Lilac Hills Ranch
Traffic Impact Study

Prepared for

ACCRETIVE INVESTMENT, INC.
12275 El Camino Real, Ste. 110
San Diego, CA 92130







DRAFT REPORT
MOUNTAIN RIDGE FIRE STATION ALTERNATIVE
MAY 16, 2014

Prepared by

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Executive Summary

The proposed Lilac Hills Ranch project (proposed project) is located in the Valley Center and Bonsall Community Planning Areas of the unincorporated County of San Diego with State Route 76 to the north, Valley Center proper to the east, the City of Escondido to the south, and Interstate 15 and Old Highway 395 to the west.

The Mountain Ridge Road Fire Station Alternative was developed as an alternative to the proposed project based on input from the DSFPD and their interest in a potential permanent fire station within Phase 5 of the project site. At the DSFPD request, the Fire Station Alternative also includes project access changes to accommodate the placement of a fire station within Phase 5. This alternative is analyzed in this report such that it can be used in the decision making process to provide the County with the option of approving an alternative to the proposed project that includes a permanent fire station in Phase 5 and the associated changes as described herein.

The Fire Station Alternative would encompass the same 608-acre site as the proposed project and would consist of the same mix of residential, commercial, and institutional uses, along with parks, open space and other project amenities, as the proposed project. Like the proposed project, the residential component of the Fire Station Alternative would contain a maximum of 1,746 units. While the proposed project includes a site for a potential fire station in Phase 3 at the site designated as Community Purpose Facility, under this Alternative, a permanent new DSFPD fire station approximately 4,500 square feet in size would be located within a two-acre site in Phase 5. The Fire Station Alternative is estimated to generate 16 trips per day. Additionally, under the Fire Station Alternative, an interim fire station that could accommodate up to 3-staff persons would be located within the project site in place of two equivalent dwelling units and, therefore, would not result in additional traffic trips.

To accommodate the fire station in the Phase 5 location, the Fire Station Alternative includes improving Mountain Ridge Road to County public road standards Rural Residential Collector (Local Public Road) and also eliminating the gates included as part of the proposed project along Mountain Ridge Road and Lilac Hills Ranch Road in the southern area of the site (i.e., in Phases 4 and 5). Specifically, Mountain Ridge Road would remain a 2-lane private road during Phases A through C and, therefore, the project trip distribution, assignment, and associated impacts would remain the same as those identified for the proposed project during these development phases. However, the road improvements would be in place and the gates along Lilac Hills Ranch removed by Phase D and beyond and, as a result, trip distribution under the Alternative would differ from the proposed project during these latter years. This report reflects the revised trip distribution patterns associated with the Fire Station Alternative in the analysis.

Other than the differences described above, all other aspects of this alternative would be the same as the proposed project and would require a GPA, a Specific Plan, Rezone, Master

Tentative Map, subsequent implementing Tentative Maps, MUPs for the WRF and the public park (P-7), and Site Plan for all private parks.

The proposed Lilac Hills Ranch Fire Station Alternative would generate a total of 15,167 external daily trips by buildout of the Fire Station Alternative, including 1,177 AM peak hour trips and 1,433 PM peak hour trips. As to trip generation, the Fire Station Alternative would generate a total of 15,167 external daily trips at buildout (as compared to 15,151 trips by the proposed project), including 1,177 AM peak hour trips (as compared to 1,171 AM peak hour trips by the proposed project) and 1,433 PM peak hour trips (the same as the proposed project).

Based on the County of San Diego significance criteria and the SANTEC/ITE Guidelines, the proposed Fire Station Alternative would result in direct traffic impacts at the following four (4) roadway segments:

- Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps – 238th EDU triggers the need for the construction of a dedicated westbound (Gopher Canyon Road approach) right-turn lane at the intersection of E. Vista Way / Gopher Canyon Road;
- E. Vista Way, between SR-76 and Gopher Canyon Road – 238th EDU triggers the need for the construction of a dedicated westbound (Gopher Canyon Road approach) right-turn lane and 476th EDU triggers the need for the construction of a dedicated northbound (E. Vista Way approach) right-turn lane at the intersection of E. Vista Way / Gopher Canyon Road;
- E. Vista Way, between Gopher Canyon Road and Osborne Street – 238th EDU triggers the need for the construction of a dedicated westbound (Gopher Canyon Road approach) right-turn lane and 476th EDU triggers the need for the construction of a dedicated northbound (E. Vista Way approach) right-turn lane at the intersection of E. Vista Way / Gopher Canyon Road; and
- W. Lilac Road, between Old Highway 395 and Main Street – need to be improved to 2.2C as designated in the County's adopted Mobility Element by 929th EDU.

The proposed project would also result in direct traffic impacts at the following five (5) intersections:

- E. Vista Way / Gopher Canyon Road – 238th EDU triggers the need for the construction of a dedicated westbound (Gopher Canyon Road approach) right-turn lane at the intersection of E. Vista Way / Gopher Canyon Road. The additional mitigation measure (a dedicated northbound right-turn lane) required for the segment of E. Vista Way, between Gopher Canyon Road and Osborne Street would further improve the operations at this intersection to LOS D during peak hours;
- Old Highway 395 / W. Lilac Road – 585th EDU triggers the need for signalization and the construction of the left-turn lane at the westbound W. Lilac Road approach;
- Old Highway 395 / Circle R Drive – 210th EDU from combined Phases 4 and 5 or 1,220th total EDU triggers the need for signalization;

- I-15 SB Ramps / Gopher Canyon Road – 1st EDU of Phase 4 or 363rd total EDU triggers the need for signalization. However, this intersection is a Caltrans facility over which the County does not have jurisdiction. In addition, Caltrans does not have a plan or program in place; therefore, the impacts would remain significant and unavoidable; and,
- I-15 NB Ramps / Gopher Canyon Road – 1st EDU of Phase 4 or 363rd total EDU triggers the need for signalization. However, this intersection is a Caltrans facility over which the County does not have jurisdiction. In addition, Caltrans does not have a plan or program in place; therefore, the impacts would remain significant and unavoidable.

Traffic generated by the proposed Fire Station Alternative would result in cumulative impacts at nine (9) study area roadway segments and 11 intersections; including:

Roadway Segments

- Camino Del Rey, between Old River Road and W. Lilac Road;
- Gopher Canyon Road, between Little Gopher Canyon Road and I-15 SB Ramps;
- E. Vista Way, between SR-76 and Gopher Canyon Road;
- E. Vista Way, between Gopher Canyon Road and Osborne Street;
- Cole Grade Road, between Fruitvale Road and Valley Center Road;
- W. Lilac Road, between Old Highway 395 and Main Street;
- Gopher Canyon Road, between E. Vista Way and Little Gopher Canyon Road;
- Pankey Road, between Pala Mesa Drive and SR-76; and
- Lilac Road, between Old Castle Road and Anthony Road.

Intersections

- E. Vista Way / Gopher Canyon Road (County);
- Old Highway 395 / W. Lilac Road (County);
- I-15 SB Ramps / Old Highway 395 (Caltrans);
- I-15 NB Ramps / Old Highway 395 (Caltrans);
- I-15 SB Ramps / Gopher Canyon Road (Caltrans);
- I-15 NB Ramps / Gopher Canyon Road (Caltrans);
- SR-76 / Old Highway 395 (Caltrans);
- SR-76 / Pankey Road (Caltrans);
- Old Highway 395 / E. Dulin Road (County);
- Old Highway 395 / Circle R Drive (County); and
- Miller Road / Valley Center Road (County).

In comparison the Fire Station Alternative would have results in the same direct and cumulative impact as the proposed project. However, under the general plan consistency scenarios, the Fire Station Alternative would have two (2) less General Plan inconsistency when compare to the proposed project. The two (2) roadway segments that are no longer inconsistent with the general plan are listed below:

- W. Lilac Road, Old Highway 395 to Main Street - Horizon + Project (w/o Road 3) scenario
- Old Highway 395, W. Lilac Road to I-15 SB Ramps – both Horizon + Project (w/ Road 3) & Horizon + Project (w/o Road 3) scenarios

Generally, cumulative impacts to facilities listed in the County's TIF would be mitigated through payment of TIF fees. Although the improvement is slated for implementation based upon the currently approved TIF Program; it is anticipated that the currently approved TIF Program will be updated by the County to accommodate the land use changes that would result from the project's approval. This update would revise fee rates associated with adding the project's land uses to the program. For facilities not included in the County's TIF program, specific mitigation measures are proposed.

The proposed Fire Station Alternative would also have cumulative impacts to I-15 between SR-78 and the Riverside County boundary, and these impacts would remain significant and unmitigable as with the proposed project.

Proposed Mobility Element Classification Changes

Like the proposed project, the Fire Station Alternative proposes to downgrade *W. Lilac Road, between Main Street and the planned Road 3 from 2.2C (as classified in the currently adopted General Plan) to 2.2F*.

This proposal is supported by the low (less than 6,100 ADT) forecast daily traffic volumes when Road 3 is deleted from the Mobility Element system. In October, 2011, after adoption of the County General Plan Update, the San Diego Association of Governments (SANDAG) acquired the 902-acre Rancho Lilac property through its Environmental Mitigation Program (EMP). SANDAG recorded a conservation easement over the entire 902 acres and designated this land as part of a 1,600 acre open space preserve in the State Route 76 corridor in North San Diego County. This acquisition may prevent implementation of the County's planned Road 3, and make the deletion of Road 3 from the currently adopted Mobility Element a potential roadway network scenario.

- In addition, the Fire Station Alternative also proposes to convert Mountain Ridge Road from a 2-lane private road to a Rural Residential Collector (Local Public Road), as well as remove all access restriction (gates) along Lilac Hills Ranch Road.

Table of Content

1.0 Introduction 1
1.1 Purpose of the Report 1
1.2 Mountain Ridge Road Project Description 1
1.3 Study Scenarios 13
1.4 Report Organization 14
2.0 Analysis Methodology 16
2.1 Level of Service Definition 16
2.2 Roadway Segment Level of Service Standards and Thresholds 16
2.3 Peak Hour Intersection Level of Service Standards and Thresholds 18
2.3.1 Signalized Intersection Analysis 19
2.3.2 Unsignalized Intersection Analysis 19
2.4 Two-Lane Highway Level of Service Standards and Thresholds 20
2.5 Freeway/State Highway Level of Service Standards and Thresholds 21
2.6 Ramp Intersection Capacity Analysis 21
2.7 Ramp Metering Analysis 22
2.8 Determination of Significant Impacts 22
3.0 Existing Conditions 27
3.1 Existing Transportation Network 27
3.2 Existing Intersection and Roadway Volumes 36
3.3 Existing Level of Service Analysis 36
3.4 Existing Parking, Transit, and On-Site Circulation 49
4.0 Project Traffic 50
4.1 Project Description 50
4.2 Project Phasing 52
4.3 Project Trip Generation, Distribution, and Assignment 60
4.3.1 Project Trip Generation 60
4.3.2 Project Trip Distribution 72
4.3.3 Project Trip Assignment 75
4.4 Vehicle Miles of Travel (VMT) Analysis 105
5.0 Existing Plus Project Conditions 108
5.1 Existing Plus Project (Phase A) Conditions 108
5.1.1 Existing Plus Project (Phase A) Roadway Network and Traffic Volumes 108
5.1.2 Existing Plus Project (Phase A) Traffic Conditions 108
5.1.3 Existing Plus Project (Phase A) Impact Significance and Mitigation 124
5.2 Existing Plus Project (Phase B) Conditions 126
5.2.1 Existing Plus Project (Phase B) Roadway Network and Traffic Volumes 126
5.2.2 Existing Plus Project (Phase B) Traffic Conditions 127
5.2.3 Existing Plus Project (Phase B) Impact Significance and Mitigation 143
5.3 Existing Plus Project (Phase C) Conditions 145
5.3.1 Existing Plus Project (Phase C) Roadway Network and Traffic Volumes 145
5.3.2 Existing Plus Project (Phase C) Traffic Conditions 146
5.3.3 Existing Plus Project (Phase C) Impact Significance and Mitigation 163

5.4 Existing Plus Project (Phase D) Conditions 168
5.4.1 Existing Plus Project (Phase D) Roadway Network and Traffic Volumes 168
5.4.2 Existing Plus Project (Phase D) Traffic Conditions 169
5.4.3 Existing Plus Project (Phase D) Impact Significance and Mitigation 185
5.5 Existing Plus Project (Phase E – Project Buildout) Conditions 188
5.5.1 Existing Plus Project (Buildout) Roadway Network and Traffic Volumes 188
5.5.2 Existing Plus Project (Buildout) Traffic Conditions 189
5.5.3 Existing Plus Project (Buildout) Impact Significance and Mitigation 205
6.0 Cumulative Traffic Conditions 209
6.1 Cumulative Projects 209
6.2 Existing Plus Cumulative Projects Plus Project Roadway Network and Traffic Volumes 226
6.3 Existing Plus Cumulative Projects Plus Project Traffic Conditions 226
6.4 Existing Plus Cumulative Projects Plus Project Impact Significance and Mitigation .. 249
7.0 Site Access and On-Site Circulation 260
7.1 Site Access 260
7.2 On-Site Circulation 261
8.0 Hazards to Pedestrians and Bicyclists 267
9.0 General Plan Consistency Analyses 269
9.1 Horizon Year Roadway Network and Traffic Volumes 270
9.2 Horizon Year with Road 3 Traffic Conditions 272
9.2.1 Horizon Year Base with Road 3 272
9.2.2 Horizon Year Base Plus Project with Road 3 276
9.2.3 Horizon Year with Road 3 GP Inconsistencies 288
9.3 Horizon Year without Road 3 Traffic Conditions 291
9.3.1 Horizon Year Base without Road 3 292
9.3.2 Horizon Year Base Plus Project without Road 3 299
9.3.3 Horizon Year without Road 3 Impact Significance and Mitigation 308
10.0 Findings and Recommendations 311
10.1 Summary of Roadway Segment Analysis 311
10.2 Summary of Intersection Analysis 311
10.3 Summary of Freeway Analysis 311
10.4 Summary of Ramp Intersection Capacity Analysis 311
10.5 Summary of Significant Impacts and Mitigation Recommendations 311
11.0 Transportation Demand Management Program 325

Appendices

Appendix A	Roundabout Peer Review by Reid Middleton
Appendix B	Mountain Ridge Road and Circle R. Drive Design Exception #8
Appendix C	Travel Time Survey - W. Lilac Road
Appendix D	Travel Speed Survey - Mountain Ridge Road and Circle R. Drive
Appendix E	Traffic Counts
Appendix F	Peak Hour Intersection Capacity Worksheets - Existing Conditions
Appendix G	Ramp Intersection Capacity Analysis Worksheets - Existing Conditions
Appendix H	Fire Station Trip Generation Survey
Appendix I	SANDAG Select Zone Assignment for Project Internal Capture & ITE Internal Multi-Use Generation Calculation
Appendix J	SANDAG Land Use Description and ITE Office Trip Generation
Appendix K	SANDAG Select Zone Assignments for Project Trip Distribution
Appendix L	Project Trip Distribution along Frontage and Access Roads by Phase
Appendix M	LHR VMT Model Run – Land Use Assumptions
Appendix N	LHR VMT Model Run – Mode Choice Reports
Appendix O	Bird Song Drive Traffic Operation Analysis
Appendix P	Peak Hour Intersection Capacity Worksheets - Existing Plus Project (Phase A) Conditions
Appendix Q	Ramp Intersection Capacity Analysis Worksheets - Existing Plus Project (Phase A) Conditions
Appendix R	Arterial Analysis - Existing Plus Project (Phase A) Conditions with and without Mitigation
Appendix S	Mitigated Peak Hour Intersection Capacity Worksheets - Existing Plus Project (Phase A) Conditions
Appendix T	Arterial Analysis - Existing Plus Project (Phases B) Conditions
Appendix U	Peak Hour Intersection Capacity Worksheets - Existing Plus Project (Phase B) Conditions
Appendix V	Ramp Intersection Capacity Analysis Worksheets - Existing Plus Project (Phase B) Conditions
Appendix W	Traffic Signal Warrants - Existing Plus Project (Phase B) Conditions
Appendix X	Mitigated Peak Hour Intersection Capacity Worksheets - Existing Plus Project (Phase B) Conditions
Appendix Y	Arterial Analysis - Existing Plus Project (Phases C) Conditions
Appendix Z	Peak Hour Intersection Capacity Worksheets - Existing Plus Project (Phases C) Conditions
Appendix AA	Ramp Intersection Capacity Analysis Worksheets - Existing Plus Project (Phases C) Conditions
Appendix AB	Traffic Signal Warrants - Existing Plus Project (Phases C) Conditions
Appendix AC	Mitigated Peak Hour Intersection Capacity Worksheets - Existing Plus Project (Phases C) Conditions
Appendix AD	Arterial Analysis - Existing Plus Project (Phase D) Conditions
Appendix AE	Peak Hour Intersection Capacity Worksheets - Existing Plus Project (Phase D) Conditions
Appendix AF	Ramp Intersection Capacity Analysis Worksheets - Existing Plus Project (Phase D) Conditions
Appendix AG	Traffic Signal Warrants - Existing Plus Project (Phase D) Conditions
Appendix AH	Mitigated Peak Hour Intersection Capacity Worksheets - Existing Plus Project (Phase D) Conditions
Appendix AI	Arterial Analysis - Existing Plus Project (Buildout) Conditions
Appendix AJ	Peak Hour Intersection Capacity Worksheets - Existing Plus Project (Buildout) Conditions
Appendix AK	Ramp Intersection Capacity Analysis Worksheets - Existing Plus Project (Buildout) Conditions

Appendix AL Traffic Signal Warrants - Existing Plus Project (Buildout) Conditions
Appendix AM Mitigated Peak Hour Intersection Capacity Worksheets - Existing Plus Project (Buildout) Conditions
Appendix AN SANDAG Trip Generation Report Including the List of Cumulative Projects
Appendix AO Peak Hour Intersection Capacity Worksheets - Existing Plus Cumulative Projects Plus Project
Appendix AP Ramp Intersection Capacity Analysis Worksheets - Existing Plus Cumulative Projects Plus Project
Appendix AQ Arterial Analysis - Existing Plus Cumulative Projects Plus Project
Appendix AR Traffic Signal Warrants – Existing Plus Cumulative Projects Plus Project
Appendix AS Mitigated Peak Hour Intersection Capacity Worksheets - Existing Plus Cumulative Projects Plus Project
Appendix AT Sight Distance Analysis by Landmark Consulting
Appendix AU Arterial Analysis -LHR Internal Roadways
Appendix AV Lilac Hills Ranch Road / Covey Lane Traffic Operation Analysis
Appendix AW Arterial Analysis – Horizon Year with Road 3 Base Plus Project Conditions
Appendix AX Arterial Analysis – Horizon Year without Road 3 Base Plus Project Conditions

List of Tables

Table 2.1 Level of Service (LOS) Definitions 17
Table 2.2 County of San Diego Roadway Segment Daily Capacity and LOS Standards 17
Table 2.3 Signalized Intersection LOS Highway Capacity Manual Operational Analysis Method 19
Table 2.4 LOS Criteria for Stop Controlled Unsignalized Intersections 20
Table 2.5 County of San Diego Two-Lane Highway LOS Thresholds with Signalized Intersection Spacing Over One Mile 20
Table 2.6 Freeway and State Highway Segment LOS Definitions 21
Table 2.7 Traffic Flow Conditions at Ramp Intersections at Various Levels of Operation 22
Table 2.8 Measures of Significant Project Impacts to Congestion on Road Segments: Allowable Increases on Congested Road Segments 23
Table 2.9 Measures of Significant Project Impacts to Congestion on Intersections: Allowable Increases on Congested Intersections 23
Table 2.10 Measures of Significant Project Impacts to Congestion: Allowable Increases on Two-Lane Highways with Signalized Intersection Spacing Over One Mile 25
Table 2.11 Measures of Significant Project Impacts to Congestion: Allowable Increases on Two-Lane Highways with Signalized Intersection Spacing Under One Mile 25
Table 2.12 SANTEC/ITE Measure of Significant Project Traffic Impacts 26
Table 3.1 Reduced Roadway Thresholds for Key Segments 41
Table 3.2 Roadway Segment LOS Results - Existing Conditions 41
Table 3.3 Peak Hour Intersection LOS Results - Existing Conditions 44
Table 3.4 Two-Lane Highway LOS Results - Existing Conditions 45
Table 3.5 Freeway Segment LOS Results - Existing Conditions 47
Table 3.6 Ramp Intersection Capacity Analysis - Existing Conditions 49
Table 4.2 Traffic Analysis Phasing and Access Requirements 52
Table 4.1 Project Land Use by Specific Plan Phasing by SANDAG Land Use Category 54
Table 4.3 Project Land Uses by Traffic Analysis Phasing by SANDAG Land Use Category 60
Table 4.4 Lilac Hills Ranch Project Trip Generation - Phase A by SANDAG Land Use Category 61
Table 4.5 Lilac Hills Ranch Project Trip Generation - Phase B by SANDAG Land Use Category 61

Table 4.6 Lilac Hills Ranch Project Trip Generation - Phase C by SANDAG Land Use Category 62
Table 4.7 Lilac Hills Ranch Project Trip Generation - Phase D by SANDAG Land Use Category 63
Table 4.8 Lilac Hills Ranch Project Trip Generation
- Phase E (Buildout) by SANDAG Land Use Category 65
Table 4.9 Trip Generation Comparison 72
Table 4.10 Lilac Hills Ranch Internal and External Project Trips
- Horizon Year GP Consistency Analysis 74
Table 4.11 Mode Choice Model Scenarios 106
Table 4.12 Vehicle Miles Travel & Average Trip Length 106
Table 5.1 Roadway Segment LOS Results - Existing Plus Project (Phase A) Conditions 114
Table 5.2 Peak Hour Intersection LOS Results - Existing Plus Project (Phase A) Conditions 117
Table 5.3 Two-Lane Highway LOS Results - Existing Plus Project (Phase A) Conditions 121
Table 5.4 Freeway Segment LOS Results - Existing Plus Project (Phase A) Conditions 122
Table 5.5 Ramp Intersection Capacity Analysis - Existing Plus Project (Phase A) Conditions 124
Table 5.6 Arterial LOS Results after Mitigation - Existing Plus Project (Phase A) Conditions 125
Table 5.7 Mitigated Intersection LOS - Existing Plus Project (Phase A) Conditions 125
Table 5.8 Impact and Mitigation Summary - Existing Plus Project (Phase A) Conditions 126
Table 5.9 Roadway Segment LOS Results - Existing Plus Project (Phase B) Conditions 132
Table 5.10 Arterial LOS Results - Existing Plus Project (Phase B) Conditions 135
Table 5.11 Peak Hour Intersection LOS Results - Existing Plus Project (Phase B) Conditions 136
Table 5.12 Two-Lane Highway LOS Results - Existing Plus Project (Phase B) Conditions 140
Table 5.13 Freeway Segment LOS Results - Existing Plus Project (Phase B) Conditions 141
Table 5.14 Ramp Intersection Capacity Analysis - Existing Plus Project (Phase B) Conditions 143
Table 5.15 Mitigated Intersection LOS - Existing Plus Project (Phase B) Conditions 144
Table 5.16 Impact and Mitigation Summary - Existing Plus Project (Phase B) Conditions 145
Table 5.17 Roadway Segment LOS Results - Existing Plus Project (Phase C) Conditions 152
Table 5.18 Arterial LOS Results - Existing Plus Project (Phase C) Conditions 155
Table 5.19 Peak Hour Intersection LOS Results - Existing Plus Project (Phase C) Conditions 156
Table 5.20 Two-Lane Highway LOS Results - Existing Plus Project (Phase C) Conditions 160
Table 5.21 Freeway Segment LOS Results - Existing Plus Project (Phase C) Conditions 161
Table 5.22 Ramp Intersection Capacity Analysis - Existing Plus Project (Phase C) Conditions 163
Table 5.23 Arterial LOS Results after Mitigation - Existing Plus Project (Phase C) Conditions 164
Table 5.24 Mitigated Intersection LOS - Existing Plus Project (Phase C) Conditions 167
Table 5.25 Impact and Mitigation Summary - Existing Plus Project (Phase C) Conditions 167
Table 5.26 Roadway Segment LOS Results - Existing Plus Project (Phase D) Conditions 174
Table 5.27 Arterial LOS Results - Existing Plus Project (Phase D) Conditions 177
Table 5.28 Peak Hour Intersection LOS Results - Existing Plus Project (Phase D) Conditions 178
Table 5.29 Two-Lane Highway LOS Results - Existing Plus Project (Phase D) Conditions 182
Table 5.30 Freeway Segment LOS Results - Existing Plus Project (Phase D) Conditions 183
Table 5.31 Ramp Intersection Capacity Analysis - Existing Plus Project (Phase D) Conditions 185
Table 5.32 Mitigated Intersection LOS - Existing Plus Project (Phase D) Conditions 187
Table 5.33 Impact and Mitigation Summary - Existing Plus Project (Phase D) Conditions 188
Table 5.34 Roadway Segment LOS Results
- Existing Plus Project (Phase E – Buildout) Conditions 194
Table 5.35 Arterial LOS Results - Existing Plus Project (Phase E – Buildout) Conditions 197
Table 5.36 Peak Hour Intersection LOS Results
- Existing Plus Project (Phase E – Buildout) Conditions 198
Table 5.37 Two-Lane Highway LOS Results
- Existing Plus Project (Phase E – Buildout) Conditions 202

Table 5.38 Freeway Segment LOS Results
- Existing Plus Project (Phase E – Buildout) Conditions 203
Table 5.39 Ramp Intersection Capacity Analysis
- Existing Plus Project (Phase E - Buildout) Conditions 205
Table 5.40 Arterial LOS Results after Mitigation
- Existing Plus Project (Phase E - Buildout) Conditions 206
Table 5.41 Mitigated Intersection LOS
- Existing Plus Project (Phase E - Buildout) Conditions 207
Table 5.42 Impact and Mitigation Summary
- Existing Plus Project (Phase E - Buildout) Conditions 208
Table 6.1 Cumulative Projects 209
Table 6.2 Roadway Segment LOS Results
- Existing Plus Cumulative Projects Plus Project Conditions 236
Table 6.3 Peak Hour Intersection LOS Results
- Existing Plus Cumulative Projects Plus Project Conditions 240
Table 6.4 Two-Lane Highway LOS Results
- Existing Plus Cumulative Projects Plus Project Conditions 245
Table 6.5 Freeway Segment LOS Results
- Existing Plus Cumulative Projects Plus Project Conditions 247
Table 6.6 Ramp Intersection Capacity Analysis
- Existing Plus Cumulative Projects Plus Project Conditions 249
Table 7.1 Internal Roadway Arterial LOS Results 263
Table 7.2 On-Site Circulation / Spine Roads Design Features 264
Table 7.3 Peak Hour Intersection LOS Results - Lilac Hills Ranch Road/Covey Lane 265
Table 7.4 Covey Lane and Mountain Ridge Road 266
Table 9.1 Roadway Segment LOS Results - Horizon Year Base Conditions (with Road 3)..... 274
Table 9.2 Freeway Segment LOS Results - Horizon Year Base Conditions (with Road 3)..... 277
Table 9.3 Roadway Segment LOS Results
- Horizon Year Base Plus Project Conditions (with Road 3) 281
Table 9.4 Freeway Segment LOS Results
- Horizon Year Base Plus Project Conditions (with Road 3) 286
Table 9.5 Arterial LOS Results - Horizon Year Base Plus Project Conditions (with Road 3)..... 289
Table 9.6 GP Consistencies Summary
- Horizon Year Base Plus Project Conditions (with Road 3) 290
Table 9.7 Roadway Segment LOS Results
- Horizon Year Base Conditions (without Road 3)..... 292
Table 9.8 Freeway Segment LOS Results - Horizon Year Base Conditions (without Road 3) 297
Table 9.9 Roadway Segment LOS Results
- Horizon Year Base Plus Project Conditions (without Road 3)..... 301
Table 9.10 Freeway Segment LOS Results
- Horizon Year Base Plus Project Conditions (without Road 3)..... 306
Table 9.11 Arterial LOS Results - Horizon Year Base Plus Project Conditions (without Road 3)..... 309
Table 9.12 GP Consistencies Summary
- Horizon Year Base Plus Project Conditions (without Road 3)..... 310
Table 10.1 Summary of Roadway Segment LOS Results 312
Table 10.2 Summary of Intersection Peak Hour LOS Results 316
Table 10.3 Summary of Freeway Segment LOS Results 318
Table 10.4 Summary of Ramp Intersection Capacity Analysis 320
Table 10.5 Summary of Significant Impacts and Mitigation Measures..... 321

List of Figures

Figure 1-1 Project Regional Location 3
Figure 1-2 Project Study Area 4
Figure 1-3 Project Site Plan 5
Figure 1-4A Design Exceptions (1-8) 6
Figure 1-4B Design Exceptions (9 and 10) 7
Figure 3-1A Roadway Geometrics – Existing Conditions 31
Figure 3-1B Intersection Geometrics – Existing Conditions 33
Figure 3-2A Roadway Average Daily Traffic Volumes – Existing Conditions 37
Figure 3-2B Intersection Peak Hour Traffic Volumes – Existing Conditions 38
Figure 4-1 Project Site Plan by Specific Plan Phasing 53
Figure 4-2.A Project Site Plan and Access - Traffic Analysis Phase A 55
Figure 4-2.B Project Site Plan and Access - Traffic Analysis Phase B 56
Figure 4-2.C Project Site Plan and Access - Traffic Analysis Phase C 57
Figure 4-2.D Project Site Plan and Access - Traffic Analysis Phase D 58
Figure 4-2.E Project Site Plan and Access - Traffic Analysis Phase E (Buildout) 59
Figure 4-3 Project Trip Distribution (Phase A) – Existing Network 76
Figure 4-4 Project Trip Distribution (Phase B) – Existing Network 77
Figure 4-5 Project Trip Distribution (Phase C) – Existing Network 78
Figure 4-6 Project Trip Distribution (Phase D) – Existing Network 79
Figure 4-7 Project Trip Distribution (Buildout) – Existing Network 80
Figure 4-8 Project Trip Distribution (Buildout) – Horizon Year Network with Road 3 81
Figure 4-9 Project Trip Distribution (Buildout) – Horizon Year Network without Road 3 82
Figure 4-10A Project (Phase A) Trip Assignment (Roadway) – Existing Network 83
Figure 4-10B Project (Phase A) Trip Assignment (Intersection) – Existing Network 84
Figure 4-11A Project (Phase B) Trip Assignment (Roadway) – Existing Network 87
Figure 4-11B Project (Phase B) Trip Assignment (Intersection) – Existing Network 88
Figure 4-12A Project (Phase C) Trip Assignment (Roadway) – Existing Network 91
Figure 4-12B Project (Phase C) Trip Assignment (Intersection) – Existing Network 92
Figure 4-13A Project (Phase D) Trip Assignment (Roadway) – Existing Network 95
Figure 4-13B Project (Phase D) Trip Assignment (Intersection) – Existing Network 96
Figure 4-14A Project (Buildout) Trip Assignment (Roadway) – Existing Network 99
Figure 4-14B Project (Buildout) Trip Assignment (Intersection) – Existing Network 100
Figure 4-15A Project (Buildout) Trip Assignment (Roadway) – Horizon Year Network with Road 3 103
Figure 4-16A Project (Buildout) Trip Assignment (Roadway) – Horizon Year Network without Road 3 104
Figure 5-1A Roadway Average Daily Traffic Volumes – Existing Plus Project (Phase A) Conditions 109
Figure 5-1B Intersection Peak Hour Traffic Volumes – Existing Plus Project (Phase A) Conditions 110
Figure 5-2A Roadway Average Daily Traffic Volumes – Existing Plus Project (Phase B) Conditions 128
Figure 5-2B Intersection Peak Hour Traffic Volumes – Existing Plus Project (Phase B) Conditions 129
Figure 5-3A Roadway Average Daily Traffic Volumes – Existing Plus Project (Phase C) Conditions 147

Figure 5-3B Intersection Peak Hour Traffic Volumes – Existing Plus Project (Phase C) Conditions 148
Figure 5-4 E. Vista Way/Gopher Canyon Road Intersection Conceptual Improvement 166
Figure 5-5A Roadway Average Daily Traffic Volumes – Existing Plus Project (Phase D) Conditions 170
Figure 5-5B Intersection Peak Hour Traffic Volumes – Existing Plus Project (Phase D) Conditions 171
Figure 5-6A Roadway Average Daily Traffic Volumes – Existing Plus Project (Buildout) Conditions 190
Figure 5-6B Intersection Peak Hour Traffic Volumes – Existing Plus Project (Buildout) Conditions 191
Figure 6-1 Cumulative Project Locations 225
Figure 6-2A Roadway Geometrics - Existing Plus Cumulative Projects Plus Project Conditions 227
Figure 6-2B Intersection Geometrics - Existing Plus Cumulative Projects Plus Project Conditions 228
Figure 6-3A Roadway Average Daily Traffic Volumes – Existing Plus Cumulative Projects Plus Project Conditions 231
Figure 6-3B Intersection Peak Hour Traffic Volumes – Existing Plus Cumulative Projects Plus Project Conditions 232
Figure 7-1 Estimated Internal ADTs 262
Figure 8-1 Trails Plan 268
Figure 9-1 Roadway Geometrics – Horizon Year Conditions 271
Figure 9-2 Roadway Average Daily Traffic Volumes – Horizon Year Base Conditions with Road 3 273
Figure 9-3 Roadway Average Daily Traffic Volumes – Horizon Year Base Plus Project Conditions with Road 3 279
Figure 9-4 Roadway Average Daily Traffic Volumes – Horizon Year Base Conditions without Road 3 295
Figure 9-5 Roadway Average Daily Traffic Volumes – Horizon Year Base Plus Project Conditions without Road 3 300

1.0 Introduction

1.1 Purpose of the Report

The purpose of this Traffic Impact Study (TIS) is to identify and document potential traffic impacts related to the Mountain Ridge Road Fire Station Alternative of the Lilac Hill Ranch project. This report also recommends mitigation measures for any identified intersection, roadway or freeway/highway deficiencies associated with this alternative.

For the purpose of this Traffic Impact Study, the Mountain Ridge Road Fire Station Alternative is referred as the "project".

1.2 Mountain Ridge Road Project Description

The proposed Lilac Hills Ranch project is located in the Valley Center and Bonsall Community Planning Areas of the unincorporated County of San Diego with State Route 76 to the north, Valley Center proper to the east, the City of Escondido to the south, and Interstate 15 and Old Highway 395 to the west.

The Mountain Ridge Road Fire Station Alternative was developed based on input from the DSFPD and their interest in a potential permanent fire station within Phase 5 of the project site, located on 2-acres in between Mountain Ridge Road and the Institutional Site, within the SFS-6 planning area. This alternative is analyzed such that it can be used in the decision making process to provide the option of approving a 2-acre permanent fire station site in Phase 5 and the conversion of Mountain Ridge Road from a private road to a Rural Residential Collector (Local Public Road) and the associated changes as described herein.

This alternative would encompass the same 608-acre project site and would consist of the same mix of residential, commercial, and institutional uses, along with parks, open space and other project amenities, as the project. Like the project, the residential component of this alternative would contain a maximum of 1,746 units. The proposed project includes a fire station in Phase 3 at the site designated as Community Purpose Facility. Under this Alternative, instead of a fire station in Phase 3, a permanent new DSFPD fire station within a two-acre site would be located in Phase 5. To accommodate the fire station in the Phase 5 location, this alternative includes improving Mountain Ridge Road to a County public road and eliminating the gates the project includes along Mountain Ridge Road and Lilac Hills Ranch Road in the southern area of the site (i.e., in Phases 4 and 5). All other aspects of this alternative would be the same as the project and would require a GPA, a Specific Plan, Rezone, Master Tentative Map, subsequent implementing Tentative Maps, MUPs for the WRF and the public park (P-7), and Site Plan for all private parks.

Project access is provided at W. Lilac Road via Main Street, Circle R Drive via Mountain Ridge Road, as well as Covey Lane. The Mountain Ridge Road Fire Station Alternative proposes to convert Mountain Ridge Road from a 2-lane private road with restricted access, to a Rural Residential Collector (Local Public Road) and removing all access restriction (gates) along Lilac

Hills Ranch Road and Mountain Ridge Road within the project site. **Figure 1-1** displays the project's location within the region, while **Figure 1-2** illustrates the project study area.

Figure 1-3 displays the proposed site plan. Detailed land use and trip generation information are described in Chapter 4.

Proposed Project Design Exceptions

Ten (10) design exceptions are proposed (final recommendations of the requests are pending) as part of this project and displayed in **Figures 1-4A** and **1-4B**. For purpose of explanation and ease of reading, the following summaries describe the design exception requests and the resulting effects on roadway capacity:

1. **West Lilac Road, from Old Highway 395 to the I-15 bridge**

    a. Request to reduce the parkway width (the walkable portion of the right-of-way) from 12 feet to 2 feet on the north side, and from 12 feet to 6 feet on the south side.

        i. A "Parkway" is defined as "the distance measured from the curb face to the property line of a road right-of-way." The actual drivable portion of the road is called the "Pavement Width," which is further defined as "the specified width of pavement of the roadbed and is measured from curb face to curb face. In the absence of curbs, the pavement width is measured from the edges of the roadbed." (County of San Diego Department of Public Works "Public Road Standards," March 12, 2012)

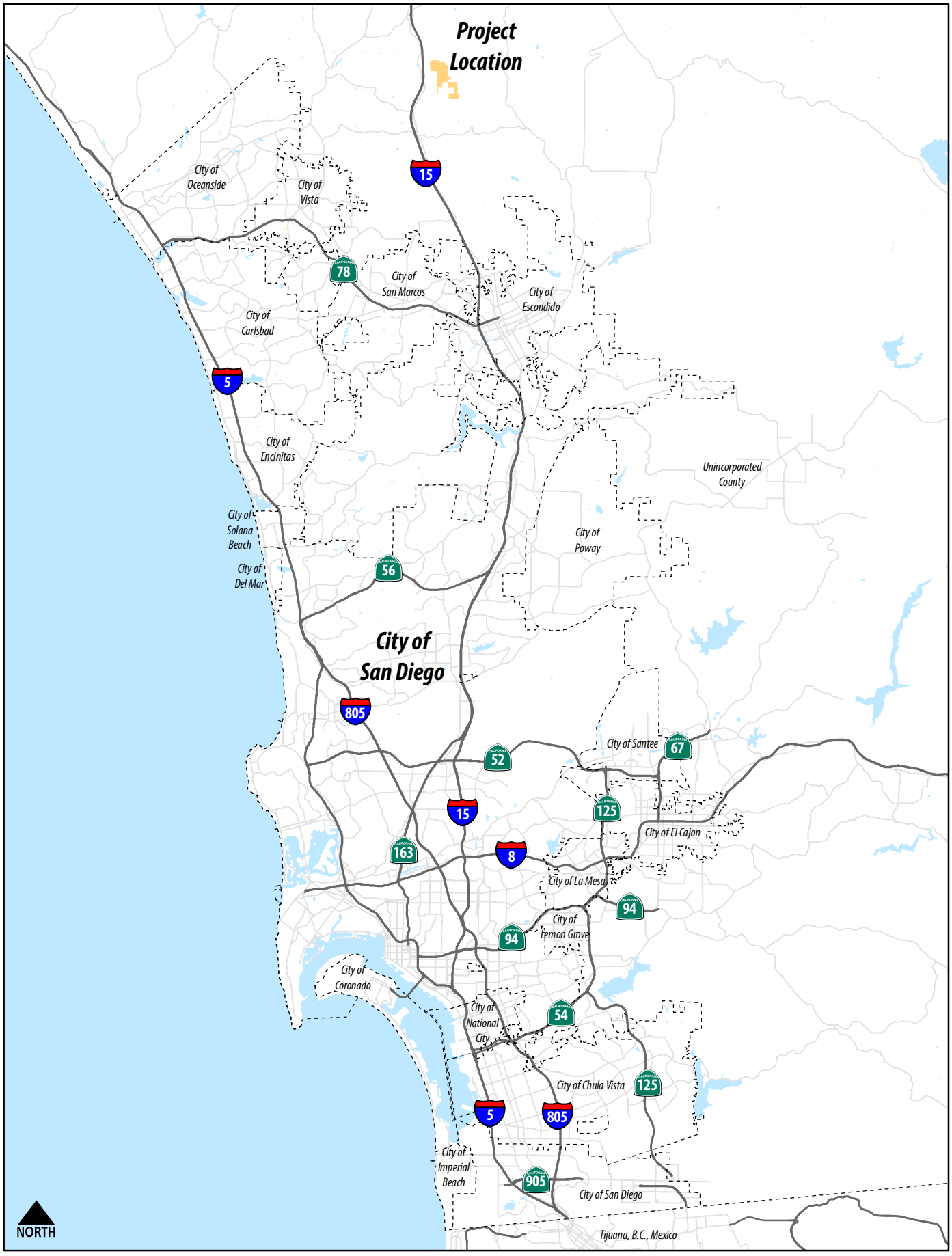
    b. Reduce the north side shoulder from 8 feet to 6 feet.

    The reduction in parkway width will not affect vehicular travel speed because the travel lanes will be built to the full 12-foot standard. The reduced shoulder width from 8 feet to 6 feet will still allow full size vehicles to pull off to the side of the road on those rare occasions when that is necessary. **Therefore, the proposed design exception will not affect roadway capacity and a capacity reduction was not applied.**

2. **West Lilac Road, over the I-15 bridge**

    a. Reduce the shoulder from 8 feet to 6 feet along the north and from 8 feet to 4 feet along the south.

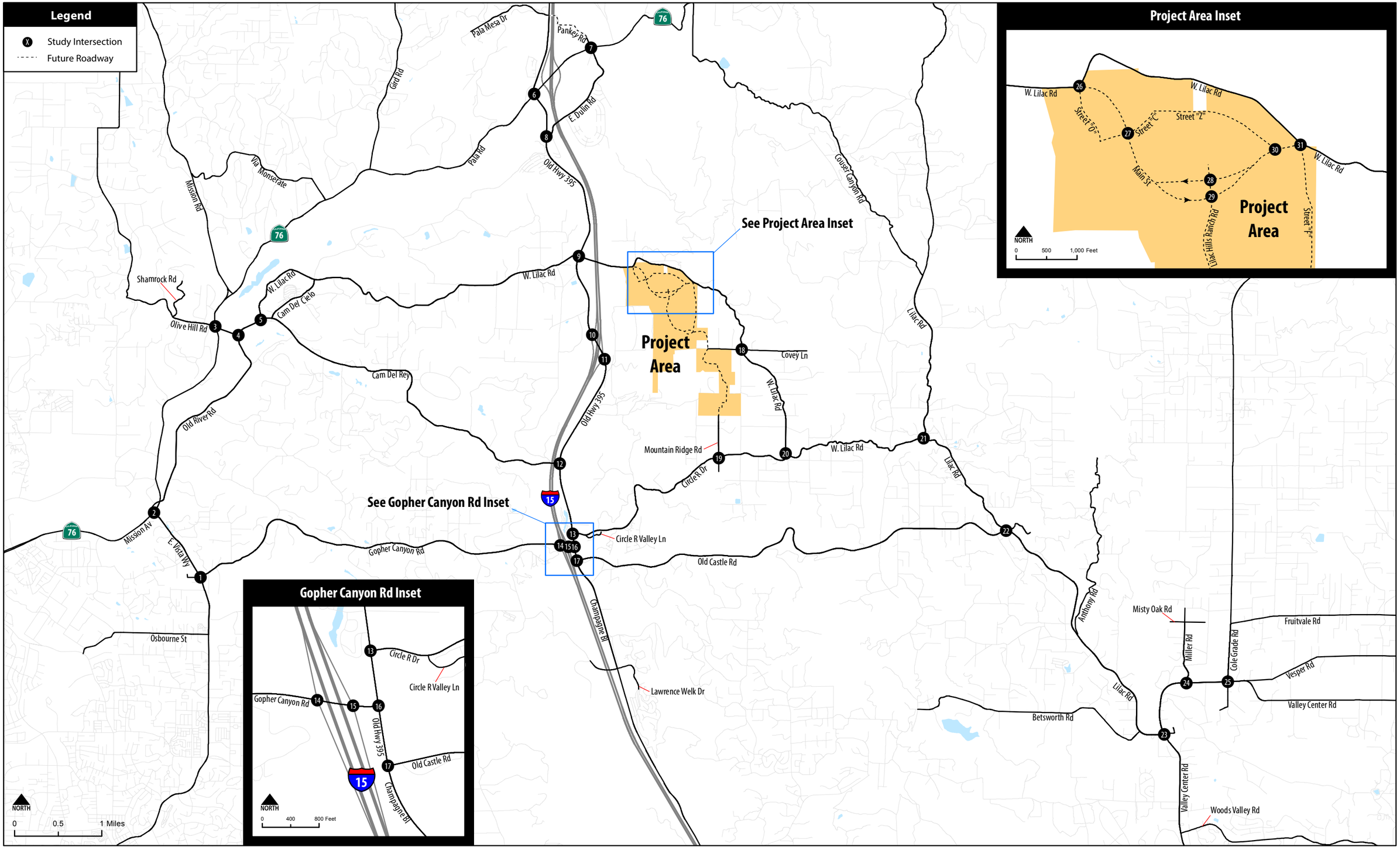
    b. Reduce the parkway from 12 feet to 0 feet along the north and from 12 feet to 6 feet along the south.



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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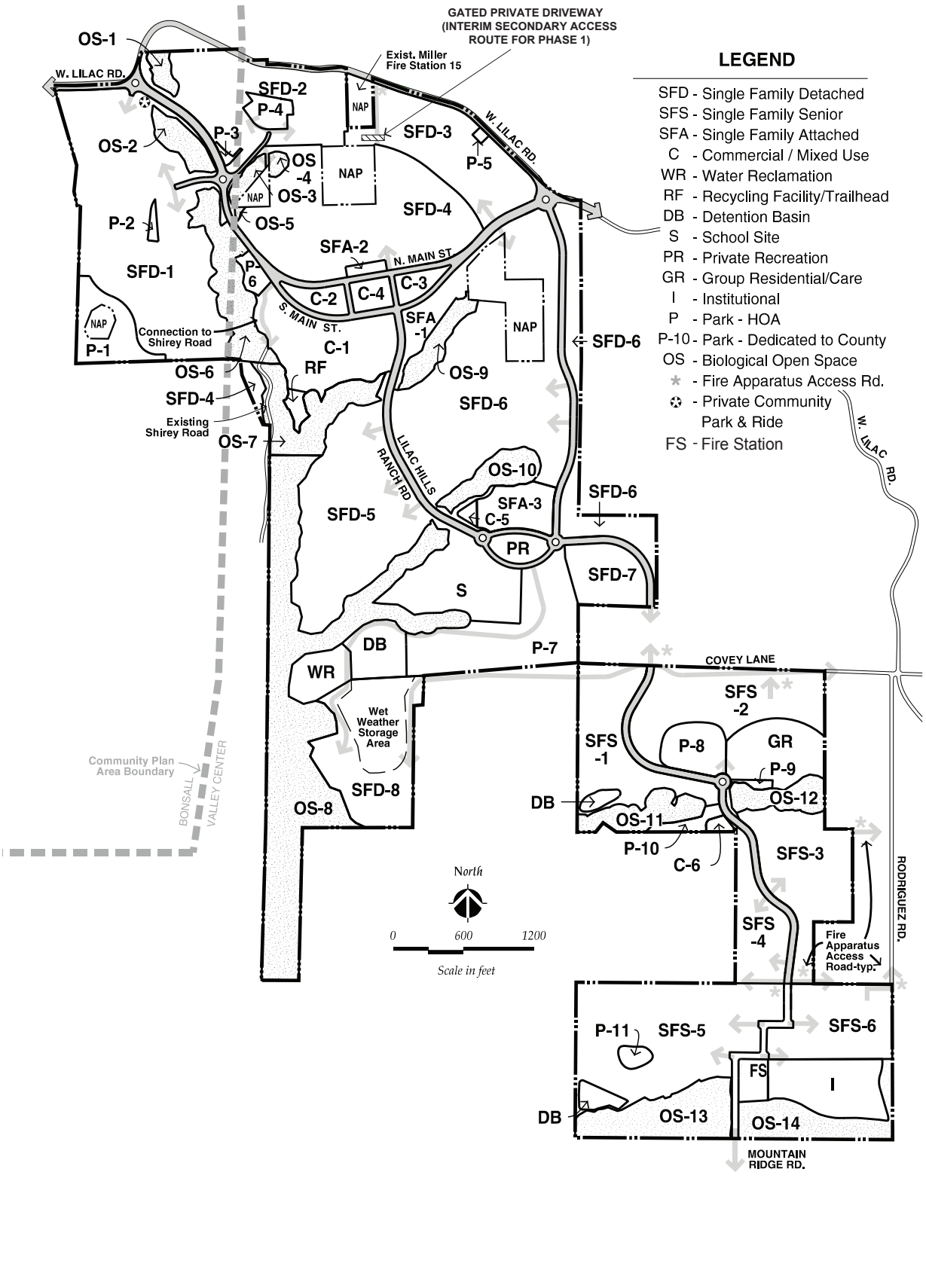
Figure 1-1
Regional Project Location



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

Figure 1-2
Project Study Area

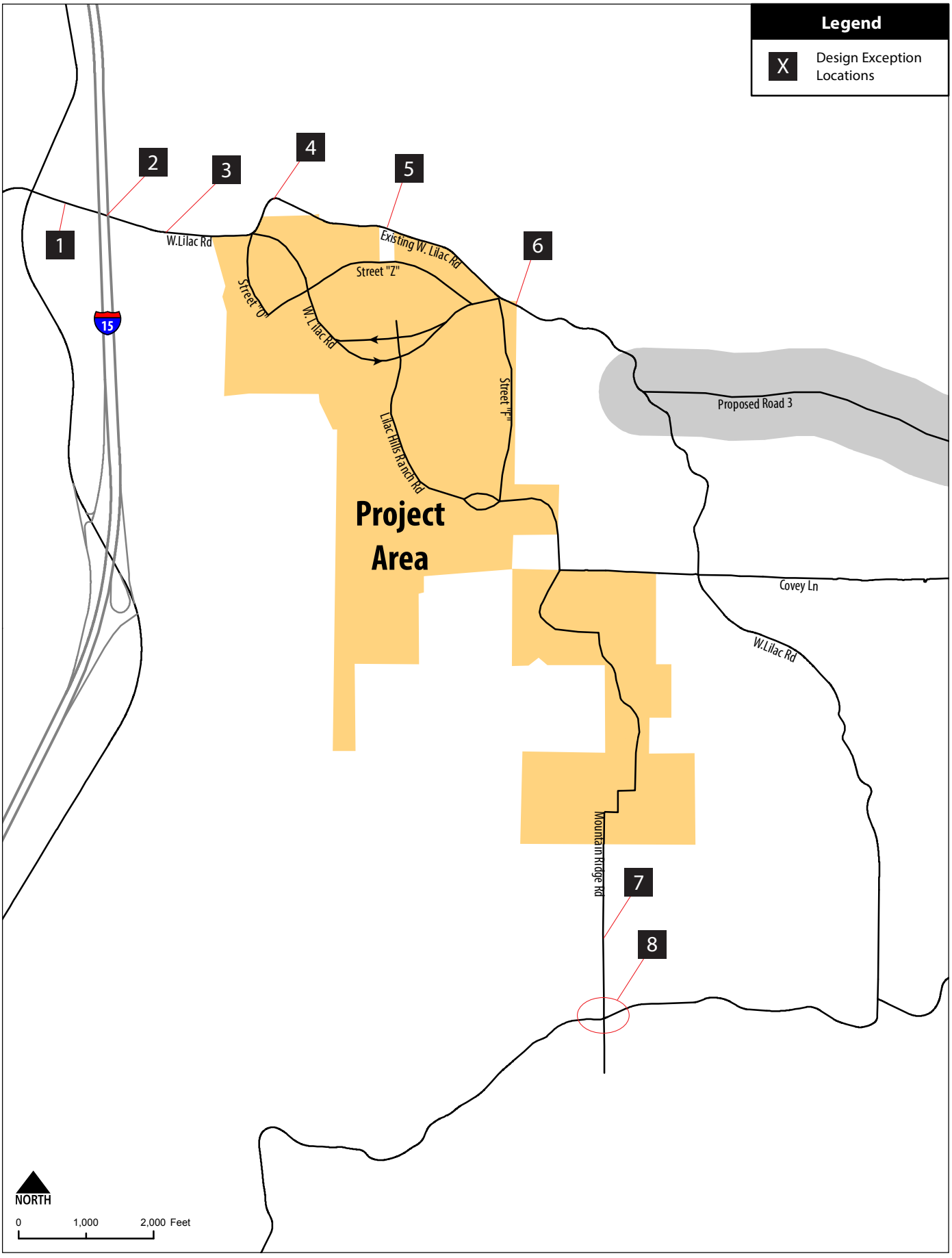
CHEN RYAN



Lilac Hills Ranch - Mountain Ridge Road
Fire Station Alternative

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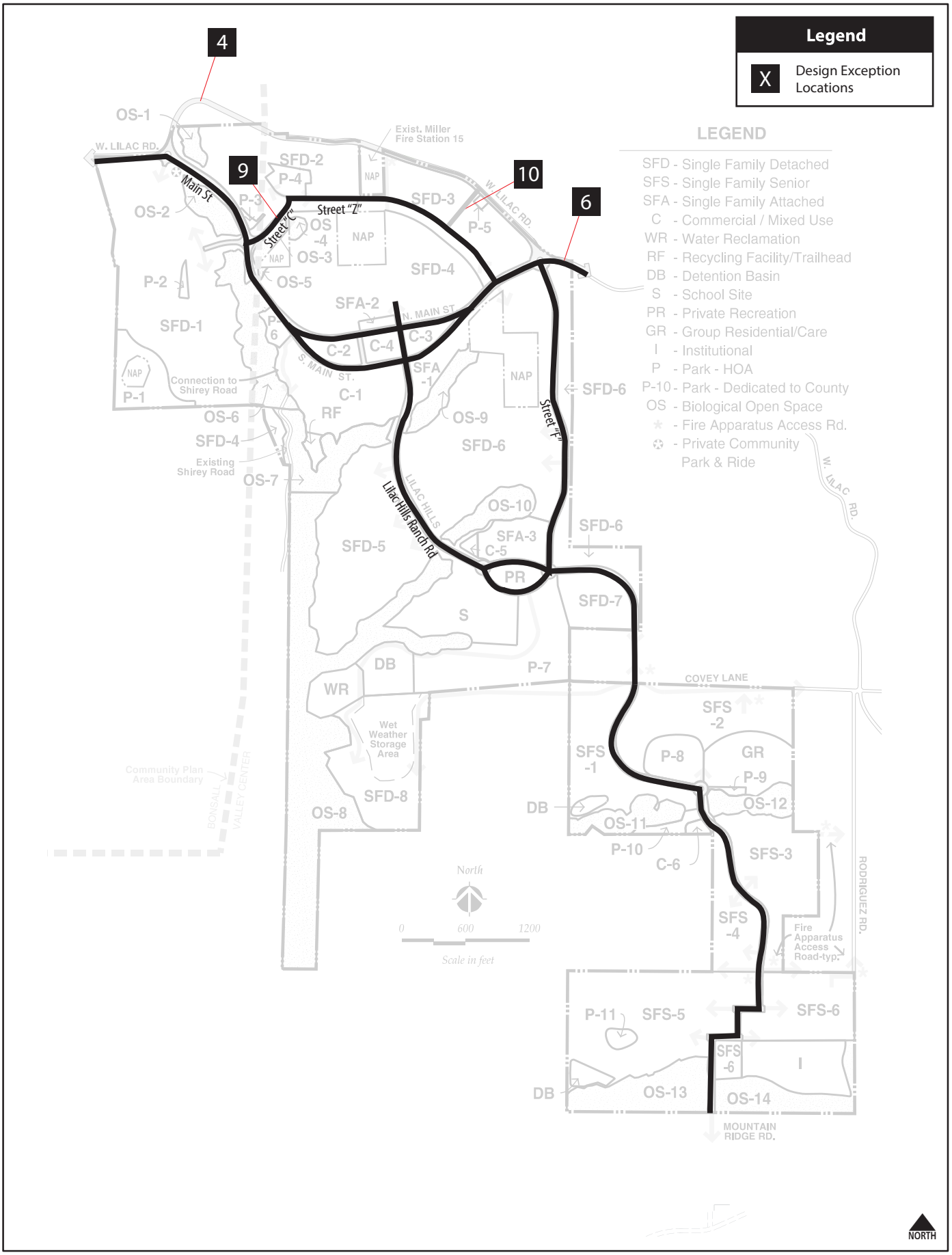
Figure 1-3
Project Site Plan



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 1-4A
Design Exceptions (1-8)



Lilac Hills Ranch - Mountain Ridge Road
Fire Station Alternative

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Figure 1-4B
Design Exceptions (9 and 10)

The reduced shoulder widths from 8 feet to 6 feet and 4 feet with full 12-foot travel lanes will still allow vehicles to pull off to the side of the road on those rare occasions when that is necessary. Parkway width is not used by drivers and therefore no negative impact to capacity would occur by reducing the width. **Therefore, the proposed design exception will not affect roadway capacity and a capacity reduction was not applied.**

3. **West Lilac Road, from the I-15 bridge to project boundary**

   a. Reduce the shoulder width from 8 feet to 6 feet.

   b. Reduce parkway width from 12 feet to 2 feet on the north side and from 12 feet to 6 feet on the south side.

      The reduction in parkway width would not affect vehicular travel and the shoulder width reduction from 8 feet to 6 feet occurs outside of the standard 12-foot vehicle travel lanes; only affecting the shoulders. Therefore it will not change the speed and capacity of this road as it would still provide two full 12-foot travel lanes and two 6-foot shoulders that are still wide enough for vehicles to pull off the road on those rare occasions when that is necessary. **Therefore, the proposed design exception will not affect roadway capacity and a capacity reduction was not applied.**

4. **West Lilac Road, from the westerly roundabout to the northern project boundary**

   c. Reduce the design speed along West Lilac Road for 225 feet from 40 mph to 25 mph as the road enters into the proposed roundabout.

      i. The Transportation Research Board (TRB) in cooperation with US department of Transportation and Federal Highway Administration (FHWA) published the National Cooperative Highway Research Program (NCHRP) Report 672 - *Roundabouts: An Informational Guide (2nd Edition*). The guide states that the operating speed of a roundabout is widely recognized as one of its most important attributes in terms of safety, and speed management is often a combination of managing speeds at the roundabout itself and managing speeds on the approaching roadways. It recommends that the maximum entering design speeds based on a theoretical fastest path should be 20 to 25 mph (32 to 40 km/h) at single-lane roundabouts. Hence, the reduction in design speed would improve safety in and around the westerly roundabout (Street "O"/W. Lilac Road/Main Street). In addition, it has been well documented by the La Jolla Bird Rock roundabouts and other national-level research that 2 lanes of travel (one in each direction) with roundabouts can carry up to 25,000 cars per day, which well exceeds the capacity threshold for a 2.2C facility. Finally, roundabout experts, Reid Middleton, provided a peer review (included as **Appendix A**) on the design and analysis of the

proposed roundabouts. Based on their analysis, both roundabouts along W. Lilac Road would operate at LOS A with low volume-to-capacity ratios. **Therefore, the proposed design exception will not affect roadway capacity and a capacity reduction was not applied.**

5. **West Lilac Road, along the northerly project boundary**

   d. Allow the construction of a half-width road improvement.

   e. Allow the northerly half to remain in its existing condition, which deviates from the current standards:
      i. The shoulder width can remain at 0 feet (from the required 2 feet).
      ii. The parkway width can remain at 0 feet (from the required 12 feet).

      The southerly half of the roadway will be built to a full 2.2F standard, combined with two standard 12-foot travel lanes. The 2-foot shoulder on the north side and the 12-foot parkway on the north side would require offsite acquisition. However, this exception would not affect capacity due to the short 2,600-foot distance. **Therefore, the proposed design exception will not affect roadway capacity and a capacity reduction was not applied.**

   f. Reduce the horizontal design from a minimum 400-foot tangent length (between curves) to an 80-foot tangent length.

      i. A tangent length is the straight segment of road that is found in between two curved pieces of road. The current minimum straight segment of road of existing West Lilac Road is 80 feet rather than 400 feet. This section is controlled by two roundabouts and therefore, the shorter tangent length does not negatively impact capacity. In addition, it has been well documented by the La Jolla Bird Rock roundabouts and other national-level research that 2 lanes of travel with roundabouts can carry up to 25,000 cars per day, which well exceeds the capacity threshold for a 2.2F or 2.2C facility. In addition, roundabout experts, Reid Middleton, provided a peer review (included as Appendix A) on the design and analysis of the proposed roundabouts. Based on their analysis, both roundabouts along W. Lilac Road would operate at LOS A with low volume-to-capacity ratios. **Therefore, the proposed design exception will not affect roadway capacity and a capacity reduction was not applied.**

6. **<u>West Lilac Road, east of easterly roundabout</u>**

   g. Add a 4-foot raised median, to allow for a transition from existing West Lilac Road into the proposed roundabout.

   h. Increase the shoulder from 2 feet to 5 feet on the south side to allow for a 5-foot bike lane.

   i. Reduced parkway from 12 feet to 2 feet on the north side.

   j. Reduce the shoulder from 2 feet to 0 feet on the north side.

      i. The modification only occurs for 240 feet at the project's easterly entrance at West Lilac Road where a roundabout is proposed. **<u>Since the modification only occurs for a short distance of 240 feet at the roundabout, no material effect to the carrying capacity of West Lilac Road would occur and a capacity reduction was not applied.</u>**

7. **<u>Mountain Ridge Road</u>**

   As Mountain Ridge Road currently exists, the road is a narrow 20 foot wide travel-way which currently serves a small amount of homes and is proposed to provide access to the project site. Since the project will add traffic to Mountain Ridge Road, this road was assessed using two methodologies outlined in the County of San Diego Guidelines for Determining Significance, Traffic and Transportation, June 30, 2009 and modified August 24, 2011 (County Guidelines). The first was from a capacity standpoint as outlined at the end of Section 4.1 (Non Circulation Element Residential Streets). The second was from a hazards standpoint as outlined in Section 4.6 of the County Guidelines.

   i. CARRYING CAPACITY

      Mountain Ridge Road is proposed to be improved to public road standards as a Rural Residential Collector (Local Public Road) under this alternative. Per Section 4.1 of the County Guidelines, Level of Service is not applied to non-circulation element residential streets such as Mountain Ridge Road. Therefore, per County requirements, the post-project volumes on Mountain Ridge Road were compared to the design capacities that are outlined in the County's Public Road Standards.

      The current volume on Mountain Ridge Road is 160 ADT. The project will add approximately 3,220 ADT to Mountain Ridge Road for a total of 3,570 ADT (worst case 2030 plus Project with Road 3; see Table 9.3 from the traffic study). As recommended in section 4.1 of the County Guidelines, the County public road standard table (Page 9 of 48) was used to determine if adequate capacity exists on Mountain Ridge Road to serve 3,570 ADT. The table on the following page shows a comparison

between the County local public road parameters for a Rural Residential Collector (Local Public Road) that would serve 4,500 ADT and the proposed Mountain Ridge Road parameters.

As can be seen, Mountain Ridge Road will meet all criteria other than graded width and parkway width. Since the improvement width (the most important indicator of capacity) is consistent with County standards and the additional twelve (12) feet outside of the improvement width (making up the graded width) is only rarely used by vehicular traffic, the eight (8) foot reduction in graded width would not negatively impact capacity. Also, since vehicular traffic does not use parkway width, the four (4) foot reduction would not negatively impact capacity. It is concluded, therefore, that the proposed design exceptions would not negatively impact the 4,500 ADT design capacity of the improved Mountain Ridge Road and, therefore, the proposed road, as improved, can accommodate the forecasted 3,570 ADT.

	Existing (As-built)	Rural Residential Collector (LPR)	Proposed Design
ADT	-	4,500	4,500
Graded Width	28’	48’	40’
Improvement Width	20’	28’	28’
Travel Lanes	10’	12'	12'
Shoulder Width	N/A	2'	2'
Parkway Width	4'	10'	6'
Horizontal Radius	N/A	300’	350’
Vertical Design Speed	~5MPH(min)	30MPH	30MPH
Maximum Grade	21.00%	12.00%	12.00%
Minimum Length-Vertical Curve	80'	doesn’t state	130'
Maximum Angle of Departure	negligible	doesn't state	negligible
Minimum Vertical Clearance	No limit	doesn't state	No limit

Source: San Diego County Standards for Private Roads, Landmark Consulting

ii. HAZARDS DUE TO AN EXISTING TRANSPORTATION DESIGN FEATURE

Mountain Ridge Road is a residential serving road with several vertical curves and design speed as low as approximately 5 mph along certain sections. Since the road is not currently built to County private road standards, an assessment according to Section 4.6 of the County Guidelines was completed considering the following factors:

1) Design features/physical configurations of access roads may adversely affect the safe movement of all users along the roadway.

2) The percentage or magnitude of increased traffic on the road due to the proposed project may affect the safety of the roadway.

3) The physical conditions of the project site and surrounding area, such as curves, slopes, walls, landscaping or other barriers, may result in conflicts with other users or stationary object.

4) Conformance of existing and proposed roads to the requirements of the private or public road standards, as applicable.

The following is a discussion of each of these four individual factors:

1) The horizontal radii, vertical design speed and maximum grade all meet County standards and, therefore, no adverse effects are expected in terms of design features/physical configurations.

2) A very large percentage increase is expected in traffic volumes. However, the total volume is calculated to be within the capacity of the proposed roadway design.

3) The horizontal radii, vertical design speed and maximum grade all meet County standards and, therefore, no adverse effects are expected in terms of the "physical conditions" of the project site. Additionally, there are no horizontal curves on the roadway, nor are there any slopes, walls, or barriers that could cause conflicts. Therefore, no issues are expected due to physical conditions.

4) Table on the previous page shows a comparison of the proposed Mountain Ridge Road to County public road standards. As described in (i) above, the improved Mountain Ridge Road will meet most of the public road standards. The lesser graded width and parkway width are not considered significant deviations from County standards because they would not negatively impact carrying capacity.

8. **Mountain Ridge Road and Circle R Drive intersection**

    a. Reduce the standard intersection angle from 90 degrees to the pre-existing 72 degrees by eliminating the required taper on the east side and allowing right hand turning movements from westbound Circle R Drive to northbound Mountain Ridge Road across the southbound travel lanes (See **Appendix B**).

        iii. The County Public Road Standards state that the angle between centerlines and intersections is to be at nearly a right angle and in no case less than 70 degrees or greater than 110 degrees. [Angles between 70-80 (or 100-110) degrees will require a taper on the acute angle for right turn movement]. This modification only deletes the need for a taper at the acute intersection angle on Circle R Drive at Mountain Ridge Road for the westbound right turn movement. **Not providing this taper would not have a material effect on the carrying capacity of Circle R Drive and a capacity reduction was not applied.**

9. **Street "C"**
    a. Design speed reduction from 30 mph to 20 mph for 500 feet

        i. Modification 9 involves an internal street which was not analyzed in the traffic study.

10. **Street "E"**
    a. Design speed reduction from 25 mph to 20 mph for 300 feet

        i. Modification 10 involves an internal street which was not analyzed in the traffic study.

1.3 Study Scenarios

A total of nine (9) scenarios are analyzed in this study, including:

1. Existing Conditions – establishes the existing baseline of traffic operations within the study area.

2. Existing Plus Project (Phase A) Conditions – represents the existing transportation network with the addition of traffic from Phase 1 of the proposed project.

3. Existing Plus Project (Phase B) Conditions – represents the existing transportation network with the addition of traffic from Phases 1 and 4 of the proposed project.

4. Existing Plus Project (Phase C) Conditions – represents the existing transportation network with the addition of traffic from Phases 1, 4 and 2 of the proposed project.

5. Existing Plus Project (Phase D) Conditions – represents the existing transportation network with the addition of traffic from Phases 1, 4, 2 and 5 of the proposed project.

6. Existing Plus Project (Phase E, project buildout) Conditions – represents the existing transportation network with the addition of traffic from buildout of the proposed project.

7. Cumulative Traffic Conditions – represents cumulative traffic conditions, including existing baseline traffic, traffic from anticipated land development projects, and traffic from buildout of the proposed project.

8. Horizon Year Plan-to-Plan (Proposed vs. Adopted) Analysis – provides a plan-to-plan analysis assessing potential impacts to the adopted County's General Plan Mobility Element roadways within the project study area, resulting from proposed changes in development land use, density, and/or intensity associated with the proposed project.

9. Horizon Year Plan-to-Plan (Proposed vs. "Without Road 3") Analysis – In October 2011, after adoption of the County General Plan Update, the San Diego Association of Governments (SANDAG) acquired the 902-acre Rancho Lilac property through its Environmental Mitigation Program (EMP). SANDAG recorded a conservation easement over the entire 902 acres and designated this land as part of a 1,600 acre open space preserve in the State Route 76 corridor in North San Diego County. This acquisition may prevent implementation of the County's planned Road 3. For this reason, an additional plan-to-plan analysis was performed as part of this TIS in order to assess the potential project traffic impacts to the County's mobility network without Road 3.

1.4 Report Organization

Following the Introduction chapter, this report is organized into the following sections:

2.0 Analysis Methodology – This chapter describes the methodologies and standards utilized to analyze roadway, intersection, and state highway/freeway traffic conditions. This chapter also documents the traffic forecast modeling process and assumptions for this project.

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, trip distribution patterns, and roadway assignments. The project trip distribution was developed via a computer generated "Select Zone" analysis utilizing the Series 12 SANDAG transportation model.

5.0 Existing Plus Project Conditions – This chapter describes the existing traffic network with additional traffic generated by the various traffic analysis phases of the proposed

project. Mitigation measures, if necessary, for project-related impacts are also identified.

6.0 Cumulative Traffic Conditions – This chapter describes cumulative land development projects anticipated to generate additional traffic within the study area. Analysis results are provided for the existing plus cumulative projects plus proposed project condition, along with recommended mitigation measures (if necessary).

7.0 Site Access and On-Site Circulation – This chapter presents an assessment of transportation facilities providing access to the proposed project. It also recommends functional classifications for all roadways internal to the project.

8.0 Hazards to Pedestrians and Bicyclists – This chapter describes existing and proposed pedestrian and bicycle facilities in the vicinity of the project site, as well as potential impacts to cyclists and pedestrians.

9.0 General Plan Consistency Analyses – This chapter provides two plan-to-plan analyses assessing potential traffic impacts to the County's General Plan Mobility Element roadways due to changes in the proposed project's land use, density, and/or intensity. The two plan-to-plan analyses include comparisons of, first, the proposed project and the currently adopted GP (with Road 3); and second, the proposed project and the "Without Road 3" network. The purpose of these analyses is to determine whether the land use changes proposed by this project can be supported by the County's Mobility Element. If deficiencies are identified, appropriated mitigation measures are recommended.

10.0 Findings and Recommendations – This chapter summarizes overall study findings and identifies recommended project-related mitigation measures.

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

2.0 Analysis Methodology

The traffic analyses prepared for this study were performed in accordance with County of San Diego traffic impact guidelines, the enhanced California Environmental Quality Act (CEQA) project review process, and SANTEC/ITE Guidelines for TIS in the San Diego region.

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 to cause any traffic queues to exceed ramp storage capacities.

In addition to the SANTEC/ITE requirements, the project study area also includes all County Mobility Element roadways and intersections where 25 or more peak hour project trips are projected to travel as per County's requirements.

2.1 Level of Service Definition

Level of service (LOS) is a quantitative stratification of performance measures (speed, travel time, comfort, etc.) that represent quality of service. Quality of service describes how well a transportation facility or service operates from a traveler's perspective. A vehicle level of service definition generally describes these conditions in terms of such factors as speed, travel time, freedom to maneuver, comfort, convenience, and safety. LOS A represents the best operating conditions from a driver's perspective, while LOS F represents the worst.

Table 2.1 describes generalized definitions of roadway systems operating at LOS A through F.

2.2 Roadway Segment Level of Service Standards and Thresholds

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** presents the roadway segment capacity and level of service standards utilized to analyze roadway segments within the unincorporated County of San Diego.

TABLE 2.1
LEVEL OF SERVICE DEFINITIONS

LOS	Characteristics
A	Primarily free-flow operation. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Controlled delay at the boundary intersections is minimal. The travel speed exceeds 85% of the base free-flow speed.
B	Reasonably unimpeded operation. The ability to maneuver within the traffic stream is only slightly restricted and control delay at the boundary intersections is not significant. The travel speed is between 67% and 85% of the base free-flow speed.
C	Stable operation. The ability to maneuver and change lanes at mid-segment locations may be more restricted than at LOS B. Longer queues at the boundary intersections may contribute to lower travel speeds. The travel speed is between 50% and 67% of the base free-flow speed.
D	Less stable condition in which small increases in flow may cause substantial increases in delay and decreases in travel speed. This operation may be due to adverse signal progression, high volume, or inappropriate signal timing at the boundary intersections. The travel speed is between 40% and 50% of the base free-flow speed.
E	Unstable operation and significant delay. Such operations may be due to some combination of adverse signal progression, high volume, and inappropriate signal timing at the boundary intersections. The travel speed is between 30% and 40% of the base free-flow speed.
F	Flow at extremely low speed. Congestion is likely occurring at the boundary intersections, as indicated by high delay and extensive queuing. The travel speed is 30% or less of the base free-flow speed. Also, LOS F is assigned to the subject direction of travel if the through movement at one or more boundary intersections have a volume-to-capacity ratio greater than 1.0.

Source: Highway Capacity Manual 2010, Chapter 16.

TABLE 2.2
COUNTY OF SAN DIEGO
ROADWAY SEGMENT DAILY CAPACITY AND LEVEL OF SERVICE 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

TABLE 2.2
COUNTY OF SAN DIEGO
ROADWAY SEGMENT DAILY CAPACITY AND LEVEL OF SERVICE STANDARDS

No.	Travel Lanes	Design Speed	Road Classification	Level of Service (in ADT)				
				A	B	C	D	E
2.1C	2	45 mph	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
LPR	2	30 mph	Rural Residential Collector	-	-	4,500	-	-

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

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 is 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 unincorporated County of San Diego.

