised Median (2.2A) between its current eastern terminus point within the City of Chula Vista to Project Driveway 6.
- The Proposed Project will construct Proctor Valley Road as a Light Collector (2.2E) between Driveway #6 and Driveway #9.
- The Proposed Project will construct Proctor Valley Road as a two-lane interim roadway (28 feet paved on a 40 foot right-of-way) between Project Driveway #9 and its current western terminus point located in the Jamul Community.

To Be Constructed by Others:

- All Improvements included under Year 2025 Cumulative conditions.
- Main Street is constructed as a 6-Lane Gateway between the SR-125 SB ramps and Eastlake Parkway (City of Chula Vista 2014-2015 TDIF – Facility #64)
- The SR-125 / Main Street interchange is included as a full interchange with partial clover leaf. (City of Chula Vista 2014-2015 TDIF – Facility # 67)

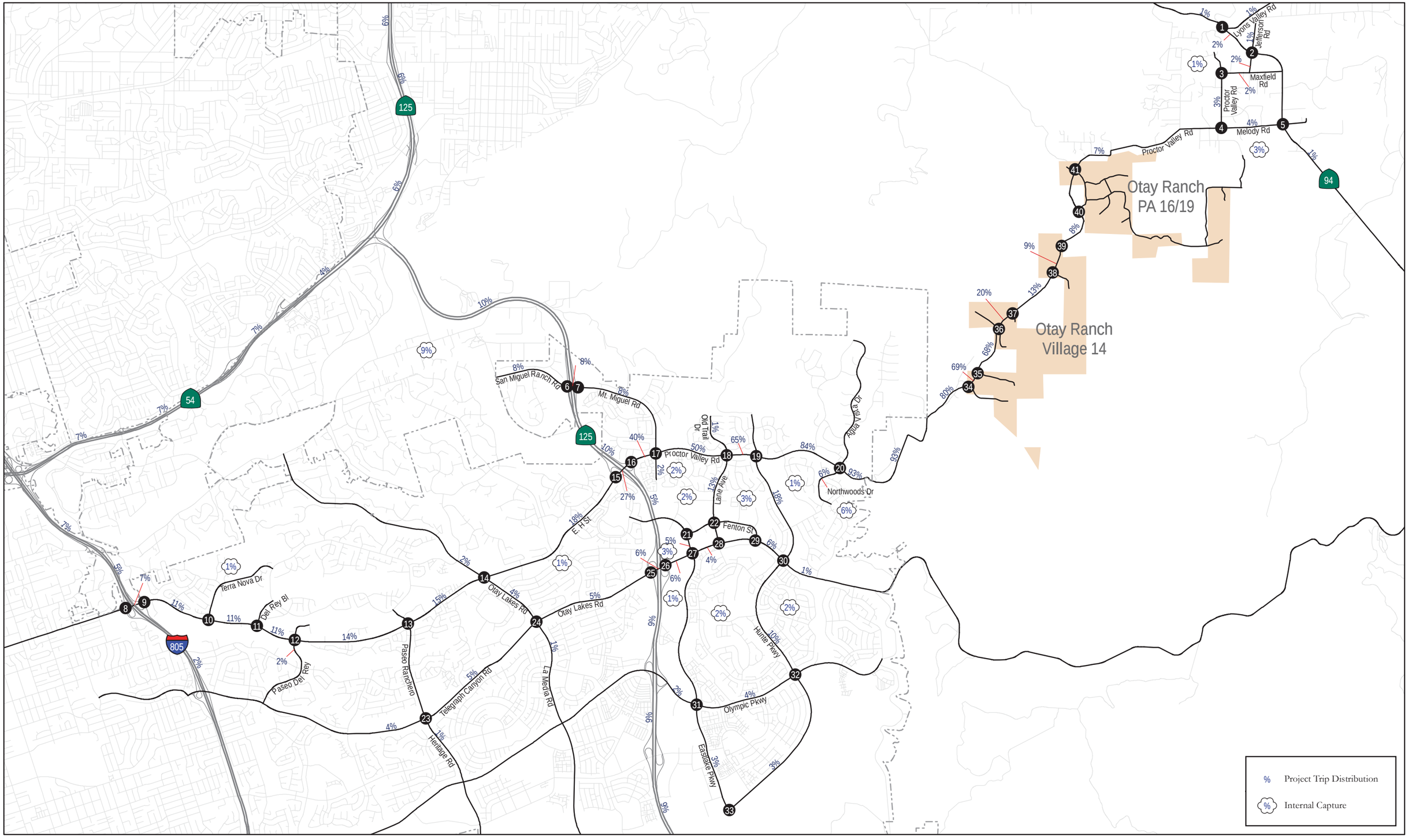

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Figure 7-1
Project Trip Distribution (Year 2030 Cumulative Conditions - Project Buildout)

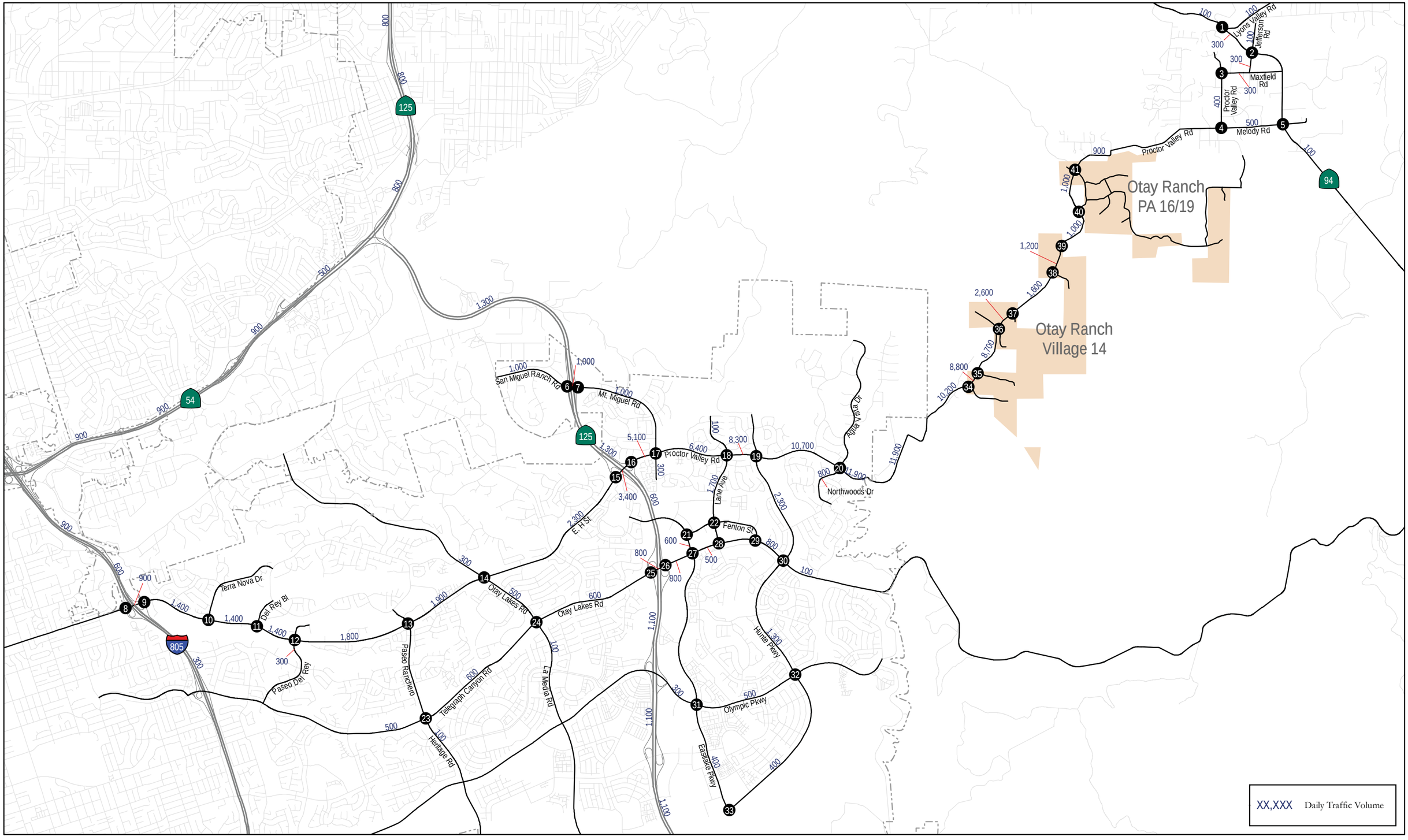

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Figure 7-2
Proposed Project Daily Roadway Segment Trip Assignment (Year 2030 Cumulative Conditions - Project Buildout)

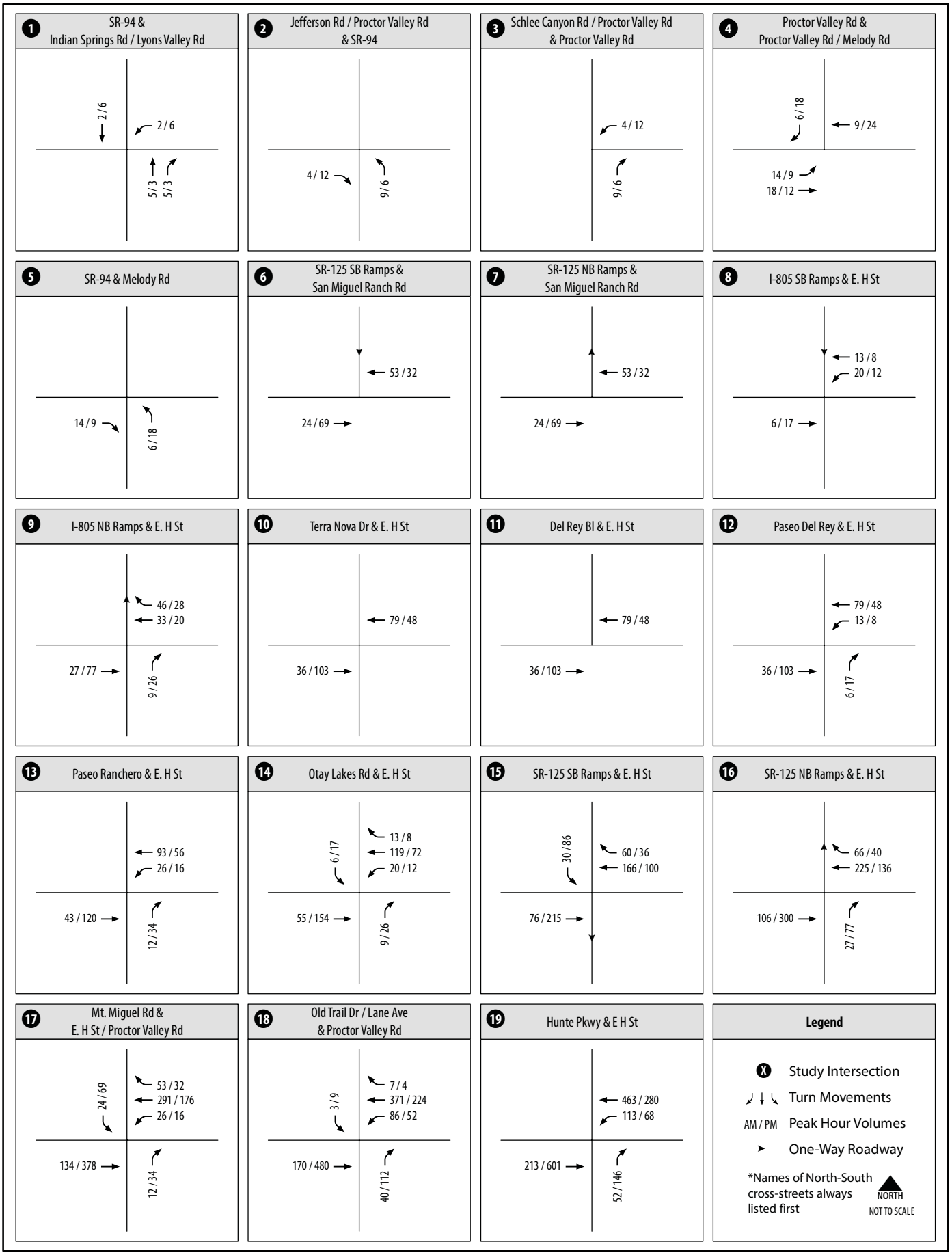

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Figure 7-3

Proposed Project Peak Hour Intersedction Trip Assignment - (Year 2030 Cumulative Conditions - Project Buildout) (Intersections 1-19)

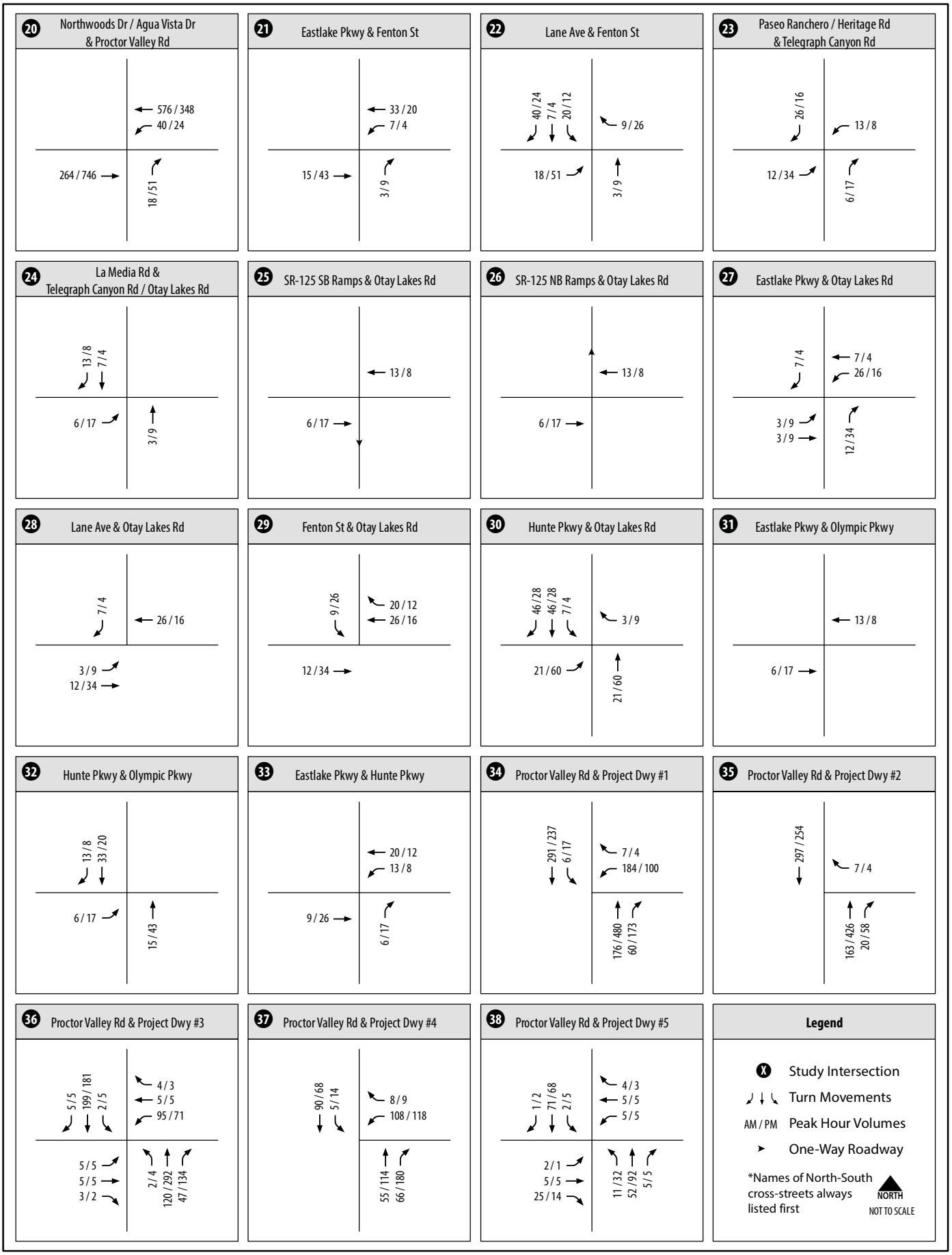

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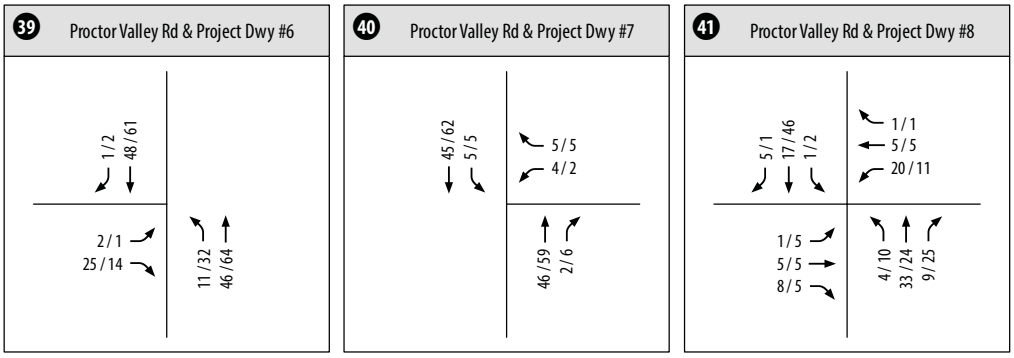
Figure 7-3

Proposed Project Peak Hour Intersection Trip Assignment - (Year 2030 Cumulative Conditions - Project Buildout) (Intersections 20-38)



Legend

- X — Study Intersection
- Turn Movements
- AM / PM — Peak Hour Volumes
- One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH
NOT TO SCALE

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Figure 7-3

Proposed Project Peak Hour Intersection Trip Assignment -
(Year 2030 Cumulative Conditions - Project Buildout) (Intersections 39-41)

- Otay Valley Road is constructed as a 4-Lane Major Arterial between Main Street and Village 9 Street "B". (City of Chula Vista 2014 – 2015 TDIF – Facility #56C & 72)
- The Otay Valley Road / SR-125 interchange is included as south facing half diamond interchange. (City of Chula Vista 2014-2015 TDIF – Facility #68)

The Year 2030 Cumulative conditions analysis is based on full buildout of the City of Chula Vista's General Plan land uses. Correspondingly, all improvements listed above that are included in the City of Chula Vista General Plan Circulation Element and its TDIF program are expected to be fully funded and completed by 2030.

Mitigation carried forward from 2025:

None.

The Year 2030 Cumulative roadway classifications and intersection geometrics are displayed in **Figure 7-4** and **Figure 7-5**, respectively.

7.3 Year 2030 Cumulative Traffic Volumes

Year 2030 Cumulative scenario traffic volumes were developed utilizing the SANDAG Series 11 "Southbay 2" Year 2030 Cumulative model. **Figure 7-6** and **Figure 7-7** show the daily roadway segment and peak hour intersection volumes under Year 2030 Cumulative with project conditions.

7.4 Year 2030 Cumulative Traffic Operations

Level of service analyses under Year 2030 Cumulative conditions were conducted using the methodologies described in Chapter 2.0. Intersection, roadway segment, and freeway mainline level of service results, as well as freeway ramp intersection ILV analysis and ramp meter results, are discussed separately below.

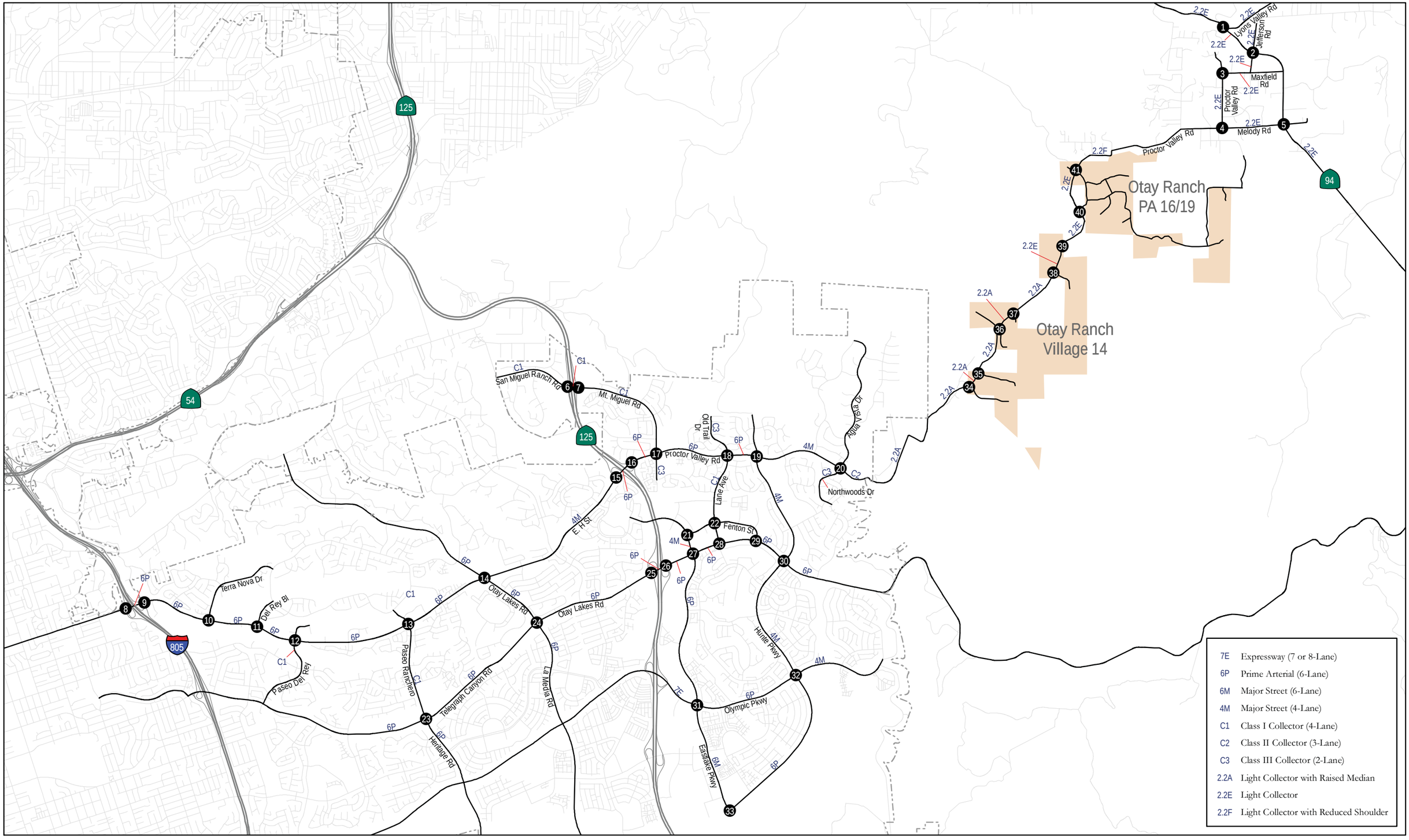
7.4.1 Intersection Analysis

Table 7.1 displays intersection Level of Service and average vehicle delay results for the study area intersections under Year 2030 Cumulative conditions. All intersections are signalized. Level of Service calculation worksheets for Year 2030 Cumulative conditions are provided in **Appendix L**.

As shown, all study area intersections within the City of Chula Vista are anticipated to operate at LOS D or better under Year 2030 Cumulative conditions, with the exception of the following:

- SR-94 & Lyons Valley Road - (LOS F – during both the AM and PM peak hours); and
- Northwoods Drive/Agua Vista Drive & Proctor Valley Road - (LOS F – during both the AM and PM peak hours).

Based on the significance criteria outlined in Section 2.8, the traffic associated with the Proposed Project would cause a significant direct impact to the two intersections listed above.


125
54
805
94
Otay Ranch
PA 16/19
Otay Ranch
Village 14
Lyons Valley Rd
Jefferson Rd
Maxfield Rd
Proctor Valley Rd
Melody Rd
Proctor Valley Rd
Northwoods Dr
Fenton St
Lane Ave
Old Trail Dr
Aguila Vista Dr
E. H St
Otay Lakes Rd
Otay Lakes Rd
Mt. Miguel Rd
San Miguel Ranch Rd
Terra Nova Dr
Del Rey Bl
Paseo Del Rey
Paseo Ranchero
Telegraph Canyon Rd
La Media Rd
Heritage Rd
Hunte Pkwy
Olympic Pkwy
Eastlake Pkwy
7E Expressway (7 or 8-Lane)
6P Prime Arterial (6-Lane)
6M Major Street (6-Lane)
4M Major Street (4-Lane)
C1 Class I Collector (4-Lane)
C2 Class II Collector (3-Lane)
C3 Class III Collector (2-Lane)
2.2A Light Collector with Raised Median
2.2E Light Collector
2.2F Light Collector with Reduced Shoulder

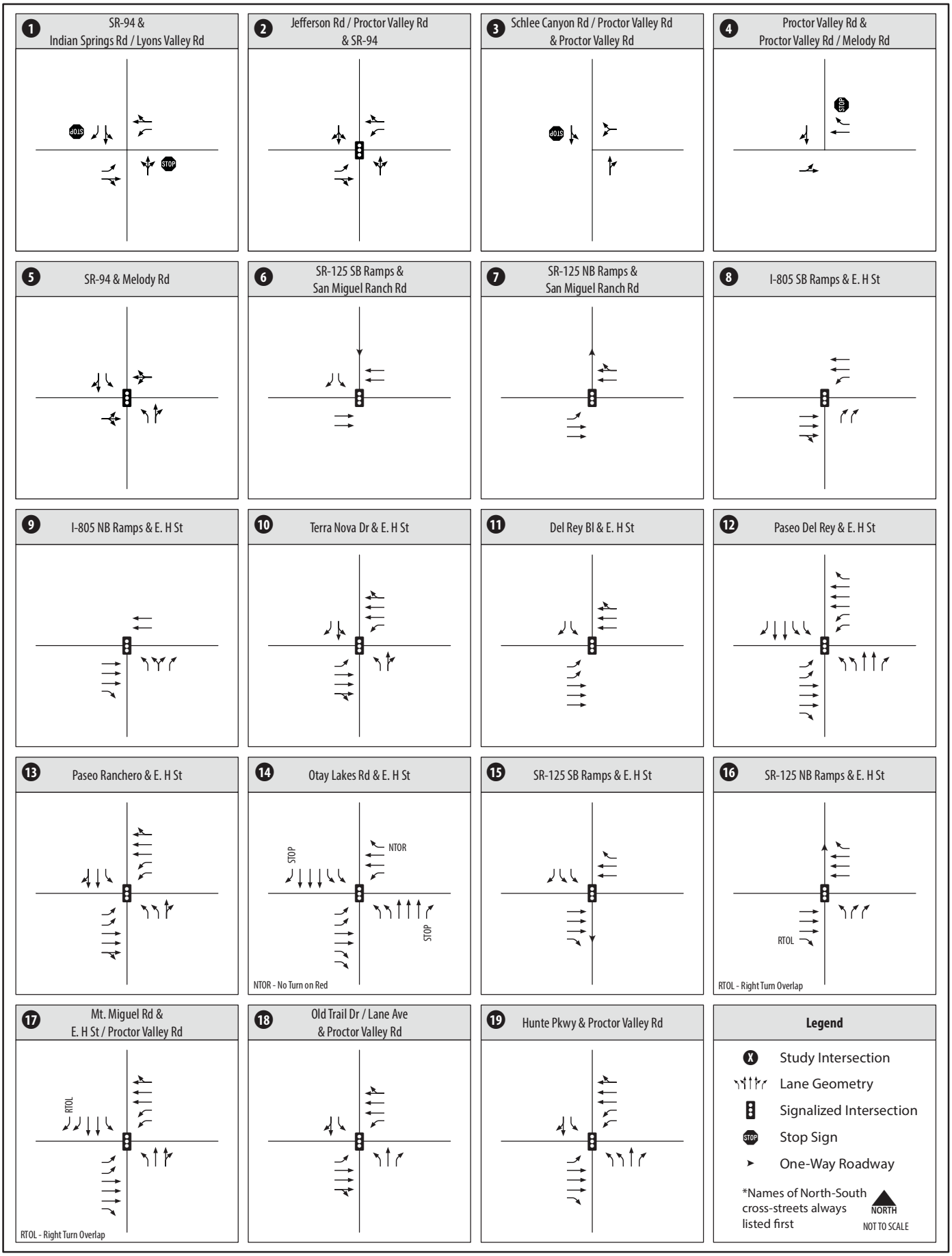


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Figure 7-5

Year 2030 Cumulative Conditions Intersection Geometry (Intersections 1-19)

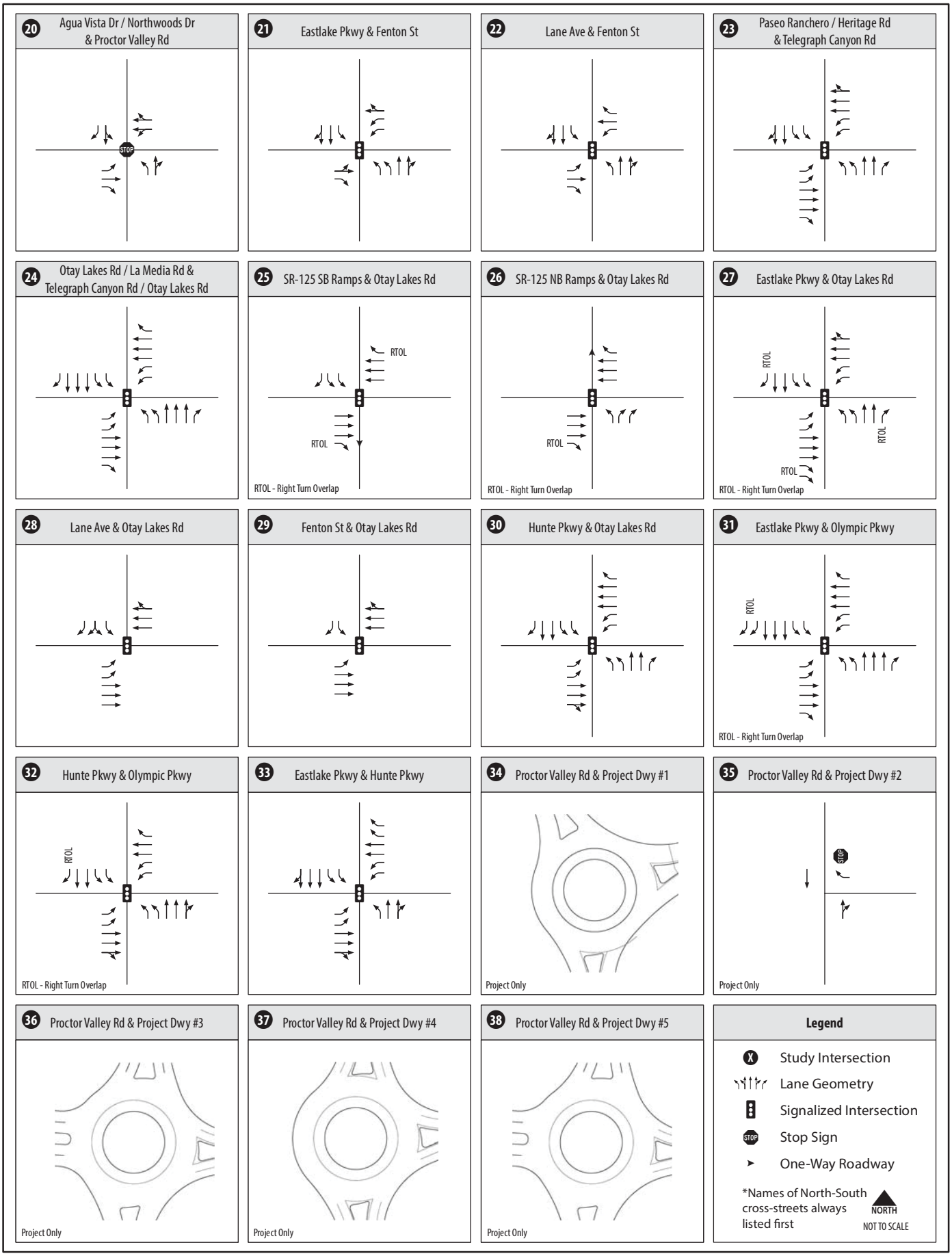

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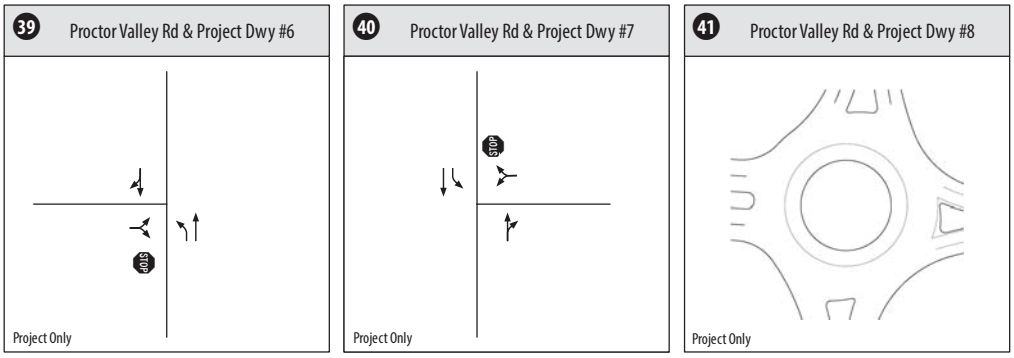
Figure 7-5

Year 2030 Cumulative Conditions Intersection Geometry (Intersections 20-38)



Legend

- Study Intersection
- Lane Geometry
- Signalized Intersection
- Stop Sign
- One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH

NOT TO SCALE

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Figure 7-5

Year 2030 Intersection Geometry
(Intersections 39-41)

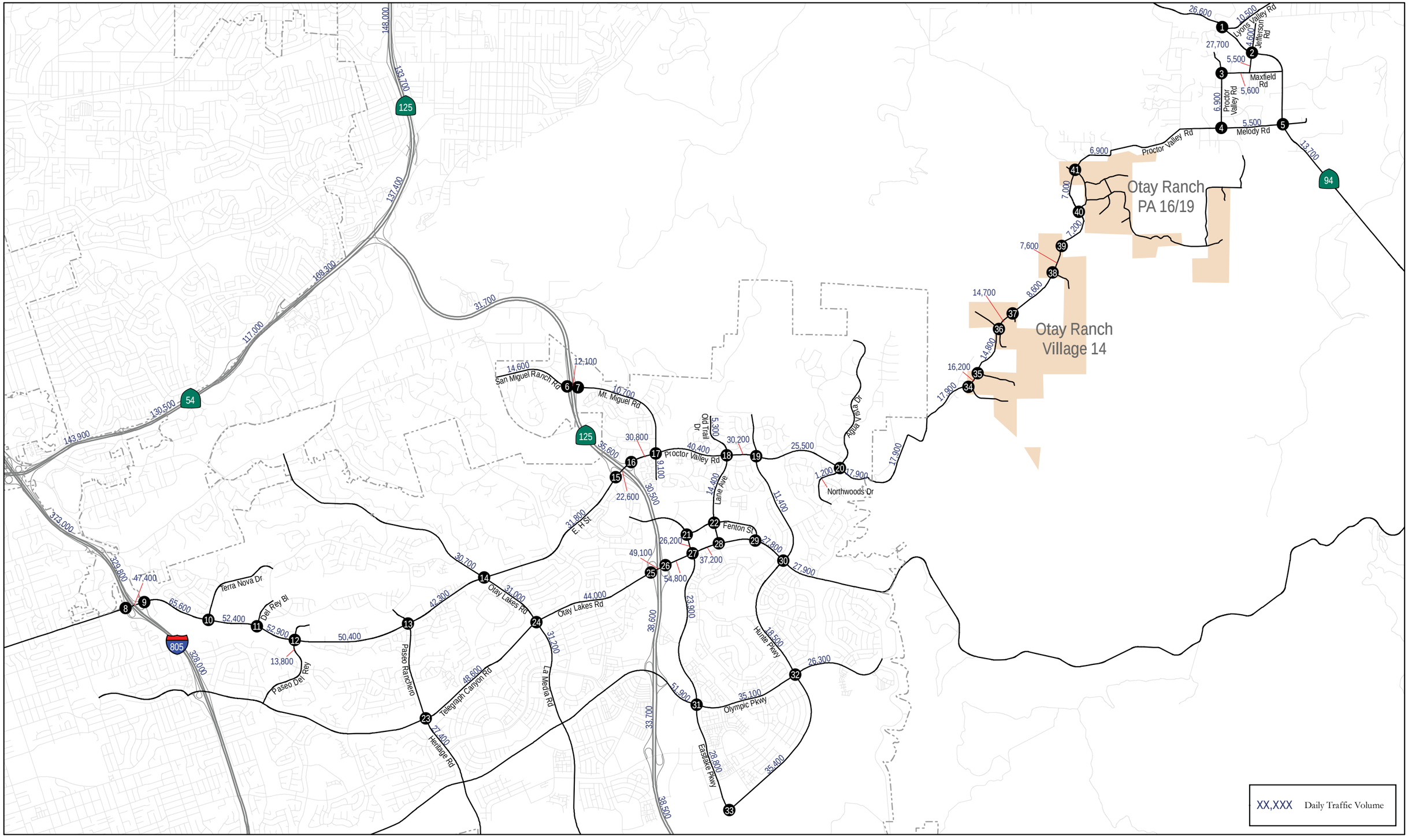

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Figure 7-6
Daily Roadway Segment Traffic Volumes - Year 2030 Cumulative Conditions

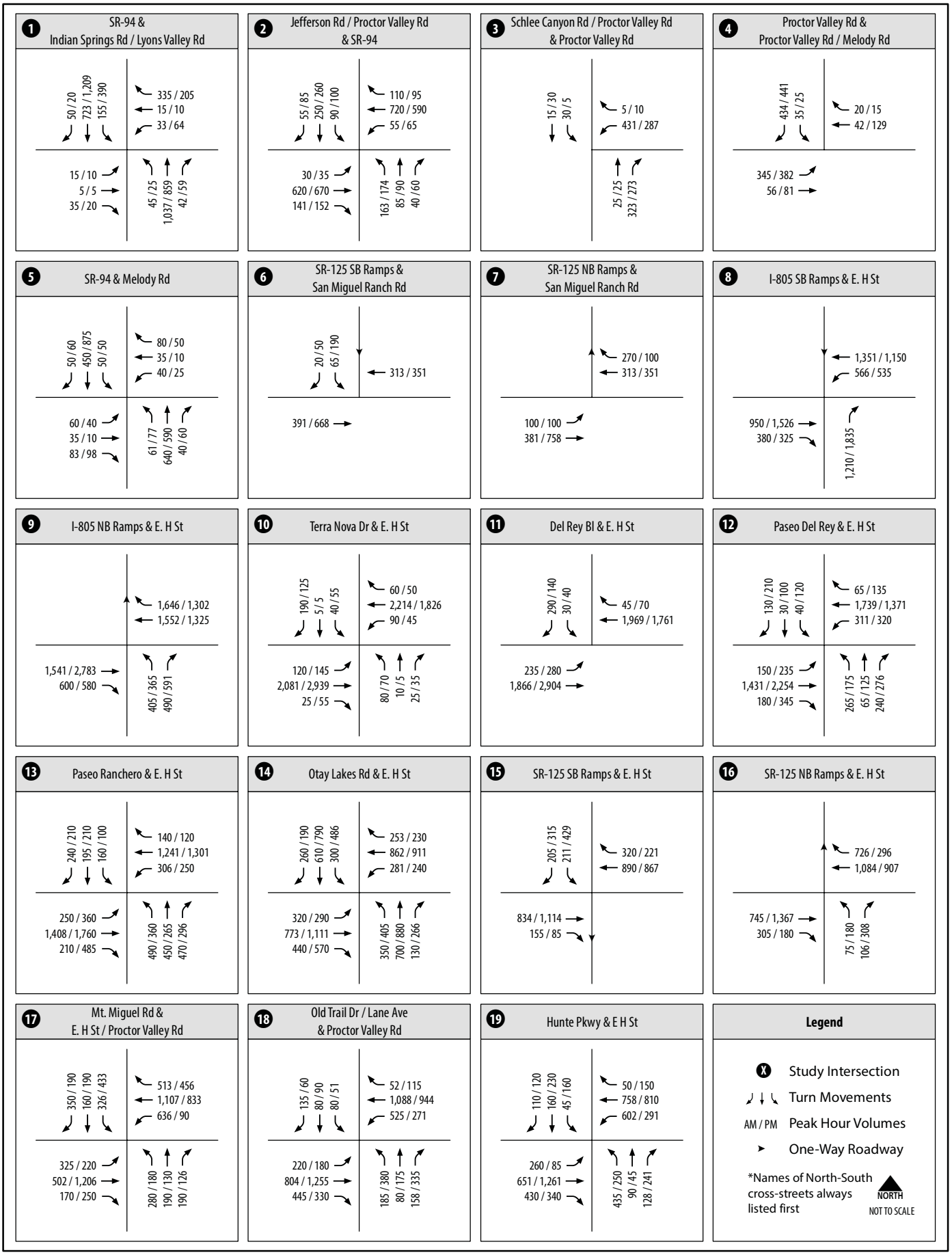

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Figure 7-7

Peak Hour Intersection Traffic Volumes - Year 2030 Cumulative Conditions (Intersections 1-19)

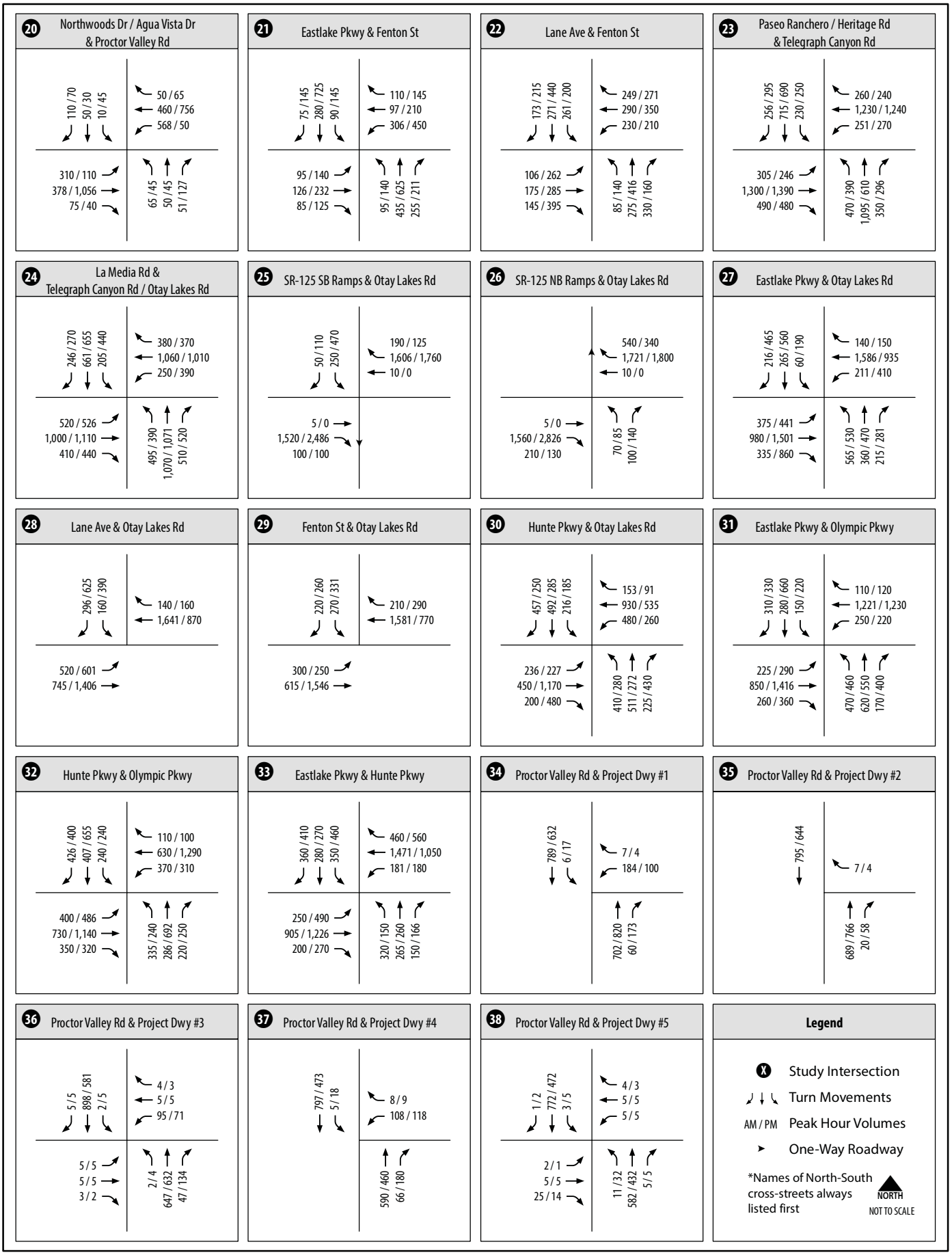

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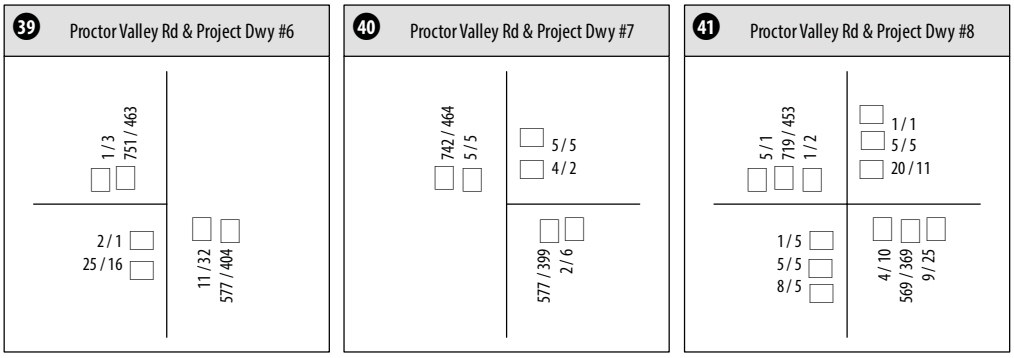
Figure 7-7

Peak Hour Intersection Traffic Volumes - Year 2030 Cumulative Conditions (Intersections 20-38)



Legend

- X — Study Intersection
- □□□ — Turn Movements
- AM / PM — Peak Hour Volumes
- ➤ — One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH

NOT TO SCALE

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Figure 7-7

Peak Hour Intersection Traffic Volumes - Year 2030 Cumulative Conditions (Intersections 39-41)

Table 7.1 Peak Hour Intersection LOS Results – Year 2030 Cumulative Conditions

#	Intersection	Year 2030 Cumulative				Impact Criteria by Jurisdiction			Significant Impact?
		AM Peak Hour		PM Peak Hour		Caltrans/ San Diego Change in Delay (seconds)	Chula Vista (Project % of Entering Volume)	County	
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	AM/PM	AM/PM	AM/PM	
1	SR-94 & Lyons Valley Road	>500	F	>500	F	-			Yes
2	Proctor Valley Road/Jefferson Road & SR-94	37.5	D	41.8	D	N/A			No
3	Proctor Valley Road & Maxfield Road	13.1	B	11.2	B	N/A			No
4	Proctor Valley Road & Melody Road	8.8	A	9.4	A	N/A			No
5	SR-94 & Melody Road	14	B	18.3	B	N/A			No
6	San Miguel Ranch Road & SR-125 SB Ramps	22.0	C	19.6	B		10.8% / 8.5%		No
7	San Miguel Ranch Road & SR-125 NB Ramp	17.0	B	15.0	B		8.4% / 8.2%		No
8	I-805 SB Ramp & East H Street	13.4	B	13.4	B		1.0% / 0.8%		No
9	I-805 NB Ramp & East H Street	10.7	B	15.0	B		1.2% / 1.2%		No
10	Terra Nova Drive & East H Street	16.3	B	21.5	C		1.2% / 1.3%		No
11	Del Rey Boulevard East H Street	13.1	B	11.1	B		1.3% / 1.3%		No
12	Paseo Del Rey & East H Street	22.6	C	42.9	D		3.5% / 3.3%		No
13	Paseo Ranchero & East H Street	53.7	D	52.5	D		3.7% / 4.2%		No
14	Otay Lakes Road & East H Street	41.8	D	50.9	D		5.1% / 4.8%		No
15	SR-125 SB Ramp & East H Street	6.6	A	8.0	A		14.1% / 15.4%		No
16	SR-125 NB Ramp & Proctor Valley Road	3.9	A	6.3	A		15.5% / 18.3%		No
17	Mt Miguel Road & Proctor Valley Road	51.1	D	35.9	D		13.8% / 17.5%		No
18	Lane Avenue & Proctor Valley Road	39.5	D	46.3	D		21.6% / 21.8%		No
19	Hunte Parkway & Proctor Valley Road	27.7	C	33.0	C		27.2% / 28.9%		No
20	Agua Vista Drive / Northwoods Drive & Proctor Valley Road	60.4	F	61.4	F		49.7% / 51.3%		Yes

Table 7.1 Peak Hour Intersection LOS Results – Year 2030 Cumulative Conditions

#	Intersection	Year 2030 Cumulative				Impact Criteria by Jurisdiction			Significant Impact?
		AM Peak Hour		PM Peak Hour		Caltrans/ San Diego Change in Delay (seconds)	Chula Vista (Project % of Entering Volume)	County	
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	AM/PM	AM/PM	AM/PM	
21	East Lake Parkway & Fenton Street	26.0	C	50.4	D		3.3% / 2.5%		No
22	Lane Avenue & Fenton Street	35.9	D	45.2	D		2.5% / 2.0%		No
23	Heritage Road/Paseo Ranchero & Telegraph Canyon Road	53.9	D	51.5	D		1.0% / 1.3%		No
24	La Media Road & Telegraph Canyon Road / Otay Lakes Road	49.2	D	53.8	D		0.5% / 0.6%		No
25	SR-125 SB Ramps & Otay Lakes Road	11.9	B	13.1	B		1.1% / 0.9%		No
26	SR-125 NB Ramps & Otay Lakes Road	9.5	A	20.8	C		1.4% / 1.6%		No
27	East Lake Parkway & Otay Lakes Road	48.2	D	51.8	D		1.3% / 1.4%		No
28	Lane Avenue & Otay Lakes Road	22.9	C	42.6	D		1.3% / 1.8%		No
29	Fenton Street & Otay Lakes Road	25.3	C	29.9	C		2.2% / 2.3%		No
30	Hunte Parkway & Otay Lakes Road	42.7	D	44.7	D		3.4% / 4.2%		No
31	East Lake Parkway & Olympic Parkway	28.5	C	34.1	C		0.5% / 0.4%		No
32	Hunte Parkway & Olympic Parkway	34.9	C	47.8	D		1.8% / 1.5%		No
33	East Lake Parkway & Hunte Parkway	51.9	D	44.9	D		1.1% / 1.2%		No
34	Proctor Valley Road & Project Driveway #1	24.0	C	22.7	D			N/A	No
35	Proctor Valley Road & Project Driveway #2	13.7	B	14.9	B			N/A	No
36	Proctor Valley Road & Project Driveway #3	26.8	D	13.8	B			N/A	No
37	Proctor Valley Road & Project Driveway #4	18.3	C	11.1	B			N/A	No
38	Proctor Valley Road & Project Driveway #5	13.7	B	8.4	A			N/A	No
39	Proctor Valley Road & Project Driveway #6	14.9	B	11.9	B			N/A	No
40	Proctor Valley Road & Project Driveway #7	20	C	12.6	B			N/A	No

Table 7.1 Peak Hour Intersection LOS Results – Year 2030 Cumulative Conditions

		Year 2030 Cumulative				Impact Criteria by Jurisdiction			
		AM Peak Hour		PM Peak Hour		Caltrans/ San Diego Change in Delay (seconds)	Chula Vista (Project % of Entering Volume)	County	
#	Intersection	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	**AM/PM**	**AM/PM**	**AM/PM**	Significant Impact?
41	Proctor Valley Road & Project Driveway #8	12.4	B	7.7	A			N/A	No

Source: Chen Ryan Associates; December 2016

Note:

Bold Indicates LOS E or F.

>500: More than 500 seconds of delay, meaning the traffic at the SSSC is too high for HCS 2010 to accurately calculate

7.4.2 Roadway Segment Analysis

As to County of San Diego roadway segments, **Table 7.2a** displays the Level of Service analysis results for the study area roadway segments located within the County of San Diego under Year 2030 Cumulative conditions.