2.3 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.

2.3.1 Signalized Intersection Analysis

The signalized intersection analysis utilized in this study conforms to the operational analysis methodology outlined in Chapter 18 of the *HCM 2010*. The *HCM 2010* methodology defines intersection level of service as a function of intersection control delay in terms of seconds per vehicle (sec/veh).

The *HCM 2010* methodology sets 1,900 passenger-cars per hour per lane (pcphpl) as the ideal saturation flow rate at signalized intersections based upon the minimum headway that can be sustained between departing vehicles at a signalized intersection. The service saturation flow rate, which reflects the saturation flow rate specific to the study facility, is determined by adjusting the ideal saturation flow rate for lane width, on-street parking, bus stops, pedestrian volume, traffic composition (or percentage of heavy vehicles), and shared lane movements (e.g. through and right-turn movements sharing the same lane). The level of service criteria used for this technique are described in **Table 2.3**. The computerized analysis of intersection operations was performed utilizing the *Synchro 8.0 Build 802* traffic analysis software (by Trafficware).

TABLE 2.3
SIGNALIZED INTERSECTION LEVEL OF SERVICE
HIGHWAY CAPACITY MANUAL OPERATIONAL ANALYSIS METHOD

Average Stopped Delay Per Vehicle (seconds)	Level of Service (LOS) Characteristics
≤10.0	*LOS A* occurs when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
10.1 – 20.0	*LOS B* occurs when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
20.1 – 35.0	*LOS C* occurs when progression is favorable or the cycle length is moderate. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
35.1 – 55.0	*LOS D* occurs when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.
55.1 – 80.0	*LOS E* occurs when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.
>80.0	*LOS F* occurs when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Source: 2010 Highway Capacity Manual, Chapter 18.

2.3.2 Unsignalized Intersection Analysis

Unsignalized intersections, including two-way and all-way stop controlled intersections, were analyzed using the Chapters 19 and 20 methodology of the *HCM 2010*. The level of service for a two-way stop controlled (TWSC) intersection is determined by the computed or measured control delay at each minor-street movement. LOS F would occur when the volume-to-capacity

ratio exceeds 1.0, regardless of the control delay. **Table 2.4** summarizes the level of service criteria for unsignalized intersections.

TABLE 2.4
LEVEL OF SERVICE CRITERIA FOR
STOP CONTROLLED UNSIGNALIZED INTERSECTIONS

Average Control Delay (sec/veh)	Level of Service (LOS)
≤10.0	A
10.1 – 15.0	B
15.1 – 25.0	C
25.1 – 35.0	D
35.1 – 50.0	E
>50.0	F

Source: 2010 Highway Capacity Manual, Chapters 19 & 20.

County of San Diego considers LOS D during the AM and PM peak hours to be the minimum standard for intersection level of service.

2.4 Two-Lane Highway Level of Service Standards and Thresholds

The existing Old Highway 395 is considered a Mobility Element roadway, but operates as a two-lane highway. As directed in Section 4.3 of the County of San Diego Guidelines for Determining Significance, Old Highway 395 is analyzed as a two-lane highway under Existing, Existing Plus Project, and Existing Plus Cumulative Projects Plus Project conditions in this report.

Under "Horizon Year" analyses, Old Highway 395 is treated as a Mobility Element road since the majority of this facility, with exception of the segment between SR-76 and W. Lilac Road, is classified as either a 4-lane Major or 4-lane Boulevard in the County's General Plan.

Table 2.5 displays the two-lane highway ADT thresholds for LOS E and LOS F, when signalized intersection spacing is greater than one mile.

TABLE 2.5
COUNTY OF SAN DIEGO
TWO-LANE HIGHWAY LEVEL OF SERVICE 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.

For two-lane highways where signalized intersection spacing is less than one mile, the level of service is determined by the intersections along the subject highway.

2.5 Freeway/State Highway Level of Service Standards and Thresholds

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 capacity is assumed to be 2,350 pc/h/ln.

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 2.6**. 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.

TABLE 2.6
FREEWAY AND STATE HIGHWAY SEGMENT LEVEL OF SERVICE DEFINITIONS

LOS	V/C	Congestion/Delay	Traffic Description
"A"	<0.41	None	Free flow.
"B"	0.42-0.62	None	Free to stable flow, light to moderate volumes.
"C"	0.63-0.79	None to minimal	Stable flow, moderate volumes, freedom to maneuver noticeably restricted.
"D"	0.80-0.92	Minimal to substantial	Approaches unstable flow, heavy volumes, very limited freedom to maneuver.
"E"	0.93-1.00	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: SANTEC/ITE Guidelines for TIS in the San Diego Region

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.

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 individual intersections as isolated units, without consideration of the effects of adjacent intersections. For this reason, the ILV analysis is utilized as an additional validation of signalized ramp intersection operations derived from the *HCM 2010* methodology. **Table 2.7** provides values of ILV/hr associated with various traffic flow thresholds.

TABLE 2.7
TRAFFIC FLOW CONDITIONS AT RAMP INTERSECTIONS
AT VARIOUS LEVELS OF OPERATION

ILV/hr	Description
<1200: (Under Capacity)	Stable flow with slight, but acceptable delay. Occasional signal loading may develop. Free midblock operations.
1200-1500: (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.
>1500: (Over Capacity)	Stop-and-go operation with severe delay and heavy congestion(1). Traffic volume is limited by maximum discharges 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 1500. Observed flow rates will normally not exceed 1500ILV/hr, and the excess will be delayed in a queue.

2.7 Ramp Metering Analysis

Ramp metering analysis should be conducted, based upon SANDAG's CMP guidelines, to calculate delays and queues at the study area freeway on-ramps. However, since no ramp meters exist within the project study area, ramp metering analysis is not required and therefore not included in this study.

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.

County of San Diego Traffic Impact Criteria

Mobility Element Roads

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, 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 Mobility Element Road or State Highway currently operating at LOS E or LOS F as identified in **Table 2.8**, or will cause a Mobility 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 2.8
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 that contributes any trips must mitigate a share of the cumulative impacts.
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.

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

TABLE 2.9
MEASURES OF SIGNIFICANT PROJECT IMPACTS TO CONGESTION ON INTERSECTIONS:
ALLOWABLE INCREASES ON 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 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.

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 an unsignalized intersection to operate below LOS D, 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, 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, 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, or

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

Two-Lane Highways when Signalized Intersection Spacing Over 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 greater than 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 2.10**, or will cause a two-lane highway segment to operate at LOS E or LOS F as a result of the proposed project.

TABLE 2.10
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 when 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 less than 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**, 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 UNDER ONE MILE

LOS	LOS Criteria
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.

SANTEC/ITE Guidelines

Facilities that belong to other jurisdictions or Caltrans, should comply with the traffic study requirements identified in the SANTEC/ITE Guidelines, as summarized in **Table 2.12**.

TABLE 2.12
SANTEC/ITE MEASURE OF SIGNIFICANT PROJECT TRAFFIC IMPACTS

Level of Service (LOS) with Project	Allowable Change Due to Impact					
	Freeways		Roadway Segments		Intersections	Ramp Metering
E & F (or ramp meter delays above 15 min.)	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

The project study area included two (2) Caltrans facilities: Interstate 15 and State Route 76. However, based upon the SANTEC/ITE study criteria discussed at the beginning of this chapter as well as a review of the SANDAG "Select Zone" assignments, the proposed project would not add 50 or more peak hour trips in either direction of SR-76. Therefore, SR-76 was not analyzed in this study.

3.0 Existing Conditions

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

3.1 Existing Transportation Network

Several regionally and locally significant roadways and freeways traverse the study area. Each of the key transportation facilities, as well as associated study intersections within the study area, is discussed below.

Freeway and State Highway Facilities

Two (2) Caltrans freeway/state highway facilities traverse the study area, as follows:

I-15 – I-15 is a grade separated freeway and ranges from 8 to 10 general purpose lanes within the study area. The travel lanes are generally 12 feet wide and the shoulders are generally 10 to 12 feet wide. The 20-mile I-15 Express Lanes Project, funded in part by the TransNet, was completed in January 2012. The Project constructed four (4) managed lanes, between SR-163 and SR-78, with a moveable barrier for maximum flexibility; multiple access points to the general purpose highway lanes; and direct access ramps for high-frequency Bus Rapid Transit (BRT) service. I-15, between SR-78 and Riverside County is planned to be widened with 4 toll lanes as per the 2050 RTP. However, this improvement is not assumed in the Horizon Year analysis since no secured funding sources were identified. Two interchanges (at Old Highway 395 and at Gopher Canyon Road) are located within the study area providing regional access for the proposed project. The posted speed limit is 70 mph along I-15 in the vicinity of the project.

SR-76 – Within the study area, SR-76 is a four-lane divided highway between E. Vista Way and Olive Hill Road; a six-lane divided highway between Olive Hill Road and S. Mission Road; transitioned to a 2-lane undivided highway between S. Mission Road and Old Highway 395; and widened to 6 lanes between Old Highway 395 and just east of I-15. It is important to note that SR-76, between S. Mission Road and Old Highway 395 is planned to be widened to four lanes by 2015. Class II bike lanes are planned along SR-76 within the study area.

East-West Roadway Facilities

Dulin Road – Dulin Road, east of Old Highway 395, is currently a two-lane undivided roadway with a posted speed limit of 25 mph. On-street parking is provided along both sides of the street in the residential area. The facility is classified as a 2.1E Community Collector in the County General Plan Mobility Element.

W. Lilac Road – W. Lilac Road, between Camino Del Rey and Old Highway 395, is generally a two-lane undivided roadway and is classified as a 2.2E Light Collector with Class II bike lanes in

the County General Plan Mobility Element. Between Old Highway 395 to Lilac Road, W. Lilac Road is also a two-lane undivided roadway. W. Lilac Road, between Old Highway 395 and the planned Road 3, is classified as a 2.2C Light Collector with intermittent turn lanes in the County General Plan Mobility Element, while the segment between Road 3 and Lilac Road is classified as a 2.2F Light Collector with reduced shoulder. *The project proposes to downgrade W. Lilac Road between Main Street and the planned Road 3 from the classified 2.2C to 2.2F.* A posted speed limit is not provided along this facility. However, a recent travel time survey (as shown in **Appendix C**) conducted by Chen Ryan Associates indicates that the average travel speed along W. Lilac Road, between the I-15 overpass and Lilac Walk, is approximately 40 mph.

Camino Del Cielo – Camino Del Cielo is a two-lane roadway with a wide median or a two-way left-turn lane between Camino Del Rey and Via Casitas and a two-lane undivided roadway between Via Casitas and W. Lilac Road. This facility has a posted speed limit of 40 mph and is classified as a 2.2E Light Collector in the County General Plan Mobility Element.

Camino Del Rey – Camino Del Rey is generally a two-lane undivided roadway between SR-76 and Old Highway 395, with the exception of the segment (approximately 2,400 feet) east of W. Lilac Road which has either a striped median or a two-way left-turn lane. The posted speed limit along with facility ranges from 45 to 50 mph. Camino Del Rey is classified in the County General Plan Mobility Element as a 4.2B Boulevard with intermittent turn lanes between SR-76 and Camino Del Cielo, and a 2.2C Light Collector between Camino Del Cielo and Old Highway 395. Class II bikes lanes are planned along this facility, between Old River Road and Old Highway 395.

Gopher Canyon Road – Gopher Canyon Road is a two-lane undivided roadway between E. Vista Way and I-15 SB Ramps and a four-lane roadway with a striped median between the I-15 SB Ramps and Old Highway 395. This facility has a posted speed limit of 50 mph and is classified as a 4.1B Major Road with intermittent turn lanes and a Class III bike route in the County General Plan Mobility Element.

Circle R Drive – Circle R Drive is currently a two-lane undivided roadway between Old Highway 395 and W. Lilac Road and is classified as a 2.2E Light Collector. A speed limit was not post along this facility. However, a recent travel speed survey (as shown in **Appendix D**) conducted by NDS indicates that the average and 85th percentile travel speeds along Circle R Drive, east of Mountain Ridge Road, is approximately 35 mph and 40-45 mph, respectively. Circle R Drive provides unrestricted access to the project site via Mountain Ridge Road.

Old Castle Road – Old Castle Road, between Old Highway 395 and Lilac Road, is a two-lane undivided roadway with a posted speed limit that varies from 45 mph to 55 mph. This facility is classified as a 2.2D Light Collector with improvement options in the County General Plan Mobility Element, and includes a Class III bike route.

Covey Lane – Covey Lane is currently a two-lane undivided private road for its entirety. A speed limit was not post along this facility. However, a recent travel speed survey (as shown in Appendix D) conducted by NDS indicates that the 85th percentile travel speeds along Covey

Lane are approximately 30-35 mph. It is proposed that this facility, approximately 600 feet west of W. Lilac Road to the Lilac Hills Ranch project boundary, be designated as a public road due to the existing IOD for road improvements in this area. Covey Lane provides unrestricted access to the project site.

Main Street - The project proposes the construction of a 2-lane private road, "Main Street," including a one-way couplet between east of Standel Lane and Lilac Walk (see Figure 1-3 for alignment). This road creates two alternative routes to W. Lilac Road and provides primary access to and from the project site as it traverses the town center of the Lilac Hills Ranch project. The design speed along Main Street is proposed to be 30 mph.

North-South Roadway Facilities

E. Vista Way – E. Vista Way, between SR-76 and Osborne Street, is generally a two-lane roadway with a two-way left-turn lane and a posted speed limit of 50 mph. This facility is classified as a 4.1A Major Road with a raised median and Class II bike lanes in the County General Plan Mobility Element.

Old River Road – Old River Road, between SR-76 and Camino Del Rey is generally a two-lane undivided roadway with the exception of the segment southwest of Golf Club Drive (approximately 1,800 feet), which has a wide raised median and on-street parking along both sides. The post speed limit in this area is 25 mph. Old River Road is classified as a 2.2C Light Collector with intermittent turn lanes in the County General Plan Mobility Element.

Old Highway 395 – Old Highway 395, between Pala Mesa Drive and Old Castle Road, is generally a two-lane roadway that operates as a two-lane highway with passing option and turn pocket/striped median at Pala Mesa Drive, Dulin Road (W), W. Lilac Road, I-15 SB & NB Ramps, Palos Verdes Drive, Camino Del Rey, the RV camp grounds entrance/exit, Circle R Drive, Gopher Canyon Road, and Old Castle Road. Class II bike lanes are marked on both sides of this facility within the study area. A posted speed limit was not observed along this segment. Old Highway 395 is classified as a 4.2B Boulevard with intermittent turn lanes between Pala Mesa Drive and SR-76, a 2.1D Community Collector with improvement options between SR-76 and W. Lilac Road, a 4.2B Boulevard with intermittent turn lanes between W. Lilac Road and I-15 NB Ramps, and a 4.1B Major Road with intermittent turn lanes between I-15 NB Ramps and Old Castle Road in the County General Plan Mobility Element.

Champagne Boulevard – Champagne Boulevard, between Old Castle Road and Lawrence Welk Drive is a two-lane roadway with passing options and turn lanes. The posted speed limit is 55 mph. Class II bike lanes are marked on both sides of this facility. Champagne Boulevard is classified as a 4.1B Major Road with intermittent turn lanes within the study area in the County General Plan Mobility Element.

Mountain Ridge Road – Mountain Ridge Road, north of Circle R Drive, is currently a two-lane undivided private road. A speed limit was not post along this facility. However, a recent travel speed survey (as shown in Appendix D) was conducted by NDS and indicates that the average

and 85th percentile travel speeds along Mountain Ridge Road are approximately 30 mph and 40 mph, respectively. The Mountain Ridge Road Fire Station Alternative proposes to convert Mountain Ridge Road from a 2-lane private road with restricted access, to a Rural Residential Collector (Local Public Road) at the beginning of Phase D (construction of Phase 5 of the project), as well as removing all access restriction (gates) along Lilac Hills Ranch Road.

Lilac Road – Lilac Road is generally a two-lane roadway with turn lanes at Lilac School driveway, Old Castle Road, Anthony Road, Betsworth Road, and Valley Center Road. The posted speed limit is 55 mph just west of Valley Center Road. Lilac Road is classified as a 2.2E Light Collector between Couser Canyon Road and Old Castle Road, a 2.1C Community Collector with intermittent turn lanes between Old Castle Road and Anthony Road, and a 4.2B Boulevard with intermittent turn lanes between Anthony Road and Valley Center Road in the County General Plan Mobility Element. A Class III bike route is also planned between Old Castle Road and Valley Center Road.

Valley Center Road – Valley Center Road, between Woods Valley Road and Cole Grade Road, is a four-lane roadway with a raised median or a two-way left-turn lane, Class II bike lanes and a posted speed of 45 mph. East of Cole Grade Road, Valley Center Road is a two-lane undivided roadway. Valley Center Road is classified as a 4.2A Boulevard with raised median between Woods Valley Road and Lilac Road, and between Miller Road and Vesper Road, and a 4.1A Major Road with raised median between Lilac Road and Miller Road in the County General Plan Mobility Element.

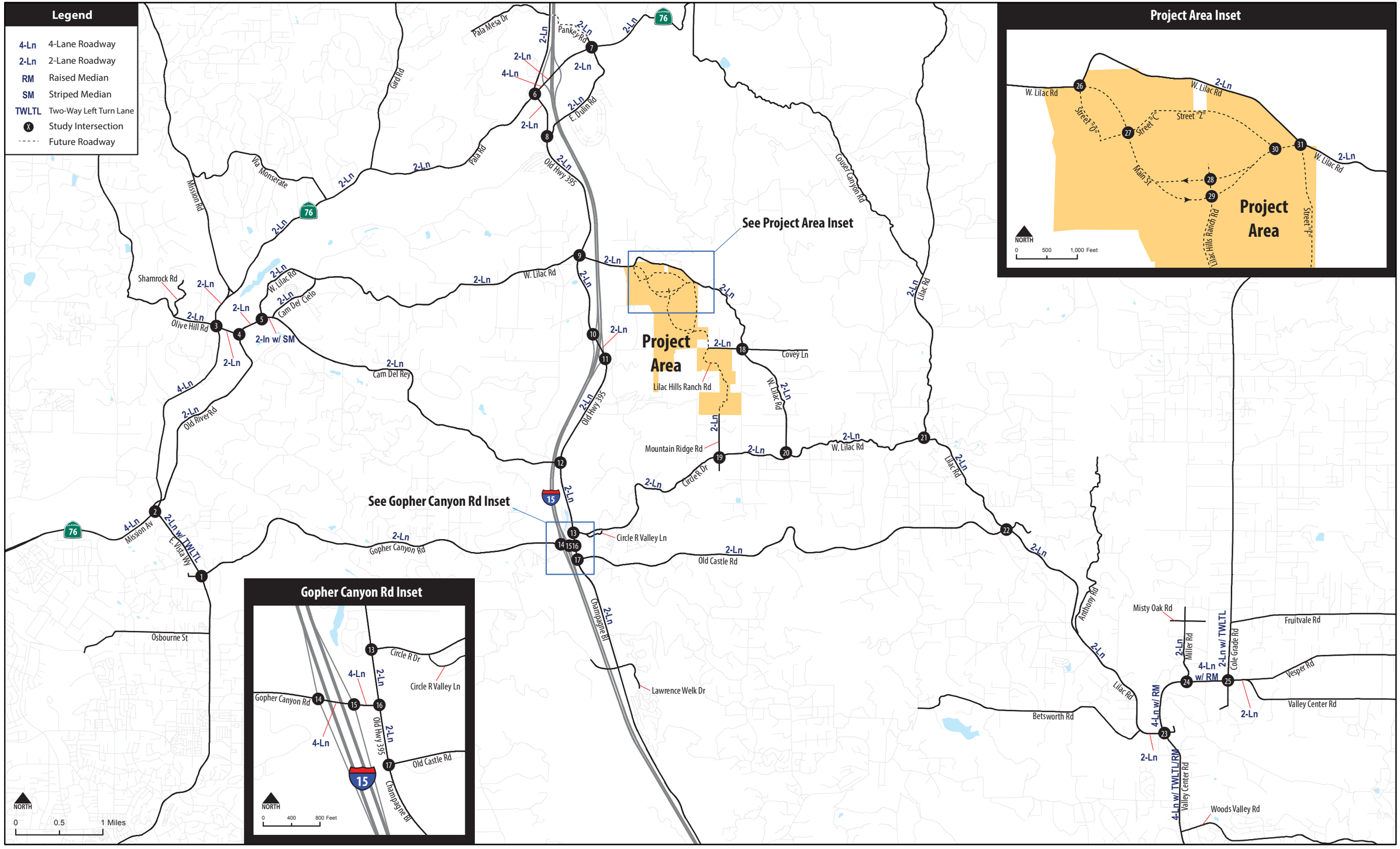
Miller Road – Miller Road, north of Valley Center Road, is a two-lane undivided roadway and is classified as a 2.3B Minor Collector with intermittent turn lanes and a Class III bike route in the County General Plan Mobility Update. A posted speed limit was not observed along this segment.

Cole Grade Road – Cole Grade Road, between Fruitvale Road and Valley Center Road, is generally a two-lane roadway with a two-way left-turn lane, Class II bike lanes and a posted speed limit of 45 mph. A 25 mph school zone is located just north of Valley Center Road. This facility is classified as a 4.2A Boulevard with raised median in the County General Plan Mobility Element.

Figure 3-1A displays existing roadway geometrics for roadway facilities within the project study area.

Study Intersections

The SANDAG Series 12 Transportation Model was utilized to perform three (3) "Select Zone" assignments which identified the number of project-related peak hour trips distributed across the transportation network. The three "Select Zone" assignments included base year, Horizon Year with Road 3, and Horizon Year without Road 3. All intersections and County Mobility Element roadways where the project added 25 or more peak hour trips to the existing traffic were included for analysis, as well as all freeway and state highway segments where the project added 50 or more peak hour trips in either direction.



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

Figure 3-1A
Roadway Geometrics - Existing Conditions

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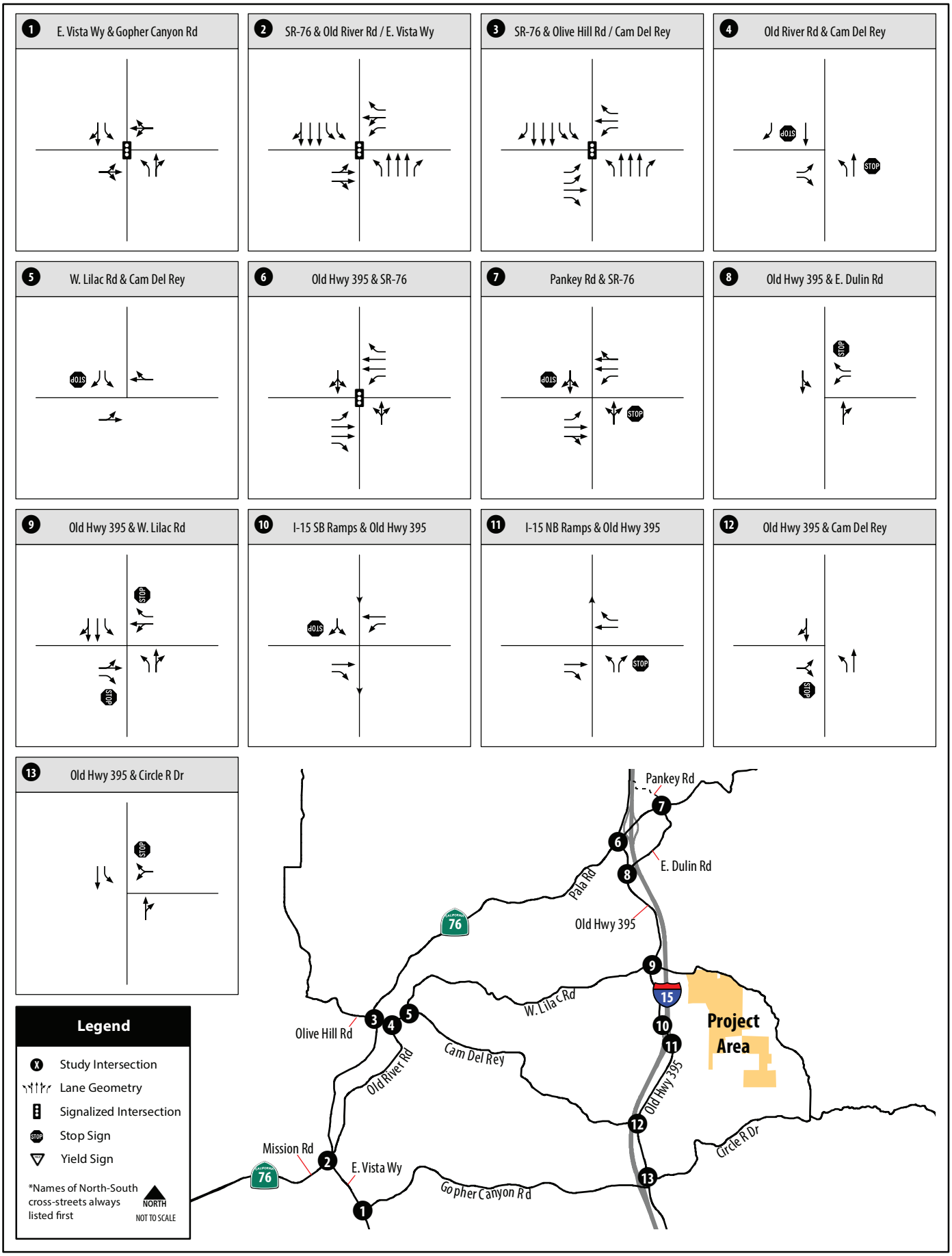
A total of thirty-one (31) key study area intersections, including 23 operated by the County of San Diego and 8 operated by Caltrans, were analyzed in this study, as shown below. Caltrans intersections are shown in italicized text.

1) E. Vista Way / Gopher Canyon Road
2) *SR-76 / Old River Road/E. Vista Way (Caltrans)*
3) *SR-76 / Olive Hill Road/Camino Del Rey (Caltrans)*
4) Old River Road / Camino Del Rey
5) W. Lilac Road / Camino Del Rey
6) *Old Highway 395 / SR-76 (Caltrans)*
7) *Pankey Road / SR-76 (Caltrans)*
8) Old Highway 395 / E. Dulin Road
9) Old Highway 395 / W. Lilac Road
10) *I-15 SB Ramps / Old Highway 395 (Caltrans)*
11) *I-15 NB Ramps / Old Highway 395 (Caltrans)*
12) Old Highway 395 / Camino Del Rey
13) Old Highway 395 / Circle R Drive
14) *I-15 SB Ramps / Gopher Canyon Road (Caltrans)*
15) *I-15 NB Ramps / Gopher Canyon Road (Caltrans)*
16) Old Highway 395 / Gopher Canyon Road
17) Old Highway 395 / Old Castle Road
18) W. Lilac Road / Covey Lane
19) Mountain Ridge Road / Circle R Drive
20) W. Lilac Road / Circle R Drive
21) Lilac Road / W. Lilac Road
22) Lilac Road / Old Castle Road
23) Valley Center Rd / Lilac Road
24) Miller Road / Valley Center Road
25) Cole Grade Road / Valley Center Road

<u>Project Driveways</u>

26) Street “O” / W. Lilac Road/Main Street
27) Main Street / Street “C”
28) Lilac Hills Ranch Road / Main Street North
29) Lilac Hills Ranch Road / Main Street South
30) Street “Z” / Main Street
31) W. Lilac Road/Street “F” / Main Street

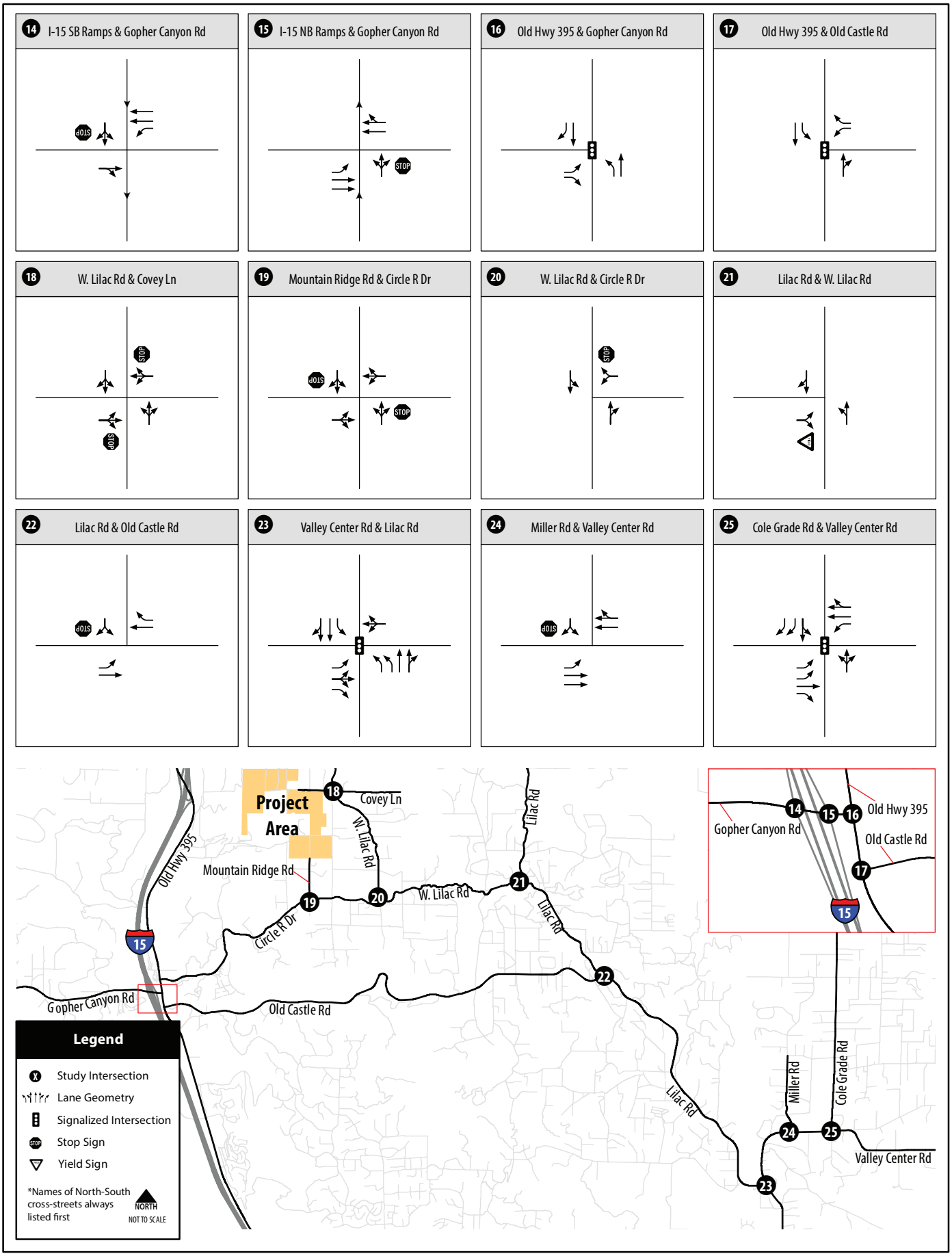
Intersections 26 through 31 are project driveways, and are included in the “Plus Project” assessments only. **Figure 3-1B** displays study area intersection lane geometrics under Existing conditions within the study area.



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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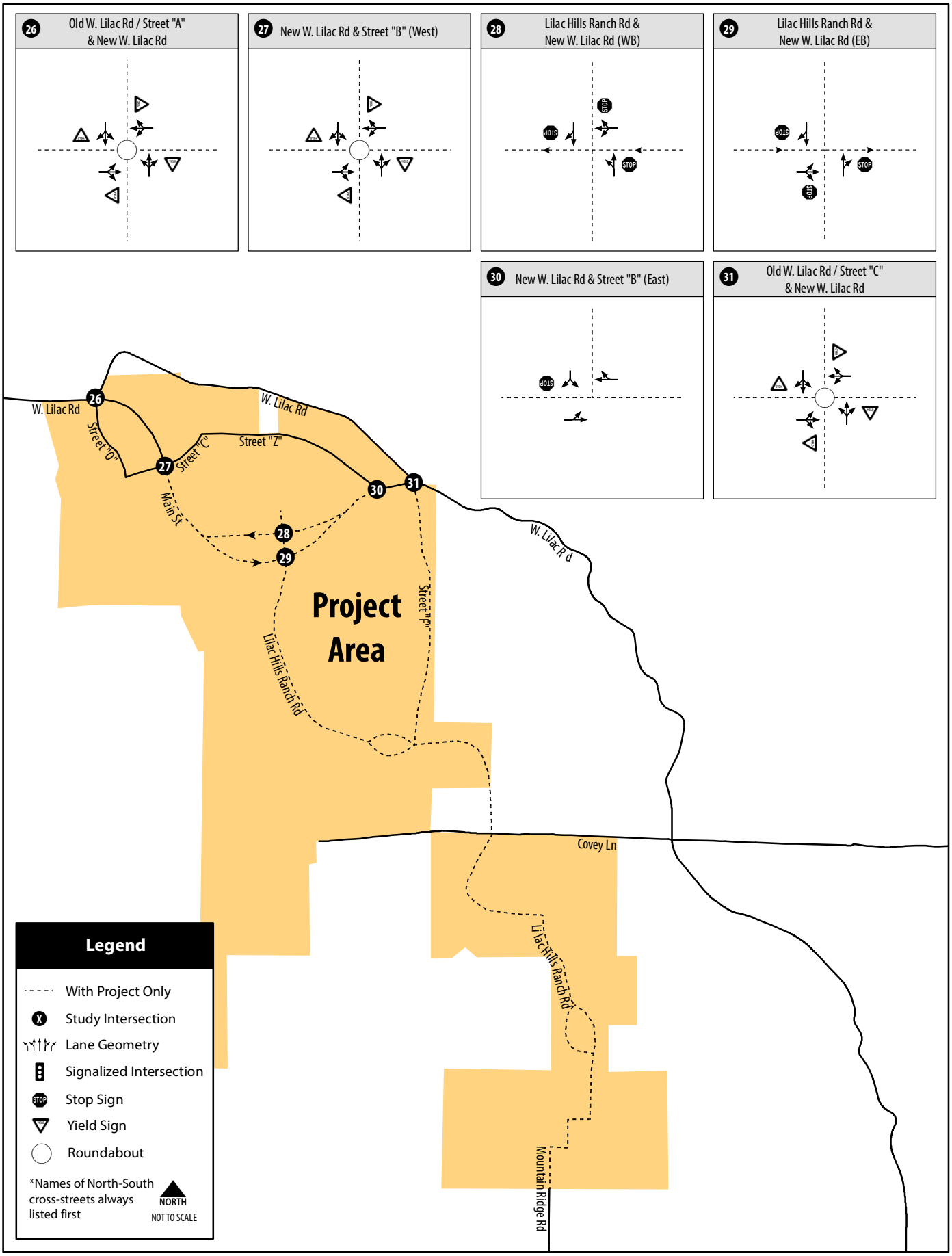
Figure 3-1B (Intersections 1-13)
Intersection Geometrics - Existing Conditions



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 3-1B (Intersections 14-25)
Intersection Geometrics - Existing Conditions



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 3-1B (Intersections 24-31)
Intersection Geometrics - Existing Conditions

3.2 Existing Intersection and Roadway Volumes

Figure 3-2A displays Average Daily Traffic (ADT) volumes for study area roadway and freeway segments. **Figure 3-2B** shows existing AM/PM peak hour traffic volumes for the key study area intersections. Roadway segment and study area intersection traffic count dates are referenced in the analysis tables in the following sections. The freeway segment counts were obtained from Caltrans. The traffic count data summary sheets are provided in **Appendix E**.

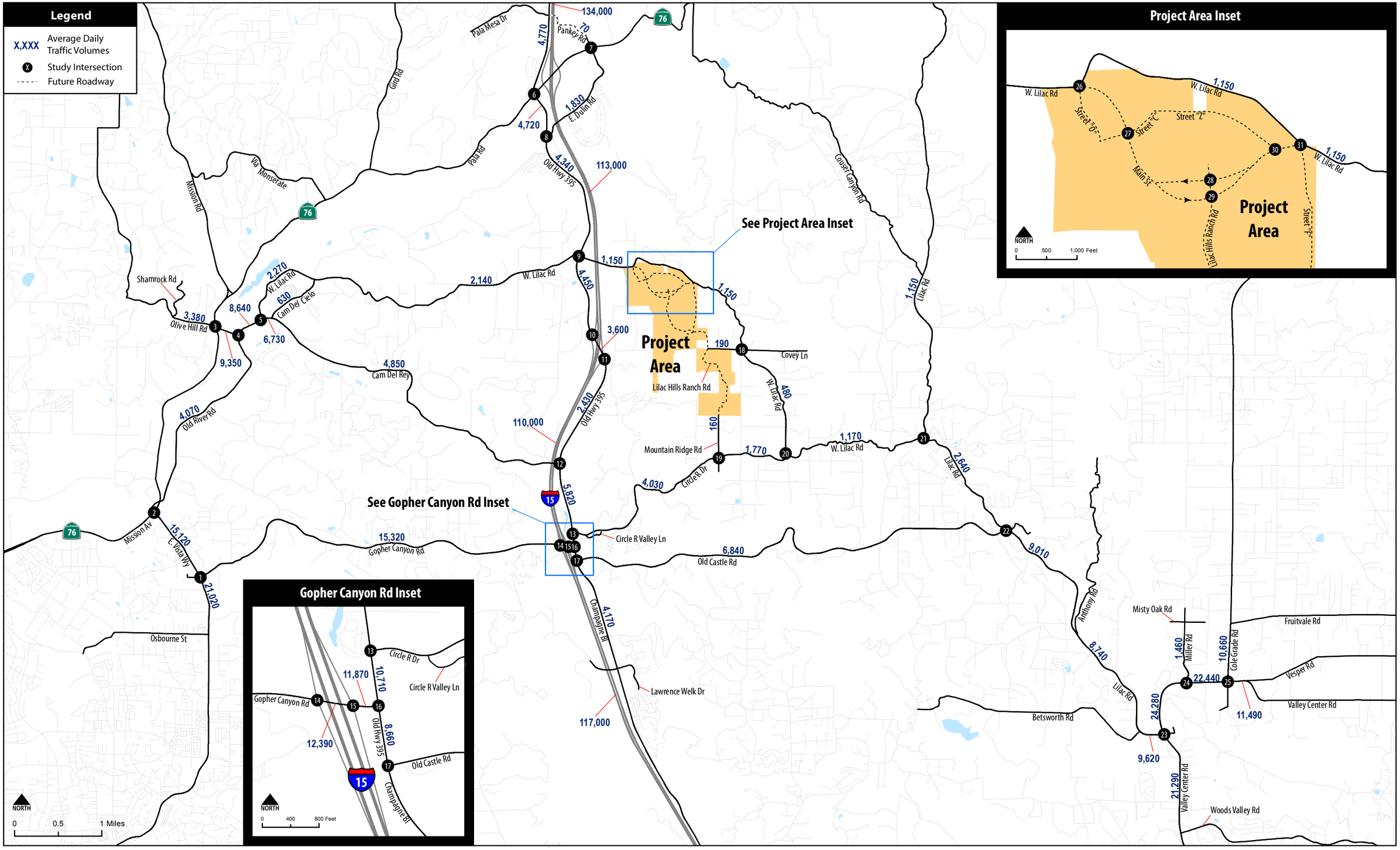
3.3 Existing Level of Service Analysis

Level of service analyses under Existing conditions were conducted using the methodologies described in Chapter 2.0. Roadway segment, intersection, two-lane highway, freeway segment, and ramp intersection level of service results are discussed separately below.

Roadway Segment Analysis

Roadway segment analysis is based on the comparison of average daily traffic (ADTs) to the County of San Diego's Roadway Segment Daily Capacity and Level of Service Standards. However, a number of the roadways within the study area are not fully built to County public road standards. Although not required by the County of San Diego's Guidelines for Determining Significance and Report Format for Transportation and Traffic, a conservative approach was taken to reduce road capacities for purposes of this analysis.

In order to determine the amount of capacity reduction to use in the analysis, several factors were considered. Most important, all of the roads considered for capacity reductions provide one lane in each direction and the number of lanes is the best indication of capacity. In terms of reduced shoulder width, since the shoulder is outside the traveled way, is rarely utilized by drivers, and the fact that the reduced shoulder width is present on only a small portion of the studied roadway, a large capacity reduction would not occur. In terms of minimum curve radii, since the curves are only present on a small portion of the studied roadway, a large capacity reduction would be inappropriate.

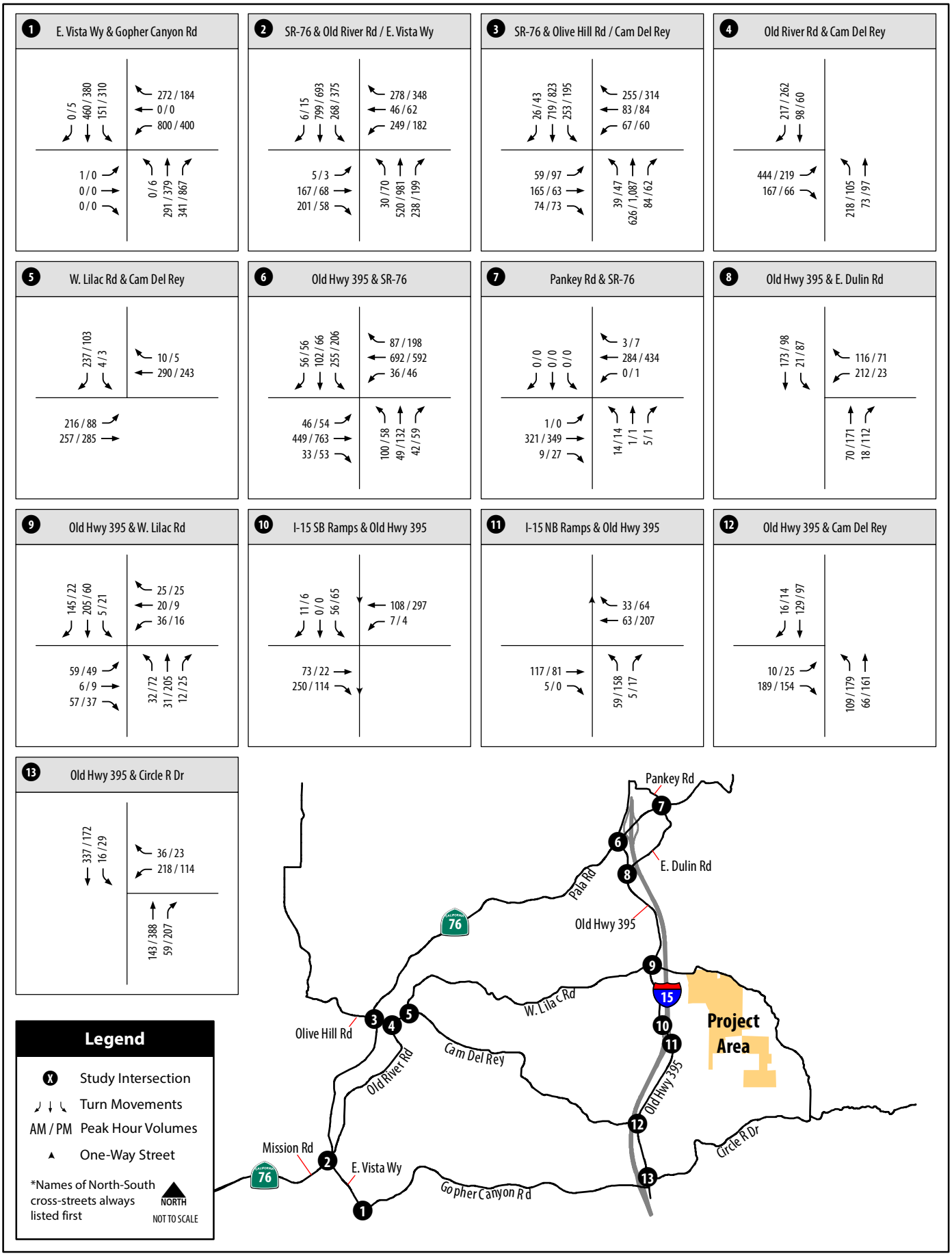


Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 3-2A

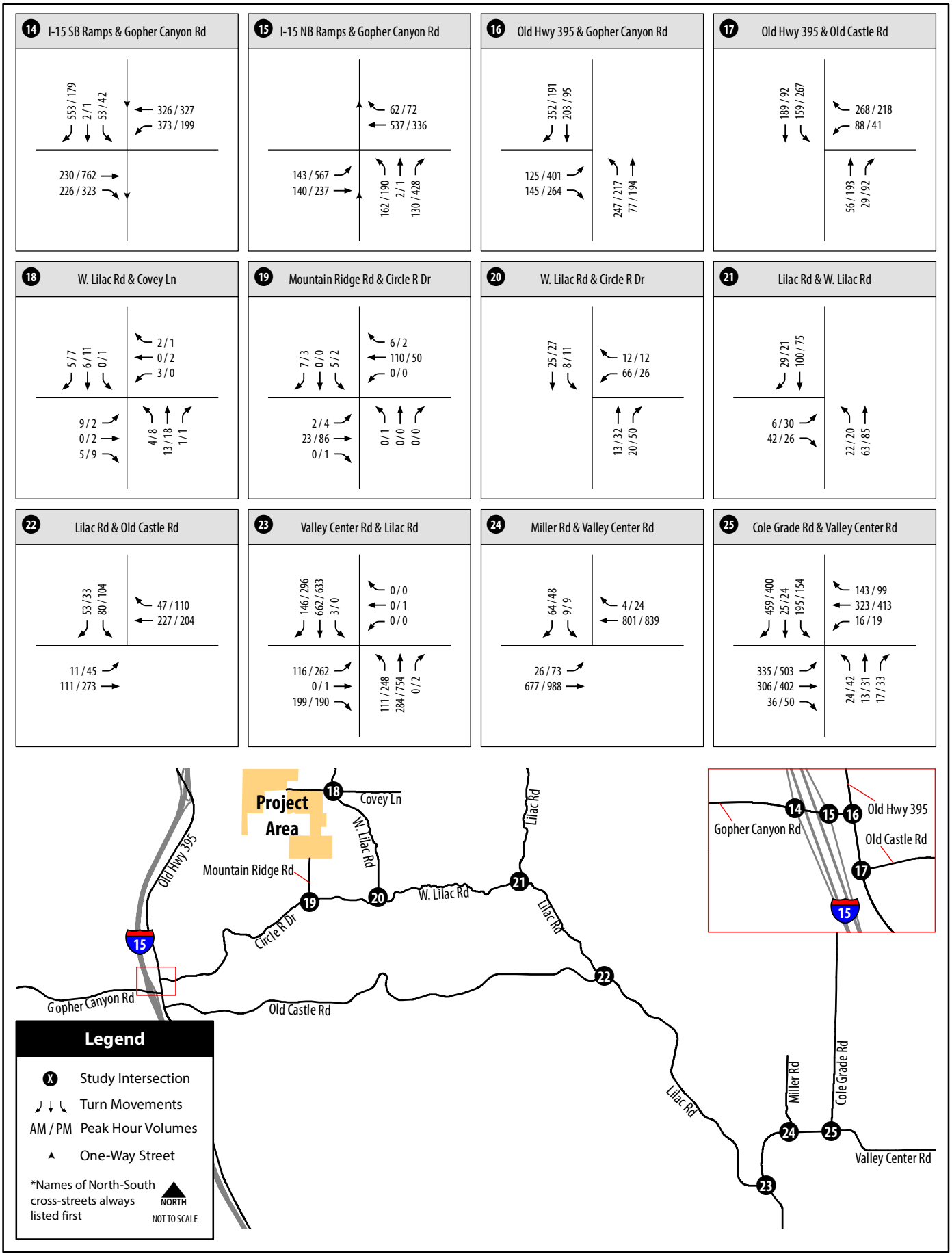
Roadway Average Daily Traffic Volumes - Existing Conditions



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 3-2B (Intersections 1-13)
Intersection Peak Hour Traffic Volumes - Existing Conditions



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 3-2B (Intersections 14-25)
Intersection Peak Hour Traffic Volumes - Existing Conditions

As shown in Tables 1 and 2 (as shown below) of the County's Public Road Standards, the only difference in design features between 2.2E and 2.2F roads is 8' vs. 2' shoulders. The LOS D threshold for a 2.2E road is estimated to be approximately 20% higher than a 2.2F road.

MOBILITY ELEMENT ROADS			LEVELS OF SERVICE				
Road Classification		# of Travel Lanes	A	B	C	D	E
Light Collector	w/ Raised Median (2.2A)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Continuous Left Turn Lane (2.2B)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Intermittent Turn Lane (2.2C)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	w/ Passing Lane (2.2D)	2	<3,000	<6,000	<9,500	<13,500	<19,000
	No Median (2.2E)	2	<1,900	<4,100	<7,100	<10,900	<16,200
	w/ Reduced Shoulder (2.2F)	2	<5,800	<6,800	<7,800	<8,700	<9,700

MOBILITY ELEMENT ROAD CLASSIFICATIONS									
ROAD CLASSIFICATION	# LANES / LANE WIDTH	MEDIAN WIDTH	ROAD SURFACING WIDTH	R.O.W. WIDTH	PAVED SHOULDERS (# / WIDTH)	PARKWAY WIDTH	MIN. CURVE RADIUS	MAX. DESIRABLE GRADE	MIN. DESIGN SPEED (MPH)
Light Collector									
With Raised Median (2.2A)	2 / 12'	14'	54'	78'	2 / 8'	12'	500'	9%	40
With Continuous Left Turn Lane (2.2B)	2 / 12'	14'	54'	78'	2 / 8'	12'	500'	9%	40
With Intermittent Turn Lanes (2.2C)	2 / 12'	-	40' - 54'	64' - 78'	2 / 8'	12'	500'	9%	40
With Improvement Options (2.2D)	2 / 12'	-	40' - 54'	88'	2 / 8'	17' - 24'	500'	9%	40
No Median (2.2E)	2 / 12'	-	40'	64'	2 / 8'	12'	500'	9%	40
With Reduced Shoulder (2.2F)	2 / 12'	-	28'	52'	2 / 2'	12'	500'	9%	40

For the reasons discussed above, a full 20% capacity reduction would be inaccurate and inappropriate. Therefore, it was determined that one-half of the reduction, 10%, would be the appropriate capacity reduction to apply.

Table 3.1 displays the reduced roadway thresholds for key study area segments. Based on field and aerial review and analysis of County roadway standards, a 10% capacity reduction was applied to the roadways listed in Table 3.1 for purposes of analysis in this TIS. Please note that reduced shoulders are also presented along Lilac Road, between Old Castle Road and Anthony Road, however, roadway capacity reduction was not applied since passing opportunities are provided along sections of this facility, which increases the capacity of a two-lane roadway.

TABLE 3.1
REDUCED ROADWAY THRESHOLDS FOR KEY SEGMENTS

Roadway	From	To	Original LOS D Thresholds	Reduced LOS D Thresholds
E. Dulin Road	Old Highway 395	SR-76	10,900	9,800
W. Lilac Road	Camino Del Rey	Camino Del Cielo	8,700	7,800
W. Lilac Road	Camino Del Cielo	Old Highway 395	8,700	7,800
W. Lilac Road	Main Street	Street "F"	8,700	7,800
W. Lilac Road	Street "F"	Covey Lane	8,700	7,800
W. Lilac Road	Covey Lane	Circle R Drive	8,700	7,800
W. Lilac Road	Circle R Drive	Lilac Road	8,700	7,800
Camino Del Rey	Old River Road	W. Lilac Road	10,900	9,800
Camino Del Rey	Camino Del Cielo	Old Highway 395	8,700	7,800
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	10,900	9,800
Circle R Drive	Old Highway 395	Mountain Ridge Road	10,900	9,800
Circle R Drive	Mountain Ridge Road	W. Lilac Road	10,900	9,800
Old Castle Road	Old Highway 395	Lilac Road	10,900	9,800
Old River Road	SR-76	Camino Del Rey	10,900	9,800
Pankey Road	Pala Mesa Drive	SR-76	10,900	4,500*
Lilac Road	Couser Canyon Road	W. Lilac Road	8,700	7,800
Lilac Road	W. Lilac Road	Old Castle Road	8,700	7,800

Source: Chen Ryan Associates; May 2014

Note:
*A section of Pankey Road is currently unpaved; hence, the LPR threshold of 4,500 ADT is utilized.

Table 3.2 displays the level of service analysis results for the key study area Mobility Element roadway segments under Existing conditions.

TABLE 3.2
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS

Roadway	From	To	Cross-Section	LOS Threshold (LOS D)	Traffic Count Date	Average Daily Traffic (ADT)	Level of Service (LOS)
E. Dulin Road	Old Highway 395	SR-76	2-Ln	9,800	Dec-12	1,830	B
W. Lilac Road	Camino Del Rey	Camino Del Cielo	2-Ln	7,800	Dec-12	2,270	A
W. Lilac Road	Camino Del Cielo	Old Highway 395	2-Ln	7,800	Mar-12	2,140	A
W. Lilac Road	Old Highway 395	Main Street	2-Ln	8,700	Oct-12	1,150	A
W. Lilac Road	Main Street	Street "F"	2-Ln	7,800	Oct-12	1,150	A

TABLE 3.2
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS

Roadway	From	To	Cross-Section	LOS Threshold (LOS D)	Traffic Count Date	Average Daily Traffic (ADT)	Level of Service (LOS)
W. Lilac Road	Street "F"	Covey Lane	2-Ln	7,800	Oct-12	1,150	A
W. Lilac Road	Covey Lane	Circle R Drive	2-Ln	7,800	Mar-11	480	A
W. Lilac Road	Circle R Drive	Lilac Road	2-Ln	7,800	Mar-11	1,170	A
Camino Del Cielo	Camino Del Rey	W. Lilac Road	2-Ln	10,900	Dec-12	630	A
Olive Hill Road	Shamrock Road	SR-76	2-Ln	8,700	Dec-12	3,380	A
Camino Del Rey	SR-76	Old River Road	2-Ln	10,900	Sep-11	9,350	D
Camino Del Rey	Old River Road	W. Lilac Road	2-Ln	9,800	Dec-12	8,640	D
Camino Del Rey	W. Lilac Road	Camino Del Cielo	2-ln w/ SM	13,500	Dec-12	6,730	C
Camino Del Rey	Camino Del Cielo	Old Highway 395	2-Ln	7,800	Dec-12	4,850	A
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	2-Ln	9,800	Dec-12	15,320	F
Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	4-Ln	30,800	Nov-11	12,390	A
Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	4-Ln	30,800	Nov-11	11,870	A
Circle R Drive	Old Highway 395	Mountain Ridge Road	2-Ln	9,800	Aug-11	4,030	C
Circle R Drive	Mountain Ridge Road	W. Lilac Road	2-Ln	9,800	Mar-11	1,770	B
Old Castle Road	Old Highway 395	Lilac Road	2-Ln	9,800	Mar-11	6,840	D
E. Vista Way	SR-76	Gopher Canyon Road	2-Ln w/ TWLTL	13,500	Dec-12	15,120	E
E. Vista Way	Gopher Canyon Road	Osborne Street	2-Ln w/ TWLTL	13,500	Dec-12	21,020	F
Old River Road	SR-76	Camino Del Rey	2-Ln	9,800	Dec-12	4,070	C
Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	2-Ln	10,900	Mar-12	4,170	C
Pankey Road	Pala Mesa Drive	SR-76	2-Ln	4,500	Dec-12	70	A

TABLE 3.2
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS

Roadway	From	To	Cross-Section	LOS Threshold (LOS D)	Traffic Count Date	Average Daily Traffic (ADT)	Level of Service (LOS)
Lilac Road	Couser Canyon Road	W. Lilac Road	2-Ln	7,800	Dec-12	1,150	A
Lilac Road	W. Lilac Road	Old Castle Road	2-Ln	7,800	Mar-11	2,640	A
Lilac Road	Old Castle Road	Anthony Road	2-Ln	10,900	Sep-11	9,010	D
Lilac Road	Anthony Road	Betsworth Road	2-Ln	10,900	Sep-11	8,740	D
Lilac Road	Betsworth Road	Valley Center Road	2-Ln	13,500	Sep-11	9,620	D
Valley Center Road	Woods Valley Road	Lilac Road	4/Ln w/ TWLTL/RM	27,000	Dec-12	21,290	C
Valley Center Road	Lilac Road	Miller Road	4-Ln w/ RM	33,400	Sep-11	24,280	B
Valley Center Road	Miller Road	Cole Grade Road	4-Ln w/ RM	27,000	Sep-11	22,440	C
Valley Center Road	Cole Grade Road	Vesper Road	2-Ln	13,500	Sep-11	11,490	D
Miller Road	Misty Oak Road	Valley Center Road	2-Ln	7,000	Sep-11	1,460	A
Cole Grade Road	Fruitvale Road	Valley Center Road	2-Ln w/ TWLTL	13,500	Sep-11	10,660	D

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E or F.
RM = Raised Median.
SM = Striped Median.
TWLTL = Two-Way Left-Turn Lane.

As shown in the table, all study roadways are currently operating at acceptable LOS D or better under Existing conditions, with the following three (3) exceptions:

- Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps – LOS F;
- E. Vista Way, between SR-76 and Gopher Canyon Road – LOS E; and
- E. Vista Way, between Gopher Canyon Road and Osborne Street – LOS F.

Intersection Analysis

Table 3.3 displays intersection level of service and average vehicle delay results for the key study area intersections under Existing conditions. Level of service calculation worksheets for Existing conditions are provided in **Appendix F**.

TABLE 3.3
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS

Intersection	Traffic Control	Traffic Count Date	AM Peak Hour		PM Peak Hour	
			Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
1. E. Vista Way / Gopher Canyon Road	Signal	Nov-11	172.8	F	212.0	F
2. SR-76 / Old River Road/E. Vista Way	Signal	Nov-08	23.7	C	32.0	C
3. SR-76 / Olive Hill Road/Camino Del Rey	Signal	Sep-11	21.6	C	34.5	C
4. Old River Road / Camino Del Rey	OWSC	Nov-12	23.2	D	12.2	B
5. W. Lilac Road / Camino Del Rey	OWSC	Jan-11	15.7	C	11.0	B
6. Old Highway 395 / SR-76	Signal	Mar-11	29.0	C	39.8	D
7. Pankey Road / SR-76	TWSC	Dec-11	12.5	B	15.2	C
8. Old Highway 395 / E. Dulin Road	OWSC	Mar-11	12.8	B	11.2	B
9. Old Highway 395 / W. Lilac Road	TWSC	Mar-11	14.7	C	13.3	B
10. I-15 SB Ramps / Old Highway 395	OWSC	Mar-11	10.6	B	12.1	B
11. I-15 NB Ramps / Old Highway 395	OWSC	Mar-11	9.8	A	11.2	B
12. Old Highway 395 / Camino Del Rey	OWSC	Mar-11	10.1	B	11.0	B
13. Old Highway 395 / Circle R Drive	OWSC	Mar-11	20.4	C	22.5	C
14. I-15 SB Ramps / Gopher Canyon Road	OWSC	Nov-11	468.2	F	173.0	F
15. I-15 NB Ramps / Gopher Canyon Road	OWSC	Nov-11	30.5	D	1945.4	F
16. Old Highway 395 / Gopher Canyon Road	Signal	Mar-11	11.0	B	14.7	B
17. Old Highway 395 / Old Castle Road	Signal	Mar-11	13.9	B	15.7	B
18. W. Lilac Road / Covey Lane	TWSC	Oct-12	8.8	B	9.3	A
19. Mountain Ridge Road / Circle R Drive	TWSC	Mar-11	9.3	A	9.6	A
20. W. Lilac Road / Circle R Drive	OWSC	Mar-11	9.3	A	9.3	A
21. Lilac Road / W. Lilac Road	OWSC	Mar-11	9.6	A	9.9	A
22. Lilac Road / Old Castle Road	OWSC	Mar-11	11.8	B	17.8	C
23. Valley Center Rd / Lilac Road	Signal	Mar-11	10.5	B	22.6	C

TABLE 3.3
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS

Intersection	Traffic Control	Traffic Count Date	AM Peak Hour		PM Peak Hour	
			Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
24. Miller Road / Valley Center Road	OWSC	Sep-11	16.9	C	25.0	D
25. Cole Grade Road / Valley Center Road	Signal	Sep-11	31.1	C	34.9	C

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E or F.
AWSC = All-Way Stop Controlled.
TWSC = Two-Way Stop Controlled.
OWSC = One-Way Stop Controlled.
For OWSC and TWSC intersections, the delay shown is the worst delay experienced by any of the approaches.

As shown in the table, all of the study area intersections are currently operating at acceptable LOS D or better, with the following three (3))exceptions:

- E. Vista Way / Gopher Canyon Road – LOS F during both the AM and PM peak hours;
- I-15 SB Ramps / Gopher Canyon Road (Caltrans) – LOS F during both the AM and PM peak hours; and
- I-15 NB Ramps / Gopher Canyon Road (Caltrans) – LOS F during the PM peak hour.

Two-Lane Highway Analysis

Table 3.4 displays two-lane highway level of service analysis results for Old Highway 395 under Existing conditions. The two-lane highway level of service analysis was performed utilizing the methodology presented in Chapter 2.0.

TABLE 3.4
TWO-LANE HIGHWAY LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS

2-Ln Highway	From	To	LOS Threshold (LOS D)	Traffic Count Date	Average Daily Traffic (ADT)	Level of Service (LOS)
Old Highway 395	Pala Mesa Drive	SR-76	16,200	Mar-12	4,770	D or better
Old Highway 395	SR-76	E. Dulin Road	16,200	Mar-11	4,720	D or better
Old Highway 395	E. Dulin Road	W. Lilac Road	16,200	Mar-11	4,340	D or better

TABLE 3.4
TWO-LANE HIGHWAY LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS

2-Ln Highway	From	To	LOS Threshold (LOS D)	Traffic Count Date	Average Daily Traffic (ADT)	Level of Service (LOS)
Old Highway 395	W. Lilac Road	I-15 SB Ramps	16,200	Mar-11	4,450	D or better
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	16,200	Mar-11	3,600	D or better
Old Highway 395	I-15 NB Ramps	Camino Del Rey	16,200	Mar-11	2,430	D or better
Old Highway 395	Camino Del Rey	Circle R Drive	16,200	Mar-11	5,820	D or better
Old Highway 395	Circle R Drive	Gopher Canyon Road	16,200	Mar-11	10,710	D or better
Old Highway 395	Gopher Canyon Road	Old Castle Road	16,200	Mar-11	8,660	D or better

Source: Chen Ryan Associates; May 2014

As shown, all of the study area segments along Old Highway 395 are currently operating at acceptable LOS D or better.

Freeway Segment Analysis

Table 3.5 displays freeway level of service analysis results for I-15 under Existing conditions. The freeway segment level of service analysis was performed utilizing the methodology presented in Chapter 2.0.

As shown in Table 3.5, all study area segments along I-15 currently operate at acceptable LOS D or better under Existing conditions.

Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements, the signalized intersections along SR-76 within the study area were analyzed under Existing conditions using the ILV procedures as described in Chapter 2.0. Note that ramp intersections along I-15 are stop-controlled and were therefore not analyzed in this study. ILV analysis results are displayed in **Table 3.6** and analysis worksheets for the Existing conditions are provided in **Appendix G**.

TABLE 3.5
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	Peak Hour Factor (PHF)	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS
I-15	Riverside County Boundary to Old Highway 395	134,000	8.4%	11,321	0.64	4	0.95	6.75%	1,957	0.833	D
I-15	Old Highway 395 to SR-76	134,000	7.4%	9,969	0.73	4	0.95	6.75%	1,984	0.844	D
I-15	SR-76 to Old Highway 395	113,000	7.8%	8,839	0.69	4	0.95	8.40%	1,661	0.707	C
I-15	Old Highway 395 to Gopher Canyon Road	110,000	8.1%	8,884	0.67	4	0.95	8.40%	1,627	0.692	C
I-15	Gopher Canyon Road to Deer Springs Road	117,000	8.1%	9,449	0.67	4	0.95	13.20%	1,770	0.753	C
I-15	Deer Springs Road to Centre City Parkway	117,000	8.0%	9,400	0.66	4	0.95	13.20%	1,752	0.745	C
I-15	Centre City Parkway to El Norte Parkway	111,000	8.0%	8,918	0.66	4	0.95	13.20%	1,662	0.707	C
I-15	El Norte Parkway to SR-78	127,000	7.9%	9,996	0.66	4	0.95	10.00%	1,836	0.781	C
I-15	SR-78 to W Valley Parkway	192,000	8.1%	15,626	0.60	5+2ML	0.95	10.00%	1,480	0.630	B
I-15	W Valley Parkway to Auto Parkway	179,000	8.1%	14,568	0.60	5+2ML	0.95	10.00%	1,380	0.587	B
I-15	Auto Parkway to W Citracado Parkway	172,000	7.8%	13,340	0.60	5+2ML	0.95	10.00%	1,256	0.534	B
I-15	W Citracado Parkway to Via Rancho Parkway	196,000	7.8%	15,201	0.60	5+2ML	0.95	7.00%	1,411	0.600	B
I-15	Via Rancho Parkway to Bernardo Drive	198,000	7.4%	14,572	0.58	5+2ML	0.95	7.00%	1,312	0.558	B
I-15	Bernardo Drive to Rancho Bernardo Road	201,000	7.4%	14,793	0.58	5+2ML	0.95	7.00%	1,332	0.567	B

TABLE 3.5
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	Peak Hour Factor (PHF)	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS
I-15	Rancho Bernardo Road to Bernardo Center Drive	209,000	7.3%	15,345	0.54	5+2ML	0.95	7.00%	1,280	0.545	B
I-15	Bernardo Center Drive to Camino Del Norte	214,000	7.3%	15,712	0.54	5+2ML	0.95	7.00%	1,311	0.558	B

Source: Caltrans, Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E or F.
ML = Managed Lane.

TABLE 3.6
RAMP INTERSECTION CAPACITY ANALYSIS
EXISTING CONDITIONS

Intersection	Peak Hour	ILV / Hour	Description
SR-76 / Old River Road/E. Vista Way	AM	1,503	*>1500: (Over Capacity)*
	PM	1,255	*1200-1500: (At Capacity)*
SR-76 / Olive Hill Road/Camino Del Rey	AM	1,202	*1200-1500: (At Capacity)*
	PM	1,370	*1200-1500: (At Capacity)*
SR-76 / Old Highway 395	AM	1,001	*<1200: (Under Capacity)*
	PM	1,035	*<1200: (Under Capacity)*

Source: Chen Ryan Associates; May 2014

As shown in the table, all three (3) intersections along SR-76 currently operate at "Under Capacity" and/or "At Capacity", with the exception of SR-76 / Old River Road/E. Vista Way intersection which operates at "Over Capacity" during the AM peak hour.

3.4 Existing Parking, Transit, and On-Site Circulation

The current site for the project generally consists of agricultural uses. Based upon field reviews, parking and on-site circulation are adequately provided. Transit services are not currently provided on or within a ¼ mile of the project site.

4.0 Project Traffic

This section describes the project, including land uses and estimated trip generation, trip distribution, and trip assignment.

4.1 Project Description

The Mountain Ridge Road Fire Station Alternative was developed based on input from the DSFPD and their interest in a potential permanent fire station within Phase 5 of the project site. At the DSFPD request, this alternative also includes access changes to accommodate the placement of a fire station within Phase 5. This alternative is analyzed such that it can be used in the decision making process to provide the option of approving a permanent fire station in Phase 5 and the associated changes as described herein.

This alternative would encompass the same 608-acre project site and would consist of the same mix of residential, commercial, and institutional uses, along with parks, open space and other project amenities, as the project. Like the project, the residential component of this alternative would contain a maximum of 1,746 units. The project includes a fire station in Phase 3 at the site designated as Community Purpose Facility. Under this Alternative, instead of a fire station in Phase 3, a permanent new DSFPD fire station within a two-acre site would be located in Phase 5. To accommodate the fire station in the Phase 5 location, this alternative includes improving Mountain Ridge Road to a County public road and eliminating the gates the project includes along Mountain Ridge Road and Lilac Hills Ranch Road in the southern area of the site (i.e., in Phases 4 and 5). All other aspects of this alternative would be the same as the project and would require a GPA, a Specific Plan, Rezone, Master Tentative Map, subsequent implementing Tentative Maps, MUPs for the WRF and the public park (P-7), and Site Plan for all private parks.

Birdsong Drive, between Street "Z" and W. Lilac Road will serve as an interim secondary access route for the initial phase of Phase A (SFD-1 and SFD-2 as shown in Figure 1-3) during construction of Main street. After the construction of Main Street has been completed, between Street "Z" and W. Lilac Road, Birdsong Drive will revert to a private driveway for use by the owner of APN 128-280-56.

The project consists of a mix of residential, commercial and institutional uses, along with parks and open space. The following list outlines the specific trip generating land uses:

Residential – a total of 1,746 units

- 903 traditional single-family detached homes;
- 375 multi-family homes (for-rent and for-sale at 20 or more dwelling units per acre);
- 468 age-restricted, single family homes (senior community); and
- Necessary facilities and amenities to serve the senior population, including a senior community center, an assisted living and group residential facility (consists of 200 beds).

Commercial – a total of 15.3 acres

- 61,500 square feet of retail uses which may include a 25,000-square foot general store – local serving and small scale specialty retail, restaurants and cafes, a veterinary clinic, and a day care facility;
- 28,500 square feet of office uses; and
- A 50-room country inn.

Institutional facilities

- A 10.0-acre church site; and
- A 12.0-acre K-8 school.

Parks and CPF area facilities

- A 40,000 square-foot CPF area comprised of a private recreational center; and
- 23.6 acres of public and private parks.

A Water Reclamation Facility (WRF)

- 2.4 acres

An on-site Recycling and Green Waste Drop-off Facility (RF)

- 0.6 acres

Interim Fire Station

An interim fire station with up to 3-staff could be located anywhere within the project site. However, this fire station would be built in place of two equivalent dwelling units and would not result in additional traffic to the overall project. A fire station trip generation survey was conducted and discussed in detail later in this chapter.

Permanent Fire Station

Instead of a fire station in Phase 3, a permanent new DSFPD fire station within a two-acre site would be located in Phase 5. The fire station is estimated to be 4,500 square feet and staffed with maximum 3-person crews. Since a fire station trip generation rate is not available in both *SANDAG's Guide to Vehicular Traffic Generation Rates for the San Diego Region (SANDAG, April 2002)* and *ITE Trip Generation Manual (8th Edition)*, a trip generation survey was conducted at existing fire stations in the area of the project. A total of nine fire stations participated in the survey and it was determined that the average daily trip per personnel is 4.34 trips, while the highest is 5.33. The 5.33 trips/personnel rate was chosen to utilize the most conservative trip generation rate. As a result, the 4,500 square-foot Lilac Hills Ranch Fire Station Alternative fire station is estimated to generate 16 trips per day. The detailed fire station trip generation survey data is included **Appendix H**. The Mountain Ridge Road Fire Station Alternative proposes to convert Mountain Ridge Road from a 2-lane private road with restricted access, to a Rural Residential Collector (Local Public Road) at the beginning of Phase D (construction of

Phase 5 of the project), as well as removing all access restriction (gates) along Lilac Hills Ranch Road. Mountain Ridge Road would remain as a 2-lane private road during Phases A through C, therefore the project trip distribution, assignment, as well as associated impact remain the same as those discussed in the TIS for the project. However, project trips distribution for Phase D and beyond were changed to reflect the removal of all gates along Lilac Hills Ranch Road. Unrestricted project access is provided at W. Lilac Road via Main Street, Circle R Drive via Mountain Ridge Road, and Covey Lane.

4.2 Project Phasing

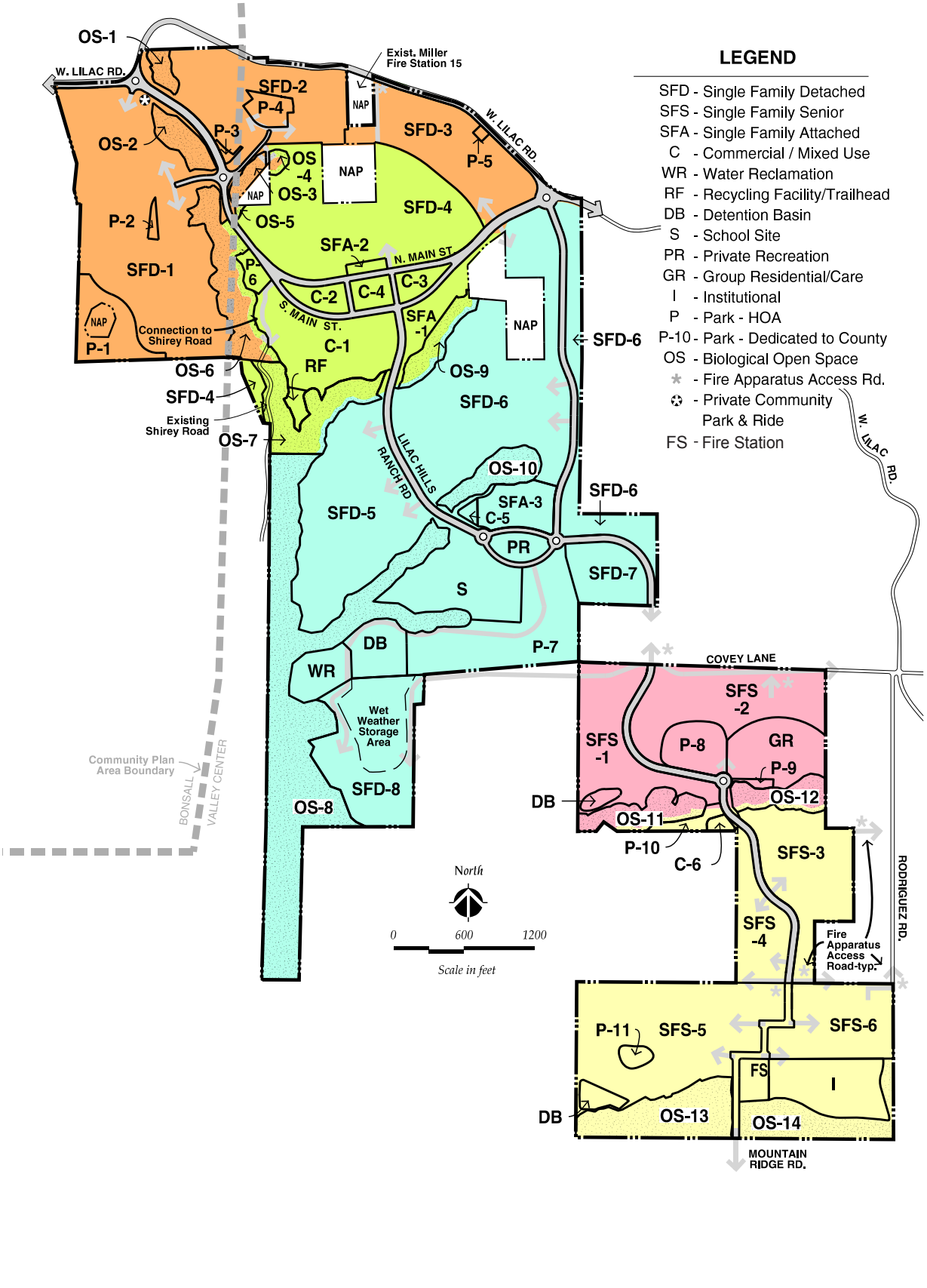
A project site plan by "Specific Plan" phasing is displayed in **Figure 4-1** with associated land use breakdowns listed in **Table 4.1** below. Note that each phase could potentially include sub-phases, however, impact and mitigation are determined based on EDUs and ADTs.

TABLE 4.2
TRAFFIC ANALYSIS PHASING AND ACCESS REQUIREMENTS

Phasing	Specific Plan					Access / Spine Road
	1	2	3	4	5	
Traffic Analysis Phase A	●					- Main St, between West Lilac Rd and St "C"; - Main St, between St "Z" and W. Lilac Rd; - St "C" and St "Z"; and - Birdsong Dr (Interim Access during initial phase of Phase A), between St "Z and W. Lilac Rd.
Traffic Analysis Phase B	●			●		- All roads listed in Phase A, with the exception of Birdsong Drive; and - Covey Ln.
Traffic Analysis Phase C	●	●		●		- All roads listed in Phase B; and - Main St, between St "C" and St "Z".
Traffic Analysis Phase D	●	●		●	●	- All roads listed in Phase C; and - Lilac Hills Ranch Rd, between Covey Ln and Mountain Ridge Rd.
Traffic Analysis Phase E (Buildout)	●	●	●	●	●	- All roads listed in Phase D; - Lilac Hills Ranch Rd, north of Covey Ln to Main St; and - St "F", between W. Lilac Rd and Lilac Hills Ranch Rd.

Source: Chen Ryan Associates; May 2014

As displayed in the table, TA **Phase A** includes Phase 1 of the "Specific Plan"; TA **Phase B** includes Phases 1 and 4; TA **Phase C** includes Phases 1, 2, and 4; TA **Phase D** includes Phases 1, 2, 4, and 5; and **Phase E** incudes all five Specific Plan phases.



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

CHEN RYAN

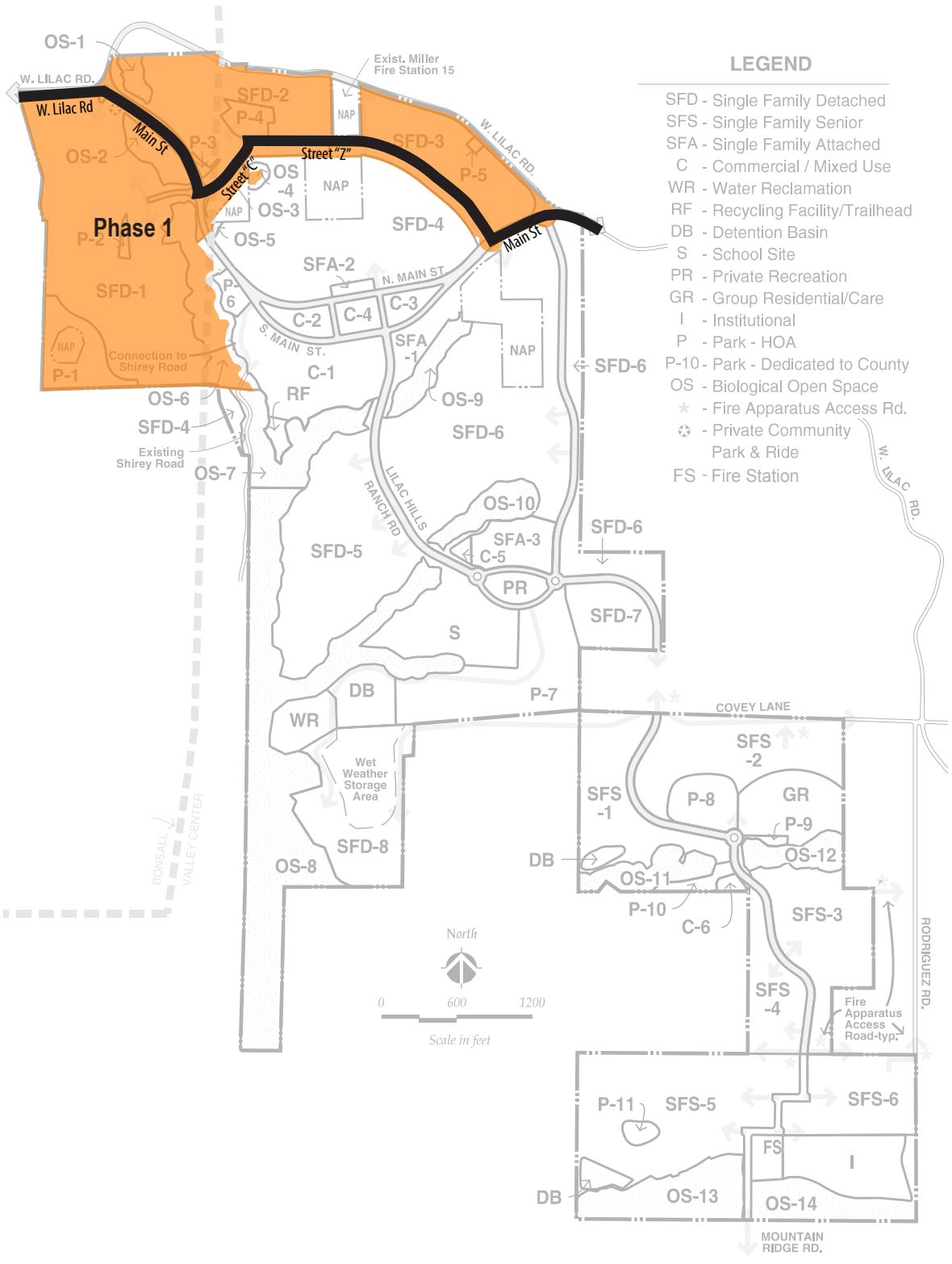
Figure 4-1
Project Site Plan by Specific Plan Phasing

TABLE 4.1
PROJECT LAND USE BY SPECIFIC PLAN PHASING
BY SANDAG LAND USE CATEGORY

SANDAG Equivalent Land Use	Unit	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Single Family	DU	352	196	355	-	-
Multi-Family	DU	-	270	105	-	-
Senior Community	DU	-	-	-	171	297
Assisted Living	Bed	-	-	-	200	-
Specialty Retail / Strip Commercial	KSF	-	55.0	4.0	-	2.5
Office	KSF	-	25.0	3.5	-	-
Country Inn / B&B	Room	-	50	-	-	-
Church	AC	-	-	-	-	10.0
Elementary School (K-5)	Student	-	-	568	-	-
Middle School (6-8)	Student	-	-	132	-	-
CPF (Recreation Center)	KSF	-	-	40.0	-	-
Neighborhood/County Park	AC	4.5	0.8	13.5	3.7	1.1
Water Reclamation	AC	-	-	2.4	-	-
Recycling Center	AC	-	0.6	-	-	-
Fire Station	Personnel	-	-	-	-	3

Source: Specific Plan Table 3, Chen Ryan Associates; May 2014

For traffic impact evaluation purposes, a set of "Traffic Analysis (TA)" phases (A–E) were developed to best represent the anticipated construction phasing, as shown in **Table 4.2**. These phases are carried forward and served as the basis for traffic analysis and impact/mitigation identifications in this study. Table 4.2 also discusses the access/spine roads needed for each of the traffic analysis phases. **Figures 4-2.A** through **4-2.E** display the site plans and access requirements for each of the traffic analysis phases A though E, respectively.



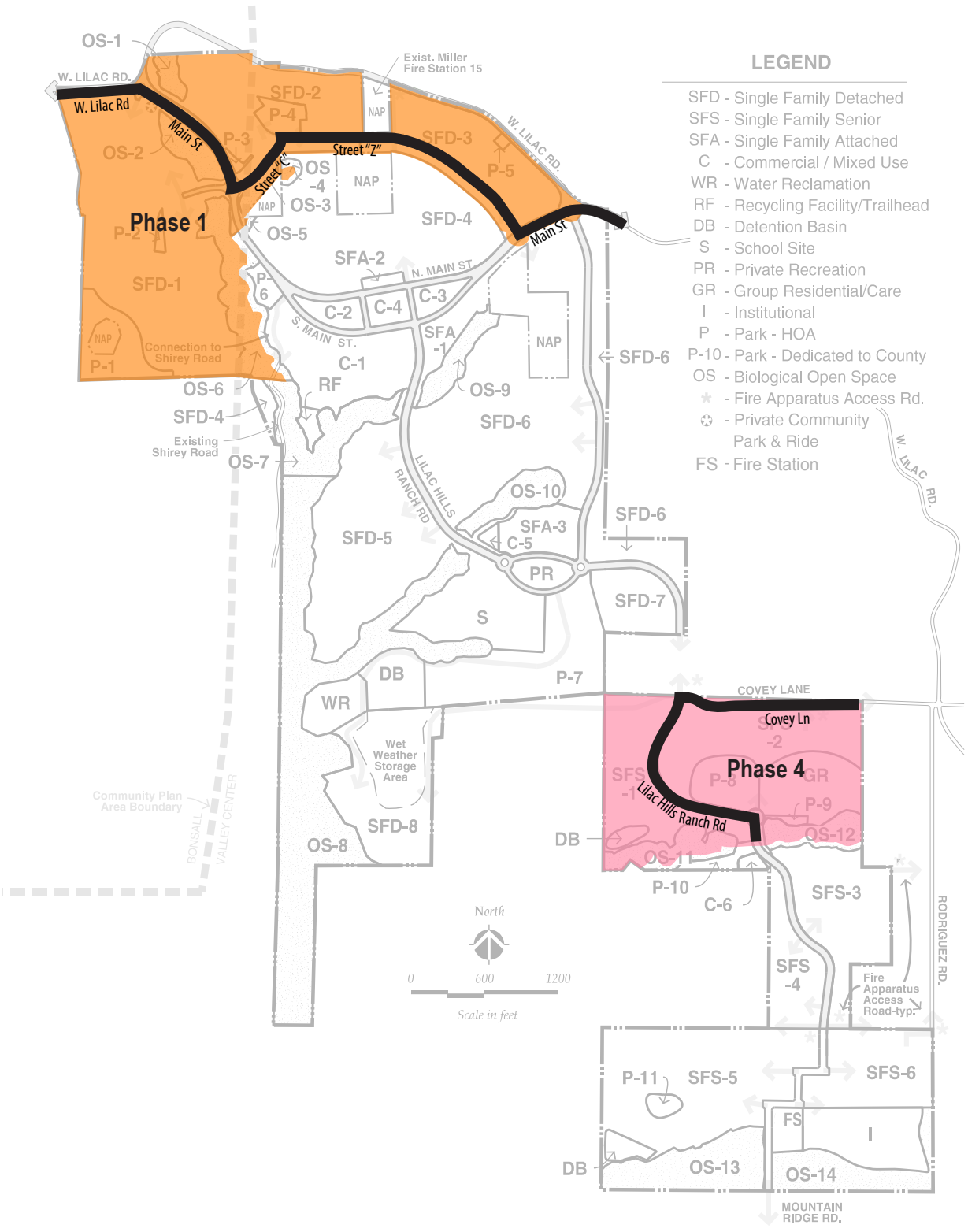
Traffic Analysis Phase A = Specific Phase 1

NORTH

Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 4-2.A
Project Site Plan and Access - Traffic Analysis Phase A

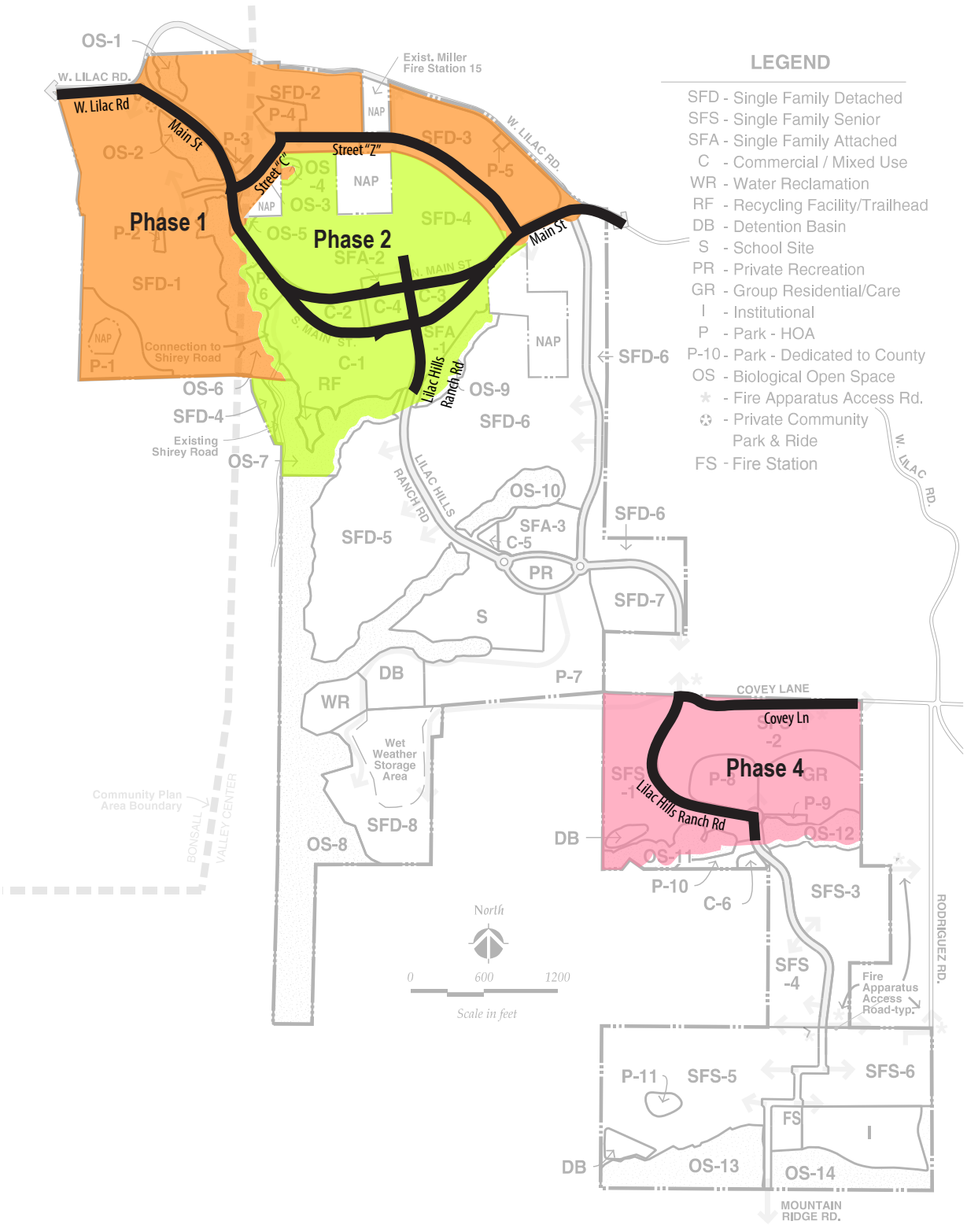


Traffic Analysis Phase B = Specific Phase 1 and Phase 4

Lilac Hills Ranch - Mountain Ridge Road
Fire Station Alternative

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Figure 4-2.B
Project Site Plan and Access - Traffic Analysis Phase B



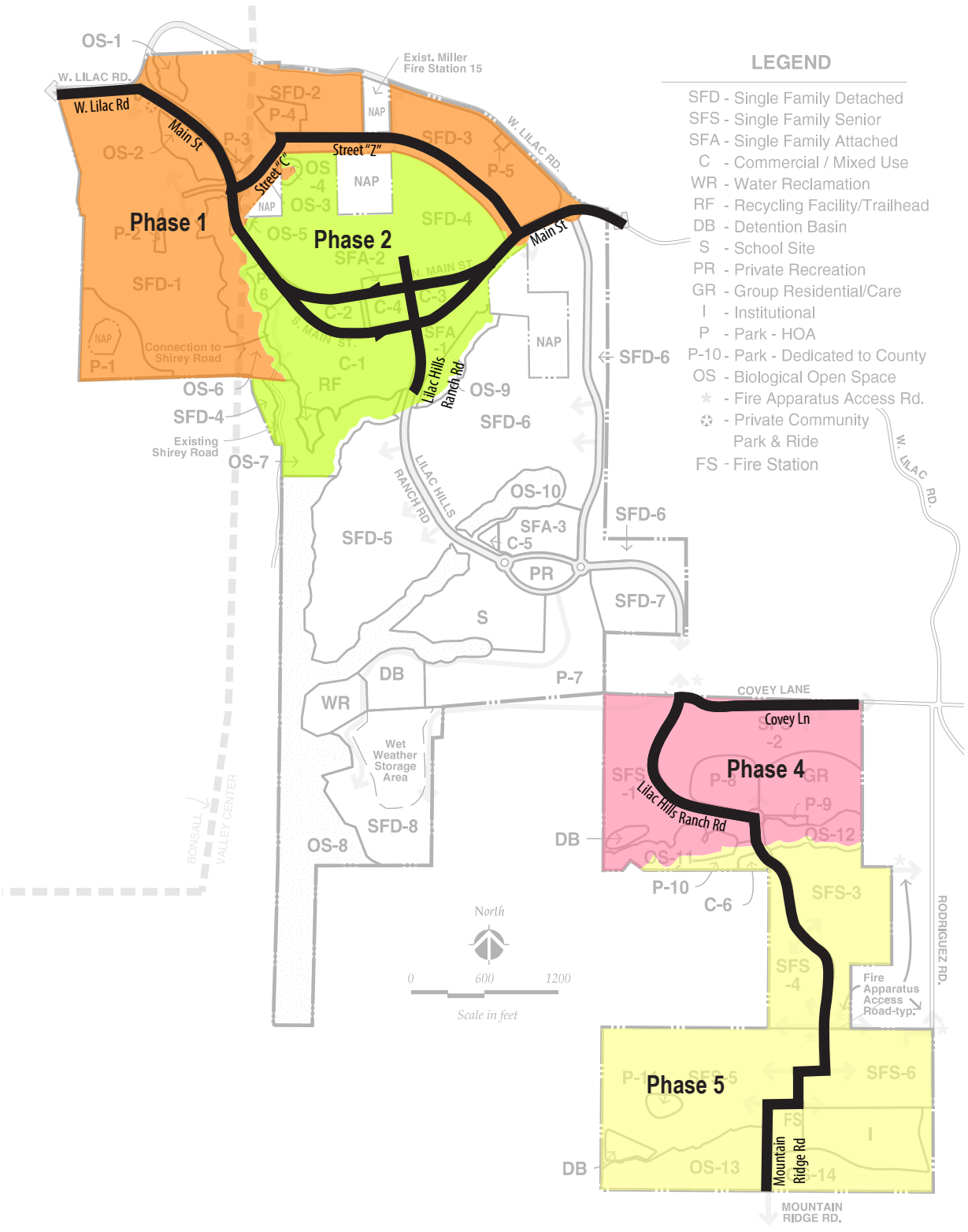
Traffic Analysis Phase C = Specific Phase 1, Phase 2 and Phase 4

NORTH

Lilac Hills Ranch - Mountain Ridge Road
Fire Station Alternative

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Figure 4-2.C
Project Site Plan and Access - Traffic Analysis Phase C



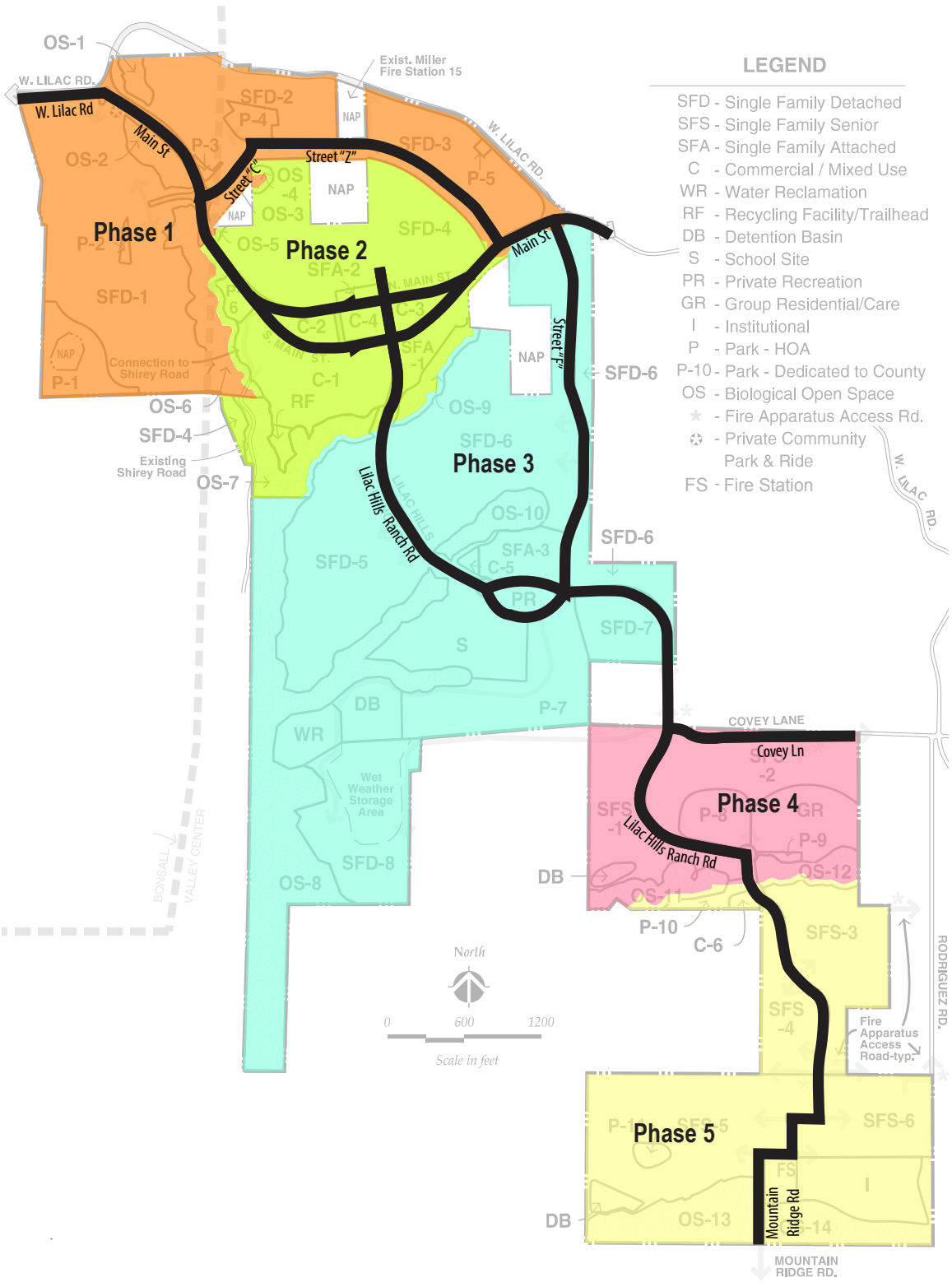
Traffic Analysis Phase D = Specific Phase 1, Phase 2, Phase 4 and Phase 5

NORTH

Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 4-2.D
Project Site Plan and Access - Traffic Analysis Phase D



Traffic Analysis Phase E = Specific Phase 1, Phase 2, Phase 3, Phase 4 and Phase 5

NORTH

Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

CHEN RYAN

Figure 4-2.E
Project Site Plan and Access - Traffic Analysis Phase E (Buildout)

Table 4.3 shows the project land use assumptions by traffic analysis phasing which represents the anticipated construction phasing. Phase E indicates project buildout. A number of statistical refinements were made to be consistent with the specific plan.

TABLE 4.3
PROJECT LAND USES BY TRAFFIC ANALYSIS PHASING
BY SANDAG LAND USE CATEGORY

SANDAG Equivalent Land Use	Unit	Phase A	Phase B	Phase C	Phase D	Phase E
Single Family	DU	352	352	548	548	903
Multi-Family	DU	-	-	270	270	375
Senior Community	DU	-	171	171	468	468
Assisted Living	Bed	-	200	200	200	200
Specialty Retail / Strip Commercial	KSF	-	-	55.0	57.5	61.5
Office	KSF	-	-	25.0	25.0	28.5
Country Inn / B&B	Room	-	-	50	50	50
Church	AC	-	-	-	10.0	10.0
Elementary School (K-5)	Student	-	-	-	-	568
Middle School (6-8)	Student	-	-	-	-	132
CPF (Recreation Center)	KSF	-	-	-	-	40.0
Neighborhood/County Park	AC	4.5	8.2	9.0	10.1	23.6
Water Reclamation	AC	-	-	-	-	2.4
Recycling Center	AC	-	-	0.6	0.6	0.6
Fire Station	Personnel	-	-	-	3	3

Source: Specific Plan Table 3, Chen Ryan Associates; May 2014

4.3 Project Trip Generation, Distribution, and Assignment

4.3.1 Project Trip Generation

Trip generation rates for the proposed Lilac Hills Ranch project were developed utilizing SANDAG's *Guide to Vehicular Traffic Generation Rates for the San Diego Region* (SANDAG, April 2002). **Tables 4.4** through **4.8** display daily, as well as AM and PM peak hour project trip generation for the five TA phases (A-E), respectively.

TABLE 4.4
LILAC HILLS RANCH PROJECT TRIP GENERATION - PHASE A
BY SANDAG LAND USE CATEGORY

SANDAG Equivalent Land Use	Units	Trip Rate	Daily Trips	AM Peak Hour		PM Peak Hour	
				%	Trips	%	Trips
Single Family	352	10 / DU	3,520	8%	282 (85-in / 197-out)	10%	352 (246-in / 106-out)
Neighborhood/County Park	4.5	5 / AC	23	4%	1 (1-in / 0-out)	8%	2 (1-in / 1-out)
Total by Phase A			3,543		283 (86-in / 197-out)		354 (247-in / 107-out)

Source: Chen Ryan Associates; May 2014

As shown in Table 4.4, Phase A of the proposed Lilac Hills Ranch project would generate a total of 3,543 daily trips, including 282 AM peak hour trips and 353 PM peak hour trips. Minor statistical refinements were made to be consistent with the specific plan under Phase A which resulted in an additional 27 daily trips including 2 AM peak hour trips and 3 PM peak hour trips. However, based upon a review of Section 5.1 (Existing Plus Project Phase A Conditions), this minor increase in trip generation would not result in additional deficient facilities or significant traffic impacts. Hence, the traffic impact analysis in Chapter 5 was not modified.

TABLE 4.5
LILAC HILLS RANCH PROJECT TRIP GENERATION - PHASE B
BY SANDAG LAND USE CATEGORY

SANDAG Equivalent Land Use	Units	Trip Rate	Daily Trips	AM Peak Hour		PM Peak Hour	
				%	Trips	%	Trips
Single Family	352	10 / DU	3,520	8%	282 (85-in / 197-out)	10%	352 (246-in / 106-out)
Senior Community	171	4 / DU	684	5%	34 (14-in / 21-out)	7%	48 (29-in / 19-out)
Assisted Living	200	2.5 / Bed	500	4%	20 (12-in / 8-out)	8%	40 (20-in / 20-out)
Neighborhood/County Park	8.2	5 / AC	41	4%	2 (1-in / 1-out)	8%	3 (1-in / 2-out)
Total by Phase B			4,745		338 (112-in / 226-out)		443 (296-in / 147-out)

Source: Chen Ryan Associates; May 2014

As shown in Table 4.5, the proposed Lilac Hills Ranch project would generate a total of 4,745 daily trips by the end of Phase B, including 338 AM peak hour trips and 443 PM peak hour trips. Minor statistical refinements were made to be consistent with the specific plan under Phase B which resulted in an additional 26 daily trips including 2 AM peak hour trip and 2 PM peak hour trips. However, based upon a review of Section 5.2 (Existing Plus Project Phase B Conditions), this minor increase in trip generation would not result in additional deficient facilities or significant traffic impacts. Hence, the traffic impact analysis in Chapter 5 was not modified.

TABLE 4.6
LILAC HILLS RANCH PROJECT TRIP GENERATION - PHASE C
BY SANDAG LAND USE CATEGORY

SANDAG Equivalent Land Use	Units	Trip Rate	Daily Trips	AM Peak Hour		PM Peak Hour	
				%	Trips	%	Trips
Single Family	548	10 / DU	5,480	8%	438 (131-in / 307-out)	10%	548 (384-in / 164-out)
Multi-Family	270	6 / DU	1,620	8%	130 (26-in / 104-out)	9%	146 (102-in / 44-out)
Senior Community	171	4 / DU	684	5%	34 (14-in / 21-out)	7%	48 (29-in / 19-out)
Assisted Living	200	2.5 / Bed	500	4%	20 (12-in / 8-out)	8%	40 (20-in / 20-out)
Specialty Retail / Strip Commercial	55.0	40 / KSF	2,200	3%	66 (40-in / 26-out)	9%	198 (99-in / 99-out)
Office	25.0	14 / KSF	350	15%	53 (47-in / 5-out)	15%	53 (11-in / 42-out)
Country Inn / B&B	50	9 / Room	450	8%	36 (14-in / 22-out)	9%	41 (24-in / 16-out)
Neighborhood/County Park	9.0	5 / AC	45	4%	2 (1-in / 1-out)	8%	4 (2-in / 2-out)
Recycling Center	0.6	6 / AC	4	11%	0 (0-in / 0-out)	10%	0 (0-in / 0-out)
Total by Phase C			11,333		779 (285-in / 493-out)		1,077 (671-in / 406-out)

Source: Chen Ryan Associates; May 2014

As shown in Table 4.6, the proposed Lilac Hills Ranch project would generate a total of 11,333 daily trips by the end of Phase C, including 779 AM peak hour trips and 1,077 PM peak hour trips. Minor statistical refinements were made to be consistent with the specific plan under Phase C which resulted in an additional 16 daily trips including 1 AM peak hour trip and 2 PM peak hour trips. However, based upon a review of Section 5.3 (Existing Plus Project Phase C Conditions), this minor increase in trip generation would not result in additional deficient facilities or significant traffic impacts. Hence, the traffic impact analysis in Chapter 5 was not modified.

TABLE 4.7
LILAC HILLS RANCH PROJECT TRIP GENERATION - PHASE D
BY SANDAG LAND USE CATEGORY

SANDAG Equivalent Land Use	Units	Trip Rate	Daily Trips	AM Peak Hour		PM Peak Hour	
				%	Trips	%	Trips
Single Family	548	10 / DU	5,480	8%	438 (131-in / 307-out)	10%	548 (384-in / 164-out)
Multi-Family	270	6 / DU	1,620	8%	130 (26-in / 104-out)	9%	146 (102-in / 44-out)
Senior Community	468	4 / DU	1,872	5%	94 (37-in / 56-out)	7%	131 (79-in / 52-out)
Assisted Living	200	2.5 / Bed	500	4%	20 (12-in / 8-out)	8%	40 (20-in / 20-out)
Specialty Retail / Strip Commercial	57.5	40 / KSF	2,300	3%	69 (41-in / 28-out)	9%	207 (104-in / 104-out)
Office	25.0	14 / KSF	350	15%	53 (47-in / 5-out)	15%	53 (11-in / 42-out)
Country Inn / B&B	50	9 / Room	450	8%	36 (14-in / 22-out)	9%	41 (24-in / 16-out)
Church	10.0	30 / AC	300	5%	15 (9-in / 6-out)	8%	24 (12-in / 12-out)
Neighborhood/County Park	10.1	5 / AC	51	4%	2 (1-in / 1-out)	8%	4 (2-in / 2-out)
Recycling Center	0.6	6 / AC	4	11%	0 (0-in / 0-out)	10%	0 (0-in / 0-out)
Fire Station*	3	5.33 / Personnel	16	2 / Personnel	6 (3-in / 3-out)	0 / Personnel	0 (0-in / 0-out)
Total by Phase D			12,943		861 (323-in / 539-out)		1,194 (738-in / 457-out)

Source: Chen Ryan Associates; May 2014

Note:
* The fire station is estimated to be 4,500 square feet and staffed with maximum 3-person crews. Since a fire station trip generation rate is not available in both SANDAG's Guide to Vehicular Traffic Generation Rates for the San Diego Region (SANDAG, April 2002) and ITE Trip Generation Manual (8th Edition), a trip generation survey was conducted at existing fire stations in the area of the project. A total of nine fire stations participated in the survey and it was determined that the average daily trip per personnel is 4.34 trips, while the highest is 5.33. The 5.33 trips/personnel rate was chosen to utilize the most conservative trip generation rate. As a result, the 4,500 square-foot Lilac Hills Ranch project fire station is estimated to generate 16 trips per day. The detailed fire station trip generation survey data is included Appendix H.

As shown in Table 4.7, the proposed Lilac Hills Ranch project would generate a total of 12,943 daily trips by the end of Phase D, including 861 AM peak hour trips and 1,194 PM peak hour trips. Minor statistical refinements were made to be consistent with the specific plan under Phase D which resulted in a reduction of 9 daily trips. Since this decrease in trip generation

would not change the findings in deficient facilities or significant traffic impacts in Section 5.4 (Existing Plus Phase D Conditions), the traffic impact analysis in Chapter 5 was not modified.

TABLE 4.8
LILAC HILLS RANCH PROJECT TRIP GENERATION - PHASE E (BUILDOUT)
BY SANDAG LAND USE CATEGORY

SANDAG Equivalent Land Use	Units	Trip Rate	Daily Trips	AM Peak Hour		PM Peak Hour	
				%	Trips	%	Trips
Single Family	903	10 / DU	9,030	8%	722 (217-in / 506-out)	10%	903 (632-in / 271-out)
Multi-Family	375	6 / DU	2,250	8%	180 (36-in / 144-out)	9%	203 (142-in / 61-out)
Senior Community	468	4 / DU	1,872	5%	94 (37-in / 56-out)	7%	131 (79-in / 52-out)
Assisted Living	200	2.5 / Bed	500	4%	20 (12-in / 8-out)	8%	40 (20-in / 20-out)
Specialty Retail / Strip Commercial	61.5	40 / KSF	2,460	3%	74 (44-in / 30-out)	9%	221 (111-in / 111-out)
Office	28.5	14 / KSF	399	15%	60 (54-in / 6-out)	15%	60 (12-in / 48-out)
Country Inn / B&B	50	9 / Room	450	8%	36 (14-in / 22-out)	9%	41 (24-in / 16-out)
Church	10.0	30 / AC	300	5%	15 (9-in / 6-out)	8%	24 (12-in / 12-out)
Elementary School (K-5)	568	1.6 / Student	909	32%	291 (175-in / 116-out)	9%	82 (33-in / 49-out)
Middle School (6-8)	132	1.4 / Student	185	30%	56 (33-in / 22-out)	9%	17 (7-in / 10-out)
CPF (Recreation Center[1])	40.0	22.88 / KSF	915	12%	108 (57-in / 51-out)	10%	95 (38-in / 57-out)
Neighborhood/County Park	23.6	5 / AC	118	4%	5 (2-in / 2-out)	8%	10 (5-in / 5-out)
Water Reclamation	2.4	6 / AC	14	11%	2 (1-in / 1-out)	10%	1 (1-in / 1-out)
Recycling Center	0.6	6 / AC	4	11%	0 (0-in / 0-out)	10%	0 (0-in / 0-out)
Fire Station*	3	5.33 / Personnel	16	2 / Personnel	6 (3-in / 3-out)	0	0 (0-in / 0-out)
Total by Phase E - Buildout			19,422		1,669 (695-in / 973-out)		1,829 (1,115-in / 714-out)
Internal Capture			22%		30%		22%
Total External Trips			15,167		1,177 (434-in / 742-out)		1,433 (908-in / 525-out)

Source: Specific Plan Table 3, Chen Ryan Associates; May 2014

Note:
[1] Trip generation rate is based on ITE Trip Generation Manual 8th Edition.

As shown in Table 4.8, the proposed Lilac Hills Ranch project would generate a total of 19,422 daily trips by the end of Phase E (project buildout), including 1,669 AM peak hour trips and 1,829 PM peak hour trips. Minor statistical refinements were made to be consistent with the specific plan under Phase E which resulted in a reduction of 22 daily trips. Since this decrease in trip generation would not change the findings in deficient facilities or significant traffic impacts in Section 5.5 (Existing Plus Phase E Conditions), the traffic impact analysis in Chapter 5 was not modified.

An interim fire station with up to three (3) staff could be located anywhere within the project site. However, this fire station (approximately 16 ADT) would be built in place of two equivalent dwelling units (20 ADT) and would not result in additional traffic to the overall project based on the fire station trip generation survey.

Each trip generation rate includes a number of trip purposes, generally categorized as home based work (HBW), home based other (HBO, consists of shopping, school, recreation, etc.) and non-home based (NHB) trips. For developments with mixed land uses, many of the trips generated would have been served on-site. For example, shopping trips (a part of HBO) would be satisfied by the commercial uses within the project site, as would school trips and recreational trips. The same logic would apply to the trip production/attraction interactions between office and commercial uses. It is a common practice, both nationwide and in the San Diego region, to allow for trip reductions reflecting the internal capture of trips associated with mixed-use developments resulting from the fact that complementary land uses (i.e. residential and commercial) help to serve each other's needs on-site.

The proposed Lilac Hills Ranch project includes residential, commercial, office, school, and recreational uses and not all trips generated would leave the project site given the nature of the project land uses. Estimates for internal versus external trip generation percentages were developed based upon likely origins/destinations of each land use type. Project trips were disaggregated into those that would remain within the project site (internally captured), and those that would leave the project site (external trips). Only external trips were distributed and assigned to the study area roadways at project buildout (Phase E).

As shown in Table 4.8, 22% of daily trips, 30% of AM peak hour trips, and 22% of PM peak hour trips were considered as internal trip capture rates for this TIS. The proposed on-site K-8 school is intended to serve the Lilac Hills Ranch project. A majority of the traffic generated by this school would be internal trips which would not leave the project site. Based on the SANDAG's Guide to Vehicular Traffic Generation Rates for the San Diego Region (SANDAG, April 2002), approximately one-third of school trip generation occurs during the AM peak hour. Therefore, a higher AM peak hour internal capture rate of 30% (vs. 22% for daily and for the PM peak hour) is utilized for the overall project.

For comparison purposes, a SANDAG Select Zone Assignment was conducted with the entire project land uses modeled in one Traffic Analysis Zone (TAZ) and the model output indicated a 28.8% daily internal capture rate for this project. The ITE Multi-Use Trip Generation Calculation was also performed and it resulted in internal capture rates of 22.2% (daily), 35.8% (AM peak),

and 22.3% (PM peak). Both the SANDAG model output and ITE Multi-Use Trip Generation Calculation worksheets are included in **Appendix I**.

Specialty Retail and Single Tenant Office Discussion

The project could include the following commercial/retail uses as listed in the Project's Specific Plan document. The specific commercial retail tenants are not known at this time.

Lilac Hills Ranch will include an 80,000 square foot mixed-use pedestrian oriented town center. The town center is designed to feature specialty retail stores, such as a butcher shop, bakery, deli, general merchandise store (general store), hardware store, drug store and produce vendors. By using a number of specialty retailers, residents within the community would be able to visit a variety of different businesses without generating additional vehicle trips to travel to different locations to meet their needs. The town center will be centered along a main street with individual merchant storefronts contributing to the pedestrian orientation, contrary to large commercial grocery centers which combine all of these uses under one big-box structure. Other allowable uses within the Town Center include single-family attached residential; commercial and residential mixed-use; restaurants, cafes; a Farmer's Market; a 50-room Country Inn; single tenant offices and flex-office space such as co-merge; veterinary clinic with boarding of small animals; public uses, religious institutional; post office, library; quasi-public uses such as a day care facility; transit node; utilities necessary to serve the Specific Plan area and other uses as authorized by the C34 Use Regulation.

As part of the specialty retail, the town center will include a general store of up to 25,000 square feet of leasable area, which is designed as a rural general merchandise store that carries a broad selection of merchandise, staple food items, household goods and specialty items. The store is intended as the place where people from the town and surrounding rural areas come to purchase all their general goods. This differs from a convenience store or grocery store in that it will be the main shop for the community rather than a regional grocery store that typically exceed 50,000 square feet of leasable area. The concept of the general store originated in many historic towns and villages when it was an important feature of a pedestrian-oriented place.

Lilac Hills Ranch will also include two neighborhood centers, supporting up to 2,500 square feet and 7,500 square feet of leasable area respectively. Allowable uses within the Neighborhood Centers include single-family attached residential, neighborhood-serving commercial; schools; retail shops and services; restaurants and cafes; private recreation facilities; veterinary clinic with boarding of small animals; public uses; religious and institutional uses; quasi-public uses such as a day care facility; transit node; post office and library; utilities necessary to serve the Specific Plan area and other uses as authorized by the C34 Use Regulations.

A. SANDAG TRIP RATES

Specialty Retail

In analyzing the potential impacts associated with the project, the Lilac Hills Ranch traffic study (TIS) utilized a trip generation rate referred to as "Specialty Retail/Strip Commercial" ("SR/SC") for the future commercial/retail uses. The SR/SC rate is 40 vehicle trips per thousand square feet. This rate was derived utilizing SANDAG's Guide to Vehicular Traffic Generation Rates for the San Diego Region (April 2002).

SANDAG describes the SR/SC type of commercial use in its 9/18/07 land use definitions (See **Appendix J**) as "tourist or specialty commercial shopping areas such as Seaport Village, Marina Village, Ferry Landing at Coronado, Bazaar del Mundo, Flower Hill, Glasshouse Square, The Lumberyard, Park Plaza at the Village, Promenade, Belmont Park, Del Mar Plaza." (http://www.sandag.org/resources/maps_and_gis/gis_downloads/downloads/codes/Land_Use_Definitions.html). Importantly, however, although some of the illustrative examples include "tourist" areas, which differ from the uses proposed as part of the Lilac Hills Ranch project, the majority of the shopping areas listed by SANDAG include high traffic generating land uses including sit down high turnover restaurants that would generate 160 ADT/1,000 SF, fast food restaurants that would generate 700 ADT/1,000 SF, and convenience market (7-Eleven) that would generate 700 ADT/1,000 SF, as well as a variety of other different businesses such as a small general market. The following table describes some of the land uses included in the SANDAG listed example sites:

SANDAG Selected Site	Example Land Uses
Seaport Village	• Restaurants (Edgewater Grill, Greek Islands Café, Harbor House, etc.) • Banks (ATM Direct, Chase, Wells Fargo, etc.) • Shops (The Candy Shack, Wetzel's Pretzels, Crazy Shirts, Destination Travel, Paradise Bakery, etc.)
Coronado Ferry Landing	• Restaurants (Burger King, Village Pizzeria Bayside, Little Piggy's BBQ, Peohe's Restaurant, etc.) • Shops (Art for Wildlife Galleries, Coronado Cupcakery, Bikes & Beyond, Men's Inland Sportswear, Cold Stone Creamery, etc.)
Flower Hill	• Restaurants (Milton's Restaurant, Chipotle Mexican Grill, Burger Lounge, Pannikin Coffee & Tea, etc.) • Shops (Yogurt-Land, Geppeto's Toys, Spa Gregories, Corepower Yoga, The Wine Connection, etc.) • convenience market with gas pumps (Mobil/Circle K)
GlassHouse Square	• Restaurants (Del Taco, In-N-Out Burger, Chuck E Cheese, Panda Express, etc.) • Shops (T Mobile, Sleep Train, etc.) • convenience market (7-Eleven)
Del Mar Plaza	• Restaurants (Del Mar Rendezvous, Smashburger, Pacifica Breeze Cafe, Pacifica Del Mar, etc.) • Shops (White House/Black Market, Haim Salon, Del Mar Chocolate Bar, Sunglass Hut, etc.) • Supermarket (Harvest Ranch - since closed)

Despite a number of high traffic generating land uses, SANDAG has assigned a trip rate of 40 ADT/1,000 SF for these types of commercial uses, as opposed to rates of over 100 ADT/1,000 SF that otherwise would apply. However, while the SR/SC rate appears low relative to restaurant or grocery store trip rates, the lower rate accounts for the fact that each use is located within walking distance of the other uses. That is the essence of each of the specialty commercial shopping areas SANDAG listed as examples in describing the rate – one vehicle trip to Seaport Village or Flower Hill, for example, would potentially enable the driver to visit a half dozen different businesses without generating additional vehicle trips, thereby substantially reducing the number of trips that otherwise would be generated if these uses were situated in different locations requiring a separate trip to each location.

Similarly, Lilac Hills Ranch is to be developed into a pedestrian oriented self-sustainable community in which all of the residential units would be located within one-half-mile of the community serving commercial areas, and the commercial areas would include multiple businesses. This plan would similarly promote walking and cycling, and the related reduction of vehicular travel.

Overall, because the project does not propose the type of high traffic generating, high turnover type land uses that in part characterize the commercial uses utilized by SANDAG in calculating the 40/1,000 SF SC/SR rate, the project land uses are expected to generate **less** traffic than what the SANDAG defined commercial uses would generate (as described above) and therefore the SR/SC rate is the most appropriate for this analysis.

Single Tenant Office

In analyzing the potential impacts associated with the project, the Lilac Hills Ranch traffic study (TIS) utilized a trip generation rate referred to as "Single Tenant Office" for the proposed office uses. The single tenant office rate is 14 vehicle trips per thousand square feet. This rate was derived utilizing SANDAG's Guide to Vehicular Traffic Generation Rates for the San Diego Region (April 2002).

As identified previously, the project proposes single tenant offices and flex-office space such as co-merge. Co-merge/co-working office spaces provide an official work space for tele-commuters, start-ups, consultants, small businesses, and non-profits. These spaces offer a variety of amenities, including but not limited to official mailing addresses and mail boxes, phone routing and event spaces.

Phone interviews were conducted on 3/3/2014 with seven (7) co-merge/co-working office spaces in the San Diego region and the table below displays the location of the office space, the average people that use the office per day, the square feet of the office space, and the average people per thousand square feet (KSF).

Company Name	Location	Average People Per Day	Sq. Ft	People Per KSF
Hive-Haus	East Village	25	5,500	5
PBC Carlsbad	2173 Salk Ave.	40	18,469	3
Ansir Innovations	4685 Convoy St. #210	35	13,000	3
Co-Merge SD	330 A Street	50	10,000	5
Hera-Hub	Serrento Valley	15	4,800	4
	Mission Valley	15	4,000	4
	Carlsbad	15	3,700	5

Source: Chen Ryan Associates; May 2014

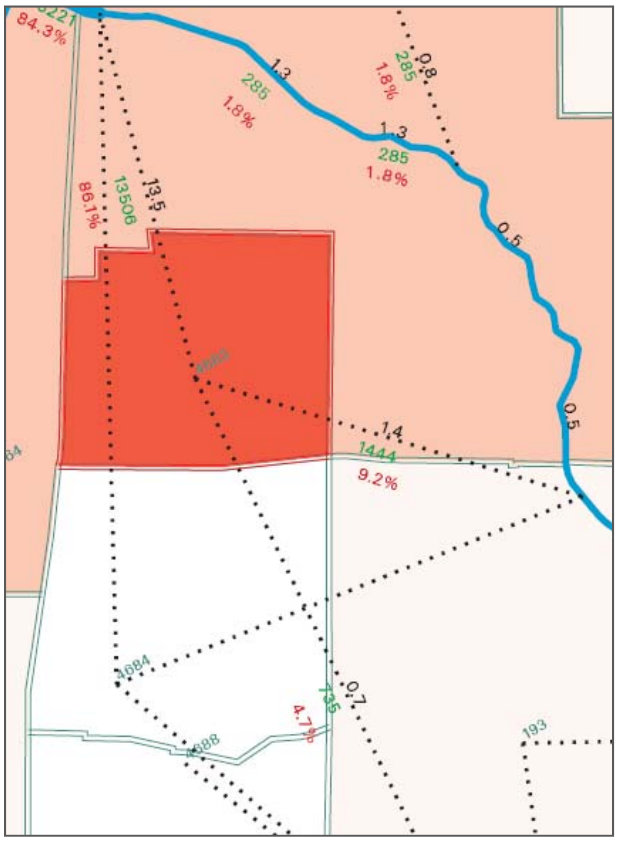
As shown above, there are roughly 4 people per thousand square foot of office space in the respondent locations. *ITE Trip Generation Manual, 9th Edition* includes a trip generation rate per employee for general office uses (see Appendix J), and this rate is 3.32 per employee. With an average of 4 people per 1KSF as determined based on other similar uses, a trip generation rate of 13.3 trips per 1KSF was derived for co-merge/co-working office. This rate of 13.3 is **less** than the rate of 14 which is utilized in the TIS for impact assessment.

B. VALIDATION EXERCISE

To illustrate the propriety of use of the 40/1,000 SF trip generation rate for the Lilac Hills Ranch commercial/retail uses, the traffic engineer worked with SANDAG to conduct a new select zone assignment that replaced 25,000 SF of space analyzed in the TIS at the SR/SC rate of 40/1,000 SF with a "supermarket" trip rate of 150/1,000 SF, which is the rate typically applied to high traffic, large-scale grocery stores such as Von's or Ralphs. The new select zone assignment also replaced 28,500 SF of single-tenant office space analyzed in the TIS at a rate of 14/1,000 SF with 28,500 SF of space analyzed at the "standard commercial office" trip rate of 20/1,000 SF. All other land uses, amounts, and trip rates utilized were unchanged from those in the TIS. The purpose of the analysis was to determine whether use of these higher trip generation rates for these two use types would alter the results of the analysis presented in the TIS.

Below is a screenshot showing the specific land uses that were coded into the model by SANDAG. As shown, the uses included the "LH Supermarket" and "Standard Commercial Office." Based on the land use mix coded into the model for this exercise, SANDAG forecasts an internal capture rate of 30.5%, which reflects the higher attraction rate attributable to a "supermarket" use than "specialty retail/strip commercial" uses.

Zone	Code	Name	Type	Amount	Person Trips	Vehicle Trips
		Land Use				
4683	112	LH SENIOR SINGLE FAMILY	du	468.0	2902.	2025.
4683	121	SINGLE FAMILY	du	903.0	13003.	9076.
4683	122	MULTI-FAMILY	du	375.0	3225.	2264.
4683	1410	CONGREGATE CARE	other	200.0	720.	506.
4683	1512	LH BED & BREAKFAST	room	50.0	815.	502.
4683	2302	RECYCLING CENTER	site	0.6	4.	4.
4683	5014	LH SUPERMARKET	ksf	25.0	5297.	3749.
4683	5030	STRIP COMMERCIAL	ksf	36.5	1832.	1331.
4683	6032	STANDARD COMMERCIAL OFFICE	ksf	28.5	744.	573.
4683	6119	WATER RECLAMATION	site	2.4	20.	14.
4683	6132	CHURCH	acre	10.0	391.	301.
4683	6806	ELEMENTARY SCHOOL	site	1.0	2117.	1183.
4683	7230	LH YMCA	ksf	40.0	1344.	917.
4683	7613	LH ACTIVE PARK II	site	23.6	182.	120.
4683		TOTAL			32597.	22564.



External trips
= 13,506 + 1444 + 735
= 15,685 daily trips

Internal Capture %
= (22,564 - 15,685) / 22,564
= 30.5%

As shown, the internal capture rate would increase to 30.5% with supermarket and standard commercial office uses.

Once the information was coded into the SANDAG model, the next step was to calculate the number of external trips that would be generated under this scenario, i.e., the number of external trips that would be generated under a scenario assuming a 25,000 SF supermarket and 28,500 SF of standard commercial office space. **Table 4.9** illustrates the calculations undertaken and the results of that process.

TABLE 4.9
TRIP GENERATION COMPARISON

Scenario	Total Trip Generation			External Trip Generation		
	Daily	AM Peak	PM Peak	Daily	AM Peak	PM Peak
Studied in this TIS (22% internal capture)	19,406	1,663	1,828	15,141	1,171	1,432
w/ 25 KSF Supermarket & 28.5 KSF Standard Office (30.5% internal capture)	22,327	1,802	2,126	15,517	1,252	1,478
25 KSF Supermarket (30.5% internal capture)	*3,750*	*150*	*375*	*2,606*	*104*	*261*
Pass-by Reduction (15% daily/AM & 40% PM)				-391	-16	-104
Transit Reduction[1] (5% AM and PM)				-131	-62	-69
Final Trip Generation w/ 25 KSF Supermarket & 28.5 KSF Standard Office				14,995	1,174	1,305
Change in Trip Generation				-146	+3	-127

Source: Chen Ryan Associates; May 2014

Note:
[1]As indicated in Chapter 15 (Transportation Demand Management Program) of this TIS, an interim transit connections would be provided between Lilac Hills Ranch and the planned regional transit system, until such transit system is extended to the community.

As shown in Table 4.9, the number of external trips that would be generated by the project assuming a 25,000 square-foot supermarket and 28,500 square feet of standard commercial office uses (14,995 ADT) would be almost identical to the number of external trips that would be generated under the land uses and trip rates utilized in the TIS (15,141 ADT). Therefore, it can be concluded that the trip rates used in the TIS are reasonable and accurate, and the conclusions reached in the TIS would not change even if different trip rates had been utilized for the commercial retail and office spaces proposed under the project.

Plan-to-Plan Trip Generation

Table 4.10 displays the amount of traffic generated by the project which exceeds the amount generated by the General Plan approved land uses.

4.3.2 Project Trip Distribution

The distribution of the external project trips was based upon three (3) computer generated "Select Zone" assignments utilizing the Series 12 Year 2050 SANDAG Transportation Model, including 2008 base year, 2050 with Road 3, and without Road 3. The "Select Zone" assignments are included in **Appendix K**. It is important to note that manual adjustments were made to reflect the removal of all gates along Lilac Hills Ranch Road for Phase D and beyond.

Separate trip distributions were developed in conjunction with the varying roadway networks assumed under each of the analysis scenarios, as discussed below:

- Existing + Project (phased) – based upon the "2008 base year" assignments with minor adjustments reflecting project access and frontage assumptions for each of the traffic analysis phases. **Appendix L** includes project trip distribution by phase along project frontage and access roads. The Mountain Ridge Road Fire Station Alternative proposed to convert Mountain Ridge Road from a private road to a public road in conjunction with the construction of Phase D of the project. Since Mountain Ridge Road remained as a private road under Phases A-C of the project (no direct access from the project site), project trips distribution for Phases A-C of the Mountain Ridge Road Fire Station Alternative are the same as the project trips distribution of the project.

- Existing + Cumulative Projects + Project (buildout) – based on the "Existing Plus Project (Phase E – Buildout)" assignments due to transportation network similarities. Pankey Road, north of SR-76 would be constructed with cumulative projects such as Campus Park, Campus Park West, and Meadowood.

- Horizon Year with Road 3 Base + Project (buildout) – based on the "2050 with Road 3" assignments with minor adjustments reflecting project access and frontage assumptions for each of the traffic analysis phases. Appendix L includes project trip distribution by phase along project frontage and access roads. Trip generation shown in Table 4.10 above was utilized for this scenario.

- Horizon Year without Road 3 Base + Project (buildout) – based on the "2050 without Road 3" assignments with minor adjustments reflecting project access and frontage assumptions for each of the traffic analysis phases. Appendix L includes project trip distribution by phase along the project frontage and access roads. Trip generation shown in Table 4.10 above was utilized for this scenario.

TABLE 4.10
LILAC HILLS RANCH INTERNAL AND EXTERNAL PROJECT TRIPS
HORIZON YEAR – GP CONSISTENCY ANALYSIS

Land Use	Quantity	Total Trips			Internal Trips				External Trips			
		Daily	AM Peak Hour	PM Peak Hour	% Internal	Daily	AM Peak Hour	PM Peak Hour	% External	Daily	AM Peak Hour	PM Peak Hour
Lilac Hills Ranch Project		19,406	1,663 (692-in / 970-out)	1,828 (1,115-in / 713-out)	22%	4,266	492 (261-in / 231-out)	395 (206-in / 189-out)	78%	15,141	1,171 (431-in / 739-out)	1,432 (908-in / 525-out)
Rural Residential (General Plan Approved)	-110 DU	-1,320	-106 (-32-in / -74-out)	-132 (-92-in /- 40-out)	0%	0	0 (0-in / 0-out)	0 (0-in / 0-out)	100%	-1,320	-106 (-32-in / -74-out)	-132 (-92-in / -40-out)
Traffic Added to the GP Network		18,086	1,557 (660-in / 896-out)	1,696 (1,023-in / 673-out)	22%	4,266	492 (261-in / 231-out)	395 (206-in / 189-out)	78%	13,821	1,065 (399-in / 665-out)	1,300 (816-in / 485-out)

Source: Chen Ryan Associates; May 2014

Figures 4-3 through **4-7** display the project trip distribution patterns associated with the existing network for the various traffic analysis phases, respectively. **Figures 4-8** and **4-9** display the project trip distribution patterns associated with the Horizon Year mobility element network with and without Road 3, respectively.

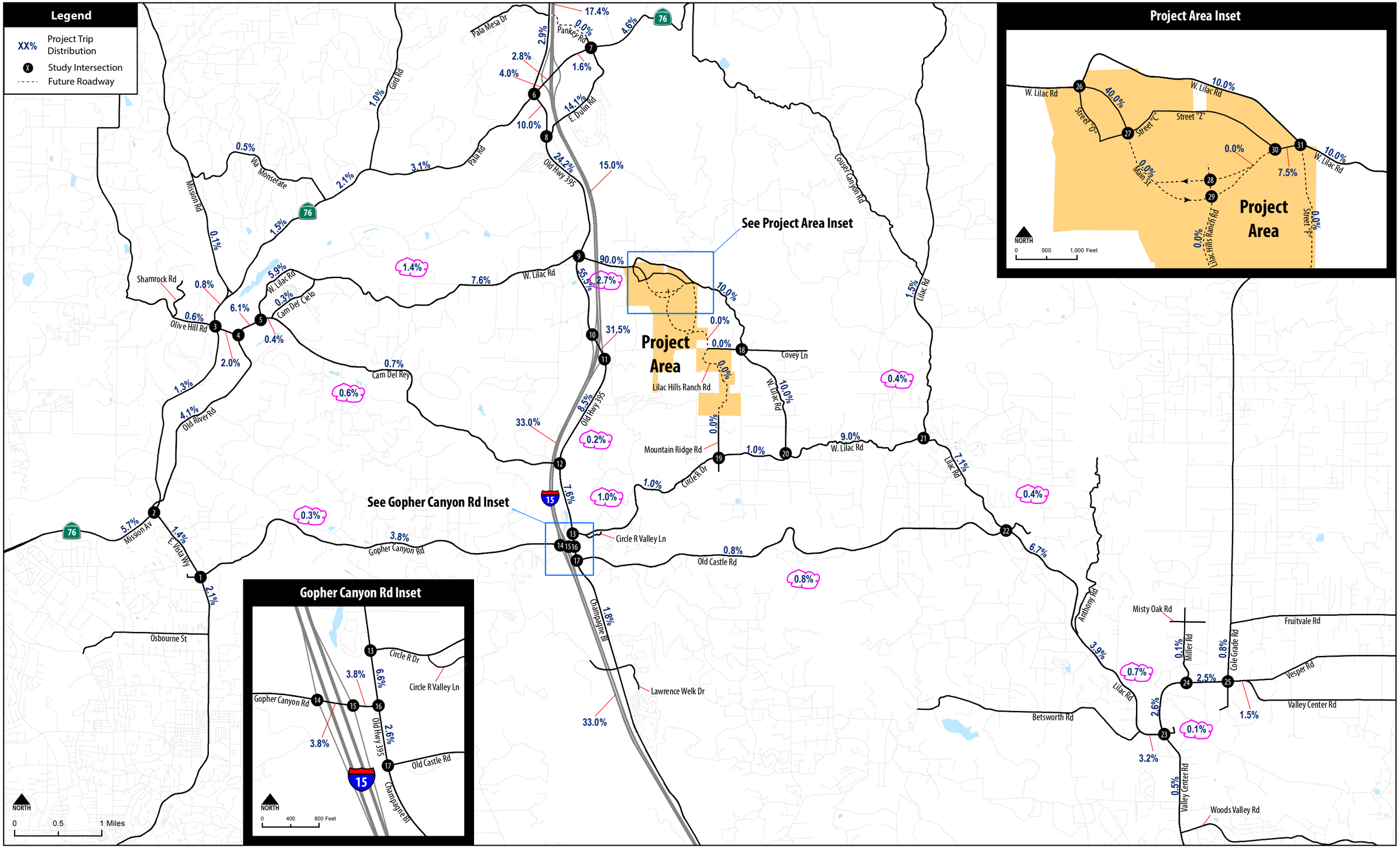
4.3.3 Project Trip Assignment

Based upon the project trip distributions, the external daily and AM/PM peak hour project trips were assigned to the various roadway networks. Seven (7) separate sets of trip assignments were developed including the following:

- Project Phase A land uses on the existing network
- Project Phase B land uses on the existing network
- Project Phase C land uses on the existing network
- Project Phase D land uses on the existing network
- Project Buildout land uses on the existing network
- Project Buildout land uses on the Horizon Year mobility element network with Road 3
- Project Buildout land uses on the Horizon Year mobility element network without Road 3

Figures 4-10A through **4-14B** display the assignment of project trips to the Existing roadway networks and key study area intersections under the various traffic analysis phases.

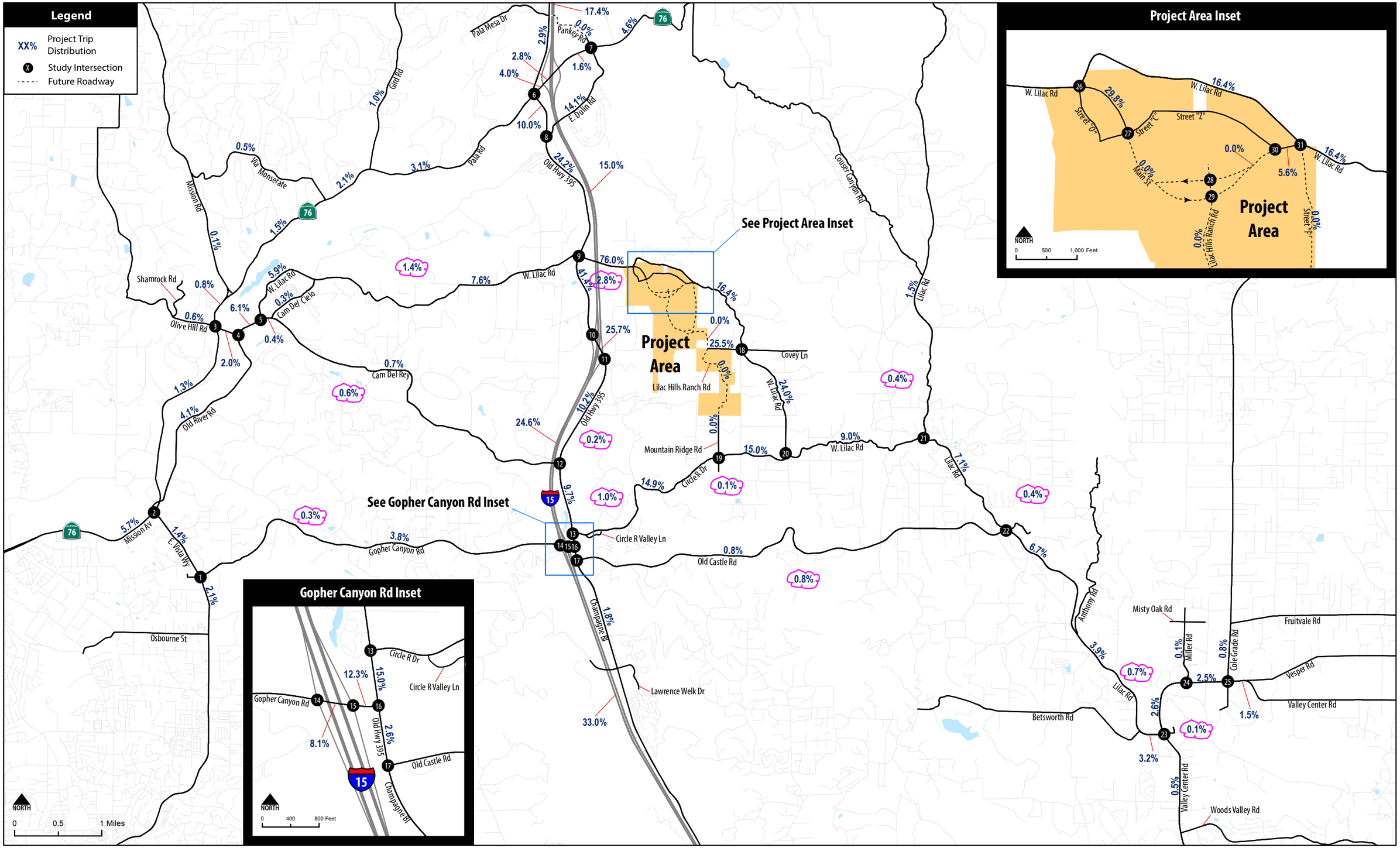
Similarly, **Figures 4-15A** and **4-16A** display the assignment of project trips to the respective Horizon Year (with and without Road 3) roadway networks.