Table 7.2a Roadway Segment LOS Results – Year 2030 Cumulative Conditions – County of San Diego

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS D)	LOS w/ Project	Project ADT	Significant Impact?
Proctor Valley Rd	City of Chula Vista boundary to Project Driveway #1	2-Ln w/ RM	17,900	13,500	E	11,900	Yes (Cumulative)
	Project Driveway #1 to Project Driveway #2	2-Ln w/ RM	16,200	13,500	E	10,200	Yes (Cumulative)
	Project Driveway #2 to Project Driveway #3	2-Ln w/ RM	14,800	13,500	E	8,800	Yes (Cumulative)
	Project Driveway #3 to Project Driveway #4	2-Ln w/ RM	14,700	13,500	E	8,700	Yes (Cumulative)
	Project Driveway #4 to Project Driveway #5	2-Ln w/ RM	8,600	13,500	C	2,600	No
	Project Driveway #5 to Project Village 14 boundary	2-Ln w/ RM	7,600	13,500	C	1,600	No
	Village 14 boundary to Project Driveway #7	2-Ln	7,200	7,100	D	1,200	No
	Project Driveway #7 to Project Driveway #8	2-Ln	7,000	7,800	C	1,000	No
	Project Driveway #8 to Melody Rd	2-Ln	6,900	9,500	C	700	No
	Melody Rd to Schlee Canyon Rd	2-Ln	6,900	7,800	C	300	No
	Schlee Canyon Rd to Maxfield Rd	2-Ln	5,600	7,100	C	200	No
	Maxfield Rd to SR-94	2-Ln	5,500	7,100	C	200	No
Melody Rd	Lyons Valley Rd to Jefferson Rd	2-Ln	5,500	7,100	C	300	No
Jefferson Rd	Jefferson Rd to Maxfield Rd	2-Ln	4,600	7,100	C	100	No
Lyons Valley Rd	Maxfield Rd to Melody Rd	2-Ln	10,500	9,500	D	100	No

Source: Chen Ryan Associates; January 2017

Note:
Bold Indicates LOS E or F.

As shown, all study area roadway segments within the County of San Diego are projected to operate at LOS D or better within the addition of Proposed Project traffic, with the exception of the following:

- Proctor Valley Road, between City of Chula Vista boundary to Project Driveway #1 (LOS E);
- Proctor Valley Road, between Project Driveway #1 to Project Driveway #2 (LOS E);

- Proctor Valley Road, between Project Driveway #2 to Project Driveway #3 (LOS E); and
- Proctor Valley Road, between Project Driveway #3 to Project Driveway #4 (LOS E).

Based on the County of San Diego significance criteria outlined in Section 2.8, the addition of trips generated by the Proposed Project would cause significant cumulative impacts under Year 2030 Cumulative conditions along the following roadway segments:

- Proctor Valley Road, between City of Chula Vista boundary to Project Driveway #1;
- Proctor Valley Road, between Project Driveway #1 to Project Driveway #2;
- Proctor Valley Road, between Project Driveway #2 to Project Driveway #3; and
- Proctor Valley Road, between Project Driveway #3 to Project Driveway #4.

Table 7.2b displays the Level of Service analysis results for study area roadway segments within the City of Chula Vista under Year 2030 Cumulative conditions.

Table 7.2b Roadway Segment LOS Results – Year 2030 Cumulative Conditions – City of Chula Vista

Roadway	Segment	Classification	ADT w/ Project	ADT Threshold (LOS C)	LOS	Project ADT (< 800)	Project Contribution (≥ 5%)	Peak Hour Operations	Significant Impact?
San Miguel Ranch Rd	Proctor Valley Rd to SR-125 SB Ramp	Class I Collector (4-lane)	14,600	22,000	A	1,000	6.85%	-	No
	SR-125 SB Ramp to SR-125 NB Ramp	Class I Collector (4-lane)	12,100	22,000	A	1,000	8.26%	-	No
San Miguel Ranch / Mt Miguel Rd	SR-125 NB Ramp to Proctor Valley Rd	Class I Collector (4-lane)	10,700	22,000	A	1,000	9.35%	-	No
Mt Miguel Rd	Proctor Valley Rd to Mackenzie Creek Rd	Class I Collector (4-lane)	9,100	22,000	A	300	3.30%	-	No
H St	I-805 SB Ramps to I-805 NB Ramps	Prime Arterial (6-lane)	47,400	50,000	C	900	1.90%	-	No
	I-805 NB Ramps to Terra Nova Dr	Expressway (7-lane)	65,600	70,000	C	1,400	2.13%	-	No
	Terra Nova Dr to Del Rey Blvd	Prime Arterial (6-lane)	52,400	50,000	D	1,400	2.67%	Yes	No
	Del Rey Blvd to Paseo Del Rey	Prime Arterial (6-lane)	52,900	50,000	D	1,400	2.65%	Yes	No
	Paseo Del Rey to Paseo Ranchero	Prime Arterial (6-lane)	50,400	50,000	D	1,800	3.57%	Yes	No
	Paseo Ranchero to Otay Lakes Rd	Prime Arterial (6-lane)	42,300	50,000	B	1,900	4.49%	-	No
	Otay Lakes Rd to SR-125 SB Ramps	Major Street (4-lane)	31,800	30,000	D	2,300	7.23%	Yes	No
Proctor Valley Rd	SR-125 SB Ramps to SR-125 NB Ramps	Prime Arterial (6-lane)	22,600	50,000	A	3,400	15.04%	-	No
	SR-125 NB Ramps to Mt Miguel Rd	Prime Arterial (6-lane)	30,800	50,000	A	5,100	16.56%	-	No
	Mt Miguel Rd to Lane Ave	Prime Arterial (6-lane)	40,400	50,000	B	6,400	15.84%	-	No
	Lane Ave to Hunte Pkwy	Prime Arterial (6-lane)	30,200	50,000	A	8,300	27.48%	-	No

Table 7.2b Roadway Segment LOS Results – Year 2030 Cumulative Conditions – City of Chula Vista

Roadway	Segment	Classification	ADT w/ Project	ADT Threshold (LOS C)	LOS	Project ADT (< 800)	Project Contribution (≥ 5%)	Peak Hour Operations	Significant Impact?
Proctor Valley Rd	Hunte Pkwy to Northwood Dr	Major Street (4-lane)	25,500	30,000	B	10,700	41.96%	-	No
	Northwoods Dr to City of Chula Vista/County Boundary	Class II Collector (3-lane)	15,900	12,000	F	11,900	74.84%	No	Yes (Direct)
Telegraph Canyon Rd	Paseo Ranchero to Otay Lakes Rd	Prime Arterial (6-lane)	48,600	50,000	C	600	1.23%	-	No
Otay Lakes Rd	Ridgeback Rd to E. H St	Prime Arterial (6-lane)	30,700	50,000	A	300	0.98%	-	No
	E. H St to Otay Lakes Rd	Prime Arterial (6-lane)	31,000	50,000	A	500	1.61%	-	No
	Telegraph Canyon to SR-125 SB Ramps	Prime Arterial (6-lane)	44,000	50,000	C	600	1.36%	-	No
	SR-125 SB Ramps to SR-125 NB Ramps	Prime Arterial (6-lane)	49,100	50,000	C	800	1.63%	-	No
	SR-125 NB Ramps to Eastlake Pkwy	Prime Arterial (6-lane)	54,800	50,000	D	800	1.46%	Yes	No
	Eastlake Pkwy to Lane Ave	Prime Arterial (6-lane)	37,200	50,000	A	500	1.34%	-	No
	Lane Ave to Hunte Pkwy	Prime Arterial (6-lane)	27,800	50,000	A	800	2.88%	-	No
	Hunte Pkwy to Agua Vista Dr / Northwoods Dr	Prime Arterial (6-lane)	27,900	50,000	A	100	0.36%	-	No
	SR-125 NB Ramps to Eastlake Pkwy	Expressway (7 or 8-lane)	51,900	70,000	A	300	0.58%	-	No
	Eastlake Pkwy to Hunte Pkwy	Prime Arterial (6-lane)	35,100	50,000	A	500	1.42%	-	No
	Hunte Pkwy to Olympic Vista Rd	Major Street (4-lane)	26,300	30,000	C	0	0.00%	-	No
Paseo Del Rey	E. H St to E. J St	Class I Collector (4-lane)	13,800	22,000	A	300	2.17%	-	No

Table 7.2b Roadway Segment LOS Results – Year 2030 Cumulative Conditions – City of Chula Vista

Roadway	Segment	Classification	ADT w/ Project	ADT Threshold (LOS C)	LOS	Project ADT (< 800)	Project Contribution (≥ 5%)	Peak Hour Operations	Significant Impact?
Heritage Rd	Telegraph Canyon Rd to E. Palomar St	Prime Arterial (6-lane)	27,400	50,000	A	100	0.36%	-	No
La Media Rd	Otay Lakes Rd to E. Palomar St	Prime Arterial (6-lane)	31,200	50,000	A	100	0.32%	-	No
Eastlake Pkwy	Miller Rd to Otay Lakes Rd	Major Street (4-lane)	26,200	30,000	B	600	2.29%	-	No
	Otay Lakes Rd to Olympic Pkwy	Prime Arterial (6-lane)	23,900	50,000	A	0	0.00%	-	No
	Olympic Pkwy to Hunte Pkwy	Major Street (6-lane)	28,800	40,000	A	400	1.39%	-	No
Old Trail Dr	N Trail Ct to Proctor Valley Rd	Class III Collector (2-lane)	5,300	7,500	A	100	1.89%	-	No
Lane Ave	Proctor Valley Rd to Otay Lakes Rd	Class I Collector (4-lane)	14,400	22,000	A	1,700	11.81%	-	No
Hunte Pkwy	Proctor Valley Rd to Otay Lakes Rd	Major Street (4-lane)	11,400	30,000	A	2,300	20.18%	-	No
	Otay Lakes Rd to Olympic Pkwy	Major Street (4-lane)	18,500	30,000	A	1,300	7.03%	-	No
	Olympic Pkwy to Eastlake Pkwy	Prime Arterial (6-lane)	35,400	50,000	A	400	1.13%	-	No
Northwoods Dr	Proctor Valley Rd to Blue Ridge Dr	Class III Collector (2-lane)	1,200	7,500	A	800	66.67%	-	No

Source: Chen Ryan Associates; December 2016

Notes:
Peak Hour Operations: Do intersections along the roadway segment operate at LOS D or better during the peak hours? – For segments operating at D, E or F.
Bold Indicates LOS D, E, or F.

As shown in the table, all study area roadway segments within the City of Chula Vista are projected to operate at LOS C or better under Year 2030 Cumulative conditions within the exception of the following segments. Whether the Project would result in a significant impact at each segment is identified.

- *East H Street, between Terra Nova Drive and Del Rey Boulevard (LOS D):*
  - *P*roposed buildout project trips would comprise 2.67% (less than 5%) of the total segment volume;
  - Proposed buildout project trips add 1,400 ADT (more than 800 ADT);
  - The intersections of East H Street / Terra Nova Drive and East H Street / Del Rey Boulevard are both projected to operate at LOS C or better during both peak hours;
  - Therefore, the Proposed Project **would not have a significant impact** to this roadway segment.
- *East H Street, between Del Rey Boulevard and Paseo Del Rey (LOS D):*
  - *P*roposed buildout project trips would comprise 2.65% (less than 5%) of the total segment volume;
  - Proposed buildout project trips add 1,400 ADT (more than 800 ADT);
  - The intersections of East H Street / Del Rey Boulevard and East H Street / Paseo Del Rey are both projected to operate at LOS D or better during both peak hours;
  - Therefore, the Proposed Project **would not have a significant impact** to this roadway segment.
- *East H Street between Paseo Del Rey and Paseo Ranchero (LOS D*):
  - Proposed buildout project trips would comprise 3.57% (less than 5%) of the total segment volume;
  - Proposed buildout project trips add 1,800 ADT (more than 800 ADT);
  - The intersections of East H Street / Del Rey Boulevard and East H Street / Paseo Del Rey are both projected to operate at LOS D or better during both peak hours;
  - Therefore, the Proposed Project **would not have a significant impact** to this roadway segment.
- *East H Street, between Otay Lakes Road and SR-125 SB Ramps (LOS D):*
  - Proposed buildout project trips would comprise 7.23% (more than 5%) of the total segment volume;
  - Proposed buildout project trips add 2,300 ADT (more than 800 ADT);
  - The intersections of East H Street / Otay Lakes Road and East H Street / SR-125 SB are both projected to operate at LOS D or better during both peak hours;
  - Therefore, the Proposed Project **would not have a significant impact** to this roadway segment.
- *Proctor Valley Road, between Northwoods Drive to the City of Chula Vista Boundary (LOS F):*
  - Proposed buildout project trips would comprise 74.84% (more than 5%) of the total segment volume;
  - Proposed buildout project trips add 11,900 ADT (more than 800 ADT);

- The intersections of Northwoods Drive/Agua Vista Drive & Proctor Valley Road is projected to operate at LOS F during both the AM and PM peak hours;
- Therefore, the Proposed Project **would have a significant direct impact** to this roadway segment.

- *Otay Lakes Road, between SR-125 NB Ramps and Eastlake Parkway (LOS D):*
  - Proposed buildout project trips would comprise 1.46% (less than 5%) of the total segment volume;
  - Proposed buildout project trips add 800 ADT (not exceeding 800 ADT);
  - The intersections of Otay Lakes Road / SR-125 NB and Otay Lakes Road / Eastlake Parkway are projected to operate at LOS D or better during both peak hours;
  - Therefore, the Proposed Project **would not have a significant impact** to this segment.

7.4.3 Two-Lane Highway Segment Analysis

Table 7.3 displays two-lane highway Level of Service analysis results for SR-94 under Year 2030 Cumulative conditions. This analysis was performed using the County of San Diego methodologies as described in Chapter 2.0. Two segments of SR-94 (between Jefferson Road and Maxfield Road, and between Maxfield Road and Melody Road) were not included as a part of this analysis, since the distance between these signalized intersections is less than one mile, the Level of Service for these highway segments is determined based on the intersections' Level of Service along these segments.

Table 7.3 Two-Lane Highway Segment LOS Results – Year 2030 Cumulative Conditions

Highway	Segment	LOS Threshold (LOS D)	ADT	LOS w/ Project	LOS w/o Project	Project ADT	Significant Impact?
SR-94	Vista Sage Ln to Lyons Valley Rd	16,200	26,600	F	F	100	No
	Lyons Valley Rd to Jefferson Rd		27,700	F	F	100	No
	Melody Rd to Otay Lakes Rd		13,700	D or better	D or better	100	No

Source: Chen Ryan Associates; January 2017

Note:
Bold Indicates LOS E or F.

As shown, all two-lane highway segments within the County of San Diego are projected to operate at LOS D or better with the addition of Proposed Project traffic, with the exception of SR-94 between Vista Sage Lane and Lyons Valley Road, and SR-94 between Lyons Valley Road and Jefferson Road, both of which are projected to operate at LOS F.

Based on the County of San Diego significance criteria outlined in Section 2.8, the traffic associated with the Proposed Project would not have a significant cumulative impact on SR-94 within the project study area (Proposed Project will add less than 225 daily trips).

7.4.4 Freeway Mainline Analysis

Table 7.4 displays freeway Level of Service analysis results for the study area freeway mainline facilities under Year 2030 Cumulative conditions. The freeway/state highway segment Level of Service analysis was performed utilizing the methodology presented in Section 2.5.

As shown in the table, the following 12 study area freeway mainline segments are projected to operate at LOS E or F under Year 2030 Cumulative conditions.

- I-805, between Home Avenue and SR-94 (LOS F);
- I-805, between SR-94 and Market Street (LOS F);
- I-805, between Market Street and Imperial Avenue (LOS F);
- I-805, between Imperial Avenue and E Division Street (LOS F);
- I-805, between E Division Street and Plaza Boulevard (LOS F);
- I-805, between Plaza Boulevard to SR-54 (LOS F);
- I-805, between SR-54 and Bonita Road (LOS F);
- I-805, between Bonita Road and East H Street (LOS F);
- I-805, between East H Street and Telegraph Canyon Road (LOS F);
- SR-125, between SR-94 Junction and Jamacha Road (LOS F);
- SR-125, between Jamacha Road and Paradise Valley Road (LOS E); and
- SR-54, between I-805 and Reo Drive/Plaza Bonita Center Way (LOS F).

Based on the Freeway Mainline significance criteria outlined in Section 2.8, the traffic associated with the Proposed Project not increase the V/C ratio by more than 0.01 on any freeway segments operating at LOS E or F under Year 2030 Cumulative conditions. Therefore, no significant Proposed Project related impacts were identified and no mitigation is required.

Table 7.4 Freeway/State Highway Segment LOS Results – Year 2030 Cumulative Conditions

Freeway	Segment	ADT	Peak Hour Percent	Peak Hour Volume	Directional Split	Lanes Per Direction	PHF	HVF	Volume (pc/h/ln)	V/C	LOS	Δ V/C	LOS w/o Project	Significant Impact?
I-805	Home Ave to SR-94	297,500	7.86%	23,384	0.58	4M	0.95	6.00%	3,804	1.585	F	0.005	F	No
	SR-94 to Market St	297,500	8.03%	23,889	0.60	4M	0.95	6.00%	3,997	1.665	F	0.005	F	No
	Market St to Imperial Ave	354,200	8.03%	28,442	0.60	4M + 1 HOV + 1 Aux	0.95	6.00%	3,807	1.586	F	0.004	F	No
	Imperial Ave to E Division St	352,300	8.03%	28,290	0.60	5M + 1 HOV	0.95	6.00%	3,443	1.435	F	0.004	F	No
	E Division St to Plaza Blvd	339,600	8.04%	27,304	0.60	5M + 1 HOV + 1 Aux	0.95	6.00%	3,076	1.282	F	0.004	F	No
	Plaza Blvd to SR-54	330,700	8.04%	26,588	0.60	5M + 1 HOV	0.95	6.00%	3,268	1.362	F	0.006	F	No
	SR-54 to Bonita Rd	373,000	8.01%	29,877	0.57	4M + 1 HOV + 1 Aux	0.95	7.32%	3,847	1.603	F	0.004	F	No
	Bonita Rd to East H St	329,800	8.01%	26,417	0.57	4M + 1 HOV + 1 Aux	0.95	7.32%	3,401	1.417	F	0.002	F	No
	East H St to Telegraph Canyon Rd	328,000	8.01%	26,273	0.57	5M + 1 HOV	0.95	7.32%	3,075	1.281	F	0.001	F	No
SR-125	SR-94 Junction to Jamacha Rd	148,000	8.76%	12,965	0.56	3M	0.95	4.40%	2,648	1.103	F	0.006	F	No
	Jamacha Rd to Paradise Valley Rd	133,700	8.76%	11,712	0.56	3M	0.95	4.40%	2,392	0.997	E	0.006	E	No
	Paradise Valley Rd to SR-54 Junction	137,400	8.76%	12,036	0.56	3M + 1 HOV	0.95	4.40%	2,107	0.878	D	0.005	D	No
	SR-54 to Mt. Miguel Rd	31,700	7.00%	2,219	0.59	2M	0.95	1.90%	702	0.293	A	0.012	A	No
	Mt. Miguel Rd to Proctor Valley Rd	35,600	7.00%	2,492	0.59	2M	0.95	1.90%	789	0.329	B	0.012	A	No
	Proctor Valley Rd to Otay Lakes Rd	30,500	7.00%	2,135	0.59	2M	0.95	1.90%	676	0.282	A	0.006	A	No

Table 7.4 Freeway/State Highway Segment LOS Results – Year 2030 Cumulative Conditions

Freeway	Segment	ADT	Peak Hour Percent	Peak Hour Volume	Directional Split	Lanes Per Direction	PHF	HVF	Volume (pc/h/ln)	V/C	LOS	Δ V/C	LOS w/o Project	Significant Impact?
SR-125	Otay Lakes Rd to Olympic Pkwy	38,600	7.00%	2,702	0.59	2M	0.95	1.90%	855	0.356	B	0.010	B	No
	Olympic Pkwy to Birch Rd	33,700	7.00%	2,359	0.59	2M	0.95	1.90%	747	0.311	A	0.010	A	No
	Birch Rd to Main St	38,500	7.00%	2,695	0.59	2M	0.95	1.90%	853	0.355	B	0.010	B	No
	Main St to Otay Valley Rd	51,600	7.00%	3,612	0.59	2M	0.95	1.90%	1,143	0.476	B	0.010	B	No
	Otay Valley Rd to Lone Star Rd	90,500	7.00%	6,335	0.59	2M	0.95	1.90%	2,005	0.835	D	0.010	D	No
	Lone Star Rd to Otay Mesa Rd	80,200	7.00%	5,614	0.59	2M	0.95	1.90%	1,777	0.740	D	0.007	C	No
SR-54	I-805 to Reo Dr/Plaza Bonita Center Wy	143,900	8.23%	11,843	0.58	3M	0.95	1.90%	2,445	1.019	F	0.006	F	No
	Reo Dr/Plaza Bonita Center Wy to Woodman St	130,500	8.32%	10,858	0.55	3M	0.95	1.90%	2,141	0.892	D	0.006	D	No
	Woodman St to Briarwood Rd	117,000	8.27%	9,676	0.55	3M	0.95	1.90%	1,908	0.795	D	0.006	D	No
	Briarwood Rd to SR-125 Junction	108,300	8.45%	9,151	0.52	3M + 1 HOV	0.95	1.90%	1,451	0.605	C	0.003	C	No

Source: Chen Ryan Associates; December 2016

Notes:
K = Percent of Traffic during the peak hour.
D = Directional split.
HVF = Percent of heavy vehicles.
PHF =Peak Hour Factor
M = Mainline lane.
HOV = High Occupancy Vehicle lane.
Aux = Auxiliary lane.
Bold Indicates LOS E or F.

7.4.5 Ramp Intersection Capacity Analysis

Consistent with Caltrans' requirements, the signalized ramp intersections within the Proposed Project study area were analyzed using ILV procedures, as described in Section 2.6. ILV analysis results are displayed in **Table 7.5** and analysis worksheets for Year 2030 Cumulative conditions are provided in **Appendix L**.

Table 7.5 Ramp Intersection Capacity Analysis – Year 2030 Cumulative Conditions

Intersection	Peak Hour	ILV/hour	Capacity
SR-125 SB / Mt. Miguel Road	AM	261	Under Capacity
	PM	524	Under Capacity
SR-125 NB / Mt. Miguel Road	AM	392	Under Capacity
	PM	379	Under Capacity
I-805 SB / H Street	AM	1,009	Under Capacity
	PM	1,152	Under Capacity
I-805 NB / H Street	AM	1,074	Under Capacity
	PM	981	Under Capacity
SR-125 SB / H Street	AM	650	Under Capacity
	PM	749	Under Capacity
SR-125 NB / H Street	AM	436	Under Capacity
	PM	482	Under Capacity
SR-125 SB / Mt. Miguel Road	AM	632	Under Capacity
	PM	1,064	Under Capacity
SR-125 NB / Otay Lakes Road	AM	644	Under Capacity
	PM	1,027	Under Capacity

Source: Chen Ryan Associates; August 2015

As shown, all freeway ramp interchange intersections are projected to operate under capacity under Year 2030 Cumulative conditions.

7.4.6 Ramp Meter Analysis

Table 7.6 displays the ramp metering analysis conducted at study area freeway ramps under Year 2030 Cumulative conditions. Ramp meter rates are expected to be the same in 2030 as under Existing conditions. Ramp meter excess demand, delay, and queuing results were calculated using the methodologies outlined in Section 2.7.

Table 7.6 Ramp Metering Analysis – Year 2030 Cumulative Conditions

Location	Peak Hour	With Project					Without Project				S?
		Peak Hour Volume	Meter Rate[1]	Excess Demand[2]	Delay[3] (min)	Queue[4] (ft)	Peak Hour Volume	Excess Demand[2]	Delay[3] (min)	Queue[4] (ft)	
I-805 NB On-Ramp @ WB H Street	AM	823	934	0	0	0	800	0	0	0	No
I-805 NB On-Ramp @ EB H Street	AM	480	369	111	18.05	3,219	480	111	18.05	3,219	No

Source: Chen Ryan Associates; December 2016

Notes:
1. Meter Rate is the peak hour capacity expected to be processed through the ramp meter (veh/hr). This value was obtained from Caltrans.
2. Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater (veh/hr).
3. Delay = (Excess Demand / Meter Rate) X 60 min/hr.
4. Queue = (Excess Demand) X 29 ft/veh.

As shown, under Year 2030 Cumulative conditions, the peak hour ramp volumes are anticipated to exceed the current ramp meter rate at the I-805 NB On-Ramp @ EB H Street during the AM peak hour, resulting in 18-plus minutes of delay. However, since the Proposed Project is located to the east of this ramp, Proposed Project traffic would access northbound I-805 from the westbound direction only. Therefore, the Proposed Project would not add any additional traffic to the I-805 NB On-Ramp @ EB H Street and would not contribute to any impacts at this ramp.

7.5 Impact Significance and Mitigation

This section identifies required mitigation measures for intersection and roadway facilities that would be significantly impacted by Proposed Project-related traffic under Year 2030 Cumulative conditions.

7.5.1 Intersection

The Proposed Project would have a cumulative impact on one (1) intersection within the County of San Diego that is under the jurisdiction and control of Caltrans, as well as a project specific impact on one (1) intersection in the City of Chula Vista. The following intersection improvements would be required to mitigate the identified traffic impacts:

- *SR-94 & Lyons Valley Road (County of San Diego)* – Signalization by the 741st EDU would mitigate the cumulative impact identified under the 2030 cumulative conditions scenario and the direct impact identified under Existing plus Project conditions at this intersection. A traffic signal warrant was conducted, and based upon 2014 MUTCD Figure 4C-103 (CA), this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants (provided in Appendix G). This intersection is a Caltrans facility in which the County does not have jurisdiction to permit or implement improvements. Therefore, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable. However, it should be noted that this improvement is part of the improvement project analyzed in the *Caltrans'*

State Route 94 Improvement Project Draft EIR, July 2015. In addition, this improvement is also included as a mitigation measure in the Jamul Indian Village Final Environmental Evaluation.

- *Northwoods Drive/Agua Vista Drive & Proctor Valley Road (City of Chula Vista)* – Signalization would mitigate the cumulative impact at this intersection. A traffic signal warrant was conducted, and based upon *2014 MUTCD Figure 4C-103 (CA),* this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants. The signal warrant worksheet is provided in Appendix G. However, this intersection is located within the City of Chula Vista and the County does not have the jurisdiction to permit or implement improvements. Therefore, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable. It should be noted that the signalization of this intersection is a condition of the Rolling Hills Ranch Plan and the signal mast arms have already been constructed at this intersection. Therefore, only minor improvements would be required to implement a signal at this intersection.

Table 7.7 displays Level of Service analysis results for the mitigated intersections under Year 2030 Cumulative conditions. Calculation worksheets for the intersection analysis are provided in **Appendix M**.