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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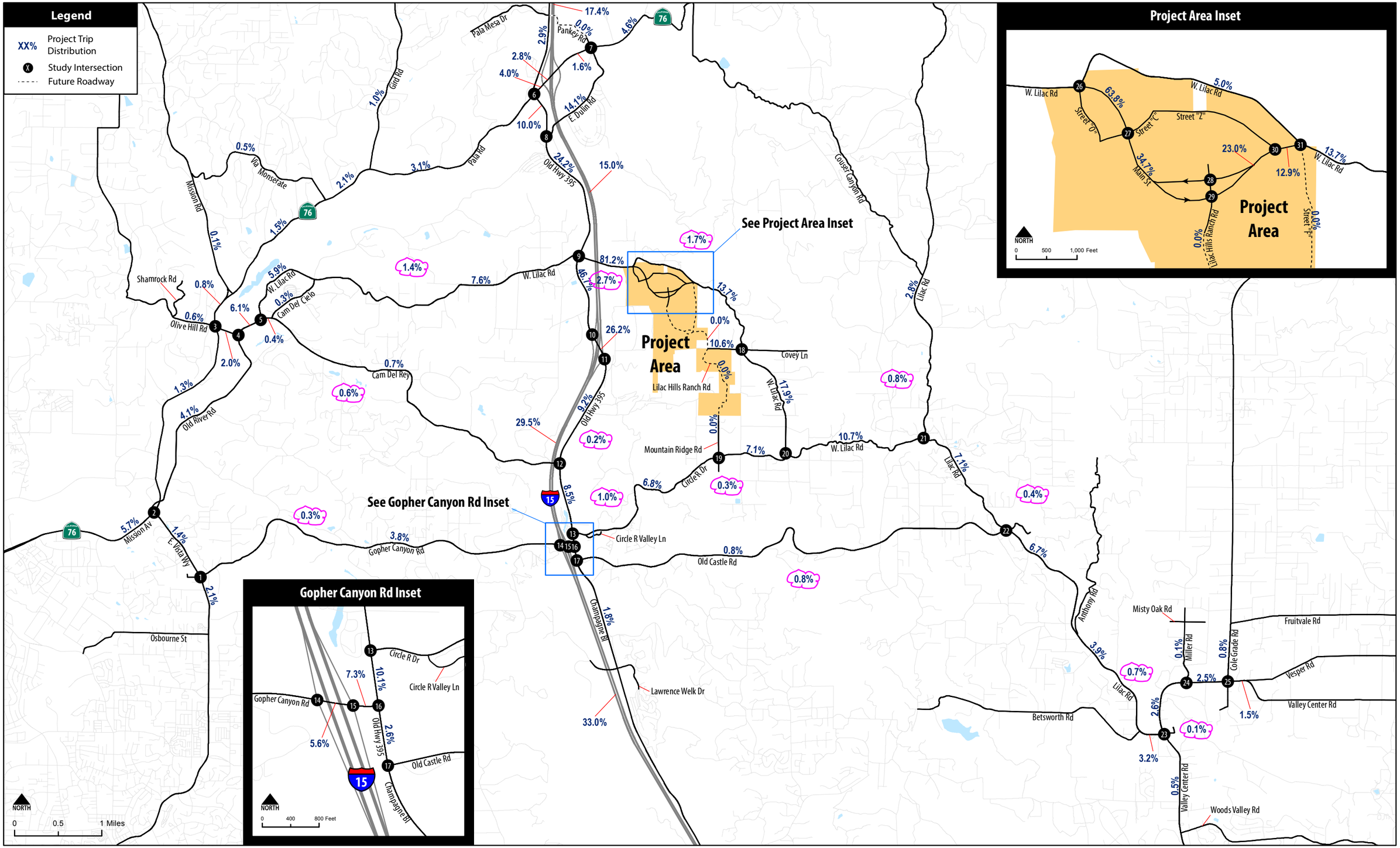
Figure 4-3
Project Trip Distribution (Phase A) - Existing Network



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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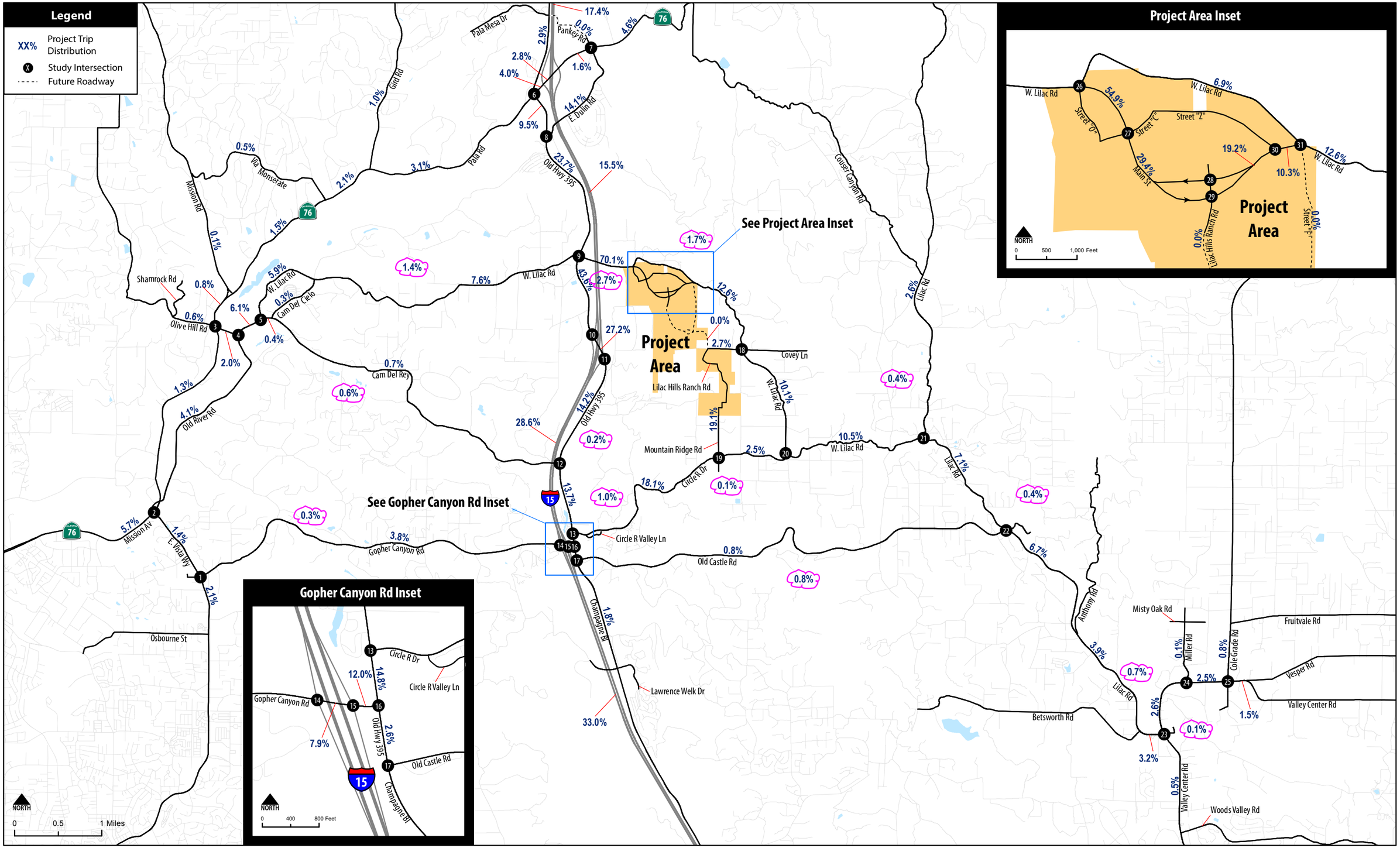
Figure 4-4
Project Trip Distribution (Phase B) - Existing Network



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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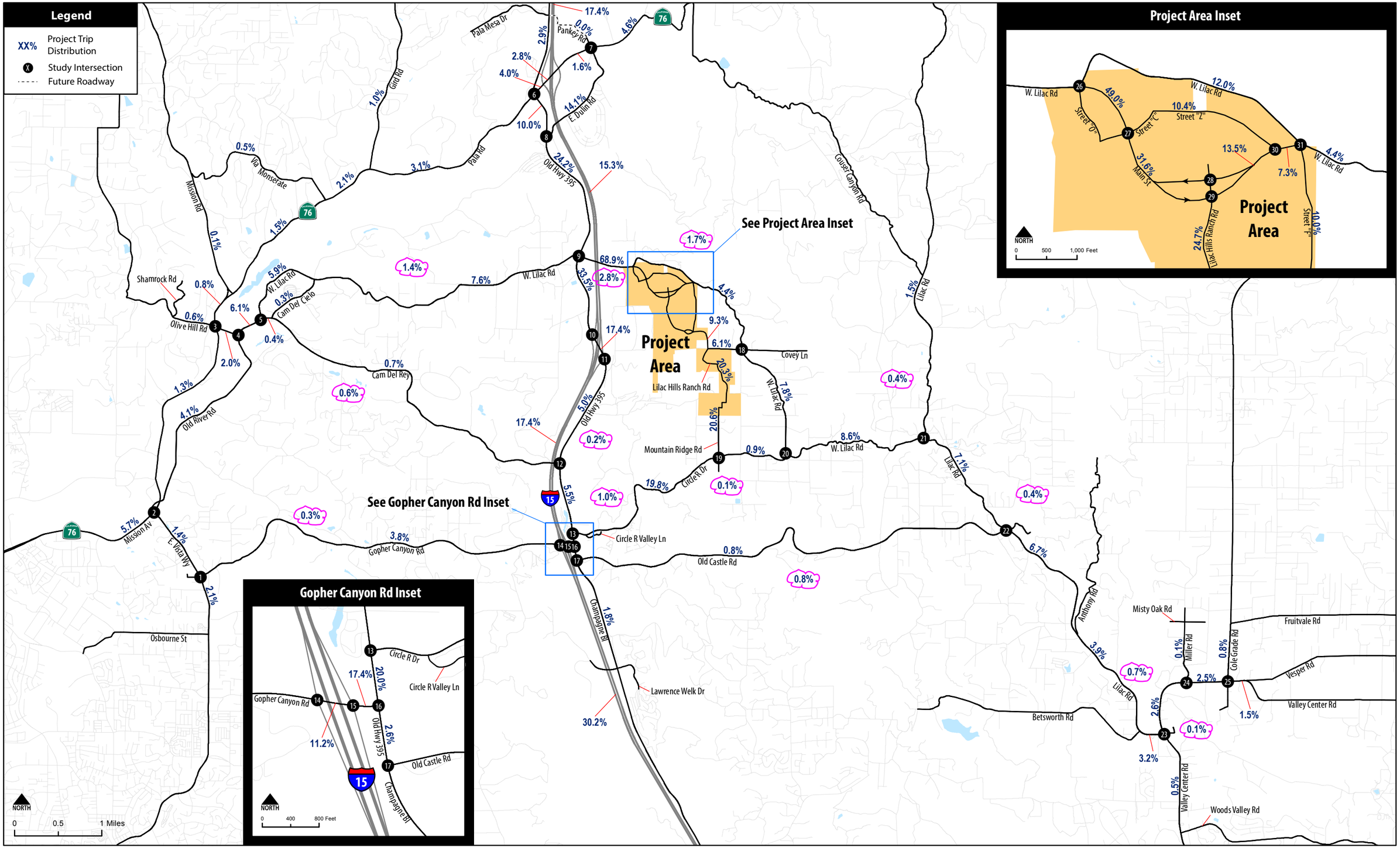
Figure 4-5
Project Trip Distribution (Phase C) - Existing Network



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 4-6
Project Trip Distribution (Phase D) - Existing Network

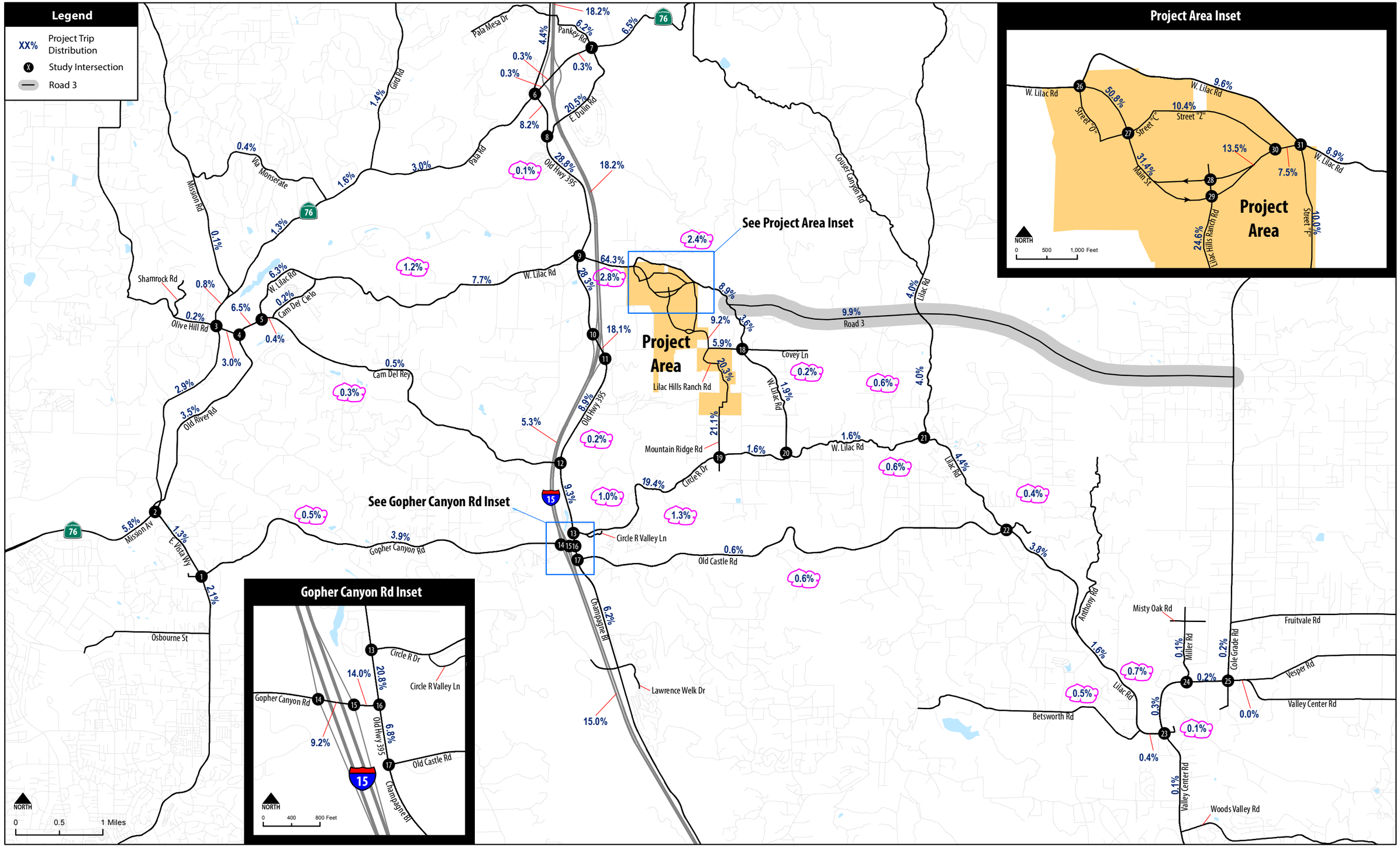


Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 4-7

Project Trip Distribution (Phase E, Buildout) - Existing Network

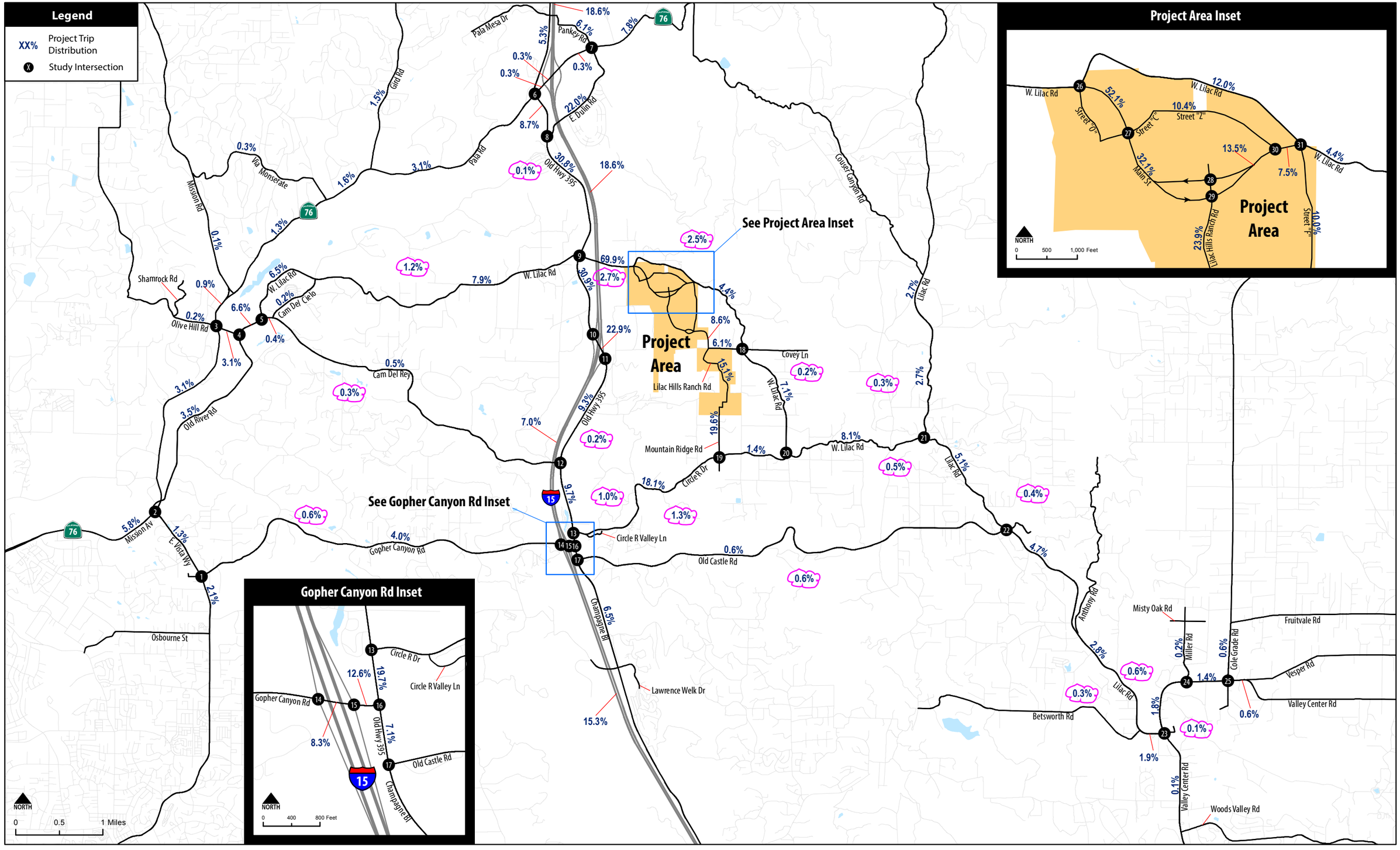


Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

Figure 4-8

Project Trip Distribution (Buildout) - Horizon Year Network with Road 3

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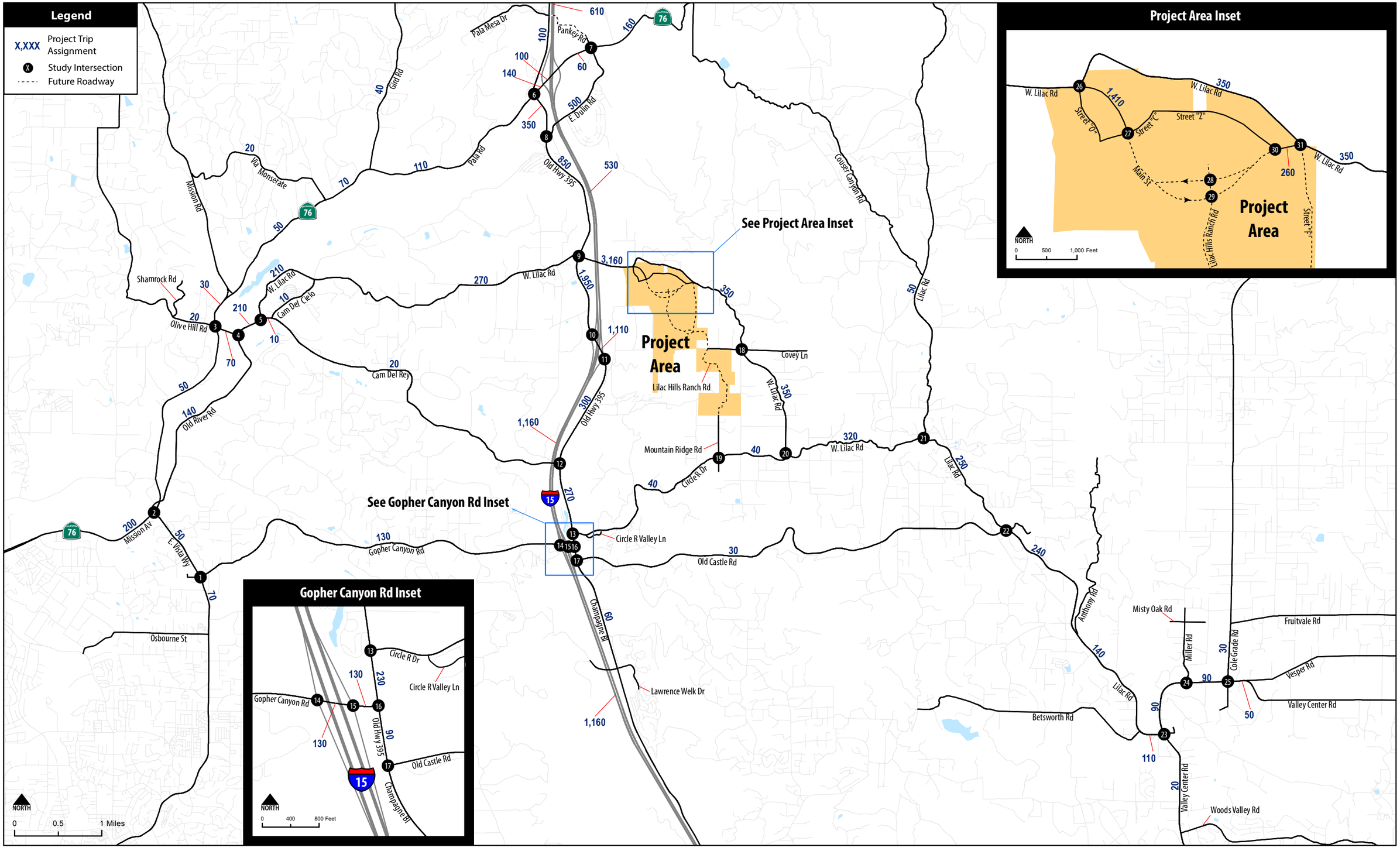


Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 4-9

Project Trip Distribution (Buildout) - Horizon Year Network without Road 3

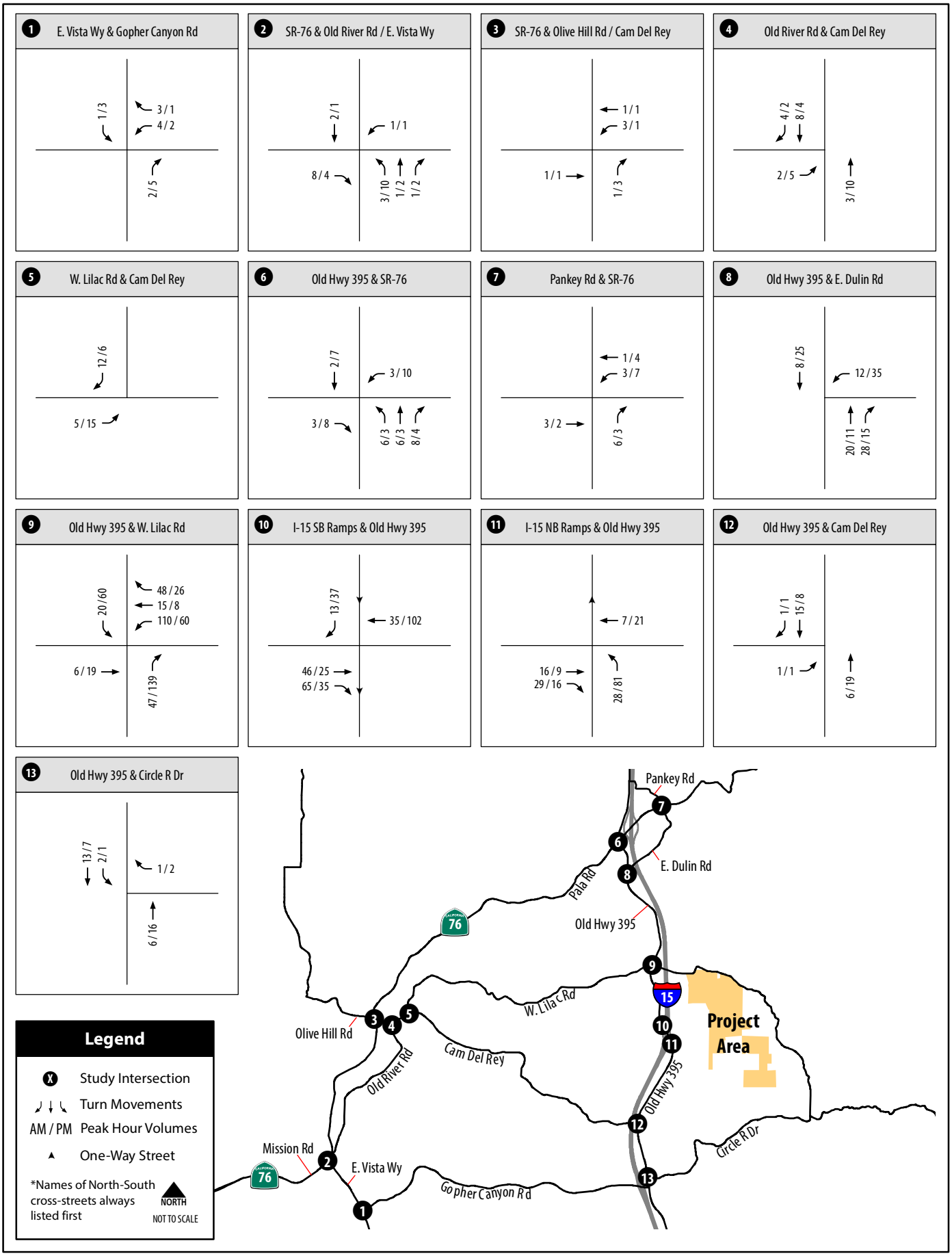


Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 4-10A

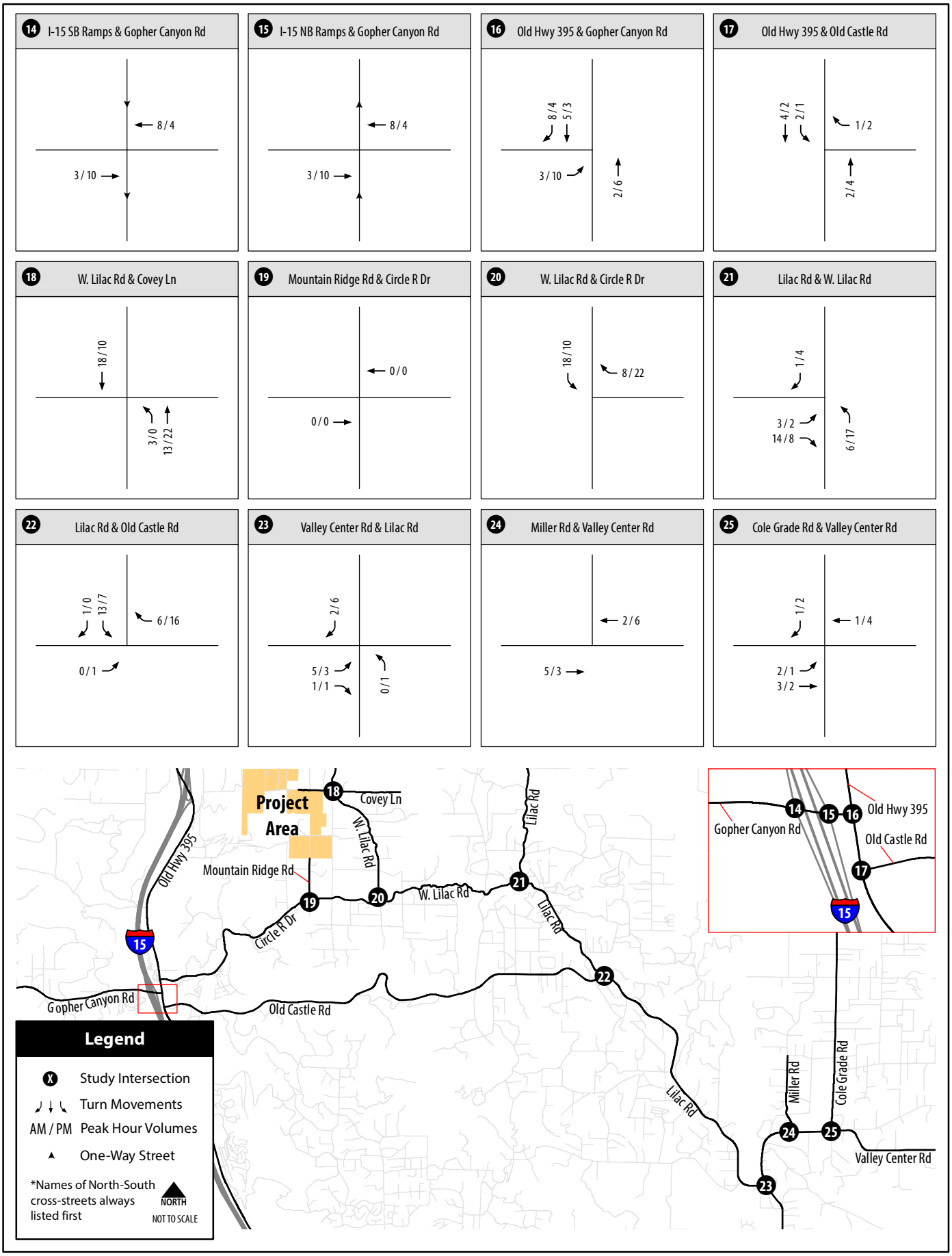
Project (Phase A) Trip Assignment (Roadway) - Existing Network



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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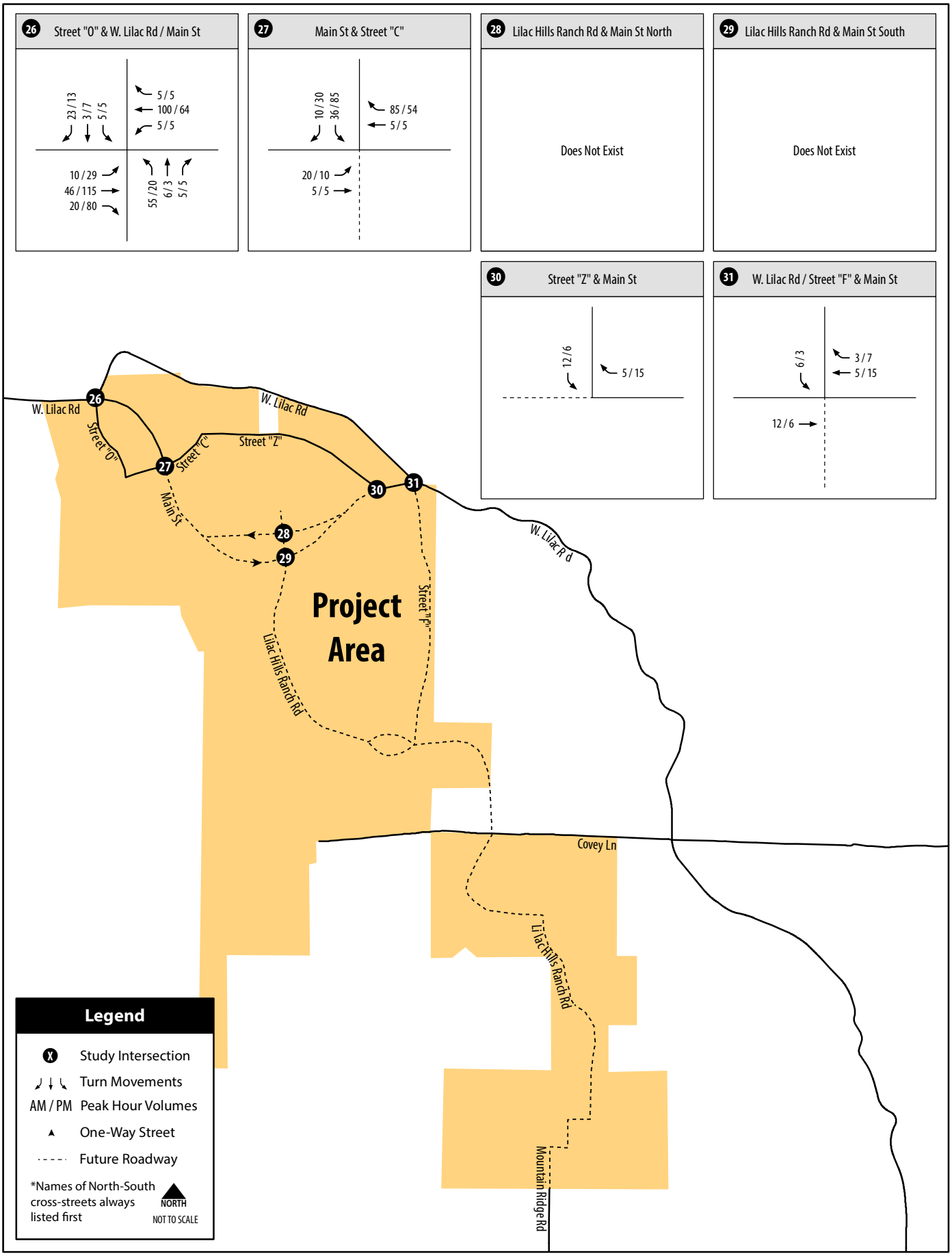
Figure 4-10B (Intersections 1-13)
Project (Phase A) Trip Assignment (Intersection) - Existing Network



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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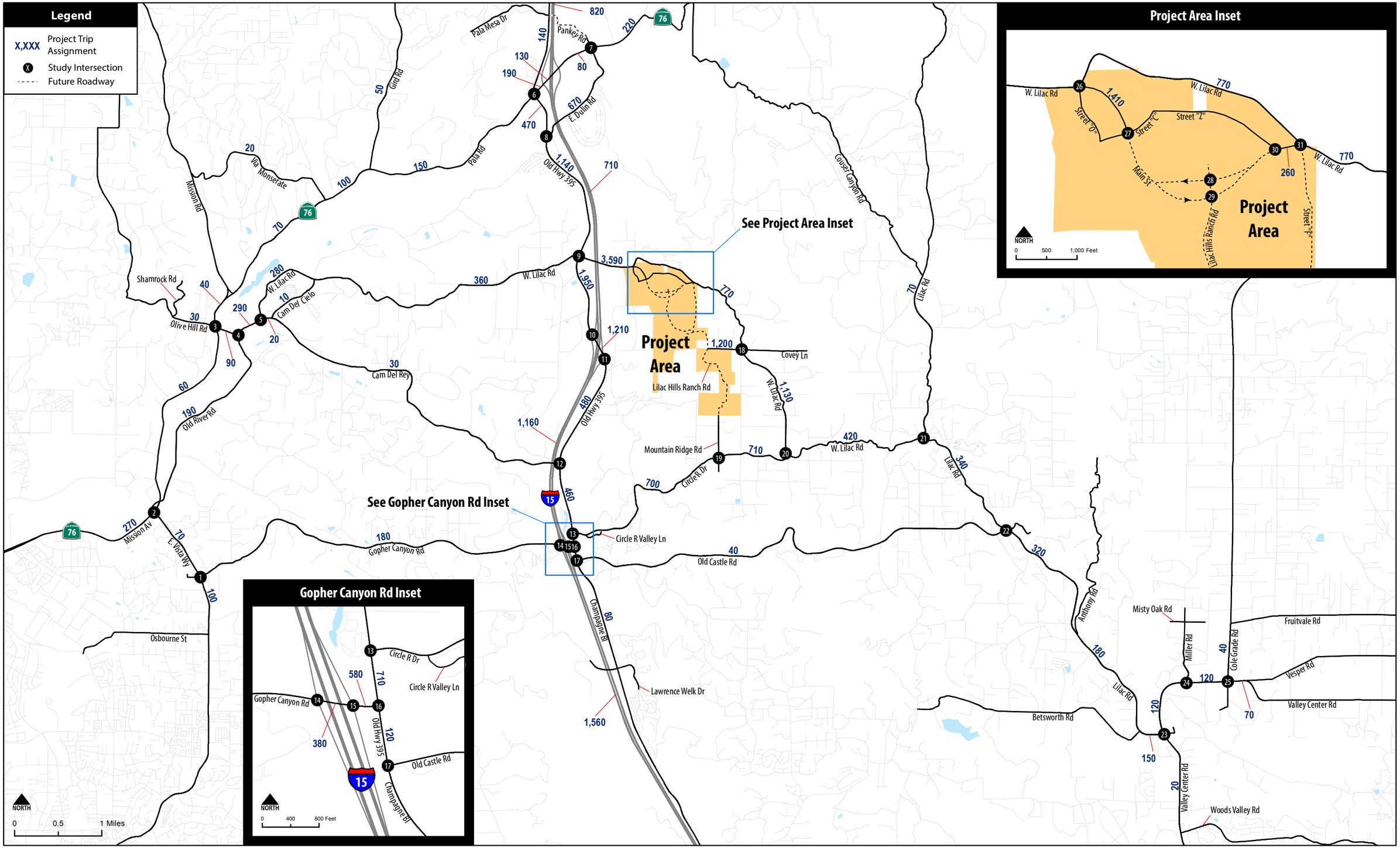
Figure 4-10B (Intersections 14-25)
Project (Phase A) Trip Assignment (Intersection) - Existing Network



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 4-10B (Intersections 26-31)
Project (Phase A) Trip Assignment (Intersection) - Existing Network

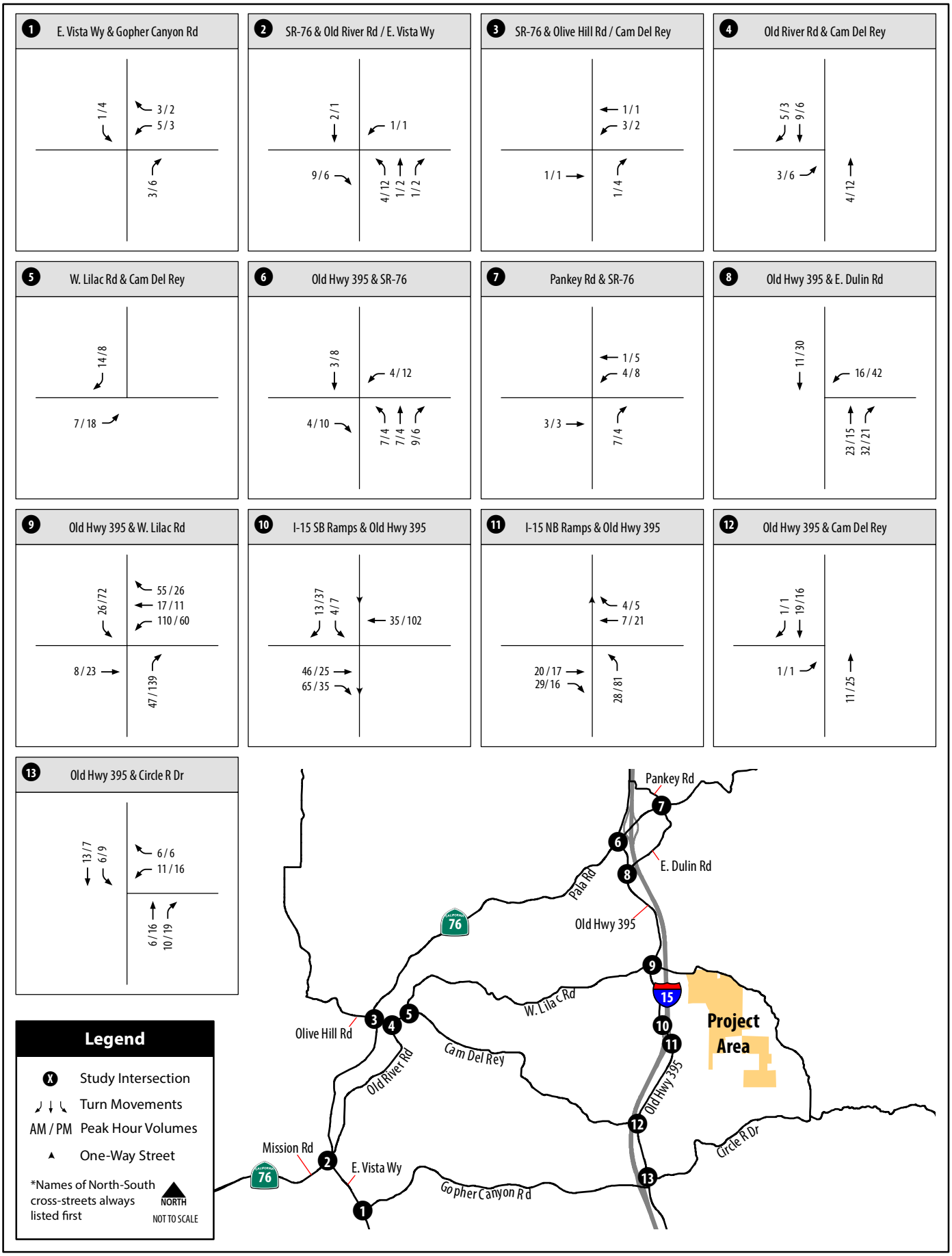


Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 4-11A

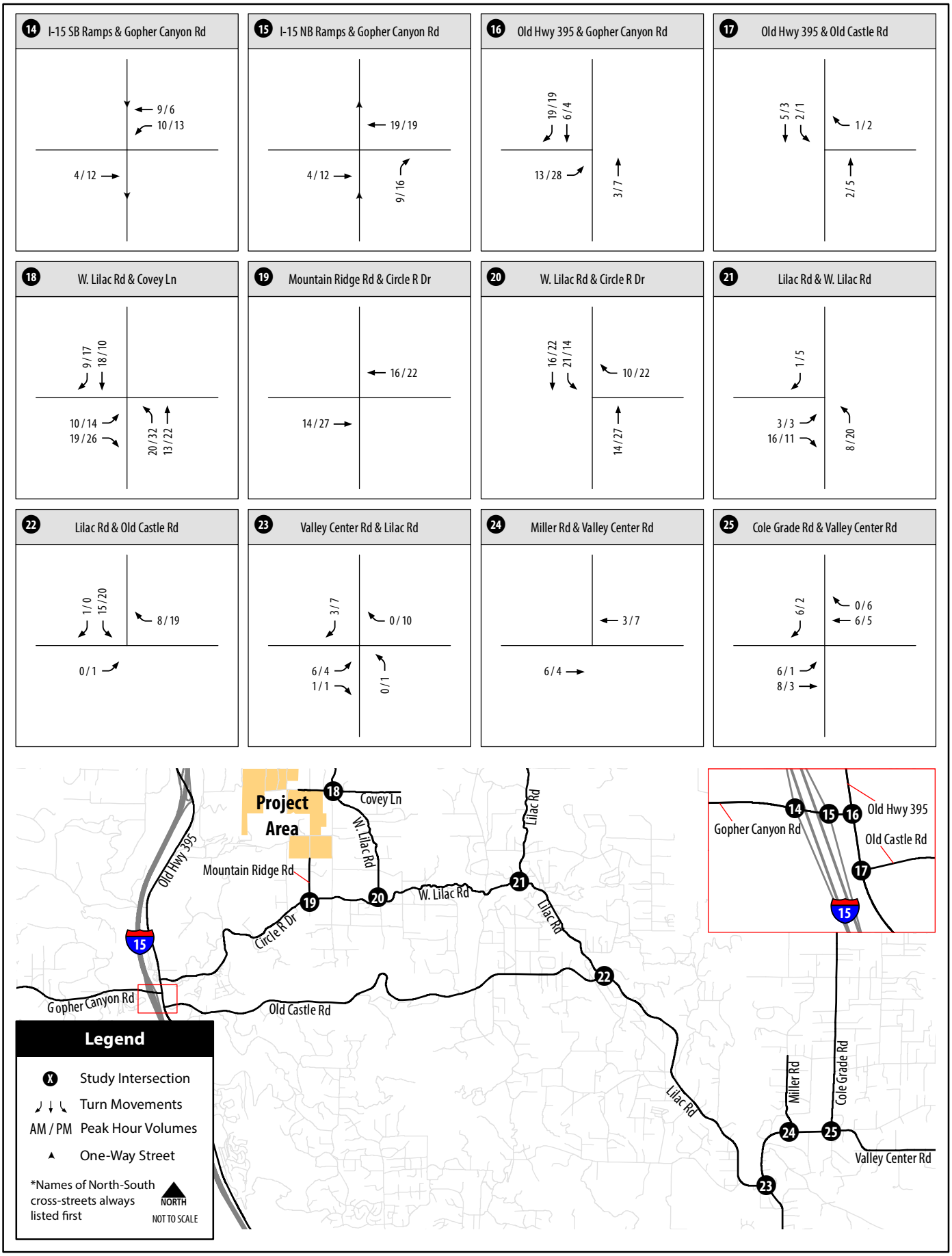
Project (Phase B) Trip Assignment (Roadway) - Existing Network



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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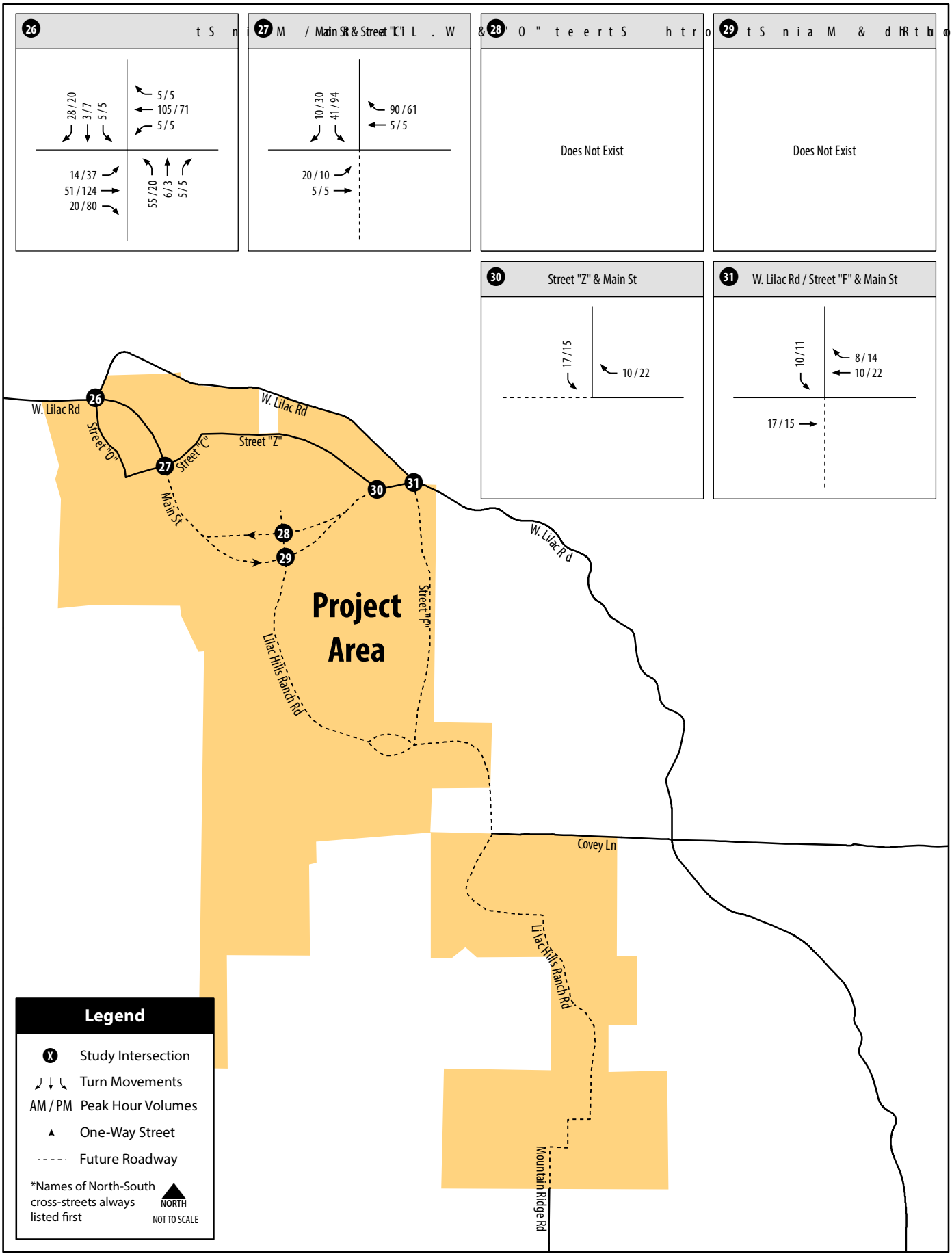
Figure 4-11B (Intersections 1-13)
Project (Phase B) Trip Assignment (Intersection) - Existing Network



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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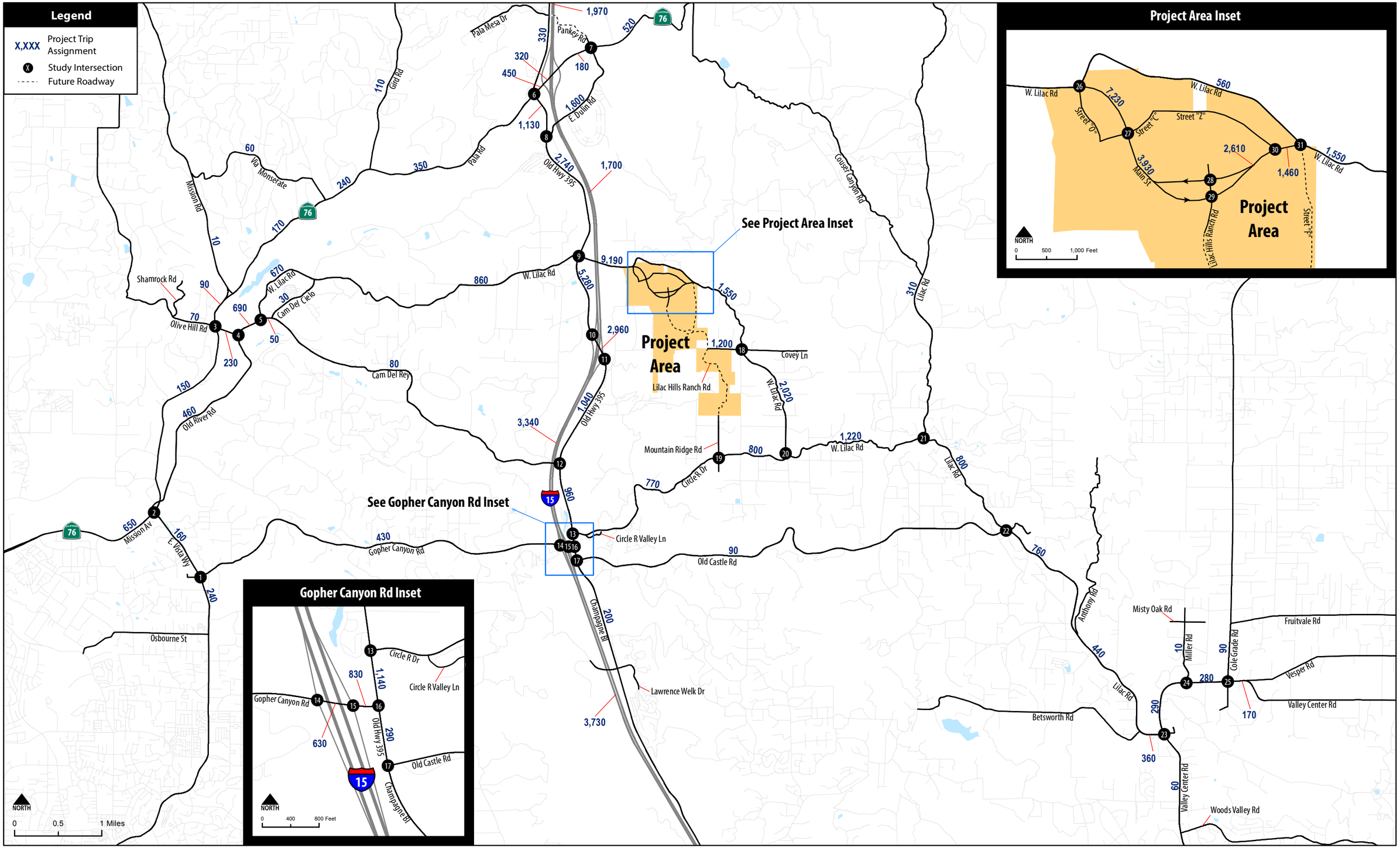
Figure 4-11B (Intersections 14-25)
Project (Phase B) Trip Assignment (Intersection) - Existing Network



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 4-11B (Intersections 26-31)
Project (Phase B) Trip Assignment (Intersection) - Existing Network

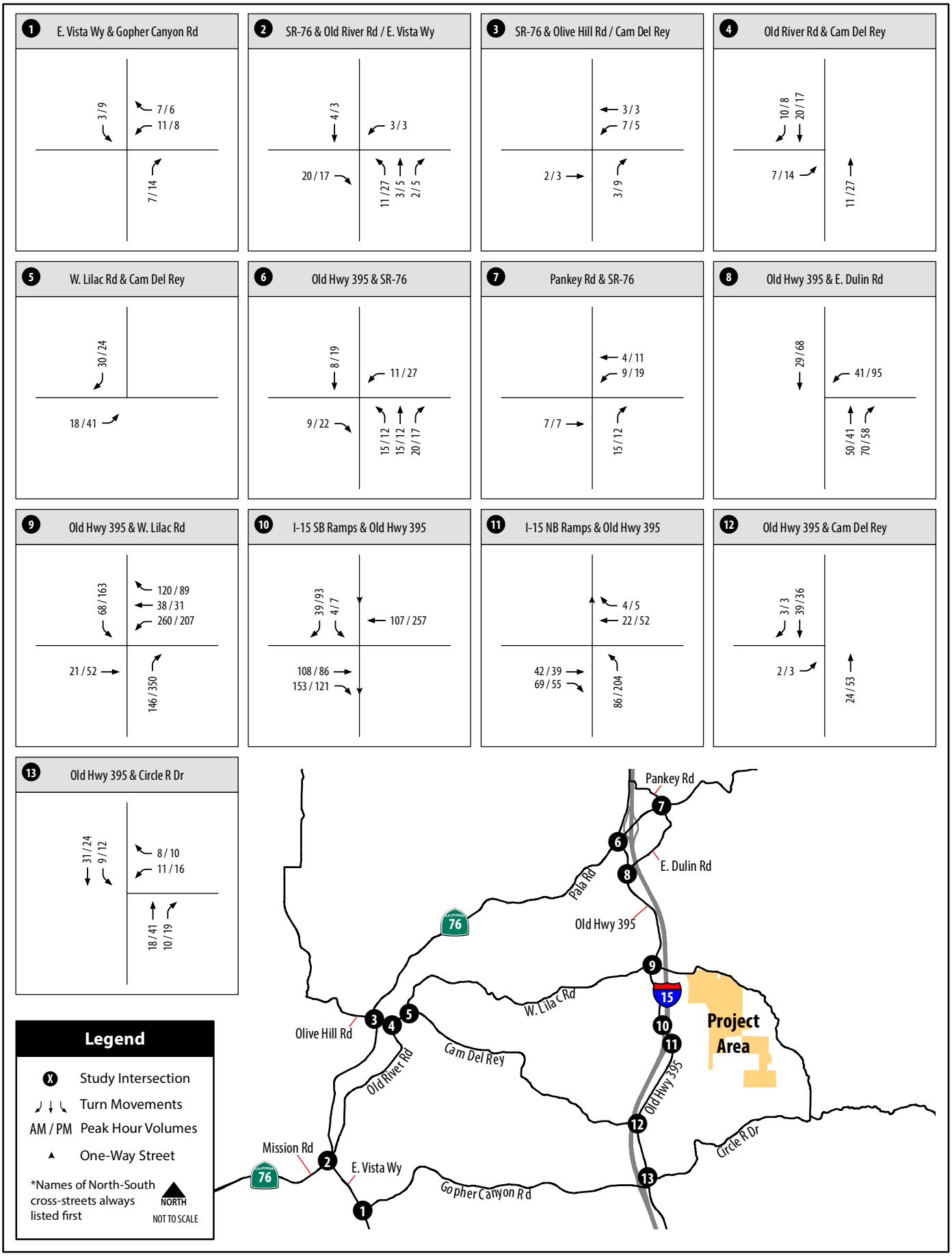


Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 4-12A

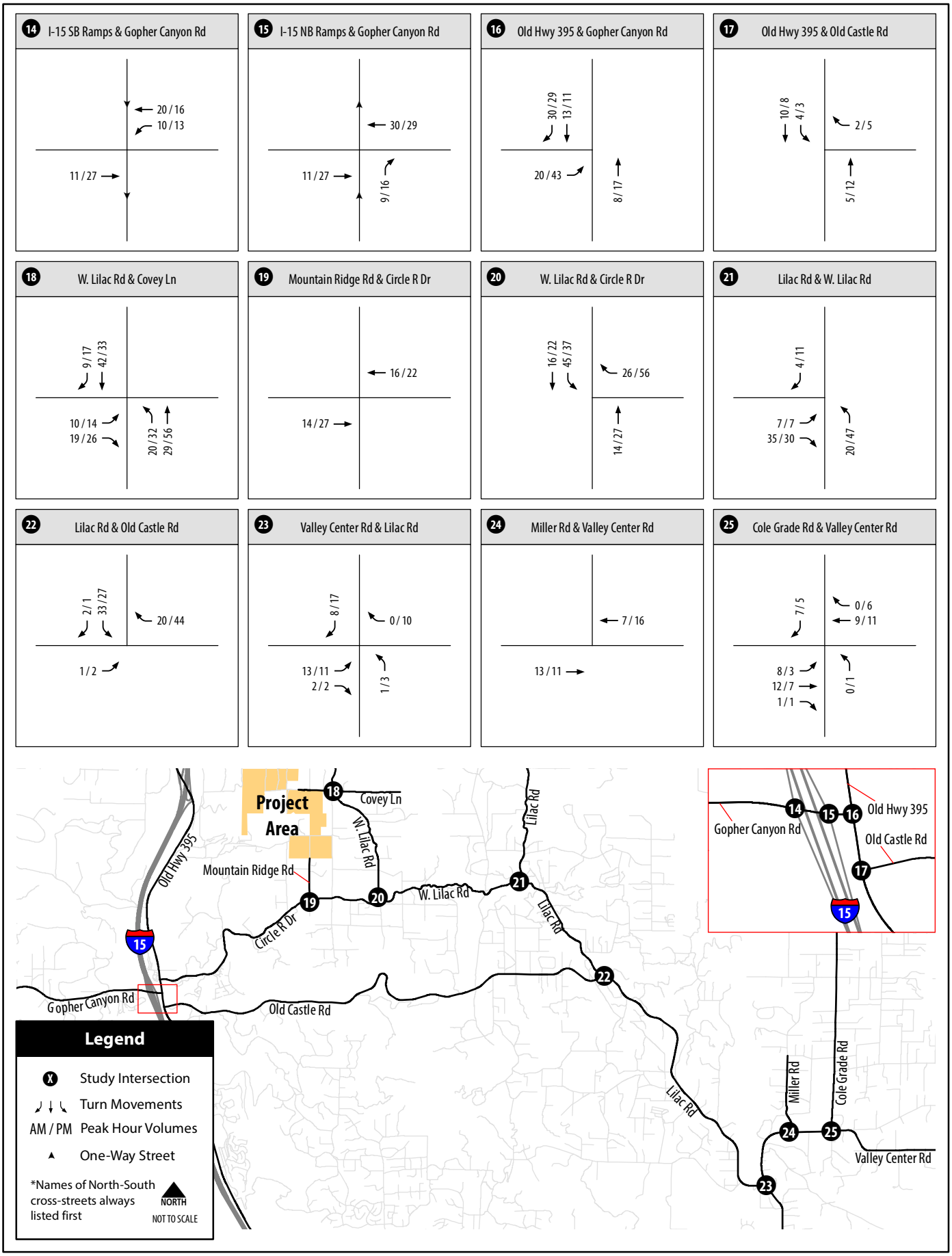
Project (Phase C) Trip Assignment (Roadway) - Existing Network



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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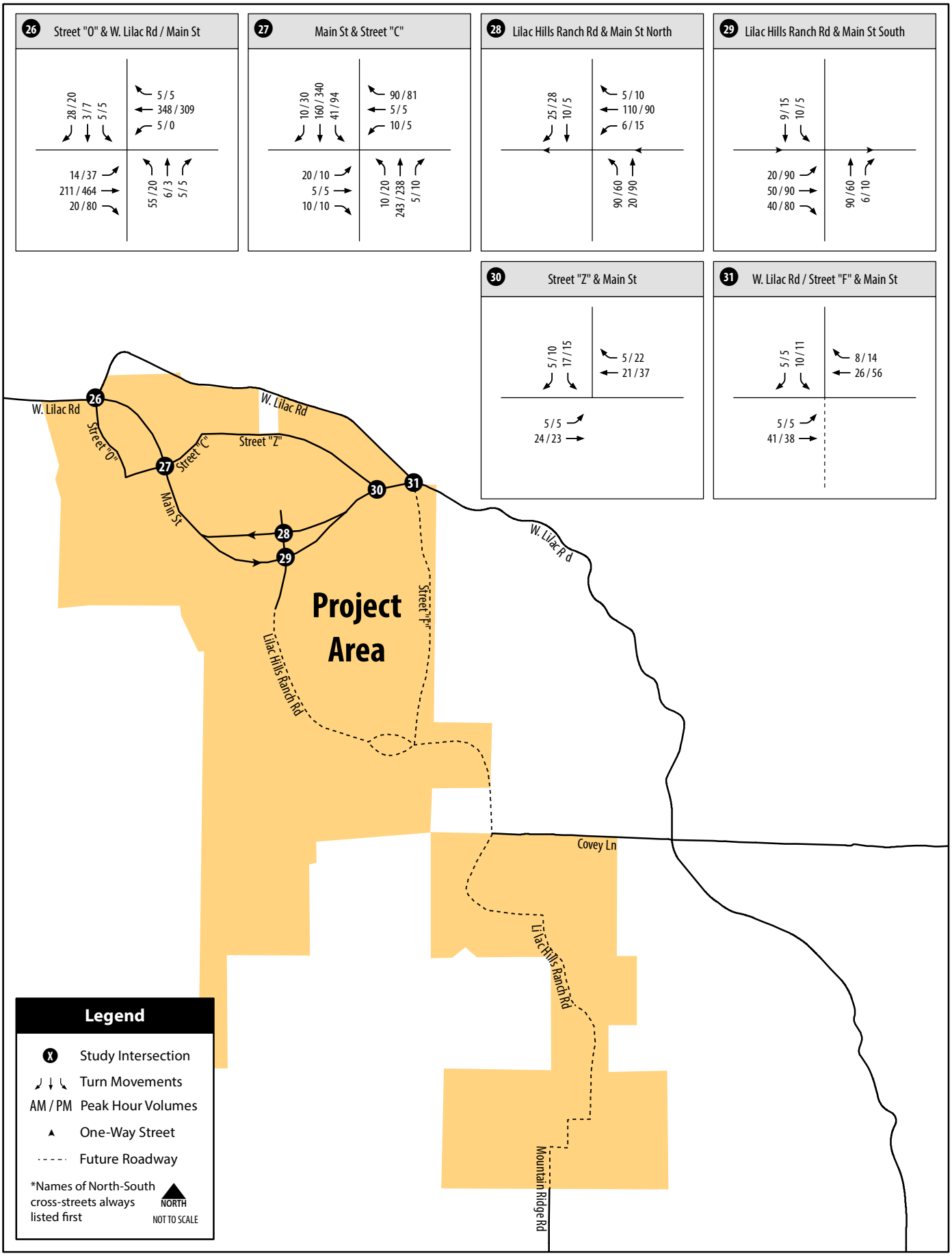
Figure 4-12B (Intersections 1-13) Project (Phase C) Trip Assignment (Intersection) - Existing Network



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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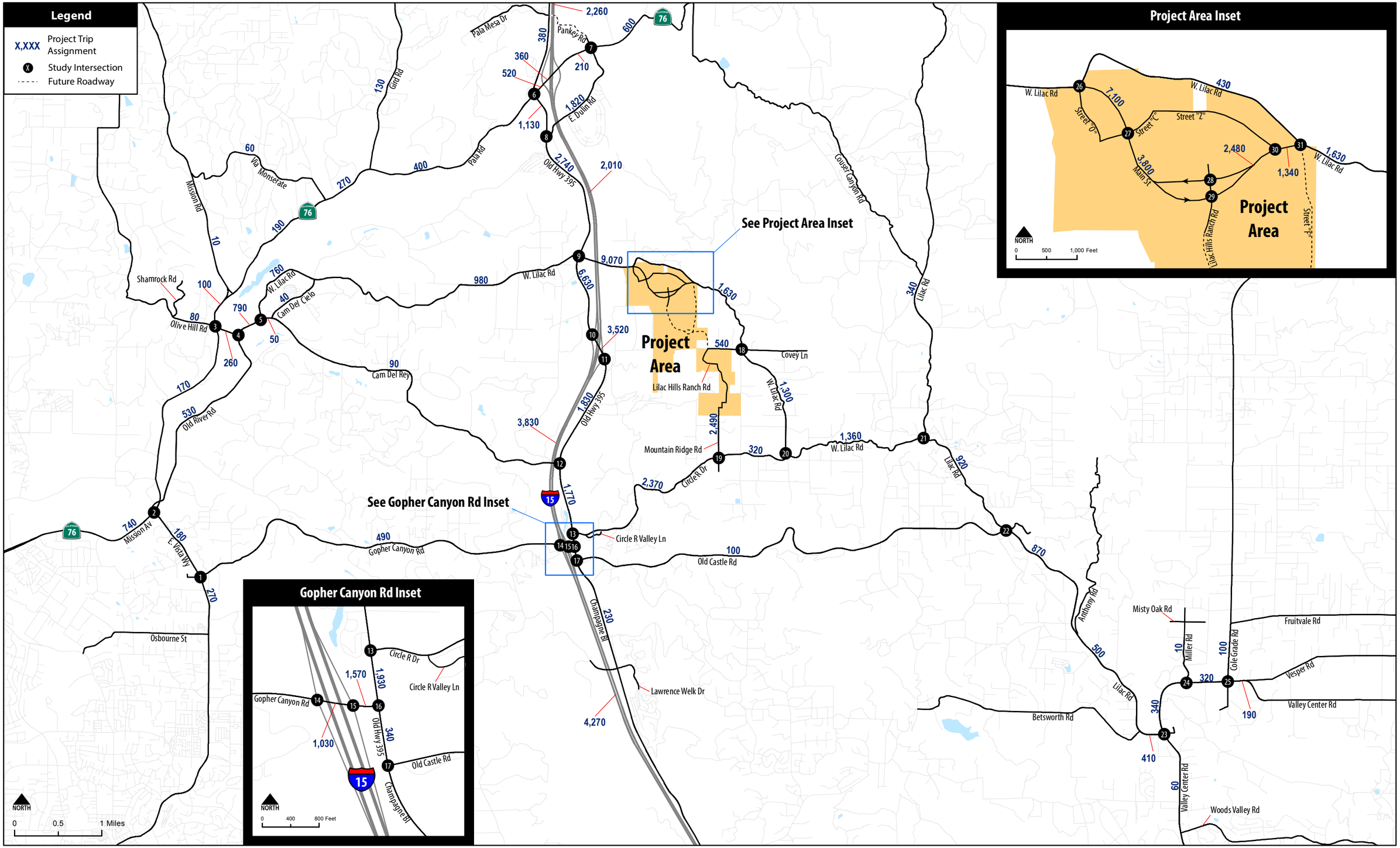
Figure 4-12B (Intersections 14-25)
Project (Phase C) Trip Assignment (Intersection) - Existing Network



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 4-12B (Intersections 26-31)
Project (Phase C) Trip Assignment (Intersection) - Existing Network

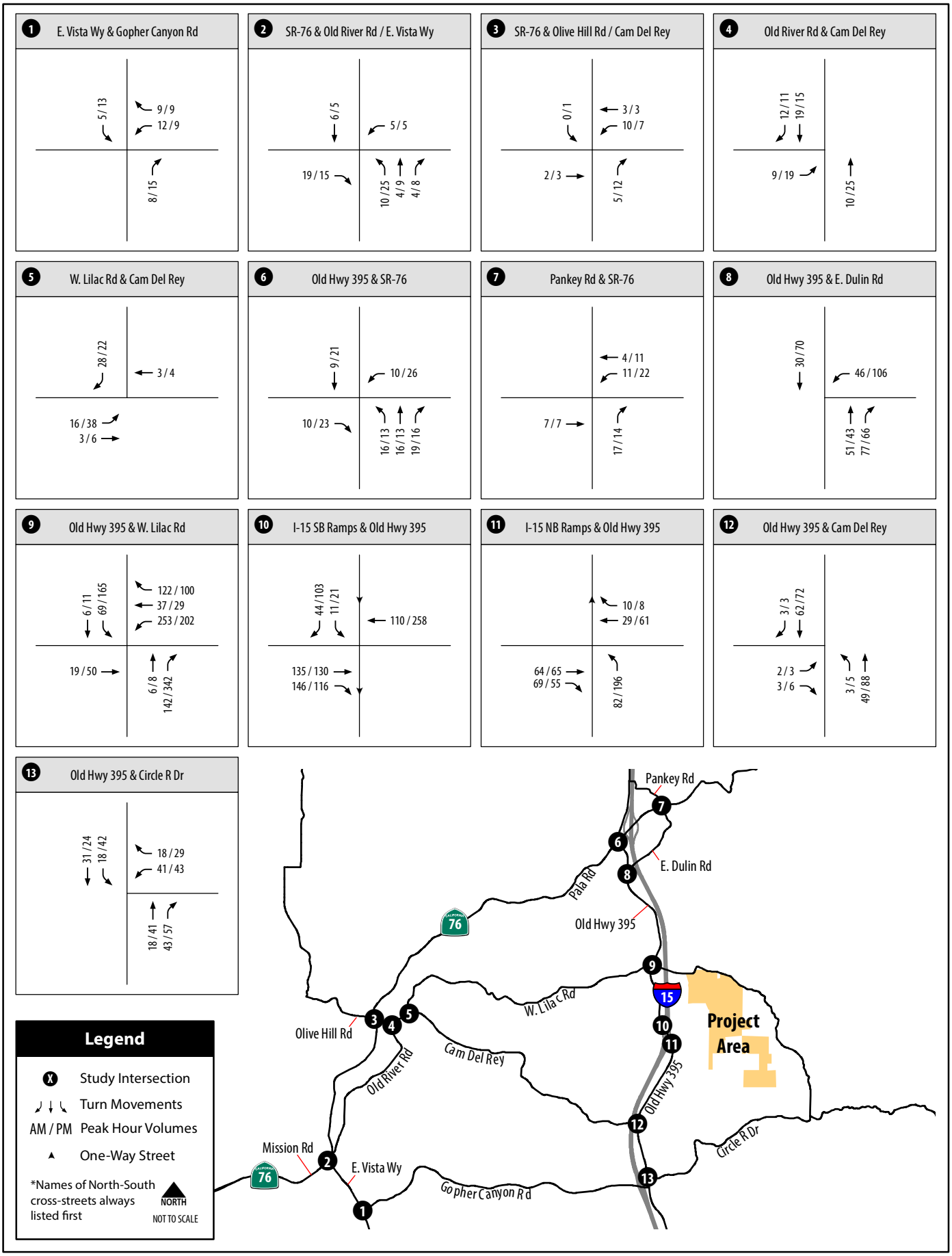


Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

Figure 4-13A

Project (Phase D) Trip Assignment (Roadway) - Existing Network

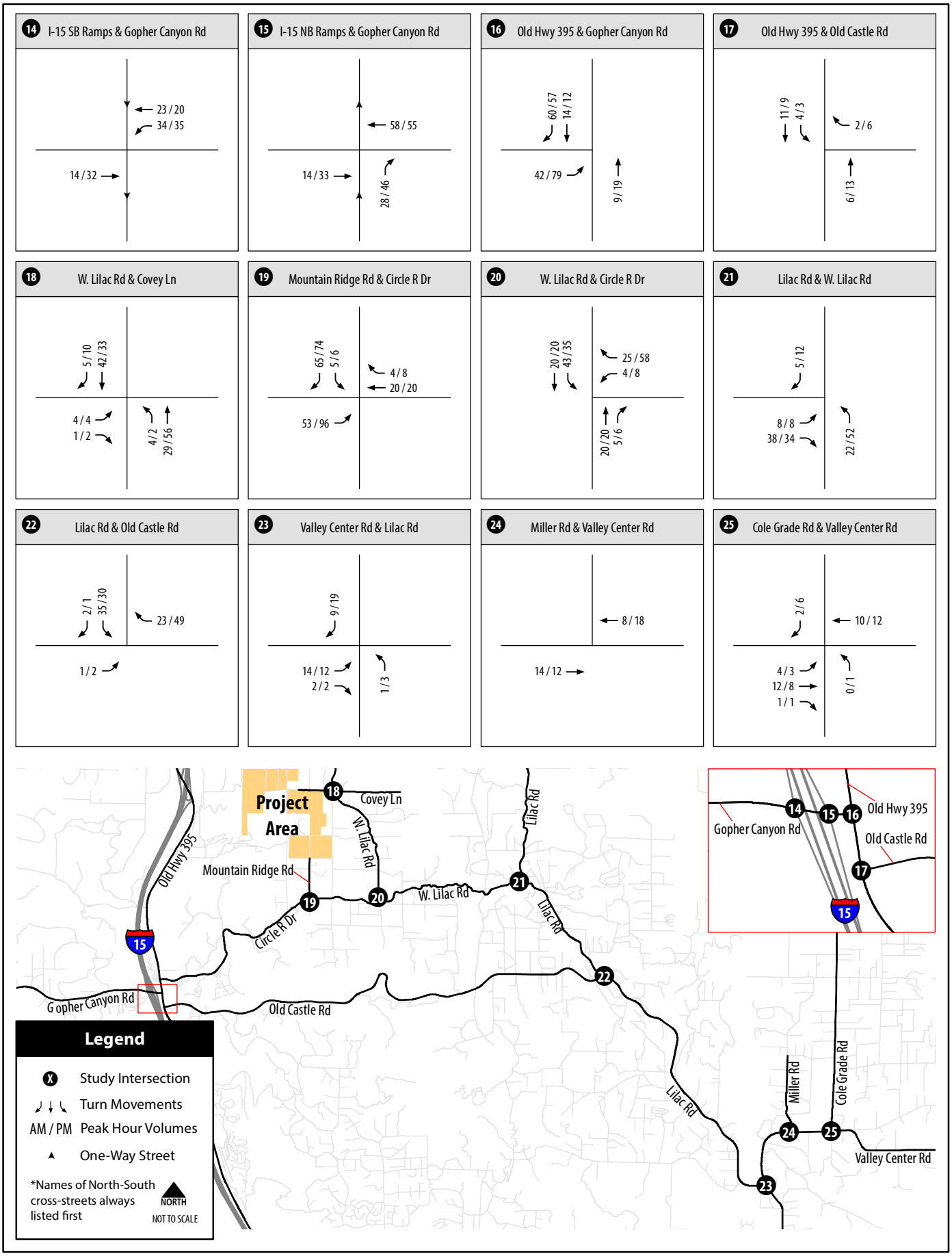
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Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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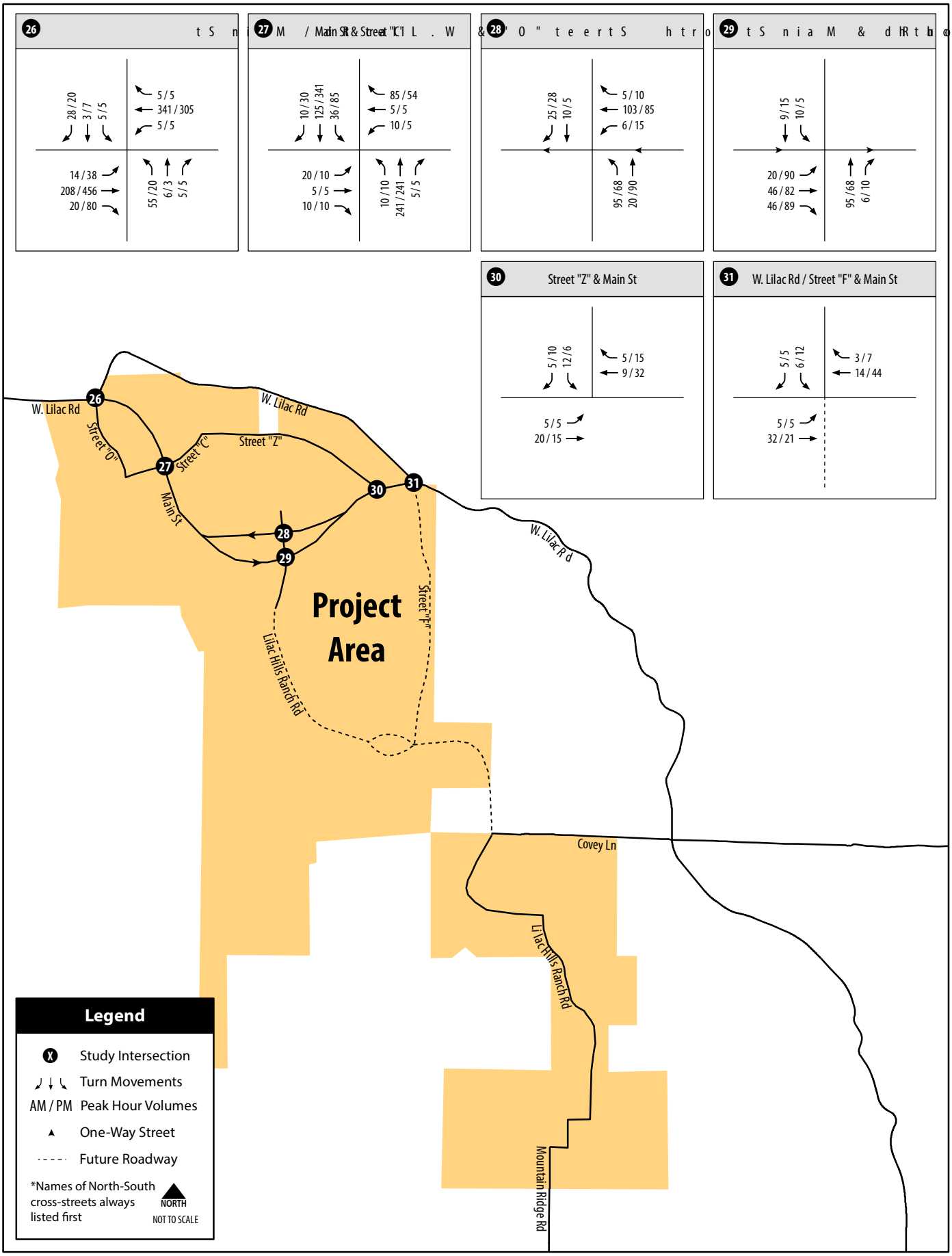
Figure 4-13B (Intersections 1-13)
Project (Phase D) Trip Assignment (Intersection) - Existing Network



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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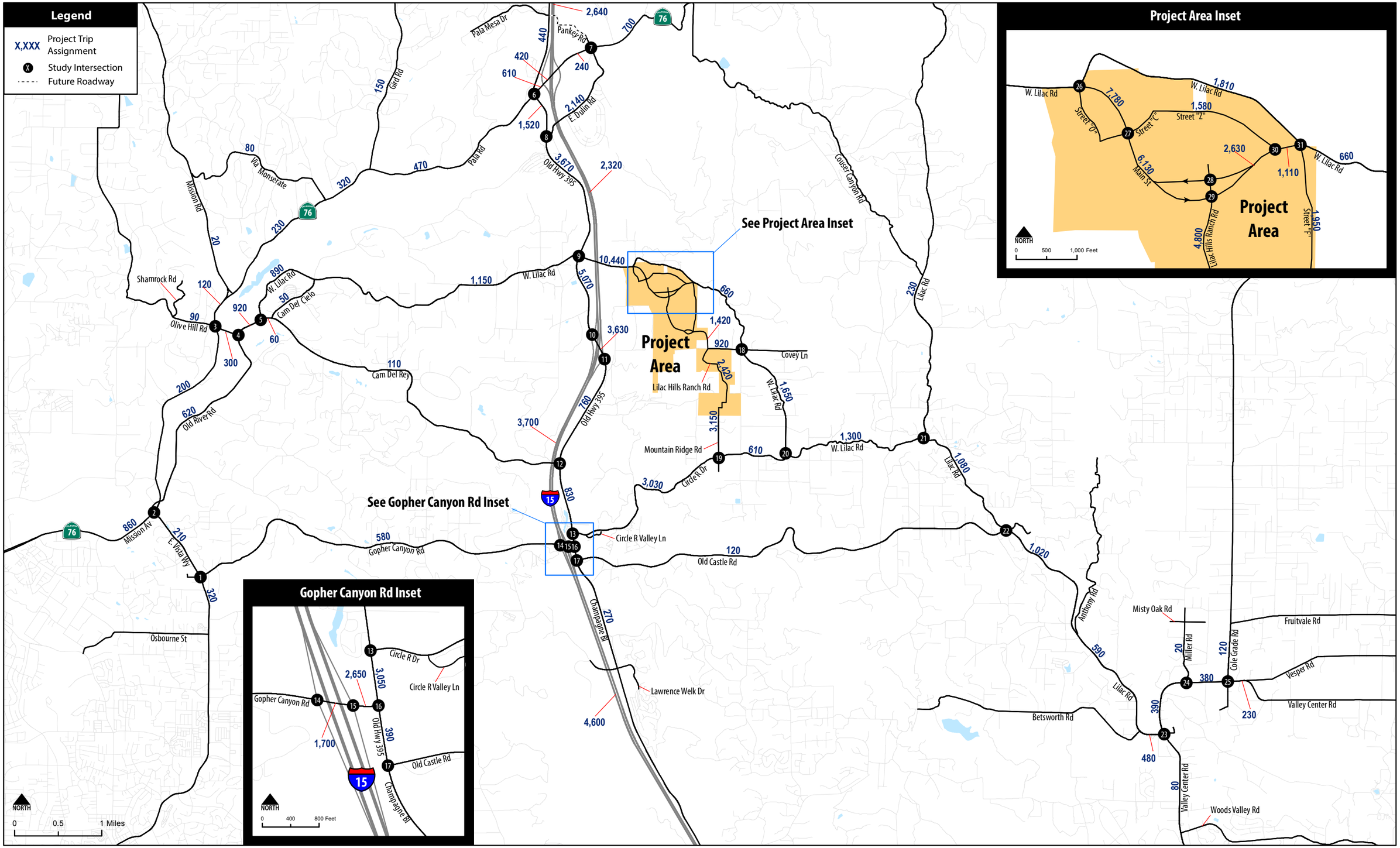
Figure 4-13B (Intersections 14-25)
Project (Phase D) Trip Assignment (Intersection) - Existing Network



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 4-13B (Intersections 26-31)
Project (Phase D) Trip Assignment (Intersection) - Existing Network

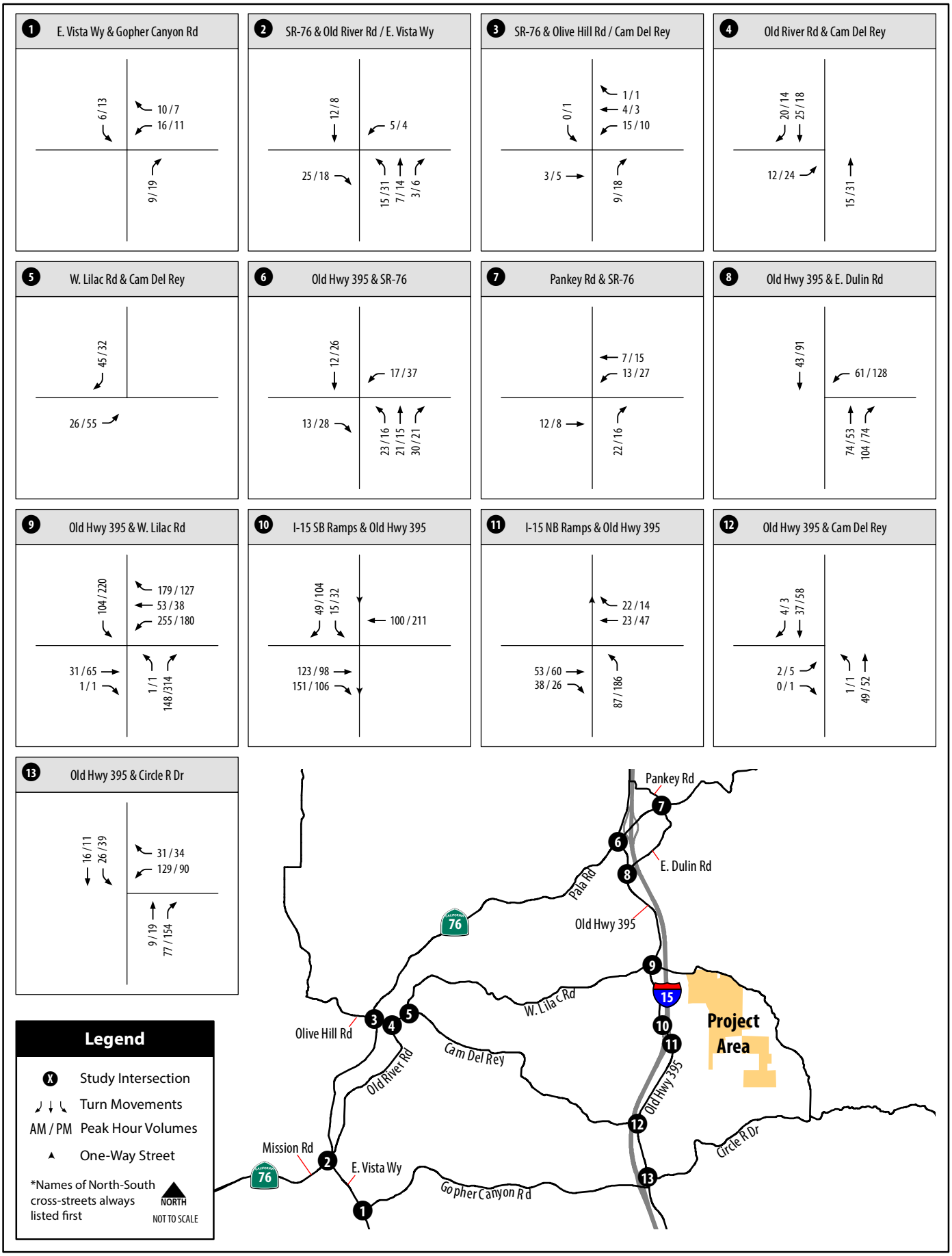


Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 4-14A

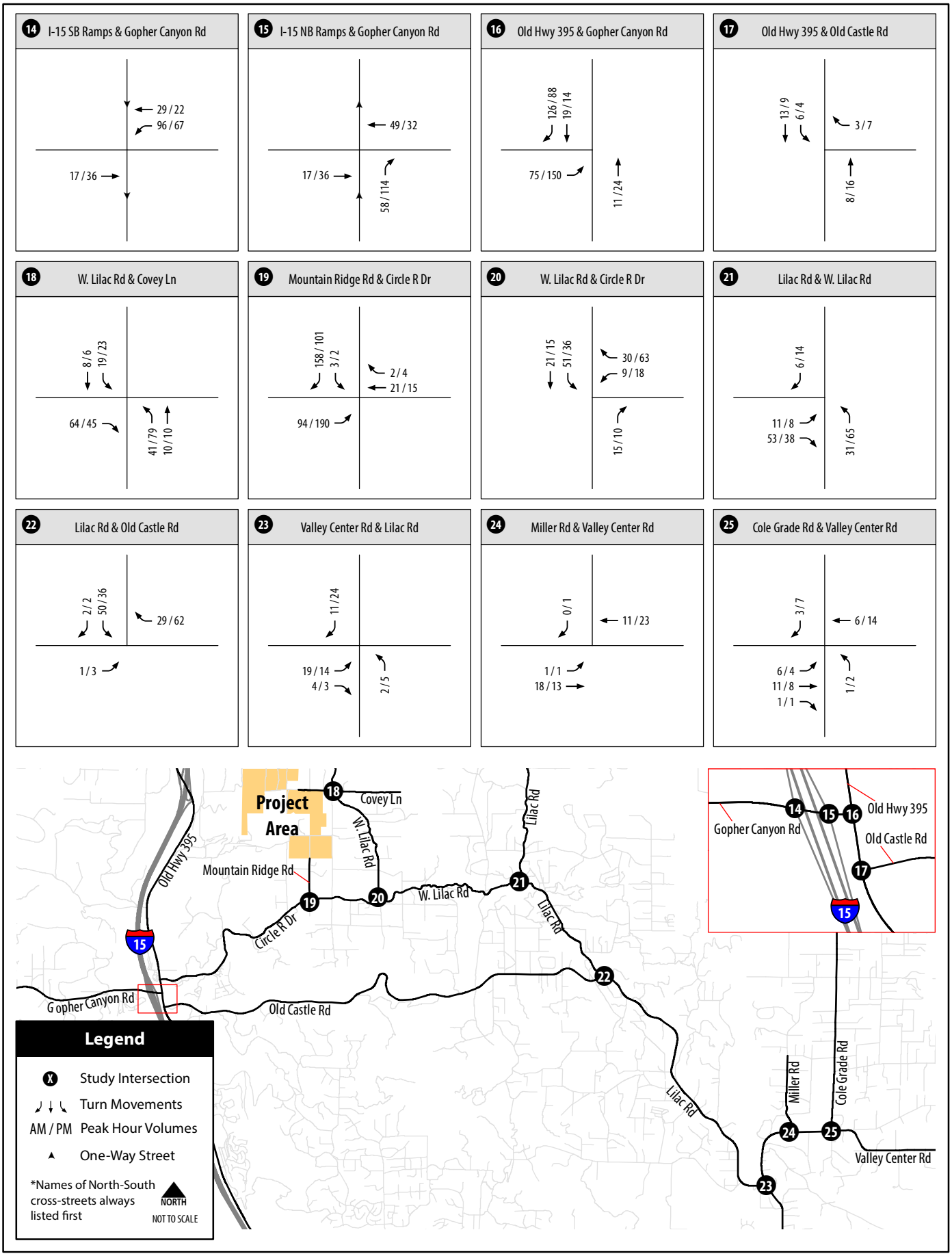
Project (Phase E, Buildout) Trip Assignment (Roadway) - Existing Network



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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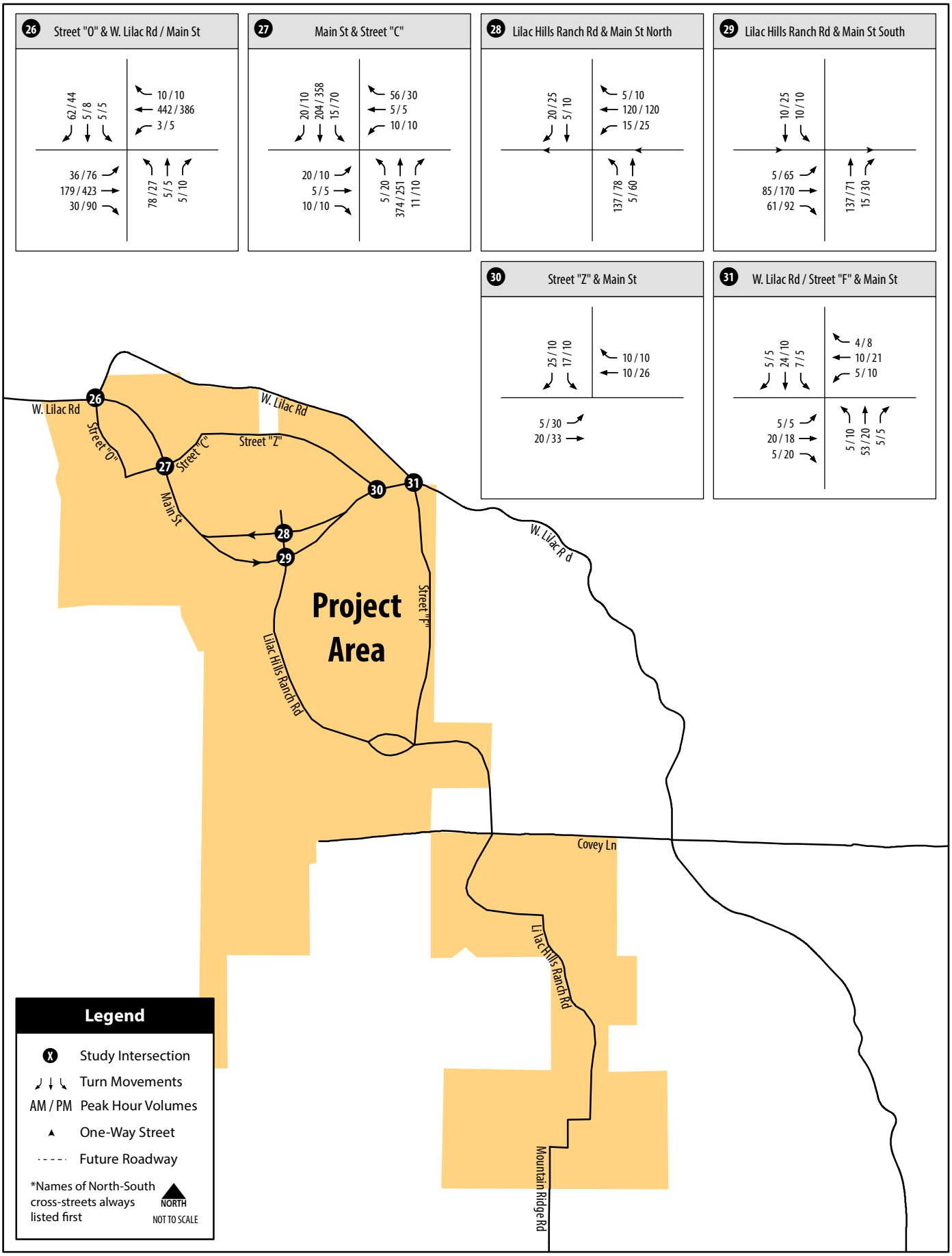
Figure 4-14B (Intersections 1-13)
Project (Phase E, Buildout)
Trip Assignment (Intersection) - Existing Network



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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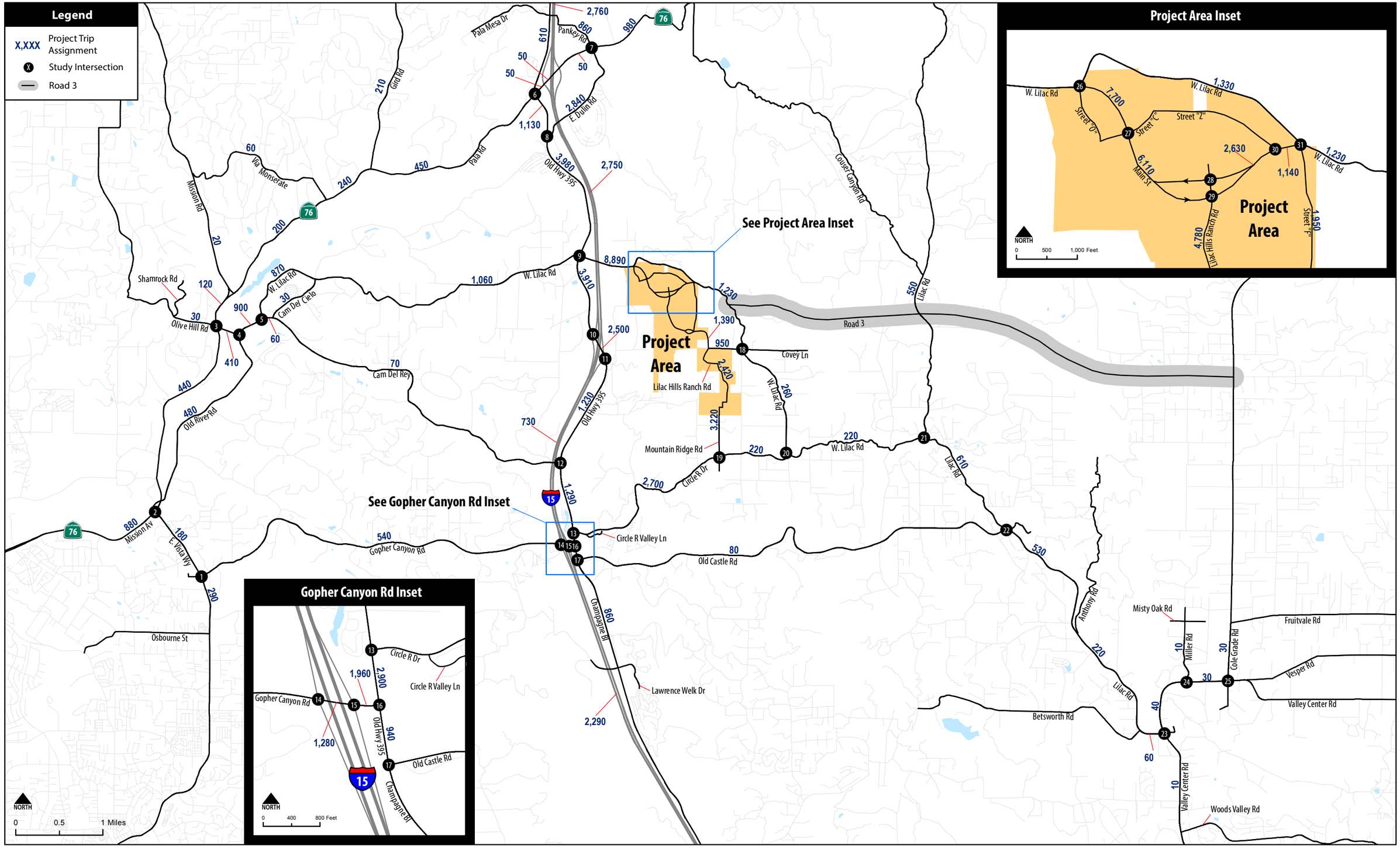
Figure 4-14B (Intersections 14-25)
Project (Phase E, Buildout)
Trip Assignment (Intersection) - Existing Network



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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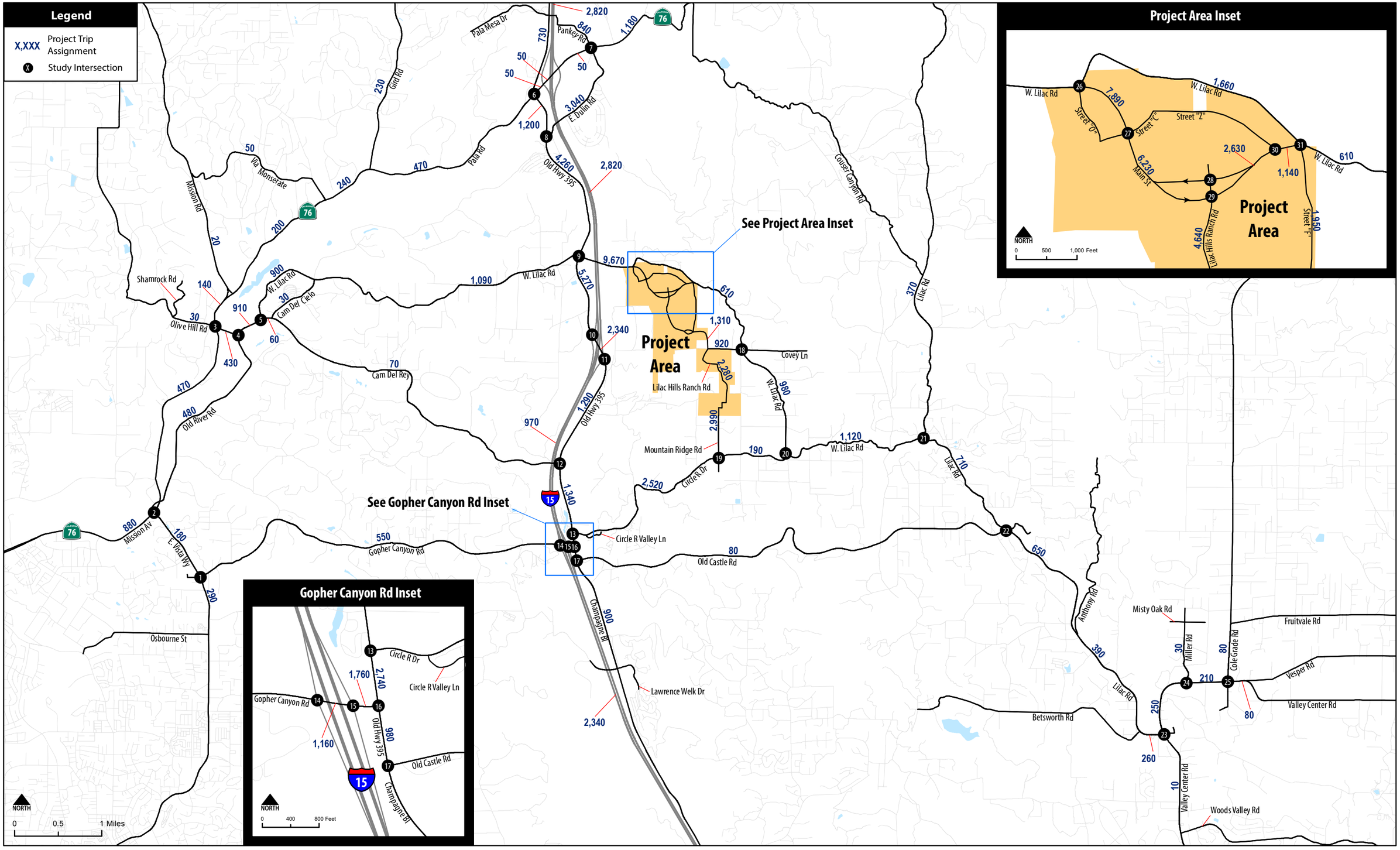
Figure 4-14B (Intersections 26-31)
Project (Phase E, Buildout)
Trip Assignment (Intersection) - Existing Network



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 4-15
Project (Buildout) Trip Assignment (Roadway) - Horizon Year Network with Road 3



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 4-16
Project (Buildout) Trip Assignment (Roadway) - Horizon Year Network without Road 3

4.4 Vehicle Miles of Travel (VMT) Analysis

VMT is documented and compared in the form of average vehicular trip lengths in the Valley Center both with and without the proposed Lilac Hills Ranch project. Mode choice analyses and reports were derived from SANDAG model runs under the following six (6) scenarios:

With Road 3

1. **Without project and with Road 3:** Analyzes the average vehicular trip length within the Valley Center community without the project and assuming the construction of Road 3. It is assumed that without the construction of the project the project site would be developed based on the approved land uses contained in the *County of San Diego General Plan - Land Use Element*.

2. **With project and with Road 3:** Analyzes the average vehicular trip length within the Valley Center community assuming the development of the project and assuming the construction of Road 3.

3. **Lilac Hills Ranch Project only with Road 3:** To provide a better understanding of how the vehicular trip lengths generated by the project compares to the surrounding community, this scenario analyses the average vehicular trip length for the trips generated by proposed Lilac Hills Ranch project, assuming the construction of Road 3.

Without Road 3

4. **Without project and without Road 3:** Analyzes the average vehicular trip length within the Valley Center community, without the construction of the project and assuming that Road 3 would not be constructed. It is assumed that without the construction of the project the project site would be developed based on the approved land uses contained in the *County of San Diego General Plan - Land Use Element*.

5. **With project and without Road 3**: Analyzes the average vehicular trip length within the Valley Center community assuming the development of the project and assuming Road 3 would not be constructed.

6. **Lilac Hills Ranch Project only without Road 3:** To provide a better understanding of how the vehicular trip lengths generated by the project compares to the surrounding community, this scenario analyses the average vehicular trip length for just the proposed Lilac Hills Ranch project, assuming Road 3 would not be constructed.

The Year 2050 Regional Model (Series 12) assumes the build out of both the regional roadway network and the development of regional land uses under Year 2050 conditions. **Table 4.11** documents the assumed land use and roadway network under each of the analysis scenarios outlined above. Land use assumptions for each model run are provided in **Appendix M**.

TABLE 4.11
MODE CHOICE MODEL SCENARIOS

Scenario	Model ID	Geographic Area Analyzed	Assumed Land Uses within Project Site	Network Assumption
Without project and with Road 3	2050rc11g	Valley Center CPA	General Plan Update	Regional Buildout with Road 3
With project and with Road 3	2050rc11e1	Valley Center CPA	Lilac Hills Ranch project	
Lilac Hills Ranch Project only with Road 3	2050rc11e2	Project Only	Lilac Hills Ranch project	
Without project and without Road 3	2050rc11h	Valley Center CPA	General Plan Update	Regional Buildout without Road 3
With project and without Road 3	2050rc11f1	Valley Center CPA	Lilac Hills Ranch project	
Lilac Hills Ranch Project only without Road 3	2050rc11f2	Project Only	Lilac Hills Ranch project	

Source: SANDAG, Chen Ryan Associates; May 2014

Table 4.12 displays a comparison of vehicles mile travel (VMT), the total number of vehicular trips generated, and the average vehicular trip length within the community and/or generated by the project for each of the six analysis scenarios. The individual mode choice reports for each scenario are provided in **Appendix N**.

TABLE 4.12
VEHICLE MILES TRAVEL & AVERAGE TRIP LENGTH

Scenarios	VMT (mi)	# of Vehicles	Trip Length (mi)
Without project and with Road 3	991,157	120,162	8.25
With project and with Road 3	1,045,936	128,042	8.17
Lilac Hills Ranch Project only with Road 3	71,084	9,353	7.600
Without project and without Road 3	989,607	120,162	8.24
With project and without Road 3	1,043,747	128,034	8.15
Lilac Hills Ranch Project only without Road 3	71,055	9,346	7.603

Source: SANDAG Mode Choice Reports; May 2014

As shown in Table 4.12, the overall VMT and number of vehicles increase with the development of the project, trip lengths within the Valley Center community are projected to be reduced by 0.08 miles, assuming the construction of Road 3, and 0.09 miles without the construction of Road 3. The project is projected to have an average vehicular trip length of 7.6 miles, which is over a half-mile lower than the rest of the Valley Center community, both with and without the construction of Road 3.

It should be noted that due the rural nature of the Valley Center community and the relevance of the trip length comparisons, this analysis was only conducted at the community and project level (not at the regional level). Based on the Year 2050 Regional Model, the average vehicular trip length within the San Diego region is 5.8 miles; however, this includes numerous urban and suburban communities and jurisdictions such as downtown, UTC, La Jolla, Mission Valley, Encinitas, etc. and is therefore not applicable to the rural Valley Center community.

5.0 Existing Plus Project Conditions

This section provides an analysis of existing traffic conditions with the addition of project trips under the various traffic analysis phases of the Lilac Hills Ranch project.

5.1 Existing Plus Project (Phase A) Conditions

5.1.1 Existing Plus Project (Phase A) Roadway Network and Traffic Volumes

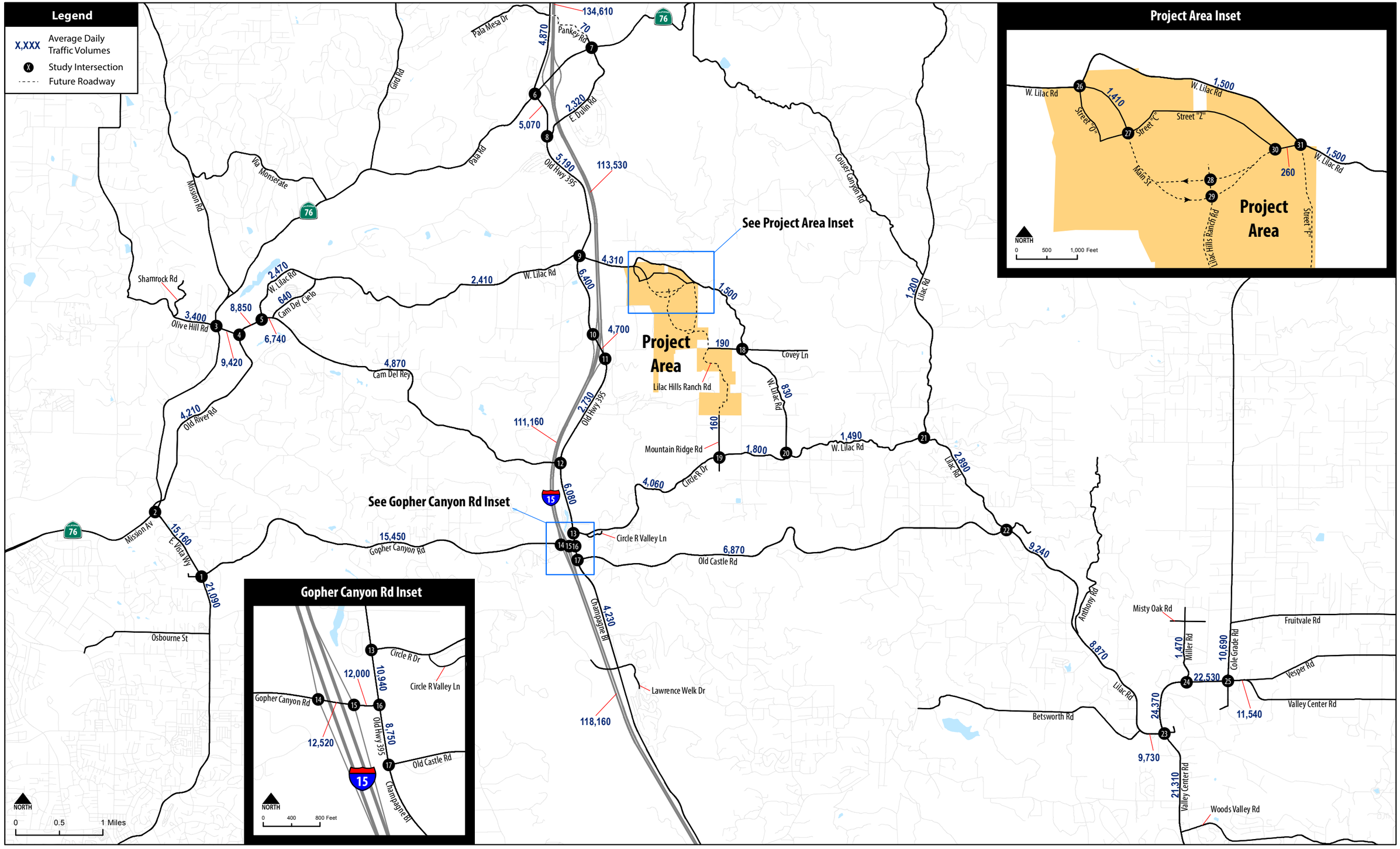
The Existing Plus Project (Phase A) scenario includes existing traffic volumes with the addition of traffic generated by traffic analysis Phase A. Intersection and roadway geometrics under Existing Plus Project conditions were assumed to be identical to Existing conditions, with the exception of the following roads and driveway intersections associated with project frontage and access:

- Main Street, between West Lilac Road and Street "C";
- Main Street, between Street "Z" and W. Lilac Road;
- Street "C" and Street "Z";
- Birdsong Drive, between Street "Z" and W. Lilac Road;
- Intersection # 26, Street "O" / W. Lilac Road/Main Street – proposed roundabout;
- Intersection # 27, Main Street / Street "C"– proposed roundabout;
- Intersection # 30, Street "Z" / Main Street – proposed one-way stop (southbound Street "Z" approach) controlled L-intersection; and
- Intersection # 31, Street "Z" / Main Street – proposed roundabout.

Note that Birdsong Drive, between Street "Z" and W. Lilac Road will serve as an interim secondary access route for the initial phase of Phase A (SFD-1 and SFD-2 as shown in Figure 1-3). After the construction of Main Street, between Street "Z" and W. Lilac Road, Birdsong Drive will revert to a private driveway for use by the owner of APN 128-280-56. **Appendix O** provided a detailed assessment for Birdsong Drive traffic operations under Phase A, and it concluded that the initial phase of Phase A (SFD-1 and SFD-2) would not have a significant impact at Birdsong Drive and W. Lilac Road intersection.

5.1.2 Existing Plus Project (Phase A) Traffic Conditions

Level of service analyses under Existing Plus Project (Phase A) conditions were conducted using the methodologies described in Chapter 2.0. Roadway segment, intersection, two-lane highway, freeway segment, and ramp intersection level of service results are discussed separately below. Average daily traffic volumes on study area roadway segments are displayed in **Figure 5-1A**, while peak hour traffic volumes at the key study area intersections are displayed in **Figure 5-1B**.

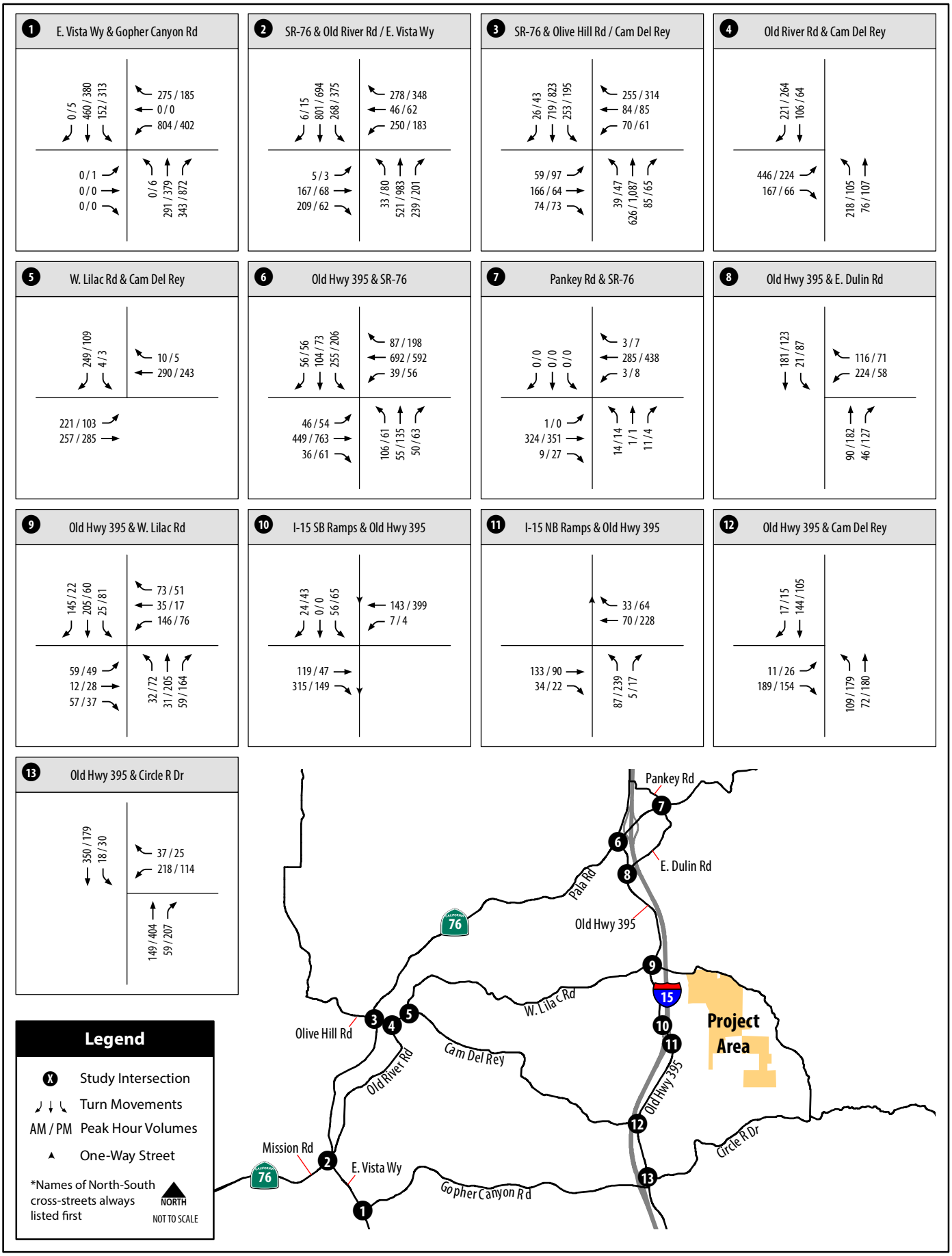


Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 5-1A

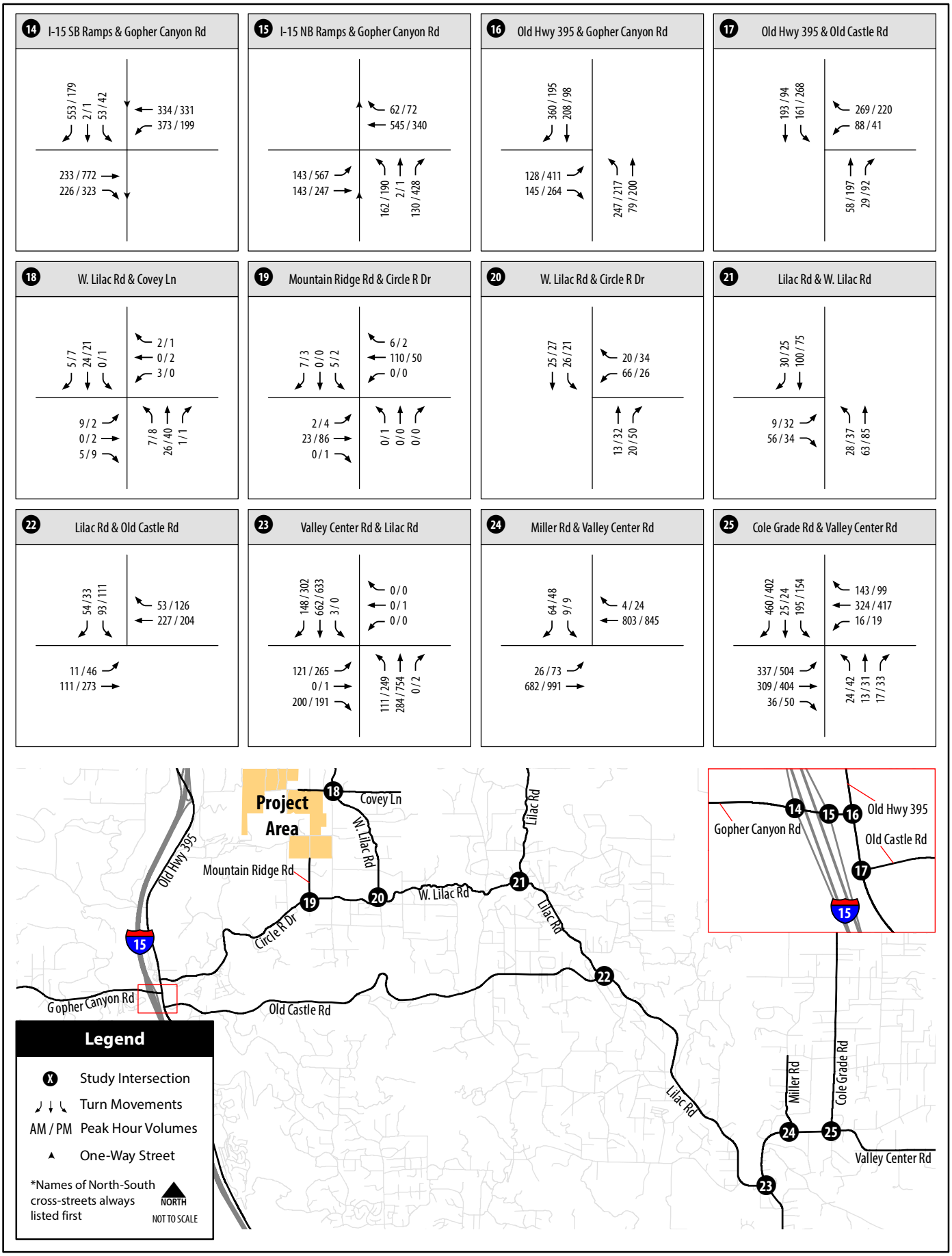
Roadway Average Daily Traffic Volumes - Existing Plus Project (Phase A) Conditions



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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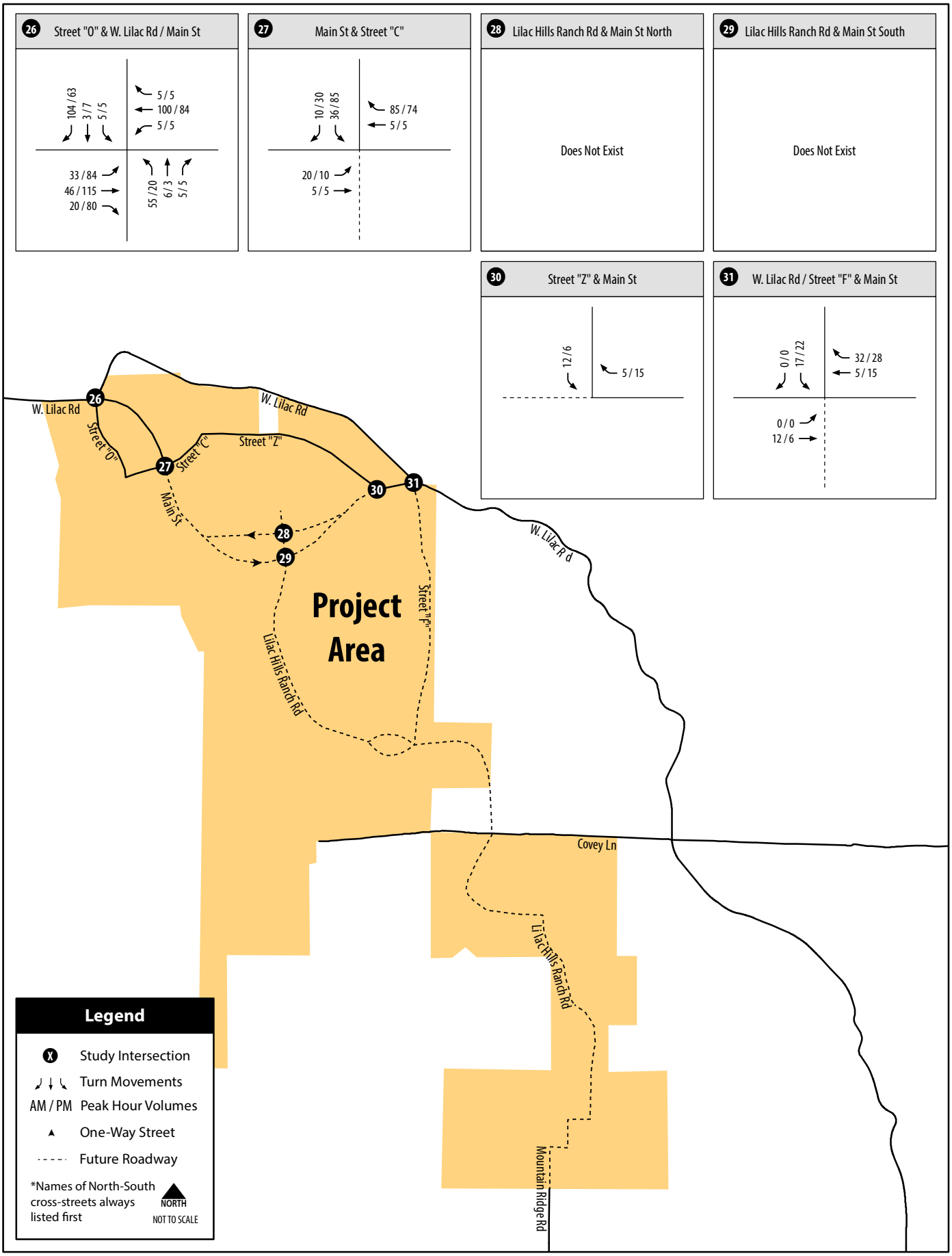
Figure 5-1B (Intersections 1-13)
Intersection Peak Hour Traffic Volumes - Existing Plus Project (Phase A) Conditions



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 5-1B (Intersections 14-25)
Intersection Peak Hour Traffic Volumes - Existing Plus Project (Phase A) Conditions



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 5-1B (Intersections 26-31)
Intersection Peak Hour Traffic Volumes - Existing Plus Project (Phase A) Conditions

Roadway Segment Analysis

Table 5.1 displays the level of service analysis results for key roadway segments under Existing Plus Project (Phase A) conditions. As shown, similar to Existing conditions, the following three (3) roadway segments would continue to operate at substandard LOS E or F:

- Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps – LOS F;

  Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase A of the Lilac Hills Ranch project would result in a direct impact to this roadway segment since it would add more than 100 ADT on this facility which would operate at LOS F.

- E. Vista Way, between SR-76 and Gopher Canyon Road – LOS E;

  Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase A of the Lilac Hills Ranch project would not result in direct impacts to this roadway segment since it would not add more than 200 daily trips.

- E. Vista Way, between Gopher Canyon Road and Osborne Street – LOS F.

  Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase A of the Lilac Hills Ranch project would not result in direct impacts to this roadway segment since it would not add more than 100 daily trips.

Intersection Analysis

Table 5.2 displays intersection level of service and average vehicle delay results under Existing Plus Project (Phase A) conditions. Level of service calculation worksheets for the Existing Plus Project (Phase A) conditions are provided in **Appendix P**. As shown in the table, the following three (3) study intersections would continue to operate at substandard LOS E or F under Existing Plus Project (Phase A) conditions:

- E. Vista Way / Gopher Canyon Road – LOS F during both the AM and PM peak hours, and the Phase A project traffic would add more than 5 peak hour trips to the critical movement, as well as more than 1 second of delay to this signalized intersection. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase A of the Lilac Hills Ranch would result in a direct impact to this intersection.

TABLE 5.1
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE A) CONDITIONS

Roadway	From	To	With Project Phase A				Existing		Project Phase A ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
E. Dulin Road	Old Highway 395	SR-76	2-Ln	9,800	2,320	B	1,830	B	500	No
W. Lilac Road	Camino Del Rey	Camino Del Cielo	2-Ln	7,800	2,470	A	2,270	A	210	No
W. Lilac Road	Camino Del Cielo	Old Highway 395	2-Ln	7,800	2,410	A	2,140	A	270	No
W. Lilac Road	Old Highway 395	Main Street	2-Ln	8,700	4,310	A	1,150	A	3,160	No
W. Lilac Road	Main Street	Street "F"	2-Ln	7,800	1,500	A	1,150	A	350	No
W. Lilac Road	Street "F"	Covey Lane	2-Ln	7,800	1,500	A	1,150	A	350	No
W. Lilac Road	Covey Lane	Circle R Drive	2-Ln	7,800	830	A	480	A	350	No
W. Lilac Road	Circle R Drive	Lilac Road	2-Ln	7,800	1,490	A	1,170	A	320	No
Camino Del Cielo	Camino Del Rey	W. Lilac Road	2-Ln	10,900	640	A	630	A	10	No
Olive Hill Road	Shamrock Road	SR-76	2-Ln	8,700	3,400	A	3,380	A	20	No
Camino Del Rey	SR-76	Old River Road	2-Ln	10,900	9,420	D	9,350	D	70	No
Camino Del Rey	Old River Road	W. Lilac Road	2-Ln	9,800	8,850	D	8,640	D	210	No
Camino Del Rey	W. Lilac Road	Camino Del Cielo	2-ln w/ SM	13,500	6,740	C	6,730	C	10	No
Camino Del Rey	Camino Del Cielo	Old Highway 395	2-Ln	7,800	4,870	A	4,850	A	20	No
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	2-Ln	9,800	15,450	F	15,320	F	130	*Yes > 100ADT*
Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	4-Ln	30,800	12,520	A	12,390	A	130	No
Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	4-Ln	30,800	12,000	A	11,870	A	130	No
Circle R Drive	Old Highway 395	Mountain Ridge Road	2-Ln	9,800	4,060	C	4,030	C	40	No
Circle R Drive	Mountain Ridge Road	W. Lilac Road	2-Ln	9,800	1,800	B	1,770	B	40	No

TABLE 5.1
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE A) CONDITIONS

Roadway	From	To	With Project Phase A				Existing		Project Phase A ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Old Castle Road	Old Highway 395	Lilac Road	2-Ln	9,800	6,870	D	6,840	D	30	No
E. Vista Way	SR-76	Gopher Canyon Road	2-Ln w/ TWLTL	13,500	15,160	E	15,120	E	50	No < 200ADT
E. Vista Way	Gopher Canyon Road	Osborne Street	2-Ln w/ TWLTL	13,500	21,090	F	21,020	F	70	No < 100ADT
Old River Road	SR-76	Camino Del Rey	2-Ln	9,800	4,210	C	4,070	C	140	No
Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	2-Ln	10,900	4,230	C	4,170	C	60	No
Pankey Road	Pala Mesa Drive	SR-76	2-Ln	4,500	70	A	70	A	0	No
Lilac Road	Couser Canyon Road	W. Lilac Road	2-Ln	7,800	1,200	A	1,150	A	50	No
Lilac Road	W. Lilac Road	Old Castle Road	2-Ln	7,800	2,890	A	2,640	A	250	No
Lilac Road	Old Castle Road	Anthony Road	2-Ln	10,900	9,240	D	9,010	D	240	No
Lilac Road	Anthony Road	Betsworth Road	2-Ln	10,900	8,870	D	8,740	D	140	No
Lilac Road	Betsworth Road	Valley Center Road	2-Ln	13,500	9,730	D	9,620	D	110	No
Valley Center Road	Woods Valley Road	Lilac Road	4/Ln w/ TWLTL/RM	27,000	21,310	C	21,290	C	20	No
Valley Center Road	Lilac Road	Miller Road	4-Ln w/ RM	33,400	24,370	B	24,280	B	90	No
Valley Center Road	Miller Road	Cole Grade Road	4-Ln w/ RM	27,000	22,530	C	22,440	C	90	No
Valley Center Road	Cole Grade Road	Vesper Road	2-Ln	13,500	11,540	D	11,490	D	50	No
Miller Road	Misty Oak Road	Valley Center Road	2-Ln	7,000	1,470	A	1,460	A	0	No

TABLE 5.1
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE A) CONDITIONS

Roadway	From	To	With Project Phase A				Existing		Project Phase A ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Cole Grade Road	Fruitvale Road	Valley Center Road	2-Ln w/ TWLTL	13,500	10,690	D	10,660	D	30	No

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E or F.
RM = Raised Median.
SM = Striped Median.
TWLTL = Two-Way Left-Turn Lane.

TABLE 5.2
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE A) CONDITIONS

Intersection	Traffic Control	With Project Phase A				Existing		Change in Delay (sec.) AM / PM	Phase A Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
1. E. Vista Way / Gopher Canyon Road	Signal	175.7	F	221.2	F	172.8 / 212.0	F / F	2.9 / 9.2	WB:+7 / NB:+5	*Yes County Int. > 5 trips >1 sec.*
2. SR-76 / Old River Road/E. Vista Way	Signal	24.1	C	32.0	C	23.7 / 32	C / C	0.4 / 0.0	-	No
3. SR-76 / Olive Hill Road/Camino Del Rey	Signal	26.4	C	34.5	C	21.6 / 34.5	C / C	4.8 / 0.0	-	No
4. Old River Road / Camino Del Rey	OWSC	23.4	D	12.2	B	23.2 / 12.2	D / B	0.2 / 0.0	-	No
5. W. Lilac Road / Camino Del Rey	OWSC	16.2	C	11.1	B	15.7 / 11.0	C / B	0.5 / 0.1	-	No
6. Old Highway 395 / SR-76	Signal	29.3	C	41.8	D	29.0 / 39.8	C / D	0.3 / 2.0	-	No
7. Pankey Road / SR-76	TWSC	12.9	B	15.5	C	12.8 / 15.2	B / C	0.1 / 0.3	-	No
8. Old Highway 395 / E. Dulin Road	OWSC	14.7	B	13.1	B	14.7 / 11.2	B / B	0.0 / 1.9	-	No
9. Old Highway 395 / W. Lilac Road	TWSC	19.3	C	21.9	C	18.5 / 13.3	C / B	0.8 / 8.6	-	No
10. I-15 SB Ramps / Old Highway 395	OWSC	12.0	B	12.1	B	10.6 / 12.1	B / B	1.4 / 0.0	-	No
11. I-15 NB Ramps / Old Highway 395	OWSC	10.2	B	12.9	B	9.8 / 11.2	A / B	0.4 / 1.7	-	No

TABLE 5.2
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE A) CONDITIONS

Intersection	Traffic Control	With Project Phase A				Existing		Change in Delay (sec.) AM / PM	Phase A Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
12. Old Highway 395 / Camino Del Rey	OWSC	10.2	B	11.3	B	10.1 / 11.0	B / B	0.1 / 0.3	-	No
13. Old Highway 395 / Circle R Drive	OWSC	21.5	C	23.6	C	20.4 / 22.5	C / C	1.1 / 1.1	-	No
14. I-15 SB Ramps / Gopher Canyon Road	OWSC	469.6	F	173.0	F	468.2 / 173.0	F / F	1.4 / 0.0	-	No Caltrans Int. < 2 sec.
15. I-15 NB Ramps / Gopher Canyon Road	OWSC	31.3	D	1945.5	F	30.5 / 1945.4	D / F	0.8 / 0.1	-	No Caltrans Int. < 2 sec.
16. Old Highway 395 / Gopher Canyon Road	Signal	13.4	B	14.9	B	11.0 / 14.7	B / B	2.4 / 0.2	-	No
17. Old Highway 395 / Old Castle Road	Signal	13.9	B	16.2	B	13.9 / 15.7	B / B	0.0 / 0.5	-	No
18. W. Lilac Road / Covey Lane	TWSC	9.0	A	9.3	A	8.8 / 9.3	B / A	0.2 / 0.0	-	No
19. Mountain Ridge Road / Circle R Drive	TWSC	9.3	A	9.6	A	9.3 / 9.6	A / A	0.0 / 0.0	-	No
20. W. Lilac Road / Circle R Drive	OWSC	9.6	A	9.3	A	9.3 / 9.3	A / A	0.3 / 0.0	-	No
21. Lilac Road / W. Lilac Road	OWSC	9.7	A	10.2	B	9.6 / 9.9	A / A	0.1 / 0.3	-	No
22. Lilac Road / Old Castle Road	OWSC	12.2	B	18.6	C	11.8 / 17.8	B / C	0.4 / 0.8	-	No
23. Valley Center Rd / Lilac Road	Signal	10.6	B	22.8	C	10.5 / 22.6	B / C	0.1 / 0.2	-	No

TABLE 5.2
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE A) CONDITIONS

Intersection	Traffic Control	With Project Phase A				Existing		Change in Delay (sec.) AM / PM	Phase A Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
24. Miller Road / Valley Center Road	OWSC	17.0	C	25.3	D	16.9 / 25.0	C / D	0.1 / 0.3	-	No
25. Cole Grade Road / Valley Center Road	Signal	31.1	C	34.9	C	31.1 / 34.9	C / C	0.0 / 0.0	-	No
26. Street "O" / W. Lilac Road/Main Street	RA	4.6	A	5.4	A	DNE	DNE	4.6 / 5.4	-	No
27. Main Street / Street "C"	RA	3.9	A	4.1	A	DNE	DNE	3.9 / 4.1	-	No
28. Lilac Hills Ranch Road / Main Street North	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
29. Lilac Hills Ranch Road / Main Street South	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
30. Street "Z" / Main Street	OWSC	8.6	A	8.6	A	DNE	DNE	8.6 / 8.6	-	No
31. W. Lilac Road/Street "F" / Main Street	RA	3.5	A	3.5	A	DNE	DNE	3.5 / 3.5	-	No

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E of F.
AWSC = All-Way Stop Controlled.
TWSC = Two-Way Stop Controlled.
OWSC = One-Way Stop Controlled.
RA = Roundabout.
DNE = Does Not Exist.
For OWSC and TWSC intersections, the delay shown is the worst delay experienced by any of the approaches.

- I-15 SB Ramps / Gopher Canyon Road (Caltrans) – LOS F during both the AM and PM peak hours, and the Phase A project traffic would not add two seconds or more of additional delay to this intersection. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase A of the Lilac Hills Ranch project would not result in any direct impact to this intersection.
- I-15 NB Ramps / Gopher Canyon Road (Caltrans) – LOS F during the PM peak hour, and the Phase A project traffic would not add two seconds or more of additional delay to this intersection. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase A of the Lilac Hills Ranch project would not result in any direct impact to this intersection.

Two-lane Highway Analysis

Table 5.3 displays two-lane highway level of service analysis results for Old Highway 395 under Existing Plus Project (Phase A) conditions. The two-lane highway level of service analysis was performed utilizing the methodology presented in Chapter 2.0.

As shown in the table, all segments along Old Highway 395 would continue to operate at acceptable LOS D or better under Existing Plus Project (Phase A) conditions and the additional traffic generated by Phase A of the project would not cause any direct impacts to Old Highway 395.

Freeway Segment Analysis

The freeway segment level of service analysis was performed utilizing the methodology presented in Chapter 2.0. **Table 5.4** displays the resulting level of service for I-15 under Existing Plus Project (Phase A) conditions.

As shown in the table, all of the study area freeway segments along I-15 would continue to operate at LOS D or better under Existing Plus Project (Phase A) conditions. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase A of the project would not cause any direct impacts to study area freeway segments.

TABLE 5.3
TWO-LANE HIGHWAY LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE A) CONDITIONS

2-Ln Highway	From	To	With Project Phase A			Existing		Project Phase A ADT	Direct Impact?
			LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Old Highway 395	Pala Mesa Drive	SR-76	16,200	4,870	D or better	4,770	D or better	100	No
Old Highway 395	SR-76	E. Dulin Road	16,200	5,070	D or better	4,720	D or better	350	No
Old Highway 395	E. Dulin Road	W. Lilac Road	16,200	5,190	D or better	4,340	D or better	850	No
Old Highway 395	W. Lilac Road	I-15 SB Ramps	16,200	6,400	D or better	4,450	D or better	1,950	No
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	16,200	4,700	D or better	3,600	D or better	1,110	No
Old Highway 395	I-15 NB Ramps	Camino Del Rey	16,200	2,730	D or better	2,430	D or better	300	No
Old Highway 395	Camino Del Rey	Circle R Drive	16,200	6,080	D or better	5,820	D or better	270	No
Old Highway 395	Circle R Drive	Gopher Canyon Road	16,200	10,940	D or better	10,710	D or better	230	No
Old Highway 395	Gopher Canyon Road	Old Castle Road	16,200	8,750	D or better	8,660	D or better	90	No

Source: Chen Ryan Associates; May 2014

TABLE 5.4
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE A) CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-15	Riverside County Boundary to Old Highway 395	134,590	8.4%	11,371	0.64	4	0.95	6.75%	1,965	0.836	D	0.004	No
I-15	Old Highway 395 to SR-76	134,610	7.4%	10,014	0.73	4	0.95	6.75%	1,993	0.848	D	0.004	No
I-15	SR-76 to Old Highway 395	113,530	7.8%	8,880	0.69	4	0.95	8.40%	1,669	0.710	C	0.003	No
I-15	Old Highway 395 to Gopher Canyon Road	111,160	8.1%	8,977	0.67	4	0.95	8.40%	1,644	0.700	C	0.007	No
I-15	Gopher Canyon Road to Deer Springs Road	118,160	8.1%	9,543	0.67	4	0.95	13.20%	1,788	0.761	C	0.007	No
I-15	Deer Springs Road to Centre City Parkway	117,940	8.0%	9,475	0.66	4	0.95	13.20%	1,766	0.751	C	0.006	No
I-15	Centre City Parkway to El Norte Parkway	111,750	8.0%	8,978	0.66	4	0.95	13.20%	1,673	0.712	C	0.005	No
I-15	El Norte Parkway to SR-78	127,690	7.9%	10,050	0.66	4	0.95	10.00%	1,846	0.786	C	0.004	No
I-15	SR-78 to W Valley Parkway	192,510	8.1%	15,667	0.60	5+2ML	0.95	10.00%	1,484	0.631	C	0.002	No
I-15	W Valley Parkway to Auto Parkway	179,430	8.1%	14,603	0.60	5+2ML	0.95	10.00%	1,383	0.589	B	0.001	No
I-15	Auto Parkway to W Citracado Parkway	172,420	7.8%	13,372	0.60	5+2ML	0.95	10.00%	1,259	0.536	B	0.001	No

TABLE 5.4
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE A) CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-15	W Citracado Parkway to Via Rancho Parkway	196,370	7.8%	15,230	0.60	5+2ML	0.95	7.00%	1,413	0.601	B	0.001	No
I-15	Via Rancho Parkway to Bernardo Drive	198,340	7.4%	14,597	0.58	5+2ML	0.95	7.00%	1,314	0.559	B	0.001	No
I-15	Bernardo Drive to Rancho Bernardo Road	201,320	7.4%	14,817	0.58	5+2ML	0.95	7.00%	1,334	0.568	B	0.001	No
I-15	Rancho Bernardo Road to Bernardo Center Drive	209,200	7.3%	15,359	0.54	5+2ML	0.95	7.00%	1,281	0.545	B	0.001	No
I-15	Bernardo Center Drive to Camino Del Norte	214,290	7.3%	15,733	0.54	5+2ML	0.95	7.00%	1,312	0.558	B	0.001	No

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E or F.
ML = Managed Lane.

Ramp Intersection Capacity Analysis

Consistent with Caltrans' requirements, the signalized intersections along SR-76 within the study area were analyzed under Existing Plus Project (Phase A) conditions using the ILV procedures as described in Chapter 2.0. ILV analysis results are displayed in **Table 5.5** and analysis worksheets for the Existing Plus Project (Phase A) conditions are provided in **Appendix Q**.

TABLE 5.5
RAMP INTERSECTION CAPACITY ANALYSIS
EXISTING PLUS PROJECT (PHASE A) CONDITIONS

Ramp Intersection	Peak Hour	ILV / Hour	Description
SR-76 / Old River Road/E. Vista Way	AM	1,517	*>1500: (Over Capacity)*
	PM	1,270	*1200-1500: (At Capacity)*
SR-76 / Olive Hill Road/Camino Del Rey	AM	1,204	*1200-1500: (At Capacity)*
	PM	1,372	*1200-1500: (At Capacity)*
SR-76 / Old Highway 395	AM	1,018	*<1200: (Under Capacity)*
	PM	1,062	*<1200: (Under Capacity)*

Source: Chen Ryan Associates; May 2014

As shown in the table, all three (3) intersections along SR-76 would operate at "At Capacity" and/or "Under Capacity", with the exception of the SR-76 / Old River Road/E. Vista Way intersection, which would operate at "Over Capacity" during the AM peak hour under the Existing Plus Project (Phase A) conditions.

5.1.3 Existing Plus Project (Phase A) Impact Significance and Mitigation

This section identifies required mitigation measures for roadway, intersection, two-lane highway, and freeway facilities that would be significantly impacted by project-related traffic under Existing Plus Project (Phase A) conditions.

Roadway Segments

Phase A of the project traffic would result in direct impact at one (1) of the study area roadway segment. The following improvements would be required to mitigate the identified impact:

- Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps – The project would add 130 daily trips (approximately 0.8% of the total ADT) to this roadway which is approximately 7 miles away from the project site.

The mitigation for this direct impact is the provision of a dedicated right-turn lane at the westbound Gopher Canyon Road approach of the East Vista Way / Gopher Canyon Road intersection, the constraining intersection along the impacted segment. The arterial analysis shown in **Appendix R** and summarized in **Table 5.6** below shows that the mitigation would

increase the AM peak hour average travel speed along this segment to better than the Existing conditions, and would maintain the same PM peak hour average travel speed as the Existing conditions. Therefore, the direct impact at the segment of Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps would be mitigated.

TABLE 5.6
ARTERIAL LEVEL OF SERVICE RESULTS AFTER MITIGATION
EXISTING PLUS PROJECT (PHASE A) CONDITIONS

Arterial	After Mitigation				Existing			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS
Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps	40.8	B	44.3	A	30.6	C	44.3	A

Source: Chen Ryan Associates; May 2014

Intersections

Phase A of the project traffic would have a direct impact on the study area intersection of *E. Vista Way / Gopher Canyon Road* intersection. The following intersection improvement would be required to mitigate the identified traffic impact:

- *E. Vista Way / Gopher Canyon Road* (signal) (County) – Construction of a dedicated right-turn lane at the westbound Gopher Canyon Road approach of the East Vista Way / Gopher Canyon Road intersection. This mitigation measure would be required by 238th EDU to mitigate direct project impact.

Table 5.7 displays level of service analysis results for the mitigated intersection under the Existing Plus Project (Phase A) conditions. Calculation worksheets for the intersection analysis are provided in **Appendix S**.

TABLE 5.7
MITIGATED INTERSECTION LEVEL OF SERVICE
EXISTING PLUS PROJECT (PHASE A) CONDITIONS

Intersection	After Mitigation				Existing	
	AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM
	Delay (Sec.)	LOS	Delay (sec.)	LOS		
1. E. Vista Way / Gopher Canyon Road	113.6	F	177.9	F	172.8 / 212.0	F / F

Source: Chen Ryan Associates; May 2014

Note: Bold letter indicates unacceptable LOS E or F.

As shown in the table, after the proposed mitigation measures, the intersection of E. Vista Way / Gopher Canyon Road would continue to operate at LOS F during the peak hours. However,

the intersection delays are significantly reduced to less than existing conditions, and hence the direct impact would be mitigated.

Two-Lane Highways

None of the study area two-lane highway facilities would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Phase A) conditions.

Freeways

None of the study area freeway facilities would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Phase A) conditions.

Table 5.8 summarizes potential impacts and recommended mitigation measures associated with Phase A of the Lilac Hills Ranch project.

TABLE 5.8
IMPACT AND MITIGATION SUMMARY
EXISTING PLUS PROJECT (PHASE A) CONDITIONS

Impacted Facility	Mitigation Measures
Roadway Segment	
Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps	Construction of a dedicated WB right-turn lane at the intersection of E. Vista Way / Gopher Canyon Road by 238th EDU.
Intersection	
E. Vista Way / Gopher Canyon Road	Construction of a dedicated WB right-turn lane at the intersection of E. Vista Way / Gopher Canyon Road by 238th EDU.
Two-Lane Highway	
None	-
Freeway	
None	-

Source: Chen Ryan Associates; May 2014

5.2 Existing Plus Project (Phase B) Conditions

5.2.1 Existing Plus Project (Phase B) Roadway Network and Traffic Volumes

The Existing Plus Project (Phase B) scenario includes existing traffic volumes with the addition of traffic generated by traffic analysis Phase B. Intersection and roadway geometrics under Existing Plus Project conditions were assumed to be identical to Existing conditions, with the exception of the following roads and driveway intersections associated with project frontage and access:

- Main Street, between West Lilac Road and Street "C";
- Main Street, between Street "Z" and W. Lilac Road;
- Street "C" and Street "Z";
- Covey Lane, west of W. Lilac Road;
- Intersection # 26, Street "O" / W. Lilac Road/Main Street – proposed roundabout;
- Intersection # 27, Main Street / Street "C"– proposed roundabout;
- Intersection # 30, Street "Z" / Main Street – proposed one-way stop (southbound Street "Z" approach) controlled L-intersection; and
- Intersection # 31, Street "Z" / Main Street – proposed roundabout.

In addition to the project access and frontage roads assumed above, mitigation measure from Phase A was also carried forward into this Phase, including:

- Construction of a dedication right-turn lane at the westbound Gopher Canyon Road approach of the intersection of E. Vista Way and Gopher Canyon Road.

5.2.2 Existing Plus Project (Phase B) Traffic Conditions

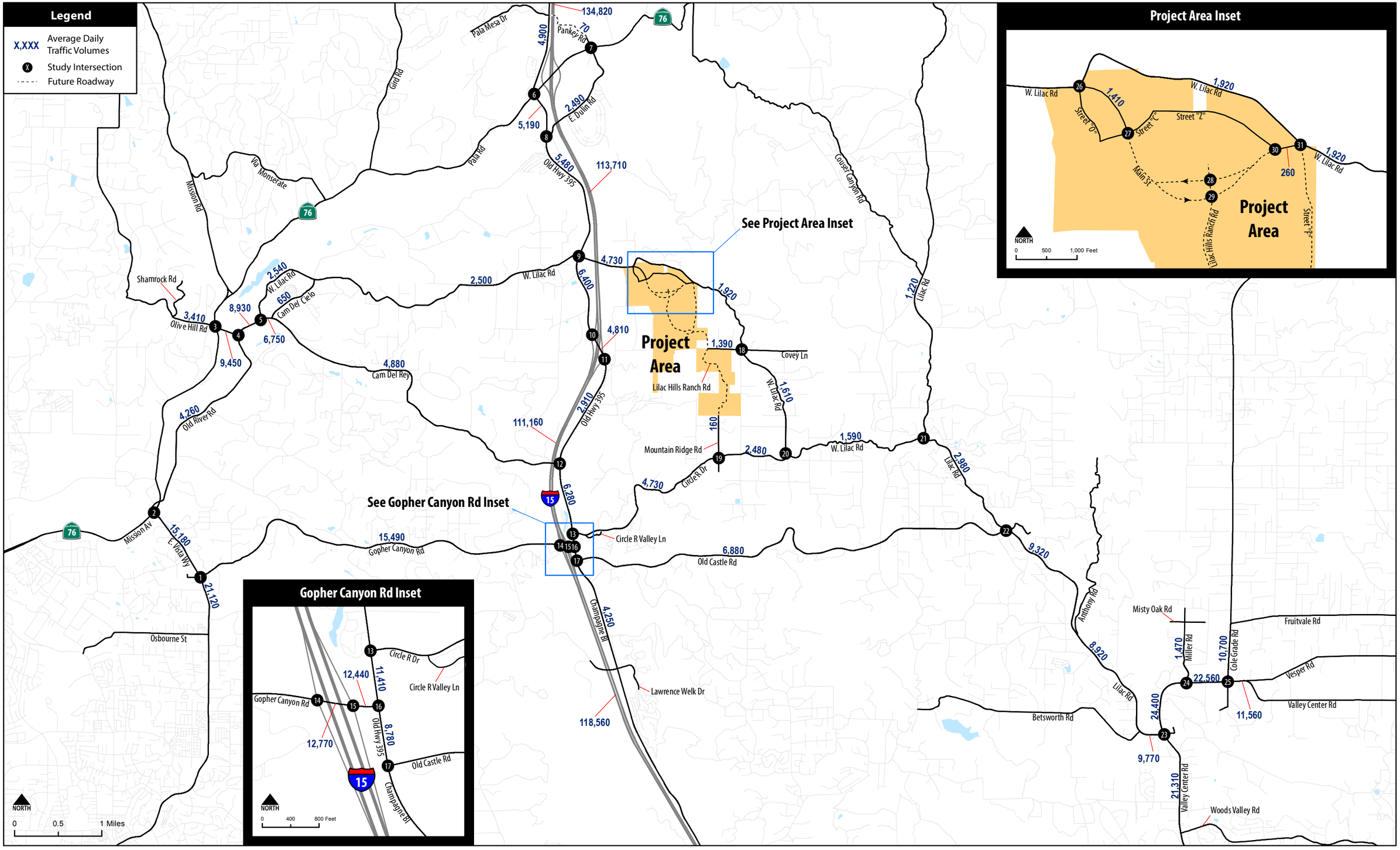
Level of service analyses under Existing Plus Project (Phase B) conditions were conducted using the methodologies described in Chapter 2.0. Roadway segment, intersection, two-lane highway, freeway segment, and ramp intersection level of service results are discussed separately below. Average daily traffic volumes on study area roadway segments are displayed in **Figure 5-2A**, while peak hour traffic volumes at the key study area intersections are displayed in **Figure 5-2B**.

Roadway Segment Analysis

Table 5.9 displays the level of service analysis results for key roadway segments under Existing Plus Project (Phase B) conditions. As shown, similar to Existing conditions, the following three (3) roadway segments would continue to operate at substandard LOS E or F:

- Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps – LOS F;

  The construction of a dedicated right-turn lane at the westbound Gopher Canyon Road approach of the intersection of E. Vista Way and Gopher Canyon Road was identified under the Existing Plus Project (Phase A) conditions as a mitigation measure. With this mitigation measure, the arterial analysis for Existing Plus Project (Phase B) shown in **Appendix T** and summarized in **Table 5.10** shows that the mitigation would increase the AM peak hour average travel speed along this segment to better than the Existing conditions, and would maintain the same PM peak hour average travel speed as the Existing conditions. Therefore, with the mitigation measure from Phase A, the additional traffic generated by Phase B of the Lilac Hills Ranch project would not result in a direct impact at this segment.