Table 7.7 Mitigated Intersection LOS Year 2030 Cumulative Conditions

Intersection	Before Mitigation				After Mitigation			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Avg. Delay (Sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
SR-94 & Lyons Valley Road	>500	F	>500	F	42.9	D	52.7	D
Agua Vista Drive / Northwoods Drive & Proctor Valley Road	60.4	F	61.4	F	18.7	B	19.7	B

Source: Chen Ryan Associates; December 2016

Note:
Bold Indicates LOS E or F.

As shown in the table, after implementation of the identified improvements, the impacted intersections would operate at acceptable LOS D during both peak hours.

7.5.2 Roadway Segments

The Proposed Project would have a significant impact on one (1) roadway segment, located in the City of Chula Vista, under Year 2030 Cumulative conditions. The following roadway improvements would be required to mitigate the impacts:

Segments in the City of Chula Vista

The Proposed Project would significantly impact one (1) roadway segment located in the City of Chula Vista under Year 2030 Cumulative conditions. The following roadway improvements would be required to mitigate the impacts:

- *Proctor Valley Road, between Northwoods Drive and the City of Chula Vista Boundary (Project Specific Impact, City of Chula Vista)* – widen from a 2-lane roadway to a Class I Collector. As per the City of Chula Vista Roadway Standards, a Class I collector is a four-lane roadway, typically divided by a two-way left-turn lane. The daily traffic capacity of a Class I Collector is 22,000 ADT (LOS C). With widening to a Class I Collector, the Project's significant impacts to this roadway segment would be fully mitigated as the segment would operate at LOS B once widened and no further mitigation would be required.

  Widening to a Class I Collector is consistent with the City of Chula Vista Circulation Plan, which identifies the segment of Proctor Valley Road between Northwoods Drive and the City of Chula Vista boundary as a 4-Lane Major Street. Widening the segment from the 2-lane configuration to four lanes, as recommended by the mitigation measure, would not conflict with the City's long-range road widening plans (four lanes) because the mitigation improvement (widen from two to four lanes) does not foreclose or conflict with the City's ultimate build-out plans or programs, and would not preclude the City from improving the segment to a 4-Lane Major at a future date when/if future traffic conditions warrant such action.

  As shown in **Table 7.8,** the proposed improvement would fully mitigate the Proposed Project's project specific impact to the segment of Proctor Valley Road, between Northwoods Drive and the City of Chula Vista boundary. However, because this roadway segment is located within the City of Chula Vista and the County does not have the jurisdiction to permit or implement any improvements, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable.

Table 7.8 Mitigated Roadway Segment LOS Year 2030 Cumulative Conditions

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project
Proctor Valley Road	Agua Vista Drive / Northwoods Drive and the City of Chula Vista Boundary	Class I Collector	15,900	22,000	B

Source: Chen Ryan Associates; August 2015

County of San Diego – The Proposed Project was identified to have a significant cumulative impact along the following four (4) segments of Proctor Valley Road along the Proposed Project frontage:

- *Proctor Valley Road, between the City of Chula Vista Boundary and Project Driveway #1;*
- *Proctor Valley Road, between Project Driveway #1 and Project Driveway #2; and*
- *Proctor Valley Road, between Project Driveway #2 and Project Driveway #3*; and
- *Proctor Valley Road, between Project Driveway #3 to Project Driveway #4*

The Project applicant will pay the appropriate Transportation Impact Fee (TIF). However, based on the daily roadway segment volume to capacity analysis method, the four identified segments are projected to continue to operate at substandard LOS E under Year 2025 Cumulative conditions even

after the segments are constructed to their ultimate classification as a 2.2A facility. Based on the arterial analysis shown in **Appendix M**, and summarized in **Table 7.9** below, when constructed to 2.2A, the average travel speed along these segments will be around 30 mph, which is just under the roadway design speed of 40 mph since there are minimal to no interruptions along this corridor.

Table 7.9 Arterial LOS Results After Mitigation Year 2030 Cumulative Conditions

Arterial	AM Peak Hour		PM Peak Hour	
	Speed (mph)	Design Speed (mph)	Speed (mph)	Design Speed (mph)
Proctor Valley Road, between the City of Chula Vista Boundary and Project Driveway #1	29.8	40	29.9	40
Proctor Valley Road, between Project Driveway #1 and Project Driveway #2	31.8	40	32.1	40
Proctor Valley Road, between Project Driveway #2 and Project Driveway #3	31.9	40	32.5	40
Proctor Valley Road, between Project Driveway #3 and Project Driveway #4	31.3	40	34.1	40

Source: Chen Ryan Associates; January 2016

Due to the minimal interruptions along Proctor Valley Road, and the distance between Northwood Drive and Project Driveway #1 as greater than 1 mile, it was determined that a more detailed arterial analysis of the four segments would be conducted to further assess future operating conditions. Specifically, the Highway Capacity Software (HCS) 2000 developed by McTrans was utilized to conduct a supplemental arterial analysis. The HCS arterial analysis methodology is based upon Chapter 20 (2-Lane Highway) of the Highway Capacity Manual (HCM) 2000, which determines average travel speed and facility level of service according to the roadway functional classification. Based on the analysis, the average travel speed along these segments would be LOS D when constructed to ultimate classification as a 2.2A facility since there are minimal to no interruptions along this corridor.

In addition, implementation of the Proposed Project traffic control along Proctor Valley Road would include a number of roundabouts. It has been documented by the La Jolla Bird Rock roundabouts in the city of San Diego and other national-level research that 2 lanes of travel with roundabouts can carry up to 25,000 cars per day, which exceeds the projected 17,900 ADT for Proctor Valley Road. Additionally, multi-purpose trail would be provided along the eastside of Proctor Valley Road, which would greatly improve safety and comfort for pedestrians and bicyclists. Therefore, based on the supplemental analysis, the cumulative impact at the three identified segments of Proctor Valley Road, between the City of Chula Vista boundary and Project Driveway #4, is expected to be reduced to less than significant with construction of the segments to a 2.2A facility. However, based on the results of the volume to capacity analysis, and to be conservative, this impact is considered significant and unavoidable.

8.0 Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property

This section provides an analysis of Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property traffic conditions with the assumption that all of the additional dwelling units allowed under the approved Otay Ranch GDP/SRP, in the areas not included within the Proposed Project area, would be developed. This is a theoretical, highly unlikely scenario as the site of a majority of the additional dwelling units that would be developed under this scenario is located in Village 14 and Planning Area 16 on State property (Rancho Jamul Preserve). Accordingly, it is highly unlikely that these additional units would ever be developed. Nevertheless, the analysis of impacts associated with this scenario is presented in this Section 8.0.

As previously noted, since the Proposed Project land uses are consistent with those included in the Otay Ranch GDP/SRP and in the County of San Diego General Plan, no long-range General Plan consistency assessment is required for the Proposed Project.

8.1 Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property Roadway Network

The Year 2030 roadway network under this scenario is based on buildout of the County Circulation Element, the proposed City of Chula Vista General Plan Circulation Element, as well as the City of San Diego's adopted Community Plan Circulation Element. In addition, the following network specific improvements were also included:

To Be Constructed by the Proposed Project:

- The Proposed Project will construct Proctor Valley Road as follows:
  - A Light Collector with a Raised Median (2.2A) between its current eastern terminus within the City of Chula Vista to Project Driveway 5;
  - A Light Collector between Project Driveway 5 and the Village 14 Boundary; and
  - As a two-lane interim roadway (28 feet paved on a 40-foot right-of-way) between the Village 14 Boundary and its current western terminus point located in the community of Jamul.
- The Proposed Project will extend Whispering Meadows Lane to the South, as a Rural Road, to provide a secondary access point for Planning Area 16.
- All Proposed Project Driveways and access points.

To Be Constructed by Others:

- All Improvements assumed under Year 2025 Cumulative conditions.
- Main Street is constructed as a 6-Lane Gateway between the SR-125 SB ramps and Eastlake Parkway (City of Chula Vista 2014-2015 TDIF – Facility #64)
- The SR-125 / Main Street interchange is included as a full interchange with partial clover leaf. (City of Chula Vista 2014-2015 TDIF – Facility # 67)
- Otay Valley Road is constructed as a 4-Lane Major Arterial between Main Street and Village 9 Street "B". (City of Chula Vista 2014 – 2015 TDIF – Facility #56C & 72)

- The Otay Valley Road / SR-125 interchange is included as south facing half diamond interchange. (City of Chula Vista 2014-2015 TDIF – Facility #68)

Mitigation carried forward from 2025:

None.

The Year 2030Cumulative Conditions Plus Hypothetical Development of State Preserve Property roadway classifications and intersection geometrics under this scenario are assumed to be identical to those in Year 2030 Cumulative Conditions, as previously displayed in Figure 7-4 and Figure 7-5.

8.1.1 Cumulative Units Allowed by the Otay Ranch Specific Plan

Since the Proposed Project applicant does not own all of the parcels within Village 14 and Planning Area 16, it was assumed that the remaining areas would be developed to the full capacity of the Otay Ranch GDP/SRP, as a worst-case scenario. **Table 8.1** compares the total land uses allowed by the Otay Ranch GDP/SRP compared to the Proposed Project land uses. The remaining net land uses were assumed as a cumulative project. It should be noted that there are currently no known plans or applications to develop these remaining parcels, and, as previously noted, the majority of these remaining land uses would be developed on property owned by either the State, as part of the Rancho Jamul Preserve, or by the United States Fish and Wildlife Service in the "Inverted L." Therefore, it is highly likely that they would remain in preserve and never be developed.

Table 8.1 Otay Ranch Cumulative Land Uses

Plan	Village	SF (units)	MF (units)	Park (acres)	Community Facility (acres)	School (acres)	Commercial (Acres)
Otay Ranch GDP/SRP	V14	1563	150	10	7.5	10	2.9
	PA16	390	0	2.5	1.7	0	0
	PA19	20	0	0	0	0	0
	Total	*1973*	*150*	*12.5*	*9.2*	*10*	*2.9*
Proposed Project	V14	994	0	13.9	4.5	9.7	1.7
	PA16 PA19	125	0	0	0	0	0
	Total	*1119*	*0*	*13.9*	*4.5*	*9.7*	*1.7*
Additional Units		854	150	-	4.7	-	1.2

Source: Otay Ranch Specific Plan, Chen Ryan Associates; January 2017

Table 8.2 displays the trip generation for the additional land uses in Village 14 and Planning Areas 16 & 19 that would be developed under this scenario.

Table 8.2 Otay Ranch Cumulative Land Uses Trip Generation

Land Use	Units	Trip Rate	ADT	%	AM Peak Hour				%	PM Peak Hour			
					Trips	Split	In	Out		Trips	Split	In	Out
Single Family Detached Housing	854 Units	10/Units	8,540	8%	683	(3:7)	205	478	10%	854	(7:3)	598	256
Community Facility	4.7 Acres	30/Acres	141	5%	8	(5:5)	4	4	8%	11	(5:5)	5	6
Mixed Use: Commercial/Residential	1.2 Acres	2,000/Acre	2,400	3%	72	(6:4)	43	29	9%	216	(5:5)	108	108
		Total	11,081		763		252	511		1,081		711	370

Source: SANDAG Trip Generation Manual, Chen Ryan Associates; January 2017

As shown, the additional land uses are anticipated to generate 11,081 total daily trips within 763 trips (252-in / 511-out) during the AM peak hour and 1,081 (711-in / 370-out) during the PM peak hour.

8.2 Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property Traffic Volumes

Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property traffic volumes under this scenario were developed utilizing the SANDAG Series 11 "Southbay 2" Year 2030 model. The analysis under this scenario is based on full buildout of the City of Chula Vista's General Plan land uses, the County of San Diego General Plan Land uses as well as the addition of the Cumulative uses outlined in Table 8.1 and Table 8.2 (854 additional single family dwelling units, 4.7 acres of community facilities and 1.2 acres of commercial). Correspondingly, all improvements listed above that are included in the City of Chula Vista General Plan Circulation Element and its TDIF program are expected to be fully funded and completed by 2030.

If the assumed roadway improvements are not in place as modeled for the Year 2030 With Cumulative Units scenario, additional significant traffic impacts could occur beyond those identified here.

8.3 Year 2030 Project Trip Generation, Distribution and Assignment

Year 2030 Project trip assignment under this scenario was derived by assigning the Proposed Project buildout trip generation estimates (Table 4.1) to the surrounding roadway network based on the Year 2030 trip distribution patterns previously displayed in Figure 7-1**.** The Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property trip distribution patterns were derived using the SANDAG Series 11 Year 2030 With Cumulative Units Select Zone assignment, which is provided in **Appendix C**. Figure 7-2 and Figure 7-3 display the Year 2030 With Cumulative Units project trip assignment at study area roadway segments and intersections, respectively.

Figure 8-1 and **Figure 8-2** show the daily roadway segment and peak hour intersection volumes under Year 2030 With Cumulative Units with project conditions.

8.4 Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property Traffic Operations

Level of service analyses under Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property conditions were conducted using the methodologies described in Chapter 2.0. Intersection, roadway segment, and freeway mainline level of service results, as well as freeway ramp intersection ILV analysis and ramp meter results, are discussed separately below.

8.4.1 Intersection Analysis

Table 8.3 displays intersection Level of Service and average vehicle delay results for the study area intersections under Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property. All intersections are signalized. Level of Service calculation worksheets for Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property conditions are provided in **Appendix N**.

As shown, all study area intersections within the City of Chula Vista are anticipated to operate at LOS D or better under Year 2030 With Cumulative Units conditions, with the exception of the following:

- SR-94 and Lyons Valley Road (LOS F – during both the AM and PM peak hours);
- Paseo Ranchero & East H Street (LOS E – during both the AM and PM peak hours);
- Mt Miguel Road & East H Street (LOS F – during the AM peak hour and LOS E - during the PM peak hour);
- Lane Avenue & East H Street (LOS F – during the AM peak hour and LOS E - during the PM peak hour);
- Northwoods Drive/Agua Vista Drive & Proctor Valley Road (LOS F – during both the AM and PM peak hours);
- Proctor Valley Road & Project Driveway #1 - (LOS F – during both the AM and PM peak hours);
- Proctor Valley Road & Project Driveway #2 - (LOS E – during the PM peak hour);
- Proctor Valley Road & Project Driveway #3 - (LOS F – during both the AM and PM peak hours);
- Proctor Valley Road & Project Driveway #4 - (LOS F – during both the AM and PM peak hours); and
- Proctor Valley Road & Project Driveway #5 - (LOS E – during the AM peak hour).

Based on the City of Chula Vista traffic impact standards outlined in Section 2.8, the Proposed Project traffic would cause a significant direct impact at the following intersections:

- SR-94 and Lyons Valley Road (Cumulative);
- Paseo Ranchero & East H Street (Cumulative);
- Mt Miguel Road & East H Street (Project Specific);
- Lane Avenue & East H Street (Project Specific);
- Northwoods Drive/Agua Vista Drive & Proctor Valley Road (Project Specific)
- Proctor Valley Road & Project Driveway #1 - (Cumulative);
- Proctor Valley Road & Project Driveway #2 - (Cumulative);
- Proctor Valley Road & Project Driveway #3 - (Cumulative);
- Proctor Valley Road & Project Driveway #4 - (Cumulative); and
- Proctor Valley Road & Project Driveway #5 - (Cumulative).

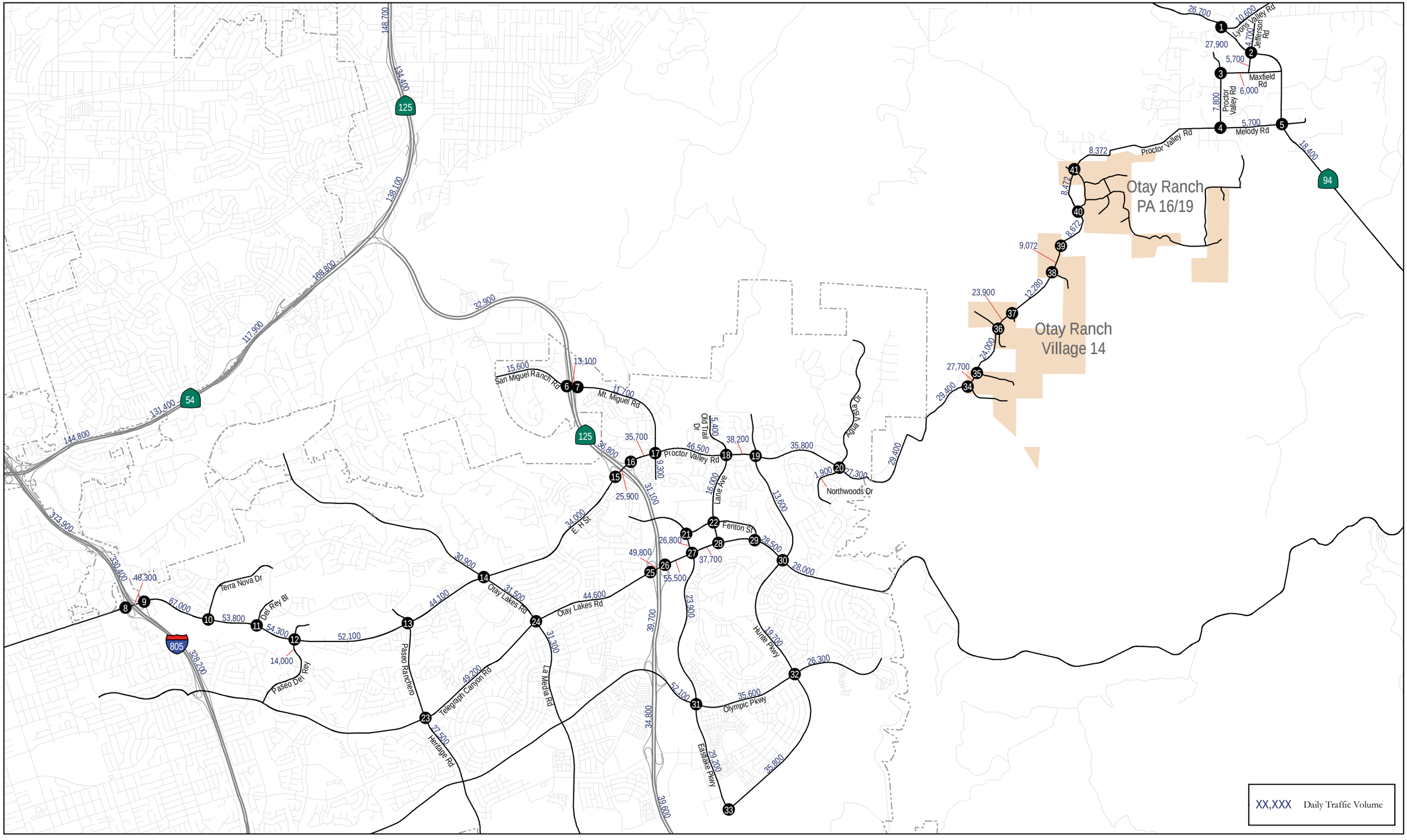

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Figure 8-1
Daily Roadway Segment Traffic Volumes - Year 2030 Cumulative Conditions
Plus Hypothetical Development of State Preserve Property

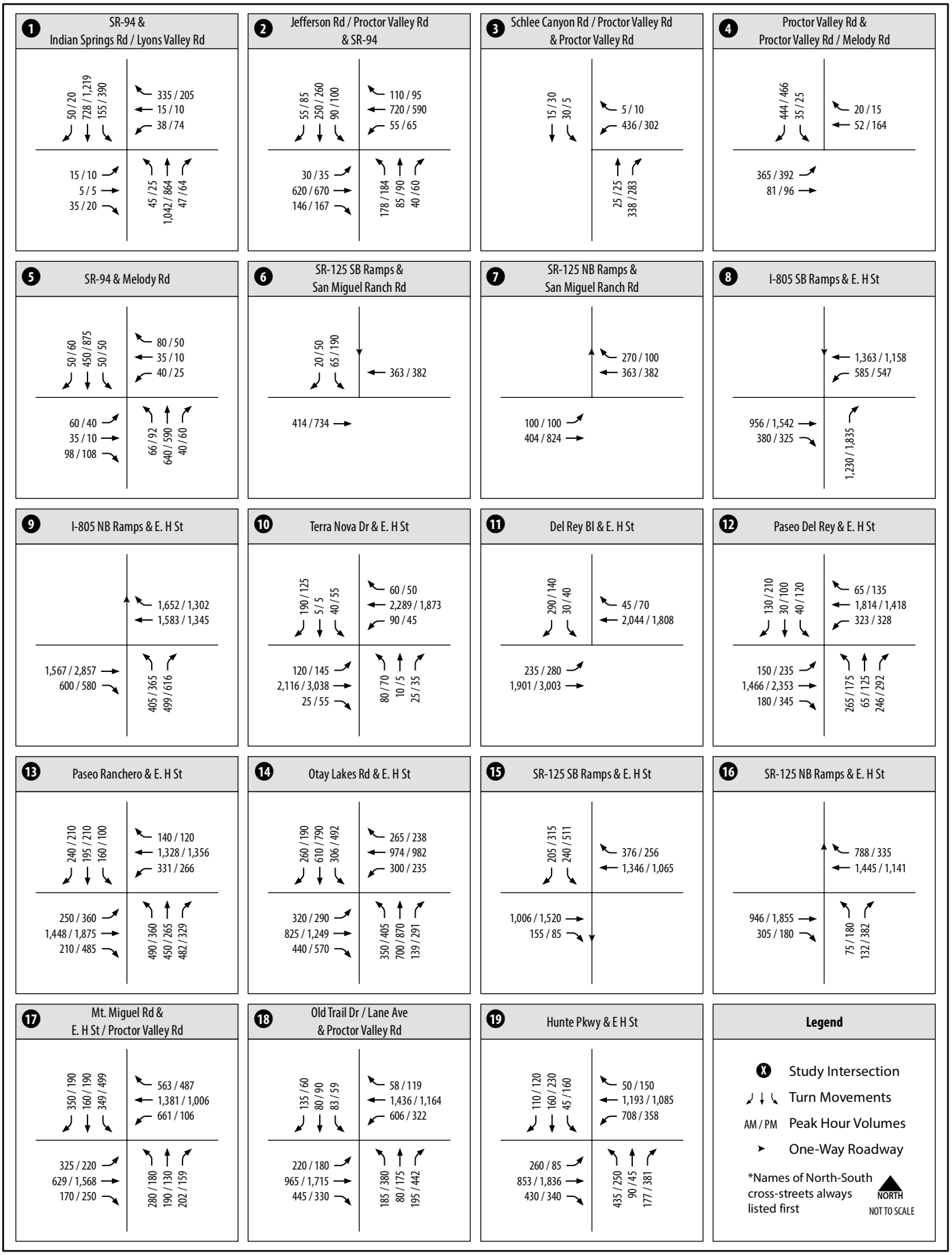

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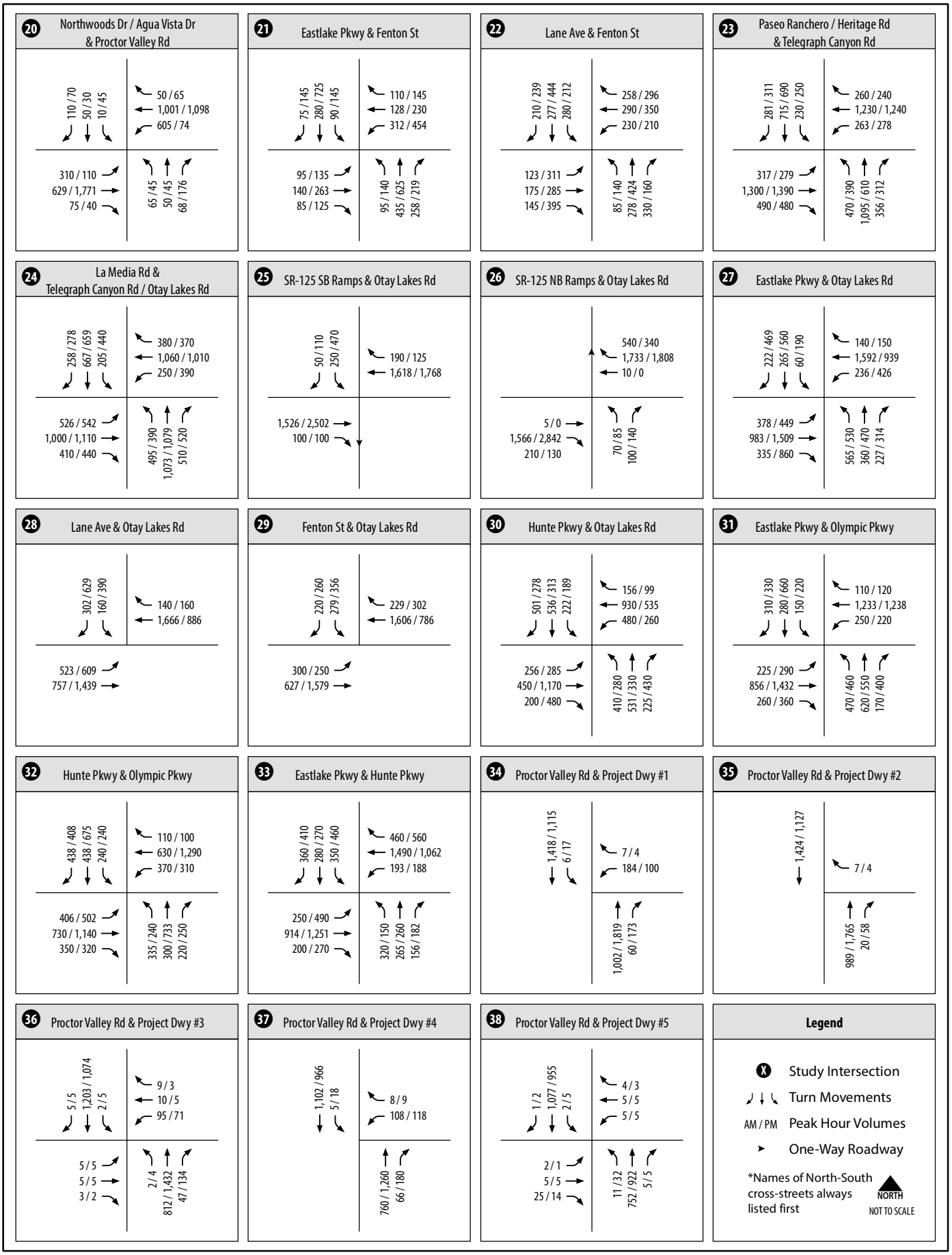
Figure 8-2

Peak Hour Intersection Traffic Volumes - Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property (Intersections 1-19)