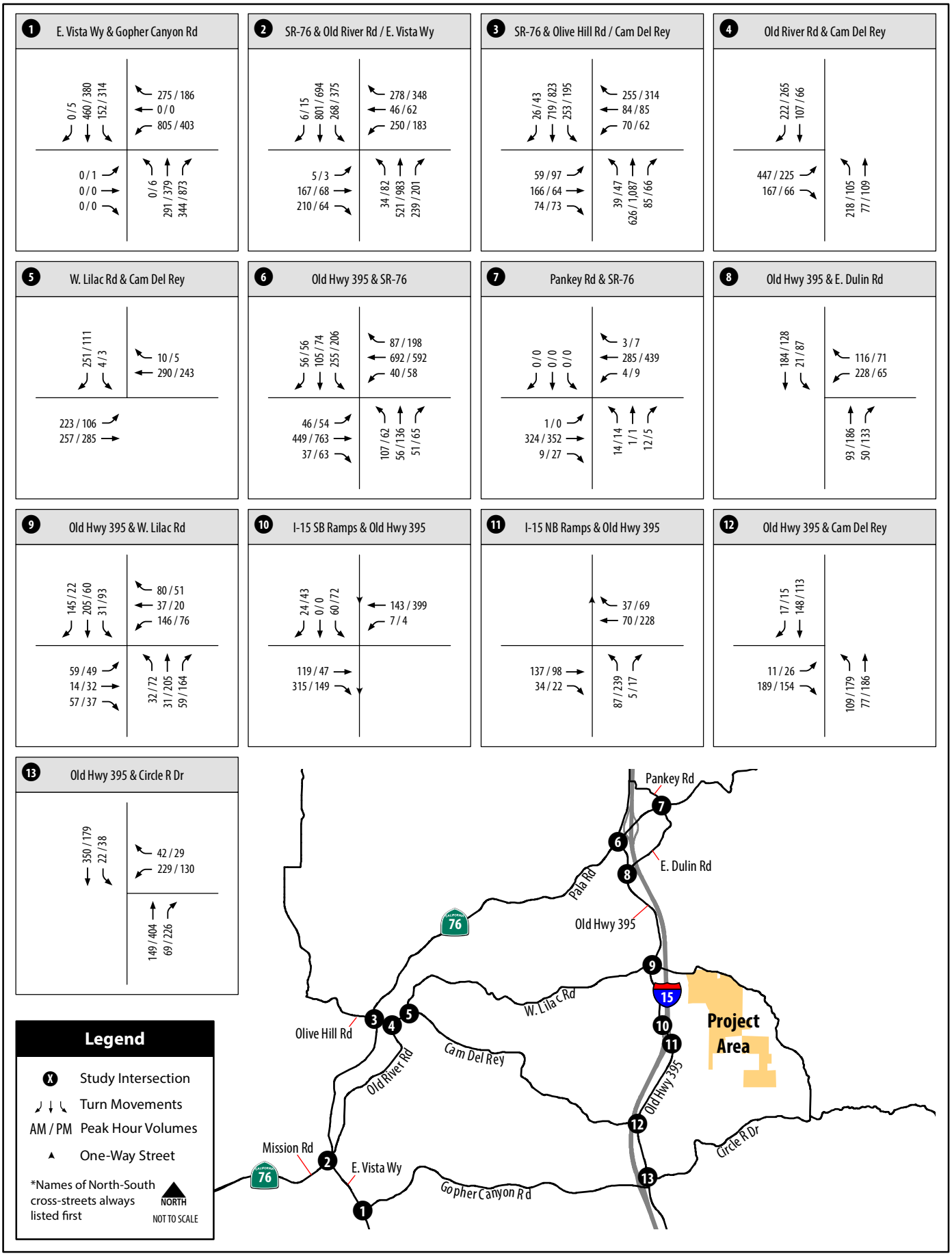


Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 5-2A

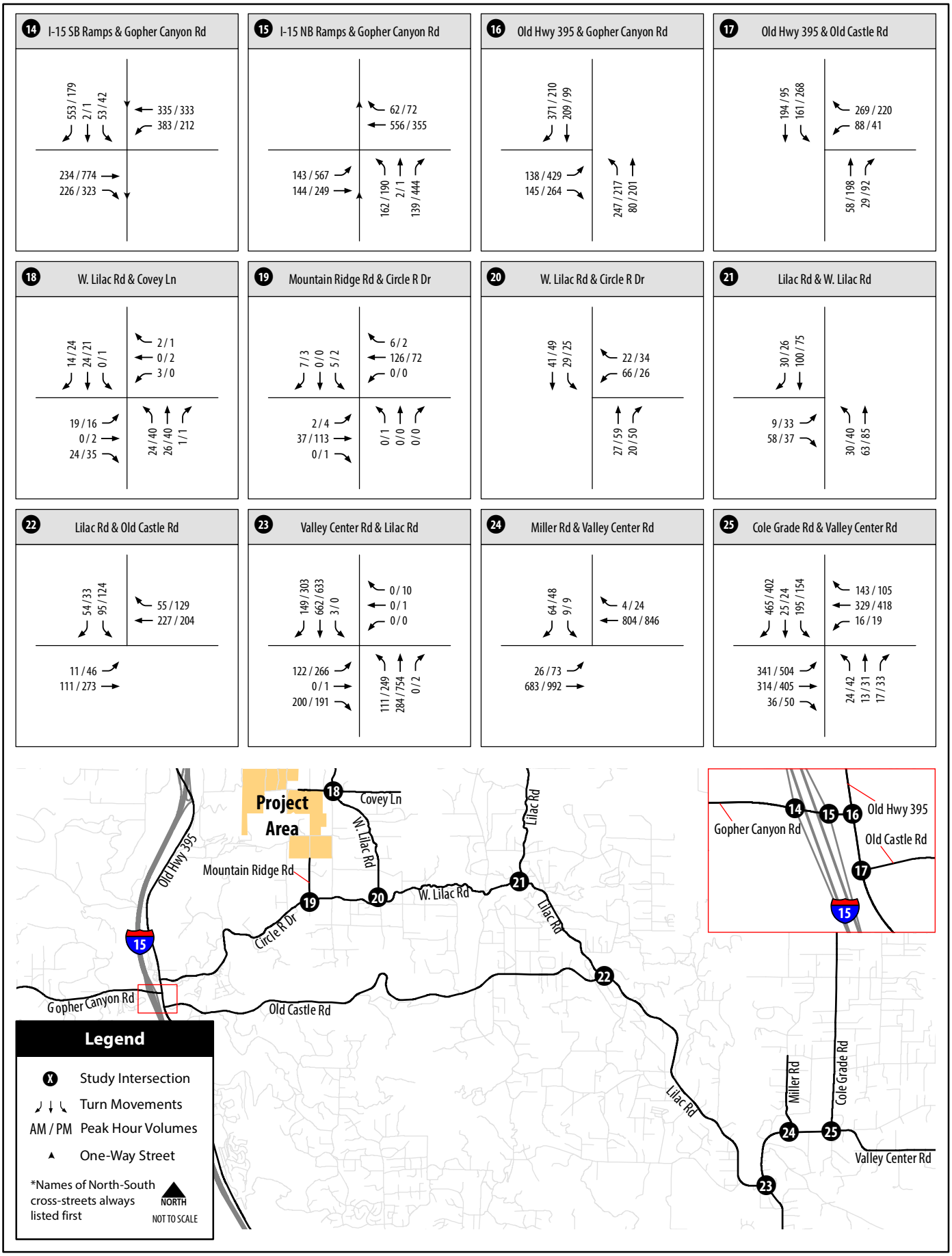
Roadway Average Daily Traffic Volumes - Existing Plus Project (Phase B) Conditions



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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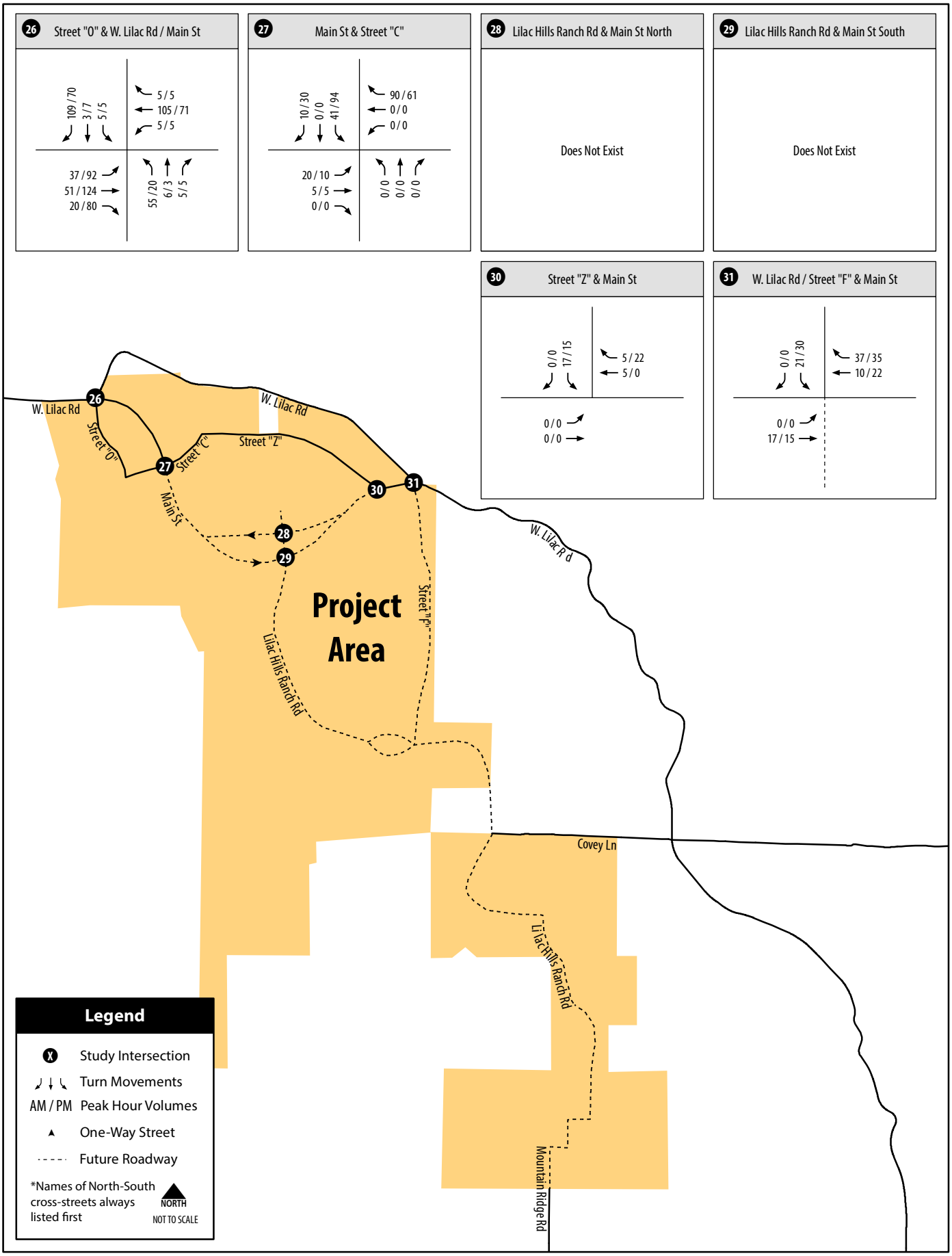
Figure 5-2B (Intersections 1-13)
Intersection Peak Hour Traffic Volumes - Existing Plus Project (Phase B) Conditions



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 5-2B (Intersections 14-25)
Intersection Peak Hour Traffic Volumes - Existing Plus Project (Phase B) Conditions



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 5-2B (Intersections 26-31)
Intersection Peak Hour Traffic Volumes - Existing Plus Project (Phase B) Conditions

TABLE 5.9
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE B) CONDITIONS

Roadway	From	To	With Project Phase B				Existing		Project Phase B ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
E. Dulin Road	Old Highway 395	SR-76	2-Ln	9,800	2,490	B	1,830	B	670	No
W. Lilac Road	Camino Del Rey	Camino Del Cielo	2-Ln	7,800	2,540	A	2,270	A	280	No
W. Lilac Road	Camino Del Cielo	Old Highway 395	2-Ln	7,800	2,500	A	2,140	A	360	No
W. Lilac Road	Old Highway 395	Main Street	2-Ln	8,700	4,730	A	1,150	A	3,590	No
W. Lilac Road	Main Street	Street "F"	2-Ln	7,800	1,920	A	1,150	A	770	No
W. Lilac Road	Street "F"	Covey Lane	2-Ln	7,800	1,920	A	1,150	A	770	No
W. Lilac Road	Covey Lane	Circle R Drive	2-Ln	7,800	1,610	A	480	A	1,130	No
W. Lilac Road	Circle R Drive	Lilac Road	2-Ln	7,800	1,590	A	1,170	A	420	No
Camino Del Cielo	Camino Del Rey	W. Lilac Road	2-Ln	10,900	650	A	630	A	10	No
Olive Hill Road	Shamrock Road	SR-76	2-Ln	8,700	3,410	A	3,380	A	30	No
Camino Del Rey	SR-76	Old River Road	2-Ln	10,900	9,450	D	9,350	D	90	No
Camino Del Rey	Old River Road	W. Lilac Road	2-Ln	9,800	8,930	D	8,640	D	290	No
Camino Del Rey	W. Lilac Road	Camino Del Cielo	2-ln w/ SM	13,500	6,750	C	6,730	C	20	No
Camino Del Rey	Camino Del Cielo	Old Highway 395	2-Ln	7,800	4,880	A	4,850	A	30	No
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	2-Ln	9,800	15,490	F	15,320	F	180	No* > 100ADT
Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	4-Ln	30,800	12,770	A	12,390	A	380	No
Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	4-Ln	30,800	12,440	A	11,870	A	580	No
Circle R Drive	Old Highway 395	Mountain Ridge Road	2-Ln	9,800	4,730	C	4,030	C	700	No
Circle R Drive	Mountain Ridge Road	W. Lilac Road	2-Ln	9,800	2,480	B	1,770	B	710	No

TABLE 5.9
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE B) CONDITIONS

Roadway	From	To	With Project Phase B				Existing		Project Phase B ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Old Castle Road	Old Highway 395	Lilac Road	2-Ln	9,800	6,880	D	6,840	D	40	No
E. Vista Way	SR-76	Gopher Canyon Road	2-Ln w/ TWLTL	13,500	15,180	E	15,120	E	70	No < 200ADT
E. Vista Way	Gopher Canyon Road	Osborne Street	2-Ln w/ TWLTL	13,500	21,120	F	21,020	F	<100	No < 100ADT
Old River Road	SR-76	Camino Del Rey	2-Ln	9,800	4,260	C	4,070	C	190	No
Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	2-Ln	10,900	4,250	C	4,170	C	80	No
Pankey Road	Pala Mesa Drive	SR-76	2-Ln	4,500	70	A	70	A	0	No
Lilac Road	Couser Canyon Road	W. Lilac Road	2-Ln	7,800	1,220	A	1,150	A	70	No
Lilac Road	W. Lilac Road	Old Castle Road	2-Ln	7,800	2,980	A	2,640	A	340	No
Lilac Road	Old Castle Road	Anthony Road	2-Ln	10,900	9,320	D	9,010	D	320	No
Lilac Road	Anthony Road	Betsworth Road	2-Ln	10,900	8,920	D	8,740	D	180	No
Lilac Road	Betsworth Road	Valley Center Road	2-Ln	13,500	9,770	D	9,620	D	150	No
Valley Center Road	Woods Valley Road	Lilac Road	4/Ln w/ TWLTL/RM	27,000	21,310	C	21,290	C	20	No
Valley Center Road	Lilac Road	Miller Road	4-Ln w/ RM	33,400	24,400	B	24,280	B	120	No
Valley Center Road	Miller Road	Cole Grade Road	4-Ln w/ RM	27,000	22,560	C	22,440	C	120	No
Valley Center Road	Cole Grade Road	Vesper Road	2-Ln	13,500	11,560	D	11,490	D	70	No
Miller Road	Misty Oak Road	Valley Center Road	2-Ln	7,000	1,470	A	1,460	A	0	No

TABLE 5.9
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE B) CONDITIONS

Roadway	From	To	With Project Phase B				Existing		Project Phase B ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Cole Grade Road	Fruitvale Road	Valley Center Road	2-Ln w/ TWLTL	13,500	10,700	D	10,660	D	40	No

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E or F.
RM = Raised Median.
SM = Striped Median.
TWLTL = Two-Way Left-Turn Lane.
* Phase A mitigation measures at the intersection of E. Vista Way / Gopher Canyon Road were assumed to be carried forwarded into Phases B, C, D, & E.

TABLE 5.10
ARTERIAL LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE B) CONDITIONS

Arterial	With Project Phase B				Existing			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS
Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps	40.7	B	44.3	A	30.6	C	44.3	A

Source: Chen Ryan Associates; May 2014

- E. Vista Way, between Gopher Canyon Road and Osborne Street – LOS F.

  Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase B of the Lilac Hills Ranch would not result in direct impacts to this roadway segment since it would not add more than 100 daily trips.

- E. Vista Way, between SR-76 and Gopher Canyon Road – LOS E;

  Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase B of the Lilac Hills Ranch project would not result in direct impacts to this roadway segment since it would not add more than 200 daily trips.

Intersection Analysis

Table 5.11 displays intersection level of service and average vehicle delay results under Existing Plus Project (Phase B) conditions. Level of service calculation worksheets for the Existing Plus Project (Phase B) conditions are provided in **Appendix U**.

As shown in the table, the following three (3) study intersections would continue to operate at substandard LOS E or F under Existing Plus Project (Phase B) conditions:

- E. Vista Way / Gopher Canyon Road (County) – LOS F during both the AM and PM peak hours. However, this intersection is currently operating at LOS F and Phase A recommended mitigation measure would improve the intersection operations to better than existing conditions. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase B of the Lilac Hills Ranch project would not have a direct impact at this intersection.

TABLE 5.11
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE B) CONDITIONS

Intersection	Traffic Control	With Project Phase B				Existing		Change in Delay (sec.) AM / PM	Phase B Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
1. E. Vista Way / Gopher Canyon Road	Signal*	114.7	F	178.6	F	172.8 / 212.0	F / F	-58.1 / -33.4	-	No
2. SR-76 / Old River Road/E. Vista Way	Signal	24.2	C	32.1	C	23.7 / 32	C / C	0.5 / 0.1	-	No
3. SR-76 / Olive Hill Road/Camino Del Rey	Signal	26.4	C	34.7	C	21.6 / 34.5	C / C	4.8 / 0.2	-	No
4. Old River Road / Camino Del Rey	OWSC	23.4	D	12.2	B	23.2 / 12.2	D / B	0.2 / 0.0	-	No
5. W. Lilac Road / Camino Del Rey	OWSC	16.3	C	11.1	B	15.7 / 11.0	C / B	0.6 / 0.1	-	No
6. Old Highway 395 / SR-76	Signal	29.6	C	42.7	D	29.0 / 39.8	C / D	0.6 / 2.9	-	No
7. Pankey Road / SR-76	TWSC	14.1	B	18.8	C	12.5 / 15.2	B / C	1.6 / 3.6	-	No
8. Old Highway 395 / E. Dulin Road	OWSC	14.7	B	13.6	B	12.8 / 11.2	B / B	1.9 / 2.4	-	No
9. Old Highway 395 / W. Lilac Road	TWSC	22.3	C	24.2	D	14.7 / 13.3	C / B	7.6 / 10.9	-	No
10. I-15 SB Ramps / Old Highway 395	OWSC	11.0	B	12.1	B	10.6 / 12.1	B / B	0.4 / 0.0	-	No
11. I-15 NB Ramps / Old Highway 395	OWSC	10.2	B	13.1	B	9.8 / 11.2	A / B	0.4 / 1.9	-	No

TABLE 5.11
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE B) CONDITIONS

Intersection	Traffic Control	With Project Phase B				Existing		Change in Delay (sec.) AM / PM	Phase B Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
12. Old Highway 395 / Camino Del Rey	OWSC	10.2	B	11.3	B	10.1 / 11.0	B / B	0.1 / 0.3	-	No
13. Old Highway 395 / Circle R Drive	OWSC	23.6	C	28.0	D	20.4 / 22.5	C / C	3.2 / 5.5	-	No
14. I-15 SB Ramps / Gopher Canyon Road	OWSC	470.3	F	173.0	F	468.2 / 173.0	F / F	2.1 / 0.0	-	Yes *Caltrans Int. > 2 sec.*
15. I-15 NB Ramps / Gopher Canyon Road	OWSC	31.8	D	1970.0	F	30.5 / 1945.4	D / F	1.3 / 24.6	-	Yes *Caltrans Int. > 2 sec.*
16. Old Highway 395 / Gopher Canyon Road	Signal	17.6	B	15.2	B	11.0 / 14.7	B / B	6.6 / 0.5	-	No
17. Old Highway 395 / Old Castle Road	Signal	13.9	B	16.2	B	13.9 / 15.7	B / B	0.0 / 0.5	-	No
18. W. Lilac Road / Covey Lane	TWSC	9.3	A	9.9	A	8.8 / 9.3	B / A	0.5 / 0.6	-	No
19. Mountain Ridge Road / Circle R Drive	TWSC	9.5	A	10.1	B	9.3 / 9.6	A / A	0.2 / 0.5	-	No
20. W. Lilac Road / Circle R Drive	OWSC	9.9	A	9.7	A	9.3 / 9.3	A / A	0.6 / 0.4	-	No
21. Lilac Road / W. Lilac Road	OWSC	9.8	A	10.2	B	9.6 / 9.9	A / A	0.2 / 0.3	-	No
22. Lilac Road / Old Castle Road	OWSC	12.3	B	19.9	C	11.8 / 17.8	B / C	0.5 / 2.1	-	No
23. Valley Center Rd / Lilac Road	Signal	10.6	B	26.4	C	10.5 / 22.6	B / C	0.1 / 3.8	-	No

TABLE 5.11
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE B) CONDITIONS

Intersection	Traffic Control	With Project Phase B				Existing		Change in Delay (sec.) AM / PM	Phase B Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour						
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS	Delay (sec.) AM / PM	LOS AM / PM			
24. Miller Road / Valley Center Road	OWSC	17	C	25.6	D	16.9 / 25.0	C / D	0.1 / 0.6	-	No
25. Cole Grade Road / Valley Center Road	Signal	31.4	C	35.1	D	31.1 / 34.9	C / C	0.3 / 0.2	-	No
26. Street "O" / W. Lilac Road/Main Street	RA	4.7	A	5.5	A	DNE	DNE	4.7 / 5.5	-	No
27. Main Street / Street "C"	RA	3.9	A	4.1	A	DNE	DNE	3.9 / 4.1	-	No
28. Lilac Hills Ranch Road / Main Street North	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
29. Lilac Hills Ranch Road / Main Street South	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE	DNE
30. Street "Z" / Main Street	OWSC	8.6	A	8.6	A	DNE	DNE	8.6 / 8.6	-	No
31. W. Lilac Road/Street "F" / Main Street	RA	3.6	A	3.7	A	DNE	DNE	3.6 / 3.7	-	No

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E of F.
AWSC = All-Way Stop Controlled.
TWSC = Two-Way Stop Controlled.
OWSC = One-Way Stop Controlled.
RA = Roundabout.
DNE = Does Not Exist.
For OWSC and TWSC intersections, the delay shown is the worst delay experienced by any of the approaches.
* Phase A mitigation measures at the intersection of E. Vista Way / Gopher Canyon Road were assumed to be carried forwarded into Phases B, C, D, & E.

- I-15 SB Ramps / Gopher Canyon Road (Caltrans) – LOS F during both the AM and PM peak hours, and the Phase B project traffic would add two seconds or more of additional delay to this intersection. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase B of the Lilac Hills Ranch project would have a direct impact at this intersection.
- I-15 NB Ramps / Gopher Canyon Road (Caltrans) – LOS F during the PM peak hour, and the Phase B project traffic would add two seconds or more of additional delay to this intersection. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase B of the Lilac Hills Ranch project would have a direct impact at this intersection.

Two-Lane Highway Analysis

Table 5.12 displays two-lane highway level of service analysis results for Old Highway 395 under Existing Plus Project (Phase B) conditions. The two-lane highway level of service analysis was performed utilizing the methodology presented in Chapter 2.0.

As shown in the table, all segments along Old Highway 395 would continue to operate at acceptable LOS D or better under Existing Plus Project (Phase B) conditions and the additional traffic generated by Phase B of the project would not cause any direct impacts to Old Highway 395.

Freeway Segment Analysis

The freeway segment level of service analysis was performed utilizing the methodology presented in Chapter 2.0. **Table 5.13** displays the resulting level of service for I-15 under Existing Plus Project (Phase B) conditions.

As shown in the table, all of the study area freeway segments along I-15 would continue to operate at LOS D or better under Existing Plus Project (Phase B) conditions. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase B of the project would not cause any direct impacts to study area freeway segments.

TABLE 5.12
TWO-LANE HIGHWAY LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE B) CONDITIONS

2-Ln Highway	From	To	With Project Phase B			Existing		Project Phase B ADT	Direct Impact?
			LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Old Highway 395	Pala Mesa Drive	SR-76	16,200	4,900	D or better	4,770	D or better	140	No
Old Highway 395	SR-76	E. Dulin Road	16,200	5,190	D or better	4,720	D or better	470	No
Old Highway 395	E. Dulin Road	W. Lilac Road	16,200	5,480	D or better	4,340	D or better	1,140	No
Old Highway 395	W. Lilac Road	I-15 SB Ramps	16,200	6,400	D or better	4,450	D or better	1,950	No
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	16,200	4,810	D or better	3,600	D or better	1,210	No
Old Highway 395	I-15 NB Ramps	Camino Del Rey	16,200	2,910	D or better	2,430	D or better	480	No
Old Highway 395	Camino Del Rey	Circle R Drive	16,200	6,280	D or better	5,820	D or better	460	No
Old Highway 395	Circle R Drive	Gopher Canyon Road	16,200	11,410	D or better	10,710	D or better	710	No
Old Highway 395	Gopher Canyon Road	Old Castle Road	16,200	8,780	D or better	8,660	D or better	120	No

Source: Chen Ryan Associates; May 2014

TABLE 5.13
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE B) CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-15	Riverside County Boundary to Old Highway 395	134,790	8.4%	11,387	0.64	4	0.95	6.75%	1,968	0.838	D	0.005	No
I-15	Old Highway 395 to SR-76	134,820	7.4%	10,030	0.73	4	0.95	6.75%	1,996	0.849	D	0.005	No
I-15	SR-76 to Old Highway 395	113,710	7.8%	8,894	0.69	4	0.95	8.40%	1,672	0.711	C	0.004	No
I-15	Old Highway 395 to Gopher Canyon Road	111,160	8.1%	8,977	0.67	4	0.95	8.40%	1,644	0.700	C	0.007	No
I-15	Gopher Canyon Road to Deer Springs Road	118,560	8.1%	9,575	0.67	4	0.95	13.20%	1,794	0.763	C	0.010	No
I-15	Deer Springs Road to Centre City Parkway	118,260	8.0%	9,501	0.66	4	0.95	13.20%	1,771	0.754	C	0.008	No
I-15	Centre City Parkway to El Norte Parkway	112,000	8.0%	8,998	0.66	4	0.95	13.20%	1,677	0.714	C	0.006	No
I-15	El Norte Parkway to SR-78	127,930	7.9%	10,069	0.66	4	0.95	10.00%	1,850	0.787	C	0.006	No
I-15	SR-78 to W Valley Parkway	192,680	8.1%	15,681	0.60	5+2ML	0.95	10.00%	1,485	0.632	C	0.002	No
I-15	W Valley Parkway to Auto Parkway	179,580	8.1%	14,615	0.60	5+2ML	0.95	10.00%	1,384	0.589	B	0.002	No
I-15	Auto Parkway to W Citracado Parkway	172,560	7.8%	13,383	0.60	5+2ML	0.95	10.00%	1,260	0.536	B	0.002	No

TABLE 5.13
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE B) CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-15	W Citracado Parkway to Via Rancho Parkway	196,490	7.8%	15,239	0.60	5+2ML	0.95	7.00%	1,414	0.602	B	0.002	No
I-15	Via Rancho Parkway to Bernardo Drive	198,460	7.4%	14,606	0.58	5+2ML	0.95	7.00%	1,315	0.560	B	0.001	No
I-15	Bernardo Drive to Rancho Bernardo Road	201,430	7.4%	14,825	0.58	5+2ML	0.95	7.00%	1,335	0.568	B	0.001	No
I-15	Rancho Bernardo Road to Bernardo Center Drive	209,400	7.3%	15,374	0.54	5+2ML	0.95	7.00%	1,282	0.546	B	0.001	No
I-15	Bernardo Center Drive to Camino Del Norte	214,380	7.3%	15,740	0.54	5+2ML	0.95	7.00%	1,313	0.559	B	0.001	No

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E or F.
ML = Managed Lane.

Ramp Intersection Capacity Analysis

Consistent with Caltrans' requirements, the signalized intersections along SR-76 within the study area were analyzed under Existing Plus Project (Phase B) conditions using the ILV procedures as described in Chapter 2.0. ILV analysis results are displayed in **Table 5.14** and analysis worksheets for the Existing Plus Project (Phase B) conditions are provided in **Appendix V**.

TABLE 5.14
RAMP INTERSECTION CAPACITY ANALYSIS
EXISTING PLUS PROJECT (PHASE B) CONDITIONS

Ramp Intersection	Peak Hour	ILV / Hour	Description
SR-76 / Old River Road/E. Vista Way	AM	1,519	*>1500: (Over Capacity)*
	PM	1,274	*1200-1500: (At Capacity)*
SR-76 / Olive Hill Road/Camino Del Rey	AM	1,204	*1200-1500: (At Capacity)*
	PM	1,372	*1200-1500: (At Capacity)*
SR-76 / Old Highway 395	AM	1,022	*<1200: (Under Capacity)*
	PM	1,070	*<1200: (Under Capacity)*

Source: Chen Ryan Associates; May 2014

As shown in the table, all three (3) intersections along SR-76 would operate at "At Capacity" and/or "Under Capacity", with the exception of the SR-76 / Old River Road/E. Vista Way intersection, which would operate at "Over Capacity" during the AM peak hour under the Existing Plus Project (Phase B) conditions.

5.2.3 Existing Plus Project (Phase B) Impact Significance and Mitigation

This section identifies required mitigation measures for roadway, intersection, two-lane highway, and freeway facilities that would be significantly impacted by project-related traffic under Existing Plus Project (Phase B) conditions.

Roadway Segments

None.

Intersections

Phase B of the project traffic would have direct impacts on two (2) of the study area intersections, including *I-15 SB Ramps / Gopher Canyon Road* and *I-15 NB Ramps / Gopher Canyon Road*. The following improvements would be required to mitigate the identified traffic impacts:

- *I-15 SB Ramps / Gopher Canyon Road* (stop controlled ramp intersection) (Caltrans) - Signalization would be required (by the 1st EDU of Phase 4 or 363rd total EDU) at this

intersection to mitigate direct project impacts.Calculation worksheets for the various improvement analyses are included in **Appendix X**.

- *I-15 NB Ramps / Gopher Canyon Road* (stop controlled ramp intersection) (Caltrans) - Signalization would be required (by the 1st EDU of Phase 4 or 363rd total EDU A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA),* this intersection would meet both the "Minimum Vehicular Volume" and the "Interruption of Continuous Traffic" warrants. The project applicant would be responsible for implementing the mitigation measure identified above. However, this particular facility is out of the County's control and therefore the impact would remain significant and unavoidable. The signal warrant worksheet for this intersection is provided in **Appendix W**. A number of potential improvements such as such as additional right-turn lane at the I-15 off ramp, all-way stop control, and single lane roundabout were assessed and it was determined that traffic signal is the most effective improvement to mitigate the identified project impact at this location.) at this intersection to mitigate direct Fire Station Alternative impacts. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA),* this intersection would meet both the "Minimum Vehicular Volume" and the "Interruption of Continuous Traffic" warrants. The project applicant would be responsible for implementing the mitigation measure identified above. However, this particular facility is out of the County's control and therefore the impact would remain significant and unavoidable. The signal warrant worksheet for this intersection is provided in Appendix W. A number of potential improvements such as such as additional right-turn lane at the I-15 off ramp, all-way stop control, and single lane roundabout were assessed and it was determined that traffic signal is the most effective improvement to mitigate the identified project impact at this location. Calculation worksheets for the various improvement analyses are included in Appendix X.

Table 5.15 displays level of service analysis results for the mitigated intersection under the Existing Plus Project (Phase B) conditions. Calculation worksheets for the intersection analysis are provided in Appendix X.

TABLE 5.15
MITIGATED INTERSECTION LEVEL OF SERVICE
EXISTING PLUS PROJECT (PHASE B) CONDITIONS

Intersection	After Mitigation				Existing	
	AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM
	Delay (Sec.)	LOS	Delay (sec.)	LOS		
14. I-15 SB Ramps / Gopher Canyon Road	21.7	C	20.8	C	468.2 / 173.0	F / F
15. I-15 NB Ramps / Gopher Canyon Road	12.7	B	30.3	C	30.5 / 1945.4	D / F

Source: Chen Ryan Associates; May 2014

Note: Bold letter indicates unacceptable LOS E or F.

As shown in the table, after installation of the proposed traffic signals, both impacted intersections would operate at acceptable LOS C or better during both the AM and PM peak hours. However, these intersections are Caltrans' facilities in which the County does not have jurisdiction. In addition, Caltrans does not have a plan or program in place. Therefore, the impacts would remain significant and unavoidable.

Two-Lane Highways

None of the study area two-lane highway facilities would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Phase B) conditions.

Freeways

None of the study area freeway facilities would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Phase B) conditions.

Table 5.16 summarizes potential impacts and recommended mitigation measures associated with Phase B of the Lilac Hills Ranch project.

TABLE 5.16
IMPACT AND MITIGATION SUMMARY
EXISTING PLUS PROJECT (PHASE B) CONDITIONS

Impacted Facility	Mitigation Measures
Roadway Segment	
None	-
Intersection	
I-15 SB Ramps / Gopher Canyon Road	Signalization by the 1st EDU of Phase 4 or 363rd total EDU - Caltrans' facility, significant and unavoidable impact.
I-15 NB Ramps / Gopher Canyon Road	Signalization by the 1st EDU of Phase 4 or 363rd total EDU - Caltrans' facility, significant and unavoidable impact.
Two-Lane Highway	
None	-
Freeway	
None	-

Source: Chen Ryan Associates; May 2014

5.3 Existing Plus Project (Phase C) Conditions

5.3.1 Existing Plus Project (Phase C) Roadway Network and Traffic Volumes

The Existing Plus Project (Phase C) scenario includes existing traffic volumes with the addition of traffic generated by traffic analysis Phase C. Intersection and roadway geometrics under

Existing Plus Project conditions were assumed to be identical to Existing conditions, with the exception of the following roads and driveway intersections associated with project frontage and access:

- Main Street, between West Lilac Road and Street "C";
- Main Street, between Street "C" and Street "Z";
- Main Street, between Street "Z" and W. Lilac Road;
- Street "C" and Street "Z";
- Covey Lane, west of W. Lilac Road;
- Intersection # 26, Street "O" / W. Lilac Road/Main Street – proposed roundabout;
- Intersection # 27, Main Street / Street "C"– proposed roundabout;
- Intersection #28, Lilac Hills Ranch Road / Main Street North – proposed all-way stop controlled intersection;
- Intersection #29, Lilac Hills Ranch Road / Main Street South – proposed all-way stop controlled intersection;
- Intersection # 30, Street "Z" / Main Street – proposed one-way stop (southbound Street "Z" approach) controlled T-intersection; and
- Intersection # 31, Street "Z" / Main Street – proposed roundabout.

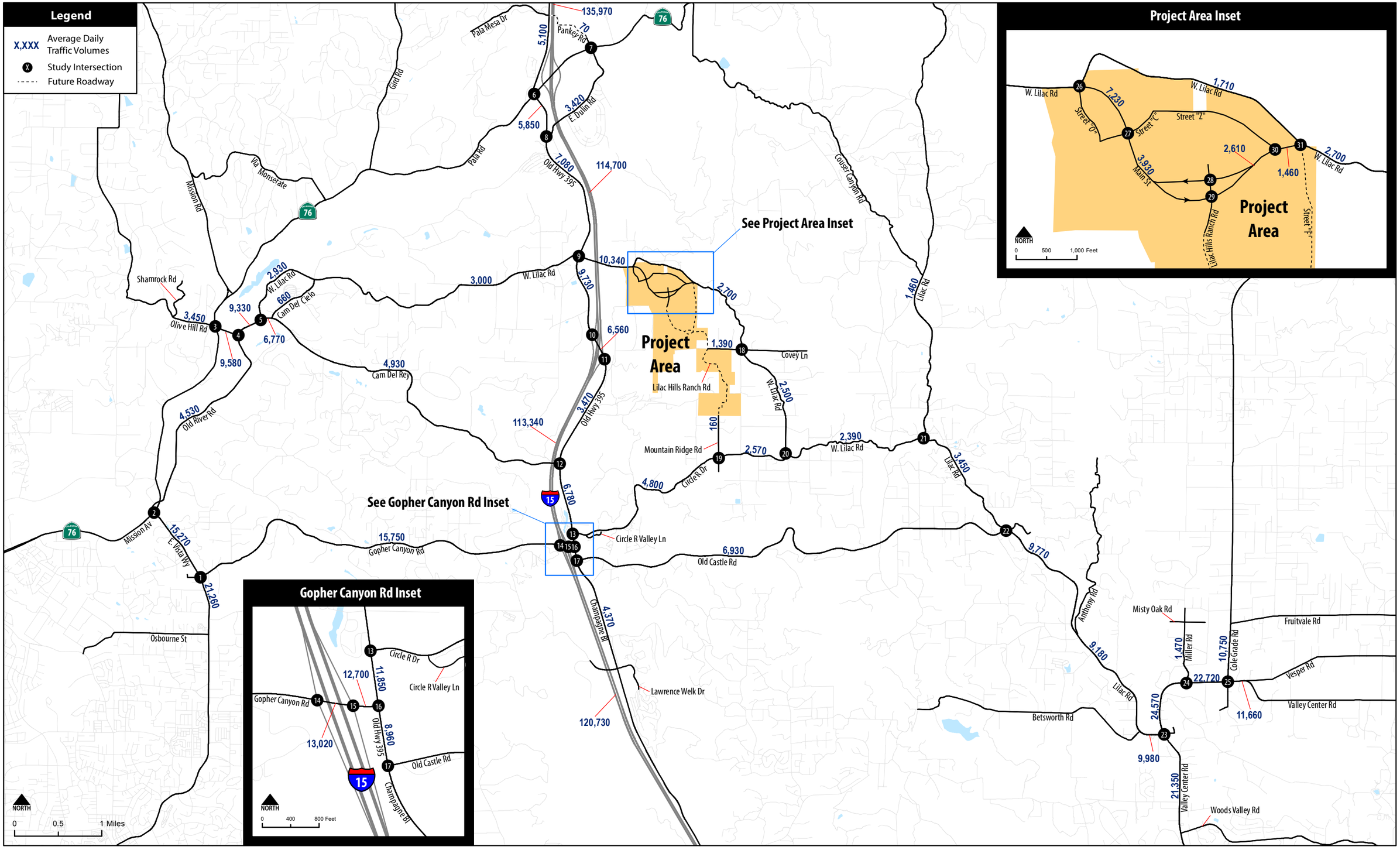
In addition to the project access and frontage roads assumed above, mitigation measure from Phase A was also carried forward into this Phase, including:

- Construction of a dedication right-turn lane at the westbound Gopher Canyon Road approach of the intersection of E. Vista Way and Gopher Canyon Road.

5.3.2 Existing Plus Project (Phase C) Traffic Conditions

Level of service analyses under Existing Plus Project (Phase C) conditions were conducted using the methodologies described in Chapter 2.0. Roadway segment, intersection, two-lane highway, freeway segment, and ramp intersection level of service results are discussed separately below.

Average daily traffic volumes on study area roadway segments are displayed in **Figure 5-3A**, while peak hour traffic volumes at the key study area intersections are displayed in **Figure 5-3B**.

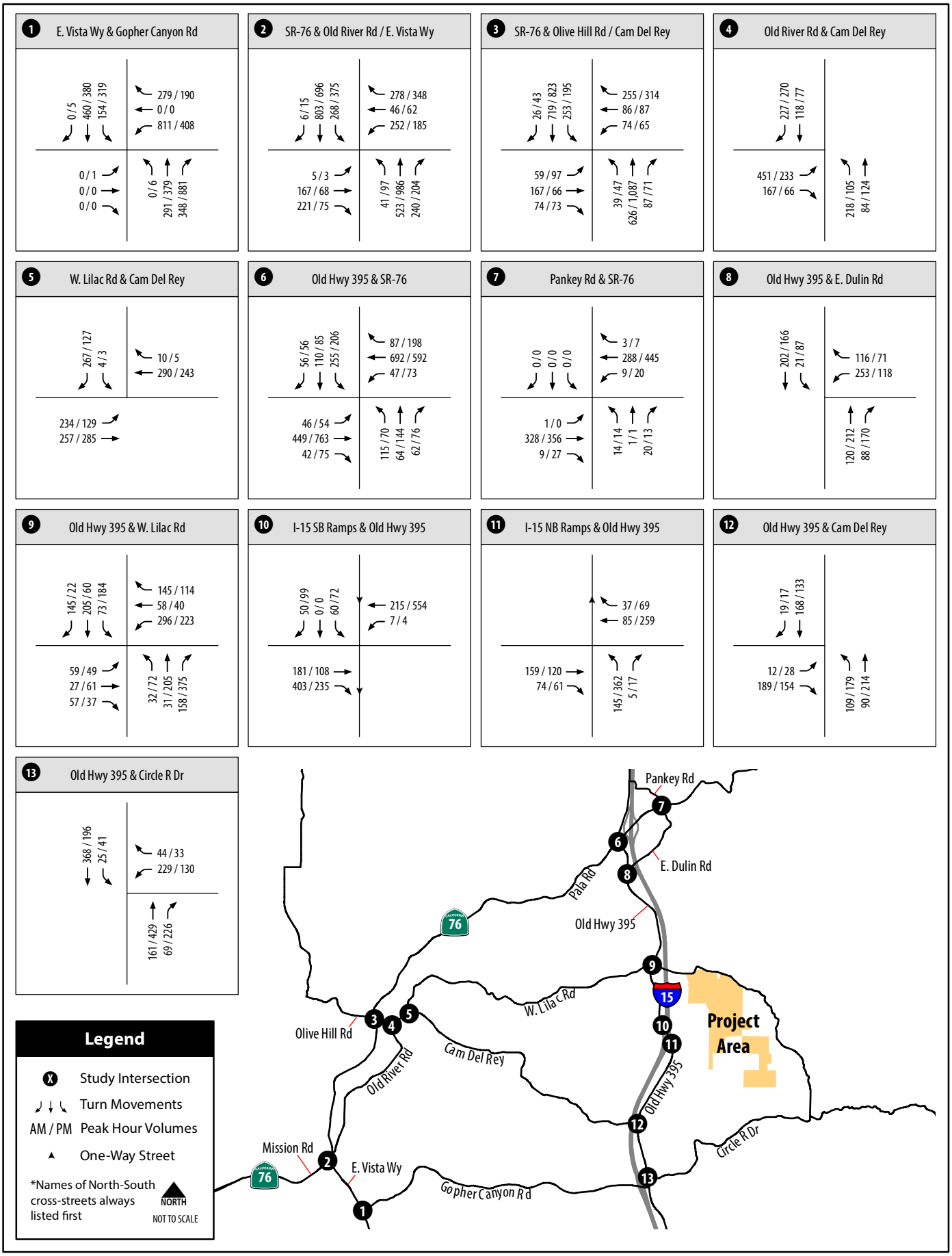


Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 5-3A

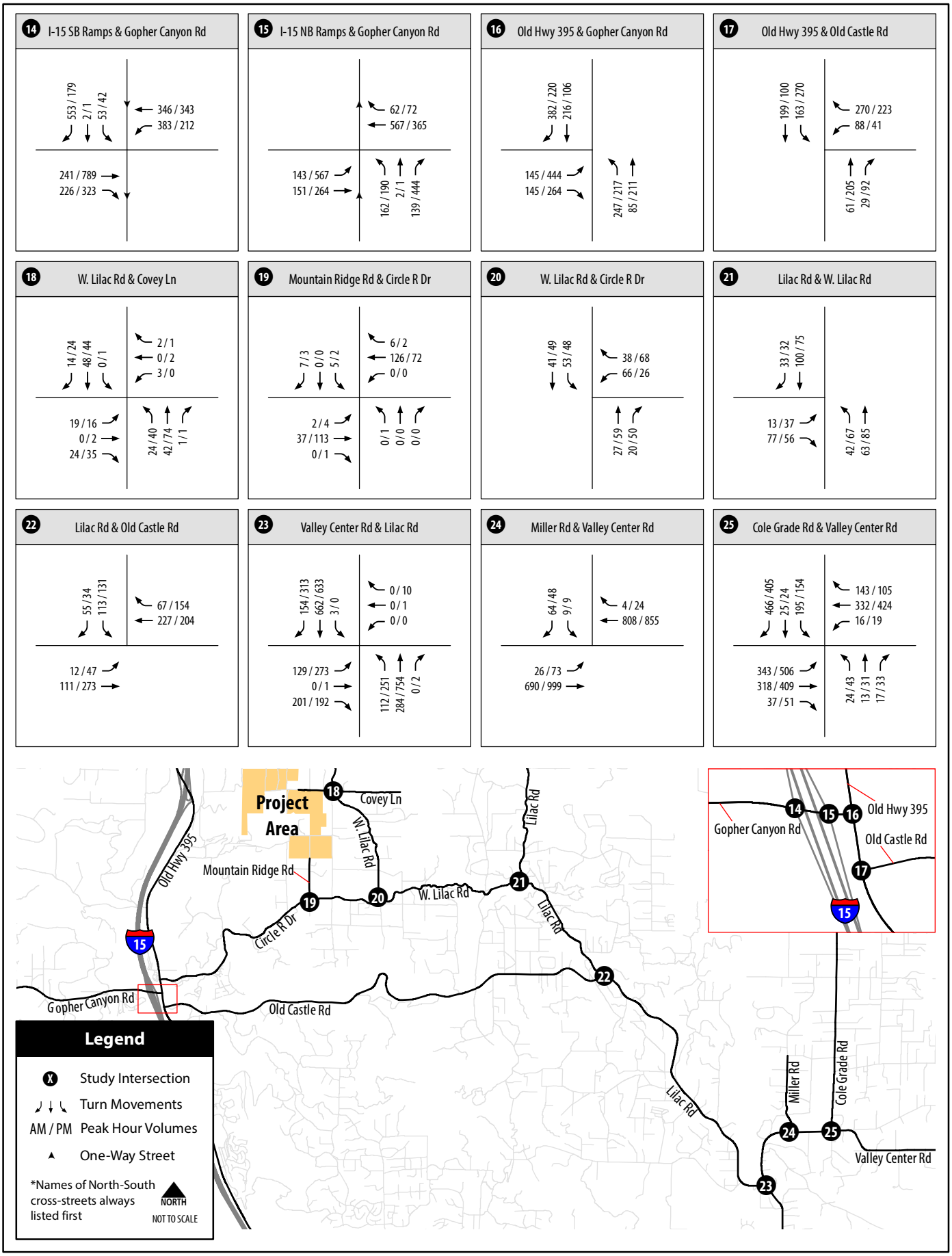
Roadway Average Daily Traffic Volumes - Existing Plus Project (Phase C) Conditions



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

CHEN RYAN

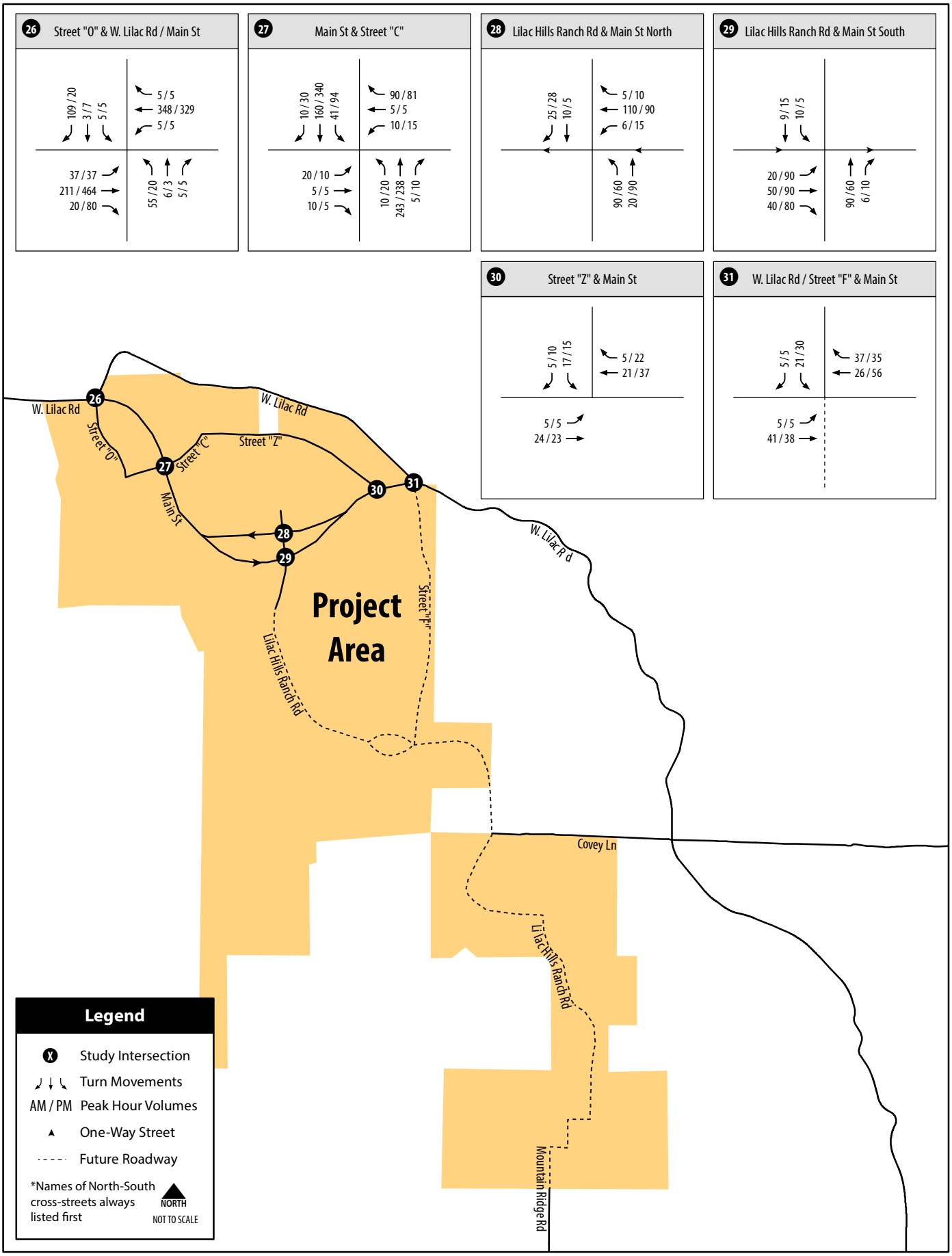
Figure 5-3B (Intersections 1-13)
Intersection Peak Hour Traffic Volumes - Existing Plus Project (Phase C) Conditions



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 5-3B (Intersections 14-25)
Intersection Peak Hour Traffic Volumes - Existing Plus Project (Phase C) Conditions



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 5-3B (Intersections 26-31)
Intersection Peak Hour Traffic Volumes - Existing Plus Project (Phase C) Conditions

Roadway Segment Analysis

Table 5.17 displays the level of service analysis results for key roadway segments under Existing Plus Project (Phase C) conditions. As shown, the following four (4) roadway segments would operate at substandard LOS E or F:

- W. Lilac Road, between Old Highway 395 and Main Street – LOS F;

  Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase C of the Lilac Hills Ranch project would result in a direct impact to this roadway segment since it would add more than 100 daily trips.

- Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps – LOS F;

  The construction of a dedicated right-turn lane at the westbound Gopher Canyon Road approach of the intersection of E. Vista Way and Gopher Canyon Road was identified under the Existing Plus Project (Phase A) conditions as a mitigation measure. With this mitigation measure, the arterial analysis for Existing Plus Project (Phase C) shown in **Appendix Y** and summarized in **Table 5.18** shows that the mitigation would increase the AM peak hour average travel speed along this segment to better than the Existing conditions, and would maintain the same PM peak hour average travel speed as the Existing conditions. Therefore, with the mitigation measure, the additional traffic generated by Phase C of the Lilac Hills Ranch project would not result in a direct impact at this segment.

- E. Vista Way, between SR-76 and Gopher Canyon Road – LOS E;

  Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase C of the Lilac Hills Ranch project would not result in direct impacts to this roadway segment since it would not add more than 200 daily trips.

- E. Vista Way, between Gopher Canyon Road and Osborne Street – LOS F.

  Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase C of the Lilac Hills Ranch project would result in a direct impact to this roadway segment since it would add more than 100 daily trips.

TABLE 5.17
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Roadway	From	To	With Project Phase C				Existing		Project Phase C ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
E. Dulin Road	Old Highway 395	SR-76	2-Ln	9,800	3,420	B	1,830	B	1,600	No
W. Lilac Road	Camino Del Rey	Camino Del Cielo	2-Ln	7,800	2,930	A	2,270	A	670	No
W. Lilac Road	Camino Del Cielo	Old Highway 395	2-Ln	7,800	3,000	A	2,140	A	860	No
W. Lilac Road	Old Highway 395	Main Street	2-Ln	8,700	10,340	F	1,150	A	9,190	*Yes > 100ADT*
W. Lilac Road	Main Street	Street "F"	2-Ln	7,800	1,710	A	1,150	A	560	No
W. Lilac Road	Street "F"	Covey Lane	2-Ln	7,800	2,700	A	1,150	A	1,550	No
W. Lilac Road	Covey Lane	Circle R Drive	2-Ln	7,800	2,500	A	480	A	2,020	No
W. Lilac Road	Circle R Drive	Lilac Road	2-Ln	7,800	2,390	A	1,170	A	1,220	No
Camino Del Cielo	Camino Del Rey	W. Lilac Road	2-Ln	10,900	660	A	630	A	30	No
Olive Hill Road	Shamrock Road	SR-76	2-Ln	8,700	3,450	A	3,380	A	70	No
Camino Del Rey	SR-76	Old River Road	2-Ln	10,900	9,580	D	9,350	D	230	No
Camino Del Rey	Old River Road	W. Lilac Road	2-Ln	9,800	9,330	D	8,640	D	690	No
Camino Del Rey	W. Lilac Road	Camino Del Cielo	2-ln w/ SM	13,500	6,770	C	6,730	C	50	No
Camino Del Rey	Camino Del Cielo	Old Highway 395	2-Ln	7,800	4,930	A	4,850	A	80	No
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	2-Ln	9,800	15,750	F	15,310	F	430	No* > 100ADT
Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	4-Ln	30,800	13,020	A	12,390	A	630	No
Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	4-Ln	30,800	12,700	A	11,870	A	830	No

TABLE 5.17
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Roadway	From	To	With Project Phase C				Existing		Project Phase C ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Circle R Drive	Old Highway 395	Mountain Ridge Road	2-Ln	9,800	4,800	C	4,030	C	770	No
Circle R Drive	Mountain Ridge Road	W. Lilac Road	2-Ln	9,800	2,570	B	1,770	B	800	No
Old Castle Road	Old Highway 395	Lilac Road	2-Ln	9,800	6,930	D	6,840	D	90	No
E. Vista Way	SR-76	Gopher Canyon Road	2-Ln w/ TWLTL	13,500	15,270	E	15,120	E	160	No < 200ADT
E. Vista Way	Gopher Canyon Road	Osborne Street	2-Ln w/ TWLTL	13,500	21,260	F	21,020	F	240	*Yes > 100ADT*
Old River Road	SR-76	Camino Del Rey	2-Ln	9,800	4,530	C	4,070	C	460	No
Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	2-Ln	10,900	4,370	C	4,170	C	200	No
Pankey Road	Pala Mesa Drive	SR-76	2-Ln	4,500	70	A	70	A	0	No
Lilac Road	Couser Canyon Road	W. Lilac Road	2-Ln	7,800	1,460	A	1,150	A	310	No
Lilac Road	W. Lilac Road	Old Castle Road	2-Ln	7,800	3,450	A	2,640	A	800	No
Lilac Road	Old Castle Road	Anthony Road	2-Ln	10,900	9,770	D	9,010	D	760	No
Lilac Road	Anthony Road	Betsworth Road	2-Ln	10,900	9,180	D	8,740	D	440	No
Lilac Road	Betsworth Road	Valley Center Road	2-Ln	13,500	9,980	D	9,620	D	360	No
Valley Center Road	Woods Valley Road	Lilac Road	4/Ln w/ TWLTL/RM	27,000	21,350	C	21,290	C	60	No
Valley Center Road	Lilac Road	Miller Road	4-Ln w/ RM	33,400	24,570	B	24,280	B	290	No
Valley Center Road	Miller Road	Cole Grade Road	4-Ln w/ RM	27,000	22,720	C	22,440	C	280	No
Valley Center Road	Cole Grade Road	Vesper Road	2-Ln	13,500	11,660	D	11,490	D	170	No

TABLE 5.17
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Roadway	From	To	With Project Phase C				Existing		Project Phase C ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Miller Road	Misty Oak Road	Valley Center Road	2-Ln	7,000	1,470	A	1,460	A	10	No
Cole Grade Road	Fruitvale Road	Valley Center Road	2-Ln w/ TWLTL	13,500	10,750	D	10,660	D	90	No

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E or F.
RM = Raised Median.
SM = Striped Median.
TWLTL = Two-Way Left-Turn Lane.
* Phase A mitigation measures at the intersection of E. Vista Way / Gopher Canyon Road were assumed to be carried forwarded into Phases B, C, D, & E.

TABLE 5.18
ARTERIAL LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Arterial	With Project Phase C				Existing			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS
Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps	40.0	B	44.3	A	30.6	C	44.3	A

Source: Chen Ryan Associates; May 2014

Intersection Analysis

Table 5.19 displays intersection level of service and average vehicle delay results under Existing Plus Project (Phase C) conditions. Level of service calculation worksheets for the Existing Plus Project (Phase C) conditions are provided in **Appendix Z**.

As shown in the table, the following four (4) study intersections would continue to operate at substandard LOS E or F under Existing Plus Project (Phase C) conditions:

- E. Vista Way / Gopher Canyon Road (County) – LOS F during both the AM and PM peak hours. However, this intersection is currently operating at LOS F and Phase A recommended mitigation measure would improve the intersection operations to better than existing conditions. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase C of the Lilac Hills Ranch project would not have any direct impact at this intersection.
- Old Highway 395 / W. Lilac Road (County) – LOS F during both the AM and PM peak hours, and the Phase C project traffic would add more than 5 peak hour trips to the critical movement of this unsignalized intersection. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase C of the Lilac Hills Ranch project would have a direct impact at this intersection.

TABLE 5.19
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Intersection	Traffic Control	With Project Phase C				Existing		Change in Delay (sec.) AM / PM	Phase C Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
1. E. Vista Way / Gopher Canyon Road	Signal*	115.1	F	189.5	F	172.8 / 212.0	F / F	-57.7 / -22.5	-	No
2. SR-76 / Old River Road/E. Vista Way	Signal	24.8	C	32.3	C	23.7 / 32	C / C	1.1 / 0.3	-	No
3. SR-76 / Olive Hill Road/Camino Del Rey	Signal	26.4	C	34.7	C	21.6 / 34.5	C / C	4.8 / 0.2	-	No
4. Old River Road / Camino Del Rey	OWSC	24.1	D	12.3	B	23.2 / 12.2	D / B	0.9 / 0.1	-	No
5. W. Lilac Road / Camino Del Rey	OWSC	17.0	C	11.3	B	15.7 / 11.0	C / B	1.3 / 0.3	-	No
6. Old Highway 395 / SR-76	Signal	31.2	C	45.0	D	29.0 / 39.8	C / D	2.2 / 5.2	-	No
7. Pankey Road / SR-76	TWSC	14.1	B	19.3	C	12.5 / 15.2	B / C	1.6 / 4.1	-	No
8. Old Highway 395 / E. Dulin Road	OWSC	17.9	C	19.5	D	12.8 / 11.2	B / B	5.1 / 8.3	-	No
9. Old Highway 395 / W. Lilac Road	TWSC	174.8	F	662.1	F	14.7 / 13.3	C / B	160.1 / 648.8	AM: WBL +260 PM: WBL +207	*Yes* *County Int.* *> 5 trips* *>1 sec.*
10. I-15 SB Ramps / Old Highway 395	OWSC	11.5	B	13.4	B	10.6 / 12.1	B / B	0.9 / 1.3	-	No
11. I-15 NB Ramps / Old Highway 395	OWSC	11.2	B	18.9	C	9.8 / 11.2	A / B	1.4 / 7.7	-	No

TABLE 5.19
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Intersection	Traffic Control	With Project Phase C				Existing		Change in Delay (sec.) AM / PM	Phase C Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
12. Old Highway 395 / Camino Del Rey	OWSC	10.4	B	11.8	B	10.1 / 11.0	B / B	0.3 / 0.8	-	No
13. Old Highway 395 / Circle R Drive	OWSC	26.8	D	31.2	D	20.4 / 22.5	C / C	6.4 / 8.7	-	No
14. I-15 SB Ramps / Gopher Canyon Road	OWSC	561.9	F	272.9	F	468.2 / 173.0	F / F	93.7 / 99.9	-	Yes *Caltrans Int. > 2 sec.*
15. I-15 NB Ramps / Gopher Canyon Road	OWSC	34.1	D	2171.0	F	30.5 / 1945.4	D / F	3.6 / 225.6	-	Yes *Caltrans Int. > 2 sec.*
16. Old Highway 395 / Gopher Canyon Road	Signal	17.6	B	15.3	B	11.0 / 14.7	B / B	6.6 / 0.6	-	No
17. Old Highway 395 / Old Castle Road	Signal	13.8	B	16.2	B	13.9 / 15.7	B / B	0.0 / 0.5	-	No
18. W. Lilac Road / Covey Lane	TWSC	9.7	A	10.3	B	8.8 / 9.3	B / A	0.9 / 0.9	-	No
19. Mountain Ridge Road / Circle R Drive	TWSC	9.5	A	10.1	B	9.3 / 9.6	A / A	0.2 / 0.5	-	No
20. W. Lilac Road / Circle R Drive	OWSC	10.4	B	9.9	B	9.3 / 9.3	A / A	1.1 / 0.6	-	No
21. Lilac Road / W. Lilac Road	OWSC	10.1	B	10.7	B	9.6 / 9.9	A / A	0.5 / 0.8	-	No
22. Lilac Road / Old Castle Road	OWSC	12.9	B	21.2	C	11.8 / 17.8	B / C	1.1 / 3.4	-	No
23. Valley Center Rd / Lilac Road	Signal	10.8	B	27.5	C	10.5 / 22.6	B / C	0.3 / 4.9	-	No

TABLE 5.19
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Intersection	Traffic Control	With Project Phase C				Existing		Change in Delay (sec.) AM / PM	Phase C Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
24. Miller Road / Valley Center Road	OWSC	17.1	C	25.9	D	16.9 / 25.0	C / D	0.2 / 0.9	-	No
25. Cole Grade Road / Valley Center Road	Signal	31.6	C	35.1	C	31.1 / 34.9	C / C	0.5 / 0.2	-	No
26. Street "O" / W. Lilac Road/Main Street	RA	6.9	A	10.0	A	DNE	DNE	6.9 / 10.0	-	No
27. Main Street / Street "C"	RA	5.7	A	7.6	A	DNE	DNE	5.7 / 7.6	-	No
28. Lilac Hills Ranch Road / Main Street North	AWSC	8.0	A	8.1	A	DNE	DNE	8.0 / 8.1	-	No
29. Lilac Hills Ranch Road / Main Street South	AWSC	7.6	A	8.7	A	DNE	DNE	7.6 / 8.7	-	No
30. Street "Z" / Main Street	OWSC	8.8	A	8.9	A	DNE	DNE	8.8 / 8.9	-	No
31. W. Lilac Road/Street "F" / Main Street	RA	3.7	A	3.9	A	DNE	DNE	3.7 / 3.9	-	No

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E of F.
AWSC = All-Way Stop Controlled.
TWSC = Two-Way Stop Controlled.
OWSC = One-Way Stop Controlled.
RA = Roundabout.
DNE = Does Not Exist.
For OWSC and TWSC intersections, the delay shown is the worst delay experienced by any of the approaches.
* Phase A mitigation measures at the intersection of E. Vista Way / Gopher Canyon Road were assumed to be carried forwarded into Phases B, C, D, & E.

- I-15 SB Ramps / Gopher Canyon Road (Caltrans) – LOS F during both the AM and PM peak hours, and the Phase C project traffic would add two seconds or more of additional delay to this intersection. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase C of the Lilac Hills Ranch project would have a direct impact at this intersection.
- I-15 NB Ramps / Gopher Canyon Road (Caltrans) – LOS F during the PM peak hour, and the Phase C project traffic would add two seconds or more of additional delay to this intersection. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase C of the Lilac Hills Ranch project would have a direct impact at this intersection.

Two-Lane Highway Analysis

Table 5.20 displays two-lane highway level of service analysis results for Old Highway 395 under Existing Plus Project (Phase C) conditions. The two-lane highway level of service analysis was performed utilizing the methodology presented in Chapter 2.0.

As shown in the table, all segments along Old Highway 395 would continue to operate at acceptable LOS D or better under Existing Plus Project (Phase C) conditions and the additional traffic generated by Phase C of the project would not cause any direct impacts to Old Highway 395.

Freeway Segment Analysis

The freeway segment level of service analysis was performed utilizing the methodology presented in Chapter 2.0. **Table 5.21** displays the resulting level of service for I-15 under Existing Plus Project (Phase C) conditions.

As shown in the table, all of the study area freeway segments along I-15 would continue to operate at LOS D or better under Existing Plus Project (Phase C) conditions. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase C of the project would not cause any direct impacts to study area freeway segments.

TABLE 5.20
TWO-LANE HIGHWAY LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

2-Ln Highway	From	To	With Project Phase C			Existing		Project Phase C ADT	Direct Impact?
			LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Old Highway 395	Pala Mesa Drive	SR-76	16,200	5,100	D or better	4,770	D or better	330	No
Old Highway 395	SR-76	E. Dulin Road	16,200	5,850	D or better	4,720	D or better	1,130	No
Old Highway 395	E. Dulin Road	W. Lilac Road	16,200	7,080	D or better	4,340	D or better	2,740	No
Old Highway 395	W. Lilac Road	I-15 SB Ramps	16,200	9,730	D or better	4,450	D or better	5,280	No
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	16,200	6,560	D or better	3,600	D or better	2,960	No
Old Highway 395	I-15 NB Ramps	Camino Del Rey	16,200	3,470	D or better	2,430	D or better	1,040	No
Old Highway 395	Camino Del Rey	Circle R Drive	16,200	6,780	D or better	5,820	D or better	960	No
Old Highway 395	Circle R Drive	Gopher Canyon Road	16,200	11,850	D or better	10,710	D or better	1,140	No
Old Highway 395	Gopher Canyon Road	Old Castle Road	16,200	8,960	D or better	8,660	D or better	290	No

Source: Chen Ryan Associates; May 2014

TABLE 5.21
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-15	Riverside County Boundary to Old Highway 395	135,900	8.4%	11,481	0.64	4	0.95	6.75%	1,985	0.844	D	0.012	No
I-15	Old Highway 395 to SR-76	135,970	7.4%	10,115	0.73	4	0.95	6.75%	2,013	0.856	D	0.012	No
I-15	SR-76 to Old Highway 395	114,700	7.8%	8,972	0.69	4	0.95	8.40%	1,686	0.718	C	0.011	No
I-15	Old Highway 395 to Gopher Canyon Road	113,340	8.1%	9,153	0.67	4	0.95	8.40%	1,676	0.713	C	0.021	No
I-15	Gopher Canyon Road to Deer Springs Road	120,730	8.1%	9,750	0.67	4	0.95	13.20%	1,827	0.777	C	0.024	No
I-15	Deer Springs Road to Centre City Parkway	120,030	8.0%	9,643	0.66	4	0.95	13.20%	1,797	0.765	C	0.019	No
I-15	Centre City Parkway to El Norte Parkway	113,400	8.0%	9,111	0.66	4	0.95	13.20%	1,698	0.723	C	0.015	No
I-15	El Norte Parkway to SR-78	129,220	7.9%	10,171	0.66	4	0.95	10.00%	1,868	0.795	C	0.014	No
I-15	SR-78 to W Valley Parkway	193,640	8.1%	15,759	0.60	5+2ML	0.95	10.00%	1,493	0.635	C	0.005	No
I-15	W Valley Parkway to Auto Parkway	180,380	8.1%	14,680	0.60	5+2ML	0.95	10.00%	1,390	0.592	B	0.005	No
I-15	Auto Parkway to W Citracado Parkway	173,340	7.8%	13,444	0.60	5+2ML	0.95	10.00%	1,266	0.539	B	0.004	No

TABLE 5.21
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-15	W Citracado Parkway to Via Rancho Parkway	197,180	7.8%	15,293	0.60	5+2ML	0.95	7.00%	1,419	0.604	B	0.004	No
I-15	Via Rancho Parkway to Bernardo Drive	199,100	7.4%	14,653	0.58	5+2ML	0.95	7.00%	1,319	0.561	B	0.003	No
I-15	Bernardo Drive to Rancho Bernardo Road	202,030	7.4%	14,869	0.58	5+2ML	0.95	7.00%	1,339	0.570	B	0.003	No
I-15	Rancho Bernardo Road to Bernardo Center Drive	209,970	7.3%	15,416	0.54	5+2ML	0.95	7.00%	1,286	0.547	B	0.003	No
I-15	Bernardo Center Drive to Camino Del Norte	214,920	7.3%	15,779	0.54	5+2ML	0.95	7.00%	1,316	0.560	B	0.002	No

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E or F.
ML = Managed Lane.

Ramp Intersection Capacity Analysis

Consistent with Caltrans' requirements, the signalized intersections along SR-76 within the study area were analyzed under Existing Plus Project (Phase C) conditions using the ILV procedures as described in Chapter 2.0. ILV analysis results are displayed in **Table 5.22** and analysis worksheets for the Existing Plus Project (Phase C) conditions are provided in **Appendix AA**.

TABLE 5.22
RAMP INTERSECTION CAPACITY ANALYSIS
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Ramp Intersection	Peak Hour	ILV / Hour	Description
SR-76 / Old River Road/E. Vista Way	AM	1,541	*>1500: (Over Capacity)*
	PM	1,302	*1200-1500: (At Capacity)*
SR-76 / Olive Hill Road/Camino Del Rey	AM	1,207	*1200-1500: (At Capacity)*
	PM	1,376	*1200-1500: (At Capacity)*
SR-76 / Old Highway 395	AM	1,055	*<1200: (Under Capacity)*
	PM	1,129	*<1200: (Under Capacity)*

Source: Chen Ryan Associates; May 2014

As shown in the table, all three (3) intersections along SR-76 would operate at "At Capacity" and/or "Under Capacity", with the exception of the SR-76 / Old River Road/E. Vista Way intersection, which would operate at "Over Capacity" during the AM peak hour under the Existing Plus Project (Phase C) conditions.

5.3.3 Existing Plus Project (Phase C) Impact Significance and Mitigation

This section identifies required mitigation measures for roadway, intersection, two-lane highway, and freeway facilities that would be significantly impacted by project-related traffic under Existing Plus Project (Phase C) conditions.

Roadway Segments

Based on the County planning level impact criteria, Phase C of the project traffic would result in direct impacts at three (3) of the study area roadway segments. The following improvements would be required to mitigate the identified impact:

- W. Lilac Road, between Old Highway 395 and Main Street – This road provides primary access to the project site, and it is recommended to improve this facility to the General Plan Mobility Element classification of 2.2C by 929th EDU (or project daily trips of 9,298). The project applicant would be responsible for implementing the mitigation measure identified above. This significantly impacted roadway segment would operate at LOS D with the roadway widening.

- E. Vista Way, between Gopher Canyon Road and Osborne Street – The project would add 240 daily trips (approximately 1.1% of the total ADT) to this roadway which is approximately 9 miles away from the project site.

The mitigation for this direct impact is the provision of a dedicated right-turn lane at the northbound E. Vista Way approach of the East Vista Way / Gopher Canyon Road intersection, the constraining intersection along the impacted segment. The arterial analysis shown in **Appendix Y** and summarized in **Table 5.23** below shows that the mitigation would increase the average travel speed along this segment to better than the Existing conditions during both the AM and PM peak hours. Therefore, the direct impact at the segment of E. Vista Way, between Gopher Canyon Road and Osborne Street would be mitigated. This improvement would be required by the 476th EDU.

TABLE 5.23
ARTERIAL LEVEL OF SERVICE RESULTS AFTER MITIGATION
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Arterial	After Mitigation				Existing			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS
E. Vista Way, between Gopher Canyon Road and Osborne Street	35.4	B	38.7	B	35.1	B	21.3	D

Source: Chen Ryan Associates; May 2014

Intersections

Phase C of the project traffic would have a direct impact on three (3) study area intersections and the following intersection improvements would be required to mitigate the identified traffic impacts:

- *Old Highway 395 / W. Lilac Road* (two-way stop controlled) (County) – Signalization and construction of a left-turn lane at the westbound W. Lilac Road approach would be required by 585th EDU at this intersection to mitigate direct project impacts. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA),* this intersection would meet both the "Minimum Vehicular Volume" and the "Interruption of Continuous Traffic" warrants. The project applicant would be responsible for implementing the mitigation measure identified above. The signal warrant worksheet for this intersection is provided in **Appendix AB**.

- *I-15 SB Ramps / Gopher Canyon Road* (stop controlled ramp intersection) (Caltrans) - Signalization would be required (by the 1st EDU of Phase 4 or 363rd total EDU) at this intersection to mitigate direct project impacts. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012*

Edition Figure 4C-103 (CA), this intersection would meet both the "Minimum Vehicular Volume" and the "Interruption of Continuous Traffic" warrants. The project applicant would be responsible for implementing the mitigation measure identified above. However, this particular facility is out of the County's control and therefore the impact would remain significant and unavoidable. The signal warrant worksheet for this intersection is provided in Appendix AB.

- *I-15 NB Ramps / Gopher Canyon Road* (stop controlled ramp intersection) (Caltrans) - Signalization would be required (by the 1st EDU of Phase 4 or 363rd total EDU) at this intersection to mitigate direct project impacts. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA),* this intersection would meet both the "Minimum Vehicular Volume" and the "Interruption of Continuous Traffic" warrants. The project applicant would be responsible for implementing the mitigation measure identified above. However, this particular facility is out of the County's control and therefore the impact would remain significant and unavoidable. The signal warrant worksheet for this intersection is provided in Appendix AB.

Additionally, the construction of the dedicated right-turn lane at the northbound E. Vista Way approach of the East Vista Way / Gopher Canyon Road intersection (a required mitigation measure for the segment of E. Vista Way, between Gopher Canyon Road and Osborne Street) would further improve the peak hour operations at the intersection of E. Vista Way / Gopher Canyon Road to LOS D. **Figure 5-4** displays the conceptual improvements at this intersection with the recommended mitigation measures. Note that accommodation to bicyclists and pedestrians, such as bike lanes and ADA compliance curb ramps, should be considered during the actual design of the intersections.

Table 5.24 displays level of service analysis results for the mitigated intersection under the Existing Plus Project (Phase C) conditions. Calculation worksheets for the intersection analysis are provided in **Appendix AC**.

As shown in the table, after installation of the proposed traffic signals, all three impacted intersections, as well as the intersection of E. Vista Way / Gopher Canyon Road, would operate at acceptable LOS D or better during both the AM and PM peak hours. However, both ramp intersections at I-15 / Gopher Canyon Road interchange are Caltrans' facilities in which the County does not have jurisdiction. In addition, Caltrans does not have a plan or program in place. Therefore, the impacts would remain significant and unavoidable.



Lilac Hills Ranch - Mountain Ridge Road
Fire Station Alternative

CHEN RYAN

Figure 5-4
Gopher Canyon Road / East Vista Way Intersection Conceptual Improvement

TABLE 5.24
MITIGATED INTERSECTION LEVEL OF SERVICE
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Intersection	After Mitigation				Existing	
	AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM
	Delay (Sec.)	LOS	Delay (sec.)	LOS		
1. E. Vista Way / Gopher Canyon Road	44.8	D	42.1	D	172.8 / 212.0	F / F
9. Old Highway 395 / W. Lilac Road	32.7	C	32.0	C	14.7 / 13.3	C / B
14.I-15 SB Ramps / Gopher Canyon Road	26.7	C	23.1	C	468.2 / 173.0	F / F
15.I-15 NB Ramps / Gopher Canyon Road	12.7	B	32.2	C	30.5 / 1945.4	D / F

Source: Chen Ryan Associates; May 2014

Note: Bold letter indicates unacceptable LOS E or F.

Two-Lane Highways

None of the study area two-lane highway facilities would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Phase C) conditions.

Freeways

None of the study area freeway facilities would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Phase C) conditions.

Table 5.25 summarizes potential impacts and recommended mitigation measures associated with Phase C of the Lilac Hills Ranch project.

TABLE 5.25
IMPACT AND MITIGATION SUMMARY
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Impacted Facility	Mitigation Measures
Roadway Segment	
W. Lilac Road, between Old Highway 395 and Main Street	Improve to 2.2C by 929th EDU
E. Vista Way, between Gopher Canyon Road and Osborne Street	Construction of a dedicated NB right-turn lane at the intersection of E. Vista Way / Gopher Canyon Road by 476th EDU.
Intersection	
Old Highway 395 / W. Lilac Road	Signalization and +1 westbound left-turn lane by 585th EDU
I-15 SB Ramps / Gopher Canyon Road	Signalization by the 1st EDU of Phase 4 or 363rd total EDU - Caltrans' facility, significant and unavoidable impact.
I-15 NB Ramps / Gopher Canyon Road	Signalization by the 1st EDU of Phase 4 or 363rd total EDU - Caltrans' facility, significant and unavoidable impact.

TABLE 5.25
IMPACT AND MITIGATION SUMMARY
EXISTING PLUS PROJECT (PHASE C) CONDITIONS

Impacted Facility	Mitigation Measures
Two-Lane Highway	
None	-
Freeway	
None	-

Source: Chen Ryan Associates; May 2014

5.4 Existing Plus Project (Phase D) Conditions

5.4.1 Existing Plus Project (Phase D) Roadway Network and Traffic Volumes

The Existing Plus Project (Phase D) scenario includes existing traffic volumes with the addition of traffic generated by traffic analysis Phase D. The Mountain Ridge Road Fire Station Alternative proposed to convert Mountain Ridge Road from a private road to a public road in conjunction with the construction of Phase D of the project. The conversion of Mountain Ridge Road to a Rural Public Road, as well as the removal of gates along Lilac Hills Ranch Road (when compare to the project), resulted in a portion of the project trips using Mountain Ridge Road, Circle R Drive, Old Highway 395, Gopher Canyon Road to travel to I-15. The project trips distribution as well as project trips assignment under the Existing Plus Project (Phase D) are shown in Figure 4-6, Figure 4-13A, and Figure 4-13B above. Intersection and roadway geometrics under Existing Plus Project conditions were assumed to be identical to Existing conditions, with the exception of the following roads and driveway intersections associated with project frontage and access:

- Main Street, between West Lilac Road and Street "C";
- Main Street, between Street "C" and Street "Z";
- Main Street, between Street "Z" and W. Lilac Road;
- Street "C" and Street "Z";
- Covey Lane, west of W. Lilac Road;
- Lilac Hills Ranch Road, between Covey Lane and Mountain Ridge Road;
- Mountain Ridge Road, between Project Boundary and Circle R Drive – this roadway is proposed to be converted from a 2-lane private road to a Rural Residential Collector (Local Public Road) under the Mountain Ridge Road Fire Station Alternative. In addition, all access restriction (gates) along Lilac Hills Ranch Road within the project site will be removed;
- Intersection # 26, Street "O" / W. Lilac Road/Main Street – proposed roundabout;
- Intersection # 27, Main Street / Street "C"– proposed roundabout;
- Intersection #28, Lilac Hills Ranch Road / Main Street North – proposed all-way stop controlled intersection;

- Intersection #29, Lilac Hills Ranch Road / Main Street South – proposed all-way stop controlled intersection;
- Intersection # 30, Street "Z" / Main Street – proposed one-way stop (southbound Street "Z" approach) controlled T-intersection; and
- Intersection # 31, Street "Z" / Main Street – proposed roundabout.

In addition to the project access and frontage roads assumed above, mitigation measures from Phases A and C were also carried forward into this Phase. These improvements include:

- Construction of dedicated right-turn lanes at the westbound Gopher Canyon Road and northbound E. Vista Way approaches of the intersection of E. Vista Way and Gopher Canyon Road;
- W. Lilac Road, between Old Highway 395 and Main Street – 2.2C; and
- Old Highway 395 / W. Lilac Road intersection – signalized and add a westbound left-turn lane.

5.4.2 Existing Plus Project (Phase D) Traffic Conditions

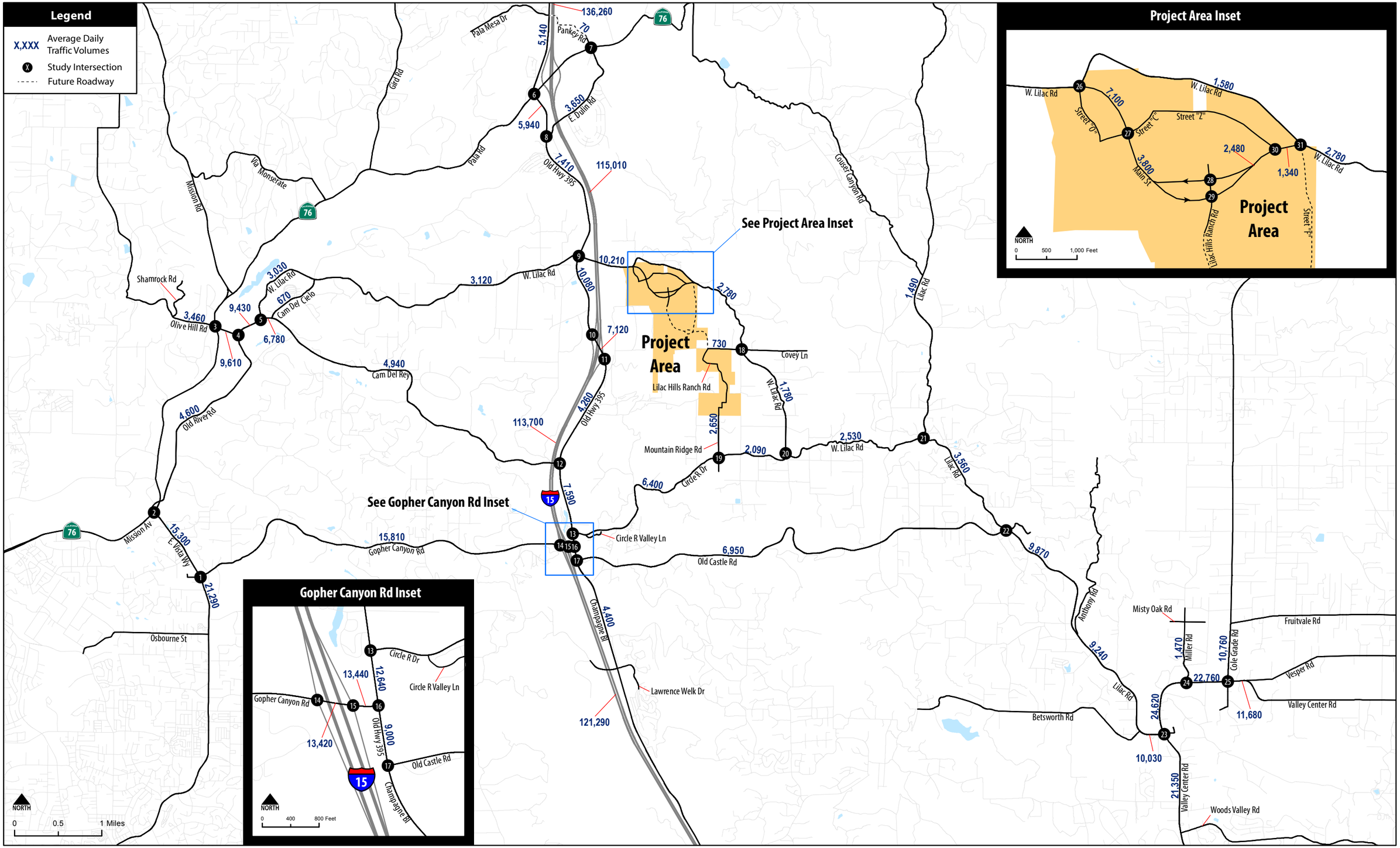
Level of service analyses under Existing Plus Project (Phase D) conditions were conducted using the methodologies described in Chapter 2.0. Roadway segment, intersection, two-lane highway, freeway segment, and ramp intersection level of service results are discussed separately below. Average daily traffic volumes on study area roadway segments are displayed in **Figure 5-5A**, while peak hour traffic volumes at the key study area intersections are displayed in **Figure 5-5B**.

Roadway Segment Analysis

Table 5.26 displays the level of service analysis results for key roadway segments under Existing Plus Project (Phase D) conditions. As shown, the following three (3) roadway segments would operate at substandard LOS E or F:

- Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps – LOS F;

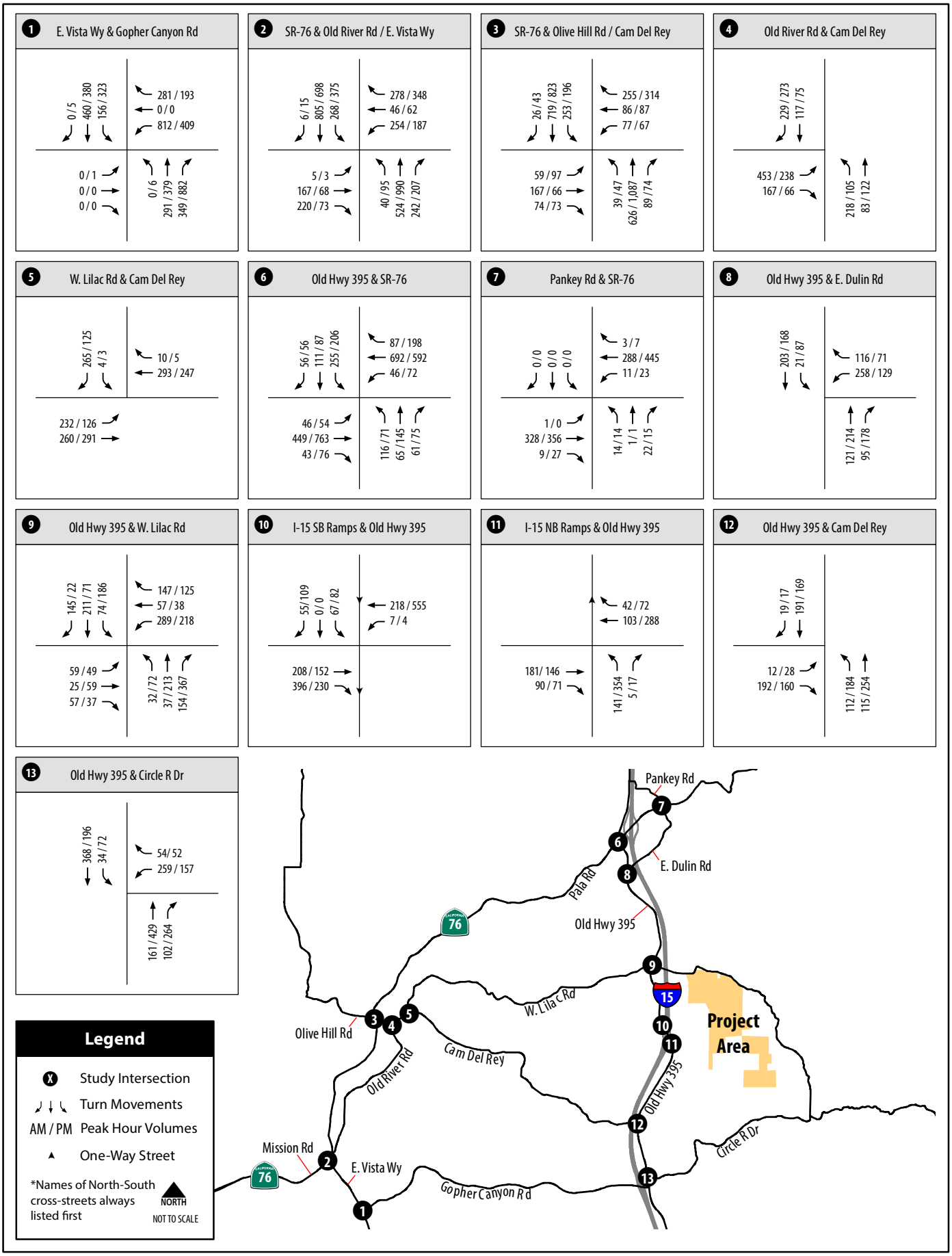
  The construction of a dedicated right-turn lane at the westbound Gopher Canyon Road approach, as well as a dedicated right-turn lane at the northbound E. Vista Way approach, of the intersection of E. Vista Way and Gopher Canyon Road was identified under the Existing Plus Project (Phase A) and Existing Plus Project (Phase C) conditions as mitigation measures. With these improvements, the arterial analysis for Existing Plus Project (Phase D) shown in **Appendix AD** and summarized in **Table 5.27** shows that the mitigation would increase the AM peak hour average travel speed along this segment to better than the Existing conditions, and would maintain the same PM peak hour average travel speed as the Existing conditions. Therefore, with the mitigation measure, the additional traffic generated by Phase D of the Lilac Hills Ranch project would not result in a direct impact at this segment.



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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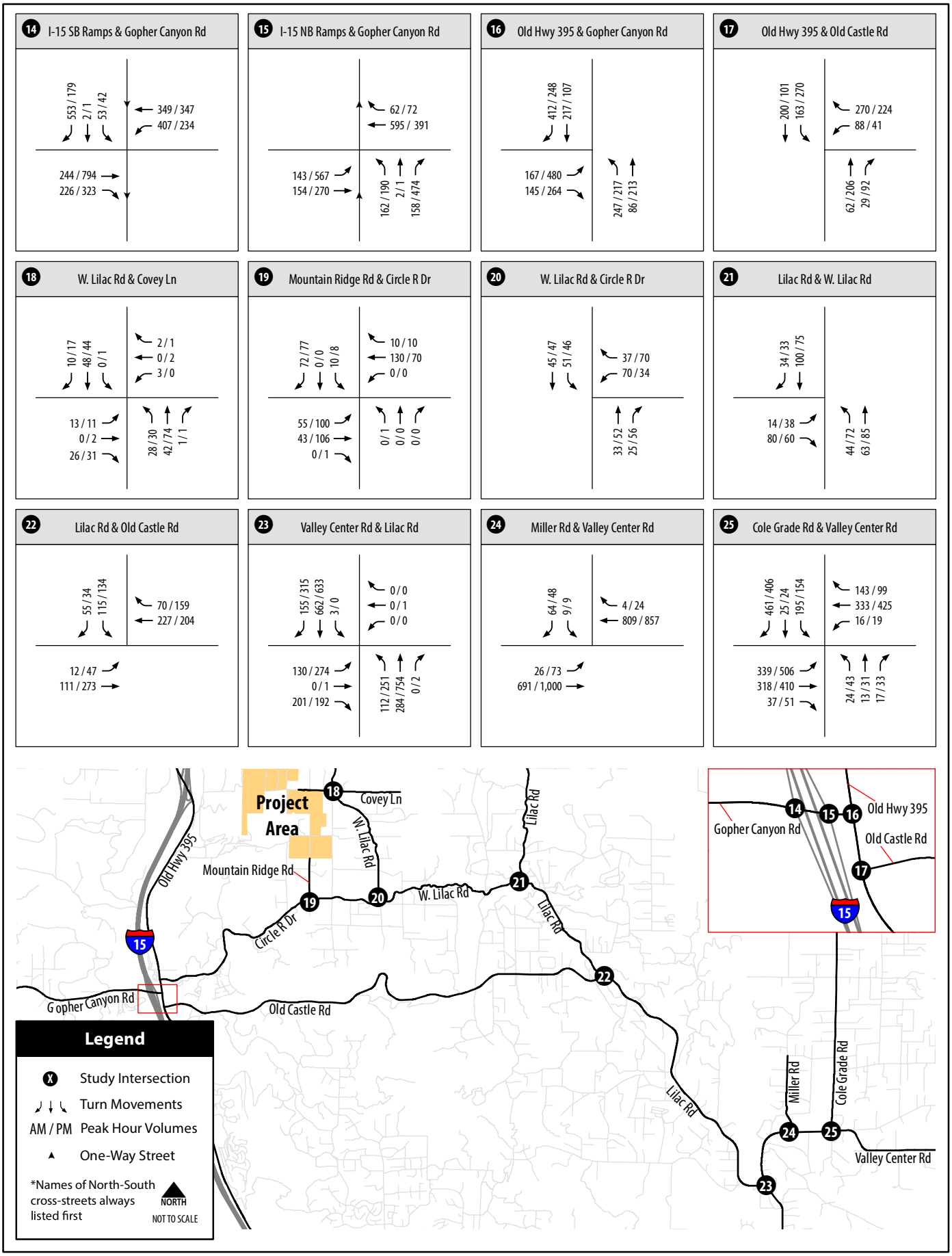
Figure 5-5A
Roadway Average Daily Traffic Volumes - Existing Plus Project (Phase D) Conditions



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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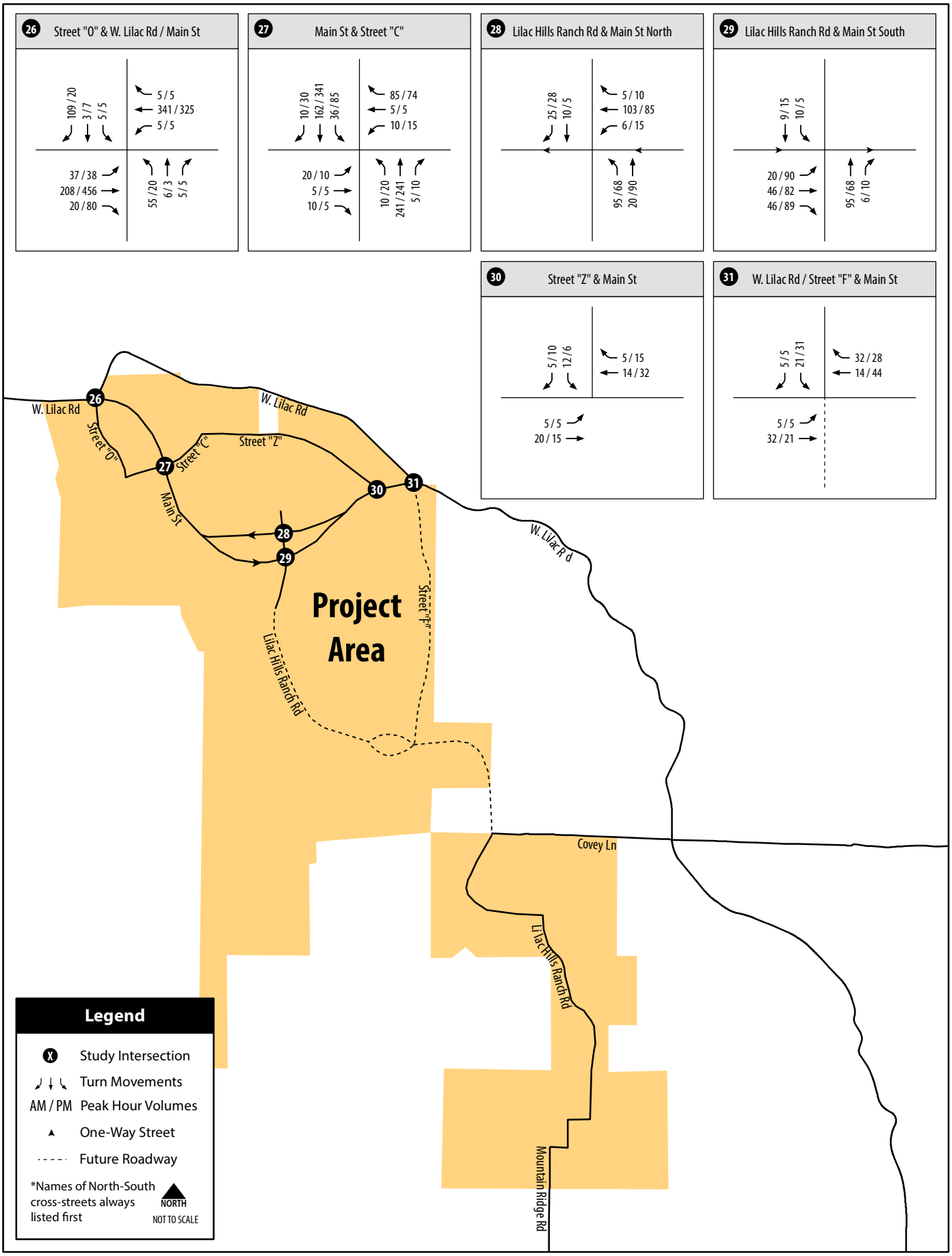
Figure 5-5B (Intersections 1-13)
Intersection Peak Hour Traffic Volumes - Existing Plus Project (Phase D) Conditions



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 5-5B (Intersections 14-25)
Intersection Peak Hour Traffic Volumes - Existing Plus Project (Phase D) Conditions



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 5-5B (Intersections 26-31)
Intersection Peak Hour Traffic Volumes - Existing Plus Project (Phase D) Conditions

TABLE 5.26
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

Roadway	From	To	With Project Phase D				Existing		Project Phase D ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
E. Dulin Road	Old Highway 395	SR-76	2-Ln	9,800	3,650	B	1,830	B	1,820	No
W. Lilac Road	Camino Del Rey	Camino Del Cielo	2-Ln	7,800	3,030	A	2,270	A	760	No
W. Lilac Road	Camino Del Cielo	Old Highway 395	2-Ln	7,800	3,120	A	2,140	A	980	No
W. Lilac Road*	Old Highway 395	Main Street	2.2C*	13,500	10,210	D	1,150	A	9,060	No
W. Lilac Road	Main Street	Street "F"	2-Ln	7,800	1,580	A	1,150	A	430	No
W. Lilac Road	Street "F"	Covey Lane	2-Ln	7,800	2,780	A	1,150	A	1,630	No
W. Lilac Road	Covey Lane	Circle R Drive	2-Ln	7,800	1,780	A	480	A	1,300	No
W. Lilac Road	Circle R Drive	Lilac Road	2-Ln	7,800	2,530	A	1,170	A	1,360	No
Camino Del Cielo	Camino Del Rey	W. Lilac Road	2-Ln	10,900	670	A	630	A	40	No
Olive Hill Road	Shamrock Road	SR-76	2-Ln	8,700	3,460	A	3,380	A	80	No
Camino Del Rey	SR-76	Old River Road	2-Ln	10,900	9,610	D	9,350	D	260	No
Camino Del Rey	Old River Road	W. Lilac Road	2-Ln	9,800	9,430	D	8,640	D	790	No
Camino Del Rey	W. Lilac Road	Camino Del Cielo	2-ln w/ SM	13,500	6,780	C	6,730	C	50	No
Camino Del Rey	Camino Del Cielo	Old Highway 395	2-Ln	7,800	4,940	A	4,850	A	90	No
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	2-Ln	9,800	15,810	F	15,310	F	490	No* > 100ADT
Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	4-Ln	30,800	13,420	A	12,390	A	1,030	No
Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	4-Ln	30,800	13,440	A	11,870	A	1,570	No
Circle R Drive	Old Highway 395	Mountain Ridge Road	2-Ln	9,800	6,400	D	4,030	C	2,370	No

TABLE 5.26
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

Roadway	From	To	With Project Phase D				Existing		Project Phase D ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Circle R Drive	Mountain Ridge Road	W. Lilac Road	2-Ln	9,800	2,090	B	1,770	B	320	No
Old Castle Road	Old Highway 395	Lilac Road	2-Ln	9,800	6,950	D	6,840	D	110	No
E. Vista Way	SR-76	Gopher Canyon Road	2-Ln w/ TWLTL	13,500	15,300	E	15,120	E	180	No < 200ADT
E. Vista Way	Gopher Canyon Road	Osborne Street	2-Ln w/ TWLTL	13,500	21,290	F	21,020	F	270	No* > 100ADT
Old River Road	SR-76	Camino Del Rey	2-Ln	9,800	4,600	C	4,070	C	530	No
Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	2-Ln	10,900	4,400	C	4,170	C	230	No
Pankey Road	Pala Mesa Drive	SR-76	2-Ln	4,500	70	A	70	A	0	No
Lilac Road	Couser Canyon Road	W. Lilac Road	2-Ln	7,800	1,490	A	1,150	A	340	No
Lilac Road	W. Lilac Road	Old Castle Road	2-Ln	7,800	3,560	A	2,640	A	920	No
Lilac Road	Old Castle Road	Anthony Road	2-Ln	10,900	9,870	D	9,010	D	860	No
Lilac Road	Anthony Road	Betsworth Road	2-Ln	10,900	9,240	D	8,740	D	500	No
Lilac Road	Betsworth Road	Valley Center Road	2-Ln	13,500	10,030	D	9,620	D	410	No
Valley Center Road	Woods Valley Road	Lilac Road	4/Ln w/ TWLTL/RM	27,000	21,350	C	21,290	C	60	No
Valley Center Road	Lilac Road	Miller Road	4-Ln w/ RM	33,400	24,620	B	24,280	B	340	No
Valley Center Road	Miller Road	Cole Grade Road	4-Ln w/ RM	27,000	22,760	C	22,440	C	320	No
Valley Center Road	Cole Grade Road	Vesper Road	2-Ln	13,500	11,680	D	11,490	D	190	No
Miller Road	Misty Oak Road	Valley Center Road	2-Ln	7,000	1,470	A	1,460	A	10	No

TABLE 5.26
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

Roadway	From	To	With Project Phase D				Existing		Project Phase D ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Cole Grade Road	Fruitvale Road	Valley Center Road	2-Ln w/ TWLTL	13,500	10,760	D	10,660	D	100	No
Mountain Ridge Road	LHR Project Boundary	Circle R Drive	Rural Residential Collector (LPR)	4,500	2,650	acceptable	160	acceptable	2,490	No

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E or F.
RM = Raised Median.
SM = Striped Median.
TWLTL = Two-Way Left-Turn Lane.
*W. Lilac Road, between Old Highway 395 and Main Street is to be improved to a 2.2C as a mitigation measure from previous phase (Phase C).
* Phase A mitigation measures at the intersection of E. Vista Way / Gopher Canyon Road were assumed to be carried forwarded into Phases B, C, D, & E.
* Phase C mitigation measures at the intersection of E. Vista Way / Gopher Canyon Road were assumed to be carried forwarded into Phases D & E.

- E. Vista Way, between SR-76 and Gopher Canyon Road – LOS E;

  Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase D of the Lilac Hills Ranch project would not result in direct impacts to this roadway segment since it would not add more than 200 daily trips.

- E. Vista Way, between Gopher Canyon Road and Osborne Street – LOS F.

  The construction of a dedicated right-turn lane at the westbound Gopher Canyon Road approach, as well as a dedicated right-turn lane at the northbound E. Vista Way approach, of the intersection of E. Vista Way and Gopher Canyon Road was identified under the Existing Plus Project (Phase A) and Existing Plus Project (Phase C) conditions as mitigation measures. With these improvements, the arterial analysis for Existing Plus Project (Phase D) shown in Appendix AD and summarized in Table 5.27 shows that the mitigation would increase the average travel speed along this segment to better than the Existing conditions during both the AM and PM peak hours. Therefore, with the mitigation measure, the additional traffic generated by Phase D of the Lilac Hills Ranch project would not result in a direct impact at this segment.

TABLE 5.27
ARTERIAL LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

Arterial	With Project Phase D				Existing			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS
Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps	40.8	B	44.3	A	30.6	C	44.3	A
E. Vista Way, between Gopher Canyon Road and Osborne Street	35.4	B	38.7	B	35.1	B	21.3	D

Source: Chen Ryan Associates; May 2014

Intersection Analysis

Table 5.28 displays intersection level of service and average vehicle delay results under Existing Plus Project (Phase D) conditions. Level of service calculation worksheets for the Existing Plus Project (Phase D) conditions are provided in **Appendix AE**.

As shown in the table, the following three (3) study intersections would continue to operate at substandard LOS E or F under Existing Plus Project (Phase D) conditions:

TABLE 5.28
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

Intersection	Traffic Control	With Project Phase D				Existing		Change in Delay (sec.) AM / PM	Phase D Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
1. E. Vista Way / Gopher Canyon Road	Signal*	46.0	D	48.7	D	172.8 / 212.0	F / F	-126.8 / -163.3	-	No
2. SR-76 / Old River Road/E. Vista Way	Signal	24.8	C	32.4	C	23.7 / 32	C / C	1.1 / 0.4	-	No
3. SR-76 / Olive Hill Road/Camino Del Rey	Signal	26.4	C	34.8	C	21.6 / 34.5	C / C	4.8 / 0.3	-	No
4. Old River Road / Camino Del Rey	OWSC	30.4	D	12.5	B	23.2 / 12.2	D / B	7.2 / 0.3	-	No
5. W. Lilac Road / Camino Del Rey	OWSC	17.1	C	11.3	B	15.7 / 11.0	C / B	1.4 / 0.3	-	No
6. Old Highway 395 / SR-76	Signal	31.4	C	46.5	D	29.0 / 39.8	C / D	2.4 / 6.7	-	No
7. Pankey Road / SR-76	TWSC	14.1	B	19.0	C	12.5 / 15.2	B / C	1.6 / 3.8	-	No
8. Old Highway 395 / E. Dulin Road	OWSC	18.5	C	21.2	C	12.8 / 11.2	B / B	5.7 / 10.0	-	No
9. Old Highway 395 / W. Lilac Road	Signal*	28.2	C	27.1	C	14.7 / 13.3	C / B	13.5 / 13.8	-	No
10. I-15 SB Ramps / Old Highway 395	OWSC	11.5	B	13.6	B	10.6 / 12.1	B / B	0.9 / 1.5	-	No
11. I-15 NB Ramps / Old Highway 395	OWSC	11.8	B	17.5	C	9.8 / 11.2	A / B	2.0 / 6.3	-	No

TABLE 5.28
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

Intersection	Traffic Control	With Project Phase D				Existing		Change in Delay (sec.) AM / PM	Phase D Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
12. Old Highway 395 / Camino Del Rey	OWSC	10.5	B	12.5	B	10.1 / 11.0	B / B	0.4 / 1.5	-	No
13. Old Highway 395 / Circle R Drive	OWSC	41.5	E	68.3	F	20.4 / 22.5	C / C	21.1 / 45.8	AM: WBL +41 PM: WBL +43	*Yes* *County Int.* *> 5 trips* *>1 sec.*
14. I-15 SB Ramps / Gopher Canyon Road	OWSC	712.3	F	352.7	F	468.2 / 173.0	F / F	244.1 / 179.7	-	Yes *Caltrans Int. > 2 sec.*
15. I-15 NB Ramps / Gopher Canyon Road	OWSC	36.0	E	2314.4	F	30.5 / 1945.4	D / F	5.5 / 369.0	-	Yes *Caltrans Int. > 2 sec.*
16. Old Highway 395 / Gopher Canyon Road	Signal	17.9	B	17.7	B	11.0 / 14.7	B / B	6.9 / 3.0	-	No
17. Old Highway 395 / Old Castle Road	Signal	13.8	B	16.6	B	13.9 / 15.7	B / B	0.0 / 0.9	-	No
18. W. Lilac Road / Covey Lane	TWSC	9.8	A	9.6	A	8.8 / 9.3	B / A	1.0 / 0.3	-	No
19. Mountain Ridge Road / Circle R Drive	TWSC	9.8	A	14.3	B	9.3 / 9.6	A / A	0.5 / 4.7	-	No
20. W. Lilac Road / Circle R Drive	OWSC	10.5	B	10.7	B	9.3 / 9.3	A / A	1.2 / 1.4	-	No
21. Lilac Road / W. Lilac Road	OWSC	10.2	B	10.8	B	9.6 / 9.9	A / A	0.6 / 0.9	-	No
22. Lilac Road / Old Castle Road	OWSC	13.0	B	21.7	C	11.8 / 17.8	B / C	1.2 / 3.9	-	No
23. Valley Center Rd / Lilac Road	Signal	10.8	B	30.5	C	10.5 / 22.6	B / C	0.3 / 7.9	-	No

TABLE 5.28
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

Intersection	Traffic Control	With Project Phase D				Existing		Change in Delay (sec.) AM / PM	Phase D Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
24. Miller Road / Valley Center Road	OWSC	17.2	C	26.3	D	16.9 / 25.0	C / D	0.3 / 1.3	-	No
25. Cole Grade Road / Valley Center Road	Signal	32.8	C	35.1	D	31.1 / 34.9	C / C	1.7 / 0.2	-	No
26. Street "O" / W. Lilac Road/Main Street	RA	6.8	A	12.5	B	DNE	DNE	6.8 / 12.5	-	No
27. Main Street / Street "C"	RA	5.6	A	7.7	A	DNE	DNE	5.6 / 7.7	-	No
28. Lilac Hills Ranch Road / Main Street North	AWSC	8.0	A	8.2	A	DNE	DNE	8.0 / 8.2	-	No
29. Lilac Hills Ranch Road / Main Street South	AWSC	7.7	A	8.7	A	DNE	DNE	7.7 / 8.7	-	No
30. Street "Z" / Main Street	OWSC	8.8	A	8.9	A	DNE	DNE	8.8 / 8.9	-	No
31. W. Lilac Road/Street "F" / Main Street	RA	3.6	A	3.8	A	DNE	DNE	3.6 / 3.8	-	No

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E of F.
AWSC = All-Way Stop Controlled.
TWSC = Two-Way Stop Controlled.
OWSC = One-Way Stop Controlled.
RA = Roundabout.
DNE = Does Not Exist.
For OWSC and TWSC intersections, the delay shown is the worst delay experienced by any of the approaches.
* Phase A mitigation measures at the intersection of E. Vista Way / Gopher Canyon Road were assumed to be carried forwarded into Phases B, C, D, & E.
* Phase C mitigation measures at the intersection of E. Vista Way / Gopher Canyon Road were assumed to be carried forwarded into Phases D & E.
*Traffic signal was required at intersection #9 as a mitigation measure in Phase C of the project and was assumed to be carried forwarded into Phases D & E.

- Old Highway 395 / Circle R Drive (County) – LOS E during the AM peak hour and LOS F during the PM peak hour, and the Phase D project traffic would add more than 5 peak hour trips to the critical movement of this unsignalized intersection. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase D of the Lilac Hills Ranch project would have a direct impact at this intersection.
- I-15 SB Ramps / Gopher Canyon Road (Caltrans) – LOS F during both the AM and PM peak hours, and the Phase D project traffic would add two seconds or more of additional delay to this intersection. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase D of the Lilac Hills Ranch project would have a direct impact at this intersection.
- I-15 NB Ramps / Gopher Canyon Road (Caltrans) – LOS E during the AM peak hour and LOS F during the PM peak hour, and the Phase D project traffic would add two seconds or more of additional delay to this intersection. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase D of the Lilac Hills Ranch project would have a direct impact at this intersection.

Two-Lane Highway Analysis

Table 5.29 displays two-lane highway level of service analysis results for Old Highway 395 under Existing Plus Project (Phase D) conditions. The two-lane highway level of service analysis was performed utilizing the methodology presented in Chapter 2.0.

As shown in the table, all segments along Old Highway 395 would continue to operate at acceptable LOS D or better under Existing Plus Project (Phase D) conditions and the additional traffic generated by Phase D of the project would not cause any direct impacts to Old Highway 395.

Freeway Segment Analysis

The freeway segment level of service analysis was performed utilizing the methodology presented in Chapter 2.0. **Table 5.30** displays the resulting level of service for I-15 under Existing Plus Project (Phase D) conditions.

TABLE 5.29
TWO-LANE HIGHWAY LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

2-Ln Highway	From	To	With Project Phase D			Existing		Project Phase D ADT	Direct Impact?
			LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Old Highway 395	Pala Mesa Drive	SR-76	16,200	5,100	D or better	4,770	D or better	330	No
Old Highway 395	SR-76	E. Dulin Road	16,200	5,850	D or better	4,720	D or better	1,130	No
Old Highway 395	E. Dulin Road	W. Lilac Road	16,200	7,080	D or better	4,340	D or better	2,740	No
Old Highway 395	W. Lilac Road	I-15 SB Ramps	16,200	10,080	D or better	4,450	D or better	5,630	No
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	16,200	7,120	D or better	3,600	D or better	3,520	No
Old Highway 395	I-15 NB Ramps	Camino Del Rey	16,200	4,080	D or better	2,430	D or better	1,650	No
Old Highway 395	Camino Del Rey	Circle R Drive	16,200	7,340	D or better	5,820	D or better	1,520	No
Old Highway 395	Circle R Drive	Gopher Canyon Road	16,200	12,640	D or better	10,710	D or better	1,930	No
Old Highway 395	Gopher Canyon Road	Old Castle Road	16,200	8,960	D or better	8,660	D or better	340	No

Source: Chen Ryan Associates; May 2014

TABLE 5.30
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-15	Riverside County Boundary to Old Highway 395	136,180	8.4%	11,505	0.64	4	0.95	6.75%	1,989	0.846	D	0.014	No
I-15	Old Highway 395 to SR-76	136,260	7.4%	10,137	0.73	4	0.95	6.75%	2,017	0.858	D	0.014	No
I-15	SR-76 to Old Highway 395	115,010	7.8%	8,996	0.69	4	0.95	8.40%	1,691	0.720	C	0.013	No
I-15	Old Highway 395 to Gopher Canyon Road	113,700	8.1%	9,182	0.67	4	0.95	8.40%	1,681	0.716	C	0.023	No
I-15	Gopher Canyon Road to Deer Springs Road	121,270	8.1%	9,794	0.67	4	0.95	13.20%	1,835	0.781	C	0.027	No
I-15	Deer Springs Road to Centre City Parkway	120,460	8.0%	9,678	0.66	4	0.95	13.20%	1,804	0.768	C	0.022	No
I-15	Centre City Parkway to El Norte Parkway	113,740	8.0%	9,138	0.66	4	0.95	13.20%	1,703	0.725	C	0.017	No
I-15	El Norte Parkway to SR-78	129,540	7.9%	10,196	0.66	4	0.95	10.00%	1,873	0.797	C	0.016	No
I-15	SR-78 to W Valley Parkway	193,880	8.1%	15,779	0.60	5+2ML	0.95	10.00%	1,495	0.636	C	0.006	No
I-15	W Valley Parkway to Auto Parkway	180,580	8.1%	14,696	0.60	5+2ML	0.95	10.00%	1,392	0.592	B	0.005	No
I-15	Auto Parkway to W Citracado Parkway	173,540	7.8%	13,459	0.60	5+2ML	0.95	10.00%	1,267	0.539	B	0.005	No

TABLE 5.30
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-15	W Citracado Parkway to Via Rancho Parkway	197,360	7.8%	15,307	0.60	5+2ML	0.95	7.00%	1,421	0.604	B	0.004	No
I-15	Via Rancho Parkway to Bernardo Drive	199,260	7.4%	14,665	0.58	5+2ML	0.95	7.00%	1,320	0.562	B	0.004	No
I-15	Bernardo Drive to Rancho Bernardo Road	202,180	7.4%	14,880	0.58	5+2ML	0.95	7.00%	1,340	0.570	B	0.003	No
I-15	Rancho Bernardo Road to Bernardo Center Drive	210,100	7.3%	15,425	0.54	5+2ML	0.95	7.00%	1,287	0.548	B	0.003	No
I-15	Bernardo Center Drive to Camino Del Norte	215,050	7.3%	15,789	0.54	5+2ML	0.95	7.00%	1,317	0.560	B	0.003	No

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E or F.
ML = Managed Lane.

As shown in the table, all of the study area freeway segments along I-15 would continue to operate at LOS D or better under Existing Plus Project (Phase D) conditions. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by Phase D of the project would not cause any direct impacts to study area freeway segments.

Ramp Intersection Capacity Analysis

Consistent with Caltrans' requirements, the signalized intersections along SR-76 within the study area were analyzed under Existing Plus Project (Phase D) conditions using the ILV procedures as described in Chapter 2.0. ILV analysis results are displayed in **Table 5.31** and analysis worksheets for the Existing Plus Project (Phase D) conditions are provided in **Appendix AF**.

TABLE 5.31
RAMP INTERSECTION CAPACITY ANALYSIS
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

Ramp Intersection	Peak Hour	ILV / Hour	Description
SR-76 / Old River Road/E. Vista Way	AM	1,549	*>1500: (Over Capacity)*
	PM	1,300	*1200-1500: (At Capacity)*
SR-76 / Olive Hill Road/Camino Del Rey	AM	1,207	*1200-1500: (At Capacity)*
	PM	1,377	*1200-1500: (At Capacity)*
SR-76 / Old Highway 395	AM	1,056	*<1200: (Under Capacity)*
	PM	1,132	*<1200: (Under Capacity)*

Source: Chen Ryan Associates; May 2014

As shown in the table, all three (3) intersections along SR-76 would operate at "At Capacity" and/or "Under Capacity", with the exception of the SR-76 / Old River Road/E. Vista Way intersection, which would operate at "Over Capacity" during the AM peak hour under the Existing Plus Project (Phase D) conditions.

5.4.3 Existing Plus Project (Phase D) Impact Significance and Mitigation

This section identifies required mitigation measures for roadway, intersection, two-lane highway, and freeway facilities that would be significantly impacted by project-related traffic under Existing Plus Project (Phase D) conditions.

Roadway Segments

None.

Intersections

Phase D of the project traffic would have a direct impact on three (3) study area intersections and the following intersection improvements would be required to mitigate the identified traffic impacts:

- *Old Highway 395 / Circle R Drive* (one-way stop controlled) (County) - Signalization would be required (by 121st EDU from combined Phases 4 and 5 to mitigate direct project impacts; or a 1,132 total EDU. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA),* this intersection would meet both the "Minimum Vehicular Volume" and the "Interruption of Continuous Traffic" warrants. The project applicant would be responsible for implementing the mitigation measure identified above. The signal warrant worksheet for this intersection is provided in **Appendix AG**.

- *I-15 SB Ramps / Gopher Canyon Road* (stop controlled ramp intersection) (Caltrans) - Signalization would be required (by the 1st EDU of Phase 4 or 363rd total EDU) at this intersection to mitigate direct project impacts. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA),* this intersection would meet both the "Minimum Vehicular Volume" and the "Interruption of Continuous Traffic" warrants. The project applicant would be responsible for implementing the mitigation measure identified above. However, this particular facility is out of the County's control and therefore the impact would remain significant and unavoidable. The signal warrant worksheet for this intersection is provided in Appendix AG.

- *I-15 NB Ramps / Gopher Canyon Road* (stop controlled ramp intersection) (Caltrans) - Signalization would be required (by the 1st EDU of Phase 4 or 363rd total EDU) at this intersection to mitigate direct project impacts. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA),* this intersection would meet both the "Minimum Vehicular Volume" and the "Interruption of Continuous Traffic" warrants. The project applicant would be responsible for implementing the mitigation measure identified above. However, this particular facility is out of the County's control and therefore the impact would remain significant and unavoidable. The signal warrant worksheet for this intersection is provided in Appendix AG.

Table 5.32 displays level of service analysis results for the mitigated intersection under the Existing Plus Project (Phase D) conditions. Calculation worksheets for the intersection analysis are provided in Appendix **AH**.

TABLE 5.32
MITIGATED INTERSECTION LEVEL OF SERVICE
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

Intersection	After Mitigation				Existing	
	AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM
	Delay (Sec.)	LOS	Delay (sec.)	LOS		
13. Old Highway 395 / Circle R Drive	9.4	A	10.6	B	20.4 / 22.5	C / C
14. I-15 SB Ramps / Gopher Canyon Road	31.9	C	25.1	C	468.2 / 173.0	F / F
15. I-15 NB Ramps / Gopher Canyon Road	13.3	B	38.9	D	30.5 / 1945.4	D / F

Source: Chen Ryan Associates; May 2014

Note: Bold letter indicates unacceptable LOS E or F.

As shown in the table, after installation of the proposed traffic signals, all three impacted intersections would operate at acceptable LOS C or better during both the AM and PM peak hours. However, both ramp intersections at I-15 / Gopher Canyon Road interchange are Caltrans' facilities in which the County does not have jurisdiction. In addition, Caltrans does not have a plan or program in place. Therefore, the impacts would remain significant and unavoidable.

Two-Lane Highways

None of the study area two-lane highway facilities would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Phase D) conditions.

Freeways

None of the study area freeway facilities would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Phase D) conditions.

Table 5.33 summarizes potential impacts and recommended mitigation measures associated with Phase D of the Lilac Hills Ranch project.

TABLE 5.33
IMPACT AND MITIGATION SUMMARY
EXISTING PLUS PROJECT (PHASE D) CONDITIONS

Impacted Facility	Mitigation Measures
Roadway Segment	
None	-
Intersection	
Old Highway 395 / Circle R Drive	Signalization by 121st EDU from combined Phases 4 and 5; or 1,132nd total EDU.
I-15 SB Ramps / Gopher Canyon Road	Signalization by the 1st EDU of Phase 4 or 363rd total EDU - Caltrans' facility, significant and unavoidable impact.
I-15 NB Ramps / Gopher Canyon Road	Signalization by the 1st EDU of Phase 4 or 363rd total EDU - Caltrans' facility, significant and unavoidable impact.
Two-Lane Highway	
None	-
Freeway	
None	-

Source: Chen Ryan Associates; May 2014

5.5 Existing Plus Project (Phase E – Project Buildout) Conditions

5.5.1 Existing Plus Project (Buildout) Roadway Network and Traffic Volumes

The Existing Plus Project (Buildout) scenario includes existing traffic volumes with the addition of traffic generated by project buildout. Intersection and roadway geometrics under Existing Plus Project conditions were assumed to be identical to Existing conditions, with the exception of the following roads and driveway intersections associated with project frontage and access:

- Main Street, between West Lilac Road and Street "C";
- Main Street, between Street "C" and Street "Z";
- Main Street, between Street "Z" and W. Lilac Road;
- Street "C" and Street "Z";
- Covey Lane, west of W. Lilac Road;
- Lilac Hills Ranch Road, north of Covey Lane;
- Lilac Hills Ranch Road, between Covey Lane and Mountain Ridge Road;
- Street "F", between W. Lilac Road and Lilac Hills Ranch Road;
- Intersection # 26, Street "O" / W. Lilac Road/Main Street – proposed roundabout;
- Intersection # 27, Main Street / Street "C"– proposed roundabout;
- Intersection #28, Lilac Hills Ranch Road / Main Street North – proposed all-way stop controlled intersection;
- Intersection #29, Lilac Hills Ranch Road / Main Street South – proposed all-way stop controlled intersection;

- Intersection # 30, Street "Z" / Main Street – proposed one-way stop (southbound Street "Z" approach) controlled T-intersection; and
- Intersection # 31, Street "Z" / Main Street – proposed roundabout.

In addition to the project access and frontage roads assumed above, mitigation measures from Phases A, C, and D were also carried forward into this Phase. These improvements include:

- Construction of dedicated right-turn lanes at the westbound Gopher Canyon Road and northbound E. Vista Way approach of the intersection of E. Vista Way and Gopher Canyon Road;
- W. Lilac Road, between Old Highway 395 and Main Street – 2.2C;
- Old Highway 395 / W. Lilac Road intersection – signalized and add a westbound left-turn lane; and
- Old Highway 395 / Circle R Drive intersection – signalized.

5.5.2 Existing Plus Project (Buildout) Traffic Conditions

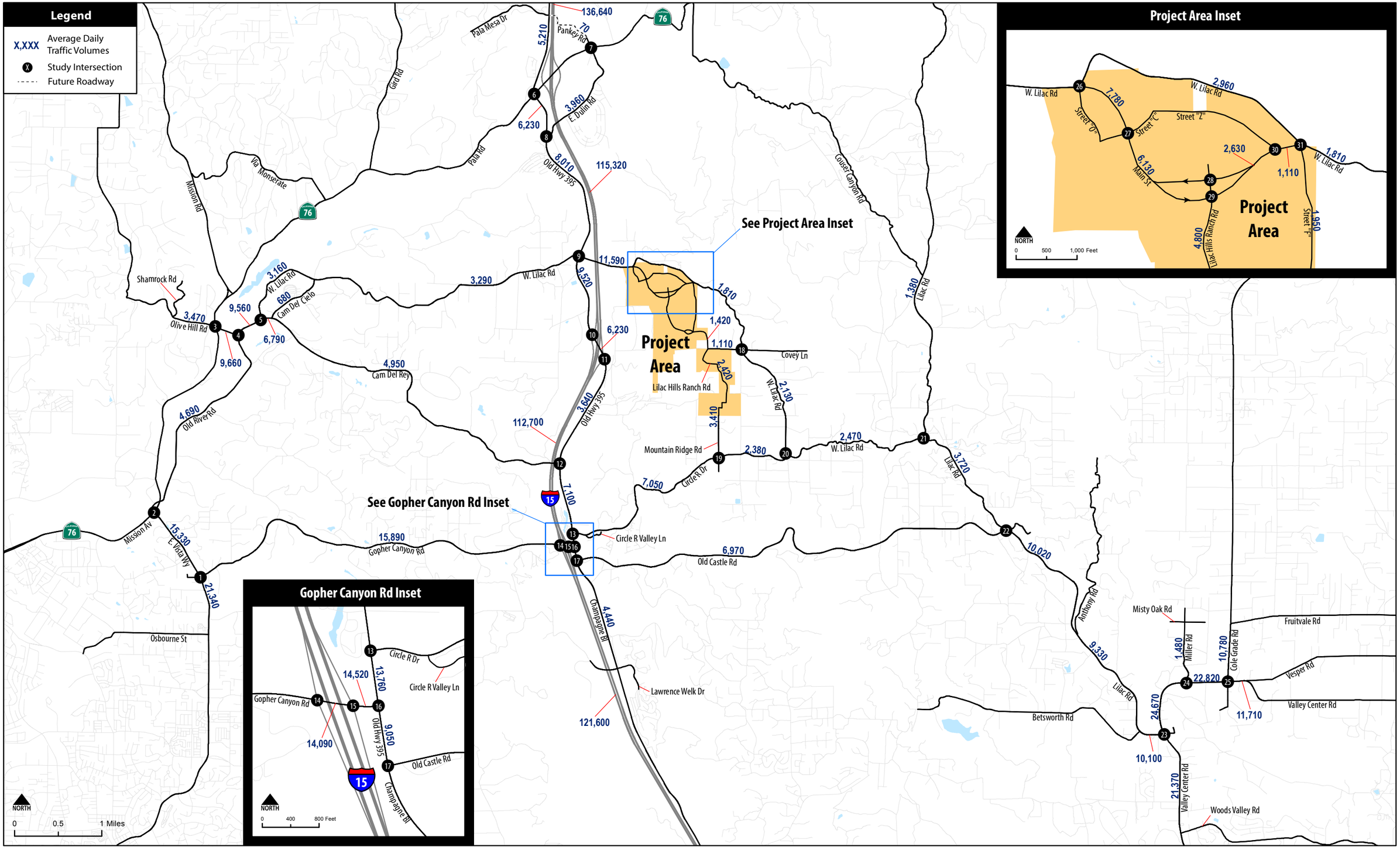
Level of service analyses under Existing Plus Project (Buildout) conditions were conducted using the methodologies described in Chapter 2.0. Roadway segment, intersection, two-lane highway, freeway segment, and ramp intersection level of service results are discussed separately below. Average daily traffic volumes on study area roadway segments are displayed in **Figure 5-6A**, while peak hour traffic volumes at the key study area intersections are displayed in **Figure 5-6B**.

Roadway Segment Analysis

Table 5.34 displays the level of service analysis results for key roadway segments under Existing Plus Project (Buildout) conditions. As shown, the following three (3) roadway segments would operate at substandard LOS E or F:

- Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps – LOS F;

  The construction of a dedicated right-turn lane at the westbound Gopher Canyon Road approach, as well as a dedicated right-turn lane at the northbound E. Vista Way approach, of the intersection of E. Vista Way and Gopher Canyon Road was identified under the Existing Plus Project (Phase A) and Existing Plus Project (Phase C) conditions as mitigation measures. With these improvements, the arterial analysis for Existing Plus Project (Buildout) shown in **Appendix AI** and summarized in **Table 5.35** shows that the mitigation would increase the AM peak hour average travel speed along this segment to better than the Existing conditions, and would maintain the same PM peak hour average travel speed as the Existing conditions. Therefore, with the mitigation measure, the additional traffic generated by the buildout of the Lilac Hills Ranch project would not result in a direct impact at this segment.

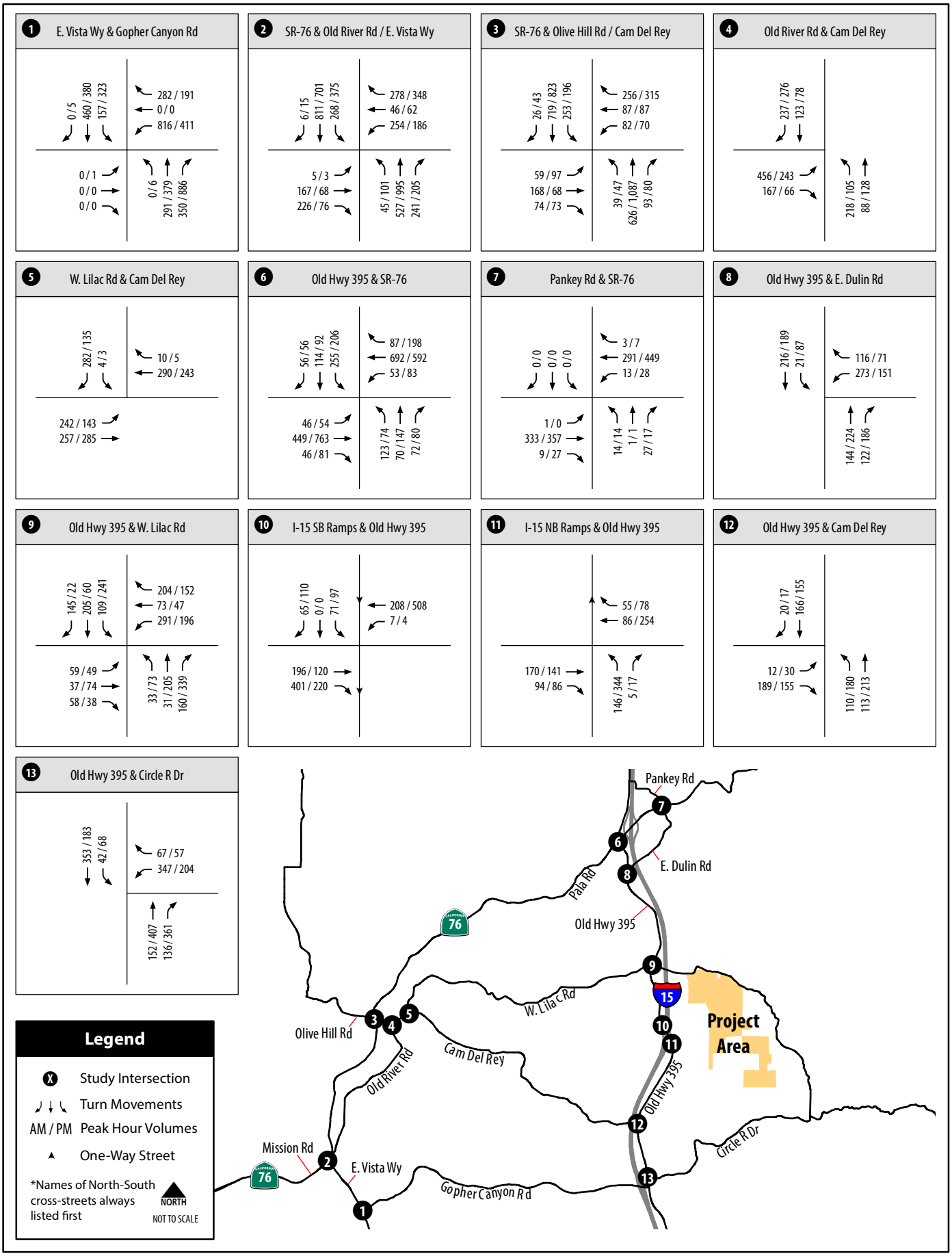


Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 5-6A

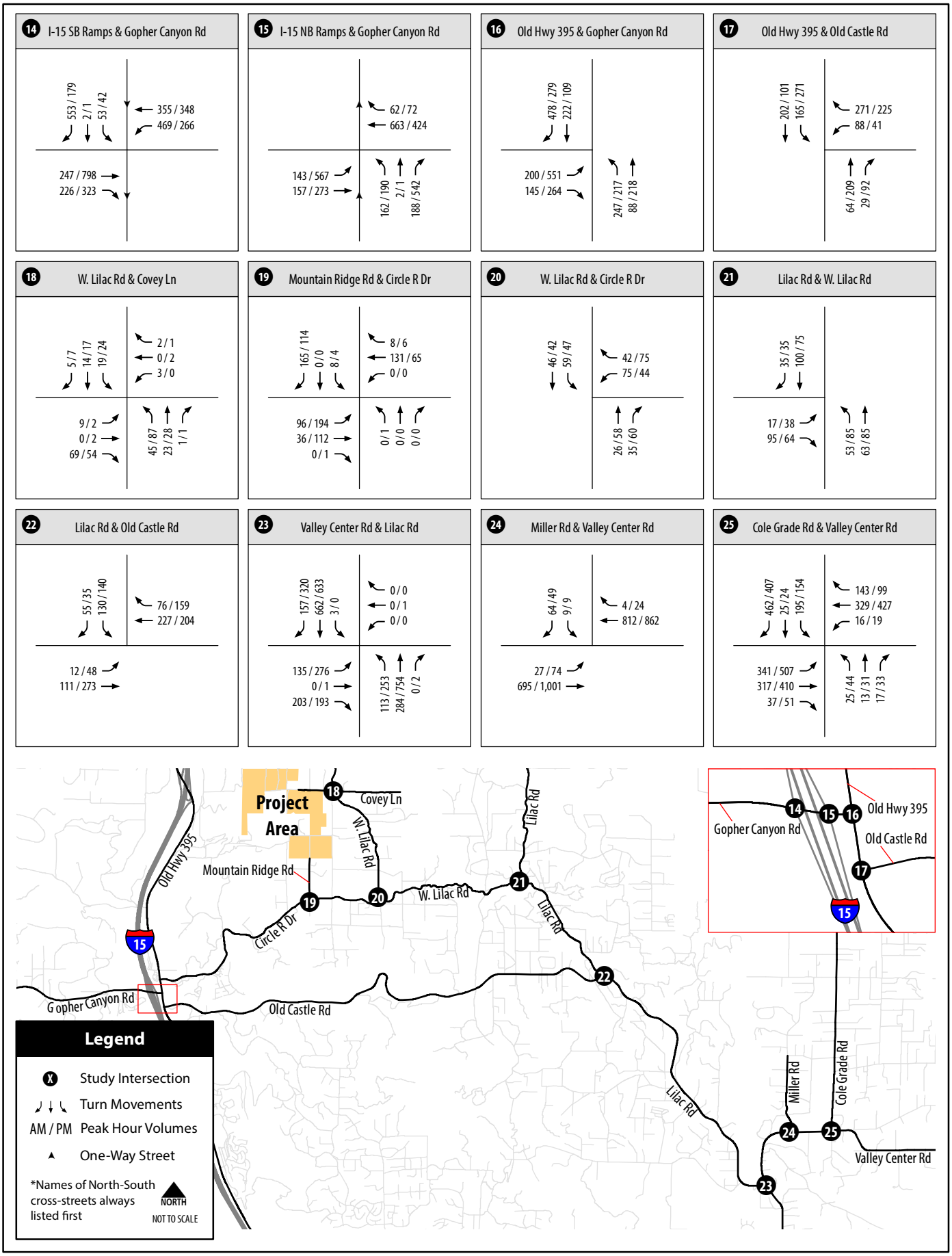
Roadway Average Daily Traffic Volumes - Existing Plus Project (Phase E, Buildout) Conditions



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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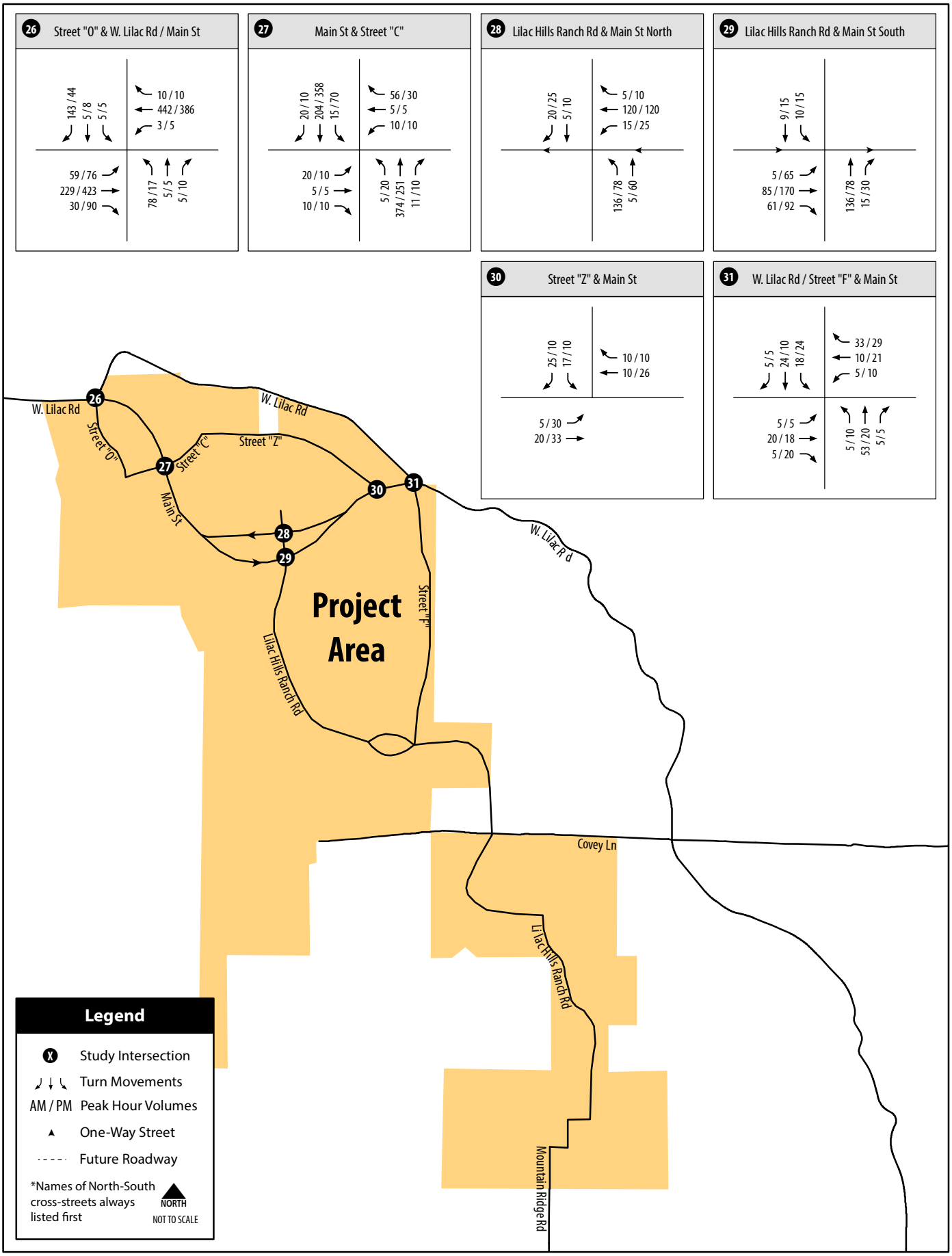
Figure 5-6B (Intersections 1-13)
Intersection Peak Hour Traffic Volumes - Existing Plus Project (Phase E, Buildout) Conditions



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 5-6B (Intersections 14-25)
Intersection Peak Hour Traffic Volumes - Existing Plus Project (Phase E, Buildout) Conditions



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 5-6B (Intersections 26-31)
Intersection Peak Hour Traffic Volumes - Existing Plus Project (Phase E, Buildout) Conditions

TABLE 5.34
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE E – BUILDOUT) CONDITIONS

Roadway	From	To	With Project Buildout				Existing		Project Buildout ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
E. Dulin Road	Old Highway 395	SR-76	2-Ln	9,800	3,960	C	1,830	B	2,130	No
W. Lilac Road	Camino Del Rey	Camino Del Cielo	2-Ln	7,800	3,160	A	2,270	A	890	No
W. Lilac Road	Camino Del Cielo	Old Highway 395	2-Ln	7,800	3,290	A	2,140	A	1,150	No
W. Lilac Road	Old Highway 395	Main Street	2.2C*	13,500	11,590	D	1,150	A	10,440	No
W. Lilac Road	Main Street	Street "F"	2-Ln	7,800	2,960	A	1,150	A	1,810	No
W. Lilac Road	Street "F"	Covey Lane	2-Ln	7,800	1,810	A	1,150	A	660	No
W. Lilac Road	Covey Lane	Circle R Drive	2-Ln	7,800	2,130	A	480	A	1,650	No
W. Lilac Road	Circle R Drive	Lilac Road	2-Ln	7,800	2,470	A	1,170	A	1,300	No
Camino Del Cielo	Camino Del Rey	W. Lilac Road	2-Ln	10,900	680	A	630	A	50	No
Olive Hill Road	Shamrock Road	SR-76	2-Ln	8,700	3,470	A	3,380	A	90	No
Camino Del Rey	SR-76	Old River Road	2-Ln	10,900	9,660	D	9,350	D	310	No
Camino Del Rey	Old River Road	W. Lilac Road	2-Ln	9,800	9,560	D	8,640	D	920	No
Camino Del Rey	W. Lilac Road	Camino Del Cielo	2-ln w/ SM	13,500	6,790	C	6,730	C	60	No
Camino Del Rey	Camino Del Cielo	Old Highway 395	2-Ln	7,800	4,950	A	4,850	A	100	No
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	2-Ln	9,800	15,890	F	15,310	F	580	No* > 100ADT
Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	4-Ln	30,800	14,090	B	12,390	A	1,700	No
Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	4-Ln	30,800	14,520	B	11,870	A	2,650	No
Circle R Drive	Old Highway 395	Mountain Ridge Road	2-Ln	9,800	7,050	D	4,030	C	3,030	No

TABLE 5.34
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE E – BUILDOUT) CONDITIONS

Roadway	From	To	With Project Buildout				Existing		Project Buildout ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Circle R Drive	Mountain Ridge Road	W. Lilac Road	2-Ln	9,800	2,380	B	1,770	B	610	No
Old Castle Road	Old Highway 395	Lilac Road	2-Ln	9,800	6,970	D	6,840	D	130	No
E. Vista Way	SR-76	Gopher Canyon Road	2-Ln w/ TWLTL	13,500	15,330	E	15,120	E	210	*Yes > 200ADT*
E. Vista Way	Gopher Canyon Road	Osborne Street	2-Ln w/ TWLTL	13,500	21,340	F	21,020	F	320	No* > 100ADT
Old River Road	SR-76	Camino Del Rey	2-Ln	9,800	4,690	C	4,070	C	620	No
Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	2-Ln	10,900	4,440	C	4,170	C	270	No
Pankey Road	Pala Mesa Drive	SR-76	2-Ln	4,500	70	A	70	A	0	No
Lilac Road	Couser Canyon Road	W. Lilac Road	2-Ln	7,800	1,380	A	1,150	A	230	No
Lilac Road	W. Lilac Road	Old Castle Road	2-Ln	7,800	3,720	A	2,640	A	1,080	No
Lilac Road	Old Castle Road	Anthony Road	2-Ln	10,900	10,020	D	9,010	D	1,010	No
Lilac Road	Anthony Road	Betsworth Road	2-Ln	10,900	9,330	D	8,740	D	590	No
Lilac Road	Betsworth Road	Valley Center Road	2-Ln	13,500	10,100	D	9,620	D	480	No
Valley Center Road	Woods Valley Road	Lilac Road	4/Ln w/ TWLTL/RM	27,000	21,370	C	21,290	C	80	No
Valley Center Road	Lilac Road	Miller Road	4-Ln w/ RM	33,400	24,670	B	24,280	B	390	No
Valley Center Road	Miller Road	Cole Grade Road	4-Ln w/ RM	27,000	22,820	C	22,440	C	380	No
Valley Center Road	Cole Grade Road	Vesper Road	2-Ln	13,500	11,710	D	11,490	D	220	No
Miller Road	Misty Oak Road	Valley Center Road	2-Ln	7,000	1,480	A	1,460	A	20	No

TABLE 5.34
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE E – BUILDOUT) CONDITIONS

Roadway	From	To	With Project Buildout				Existing		Project Buildout ADT	Direct Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Cole Grade Road	Fruitvale Road	Valley Center Road	2-Ln w/ TWLTL	13,500	10,780	D	10,660	D	120	No
Mountain Ridge Road	LHR Project Boundary	Circle R Drive	Rural Residential Collector (LPR)	4,500	3,310	acceptable	160	acceptable	3,150	No

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E or F.
RM = Raised Median.
SM = Striped Median.
TWLTL = Two-Way Left-Turn Lane.
*W. Lilac Road, between Old Highway 395 and Main Street is to be improved to a 2.2C as a mitigation measure from previous phase (Phase C).
* Phase A mitigation measures at the intersection of E. Vista Way / Gopher Canyon Road were assumed to be carried forwarded into Phases B, C, D, & E.
* Phase C mitigation measures at the intersection of E. Vista Way / Gopher Canyon Road were assumed to be carried forwarded into Phases D & E.

- E. Vista Way, between SR-76 and Gopher Canyon Road – LOS E;

  Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by the buidout of the Lilac Hills Ranch project would result in a direct impact to this roadway segment since it would add more than 200 daily trips.

- E. Vista Way, between Gopher Canyon Road and Osborne Street – LOS F.

  The construction of a dedicated right-turn lane at the westbound Gopher Canyon Road approach, as well as a dedicated right-turn lane at the northbound E. Vista Way approach, of the intersection of E. Vista Way and Gopher Canyon Road was identified under the Existing Plus Project (Phase A) and Existing Plus Project (Phase C) conditions as mitigation measures. With these improvements, the arterial analysis for Existing Plus Project (Buildout) shown in Appendix AI and summarized in Table 5.34 shows that the mitigation would increase the average travel speed along this segment to better than the Existing conditions during both the AM and PM peak hours. Therefore, with the mitigation measure, the additional traffic generated by the buildout of the Lilac Hills Ranch project would not result in a direct impact at this segment.

TABLE 5.35
ARTERIAL LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE E – BUILDOUT) CONDITIONS

Arterial	With Project Phase D				Existing			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS
Gopher Canyon Road, between E. Vista Way and I-15 SB Ramps	40.6	B	44.3	A	30.6	C	44.3	A
E. Vista Way, between Gopher Canyon Road and Osborne Street	35.2	B	34.9	B	35.1	B	21.3	D

Source: Chen Ryan Associates; May 2014

Intersection Analysis

Table 5.36 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 AJ**.

As shown in the table, the following two (2) study intersections would continue to operate at substandard LOS E or F under Existing Plus Project (Buildout) conditions:

TABLE 5.36
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE E – BUILDOUT) CONDITIONS

Intersection	Traffic Control	With Project Buildout				Existing		Change in Delay (sec.) AM / PM	Buildout Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
1. E. Vista Way / Gopher Canyon Road	Signal*	47.7	D	51.9	D	172.8 / 212.0	F / F	-125.1 / -160.1	-	No
2. SR-76 / Old River Road/E. Vista Way	Signal	24.9	C	32.4	C	23.7 / 32	C / C	1.2 / 0.4	-	No
3. SR-76 / Olive Hill Road/Camino Del Rey	Signal	26.6	C	34.8	C	21.6 / 34.5	C / C	5.0 / 0.3	-	No
4. Old River Road / Camino Del Rey	OWSC	33.2	D	12.6	B	31.2 / 10.7	D / B	2.0 / 1.9	-	No
5. W. Lilac Road / Camino Del Rey	OWSC	17.8	C	11.4	B	15.7 / 11.0	C / B	2.1 / 0.4	-	No
6. Old Highway 395 / SR-76	Signal	32.7	C	46.6	D	29.0 / 39.8	C / D	3.7 / 6.8	-	No
7. Pankey Road / SR-76	TWSC	15.2	B	19.3	C	12.5 / 15.2	B / C	2.7 / 4.1	-	No
8. Old Highway 395 / E. Dulin Road	OWSC	23.2	C	27.2	D	12.8 / 11.2	B / B	10.4 / 16.0	-	No
9. Old Highway 395 / W. Lilac Road	Signal*	29.2	C	32.9	C	14.7 / 13.3	C / B	14.5 / 19.6	-	No
10. I-15 SB Ramps / Old Highway 395	OWSC	12.2	B	14.3	B	10.6 / 12.1	B / B	1.6 / 2.2	-	No
11. I-15 NB Ramps / Old Highway 395	OWSC	11.5	B	17.5	C	9.8 / 11.2	A / B	1.7 / 6.3	-	No

TABLE 5.36
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE E – BUILDOUT) CONDITIONS

Intersection	Traffic Control	With Project Buildout				Existing		Change in Delay (sec.) AM / PM	Buildout Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
12. Old Highway 395 / Camino Del Rey	OWSC	10.5	B	12.2	B	10.1 / 11.0	B / B	0.4 / 1.2	-	No
13. Old Highway 395 / Circle R Drive	Signal*	12.1	B	13.1	B	20.4 / 22.5	C / C	-8.3 / -9.4	-	No
14. I-15 SB Ramps / Gopher Canyon Road	OWSC	1,124.2	F	522.6	F	468.2 / 173.0	F / F	656.0 / 349.6	-	Yes *Caltrans Int. > 2 sec.*
15. I-15 NB Ramps / Gopher Canyon Road	OWSC	50.2	F	2,489.0	F	30.5 / 1945.4	D / F	19.7 / 543.6	-	Yes *Caltrans Int. > 2 sec.*
16. Old Highway 395 / Gopher Canyon Road	Signal	18.5	B	20.7	C	11.0 / 14.7	B / B	7.5 / 6.0	-	No
17. Old Highway 395 / Old Castle Road	Signal	14.2	B	17.0	B	13.9 / 15.7	B / B	0.3 / 1.3	-	No
18. W. Lilac Road / Covey Lane	TWSC	10.3	B	10.9	B	8.8 / 9.3	B / A	1.5 / 1.6	-	No
19. Mountain Ridge Road / Circle R Drive	TWSC	10.8	B	20.4	C	9.3 / 9.6	A / A	1.5 / 10.8	-	No
20. W. Lilac Road / Circle R Drive	OWSC	10.8	B	11.0	B	9.3 / 9.3	A / A	1.5 / 1.7	-	No
21. Lilac Road / W. Lilac Road	OWSC	10.4	B	11.0	B	9.6 / 9.9	A / A	0.8 / 1.1	-	No
22. Lilac Road / Old Castle Road	OWSC	11.9	B	17.9	C	11.8 / 17.8	B / C	0.1 / 0.1	-	No
23. Valley Center Rd / Lilac Road	Signal	10.9	B	31.5	C	10.5 / 22.6	B / C	0.4 / 8.9	-	No
24. Miller Road / Valley Center Road	OWSC	17.3	C	26.4	D	16.9 / 25.0	C / D	0.4 / 1.4	-	No

TABLE 5.36
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE E – BUILDOUT) CONDITIONS

Intersection	Traffic Control	With Project Buildout				Existing		Change in Delay (sec.) AM / PM	Buildout Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
25. Cole Grade Road / Valley Center Road	Signal	32.7	C	35.3	D	31.1 / 34.9	C / C	1.6 / 0.4	-	No
26. Street "O" / W. Lilac Road/Main Street	RA	8.6	A	10.8	B	DNE	DNE	8.6 / 10.8	-	No
27. Main Street / Street "C"	RA	6.7	A	7.4	A	DNE	DNE	6.7 / 7.4	-	No
28. Lilac Hills Ranch Road / Main Street North	AWSC	8.3	A	8.4	A	DNE	DNE	8.3 / 8.4	-	No
29. Lilac Hills Ranch Road / Main Street South	AWSC	8.2	A	9.6	A	DNE	DNE	8.2 / 9.6	-	No
30. Street "Z" / Main Street	OWSC	8.7	A	9.0	A	DNE	DNE	8.7 / 9.0	-	No
31. W. Lilac Road/Street "F" / Main Street	RA	3.8	A	3.8	A	DNE	DNE	3.8 / 3.8	-	No

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E of F.
AWSC = All-Way Stop Controlled.
TWSC = Two-Way Stop Controlled.
OWSC = One-Way Stop Controlled.
RA = Roundabout.
DNE = Does Not Exist.
For OWSC and TWSC intersections, the delay shown is the worst delay experienced by any of the approaches.
* Phase A mitigation measures at the intersection of E. Vista Way / Gopher Canyon Road were assumed to be carried forwarded into Phases B, C, D, & E.
* Phase C mitigation measures at the intersection of E. Vista Way / Gopher Canyon Road were assumed to be carried forwarded into Phases D & E.
*Traffic signal was required at intersection #9 as a mitigation measure in Phase C of the project and was assumed to be carried forwarded into Phases D & E.
*Traffic signal was required at intersection #13 as a mitigation measure in Phase D of the project and was assumed to be carried forwarded into Phase E.