Otay Ranch Village 14, 16 & 19
Transportation Impact Study

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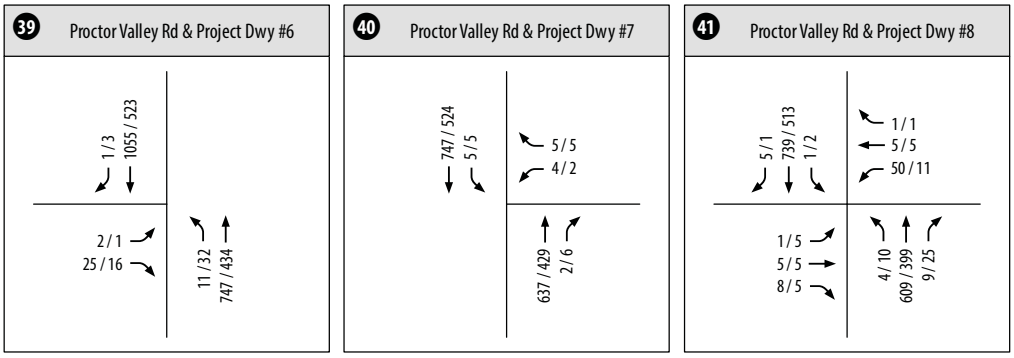
Figure 8-2

Peak Hour Intersection Traffic Volumes - Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property (Intersections 20-38)



Legend

- X — Study Intersection
- Turn Movements
- AM / PM — Peak Hour Volumes
- One-Way Roadway

*Names of North-South cross-streets always listed first

NORTH
NOT TO SCALE

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Figure 8-2

Peak Hour Intersection Traffic Volumes - Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property (Intersections 39-41)

Table 8.3 Peak Hour Intersection LOS Results – Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property

#	Intersection	Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property				Impact Criteria by Jurisdiction			Significant Impact?
		AM Peak Hour		PM Peak Hour		Caltrans/ San Diego Change in Delay (seconds)	Chula Vista (Project % of Entering Volume)	County	
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	**AM/PM**	**AM/PM**	**AM/PM**	
1	SR-94 & Lyons Valley Road	>500	F	>500	F	-			Yes
2	Proctor Valley Road/Jefferson Road & SR-94	40.5	D	42.3	D	N/A			No
3	Proctor Valley Road & Maxfield Road	13.4	B	11.3	B	N/A			No
4	Proctor Valley Road & Melody Road	9.0	A	9.7	A	N/A			No
5	SR-94 & Melody Road	14.6	B	19.7	B	N/A			No
6	San Miguel Ranch Road & SR-125 SB Ramps	22.1	C	20.0	B		10.7% / 8.4%		No
7	San Miguel Ranch Road & SR-125 NB Ramp	16.7	B	14.6	B		8.3% / 8.1%		No
8	I-805 SB Ramp & East H Street	14.5	B	13.9	B		1.0% / 0.8%		No
9	I-805 NB Ramp & East H Street	12.3	B	16.9	B		1.2% / 1.2%		No
10	Terra Nova Drive & East H Street	20.0	C	25.1	C		1.2% / 1.3%		No
11	Del Rey Boulevard & East H Street	14.4	B	11.7	B		1.3% / 1.3%		No
12	Paseo Del Rey & East H Street	24.3	C	54.0	D		3.5% / 3.3%		No
13	Paseo Ranchero & East H Street	61.6	E	57.6	E		3.7% / 4.2%		Yes
14	Otay Lakes Road & East H Street	52.4	D	54.8	D		5.0% / 4.8%		No
15	SR-125 SB Ramp & East H Street	7.9	A	8.5	A		14.0% / 15.2%		No
16	SR-125 NB Ramp & Proctor Valley Road	5.0	A	7.2	A		15.3% / 18.1%		No
17	Mt Miguel Road & Proctor Valley Road	81.6	F	66.2	E		13.7% / 17.3%		Yes
18	Lane Avenue & Proctor Valley Road	114.6	F	71.8	E		21.4% / 21.6%		Yes
19	Hunte Parkway & Proctor Valley Road	54.0	D	53.3	D		26.9% / 28.6%		No

Table 8.3 Peak Hour Intersection LOS Results – Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property

#	Intersection	Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property				Impact Criteria by Jurisdiction			Significant Impact?
		AM Peak Hour		PM Peak Hour		Caltrans/ San Diego Change in Delay (seconds)	Chula Vista (Project % of Entering Volume)	County	
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	**AM/PM**	**AM/PM**	**AM/PM**	
20	Agua Vista Drive / Northwoods Drive & Proctor Valley Road	70.8	F	72.0	F		49.2% / 50.8%		Yes
21	East Lake Parkway & Fenton Street	26.9	C	54.6	D		3.3% / 2.5%		No
22	Lane Avenue & Fenton Street	38.1	D	52.8	D		2.5% / 2.0%		No
23	Heritage Road/Paseo Ranchero & Telegraph Canyon Road	54.8	D	53.7	D		1.0% / 1.3%		No
24	La Media Road & Telegraph Canyon Road / Otay Lakes Road	49.5	D	55.0	D		0.5% / 0.6%		No
25	SR-125 SB Ramps & Otay Lakes Road	12.6	B	13.2	B		1.1% / 0.9%		No
26	SR-125 NB Ramps & Otay Lakes Road	10.0	A	21.5	C		1.4% / 1.6%		No
27	East Lake Parkway & Otay Lakes Road	48.8	D	53.1	D		1.3% / 1.4%		No
28	Lane Avenue & Otay Lakes Road	23.4	C	43.9	D		1.3% / 1.8%		No
29	Fenton Street & Otay Lakes Road	26.9	C	31.4	C		2.2% / 2.3%		No
30	Hunte Parkway & Otay Lakes Road	48.6	D	44.4	D		3.4% / 4.2%		No
31	East Lake Parkway & Olympic Parkway	28.6	C	34.1	C		0.5% / 0.4%		No
32	Hunte Parkway & Olympic Parkway	38.7	D	50.6	D		1.8% / 1.5%		No
33	East Lake Parkway & Hunte Parkway	52.8	D	45.8	D		1.1% / 1.2%		No
34	Proctor Valley Road & Project Driveway #1	187.0	F	>500	F				Yes
35	Proctor Valley Road & Project Driveway #2	18.5	C	48.0	E				Yes
36	Proctor Valley Road & Project Driveway #3	93.2	F	177.2	F				Yes
37	Proctor Valley Road & Project Driveway #4	66.9	F	143.8	F				Yes

Table 8.3 Peak Hour Intersection LOS Results – Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property

#	Intersection	Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property				Impact Criteria by Jurisdiction			
		AM Peak Hour		PM Peak Hour		Caltrans/ San Diego Change in Delay (seconds)	Chula Vista (Project % of Entering Volume)	County	Significant Impact?
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	**AM/PM**	**AM/PM**	**AM/PM**	
38	Proctor Valley Road & Project Driveway #5	41.1	E	34.0	D				Yes
39	Proctor Valley Road & Project Driveway #6	20.8	C	12.5	B				No
40	Proctor Valley Road & Project Driveway #7	21.6	C	13.3	B				No
41	Proctor Valley Road & Project Driveway #8	13.9	B	8.4	A				No

Source: Chen Ryan Associates; January 2017

Note:

Bold Indicates LOS E or F.

>500: More than 500 seconds of delay, meaning the traffic at the SSSC is too high for HCS 2010 to accurately calculate

8.4.2 Roadway Segment Analysis

As to County of San Diego roadway segments, **Table 8.4a** displays the Level of Service analysis results for the study area roadway segments located within the County of San Diego under Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property.

Table 8.4a Roadway Segment LOS Results – Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property – County of San Diego

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS D)	LOS w/ Project	Project ADT	Significant Impact?
Proctor Valley Rd	City of Chula Vista boundary to Project Driveway #1	2-Ln w/ RM	29,400	13,500	F	11,900	Yes (Cumulative)
	Project Driveway #1 to Project Driveway #2	2-Ln w/ RM	27,700	13,500	F	10,200	Yes (Cumulative)
	Project Driveway #2 to Project Driveway #3	2-Ln w/ RM	24,000	13,500	F	8,800	Yes (Cumulative)
	Project Driveway #3 to Project Driveway #4	2-Ln w/ RM	23,900	13,500	F	8,700	Yes (Cumulative)
	Project Driveway #4 to Project Driveway #5	2-Ln w/ RM	12,280	13,500	D	2,600	No
	Project Driveway #5 to Project Village 14 boundary	2-Ln w/ RM	9,072	13,500	C	1,600	No
	Village 14 boundary to Project Driveway #7	2-Ln	8,672	7,100	D	1,200	No
	Project Driveway #7 to Project Driveway #8	2-Ln	8,472	7,800	D	1,000	No
	Project Driveway #8 to Melody Rd	2-Ln	8,372	9,500	C	700	No
	Melody Rd to Schlee Canyon Rd	2-Ln	7,800	7,800	D	300	No
	Schlee Canyon Rd to Maxfield Rd	2-Ln	6,000	7,100	C	200	No
	Maxfield Rd to SR-94	2-Ln	5,700	7,100	C	200	No
Melody Rd	Lyons Valley Rd to Jefferson Rd	2-Ln	5,700	7,100	C	300	No
Jefferson Rd	Jefferson Rd to Maxfield Rd	2-Ln	4,700	7,100	C	100	No
Lyons Valley Rd	Maxfield Rd to Melody Rd	2-Ln	10,600	9,500	D	100	No

Source: Chen Ryan Associates; January 2017

Note:
Bold Indicates LOS E or F.

As shown, all study area roadway segments within the County of San Diego are projected to operate at LOS D or better within the addition of Proposed Project traffic, with the exception of the following:

- Proctor Valley Road, between City of Chula Vista boundary to Project Driveway #1 (LOS F);
- Proctor Valley Road, between Project Driveway #1 to Project Driveway #2 (LOS F);
- Proctor Valley Road, between Project Driveway #2 to Project Driveway #3 (LOS F);and
- Proctor Valley Road, between Project Driveway #3 to Project Driveway #4 (LOS F).

Based on the County of San Diego significance criteria outlined in Section 2.8, the addition of trips generated by the Proposed Project would cause significant cumulative impacts under Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property along the following roadway segments:

- Proctor Valley Road, between City of Chula Vista boundary to Project Driveway #1;
- Proctor Valley Road, between Project Driveway #1 to Project Driveway #2;
- Proctor Valley Road, between Project Driveway #2 to Project Driveway #3;and
- Proctor Valley Road, between Project Driveway #3 to Project Driveway #4.

Table 8.4b displays the Level of Service analysis results for study area roadway segments within the City of Chula Vista under Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property.

Table 8.4b Roadway Segment LOS Results – Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property – City of Chula Vista

Roadway	Segment	Classification	ADT w/ Project	ADT Threshold (LOS C)	LOS	Project ADT (< 800)	Project Contribution (≥ 5%)	Peak Hour Operations	Significant Impact?
San Miguel Ranch Rd	Proctor Valley Rd to SR-125 SB Ramp	Class I Collector (4-lane)	15,600	22,000	A	1,000	6.41%	-	No
	SR-125 SB Ramp to SR-125 NB Ramp	Class I Collector (4-lane)	13,100	22,000	A	1,000	7.63%	-	No
San Miguel Ranch / Mt Miguel Rd	SR-125 NB Ramp to Proctor Valley Rd	Class I Collector (4-lane)	11,700	22,000	A	1,000	8.55%	-	No
Mt Miguel Rd	Proctor Valley Rd to Mackenzie Creek Rd	Class I Collector (4-lane)	9,300	22,000	A	300	3.23%	-	No
H St	I-805 SB Ramps to I-805 NB Ramps	Prime Arterial (6-lane)	48,300	50,000	C	900	1.86%	-	No
	I-805 NB Ramps to Terra Nova Dr	Expressway (7-lane)	67,000	70,000	C	1,400	2.09%	-	No
	Terra Nova Dr to Del Rey Blvd	Prime Arterial (6-lane)	53,800	50,000	D	1,400	2.60%	Yes	No
	Del Rey Blvd to Paseo Del Rey	Prime Arterial (6-lane)	54,300	50,000	D	1,400	2.58%	Yes	No
	Paseo Del Rey to Paseo Ranchero	Prime Arterial (6-lane)	52,100	50,000	D	1,800	3.45%	Yes	No
	Paseo Ranchero to Otay Lakes Rd	Prime Arterial (6-lane)	44,100	50,000	C	1,900	4.31%	-	No
	Otay Lakes Rd to SR-125 SB Ramps	Major Street (4-lane)	34,000	30,000	E	2,300	6.76%	Yes	No
Proctor Valley Rd	SR-125 SB Ramps to SR-125 NB Ramps	Prime Arterial (6-lane)	25,900	50,000	A	3,400	13.13%	-	No
	SR-125 NB Ramps to Mt Miguel Rd	Prime Arterial (6-lane)	35,700	50,000	A	5,100	14.29%	-	No
	Mt Miguel Rd to Lane Ave	Prime Arterial (6-lane)	46,500	50,000	C	6,400	13.76%	-	No

Table 8.4b Roadway Segment LOS Results – Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property – City of Chula Vista

Roadway	Segment	Classification	ADT w/ Project	ADT Threshold (LOS C)	LOS	Project ADT (< 800)	Project Contribution (≥ 5%)	Peak Hour Operations	Significant Impact?
Proctor Valley Rd	Lane Ave to Hunte Pkwy	Prime Arterial (6-lane)	38,200	50,000	B	8,300	21.73%	-	No
	Hunte Pkwy to Agua Vista Dr / Northwoods Dr	Major Street (4-lane)	35,800	30,000	E	10,700	29.89%	No	Yes (Direct)
	Agua Vista Dr / Northwoods Dr to City of Chula Vista/County Boundary	Class II Collector (3-lane)	27,300	12,000	F	11,900	43.59%	No	Yes (Direct)
Telegraph Canyon Rd	Paseo Ranchero to Otay Lakes Rd	Prime Arterial (6-lane)	49,200	50,000	C	600	1.22%	-	No
Otay Lakes Rd	Ridgeback Rd to E. H St	Prime Arterial (6-lane)	30,900	50,000	A	300	0.97%	-	No
	E. H St to Otay Lakes Rd	Prime Arterial (6-lane)	31,500	50,000	A	500	1.59%	-	No
	Telegraph Canyon to SR-125 SB Ramps	Prime Arterial (6-lane)	44,600	50,000	C	600	1.35%	-	No
	SR-125 SB Ramps to SR-125 NB Ramps	Prime Arterial (6-lane)	49,800	50,000	C	800	1.61%	-	No
	SR-125 NB Ramps to Eastlake Pkwy	Prime Arterial (6-lane)	55,500	50,000	D	800	1.44%	Yes	No
	Eastlake Pkwy to Lane Ave	Prime Arterial (6-lane)	37,700	50,000	B	500	1.33%	-	No
	Lane Ave to Hunte Pkwy	Prime Arterial (6-lane)	28,500	50,000	A	800	2.81%	-	No
	Hunte Pkwy to Woods Dr	Prime Arterial (6-lane)	28,000	50,000	A	100	0.36%	-	No
Olympic Pkwy	SR-125 NB Ramps to Eastlake Pkwy	Expressway (7 or 8-lane)	52,100	70,000	A	300	0.58%	-	No
	Eastlake Pkwy to Hunte Pkwy	Prime Arterial (6-lane)	35,600	50,000	A	500	1.40%	-	No

Table 8.4b Roadway Segment LOS Results – Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property – City of Chula Vista

Roadway	Segment	Classification	ADT w/ Project	ADT Threshold (LOS C)	LOS	Project ADT (< 800)	Project Contribution (≥ 5%)	Peak Hour Operations	Significant Impact?
Olympic Pkwy	Hunte Pkwy to Olympic Vista Rd	Major Street (4-lane)	26,300	30,000	C	0	0.00%	-	No
Paseo Del Rey	E. H St to E. J St	Class I Collector (4-lane)	14,000	22,000	A	300	2.14%	-	No
Heritage Rd	Telegraph Canyon Rd to E. Palomar St	Prime Arterial (6-lane)	27,500	50,000	A	100	0.36%	-	No
La Media Rd	Otay Lakes Rd to E. Palomar St	Prime Arterial (6-lane)	31,300	50,000	A	100	0.32%	-	No
Eastlake Pkwy	Miller Rd to Otay Lakes Rd	Major Street (4-lane)	26,800	30,000	C	600	2.24%	-	No
	Otay Lakes Rd to Olympic Pkwy	Prime Arterial (6-lane)	23,900	50,000	A	0	0.00%	-	No
	Olympic Pkwy to Hunte Pkwy	Major Street (6-lane)	29,200	40,000	A	400	1.37%	-	No
Old Trail Dr	N Trail Ct to Proctor Valley Rd	Class III Collector (2-lane)	5,400	7,500	A	100	1.85%	-	No
Lane Ave	Proctor Valley Rd to Otay Lakes Rd	Class I Collector (4-lane)	16,000	22,000	A	1,700	10.63%	-	No
Hunte Pkwy	Proctor Valley Rd to Otay Lakes Rd	Major Street (4-lane)	13,600	30,000	A	2,300	16.91%	-	No
	Otay Lakes Rd to Olympic Pkwy	Major Street (4-lane)	19,700	30,000	A	1,300	6.60%	-	No
	Olympic Pkwy to Eastlake Pkwy	Prime Arterial (6-lane)	35,800	50,000	A	400	1.12%	-	No
Northwoods Dr	Proctor Valley Rd to Blue Ridge Dr	Class III Collector (2-lane)	1,900	7,500	A	800	42.11%	-	No

Source: Chen Ryan Associates; January 2017

Notes:
Peak Hour Operations: Do intersections along the roadway segment operate at LOS D or better during the peak hours? – For segments operating at D, E or F.
Bold Indicates LOS D, E, or F.

As shown in the table, all study area roadway segments within the City of Chula Vista are projected to operate at LOS C or better under Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property with the exception of the following segments. Whether the Project would result in a significant impact at each segment is identified.

- *East H Street, between Terra Nova Drive and Del Rey Boulevard (LOS D):*
    - *P*roposed buildout project trips would comprise 2.60% (less than 5%) of the total segment volume;
    - Proposed buildout project trips add 1,400 ADT (more than 800 ADT);
    - The intersections of East H Street / Terra Nova Drive and East H Street / Del Rey Boulevard are both projected to operate at LOS C or better during both peak hours;
    - Therefore, the Proposed Project **would not have a significant impact** to this roadway segment.
- *East H Street, between Del Rey Boulevard and Paseo Del Rey (LOS D):*
    - *P*roposed buildout project trips would comprise 2.58% (less than 5%) of the total segment volume;
    - Proposed buildout project trips add 1,400 ADT (more than 800 ADT);
    - The intersections of East H Street / Del Rey Boulevard and East H Street / Paseo Del Rey are both projected to operate at LOS D or better during both peak hours;
    - Therefore, the Proposed Project **would not have a significant impact** to this roadway segment.
- *East H Street between Paseo Del Rey and Paseo Ranchero (LOS D*):
    - Proposed buildout project trips would comprise 3.45% (less than 5%) of the total segment volume;
    - Proposed buildout project trips add 1,800 ADT (more than 800 ADT);
    - The intersections of East H Street / Del Rey Boulevard and East H Street / Paseo Del Rey are both projected to operate at LOS D or better during both peak hours;
    - Therefore, the Proposed Project **would not have a significant impact** to this roadway segment.
- *East H Street, between Otay Lakes Road and SR-125 SB Ramps (LOS E):*
    - Proposed buildout project trips would comprise 6.76% (more than 5%) of the total segment volume;
    - Proposed buildout project trips add 2,300 ADT (more than 800 ADT);
    - The intersections of East H Street / Otay Lakes Road and East H Street / SR-125 SB are both projected to operate at LOS D or better during both peak hours;
    - Therefore, the Proposed Project **would not have a significant impact** to this roadway segment.
- *Proctor Valley Road, between Hunte Parkway between Northwoods Drive (LOS E):*
    - Proposed buildout project trips would comprise 29.89% (more than 5%) of the total segment volume;

- Proposed buildout project trips add 10,700 ADT (more than 800 ADT);
- The intersection of Northwoods Drive/Agua Vista Drive & Proctor Valley Road is projected to operate at LOS F during both the AM and PM peak hours;
- Therefore, the Proposed Project **would have a significant direct impact** to this roadway segment.

- *Proctor Valley Road, between Northwoods Drive to the City of Chula Vista Boundary (LOS F):*
  - Proposed buildout project trips would comprise 43.59% (more than 5%) of the total segment volume;
  - Proposed buildout project trips add 11,900 ADT (more than 800 ADT);
  - The intersection of Northwoods Drive/Agua Vista Drive & Proctor Valley Road is projected to operate at LOS F during both the AM and PM peak hours;
  - Therefore, the Proposed Project **would have a significant direct impact** to this roadway segment.

- *Otay Lakes Road, between SR-125 NB Ramps and Eastlake Parkway (LOS D):*
  - Proposed buildout p4roject trips would comprise 1.46% (less than 5%) of the total segment volume;
  - Proposed buildout project trips add 800 ADT (not exceeding 800 ADT);
  - The intersections of Otay Lakes Road / SR-125 NB and Otay Lakes Road / Eastlake Parkway are projected to operate at LOS D or better during both peak hours;
  - Therefore, the Proposed Project **would not have a significant impact** to this segment.

8.4.3 Two-Lane Highway Segment Analysis

Table 8.5 displays two-lane highway Level of Service analysis results for SR-94 Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property. This analysis was performed using the County of San Diego methodologies as described in Chapter 2.0. Two segments of SR-94 (between Jefferson Road and Maxfield Road, and between Maxfield Road and Melody Road) were not included as a part of this analysis, since the distance between these signalized intersections is less than one mile, the Level of Service for these highway segments is determined based on the intersections' Level of Service along these segments.

Table 8.5 Two-Lane Highway Segment LOS Results – Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property

Highway	Segment	LOS Threshold (LOS D)	ADT	LOS w/ Project	LOS w/o Project	Project ADT	Significant Impact?
SR-94	Vista Sage Ln to Lyons Valley Rd	16,200	26,700	F	F	100	No
	Lyons Valley Rd to Jefferson Rd		27,900	F	F	100	No
	Melody Rd to Otay Lakes Rd		18,400	D or better	D or better	100	No

Source: Chen Ryan Associates; January 2017

Note:
Bold Indicates LOS E or F.

As shown, all two-lane highway segments within the County of San Diego are projected to operate at LOS D or better with the addition of Proposed Project traffic, with the exception of SR-94 between Vista Sage Lane and Lyons Valley Road, and SR-94 between Lyons Valley Road and Jefferson Road, both of which are projected to operate at LOS F.

Based on the County of San Diego significance criteria outlined in Section 2.8, the traffic associated with the Proposed Project would not have a significant cumulative impact on SR-94 within the project study area (Proposed Project will add less than 225 daily trips).

8.4.4 Freeway Mainline Analysis

Table 8.6 displays freeway Level of Service analysis results for the study area freeway mainline facilities under Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property. The freeway/state highway segment Level of Service analysis was performed utilizing the methodology presented in Section 2.5.

As shown in the table, the following 12 study area freeway mainline segments are projected to operate at LOS E or F under Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property.

- I-805, between Home Avenue and SR-94 (LOS F);
- I-805, between SR-94 and Market Street (LOS F);
- I-805, between Market Street and Imperial Avenue (LOS F);
- I-805, between Imperial Avenue and E Division Street (LOS F);
- I-805, between E Division Street and Plaza Boulevard (LOS F);
- I-805, between Plaza Boulevard to SR-54 (LOS F);
- I-805, between SR-54 and Bonita Road (LOS F);
- I-805, between Bonita Road and East H Street (LOS F);
- I-805, between East H Street and Telegraph Canyon Road (LOS F);
- SR-125, between SR-94 Junction and Jamacha Road (LOS F);
- SR-125, between Jamacha Road and Paradise Valley Road (LOS E);
- SR-54, between I-805 and Reo Drive/Plaza Bonita Center Way (LOS F).

Table 8.6 Freeway/State Highway Segment LOS Results – Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property

Freeway	Segment	ADT	Peak Hour Percent	Peak Hour Volume	Directional Split	Lanes Per Direction	PHF	HVF	Volume (pc/h/ln)	V/C	LOS	Δ V/C	LOS w/o Project	Significant Impact?
I-805	Home Ave to SR-94	298,500	7.86%	23,462	0.58	4M	0.95	6.00%	3,817	1.590	F	0.005	F	No
	SR-94 to Market St	298,500	8.03%	23,970	0.60	4M	0.95	6.00%	4,011	1.671	F	0.006	F	No
	Market St to Imperial Ave	355,200	8.03%	28,523	0.60	4M + 1 HOV + 1 Aux	0.95	6.00%	3,818	1.591	F	0.004	F	No
	Imperial Ave to E Division St	353,300	8.03%	28,370	0.60	5M + 1 HOV	0.95	6.00%	3,452	1.438	F	0.004	F	No
	E Division St to Plaza Blvd	340,700	8.04%	27,392	0.60	5M + 1 HOV + 1 Aux	0.95	6.00%	3,086	1.286	F	0.004	F	No
	Plaza Blvd to SR-54	331,900	8.04%	26,685	0.60	5M + 1 HOV	0.95	6.00%	3,279	1.366	F	0.005	F	No
	SR-54 to Bonita Rd	373,900	8.01%	29,949	0.57	4M + 1 HOV + 1 Aux	0.95	7.30%	3,856	1.607	F	0.004	F	No
	Bonita Rd to East H St	330,400	8.01%	26,465	0.57	4M + 1 HOV + 1 Aux	0.95	7.30%	3,407	1.420	F	0.002	F	No
	East H St to Telegraph Canyon Rd	328,200	8.01%	26,289	0.57	5M + 1 HOV	0.95	7.30%	3,077	1.282	F	0.001	F	No
SR-125	SR-94 Junction to Jamacha Rd	148,700	8.76%	13,026	0.56	3M	0.95	4.40%	2,661	1.109	F	0.006	F	No
	Jamacha Rd to Paradise Valley Rd	134,400	8.76%	11,773	0.56	3M	0.95	4.40%	2,405	1.002	F	0.006	E	No
	Paradise Valley Rd to SR-54 Junction	138,100	8.76%	12,098	0.56	3M + 1 HOV	0.95	4.40%	2,118	0.883	D	0.005	D	No
	SR-54 to Mt. Miguel Rd	32,900	7.00%	2,303	0.59	2M	0.95	1.90%	729	0.304	A	0.012	A	No
	Mt. Miguel Rd to Proctor Valley Rd	36,800	7.00%	2,576	0.59	2M	0.95	1.90%	815	0.340	B	0.012	A	No
	Proctor Valley Rd to Otay Lakes Rd	31,100	7.00%	2,177	0.59	2M	0.95	1.90%	689	0.287	A	0.005	A	No

Table 8.6 Freeway/State Highway Segment LOS Results – Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property

Freeway	Segment	ADT	Peak Hour Percent	Peak Hour Volume	Directional Split	Lanes Per Direction	PHF	HVF	Volume (pc/h/ln)	V/C	LOS	Δ V/C	LOS w/o Project	Significant Impact?
SR-125	Otay Lakes Rd to Olympic Pkwy	39,700	7.00%	2,779	0.59	2M	0.95	1.90%	880	0.367	B	0.010	B	No
	Olympic Pkwy to Birch Rd	34,800	7.00%	2,436	0.59	2M	0.95	1.90%	771	0.321	B	0.010	A	No
	Birch Rd to Main St	39,600	7.00%	2,772	0.59	2M	0.95	1.90%	877	0.365	B	0.010	B	No
	Main St to Otay Valley Rd	52,700	7.00%	3,689	0.59	2M	0.95	1.90%	1,168	0.487	B	0.010	B	No
	Otay Valley Rd to Lone Star Rd	91,600	7.00%	6,412	0.59	2M	0.95	1.90%	2,030	0.846	D	0.010	D	No
	Lone Star Rd to Otay Mesa Rd	80,900	7.00%	5,663	0.59	2M	0.95	1.90%	1,793	0.747	D	0.008	C	No
SR-54	I-805 to Reo Dr/Plaza Bonita Center Wy	144,800	8.23%	11,917	0.58	3M	0.95	1.90%	2,461	1.025	F	0.007	F	No
	Reo Dr/Plaza Bonita Center Wy to Woodman St	131,400	8.32%	10,932	0.55	3M	0.95	1.90%	2,155	0.898	D	0.006	D	No
	Woodman St to Briarwood Rd	117,900	8.27%	9,750	0.55	3M	0.95	1.90%	1,922	0.801	D	0.006	D	No
	Briarwood Rd to SR-125 Junction	108,800	8.45%	9,194	0.52	3M + 1 HOV	0.95	1.90%	1,458	0.608	C	0.003	C	No

Source: Chen Ryan Associates; January 2017

Notes:
K = Percent of Traffic during the peak hour.
D = Directional split.
HVF = Percent of heavy vehicles.
PHF =Peak Hour Factor
M = Mainline lane.
HOV = High Occupancy Vehicle lane.
Aux = Auxiliary lane.
Bold Indicates LOS E or F.

Based on the Freeway Mainline significance criteria outlined in Section 2.8, the traffic associated with the Proposed Project would not increase the V/C ratio by more than 0.01 on any freeway segments operating at LOS E or F under Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property. Therefore, no significant Proposed Project related impacts were identified and no mitigation is required.

8.4.5 Ramp Intersection Capacity Analysis

Consistent with Caltrans' requirements, the signalized ramp intersections within the Proposed Project study area were analyzed using ILV procedures, as described in Section 2.6. ILV analysis results are displayed in **Table 8.7** and analysis worksheets for Year 2030 With Cumulative Units conditions are provided in **Appendix N**.

Table 8.7 Ramp Intersection Capacity Analysis – Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property

Intersection	Peak Hour	ILV/hour	Capacity
SR-125 SB / Mt. Miguel Road	AM	272	Under Capacity
	PM	525	Under Capacity
SR-125 NB / Mt. Miguel Road	AM	392	Under Capacity
	PM	380	Under Capacity
I-805 SB / H Street	AM	1,014	Under Capacity
	PM	1,154	Under Capacity
I-805 NB / H Street	AM	1,070	Under Capacity
	PM	981	Under Capacity
SR-125 SB / H Street	AM	701	Under Capacity
	PM	748	Under Capacity
SR-125 NB / H Street	AM	487	Under Capacity
	PM	482	Under Capacity
SR-125 SB / Mt. Miguel Road	AM	634	Under Capacity
	PM	1064	Under Capacity
SR-125 NB / Otay Lakes Road	AM	648	Under Capacity
	PM	1027	Under Capacity

Source: Chen Ryan Associates; January 2017

As shown, all freeway ramp interchange intersections are projected to operate under capacity under Year 2030 With Cumulative Units conditions.

8.4.6 Ramp Meter Analysis

Table 8.8 displays the ramp metering analysis conducted at study area freeway ramps under Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property. Ramp meter rates are expected to be the same in 2030 as under Existing conditions. Ramp meter excess demand, delay, and

queuing results were calculated using the methodologies outlined in Section 2.7.

Table 8.8 Ramp Metering Analysis – Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property

Location	Peak Hour	With Project					Without Project				S?
		Peak Hour Volume	Meter Rate[1]	Excess Demand[2]	Delay[3] (min)	Queue[4] (ft)	Peak Hour Volume	Excess Demand[2]	Delay[3] (min)	Queue[4] (ft)	
I-805 NB On-Ramp @ WB H Street	AM	823	934	0	0	0	800	0	0	0	No
I-805 NB On-Ramp @ EB H Street	AM	480	369	111	18.05	3,219	480	111	18.05	3,219	No

Source: Chen Ryan Associates; January 2017

Notes:
1. Meter Rate is the peak hour capacity expected to be processed through the ramp meter (veh/hr). This value was obtained from Caltrans.
2. Excess Demand = (Demand) – (Meter Rate) or zero, whichever is greater (veh/hr).
3. Delay = (Excess Demand / Meter Rate) X 60 min/hr.
4. Queue = (Excess Demand) X 29 ft/veh.

As shown, under Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property, the peak hour ramp volumes are anticipated to exceed the current ramp meter rate at the I-805 NB On-Ramp @ EB H Street during the AM peak hour, resulting in 18-plus minutes of delay. However, since the Proposed Project is located to the east of this ramp, Proposed Project traffic would access northbound I-805 from the westbound direction only. Therefore, the Proposed Project would not add any additional traffic to the I-805 NB On-Ramp @ EB H Street and would not contribute to any impacts at this ramp.

8.5 Impact Significance and Mitigation

This section identifies required mitigation measures for intersection and roadway facilities that would be significantly impacted by Proposed Project-related traffic under Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property.

8.5.1 Intersection

The Proposed Project would have an Impact at five (5) intersections within the County of San Diego and project specific impacts on four (4) intersections, in the City of Chula Vista. The following intersection improvements would be required to mitigate the identified traffic impact:

- *SR-94 & Lyons Valley Road (County of San Diego)* – Signalization by the 741st EDU would mitigate the cumulative impact identified under the 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property scenario and the direct impact identified under Existing plus Project conditions at this intersection. A traffic signal warrant was conducted, and based upon 2014 MUTCD Figure 4C-103 (CA), this intersection would satisfy both the "Minimum

Vehicular Traffic" and "Interruption of Continuous Traffic" warrants (provided in Appendix G). This intersection is a Caltrans facility in which the County does not have jurisdiction to permit or implement improvements. Therefore, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable. However, it should be noted that this improvement is part of the improvement project analyzed in the *Caltrans' State Route 94 Improvement Project Draft EIR, July 2015*. In addition, this improvement is also included as a mitigation measure in the Jamul Indian Village Final Environmental Evaluation.

- *Paseo Ranchero & East H Street (City of Chula Vista)* – Restriping the eastbound approach to include an exclusive right-turn lane would mitigate the Project Specific impact at this intersection. However, this intersection is located within the City of Chula Vista and the County does not have the jurisdiction to permit or implement improvements. Therefore, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable. It should be noted that this intersection is projected to operate at LOS E without the Proposed Project.

- *Mt Miguel Road & East H Street (City of Chula Vista)* – Restriping the westbound approach to include an exclusive right-turn lane by the 638th EDU would mitigate the Project Specific impact at this intersection. However, this intersection is located within the City of Chula Vista and the County does not have the jurisdiction to permit or implement improvements. Therefore, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable.

- *Lane Avenue & East H Street (City of Chula Vista)* – Adjust Median and restripe the westbound approach to include a second left-turn lane would mitigate the Project Specific impact at this intersection. However, this intersection is located within the City of Chula Vista and the County does not have the jurisdiction to permit or implement improvements. Therefore, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable. It should be noted that this intersection is projected to operate at LOS E without the Proposed Project.

- *Northwoods Drive/Agua Vista Drive & Proctor Valley Road (City of Chula Vista)* – Signalization by the 287th EDU would mitigate the cumulative impact at this intersection. A traffic signal warrant was conducted, and based upon *2014 MUTCD Figure 4C-103 (CA),* this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants. The signal warrant worksheet is provided in Appendix G. However, this intersection is located within the City of Chula Vista and the County does not have the jurisdiction to permit or implement improvements. Therefore, for purposes of this analysis, mitigation is considered infeasible and the impact would remain significant and unavoidable. It should be noted that the signalization of this intersection is a condition of the Rolling Hills Ranch Plan and the signal mast arms have already been constructed at this intersection. Therefore, only minor improvements would be required to implement a signal at this intersection. It should be noted that this intersection is projected to operate at LOS F without the Proposed Project.

- *Proctor Valley Road & Project Driveway #1 (County of San Diego)* – Signalization would mitigate the cumulative impact at this intersection. A traffic signal warrant was conducted, and based upon *2014 MUTCD Figure 4C-103 (CA),* this intersection would satisfy both the "Minimum

Vehicular Traffic" and "Interruption of Continuous Traffic" warrants. The signal warrant worksheet is provided in **Appendix O**. It should be noted that this impact will only occur with the development of the Rancho Jamul Preserve, which is not anticipated. This impact would occur with the full development of the Proposed Project as well as the development of 74 additional units within the Rancho Jamul Preserve. If the Rancho Jamul Preserve is developed the Proposed Project will pay its fair share of the proposed improvement costs.

- *Proctor Valley Road & Project Driveway #2 (County of San Diego)* – Widening Proctor Valley Road from two to four lanes would mitigate the cumulative impact at this intersection / It should be noted that this impact will only occur with the development of the Rancho Jamul Preserve, which is not anticipated. This impact would occur with the full development of the Proposed Project as well as the development of 1,083 additional units within the Rancho Jamul Preserve. If the Rancho Jamul Preserve is developed the Proposed Project will pay its fair share of the proposed improvement costs.

- *Proctor Valley Road & Project Driveway #3 (County of San Diego)* – Signalization would mitigate the cumulative impact at this intersection. A traffic signal warrant was conducted, and based upon *2014 MUTCD Figure 4C-103 (CA),* this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants. The signal warrant worksheet is provided in **Appendix O**. It should be noted that this impact will only occur with the development of the Rancho Jamul Preserve, which is not anticipated. This impact would occur with the full development of the Proposed Project as well as the development of 397 additional units within the Rancho Jamul Preserve. If the Rancho Jamul Preserve is developed the Proposed Project will pay its fair share of the proposed improvement costs.

- *Proctor Valley Road & Project Driveway #4 (County of San Diego)* – Signalization would mitigate the cumulative impact at this intersection. A traffic signal warrant was conducted, and based upon *2014 MUTCD Figure 4C-103 (CA),* this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants. The signal warrant worksheet is provided in **Appendix O**. It should be noted that this impact will only occur with the development of the Rancho Jamul Preserve, which is not anticipated. This impact would occur with the full development of the Proposed Project as well as the development of 563 additional units within the Rancho Jamul Preserve. If the Rancho Jamul Preserve is developed the Proposed Project will pay its fair share of the proposed improvement costs.

- *Proctor Valley Road & Project Driveway #5 (County of San Diego)* – Signalization would mitigate the cumulative impact at this intersection. A traffic signal warrant was conducted, and based upon *2014 MUTCD Figure 4C-103 (CA),* this intersection would satisfy both the "Minimum Vehicular Traffic" and "Interruption of Continuous Traffic" warrants. The signal warrant worksheet is provided in **Appendix O**. It should be noted that this impact will only occur with the development of the Rancho Jamul Preserve, which is not anticipated. This impact would occur with the full development of the Proposed Project as well as the development of 481 additional

units within the Rancho Jamul Preserve. If the Rancho Jamul Preserve is developed the Proposed Project will pay its fair share of the proposed improvement costs.

Table 8.9 displays Level of Service analysis results for the mitigated intersections under Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property. Calculation worksheets for the intersection analysis are provided in **Appendix O**.

As shown in the table, after implementation of the identified improvements, the impacted intersections would operate at acceptable LOS D during both peak hours.

Table 8.9 Mitigated Intersection LOS Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property

Intersection	Before Mitigation				After Mitigation			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Avg. Delay (Sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
SR-94 & Lyons Valley Road	>500	F	>500	F	44.2	D	54.6	D
Paseo Ranchero & East H Street	61.6	E	57.6	E	54.0	D	46.6	D
Mt Miguel Road & East H Street	81.6	F	66.2	E	47.0	D	50.4	D
Lane Avenue & East H Street	114.6	F	71.8	E	45.5	D	52.9	D
Northwoods Drive / Agua Vista Drive & Proctor Valley Road	70.8	F	72.0	F	43.6	D	21.4	C
Proctor Valley Road & Project Driveway #1	187.0	F	>500	F	7.5	A	9.1	A
Proctor Valley Road & Project Driveway #2	18.5	C	48.0	E	12.4	B	19.2	C
Proctor Valley Road & Project Driveway #3	93.2	F	177.2	F	10.4	B	40.7	A
Proctor Valley Road & Project Driveway #4	66.9	F	143.8	F	5.4	A	16.7	B
Proctor Valley Road & Project Driveway #5	41.1	E	34.0	D	7.5	A	7.8	A

Source: Chen Ryan Associates; January 2017

Note:
Bold Indicates LOS E or F.

8.5.2 Roadway Segments

Segments in the County of San Diego

County of San Diego – The Proposed Project was identified to have a significant cumulative impact along the following Four (4) segments of Proctor Valley Road along the Proposed Project frontage:

- *Proctor Valley Road, between the City of Chula Vista Boundary and Project Driveway #1* - This

impact would only occur with development of the Rancho Jamul Preserve; however, there currently is no application pending to develop within the Rancho Jamul Preserve, nor are there any known plans for development within the Preserve. Therefore, any development within the Rancho Jamul Preserve is not reasonably foreseeable at this point. In the event the Preserve were to be developed, to mitigate an over-capacity road segment, Proctor Valley Road could be widened from a 2-Lane Collector with Raised Median (2.2A) to a 4-Lane Major (4.1A). With widening to a 4-Lane Major, the Project's significant cumulative impacts to this roadway segment would be fully mitigated as the segment would operate at LOS C once widened and no further mitigation would be required. However, the County has no plans to amend the Circulation Element to accommodate a four lane Major on this segment because 1) there currently is no intention to develop the Rancho Jamul Reserve and 2) the County has proposed to accept 2-lane Proctor Valley Road LOS E/F operations consistent with Mobility Element finding (the Mobility Element identified Proctor Valley Road as a 2-lane roadway). . Moreover, if the State of California does decide to sell or develop the Rancho Jamul Preserve at a later date, further study will need to be conducted at that time to determine the appropriate roadway facilities needed to accommodate the development, once the scale of that development is known. Therefore, because there are no plans in place to widen the road to a 4-Lane Major, nor is there a funding program for any such improvement due to the lack of a reasonably foreseeable development plan within the Ranch Jamul Preserve, implementation of the improvements to mitigate this impact is infeasible and the impact is considered significant and unavoidable. The Proposed Project is proposing a General Plan Amendment to accept a failing LOS on this segment.

- *Proctor Valley Road, between Project Driveway #1 and Project Driveway #2 - T*his impact would only occur with development of the Rancho Jamul Preserve; however, there currently is no application pending to develop within the Rancho Jamul Preserve, nor are there any known plans for development within the Preserve. Therefore, any development within the Rancho Jamul Preserve is not reasonably foreseeable at this point. In the event the Preserve were to be developed, to mitigate an over-capacity road segment, Proctor Valley Road could be widened from a 2-Lane Collector with Raised Median (2.2A) to a 4-Lane Major (4.1A). With widening to a 4-Lane Major, the Project's significant cumulative impacts to this roadway segment would be fully mitigated as the segment would operate at LOS C once widened and no further mitigation would be required. However, the County has no plans to amend the Circulation Element to accommodate a four lane Major on this segment because 1) there currently is no intention to develop the Rancho Jamul Reserve and 2) the County has proposed to accept 2-lane Proctor Valley Road LOS E/F operations consistent with Mobility Element finding (the Mobility Element identified Proctor Valley Road as a 2-lane roadway). . Moreover, if the State of California does decide to sell or develop the Rancho Jamul Preserve at a later date, further study will need to be conducted at that time to determine the appropriate roadway facilities needed to accommodate the development, once the scale of that development is known. Therefore, because there are no plans in place to widen the road to a 4-Lane Major, nor is there a funding program for any such improvement due to the lack of a reasonably foreseeable development plan within the Ranch Jamul Preserve, implementation of the improvements to mitigate this impact is infeasible and the

impact is considered significant and unavoidable. The Proposed Project is proposing a General Plan Amendment to accept a failing LOS on this segment.

- *Proctor Valley Road, between Project Driveway #2 and Project Driveway #3* - This impact would only occur with development of the Rancho Jamul Preserve; however, there currently is no application pending to develop within the Rancho Jamul Preserve, nor are there any known plans for development within the Preserve. Therefore, any development within the Rancho Jamul Preserve is not reasonably foreseeable at this point. In the event the Preserve were to be developed, to mitigate an over-capacity road segment, Proctor Valley Road could be widened from a 2-Lane Collector with Raised Median (2.2A) to a 4-Lane Major (4.1A). With widening to a 4-Lane Major, the Project's significant cumulative impacts to this roadway segment would be fully mitigated as the segment would operate at LOS C once widened and no further mitigation would be required. However, the County has no plans to amend the Circulation Element to accommodate a four lane Major on this segment because 1) there currently is no intention to develop the Rancho Jamul Reserve and 2) the County has proposed to accept 2-lane Proctor Valley Road LOS E/F operations consistent with Mobility Element finding (the Mobility Element identified Proctor Valley Road as a 2-lane roadway). . Moreover, if the State of California does decide to sell or develop the Rancho Jamul Preserve at a later date, further study will need to be conducted at that time to determine the appropriate roadway facilities needed to accommodate the development, once the scale of that development is known. Therefore, because there are no plans in place to widen the road to a 4-Lane Major, nor is there a funding program for any such improvement due to the lack of a reasonably foreseeable development plan within the Ranch Jamul Preserve, implementation of the improvements to mitigate this impact is infeasible and the impact is considered significant and unavoidable. The Proposed Project is proposing a General Plan Amendment to accept a failing LOS on this segment.

- *Proctor Valley Road, between Project Driveway #3 to Project Driveway #4 - T*his impact would only occur with development of the Rancho Jamul Preserve; however, there currently is no application pending to develop within the Rancho Jamul Preserve, nor are there any known plans for development within the Preserve. Therefore, any development within the Rancho Jamul Preserve is not reasonably foreseeable at this point. In the event the Preserve were to be developed, to mitigate an over-capacity road segment, Proctor Valley Road could be widened from a 2-Lane Collector with Raised Median (2.2A) to a 4-Lane Major (4.1A). With widening to a 4-Lane Major, the Project's significant cumulative impacts to this roadway segment would be fully mitigated as the segment would operate at LOS C once widened and no further mitigation would be required. However, the County has no plans to amend the Circulation Element to accommodate a four lane Major on this segment because 1) there currently is no intention to develop the Rancho Jamul Reserve and 2) the County has proposed to accept 2-lane Proctor Valley Road LOS E/F operations consistent with Mobility Element finding (the Mobility Element identified Proctor Valley Road as a 2-lane roadway). . Moreover, if the State of California does decide to sell or develop the Rancho Jamul Preserve at a later date, further study will need to be conducted at that time to determine the appropriate roadway facilities needed to accommodate the

development, once the scale of that development is known. Therefore, because there are no plans in place to widen the road to a 4-Lane Major, nor is there a funding program for any such improvement due to the lack of a reasonably foreseeable development plan within the Ranch Jamul Preserve, implementation of the improvements to mitigate this impact is infeasible and the impact is considered significant and unavoidable. The Proposed Project is proposing a General Plan Amendment to accept a failing LOS on this segment.

As shown in **Table 8.10**, if implemented, the proposed improvements to the four segments of Proctor Valley Road would fully mitigate the Proposed Project's project specific impact to the segment of Proctor Valley Road, between Driveway #4 and the City of Chula Vista boundary.

Table 8.10 Mitigated Roadway Segment LOS Year Cumulative Conditions Plus Hypothetical Development of State Preserve Property – County of San Diego

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS D)	LOS w/ Project
Proctor Valley Road	*City of Chula Vista Boundary and Project Driveway #1*	Four-Lane Major (4.1A)	29,400	33,400	C
Proctor Valley Road	*Driveway #1 and Project Driveway #2*	Four-Lane Major (4.1A)	27,700	33,400	C
Proctor Valley Road	*Project Driveway #2 and Project Driveway #3*	Four-Lane Major (4.1A)	24,000	33,400	B
Proctor Valley Road	*Project Driveway #3 to Project Driveway #4*	Four-Lane Major (4.1A)	23,900	33,400	B

Source: Chen Ryan Associates; January 2017

Segments in the City of Chula Vista

The Proposed Project would significantly impact two (2) roadway segment located in the City of Chula Vista under Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property. The following roadway improvements would be required to mitigate the impacts:

- *Proctor Valley Road, between Hunte Parkway and Northwoods Drive (Project Specific Impact, City of Chula Vista)* – widen from a 4-lane roadway to a 6-Lane Major Street, by the 487th EDU. With widening to a 6-Lane Major Street, the Project's significant impacts to this roadway segment would be fully mitigated as the segment would operate at LOS C once widened and no further mitigation would be required.

  Widening to a 6-Lane Major Street is not consistent with the City of Chula Vista Circulation Plan, which identifies the segment of Proctor Valley Road between Hunte Parkway and Northwoods Drive as a 4-Lane Major Street. Widening the segment from the 4-lanes configuration to 6-lanes, as recommended by the mitigation measure, would conflict with the City's long-range road

widening plans (six lanes).

- *Proctor Valley Road, between Northwoods Drive and the City of Chula Vista Boundary (Project Specific Impact, City of Chula Vista)* – widen from a 2-lane roadway to a Class I Collector, 563rd EDU. As per the City of Chula Vista Roadway Standards, a Class I collector is a four-lane roadway, typically divided by a two-way left-turn lane. The daily traffic capacity of a Class I Collector is 22,000 ADT (LOS C). With widening to a Class I Collector, the Project's significant impacts to this roadway segment would be fully mitigated as the segment would operate at LOS B once widened and no further mitigation would be required.

  Widening to a Class I Collector is consistent with the City of Chula Vista Circulation Plan, which identifies the segment of Proctor Valley Road between Northwoods Drive and the City of Chula Vista boundary as a 4-Lane Major Street. Widening the segment from the 2-lane configuration to four lanes, as recommended by the mitigation measure, would not conflict with the City's long-range road widening plans (four lanes) because the mitigation improvement (widen from two to four lanes) does not foreclose or conflict with the City's ultimate build-out plans or programs, and would not preclude the City from improving the segment to a 4-Lane Major at a future date when/if future traffic conditions warrant such action. It should be noted that this roadway segment is projected to operate at LOS D without the Proposed Project.

As shown in **Table 8.11**, if implemented, the proposed improvements to the two segments of Proctor Valley Road would fully mitigate the Proposed Project's project specific impact to the segment of Proctor Valley Road, between Hunte Parkway and the City of Chula Vista boundary. However, because these roadway segments are located within the City of Chula Vista and the County does not have the jurisdiction to permit or implement any improvements, for purposes of this analysis, mitigation is considered infeasible and the impacts would remain significant and unavoidable.

Table 8.11 Mitigated Roadway Segment LOS Year Cumulative Conditions Plus Hypothetical Development of State Preserve Property – City of Chula Vista

Roadway	Segment	Cross-Section	ADT	LOS Threshold (LOS C)	LOS w/ Project
Proctor Valley Road	Hunte Parkway and Northwoods Drive	Major Street (6-lane)	35,800	40,000	C
Proctor Valley Road	Northwoods Drive and the City of Chula Vista Boundary	Class I Collector	16,800	22,000	B

Source: Chen Ryan Associates; January 2017

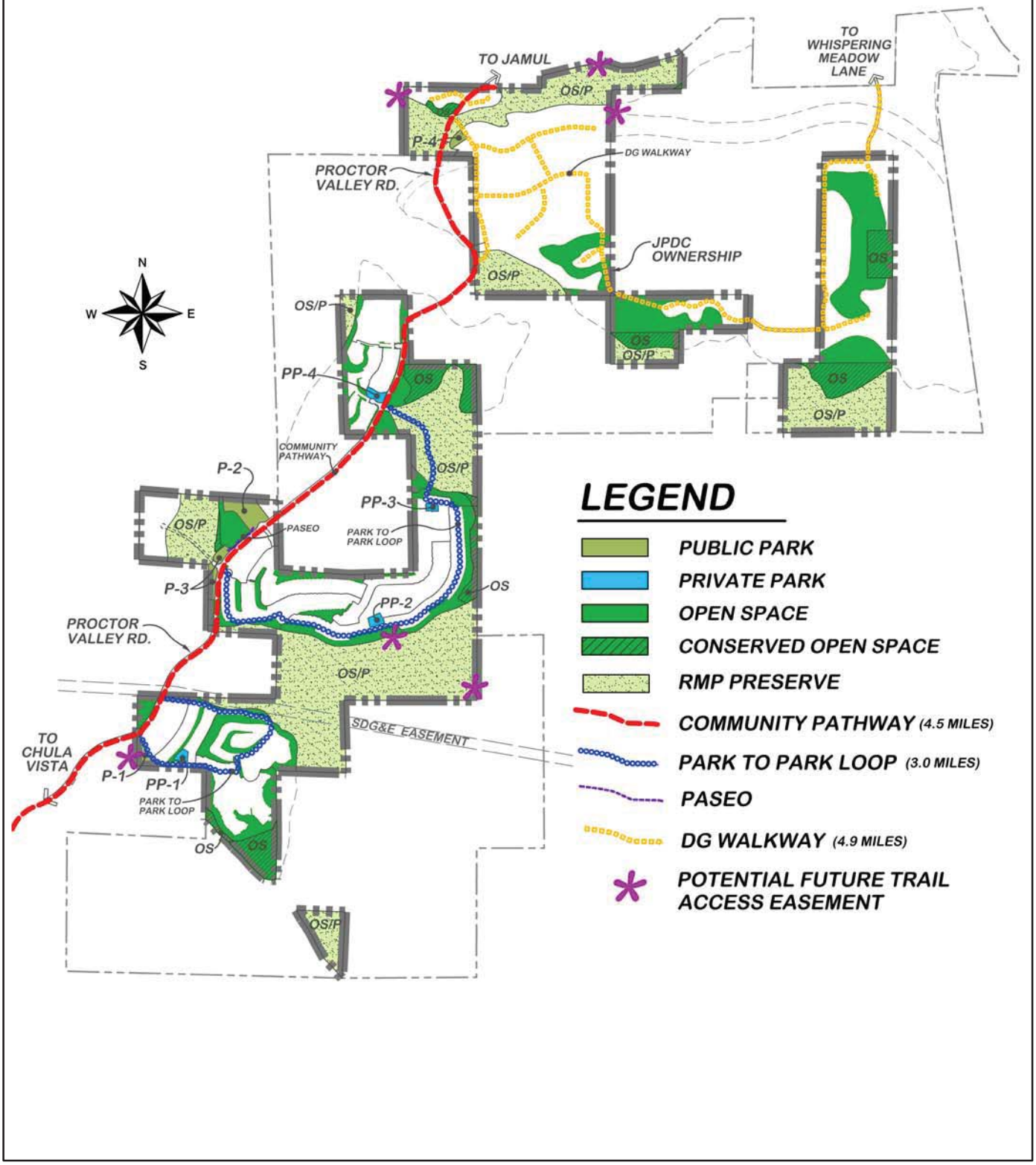
9.0 Pedestrians and Bicyclists

Many roadways and intersections in the County do not currently have pedestrian or bicycle facilities. The roadways and intersections designed prior to adoption of current road standards may have conditions that may pose an increased risk if traffic volumes, pedestrian volumes, or bicycle volumes substantially increase along the road segment or at the intersection, as a result of the Proposed Project. Increased traffic generated or redistributed by a Proposed Project may cause a significant traffic operational impact to pedestrians or bicyclists. Therefore, it is necessary to evaluate potential hazards to pedestrians or bicyclists.

The Proposed Project will construct an approximate 4.5-mile Community Pathway along Proctor Valley Road from Chula Vista to Jamul. In addition, an internal park to park trail system will be included in the Proposed Project. This trail is included in the County of San Diego General Plan Mobility Element and will be designed to accommodate pedestrian, bicycle and equestrian uses. An additional regional multi-use trail will be constructed through the nature preserve to the north of the Proposed Project, providing a connection to the Jamul community. All regional trails will be designed to County standards approved by the County as set forth in the Specific Plan for the Project to ensure the safety of pedestrians, bicyclists and equestrians.

The Proposed Project will also implement a series of local trails that circulate throughout each of the neighborhoods, providing connections between the regional trail system (along Proctor Valley Road) and all of the public parks spread throughout the Proposed Project, as shown in **Figure 9-1**.

In addition to the trails system, five roundabouts are proposed along Proctor Valley Road and the Proposed Project access points. Roundabouts have been proven to calm traffic, improve safety, and increase roadway capacity when designed correctly, thereby enhancing the comfort and safety of both cyclists and pedestrians. All proposed roundabouts will be designed to meet applicable County safety and design standards.


TO JAMUL
TO WHISPERING MEADOW LANE
OS/P
P-4
DG WALKWAY
PROCTOR VALLEY RD.
JPDC OWNERSHIP
OS
N
W
E
S
PP-4
COMMUNITY PATHWAY
P-2
PP-3
PASEO
PARK TO PARK LOOP
P-3
PROCTOR VALLEY RD.
SDG&E EASEMENT
TO CHULA VISTA
P-1
PP-1
LEGEND
PUBLIC PARK
PRIVATE PARK
OPEN SPACE
CONSERVED OPEN SPACE
RMP PRESERVE
COMMUNITY PATHWAY (4.5 MILES)
PARK TO PARK LOOP (3.0 MILES)
PASEO
DG WALKWAY (4.9 MILES)
POTENTIAL FUTURE TRAIL ACCESS EASEMENT

The determination of significant hazards to pedestrians or bicyclists shall 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:*

  All project driveways, roadways, and multi-modal facilities implemented or modified by the Proposed Project will be built to County of San Diego sight distance standards.

  The Proposed Project will construct sidewalks along all internal project roadways, a Community Pathway along Proctor Valley Road, and a series of internal trails which will provide an adequate location for pedestrians to travel that is away from vehicular traffic.

- *The preclusion or substantial hindrance of the provision of a planned bike lane or pedestrian facility on a roadway adjacent to the project site*:

  The Proposed Project will construct a Community Pathway along Proctor Valley Road from Chula Vista to Jamul. This trail is included in the County of San Diego General Plan Mobility Element and will be designed to accommodate pedestrian, bicycle and equestrian uses. There are no other planned bicycle or pedestrian facilities within the project area.

  Buffered Class II bike lanes will be provided along Proctor Valley Road between the project area and the City of Chula Vista Boundary. Additionally, The Proposed Project will construct a Community Pathway along Proctor Valley Road from Chula Vista to Jamul. These facilities will separate pedestrian and bicycle traffic away from vehicular traffic. Therefore, the projected increase in vehicular traffic along Proctor Valley Road should have minimal effect on cyclists and pedestrians.

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

  The Proposed Project will construct sidewalks along all internal project roadways, a Community Pathway along Proctor Valley Road, Class II buffered Bike Lane along Proctor Valley Road between the Proposed Project and the City of Chula Vista, and a series of internal trails. These facilities should be adequate to accommodate the anticipated project pedestrian and bicycle activity.

Therefore, the Proposed Project would not result in significant hazards to pedestrians or bicyclists and impacts would be less than significant.

10.0 Project Construction

This chapter identifies potential traffic impacts associated with Project construction.

10.1 Construction Related Traffic Generation

Project construction is expected to be continuous over seven (7) years (2021-2028). As further explained below, it is expected that the greatest potential impacts would occur around Year 2024, when earlier construction would be completed and a portion of the development would be occupied with construction activities continuing. Therefore, a Year 2024 plus construction traffic scenario is presented here. Trip Generation for occupied residential, commercial, and other land uses are provided in **Table 10.1.**

Table 10.1 Project Year 2024 Trip Generation

Area	Land Use	Units	Trip Rate	ADT
South	Single Family	352 DU	10 / DU	3,520
South	Neighborhood Park	2.9 AC	5 / AC	15
South	Community Facility	1.0 AC	30 / AC	30
Central	Estate	4 DU	12 / DU	48
Central	Single Family	188 DU	10 / DU	1,880
Central	Mixed-Use Commercial	5 KSF	110 / KSF	550
Central	Community Facility	1.2 AC	30 / AC	36
North	Single Family	33 DU	10 / DU	330
PA16/19	Estate	13 DU	12 / DU	156
			Total Project Trips	6,565

Source: Chen Ryan Associates: November 2016

As shown, the Proposed Project would generate 6,565 daily trips by the Year 2024.

All earthwork associated with construction of the Proposed Project would be balanced on-site; therefore, no import or export of soil is anticipated. The construction traffic analyzed in this report mainly focuses on construction material transport activities and trips generated by construction workers.

Based upon information provided by Dudek Environmental, Inc., Year 2024 would generate the highest amount of construction worker traffic, including approximately 380 daily truck trips and 1,436 daily construction worker trips. **Table 10.2** displays the expected maximum construction related vehicle trip generation.

Table 10.2 Year 2024 Construction Trip Generation

Type	Daily Trips	Passenger Car Equivalent	Daily Vehicle Trips
Truck	380	2.5	950
Construction Worker	1,436	1.0	1,436
Total	-	-	2,386

Source: Chen Ryan Associates: November 2016

As shown in the table above, a total of 2,386 daily vehicle trips would be generated by the Proposed Project's construction activities during the Year 2024.

10.2 Construction Related Traffic Impacts

As previously noted, Year 2024 Plus Construction Traffic represents the worst-case scenario during which the greatest potential impacts associated with construction traffic would occur. **Table 10.3** displays the total daily trips generated under this scenario.

Table 10.3 Worst Case Trip Generation During Construction – Year 2024

Scenario	Daily Trips
Year 2024 – Project Activities	6,565
Construction	2,386
Total	8,951

Source: Chen Ryan Associates; January 2017

As shown above, the Year 2024 Plus Construction scenario would generate a total of 8,951 daily trips. Project impacts for both Existing Plus Project Buildout and Year 2025 Plus Project were discussed in Chapter 5.0 and Chapter 6.0, respectively. Under each of those scenarios, the Proposed Project would generate 13,897 ADT and 9,377 ADT, respectively. Therefore, it is reasonable to conclude that potential traffic impacts associated with the worst-case scenario during construction would be less than those previously identified under either the Existing Plus Project Buildout or Year 2025 Plus Project scenarios, since the Year 2024 Plus Construction scenario would generate fewer vehicle trips.

Additionally, based on the information provided in Table 10.1, the Proposed Project will have constructed 657 EDUs by Year 2024 conditions. As discussed above in Chapter 6.0, under the Year 2025 Cumulative analysis the Proposed Project would trigger significant impacts at the Northwoods Drive/Agua Vista Drive & Proctor Valley Road intersection, as well as to the segment of Proctor Valley Road between Northwoods Drive and the City of Chula Vista boundary, at development of the 287th and 563rd EDUs, respectively (see Section 6.5). Therefore, the construction activities would not result in any additional or greater impacts than previously identified under the Year 2025 Cumulative analysis scenario

11.0 Transportation Demand Management (TDM)

The project applicant proposes implementation of a Transportation Demand Management (TDM) measure to reduce vehicle trips in favor of alternative modes of transportation. The TDM program would facilitate increased opportunities for transit, bicycling, and pedestrian travel, as well as provide the resources, means and incentives for ridesharing and carpooling opportunities. The following components are to be included in the TDM program:

1. As shown in Figure 8-1, the Proposed Project includes a comprehensive trails network that was designed to provide safe bicycle and pedestrian access between the various Proposed Project phases, land uses, parks/open spaces, schools and the Village Core area. Where approved by the appropriate jurisdiction, the trail network will also provide connections to the various recreational trails and multi-modal facilities accessing the Proposed Project area.

2. Provide bicycle racks along main travel corridors, adjacent to commercial developments, community facilities and at public parks and open spaces within the Proposed Project area.

3. Coordinate with SANDAG's iCommute program for Carpool, Vanpool, and rideshare programs that are specific to the Proposed Project.

4. Promote available websites providing transportation options for residents and businesses.

5. Create and distribute a "new resident" information packet addressing alternative modes of transportation.

6. Coordinate with MTS and SANDAG as to the future sighting of transit stops/stations within the Proposed Project area.

7. Provide a school pool program by coordinating with the local school district and SANDAG. Provide dedicated parking space for the school pool program at the Village Core area.

8. Implement a School Bus Program in coordination with the school district.

9. The project's HOA shall be required to coordinate with the local school district and partner with the on-site elementary school in order to create a "walking school bus program" for neighborhood students to safely walk to and from school. The project applicant also shall coordinate with the local school district to encourage the provision of bicycle storage facilities at the on-site elementary school.

The effect that the above measures will have on the overall Vehicle Miles Traveled generated by the proposed project as well as the Proposed Project compliance with Senate Bill 743 (for informational purpose) was analyzed in a separate memorandum, which is included in **Appendix P**.

12.0 Summary of Findings and Recommendations

This chapter provides a summary of the key findings and study recommendations, including the Level of Service results and traffic mitigation requirements, associated with the various analysis scenarios. Specific recommendations related to mitigation of the Proposed Project traffic impacts on intersection, roadway and freeway/state highway segments are also summarized.

12.1 Summary of Intersection Analyses

Table 12.1 displays intersection Level of Service results for each of the analyzed scenarios. Significant impacts are identified in bold.

Table 12.1 Summary of Peak Hour Intersection LOS Results

			Existing		Existing + P		Year 2025		Year 2030		Year 2030 Full GDP/SRP*	
#	Intersection	Jurisdiction	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	SR-94 & Lyons Valley Road	Caltrans	F	F	F	F	F	F	F	F	F	F
2	Proctor Valley Road/Jefferson Road & SR-94	County	B	B	B	B	C	D	D	D	D	D
3	Proctor Valley Road & Maxfield Road	County	A	A	A	A	B	B	B	B	B	B
4	Proctor Valley Road & Melody Road	County	A	A	A	A	A	A	A	A	A	A
5	SR-94 & Melody Road	Caltrans	B	C	B	C	B	C	B	B	B	B
6	San Miguel Ranch Road & SR-125 SB Ramps	Caltrans	C	B	C	B	C	B	C	B	C	B
7	San Miguel Ranch Road & SR-125 NB Ramp	Caltrans	B	B	B	B	B	B	B	B	B	B
8	I-805 SB Ramp & East H Street	Caltrans	A	A	A	B	A	B	B	B	B	B
9	I-805 NB Ramp & East H Street	Caltrans	A	B	A	B	B	B	B	B	B	B
10	Terra Nova Drive & East H Street	Chula Vista	B	B	B	B	B	B	B	C	C	C
11	Del Rey Boulevard & East H Street	Chula Vista	B	A	B	A	B	A	B	B	B	B
12	Paseo Del Rey & East H Street	Chula Vista	B	C	C	C	C	C	C	D	C	D
13	Paseo Ranchero & East H Street	Chula Vista	D	D	D	D	D	D	D	D	E	E
14	Otay Lakes Road & East H Street	Chula Vista	D	C	D	C	D	D	D	D	D	D
15	SR-125 SB Ramp & East H Street	Caltrans	A	A	A	A	A	A	A	A	A	A
16	SR-125 NB Ramp & Proctor Valley Road	Caltrans	A	A	A	A	A	A	A	A	A	A
17	Mt Miguel Road & Proctor Valley Road	Chula Vista	C	C	C	C	D	C	D	D	F	E
18	Lane Avenue & Proctor Valley Road	Chula Vista	B	C	C	D	C	D	D	D	F	E

Table 12.1 Summary of Peak Hour Intersection LOS Results

#	Intersection	Jurisdiction	Existing		Existing + P		Year 2025		Year 2030		Year 2030 Full GDP/SRP*	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
19	Hunte Parkway & Proctor Valley Road	Chula Vista	B	B	C	B	C	C	C	C	D	D
20	Agua Vista Drive / Northwoods Drive & Proctor Valley Road	Chula Vista	A	A	F	E	F	E	F	F	F	F
21	East Lake Parkway & Fenton Street	Chula Vista	B	C	B	C	C	D	C	D	C	D
22	Lane Avenue & Fenton Street	Chula Vista	B	C	B	C	D	D	D	D	D	D
23	Heritage Road/Paseo Ranchero & Telegraph Canyon Road	Chula Vista	D	C	D	C	D	D	D	D	D	D
24	La Media Road & Telegraph Canyon Road / Otay Lakes Road	Chula Vista	C	C	C	C	D	D	D	D	D	D
25	SR-125 SB Ramps & Otay Lakes Road	Caltrans	A	B	A	B	B	B	B	B	B	B
26	SR-125 NB Ramps & Otay Lakes Road	Caltrans	A	A	A	A	A	B	A	C	A	C
27	East Lake Parkway & Otay Lakes Road	Chula Vista	C	C	C	C	D	D	D	D	D	D
28	Lane Avenue & Otay Lakes Road	Chula Vista	B	B	B	D	C	D	C	D	C	D
29	Fenton Street & Otay Lakes Road	Chula Vista	A	A	A	A	B	C	C	C	C	C
30	Hunte Parkway & Otay Lakes Road	Chula Vista	C	B	C	B	C	D	D	D	D	D
31	East Lake Parkway & Olympic Parkway	Chula Vista	B	B	B	B	C	C	C	C	C	C
32	Hunte Parkway & Olympic Parkway	Chula Vista	B	B	B	B	C	D	C	D	D	D
33	East Lake Parkway & Hunte Parkway	Chula Vista	N/A	N/A	N/A	N/A	C	C	D	D	D	D
34	Proctor Valley Road & Project Driveway #1	County	N/A	N/A	A	C	B	C	C	D	F	F
35	Proctor Valley Road & Project Driveway #2	County	N/A	N/A	A	B	B	B	B	B	C	E
36	Proctor Valley Road & Project Driveway #3	County	N/A	N/A	A	A	C	B	D	B	F	F
37	Proctor Valley Road & Project Driveway #4	County	N/A	N/A	A	A	B	A	C	B	F	F
38	Proctor Valley Road & Project Driveway #5	County	N/A	N/A	A	A	A	A	B	A	E	D
39	Proctor Valley Road & Project Driveway #6	County	N/A	N/A	A	A	B	B	B	B	C	B
40	Proctor Valley Road & Project Driveway #7	County	N/A	N/A	A	A	B	B	C	C	C	B
41	Proctor Valley Road & Project Driveway #8	County	N/A	N/A	A	A	A	A	B	B	B	A

Source: Chen Ryan Associates; January 2017

Note: * Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property.

Table 12.1 illustrates the following:

Existing conditions – All study area intersections currently operate at LOS D or better, with the exception of the SR-94 / Lyons Valley Road intersection, which operates at LOS F during both the AM and PM peak hours.

Existing Plus Project Buildout conditions – All study area intersections are projected to operate at LOS D or better under Existing Plus Project Buildout conditions with the exception of the following:

- SR-94 & Lyons Valley Road (LOS F during the AM and PM peak hours); and
- Northwoods Drive/Agua Vista Drive & Proctor Valley Road (LOS F - AM peak hour / LOS E - PM peak hour)

Based on the significance criteria outlined in Section 2.8, the traffic associated with the Proposed Project would cause a significant direct impact to the intersections listed above.

Year 2025 Cumulative conditions – All study area intersections are projected to operate at LOS D or better under Year 2025 Cumulative conditions with the exception of the following:

- Northwoods Drive/Agua Vista Drive & Proctor Valley Road (LOS F - AM peak hour / LOS E - PM peak hour)

Based on the significance criteria outlined in Section 2.8, the traffic associated with the Proposed Project would cause a significant direct impact at the intersection listed above.

Year 2030 Cumulative conditions – All study area intersections analyzed under this scenario are anticipated to operate at LOS D or better under Year 2030 conditions, with the exception of the following:

As shown, all study area intersections within the City of Chula Vista are anticipated to operate at LOS D or better under Year 2030 conditions, with the exception of the following:

- Northwoods Drive/Agua Vista Drive & Proctor Valley Road (LOS F – during both the AM and PM peak hours).

Based on the significance criteria outlined in Section 2.8, the traffic associated with the Proposed Project would cause a significant direct impact at the intersections listed above.

Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property – All study area intersections analyzed under this scenario are anticipated to operate at LOS D or better under Year 2030 conditions, with the exception of the following:

As shown, all study area intersections within the City of Chula Vista are anticipated to operate at LOS D or better under Year 2030 conditions, with the exception of the following:

- Paseo Ranchero & East H Street (LOS E – during both the AM and PM peak hours);
- Mt Miguel Road & East H Street (LOS F – during the AM peak hour and LOS E - during the PM peak hour);
- Lane Avenue & East H Street (LOS F – during the AM peak hour and LOS E - during the PM peak hour); and
- Northwoods Drive/Agua Vista Drive & Proctor Valley Road (LOS F – during both the AM and PM peak hours).
- Proctor Valley Road & Project Driveway #1 - (LOS F – during both the AM and PM peak hours);
- Proctor Valley Road & Project Driveway #2 - (LOS E – during the PM peak hour);
- Proctor Valley Road & Project Driveway #3 - (LOS F – during both the AM and PM peak hours);
- Proctor Valley Road & Project Driveway #4 - (LOS F – during both the AM and PM peak hours); and
- Proctor Valley Road & Project Driveway #5 - (LOS E – during the AM peak hour).

Based on the significance criteria outlined in Section 2.8, the traffic associated with the Proposed Project would cause a significant direct impact at the intersections listed above.

12.2 Summary of Roadway Segment Analyses

Table 12.2a and **Table 12.2b** display the roadway segment Level of Service results for each of the study scenarios analyzed, for the County of San Diego and the City of Chula Vista, respectively. Significant impacts are identified in bold.

Table 12.2a Summary of Roadway Segment LOS Results – County of San Diego

Roadway	Segment	Existing	Existing + P	Year 2025	Year 2030	Year 2030 Full GDP/SRP*
Proctor Valley Rd	City of Chula Vista boundary to Project Driveway #1	A	D	E	**E**	**F**
	Project Driveway #1 to Project Driveway #2	N/A	D	E	**E**	**F**
	Project Driveway #2 to Project Driveway #3	N/A	C	E	**E**	**F**
	Project Driveway #3 to Project Driveway #4	N/A	C	E	**E**	**F**
	Project Driveway #4 to Project Driveway #5	N/A	A	C	C	D
	Project Driveway #5 to Project Driveway #6	N/A	A	C	C	C
	Project Driveway #6 to Project Driveway #7	N/A	A	D	D	D
	Project Driveway #7 to Project Driveway #8	N/A	A	C	C	D
	Project Driveway #9 to Melody Rd	N/A	A	A	C	C
	Melody Rd to Schlee Canyon Rd	B	A	A	C	D
	Schlee Canyon Rd to Maxfield Rd	B	A	A	C	C
	Maxfield Rd to SR-94	B	A	A	C	C
Melody Rd	Proctor Valley Rd to SR-94	A	A	A	C	C

Table 12.2a Summary of Roadway Segment LOS Results – County of San Diego

Roadway	Segment	Existing	Existing + P	Year 2025	Year 2030	Year 2030 Full GDP/SRP*
Jefferson Rd	SR-94 to Olive Vista Dr	B	A	D	C	C
Lyons Valley Rd	SR-94 to Olive Vista Dr	B	B	A	D	D

Source: Chen Ryan Associates; January 2017

Note: * Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property.

Table 12.2a, Summary of Roadway Segment LOS Results – County of San Diego, illustrates the following:

Existing conditions – All study area roadway segments analyzed within the County of San Diego currently operate at LOS B or better.

Existing Plus Project Buildout – All study area roadway segments analyzed within the County of San Diego are projected to operate at LOS D or better with the addition of Proposed Project traffic.

Based on the County of San Diego significance criteria outlined in Section 2.8, the traffic associated with the Proposed Project would not cause any significant changes in roadway segment operations under Existing Plus Project Buildout conditions. Therefore, no significant Proposed Project related impacts were identified and no mitigation is required.

Year 2025 Cumulative conditions – All study area roadway segments within the County of San Diego are projected to operate at LOS D or better with the addition of Proposed Project traffic, with the exception of the following:

- Proctor Valley Road, between City of Chula Vista boundary to Project Driveway #1 (LOS E); and
- Proctor Valley Road, between Project Driveway #1 to Project Driveway #2 (LOS E).

Based on the County of San Diego significance criteria outlined in Section 2.8, the addition of trips generated by the Proposed Project would cause significant cumulative impacts under Year 2025 Cumulative conditions along the following roadway segments within the County of San Diego:

- Proctor Valley Road, between City of Chula Vista boundary to Project Driveway #1; and
- Proctor Valley Road, between Project Driveway #1 to Project Driveway #2.

Year 2030 Cumulative conditions – All study area roadway segments within the County of San Diego are projected to operate at LOS D or better with the addition of Proposed Project traffic, with the exception of the following:

- Proctor Valley Road, between City of Chula Vista boundary to Project Driveway #1 (LOS E);
- Proctor Valley Road, between Project Driveway #1 to Project Driveway #2 (LOS E);
- Proctor Valley Road, between Project Driveway #2 to Project Driveway #3 (LOS E); and

- Proctor Valley Road, between Project Driveway #3 to Project Driveway #4 (LOS E).

Based on the County of San Diego significance criteria outlined in Section 2.8, the addition of trips generated by the Proposed Project would cause significant cumulative impacts under Year 2030 Cumulative conditions along the following roadway segments within the County of San Diego:

- Proctor Valley Road, between City of Chula Vista boundary to Project Driveway #1;
- Proctor Valley Road, between Project Driveway #1 to Project Driveway #2;
- Proctor Valley Road, between Project Driveway #2 to Project Driveway #3; and
- Proctor Valley Road, between Project Driveway #3 to Project Driveway #4.

Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property – All study area roadway segments within the County of San Diego are projected to operate at LOS D or better within the addition of Proposed Project traffic, with the exception of the following:

- Proctor Valley Road, between City of Chula Vista boundary to Project Driveway #1 (LOS F);
- Proctor Valley Road, between Project Driveway #1 to Project Driveway #2 (LOS F);
- Proctor Valley Road, between Project Driveway #2 to Project Driveway #3 (LOS F);and
- Proctor Valley Road, between Project Driveway #3 to Project Driveway #4 (LOS F).

Based on the County of San Diego significance criteria outlined in Section 2.8, the addition of trips generated by the Proposed Project would cause significant cumulative impacts under Year 2030 Cumulative conditions along the following roadway segments within the County of San Diego:

- Proctor Valley Road, between City of Chula Vista boundary to Project Driveway #1;
- Proctor Valley Road, between Project Driveway #1 to Project Driveway #2;
- Proctor Valley Road, between Project Driveway #2 to Project Driveway #3; and
- Proctor Valley Road, between Project Driveway #3 to Project Driveway #4.

Table 12.2b Summary of Roadway Segment LOS Results – City of Chula Vista

Roadway	Segment	Existing	Existing + P	Year 2025	Year 2030	Year 2030 Full GDP/SRP*
San Miguel Ranch Rd	Proctor Valley Rd to SR-125 SB Ramp	A	A	A	A	A
	SR-125 SB Ramp to SR-125 NB Ramp	A	A	A	A	A
San Miguel Ranch / Mt Miguel Rd	SR-125 NB Ramp to Proctor Valley Rd	A	A	A	A	A
Mt Miguel Rd	Proctor Valley Rd to Mackenzie Creek Rd	A	A	A	A	A
H St	I-805 SB Ramps to I-805 NB Ramps	A	D	C	C	C
	I-805 NB Ramps to Terra Nova Dr	A	B	C	C	C
	Terra Nova Dr to Del Rey Blvd	C	D	D	D	D
	Del Rey Blvd to Paseo Del Rey	C	C	D	D	D

Table 12.2b Summary of Roadway Segment LOS Results – City of Chula Vista

Roadway	Segment	Existing	Existing + P	Year 2025	Year 2030	Year 2030 Full GDP/SRP*
H St	Paseo Del Rey to Paseo Ranchero	C	C	D	D	D
	Paseo Ranchero to Otay Lakes Rd	A	B	B	B	C
	Otay Lakes Rd to SR-125 SB Ramps	B	C	D	D	E
Proctor Valley Rd	SR-125 SB Ramps to SR-125 NB Ramps	A	A	A	A	A
	SR-125 NB Ramps to Mt Miguel Rd	A	A	A	A	A
	Mt Miguel Rd to Lane Ave	A	A	B	B	C
	Lane Ave to Hunte Pkwy	A	A	A	A	B
	Hunte Pkwy to Agua Vista Dr / Northwoods Dr	A	A	A	B	E
	Agua Vista Dr / Northwoods Dr to County of San Diego Boundary	A	D	D	F	F
Telegraph Canyon Rd	Paseo Ranchero to Otay Lakes Rd	A	A	D	C	C
Otay Lakes Rd	Ridgeback Rd to E. H St	A	A	A	A	A
	E. H St to Otay Lakes Rd	A	A	A	A	A
	Telegraph Canyon to SR-125 SB Ramps	B	B	C	C	C
	SR-125 SB Ramps to SR-125 NB Ramps	C	C	C	C	C
	SR-125 NB Ramps to Eastlake Pkwy	B	B	D	D	D
	Eastlake Pkwy to Lane Ave	A	A	A	A	B
	Lane Ave to Hunte Pkwy	A	A	A	A	A
	Hunte Pkwy to Woods Dr	A	A	A	A	A
Olympic Pkwy	SR-125 NB Ramps to Eastlake Pkwy	A	A	B	A	A
	Eastlake Pkwy to Hunte Pkwy	A	A	A	A	A
	Hunte Pkwy to Olympic Vista Rd	A	A	A	C	C
Paseo Del Rey	E. H St to E. J St	A	A	A	A	A
Heritage Rd	Telegraph Canyon Rd to E. Palomar St	A	A	A	A	A
La Media Rd	Otay Lakes Rd to E. Palomar St	A	A	A	A	A
Eastlake Pkwy	Miller Rd to Otay Lakes Rd	B	B	B	B	C
	Otay Lakes Rd to Olympic Pkwy	A	A	A	A	A
	Olympic Pkwy to Hunte Pkwy	A	A	A	A	A
Old Trail Dr	N Trail Ct to Proctor Valley Rd	A	A	A	A	A
Lane Ave	Proctor Valley Rd to Otay Lakes Rd	A	A	B	A	A
Hunte Pkwy	Proctor Valley Rd to Otay Lakes Rd	A	A	A	A	A
	Otay Lakes Rd to Olympic Pkwy	A	A	A	A	A
	Olympic Pkwy to Eastlake Pkwy	A	A	A	A	A

Table 12.2b Summary of Roadway Segment LOS Results – City of Chula Vista

Roadway	Segment	Existing	Existing + P	Year 2025	Year 2030	Year 2030 Full GDP/SRP*
Northwoods Dr	Proctor Valley Rd to Blue Ridge Dr	A	A	A	A	A

Source: Chen Ryan Associates; January 2017

Note: * Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property.

Table 12.2b Summary of Roadway Segment LOS Results – City of Chula Vista, illustrates the following:

Existing conditions – All study area roadway segments analyzed within the City of Chula Vista currently operate at LOS C or better.

Existing Plus Project Buildout conditions – All study area roadway segments analyzed within the City of Chula Vista are anticipated to continue to operate at LOS C or better with the exception of the following:

- East H Street , between I-805 SB Ramps and I-805 NB Ramps (LOS D)
- East H Street, between Terra Nova Drive and Del Rey Boulevard (LOS D)
- Proctor Valley Road, between Northwoods Drive to the City of Chula Vista boundary (LOS D)

Based on the City of Chula Vista significance criteria outlined in Section 2.8, the Proposed Project would have a significant project-specific impact on the following roadway segment under Existing Plus Project Buildout conditions:

- Proctor Valley Road, between Northwoods Drive and the City of Chula Vista Boundary (LOS D)

Year 2025 Cumulative conditions – All study area roadway segments within the City of Chula Vista are projected to operate at LOS C or better under Year 2025 Cumulative conditions with the exception of the following:

- East H Street, between Terra Nova Drive and Del Rey Boulevard (LOS D)
- East H Street, between Del Rey Boulevard and Paseo Del Rey (LOS D)
- East H Street, between Paseo Del Rey and Paseo Ranchero (LOS D)
- East H Street, between Otay Lakes Road and SR-125 SB Ramps (LOS D)
- Proctor Valley Road, between Northwoods Drive to the City of Chula Vista Boundary (LOS D)
- Telegraph Canyon Road, between Paseo Ranchero to Otay Lakes Road (LOS D)
- Otay Lakes Road, between the SR-125 NB Ramps and Eastlake Parkway (LOS D)

Based on the City of Chula Vista significance criteria outlined in Section 2.8, the Proposed Project would have a significant project-specific impact on the following roadway segment under Year 2025 Cumulative conditions:

- Proctor Valley Road, between Northwoods Drive to the City of Chula Vista Boundary (LOS F)

Year 2030 Cumulative conditions – All study area roadway segments within the City of Chula Vista are projected to operate at LOS C or better under Year 2025 Cumulative conditions with the exception of the

following:

- Proctor Valley Road, between Northwoods Drive to the City of Chula Vista Boundary (LOS F)

Based on the City of Chula Vista significance criteria outlined in Section 2.8, the Proposed Project would have a significant project-specific impact on the following roadway segments under Year 2030 conditions:

- Proctor Valley Road, between Northwoods Drive to the City of Chula Vista Boundary (LOS F)

Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property – All study area roadway segments within the City of Chula Vista are projected to operate at LOS C or better under Year 2025 Cumulative conditions with the exception of the following:

- East H Street, between Terra Nova Drive and Del Rey Boulevard (LOS D)
- East H Street, between Del Rey Boulevard and Paseo Del Rey (LOS D)
- East H Street, between Paseo Del Rey and Paseo Ranchero (LOS D)
- East H Street, between Otay Lakes Road and SR-125 SB Ramps (LOS E)
- Proctor Valley Road, between Hunte Parkway and Northwoods Drive (LOS E)
- Proctor Valley Road, between Northwoods Drive to the City of Chula Vista Boundary (LOS F)
- Otay Lakes Road, between the SR-125 NB Ramps and Eastlake Parkway (LOS D)

Based on the City of Chula Vista significance criteria outlined in Section 2.8, the Proposed Project would have a significant project-specific impact on the following roadway segments under Year 2030 conditions:

- Proctor Valley Road, between Hunte Parkway and Northwoods Drive (LOS E)
- Proctor Valley Road, between Northwoods Drive to the City of Chula Vista Boundary (LOS F)

12.3 Summary of Two-Lane Highway Analysis

Table 12.3 displays two-lane highway SR-94 Level of Service results for each of the analyzed scenarios utilizing the County LOS Criteria and methodology.

Table 12.3 Summary of Two-Lane Highway Segment LOS Results

Highway	Segment	Existing	Existing + BO	Year 2025	Year 2030	Year 2030 Full GDP/SRP*
SR-94	Vista Sage Ln to Lyons Valley Rd	E	E	F	F	F
	Lyons Valley Rd to Jefferson Rd	D or better	D or better	F	F	F
	Jefferson Rd to Maxfield Rd	D or better	D or better	N/A	N/A	N/A
	Maxfield Rd to Melody Rd	D or better	D or better	N/A	N/A	N/A
	Melody Rd to Otay Lakes Rd	D or better	D or better	D or better	D or better	D or better

Source: Chen Ryan Associates; January 2017

Note: * Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property.

Table 12.3 illustrates the following:

Existing conditions – All study area two-lane highway segments analyzed under this scenario currently operate at LOS D or better, with the exception of SR-94 between Vista Sage Lane and Lyons Valley Road, which operates at LOS E.

Existing Plus Project Buildout conditions – All two-lane highway segments analyzed under this scenario are projected to operate at LOS D or better with the addition of Proposed Project traffic, with the exception of SR-94 between Vista Sage Lane and Lyons Valley Road, which operates at LOS E.

Year 2025 Cumulative Conditions — All two-lane highway segments analyzed under this scenario are projected to operate at LOS D or better with the addition of Proposed Project traffic, with the exception of SR-94 between Vista Sage Lane and Lyons Valley Road and Lyons Valley Rd to Jefferson Rd, which are projected to operate at LOS F.

Year 2030 Cumulative Conditions — All two-lane highway segments analyzed under this scenario are projected to operate at LOS D or better with the addition of Proposed Project traffic, with the exception of SR-94 between Vista Sage Lane and Lyons Valley Road and Lyons Valley Rd to Jefferson Rd, which are projected to operate at LOS F.

Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property — All two-lane highway segments analyzed under this scenario are projected to operate at LOS D or better with the addition of Proposed Project traffic, with the exception of SR-94 between Vista Sage Lane and Lyons Valley Road and Lyons Valley Rd to Jefferson Rd, which are projected to operate at LOS F.

12.4 Summary Freeway/State Highway Analyses

Table 12.4 displays freeway and state highway Level of Service results for each of the analyzed scenarios. Significant impacts are identified in bold.

Table 12.4 Summary of Freeway Mainline LOS Results

Freeway	Segment	Existing	Existing + P	Year 2025	Year 2030	Year 2030 Full GDP/SRP*
I-805	Home Ave to SR-94	F	F	F	F	F
	SR-94 to Market St	F	F	F	F	F
	Market St to Imperial Ave	F	F	F	F	F
	Imperial Ave to E Division St	D	D	F	F	F
	E Division St to Plaza Blvd	D	D	F	F	F
	Plaza Blvd to SR-54	D	D	F	F	F
	SR-54 to Bonita Rd	F	F	F	F	F
	Bonita Rd to East H St	D	D	F	F	F
	East H St to Telegraph Canyon Rd	D	D	F	F	F

Table 12.4 Summary of Freeway Mainline LOS Results

Freeway	Segment	Existing	Existing + P	Year 2025	Year 2030	Year 2030 Full GDP/SRP*
SR-125	SR-94 Junction to Jamacha Rd	D	D	F	F	F
	Jamacha Rd to Paradise Valley Rd	C	C	E	E	F
	Paradise Valley Rd to SR-54 Junction	C	C	D	D	D
	SR-54 to Mt. Miguel Rd	A	A	A	A	A
	Mt. Miguel Rd to Proctor Valley Rd	A	A	A	B	B
	Proctor Valley Rd to Otay Lakes Rd	A	A	A	A	A
	Otay Lakes Rd to Olympic Pkwy	A	A	A	B	B
	Olympic Pkwy to Birch Rd	A	A	A	A	B
SR-125	Birch Rd to Main St	A	A	B	B	B
	Main St to Otay Valley Rd	A	A	B	B	B
	Otay Valley Rd to Lone Star Rd	A	A	B	D	D
	Lone Star Rd to Otay Mesa Rd	A	A	B	D	D
SR-54	I-805 to Reo Dr/Plaza Bonita Center Wy	D	D	E	F	F
	Reo Dr/Plaza Bonita Center Wy to Woodman St	D	D	D	D	D
	Woodman St to Briarwood Rd	C	C	D	D	D
	Briarwood Rd to SR-125 Junction	C	C	C	C	C

Source: Chen Ryan Associates; January 2017

Note: * Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property.

Table 12.4 illustrates the following:

Existing conditions – All study area freeway segments currently operate at LOS D or better with the exception of the following segments:

- I-805, between Home Avenue and SR-94 (LOS F)
- I-805, between SR-94 and Market Street (LOS F)
- I-805, between Market Street and Imperial Avenue (LOS F)
- I-805, between SR-54 and Bonita Road (LOS F)

Existing Plus Project Buildout conditions – All study area freeway mainline segments are projected to operate at LOS D or better with the addition of Proposed Project traffic, with the exception of the following:

- I-805, between Home Avenue and SR-94 (LOS F)
- I-805, between SR-94 and Market Street (LOS F)
- I-805, between Market Street and Imperial Avenue (LOS F)

- I-805, between SR-54 and Bonita Road (LOS F)

Based on the Freeway Mainline significance criteria outlined in Section 2.8, the traffic associated with the Proposed Project would not cause any significant changes in roadway segment operations under Existing Plus Project Buildout conditions. Therefore, no significant Proposed Project related impacts were identified and no mitigation is required.

Year 2025 Cumulative conditions – The following study area freeway mainline segments are projected to operate at LOS E or F under Year 2025 Cumulative conditions.

- I-805, between Home Avenue and SR-94 (LOS F)
- I-805, between SR-94 and Market Street (LOS F)
- I-805, between Market Street and Imperial Avenue (LOS F)
- I-805, between Imperial Avenue and E Division Street (LOS F)
- I-805, between E. Division Street and Plaza Boulevard (LOS F)
- I-805, between Plaza Boulevard to SR-54 (LOS F)
- I-805, between SR-54 and Bonita Road (LOS F)
- I-805, between Bonita Road and East H Street (LOS F)
- I-805, between East H Street and Telegraph Canyon Road (LOS F)
- SR-125, between SR-94 Junction and Jamacha Road (LOS F)
- SR-125, between Jamacha Road and Paradise Valley Road (LOS E)
- SR-54, between I-805 and Reo Drive/Plaza Bonita Center Way (LOS E)

Based on the Freeway Mainline significance criteria outlined in Section 2.8, the traffic associated with the Proposed Project would not cause any significant changes in roadway segment operations under Year 2025 Cumulative conditions. Therefore, no significant Proposed Project related impacts were identified and no mitigation is required.

Year 2030 Cumulative conditions – The following study area freeway mainline segments are projected to operate at LOS E or F under Year 2030 conditions.

- I-805, between Home Avenue and SR-94 (LOS F)
- I-805, between SR-94 and Market Street (LOS F)
- I-805, between Market Street and Imperial Avenue (LOS F)
- I-805, between Imperial Avenue and E Division Street (LOS F)
- I-805, between E Division Street and Plaza Boulevard (LOS F)
- I-805, between Plaza Boulevard to SR-54 (LOS F)
- I-805, between SR-54 and Bonita Road (LOS F)
- I-805, between Bonita Road and East H Street (LOS F)
- I-805, between East H Street and Telegraph Canyon Road (LOS F)
- SR-125, between SR-94 Junction and Jamacha Road (LOS F)
- SR-125, between Jamacha Road and Paradise Valley Road (LOS E)

- SR-54, between I-805 and Reo Drive/Plaza Bonita Center Way (LOS F)

Based on the Freeway Mainline significance criteria outlined in Section 2.8, the traffic associated with the Proposed Project would not cause any significant changes in roadway segment operations under Year 2030 conditions. Therefore, no significant Proposed Project related impacts were identified and no mitigation is required.

Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property – The following study area freeway mainline segments are projected to operate at LOS E or F under Year 2030 conditions.

- I-805, between Home Avenue and SR-94 (LOS F)
- I-805, between SR-94 and Market Street (LOS F)
- I-805, between Market Street and Imperial Avenue (LOS F)
- I-805, between Imperial Avenue and E Division Street (LOS F)
- I-805, between E Division Street and Plaza Boulevard (LOS F)
- I-805, between Plaza Boulevard to SR-54 (LOS F)
- I-805, between SR-54 and Bonita Road (LOS F)
- I-805, between Bonita Road and East H Street (LOS F)
- I-805, between East H Street and Telegraph Canyon Road (LOS F)
- SR-125, between SR-94 Junction and Jamacha Road (LOS F)
- SR-125, between Jamacha Road and Paradise Valley Road (LOS E)
- SR-54, between I-805 and Reo Drive/Plaza Bonita Center Way (LOS F)

Based on the Freeway Mainline significance criteria outlined in Section 2.8, the traffic associated with the Proposed Project would not cause any significant changes in roadway segment operations under Year 2030 conditions. Therefore, no significant Proposed Project related impacts were identified and no mitigation is required.

12.5 Summary of Freeway Ramp Intersection Capacity Analysis

Table 12.5 displays freeway ramp intersection capacity analysis Level of Service results for each of the scenarios analyzed. This information is provided for informational purposes only as significant impacts are not assessed under this analysis.

Table 12.5 Freeway Summary

Intersection	Existing	Existing + P	Year 2025	Year 2030	Year 2030 Full GDP/SRP*
SR-125 SB / Mt. Miguel Road	Under Capacity	Under Capacity	Under Capacity	Under Capacity	Under Capacity
	Under Capacity	Under Capacity	Under Capacity	Under Capacity	Under Capacity
SR-125 NB / Mt. Miguel Road	Under Capacity	Under Capacity	Under Capacity	Under Capacity	Under Capacity
	Under Capacity	Under Capacity	Under Capacity	Under Capacity	Under Capacity

Table 12.5 Freeway Summary

Intersection	Existing	Existing + P	Year 2025	Year 2030	Year 2030 Full GDP/SRP*
I-805 SB / H Street	At Capacity	Under Capacity	Under Capacity	Under Capacity	Under Capacity
	Over Capacity	Under Capacity	Under Capacity	Under Capacity	Under Capacity
I-805 NB / H Street	Under Capacity	Under Capacity	Under Capacity	Under Capacity	Under Capacity
	Under Capacity	Under Capacity	Under Capacity	Under Capacity	Under Capacity
SR-125 SB / H Street	Under Capacity	Under Capacity	Under Capacity	Under Capacity	Under Capacity
	Under Capacity	Under Capacity	Under Capacity	Under Capacity	Under Capacity
SR-125 NB / H Street	Under Capacity	Under Capacity	Under Capacity	Under Capacity	Under Capacity
	Under Capacity	Under Capacity	Under Capacity	Under Capacity	Under Capacity
SR-125 SB / Mt. Miguel Road	Under Capacity	Under Capacity	Under Capacity	Under Capacity	Under Capacity
	Under Capacity	Under Capacity	Under Capacity	Under Capacity	Under Capacity
SR-125 NB / Otay Lakes Road	Under Capacity	Under Capacity	Under Capacity	Under Capacity	Under Capacity
	Under Capacity	Under Capacity	Under Capacity	Under Capacity	Under Capacity

Source: Chen Ryan Associates; January 2017

Note: * Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property.

Table 12.5 illustrates the following:

Existing conditions – All study area freeway ramp intersections are currently operating either at or under capacity, with the exception of I-805 SB / H Street, which is currently over capacity during the PM peak hour.

Existing Plus Project Buildout – All study area freeway ramp intersections are currently operating either at or under capacity.

Year 2025 Cumulative conditions – All study area freeway ramp interchange intersections are projected to operate at or under capacity under Year 2030 conditions.

Year 2030 Cumulative conditions – All study area freeway ramp interchange intersections are projected to operate at or under capacity under Year 2030 conditions.

Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property – All study area freeway ramp interchange intersections are projected to operate at or under capacity under Year 2030 conditions.

12.6 Summary of Ramp Metering Analysis

Table 12.6 displays ramp metering analysis results for each of the scenarios analyzed.

Table 12.6 Summary of Ramp Metering Analysis

Location	Peak Hour	Existing	Existing + P	Year 2025	Year 2030	Year 2030 Full GDP/SRP*
I-805 NB On-Ramp @ WB H Street	AM	0	0	0	0	0
I-805 NB On-Ramp @ EB H Street	AM	0	0	16.75	18.05	18.05

Source: Chen Ryan Associates; January 2017

Note: * Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property.

Table 12.6 illustrates the following:

Existing conditions – The current peak hour ramp volumes do not exceed the current ramp meter rates at either of the key study ramps that are metered.

Existing Plus Project Buildout conditions – The current peak hour ramp volumes do not exceed the current ramp meter rates at either of the key study ramps that are metered.

Year 2025 Cumulative conditions – Under Year 2025 Cumulative conditions, the peak hour ramp volumes are anticipated to exceed the current ramp meter rate at the I-805 NB On-Ramp @ EB H Street during the AM peak hour, resulting in over 16 minutes of delay. However, since the Proposed Project is located to the east of this ramp, Proposed Project traffic would access northbound I-805 from the westbound direction only. Therefore, the Proposed Project would not add any additional traffic to the I-805 NB On-Ramp @ EB H Street and would not cause or contribute to any impacts at this ramp.

Year 2030 Cumulative conditions – Under Year 2030 conditions, the peak hour ramp volumes are anticipated to exceed the current ramp meter rate at the I-805 NB On-Ramp @ EB H Street during the AM peak hour, resulting in over 18 minutes of delay. However, since the Proposed Project is located to the east of this ramp, Proposed Project traffic would access northbound I-805 from the westbound direction only. Therefore, the Proposed Project would not add any additional traffic to the I-805 NB On-Ramp @ EB H Street and would not cause or contribute to any impacts at this ramp.

Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property – Under Year 2030 conditions, the peak hour ramp volumes are anticipated to exceed the current ramp meter rate at the I-805 NB On-Ramp @ EB H Street during the AM peak hour, resulting in over 18 minutes of delay. However, since the Proposed Project is located to the east of this ramp, Proposed Project traffic would access northbound I-805 from the westbound direction only. Therefore, the Proposed Project would not add any additional traffic to the I-805 NB On-Ramp @ EB H Street and would not cause or contribute to any impacts at this ramp.

12.7 Summary of Significant Project Impacts and Mitigation Recommendations

Table 12.7 summarizes the identified significant Proposed Project-related impacts and recommended mitigation to intersections, roadway segments, freeway segments, and two-lane highway segments under each of the scenarios analyzed.

Table 12.7 Summary of Significant Impacts and Mitigation Measures

Location	Existing Plus Project Buildout	Year 2025	Year 2030	Year 2030 Full GDP/SRP*
Intersection				
SR-94 & Lyons Valley Road	Direct Signalization by the 741st EDU - Caltrans Facility – Significant and Unavoidable Impact	Cumulative Signalization by the 741st EDU - Caltrans Facility – Significant and Unavoidable Impact	Cumulative Signalization by the 741st EDU - Caltrans Facility – Significant and Unavoidable Impact	Cumulative Signalization by the 741st EDU - Caltrans Facility – Significant and Unavoidable Impact
Paseo Ranchero & East H Street	None	None	None	Cumulative Implement an exclusive right-turn lane – Impact occurs with the development of the Rancho Jamul Preserve - City of CV Facility – Significant and Unavoidable Impact
Mt Miguel Road & East H Street	None	None	None	Project Specific Implement right-turn lane by the 638th EDU - City of CV Facility – Significant and Unavoidable Impact
Lane Avenue & East H Street	None	None	None	Project Specific Implement Second westbound second left-turn lane – Impact occurs with the development of the Rancho Jamul Preserve - City of CV Facility – Significant and Unavoidable Impact
Agua Vista Drive / Northwoods Drive & Proctor Valley Road	Project Specific Signalization by the 660th EDU - City of CV Facility – Significant and Unavoidable Impact	Project Specific Signalization by the 287th EDU - City of CV Facility – Significant and Unavoidable Impact	Project Specific Signalization by the 287th EDU - City of CV Facility – Significant and Unavoidable Impact	Project Specific Signalization by the 287th EDU - City of CV Facility – Significant and Unavoidable Impact

Table 12.7 Summary of Significant Impacts and Mitigation Measures

Location	Existing Plus Project Buildout	Year 2025	Year 2030	Year 2030 Full GDP/SRP*
Proctor Valley Road & Project Driveway #1	None	None	None	Cumulative Signalization - Impact occurs with the development of the Rancho Jamul Preserve
Proctor Valley Road & Project Driveway #2	None	None	None	Cumulative Widen Proctor Valley Road to Four-Lanes - Impact occurs with the development of the Rancho Jamul Preserve
Proctor Valley Road & Project Driveway #3	None	None	None	Cumulative Signalization - Impact occurs with the development of the Rancho Jamul Preserve
Proctor Valley Road & Project Driveway #4	None	None	None	Cumulative Signalization - Impact occurs with the development of the Rancho Jamul Preserve
Proctor Valley Road & Project Driveway #5	None	None	None	Cumulative Signalization - Impact occurs with the development of the Rancho Jamul Preserve
Roadway Segment				
Proctor Valley Road between Hunte Parkway and Agua Vista Dr / Northwoods Dr	None	None	None	Project Specific Widen to a Six-Lane Major by the 487th EDU, after the development of the Rancho Jamul Preserve. City of CV Facility – Significant and Unavoidable Impact

Table 12.7 Summary of Significant Impacts and Mitigation Measures

Location	Existing Plus Project Buildout	Year 2025	Year 2030	Year 2030 Full GDP/SRP*
Proctor Valley Road between Agua Vista Dr / Northwoods Dr to County of San Diego Boundary	Project Specific Improve to a Class I Collector, by the 1,229th EDU - City of CV Facility – Significant and Unavoidable Impact	Project Specific Improve to a Class I Collector, by the 563rd EDU - City of CV Facility – Significant and Unavoidable Impact	Project Specific Improve to a Class I Collector, by the 563rd EDU - City of CV Facility – Significant and Unavoidable Impact	Project Specific Improve to a Class I Collector, by the 563rd EDU - City of CV Facility – Significant and Unavoidable Impact
Proctor Valley Road between City of Chula Vista boundary to Project Driveway #1	None	Cumulative Improve to a Four-Lane Boulevard with Intermittent Turn Lane (4.2B), by the 761st EDU - Significant and Unavoidable Impact	Cumulative Improve to a Four-Lane Boulevard with Intermittent Turn Lane (4.2B), by the 761st EDU - Significant and Unavoidable Impact	Cumulative Wide Proctor Valley Road to a Four-Lane Major (4.1A) after the development of the Rancho Jamul Preserve-Significant and Unavoidable Impact
Proctor Valley Road between Project Driveway #1 to Project Driveway #2	None	Cumulative Improve to a Four-Lane Boulevard with Intermittent Turn Lane (4.2B), by the 901st EDU - Significant and Unavoidable Impact	Cumulative Improve to a Four-Lane Boulevard with Intermittent Turn Lane (4.2B), by the 901st EDU - Significant and Unavoidable Impact	Cumulative Wide Proctor Valley Road to a Four-Lane Major (4.1A) after the development of the Rancho Jamul Preserve-Significant and Unavoidable Impact
Proctor Valley Road between Project Driveway #2 to Project Driveway #3	None	None	Cumulative Improve to a Four-Lane Boulevard with Intermittent Turn Lane (4.2B), by the 1,136th EDU Significant and Unavoidable Impact	Cumulative Wide Proctor Valley Road to a Four-Lane Major (4.1A) after the development of the Rancho Jamul Preserve - Significant and Unavoidable Impact
Proctor Valley Road between Project Driveway #3 to Project Driveway #4	None	None	Cumulative Improve to a Four-Lane Boulevard with Intermittent Turn Lane (4.2B), by the 1136th EDU Significant and Unavoidable Impact	Cumulative Wide Proctor Valley Road to a Four-Lane Major (4.1A) after the development of the Rancho Jamul Preserve - Significant and Unavoidable Impact.
2-Ln Highway Segment				
None				

Table 12.7 Summary of Significant Impacts and Mitigation Measures

Location	Existing Plus Project Buildout	Year 2025	Year 2030	Year 2030 Full GDP/SRP*
Freeway Segment				
None				
Ramp Meter				
None				

Source: Chen Ryan Associates; January 2017

Note: * Year 2030 Cumulative Conditions Plus Hypothetical Development of State Preserve Property.