- I-15 SB Ramps / Gopher Canyon Road (Caltrans) – LOS F during both the AM and PM peak hours, and the buildout project traffic would add two seconds or more of additional delay to this intersection. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by the buildout of the Lilac Hills Ranch project would have a direct impact at this intersection.
- I-15 NB Ramps / Gopher Canyon Road (Caltrans) – LOS F during both the AM and PM peak hours, and the buildout project traffic would add two seconds or more of additional delay to this intersection. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by the buildout of the Lilac Hills Ranch would have a direct impact at this intersection.

Two-Lane Highway Analysis

Table 5.37 displays two-lane highway level of service analysis results for Old Highway 395 under Existing Plus Project (Buildout) conditions. The two-lane highway level of service analysis was performed utilizing the methodology presented in Chapter 2.0.

As shown in the table, all segments along Old Highway 395 would continue to operate at acceptable LOS D or better under Existing Plus Project (Buildout) conditions and the additional traffic generated by buildout of the project would not cause any direct impacts to Old Highway 395.

Freeway Segment Analysis

The freeway segment level of service analysis was performed utilizing the methodology presented in Chapter 2.0. **Table 5.38** displays the resulting level of service for I-15 under Existing Plus Project (Buildout) conditions.

As shown in the table, all of the study area freeway segments along I-15 would continue to operate at LOS D or better under Existing Plus Project (Buildout) conditions. Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by the buildout of the project would not cause any direct impacts to study area freeway segments.

TABLE 5.37
TWO-LANE HIGHWAY LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE E – BUILDOUT) CONDITIONS

2-Ln Highway	From	To	With Project Buildout			Existing		Project Buildout ADT	Direct Impact?
			LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Old Highway 395	Pala Mesa Drive	SR-76	16,200	5,210	D or better	4,770	D or better	440	No
Old Highway 395	SR-76	E. Dulin Road	16,200	6,230	D or better	4,720	D or better	1,520	No
Old Highway 395	E. Dulin Road	W. Lilac Road	16,200	8,010	D or better	4,340	D or better	3,670	No
Old Highway 395	W. Lilac Road	I-15 SB Ramps	16,200	9,520	D or better	4,450	D or better	5,070	No
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	16,200	6,230	D or better	3,600	D or better	2,630	No
Old Highway 395	I-15 NB Ramps	Camino Del Rey	16,200	3,640	D or better	2,430	D or better	1,210	No
Old Highway 395	Camino Del Rey	Circle R Drive	16,200	7,100	D or better	5,820	D or better	1,280	No
Old Highway 395	Circle R Drive	Gopher Canyon Road	16,200	13,760	D or better	10,710	D or better	3,050	No
Old Highway 395	Gopher Canyon Road	Old Castle Road	16,200	9,050	D or better	8,660	D or better	390	No

Source: Chen Ryan Associates; May 2014

TABLE 5.38
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE E – BUILDOUT) CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-15	Riverside County Boundary to Old Highway 395	136,550	8.4%	11,536	0.64	4	0.95	6.75%	1,994	0.849	D	0.016	No
I-15	Old Highway 395 to SR-76	136,640	7.4%	10,165	0.73	4	0.95	6.75%	2,023	0.861	D	0.017	No
I-15	SR-76 to Old Highway 395	115,320	7.8%	9,020	0.69	4	0.95	8.40%	1,695	0.721	C	0.015	No
I-15	Old Highway 395 to Gopher Canyon Road	112,700	8.1%	9,102	0.67	4	0.95	8.40%	1,667	0.709	C	0.017	No
I-15	Gopher Canyon Road to Deer Springs Road	121,580	8.1%	9,819	0.67	4	0.95	13.20%	1,839	0.783	C	0.029	No
I-15	Deer Springs Road to Centre City Parkway	121,050	8.0%	9,725	0.66	4	0.95	13.20%	1,813	0.771	C	0.026	No
I-15	Centre City Parkway to El Norte Parkway	114,210	8.0%	9,176	0.66	4	0.95	13.20%	1,710	0.728	C	0.020	No
I-15	El Norte Parkway to SR-78	129,970	7.9%	10,230	0.66	4	0.95	10.00%	1,879	0.800	C	0.018	No
I-15	SR-78 to W Valley Parkway	194,200	8.1%	15,805	0.60	5+2ML	0.95	10.00%	1,497	0.637	C	0.007	No
I-15	W Valley Parkway to Auto Parkway	180,850	8.1%	14,718	0.60	5+2ML	0.95	10.00%	1,394	0.593	B	0.006	No
I-15	Auto Parkway to W Citracado Parkway	173,800	7.8%	13,479	0.60	5+2ML	0.95	10.00%	1,269	0.540	B	0.006	No

TABLE 5.38
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS PROJECT (PHASE E – BUILDOUT) CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Significant Impact?
I-15	W Citracado Parkway to Via Rancho Parkway	197,590	7.8%	15,324	0.60	5+2ML	0.95	7.00%	1,422	0.605	B	0.005	No
I-15	Via Rancho Parkway to Bernardo Drive	199,470	7.4%	14,680	0.58	5+2ML	0.95	7.00%	1,322	0.562	B	0.004	No
I-15	Bernardo Drive to Rancho Bernardo Road	202,380	7.4%	14,895	0.58	5+2ML	0.95	7.00%	1,341	0.571	B	0.004	No
I-15	Rancho Bernardo Road to Bernardo Center Drive	210,290	7.3%	15,439	0.54	5+2ML	0.95	7.00%	1,288	0.548	B	0.003	No
I-15	Bernardo Center Drive to Camino Del Norte	215,230	7.3%	15,802	0.54	5+2ML	0.95	7.00%	1,318	0.561	B	0.003	No

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E or F.
ML = Managed Lane.

Ramp Intersection Capacity Analysis

Consistent with Caltrans' requirements, the signalized intersections along SR-76 within the study area were analyzed under Existing Plus Project (Buildout) conditions using the ILV procedures as described in Chapter 2.0. ILV analysis results are displayed in **Table 5.39** and analysis worksheets for the Existing Plus Project (Buildout) conditions are provided in **Appendix AK**.

TABLE 5.39
RAMP INTERSECTION CAPACITY ANALYSIS
EXISTING PLUS PROJECT (PHASE E - BUILDOUT) CONDITIONS

Ramp Intersection	Peak Hour	ILV / Hour	Description
SR-76 / Old River Road/E. Vista Way	AM	1,560	*>1500: (Over Capacity)*
	PM	1,312	*1200-1500: (At Capacity)*
SR-76 / Olive Hill Road/Camino Del Rey	AM	1,210	*1200-1500: (At Capacity)*
	PM	1,379	*1200-1500: (At Capacity)*
SR-76 / Old Highway 395	AM	1,089	*<1200: (Under Capacity)*
	PM	1,160	*<1200: (Under Capacity)*

Source: Chen Ryan Associates; May 2014

As shown in the table, all three (3) intersections along SR-76 would operate at "At Capacity" and/or "Under Capacity", with the exception of the SR-76 / Old River Road/E. Vista Way intersection, which would operate at "Over Capacity" during the AM peak hour under the Existing Plus Project (Buildout) conditions.

5.5.3 Existing Plus Project (Buildout) Impact Significance and Mitigation

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

Roadway Segments

Based on the County planning level impact criteria, buildout of the project traffic would result in direct impacts at one (1) of the study area roadway segment:

- E. Vista Way, between SR-76 and Gopher Canyon Road - The project would add 210 daily trips (approximately 1.4% of the total ADT) to this roadway which is approximately 9 miles away from the project site.

The mitigation for this direct impact is the provision of a dedicated right-turn lane at the westbound Gopher Canyon Road approach, as well as a dedicated right-turn lane at the northbound E. Vista Way approach, of the East Vista Way / Gopher Canyon Road intersection, the constraining intersection along the impacted segment. The arterial

analysis shown in Appendix AI and summarized in **Table 5.40** below shows that the mitigation would increase the average travel speed along this segment to better than the Existing conditions. Therefore, the direct impact at the segment of E. Vista Way, between SR-76 and Gopher Canyon Road would be mitigated.

TABLE 5.40
ARTERIAL LEVEL OF SERVICE RESULTS AFTER MITIGATION
EXISTING PLUS PROJECT (PHASE E - BUILDOUT) CONDITIONS

Arterial	After Mitigation				Existing			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS	Speed (mph)	LOS
E. Vista Way, between SR-76 and Gopher Canyon Road	28.5	C	34.4	B	24.5	D	32.8	C

Source: Chen Ryan Associates; May 2014

Note that the impacted segment of E. Vista Way, between SR-76 and Gopher Canyon Road along with the other two substandard (LOS E/F) segments of Gopher Canyon Road between E. Vista Way and SR-15 SB Ramps, and E. Vista Way between Gopher Canyon Road and Osborne Street share a common intersection, the Gopher Canyon Road / E. Vista Way intersection, which is a busy constraining intersection along each of these segments. It is recommended that a dedicated westbound right-turn lane be provided at the intersection which will improve intersection operations since only one westbound lane is currently provided and this lane serves over 1,000 peak hour vehicles. Additionally, it is recommended that a dedicated northbound right-turn lane be provided at the intersection to improve the intersection by providing additional capacity for the northbound right-turn approach which currently serves over 800 peak hour vehicles. Arterial analyses were conducted along each of the three segments with the intersection improvement and the results show that the post-improvement average speeds are generally greater than the pre-project condition. Therefore, it can be concluded that the recommended improvement would mitigate the impact to below a level of significance.

Intersections

The buildout of the project traffic would have a direct impact on two (2) study area intersections and the following intersection improvements would be required to mitigate the identified traffic impacts:

- *I-15 SB Ramps / Gopher Canyon Road* (stop controlled ramp intersection) (Caltrans) - Signalization would be required (by the 1st EDU of Phase 4 or 363rd total EDU) at this intersection to mitigate direct project impacts. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA),* this intersection would meet both the "Minimum Vehicular Volume" and the "Interruption of Continuous Traffic" warrants. The project applicant would be responsible for implementing the mitigation measure identified above.

However, this particular facility is out of the County's control and therefore the impact would remain significant and unavoidable. The signal warrant worksheet for this intersection is provided in **Appendix AL**.

- *I-15 NB Ramps / Gopher Canyon Road* (stop controlled ramp intersection) (Caltrans) - Signalization would be required (by the 1st EDU of Phase 4 or 363rd total EDU) at this intersection to mitigate direct project impacts. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA),* this intersection would meet both the "Minimum Vehicular Volume" and the "Interruption of Continuous Traffic" warrants. The project applicant would be responsible for implementing the mitigation measure identified above. However, this particular facility is out of the County's control and therefore the impact would remain significant and unavoidable. The signal warrant worksheet for this intersection is provided in Appendix AL.

Table 5.41 displays level of service analysis results for the mitigated intersection under the Existing Plus Project (Buildout) conditions. Calculation worksheets for the intersection analysis are provided in **Appendix AM.**

TABLE 5.41
MITIGATED INTERSECTION LEVEL OF SERVICE
EXISTING PLUS PROJECT (PHASE E - BUILDOUT) CONDITIONS

Intersection	After Mitigation				Existing	
	AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM
	Delay (Sec.)	LOS	Delay (sec.)	LOS		
14. I-15 SB Ramps / Gopher Canyon Road	40.6	D	41.7	D	468.2 / 173.0	F / F
15. I-15 NB Ramps / Gopher Canyon Road	19.2	B	52.9	D	30.5 / 1945.4	D / F

Source: Chen Ryan Associates; May 2014

Note: Bold letter indicates unacceptable LOS E or F.

As shown in the table, after installation of the proposed traffic signals, both impacted intersections would operate at acceptable LOS C or better during both the AM and PM peak hours. However, both ramp intersections at I-15 / Gopher Canyon Road interchange are Caltrans' facilities in which the County does not have jurisdiction. In addition, Caltrans does not have a plan or program in place. Therefore, the impacts would remain significant and unavoidable.

Two-Lane Highways

None of the study area two-lane highway facilities would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Buildout) conditions.

Freeways

None of the study area freeway facilities would be significantly impacted, and therefore no mitigation measures would be required under Existing Plus Project (Buildout) conditions.

Table 5.42 summarizes potential impacts and recommended mitigation measures associated with buildout of the Lilac Hills Ranch project.

TABLE 5.42
IMPACT AND MITIGATION SUMMARY
EXISTING PLUS PROJECT (PHASE E - BUILDOUT) CONDITIONS

Impacted Facility	Mitigation Measures
Roadway Segment	
E. Vista Way, between SR-76 and Gopher Canyon Road	Construction of a dedicated WB right-turn lane by 238th EDU, as well as a dedicated NB right-turn lane by 476th EDU at the intersection of E. Vista Way / Gopher Canyon Road.
Intersection	
I-15 SB Ramps / Gopher Canyon Road	Signalization by the 1st EDU of Phase 4 or 363rd total EDU - Caltrans' facility, significant and unavoidable impact.
I-15 NB Ramps / Gopher Canyon Road	Signalization by the 1st EDU of Phase 4 or 363rd total EDU - Caltrans' facility, significant and unavoidable impact.
Two-Lane Highway	
None	-
Freeway	
None	-

Source: Chen Ryan Associates; May 2014

Note that the Existing Plus Project (Buildout) scenario includes the project's build-out traffic volumes added to the existing traffic volumes and existing roadway configurations and is shown in Traffic Analysis Phases A-E above as required by the County's Guidelines for Determining Significance and Report Format & Content Requirements for Transportation and Traffic.

6.0 Cumulative Traffic Conditions

This section describes cumulative land development projects anticipated to generate additional traffic within the study area. Potential traffic impacts to the existing transportation network, due to the addition of cumulative projects and project traffic, were also assessed.

6.1 Cumulative Projects

SANDAG's Series 12 Year 2020 Transportation Model was utilized to forecast cumulative traffic volumes. SANDAG Year 2020 land use assumptions were examined to ensure that anticipated land development projects within a seven-mile radius of the project, were accurately reflected in the model. A list of 171 cumulative projects was compiled, including:

- #1 - #96 - The cumulative project list utilized for the recent Meadowood development project;
- #97 - #110 - Geographically applicable projects from the County GPA Property Specific Workplan list of 56 projects, dated June 28, 2012;
- #111 - #171 - A list of discretionary projects obtained from SanGIS and refined to include projects with potentially relevant trip generation, such as Major Use Permits, General Plan Amendments, Specific Plans and Amendments, Tentative Maps, and Tentative Parcel Maps. Both County staff input and the KivaNet system were utilized to gather detailed project land use descriptions.

Table 6.1 displays the approved and pending cumulative project list which was incorporated in the SANDAG Transportation Model. A SANDAG model trip generation report is included in **Appendix AN**. **Figure 6-1** illustrates the location of the cumulative projects.

TABLE 6.1
CUMULATIVE PROJECTS

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
1	Campus Park	Mixed-use development, including: 529 single-family dwelling (SFR) units, 555 multi-family dwelling (MFR) units, a town center (retail) of 62,000 square feet (sf), an office building with 150,000 sf, a sports complex of 5.2 acres, and a small neighborhood park.	TM 5338 GPA 03-004	417	Just north of SR-76, 0.25 mile east of I-15

TABLE 6.1
CUMULATIVE PROJECTS

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
2	Campus Park West	Mixed-use development including approximately 355 MFR units, 400,000 sf Commercial, 50,000 sf Office Professional, 347,000 sf of Light Industrial, and possible Civic Uses..	TM 5424, S 05-014, SPA 05-001 GPA 05-003 REZ 05-005	118.5	Northeast quadrant of I-15 and SR-76
3	Pala Mesa Highlands	Maximum of 130 SFR. Density 1.6 DU/acre. Lot sizes vary from 5,500 sf to 23,500 sf, two parks totaling 4.3 acres, trails, 36.5 acres of open space. SPA to allow clustering.	TM 5187 RPL[11] SPA 99-005 MUP 99-020 REZ 99-020 MUP/REZ 04-024	84.6	West of Old Highway 395 between Pala Mesa Drive and Via Belamonte
4	Tedder TM	Split lot into 13 SFR lots, ranging in size from 1.0 to 6.43 acres net.	TM 4729 RPL[3] TE	29.5	South side of Pala Mesa Drive, west of I-15 and east of Daisy Lane
5	Hukari subdivision	Minor residential subdivision with road improvements. 4 SFR lots plus one remainder lot (3.4 to 7.7 net acres each).	TPM 20830	30	Northern terminus of Mountain View Road and West Lilac Road on west side of Bonsall
6	Fallbrook Ranch	11 SFR lots	TM 5532 S 07-012	--	East of Old Highway 395 and Sterling View Drive (at Mission Road), Fallbrook
7	Los Willows Inn and Spa	Add additional units to a Bed and Breakfast	MUP 03-127	--	532 Stewart Canyon Road
8	Reeve TPM	Minor residential subdivision. 3 SFR lots (2 acres minimum).	TPM 20411	8.8	2987 Sumac Road, Fallbrook
9	Evans TPM	Minor subdivision into 2 residential/agricultural parcels (2.00 and 2.10 acres). Private septic system.	TPM 20491	4.10	West side of Sage Road between Sumac Road and Pala Road, Fallbrook
10	Bridge Pac West I TPM	Minor residential subdivision. 4 SFR lots plus one remainder lot (2.04, 2.08, 2.12, 2.14 and remainder 7.08 net acres each).	TPM 20841	15.90	3321 Sage Road, Fallbrook

TABLE 6.1
CUMULATIVE PROJECTS

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
11	Pala Mesa Resort	Specific Plan Amendment for modification and construction of new recreation and resort-related facilities. Addition of 186 resort rooms and wedding facility. Expansion of resort by 6 acres.	SPA 03-005 R 00-000 MUP 00-000 P 74-120W[1] P 74-121M[10]; MUP 03-006; MUP 04-005	181.2	2001 Old Highway 395 at Tecalote Lane, north of SR 76 and immediately west of I-15, Fallbrook
12	Lung TPM	Minor residential subdivision. 2 SFR lots (6.7 and 4.0 acres)	TPM 20431 S 98-006	10.7	Citrus Drive and Calle Canonero, Fallbrook
13	Chipman TPM	Minor residential subdivision. 4 SFR lots plus one remainder lot, ranging from 2.13 to 2.85 net acres each and remainder 4.00 net acres. Septic system.	TPM 20440	13.54	East side of Citrus Lane between Peony Drive and Dos Ninos, Fallbrook
14	Bierman TPM	Minor residential subdivision. 4 SFR lots, ranging from 2.01 to 2.19 net acres each. Septic system.	TPM 20484	9.91	4065 Calle Canonero, Fallbrook, south of Vern Drive and west of Lorita Lane
15	Cooke Residence	4,723 s.f. SFR	S 04-026	N/A	3974 Citrus Drive between Wilt Road and Vern Drive
16	Treister TPM	Minor residential subdivision. 4 SFR lots plus one remainder lot.	TPM 20581	21.81	Donut-shaped parcel surrounding 401 Ranger Road, Fallbrook
17	Mission Ridge Road TPM	Minor residential subdivision. 4 SFR lots.	TPM 20793 03-02-068	19.55	235 Mission Ridge Road east of I-15 off Mission Road, Fallbrook
18	Rancho Alegre TPM	Part of 116-acre subdivision (33 lots). This project consists of 20 lots in the eastern portion of property and proposes a different street alignment, grading, and lot arrangement.	TM 5413	70	West side of Ranger Road approx. 0.4 mile north of Reche Road
19	Rarick TPM	Minor residential subdivision. 4 SFR lots (ranging from 2.02 to 2.25 acres each). Septic system.	TPM 20853	8.77	3261 Reche Road, Fallbrook
20	Fernandez TPM	Minor residential subdivision. 4 SFR lots. Minimum lot size 2 acres. 2 existing SFR on-site.	TPM 20936	10.4	3838 Foxglove Lane, Fallbrook

TABLE 6.1
CUMULATIVE PROJECTS

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
21	Rabuchin TPM	Subdivision of 2 lots into 4 SFR lots. Existing SFR on site	TPM 20944	9.91	4065 Calle Canonero, Fallbrook
22	Pala Casino	187,300 s.f. casino, hotel, theater.	NA	TBD	Pala Road and Pala Mission Road
23	Rosemary's Mountain/Palomar Aggregates Quarry	Aggregate rock quarry and processing plants for concrete and asphalt. Approximately 22 million tons of rock would be mined over 20 years. Realignment of SR 76 from Project site west to I-15. Reclamation Plan to designate lower portion of site as water storage reservoir after completion of mining activities.	MUP 87-021 RPL[2] REZ P87-001 RPL[2]	96.4	North side of SR 76, 1.25 miles east of I-15
24	Patapoff Minor Residential Subdivision	Subdivide property into four parcels of 4.3 acres, 4.2 acres, 9.6 acres, 8acres, and a 33-acre parcel	TPM 20542	59.1	Southern end of Rainbow Hills Road
25	Prominence at Pala	Subdivide the property into 30 SFR and two open space lots ranging in size from 4 to 96 acres	TM 5321	346.6	Pala Del Norte Road. 1/3 mile north of SR-76 and approximately two miles west of the Pala Indian Reservation
26	Palomar College North Education Center District Master Plan	New Community College campus to serve approximately 12,000 students, to include classroom and administration buildings, parking, open space, athletic fields, and off-site road, water and sewer improvements.	NA	85	East side of I-15 between Pankey Road and Pala Mesa Heights Drive
27	Caltrans Realignment of SR-76	Realignment and widening of roadway, improvements to northbound I-15 on- and off-ramps.	NA	NA	From I-15 to west of Rice Canyon Road
28	San Luis Rey Municipal Water District (SLRMWD) Water, Wastewater and Recycled Water Master Plan	Exploration of pipeline and water storage options.	NA	Over 3,000	SLRMWD service area and vicinity, north and south of SR-76 between I-15 and Pala Temecula Road
29	--	39 condo units	TM 5231	30.48	Canonita Drive and Old Hwy 395, Fallbrook

TABLE 6.1
CUMULATIVE PROJECTS

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
30	--	8 SFR lots	TM 5276	12.8	Aqueduct Road and Via Urner, Bonsall
31	--	9 SFR lots	TM 5346	38.4	Old Hwy 395 and Via Urner, Bonsall
32	Marquart Ranch	9 SFR lots. Includes improvements to Mesa Lilac Road, and drainage improvements.	TM 5410	44.2	West Lilac Road and Mesa Lilac Road, Bonsall
33	Fallbrook Oaks	19 SFR lots	TM 5449	26	Reche Road and Ranger Road, Fallbrook
34	Ridge Creek Drive	14 SFR lots	TM 5469	30.4	Ridge Creek east of Live Oak Park Road and Ridge Drive, Fallbrook
35	Club Estates	31 SFR lots	TM 5499	48.3	SR 76 east of Cole Grade Road at Pauma Valley Drive
36	Oak Tree Ranch TM	24 SFR	TM 5540; MUP 07-007	9.95	15560 Spring Valley Road
37	Turnbull TM	17 lots	TM 5545	22.9	32979 Temet Drive
38	Wexler TPM	4 lots	TPM 20913	2.54	--
39	Shadow Run Ranch	54 SFR lots and 2 open space lots. MUP filed concurrently for Planned Residential Development that would cluster residential development on minimum 2-acre lots.	TM 5223 MUP 00-030	263	Shadow Run Ranch, SR-76 and Adams Drive, Pala
40	Diana Acres	3 lots	TPM 20896	--	Adams Drive off SR-76, Pauma Valley
41	Hunter Subdivsion	3 lots	TPM 20804	7.5	15550 Adams Drive
42	Burge TPM	4 lots plus remainder	TPM 20538	12.58	34487 Citracado Drive, Pala
43	Pauma Valley Packing Company	Packing and processing	MUP 99-001	4.14	34188 Hampton Road
44	Shadow Run Ranch/ Schoepe-Pauma TM	13 lots	TM 5223; MUP 00-030	263.17	15040 Adams Drive

TABLE 6.1
CUMULATIVE PROJECTS

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
45	Warner Ranch	732 SFR lots, 168 condo units, community park, fire station lot	TM 5508	513	Pala-Pauma
46	Pauma Casino and Hotel	400 room hotel and 171,000 s.f. casino	CASINO	--	Approximately 11 miles east of I-15 along SR-76
47	De Jong/Pala Minor Subdivision	Minor residential subdivision. 3 SFR lots (1.03, 2.06 and 2.31 net acres each).	TPM 20451	5.62	Canonita Drive between I-15 and Tecalote Drive
48	Crossroads Investors Minor Subdivision	Minor residential subdivision. 4 SFR lots plus one remainder lot. Existing SFR and grove on site	TPM 20800	15.5	Ranger Road, Fallbrook
49	Chaffin/Red Mountain Ranch Subdivisions	Withdrawn TM 5217: Residential development with 29 SFR lots (2.28 to 18.33 acres) and 2 biological open space zones. TM 5225: 55 acres divided into 6 SFR lots (8.1 to 13.9 acres). TM 5227: 44.5 acres divided into 4 SFR lots (8.08 to 13.71 acres each).TM 5228: 19.1 acres divided into 2 lots (8.4 and 10.7 acres).	TM 5217/5225/5227/ 5228 MUP 00-027	455.9	Rainbow Glen Road and Red Mountain Dam Road, Fallbrook
50	John Collins TPM	2 lots	TPM 20505	8.29	Margarita in Fallbrook
51	Brannon Trust TPM Remai	4+ lots	TPM 21085	--	411 Yucca Road, Fallbrook
52	Dien N Do TPM	4+ lots	TPM 20976	--	405 Ranger Road
53	Tim Rosa TPM	4 lots plus remainder	TPM 20373	13	2973 Los Alisos Drive
54	Leising TPM	4 lots	TPM 20427	10.83	1246 Via Vista
55	Atteberry TPM	3 lots	TPM 20434	9	1166 Sierra Bonita
56	Johnson TPM	2 lots	TPM 20980	--	3035 Trelawney Lane
57	Chipman TPM	4 lots plus remainder	TPM 20381	24.5	Camino Zasa, Fallbrook
58	American Lotus Bhuddist Association TPM	4 lots plus remainder lot	TPM 21047	--	Reche Road at Rabbit Hill, Fallbrook
59	Reche Road TM	12 SFR lots	TM 5547	33.5	3129 Reche Road, Bonsall

TABLE 6.1
CUMULATIVE PROJECTS

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
60	Palisades Estates	51 lots	TM 5158; RPL3	408.4	3880 Dos Niños Road/Elevado Road
61	Dion TPM and time extension	2 lots	TPM 19742	7.5	3562 Canonita Drive
62	Patricia Daniels TPM	4 lots plus remainder	TPM 20476	13.2	3609 Canonita Road, Fallbrook
63	Cameron Subdivision	Minor residential subdivision. 3 SFR lots (2.22, 2.44 and 6.37 acres each). Septic system.	TPM 20443	11.31	2644 Vista de Palomar, Fallbrook. North side of Vista de Palomar between Post Hill and Via Rancheros
64	Tesla Gray TPM	Minor residential subdivision. 4 SFR lots plus one remainder lot. Future development of 5 SFR	TPM 20473	28.91	East end of Vista de Palomar, and north end of Old Post Road, Fallbrook
65	Aspel TPM	Minor residential subdivision. 2 SFR lots (2.09 and 5.20 acres each).	TPM 20592	7.32	3107 Old Post Road, Fallbrook
66	James Patapoff TPM	Subdivision of 16.8 acres into 4 lots plus a remainder lot	TPM 20317	16.8	2639 Via Alicia, Fallbrook
67	Yew Tree Spring Water Corporation	3 residential lots	TPM 20503	7.48	3573 Diego Estates Drive, Fallbrook
68	Haugh, Granger TPM	4 lots	TPM 20610	12.94	Fallbrook
69	Brown, Lee & Karen, TPM	3 lots	TPM 20614; RPL1	6.46	3850 Gird Road
70	Pepper Drive TPM	4 residential lots	TPM 20648	1.39	3926 Flowerwood Lane
71	Surf Properties TM	15 lots	TM 4971	46.89	3545 Vista Corona
72	Brook Hills TM	35 lots	TM 4908	96.71	4061 La Cañada Road, Fallbrook
73	Latter-Day Saints/Via Monserate	17,000 sq. ft. church and meeting rooms	MUP 02-011	7.96	Fallbrook
74	Leeds and Strausss TM	17 SFR lots – TM time extension until 09/13/2009	TM 4976; RPL4	45.76	North side of Olive Hill Road, near intersection with SR-76, Bonsall

TABLE 6.1
CUMULATIVE PROJECTS

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
75	Murray Davidson	7 lots	TM 5398	4.28	3956 Pala Mesa Road, Bonsall
76	Shamrock Partners TPM	3 lots	TPM 20173	10	Shamrock Road, Bonsall
77	Crook TPM	5 lots	TPM 20851	--	32179 Shamrock Road
78	Tabata Bonsall TPM RPL1	4 lots	TPM 20729	33.75	5546 Mission Road
79	Berezousky TPM (311 Same as one in original latch)	Subdivision of 3.11 acre into 4 residential lots. Existing SFR on site	TPM 20874	3.11	4040 Pala Mesa Drive, Fallbrook
80	Murray Davidson TPM	Subdivision of 1 lot into 4 SFR lots plus a remainder lot	TPM 20932	--	3956 Pala Mesa Road, Fallbrook
81	Sumac TPM	4 lots	TPM 21076	--	3111 Sumac Road
82	Janikowski SFR	3,200 s.f. SFR	S 03-024	5.12	9686 Pala Road (SR 76), Fallbrook, on north side of SR 76
83	Kratochvid TPM; expired map	4 lots	TPM 19827	12.3	Old Highway 395
84	Kohl TPM	4 lots plus remainder	TPM 20319	9.71	7641 Mount Ararat Way, Bonsall
85	Woodhead TPM	4 lots plus remainder	TPM 20541	12.54	Mt. Ararat Way, Bonsall
86	Rockefeller TPM	2 lots	TPM 20596	5	9590 Lilac Way, VC
87	McNulty TPM	2 lots	TPM 20763	5.19	32171 Dos Niñas
88	Stehly Caminito Quieto TPM	4 lots	TPM 20799	11.69	32009 Caminito Quieto at West Lilac Road
89	Sanders TPM	4 lots plus remainder lot	TPM 20845	--	West Lilac Road, 1.25 miles west of Old Highway 395
90	Pala Shopping Center	Addition of 5 commercial buildings to an existing commercial site with grocery store.	S 02-061	3.88	On Old Highway 395 just northwest of the intersection of I-15 and SR 76
91	Monserate TM	7 SFR	TM 5489	24.6	3624 Monserate Hill Road

TABLE 6.1
CUMULATIVE PROJECTS

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
92	Dimitri, Diffendale, and Kirk TPM	4 lots	TPM 21075	--	Monserate Hill Road and Monserate Place
93	Madrigal TPM	3 lots	TPM 20994	--	1055 Rainbow Valley Boulevard near Old Hwy 395
94	Singh Power Plant	Power Generation facility	MUP 07-009	8.5	4 miles NE of I-15 on Pala Del Norte Road, north of SR 76
95	Gregory Landfill	Landfill site for solid waste	37-AA-0032	1,770	Approximately 3.5 miles east of I-15 on SR-76
96	Meadowood	355 single-family dwelling units, 503 multi-family dwelling units, a 10 acre neighborhood park, and an elementary school.	TM 5354 & GPA 04-02	--	Just north of SR-76, 0.25 mile east of I-15
97	Bonsall - BO 18,20,22,29,32, 33	61 Rural Single Family Residential - 1 unit per every 4 acres.	Bonsall - BO 18,20,22,29,32,3 3	--	Bonsall - North of Camino Del Rey, west of I-15
98	Fallbrook - FB 17, 18	28 Single Family Rural Residential - splitting between SR1 and SR2 classification.	Fallbrook - FB 17, 18	--	Reche Road, West of Ranger Road
99	Fallbrook - FB 21,22,23	7 Single Family Rural Residential - SR10 Class.	Fallbrook - FB 21,22,23	--	Northern border of county, next to river side county
100	Fallbrook - SR2	3 Single Family Rural Residential - SR10 class.	Fallbrook - SR2	--	East of I-15 / Mission Road interchange
101	Fallbrook - FB19,25,26	13 Single Family Rural Residential - SR10 class.	Fallbrook - FB19,25,26	--	North of Pala, East of I-15, west of Rice Canyon
102	Fallbrook - FB 21,22,23	7 Single Family Rural Residential.	Fallbrook - FB 21,22,23	--	Northern border of county, next to river side county
103	North County Metro - NC22	44 Single Family Rural Residential - SR1 class.	North County Metro - NC22	--	North of San Marcos Boundary, along Las Posas Road
104	North County Metro - NC37	30 Single Family Rural Residential - to SR4	North County Metro - NC37	--	West of Twin Oak Valley Road, northwest of Deer Spring road, at Calafia Road

TABLE 6.1
CUMULATIVE PROJECTS

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
105	North County Metro - NC3A	10 Single Family Residential - SR10	North County Metro - NC3A	--	North-East of Broadway/Jesmon Dende, Access Vista Verde
106	North County Metro - NC42/ Sierra (former Merriam Mountains)	The Sierra (former Merriam Mountains) Development project is expected to request the construction of 2,100 residential units and a small amount of commercial development.	North County Metro - NC42/ Sierra (former Merriam Mountains)	--	North of Deer Spring, West of I-15, South of Gopher Canyon
107	Valley Center - VC51	15 Single Family Rural Residential - SR-4	Valley Center - VC51	--	Corner of Courser Canyon and Lilac Road
108	Valley Center - VC57, 63, 64	238 Single Family Rural Residential - SR-2	Valley Center - VC57, 63, 64	--	Corner of Valley Center Road / Mactan Road
109	Valley Center - VC67	North and south of Valley center road between Miller Road and Cole Grade Road	Valley Center - VC67	--	North and south of Valley center road between Miller Road and Cole Grade Road
110	Valley Center – VC7, 11, 20A, 20B, 54, 61 ,66	261 Single Family Rural Residential - SR-2	Valley Center – VC7, 11, 20A, 20B, 54, 61, 66	--	East of I-15, south of W. Lilac Road
111	Casa de amparo, mup	This project is a Major Use Permit for a group residential care facility to serve up to 60 children and the child development center would have the capacity to serve 46 children.	04-14603	--	325 Buena Creek Rd
112	Dai dang meditation center	The permit will provide for the development of the following buildings totaling 22,796 square feet: a Meditation Hall, Residence Quarters, and the Main Worship Hall	04-11468	--	6326 Camino Del Rey
113	Dougherty pet resort/mup 10-027	The project also includes a proposed 1,056 square foot kennel with a rooftop grass deck and pedestrian bridge. Enough kennel for 40 dogs/cats	07-0081283	--	1412 Windsong Lane
114	Gainer, major use permit, p08-052	The project consists of construction of an approximately 10,368 square foot horse stable to accommodate up to 18 horses, construction of a 10,800 square foot covered riding arena, and improvement of the existing driveway.	08-0096048	--	6893 West Lilac Road

TABLE 6.1
CUMULATIVE PROJECTS

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
115	Patnode ; mup 08-036	The project proposes to construct a 4,000 square foot reception hall (not permitted in the zone), pave driveways for a shuttle to move the event attendees, and to use the existing residence as a staging area for scheduled events. Also, an unpaved parking area is proposed (not permitted).	08-0100394	--	14044 Horse Creek Trail
116	Valley center comm church	The project is a Major Use Permit for a new church campus on a 20.56-acre parcel. Construction will occur in four phases; at the completion of the final phase of construction, the church campus would consist of six main structures totaling approximately 65,000 square feet with associated parking, landscaping and outdoor areas.	04-13720	20.56	29010 Cole Grade Road
117	Casa de amparo mup minor deviation p 03-	Foster Care Facility for Casa de Amparo - 4-Bldgs for a total sq footage of 28353.	10-0121634	--	325 Buena Creek Road
118	Champagne lakes, mup, mod	Modification for the relocation of 51 RV spaces and one mobile home space to include full hookups to 20 RV spaces, a new restroom, and an area screened by landscaping for vehicle storage.	06-0055819	--	8310 Nelson Way
119	Crossroads church, mup mod for pre-schoo	The modification proposes to install and operate relocatable pre-school classrooms. The pre-school classrooms will have a maximum of 100 students and will operate from 6am to 6:30pm Monday through Friday.	08-0094758	--	2406 N. Twin Oaks Valley Road
120	Moody creek farms llc, mup mod; p79-134w	The project will consist of expansion of the footprint of the previously approved Major Use Permit to include all of the stables; barns; riding rings and arenas; ¾ mile horse training track; ranch manager's residence; farm employee housing; and accessory structures associated with the Equestrian Facility.	09-0107476	--	30185 and 30321 Camino De Los Caballos; 31257 Via Maria Elena

TABLE 6.1
CUMULATIVE PROJECTS

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
121	Vista valley country club, spa and mup m	Total increase of 12,520 sq. feet enclosed and 4,442 sq. feet un-enclosed.	08-0100054	--	2262 Gopher Canyon Road
122	Hidden meadows - oak woodlands rezone	The Project will contain 17.3 acres of General Commercial, 5.6 acres of Office/Professional, 7.7 acres of 10.9 DU/AC Multifamily Residential and 5.2 acres of 15.0 DU/AC Multifamily Residential.	04-16685	17.3	This property is within the Northern Village Town Center of the Valley Center Community.
123	Mountain gate rezone for tm timex	Tentative Map Time Extension and Rezone to make sure that only those uses consistent with the Specific Plan are permitted. Tentative Map authorized a total of 147 single family lots.	04-15133	--	27319, 27321, 27329 Mountain Meadow Road
124	Orchard run major subdivision (296 lot)	The project will contain 300 Single Family Residential, 5.8 acres Waste Water Treatment Plant, 1.4 Acres of Community Recreation	08-0092691	--	Valley Center Road; 13675 Old Road; 28290 Lilac Road
125	Tentative map	Approved Tentative Map for 16 dwelling units on 41.7 acres.	04-20072	41.7	14357 Tyler Road
126	Alti, gpa, rez,	GPA withdrawn; however, the Tentative Map (TM 5551) proposes to subdivide 59.52 acre site into 71 lots.	06-0064250	59.52	14096 Sunday Drive; 27845 Valley Center Road
127	Beauvais tm	Tentative Map to subdivide 23.2 acres into 7 residential lots.	04-13906	23.2	South of intersection of Bella Linda and Old Castle Road
128	Brisa del mar	The project is a Tentative Map for a residential subdivision of 206 acres into 27 x 2-acre minimum lots.	06-0060719	206	31002 Aquaduct Road; 7520, 7530, 7570, 7574, 7650 Camino Del Rey
129	Canyon villas welk tm, rez and stp	The project is a Rezone and Tentative Map (TM 5313) to subdivide 20.89 acres into 177 time share units.	04-13850	20.89	28833, 28915 Champagne Blvd; 8860 Welk View Drive
130	Charles froehlich tm	The project is a residential subdivision of two parent parcels, resulting in a total of six lots. The site is located on Double K Road within the Valley Center Community Planning Group in unincorporated San Diego County.	06-0061043	--	Sierra Roja and Double K

TABLE 6.1
CUMULATIVE PROJECTS

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
131	Circle p lane tm5468rpl3	The project is a Major Subdivision of 11 proposed lots ranging in area from 1.03 to 2 gross acres on a 15.48-acre property with access via a private easement road from Mountain Meadows Road. The subject property is designated (2) Residential by the North County Metropolitan Subregional Plan	05-0055339	15.48	10264 Circle P Lane; 27446 Mountain Meadow Road
132	Dabbs tentative map	This is a request for a tentative map on 38.4 acres (gross acres). The subdivision proposes 9 lots. Each proposed lot will be 4 acres in size (net acres).	04-11658	38.4	32006 Aquaduct Road
133	Foxenwood prd tm4836 & stp89-041	Tentative Map to subdivide 45.2 acres into 17 dwelling units.	04-20362	45.2	Mirar De Valle
134	Golf green estates/s/site plan	116 Lot subdivisions of 6,000 square foot parcels.	06-0061925	--	Old River Road and Camino Del Rey
135	Kawano subdivision	Tentative Map to subdivide 10.51 into 8 residential lots.	04-0029730	10.51	1050 Ora Avo Drive
136	Mcintyre subdivision tm5014	Lilac Mtn Rch: 22-lot/108-ac	05-0060917	--	11278 Lilac Vista Drive;
137	Oak glen	The project proposes major subdivision of 20.01 acres. The subdivision proposes nine single family residences on 2 acre minimum lots. 9 Single Family Residential.	05-0046937	20.01	14099 West Oak Glen Road
138	Orchard vista, tm, rez	Withdrawn	06-0064848	--	13278 Orchard Vista Road
139	Pauma ranches	The project is a Tentative Map to subdivide 100 acres into 22 residential lots, with each lot no less than 4 acres in size.	06-0064845	100	30434 Montrachet Street;
140	Rabbit run, tm, 10 lots	The project is a major subdivision of 17.70 gross acres into 7 lots ranging in size from 2.03 to 4.02 gross acres.	06-0057789	17.7	29222, 29270 Duffwood Lane
141	West lilac farms i & ii	Approved Tentative Map for 28 single family lots on 92.8 acres.	04-14957	92.8	31817 Via Ararat Drive; 32542 Aquaduct Road

TABLE 6.1
CUMULATIVE PROJECTS

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
142	Boyer tpm 20794	Approved Tentative Parcel Map for 3 lots on 3 acres.	04-11552	3	
143	Cunningham, tpm, 2 lots	The project proposes to create two legal lots from Assessor Parcel Numbers 172-140-62 and 64. Parcel 1 is 7.40 net acres and Parcel 2 is 17.6 net acres.	05-0060144	25	1221 Tarek Trail
144	Fitzpatrick tpm	The project is a minor subdivision of a 10.8-acre parcel currently being used for agriculture (avocado grove). The project proposes to develop four residential lots ranging in size from 2.3 to 3.1 acre.	04-0023583	10.8	Tomsyl Road
145	Gangavalli, tpm, 2 lots	The project proposes to divide 5.05 net acres into 2 parcels measuring 2.51 acres gross (2.29 acres net), and 2.51 acres gross (2.45 acres net).	07-0086629	5.05	10418 King Sanday Lane
146	Goodnight ranchos, tpm, 2 lots	The project proposes to divide 5.0 acres into 2 parcels measuring 2.45 acres net each. The proposed parcels will have frontage upon Circle R Lane.	06-0058961	5.0	30359 Circle R Lane
147	Harlow minor subdivision (3 lots); tpm	3 Lot Subdivision	08-0096323	--	12542 Betsworth Road
148	Hefner/brown 4 lot and remainder tpm: tp	Subdivide a +/-57.9 acre parcel into four lots plus a remainder (lots range from 7.4 to 13.1 net acres).	09-0108702	57.9	31460 Aquaduct Road
149	Kim tentative parcel map	4 lots TPM w/ Remainder Parcel The project is a tentative parcel map application to subdivide a 46.72 acre parcel into 4 lots plus a remainder lot, ranging in area from 7.4 acres to 12.2 acres, for residential land use.	10-0135167	46.72	29640 Pamoosa Lane
150	Kirkorowicz, tpm,	The project proposes a two lot subdivision for the creation of two single-family residences and associated driveways and septic.	05-0054874	8.58	Fairview Road
151	Matheson, 2 lot tpm; tpm 21173	12.83 acres into 2 residential lots of 4.013 and 8.259 net acres.	10-0122579	12.83	1202 Rancho Luiseno Road
152	McBride, tpm, 2 lots	2-lot residential subdivision	07-0086911	--	29945 Spearhead Trail

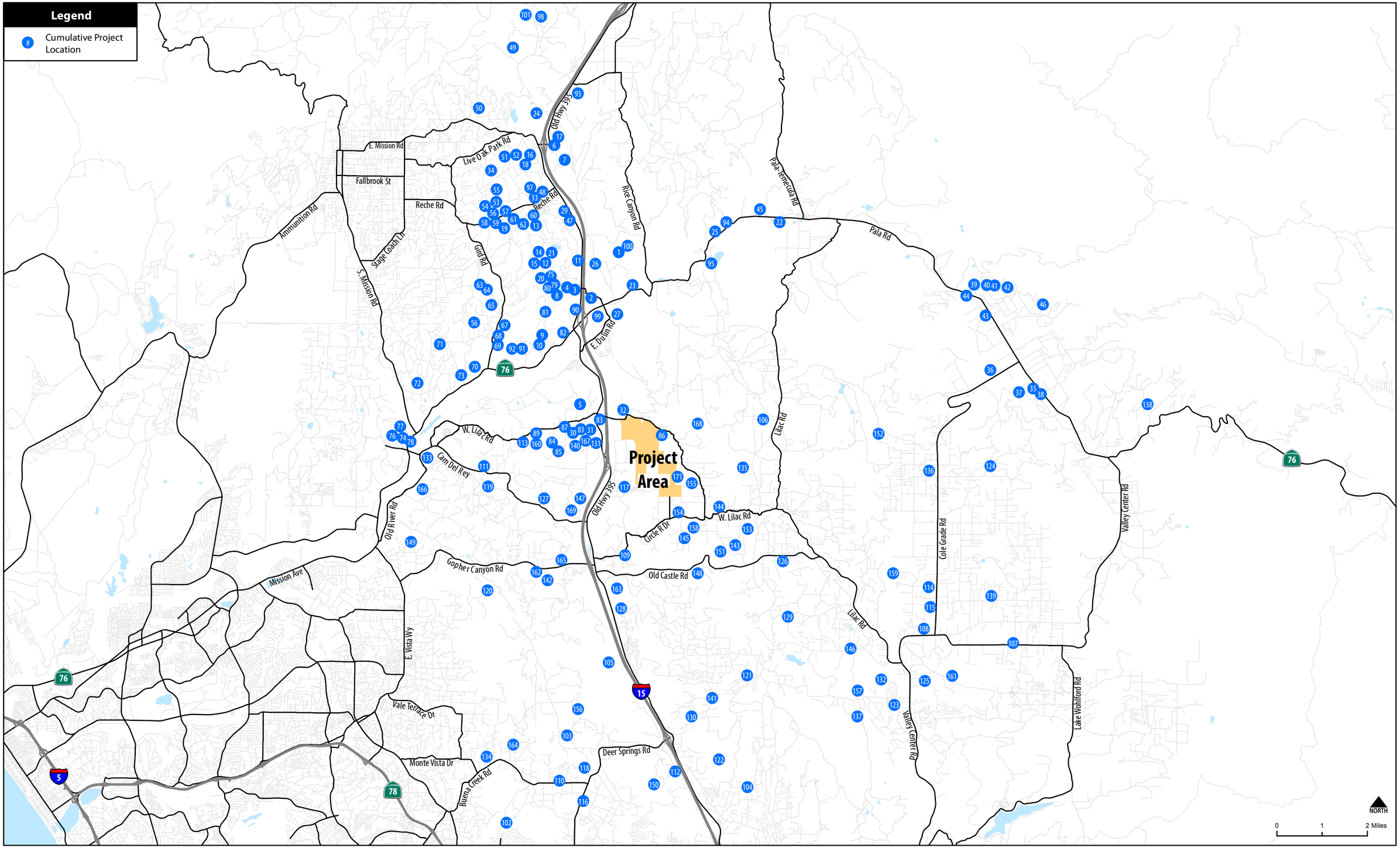
TABLE 6.1
CUMULATIVE PROJECTS

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
153	McNally rd parcel map	The project proposes to divide 78.3 acres into 4 parcels and a remainder measuring 8.3 acres net, 4.2 acres net, 4.0 acres net, 4.0 acres net and 57.8 acres net, respectively.	06-0059622	78.3	McNally Road; Lilac Road
154	Moddelmoa tpm	Tentative Parcel Map to subdivide 21.1 acres into 4 parcels and a remainder.	04-13025	21.1	30455 and 30463 Roadrunner Ridge South
155	Mustafa tpm	Tentative Parcel Map to subdivide 16.4 acres into 4 parcels and a remainder.	04-11418	16.4	9770 Circle R Road
156	Nichols whitman, tpm, 4 lots	TPM 4 Lots	05-0045920	--	10015 W Lilac Road
157	Rimsa tpm 2 lots	2 Single Family Residential lots	06-0058024	--	235 West Camino Calafia
158	Rios, tentative parcel map; tpm 21143	The project is a minor subdivision to create 2 parcels	08-0103568	--	12902 Mirar de Valle Road
159	Robinson, tpm, 4 lots	4 Single Family Residential lots	07-0087850	--	10127 Circle R Drive
160	Sage meadow tpm	2 Single Family Residential lots	06-0070181	--	13510 Sage Meadow Lane
161	Sanders, tpm, bc, 4 lots +	Tentative Parcel Map: Standard 4 lots plus a reminder lot	04-0022522	--	6993 W Lilac Road
162	Souris, tpm, 4 lots	Divide 38.8 net acres into 4 parcels ranging in size from 4.01 to 21.47 net acres. One existing single-family residence and guesthouse resides on Parcel 3 and will remain	05-0060924	38.8	14174 Sun Rocks Drive
163	Tran tentative parcel map	4 Single Family Residential lots	04-0021712	--	29623 Valley of the King Road
164	Turner, tpm	4 Single Family Residential lots	08-0090536	--	29133 Sandy Hill Drive
165	Weber, 4 lot tpm, tpm 21128	4 Single Family Residential lots	08-0097087	4.67	3458 Royal Road
166	Wild, tentative parcel map; tpm 21170	4 Single Family Residential lots	09-0117871	--	1560 Wild Acres Road

TABLE 6.1
CUMULATIVE PROJECTS

Map Key #	Project	Description	Project Reference Numbers	Area (acres)	Location
167	Yuan, minor subdivision + remainder, tpm	The project is a Tentative Map to subdivide 89.88 acres into four parcels plus a remainder parcel.	07-0082675	89.88	Old River Road and Dentro de Lomas
168	Pfaff, tpm, 3 lots	Tentative parcel map to divide a 7.79 acre parcel into three residential lots of 2.5, 2.1 and 2.7 net acres (Parcels 1, 2 and 3 respectively). The site contains an existing single-family residence on proposed Parcel 1 that would be retained.	06-0061790	7.79	32010 Caminito Quieto
169	Kohne residence, rez	Withdrawn	05-0045714	--	Calle Oro Verde
170	Castle creek condominiums, gpa, spa, rez	The project is a General Plan Amendment, Specific Plan Amendment, and Tentative Map to change the existing Land Use Designations to (21) Specific Plan Area in order to increase the density from 1.29 to 1.37 to allow a Tentative Map to subdivide the site into 63 dwelling units.	05-0061049	--	8790 Old Castle Road
171	Sukup	The project is an Expired Map for a major subdivision, TM 5184, that was approved on June 10, 2004 and expired on June 10, 2007. The project now proposes to subdivide 24.62 gross acres into 9 single-family residential lots ranging in size from 2.02 to 2.90 net acres.	TM 5184	24.62	east side of Rodriguez Road

Source: Chen Ryan Associates; May 2014



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

Figure 6-1
Cumulative Project Locations

CHEN RYAN

6.2 Existing Plus Cumulative Projects Plus Project Roadway Network and Traffic Volumes

Intersection and roadway geometrics under Existing Plus Cumulative Projects Plus Project conditions were assumed to be largely identical to Existing conditions, with the following two (2) exceptions:

- SR-76 is widened to 4 lanes – currently under construction; and
- Pankey Road, north of SR-76 is constructed as a 2-lane roadway through construction associated with cumulative projects, and the need to provide direct access to those projects. This segment of Pankey Road is currently required to be improved as conditions of the previously approved Campus Park and Meadowood projects. Specifically, these projects have been conditioned to construct the roadway to its current Mobility Element Road Classification of 2.1A. The environmental impacts associated with the improvement of Pankey Road are described in the Campus Park EIR.

Study area roadway and intersection geometrics are displayed in **Figures 6-2A** and **6-2B**, respectively. *It should be noted that, other than Pankey Road, this analysis did not assume any traffic mitigation and/or transportation system improvements by any of the anticipated cumulative land development projects. Based upon the project descriptions of a number of the cumulative projects, significant roadway improvements would in fact be forthcoming to satisfy CEQA requirements.*

Traffic volumes were developed by adding cumulative project traffic and the project trip to Existing traffic volumes.

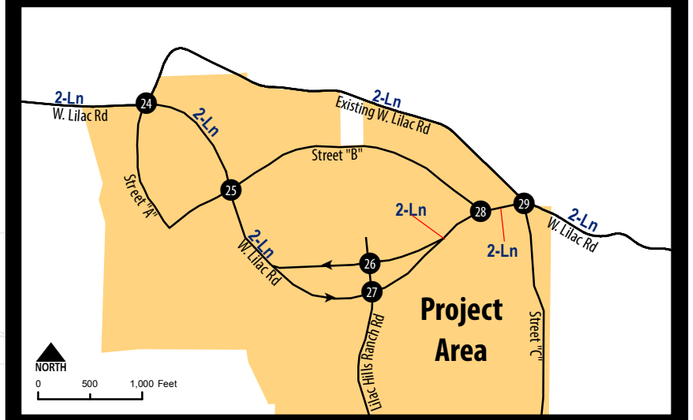
6.3 Existing Plus Cumulative Projects Plus Project Traffic Conditions

Level of service analyses under Existing Plus Cumulative Projects Plus Project conditions were conducted using the methodologies described in Chapter 2.0. Roadway segment, intersection, freeway segment, and ramp intersection level of service results are discussed separately below. Average daily traffic volumes on study area roadway segments are displayed in **Figure 6-3A**, while peak hour traffic volumes at the key study area intersections are displayed in **Figure 6-3B**.

Legend

4-Ln	4-Lane Roadway
2-Ln	2-Lane Roadway
RM	Raised Median
SM	Striped Median
TWLTL	Two-Way Left Turn Lane
X	Study Intersection

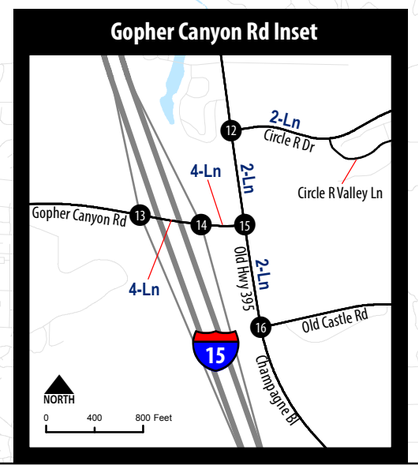
Project Area Inset



See Project Area Inset

See Gopher Canyon Rd Inset

Gopher Canyon Rd Inset



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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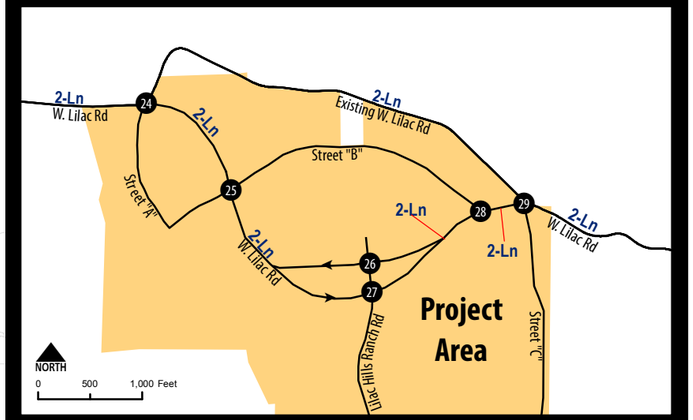
Figure 6-2A

Roadway Geometrics - Existing Plus Cumulative Projects Plus Project Conditions

Legend

4-Ln	4-Lane Roadway
2-Ln	2-Lane Roadway
RM	Raised Median
SM	Striped Median
TWLTL	Two-Way Left Turn Lane
X	Study Intersection

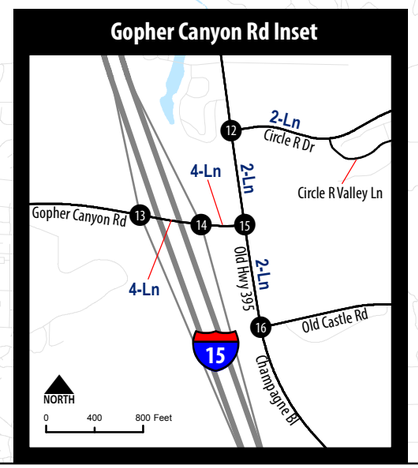
Project Area Inset



See Project Area Inset

See Gopher Canyon Rd Inset

Gopher Canyon Rd Inset

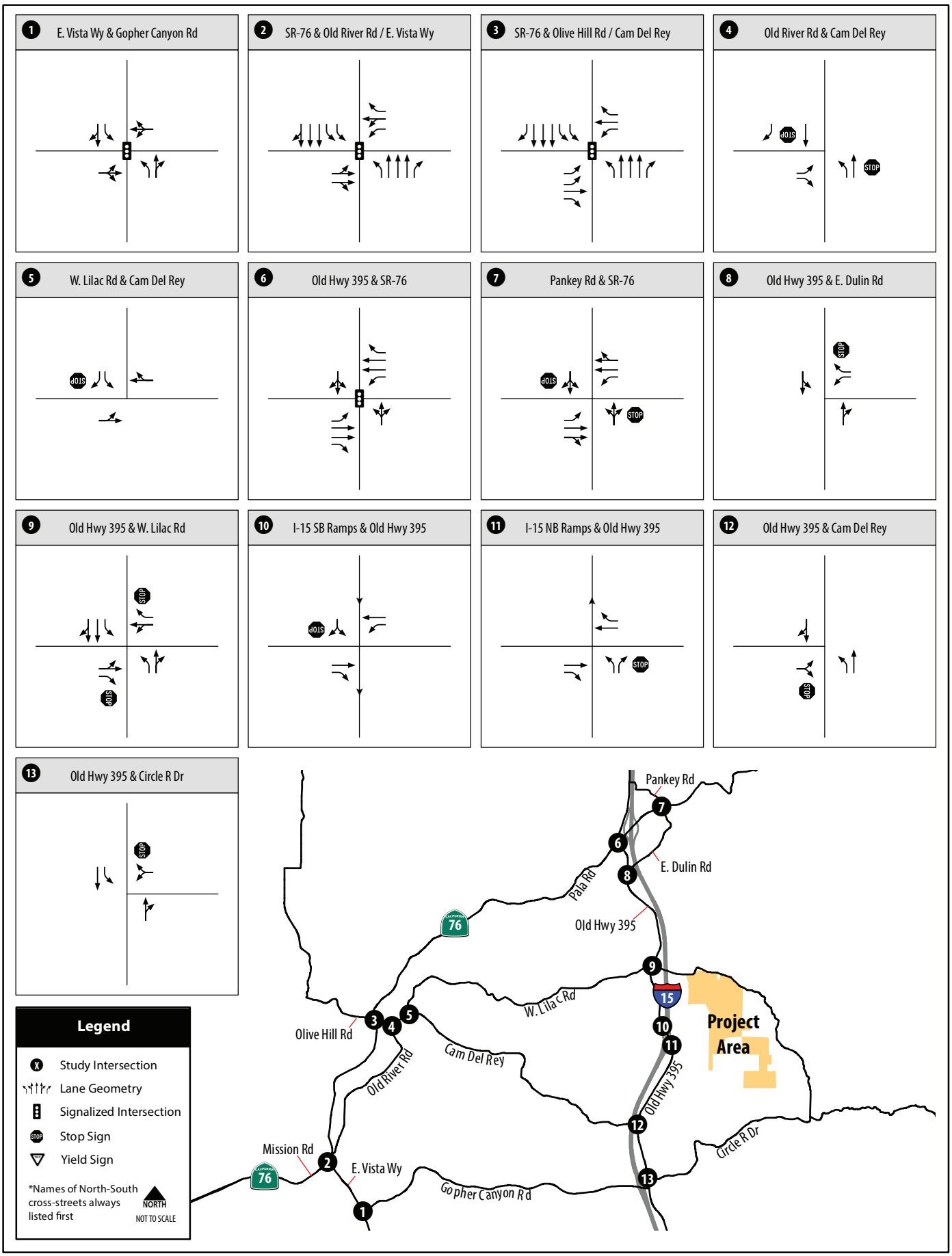


Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 6-2A

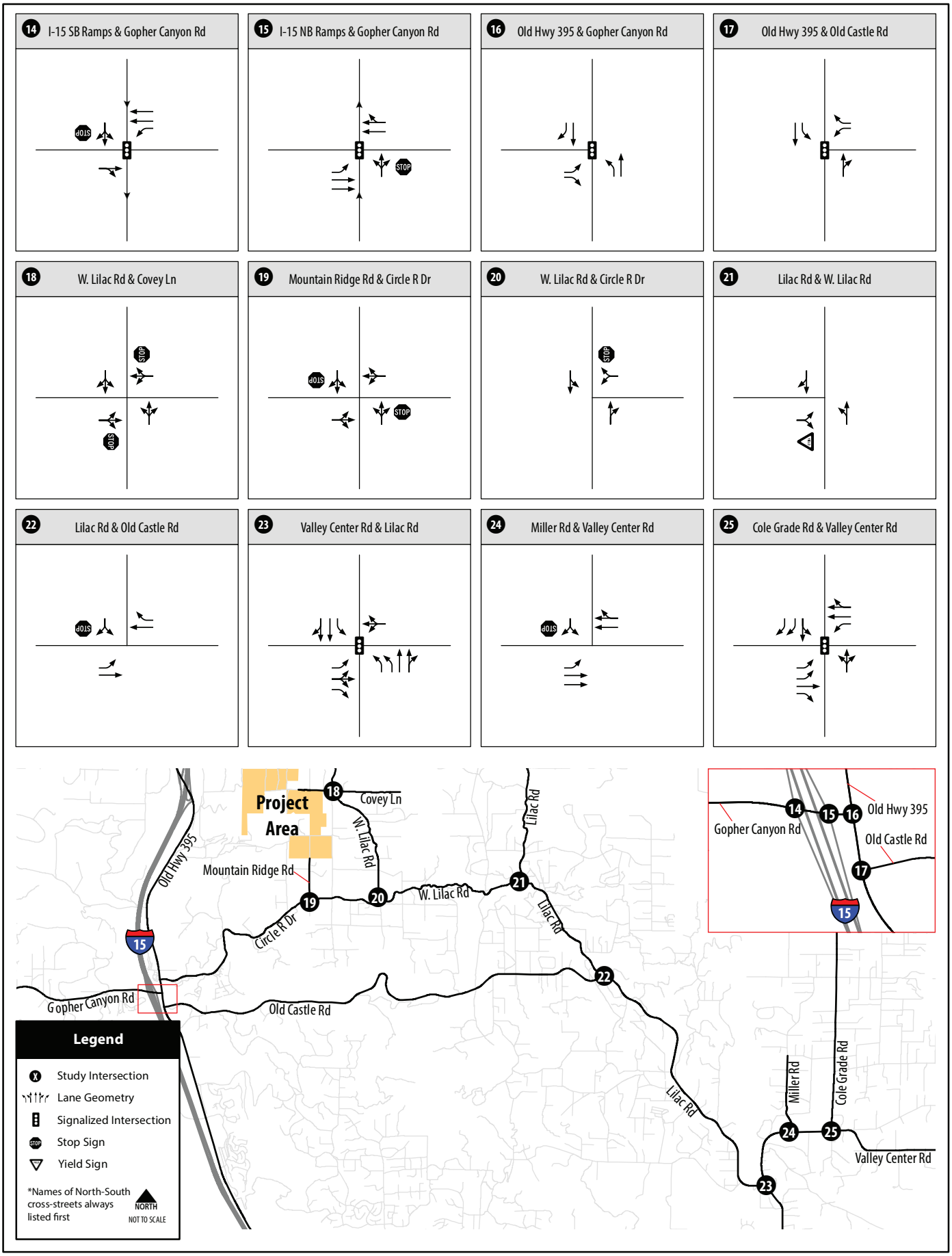
Roadway Geometrics - Existing Plus Cumulative Projects Plus Project Conditions



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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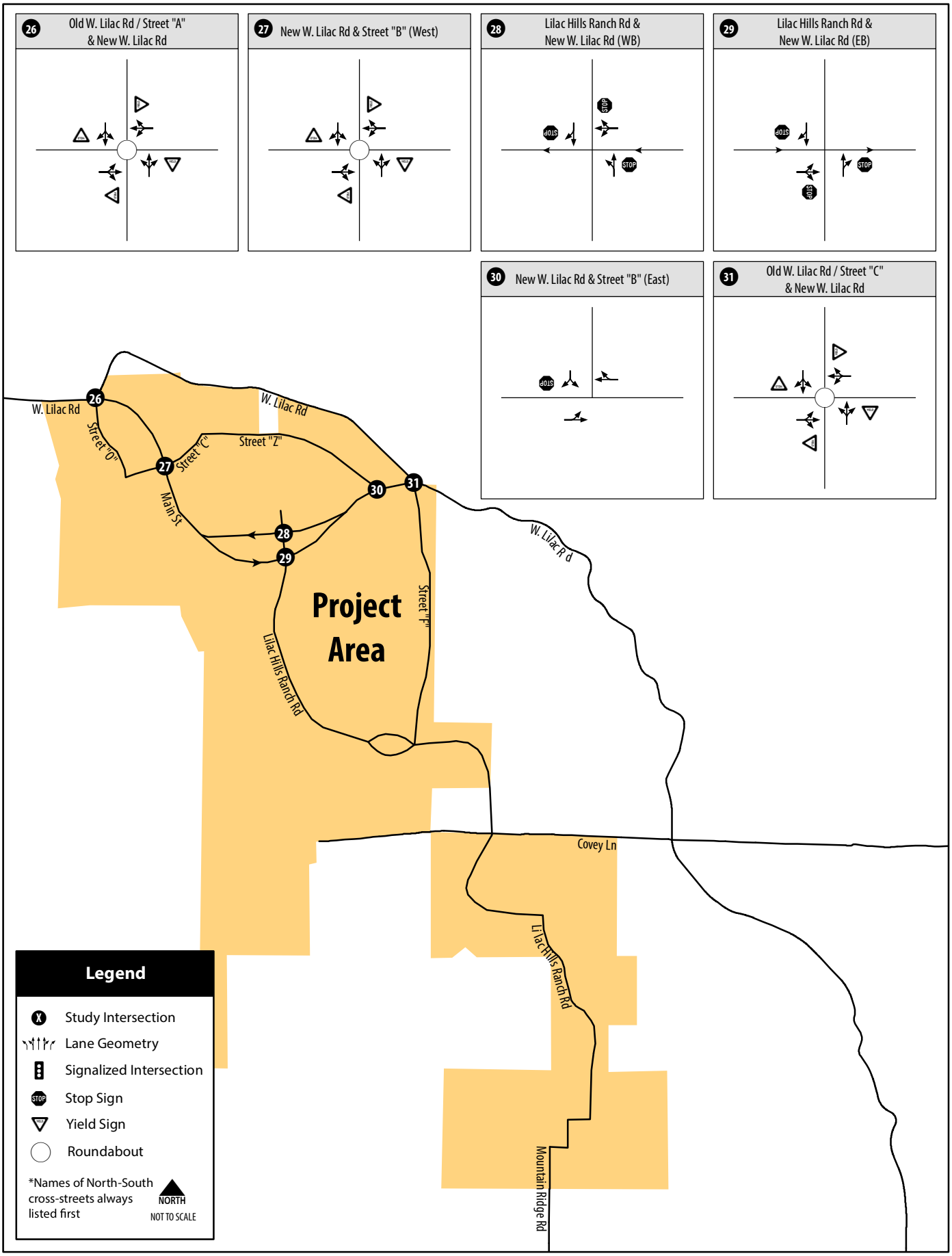
Figure 6-2B (Intersections 1-13)
Intersection Geometrics - Existing Plus Cumulative Projects Plus Project Conditions



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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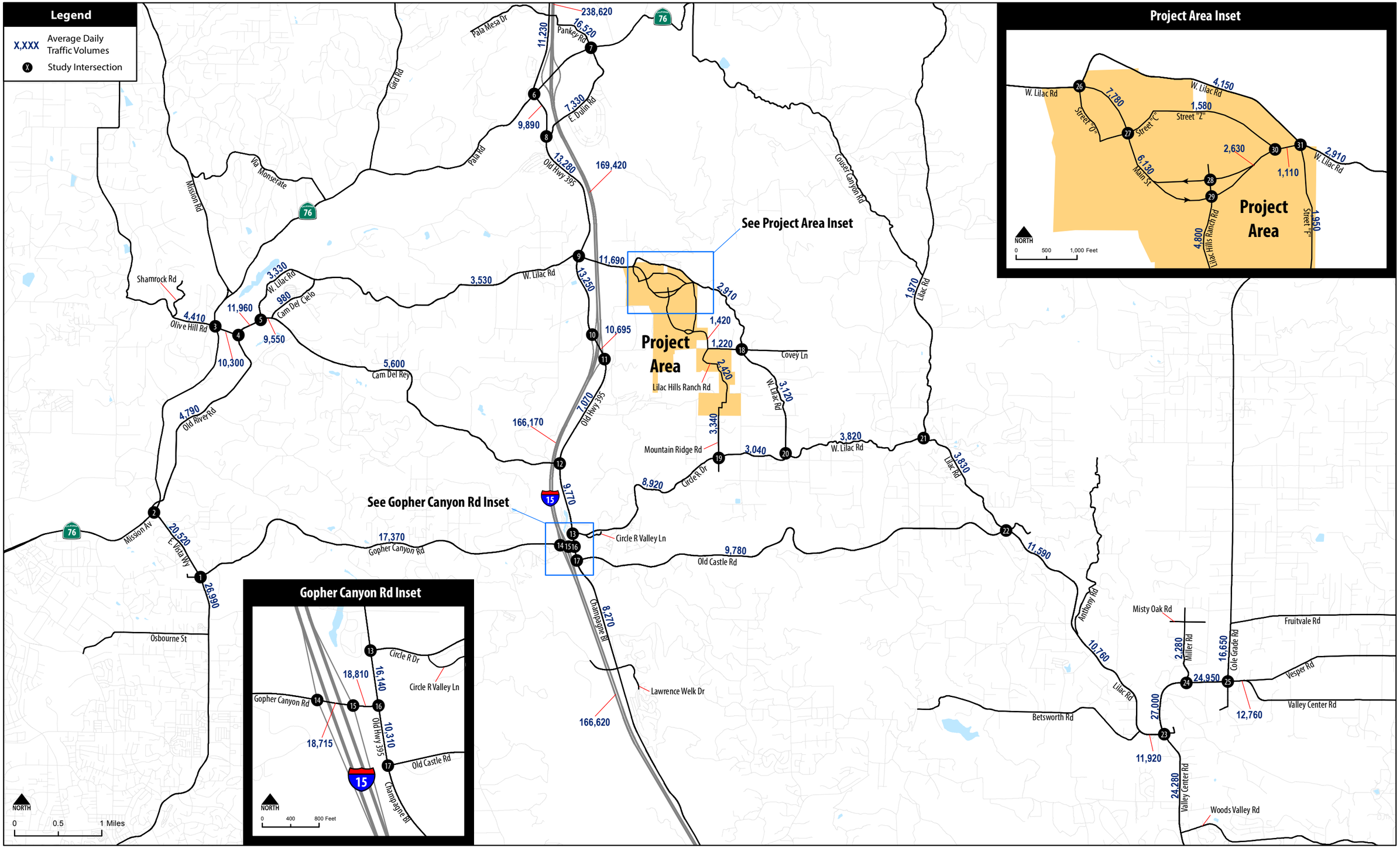
Figure 6-2B (Intersections 14-25)
Intersection Geometrics - Existing Plus Cumulative Projects Plus Project Conditions



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Figure 6-2B (Intersections 26-31)
Intersection Geometrics - Existing Plus Cumulative Projects Plus Project Conditions

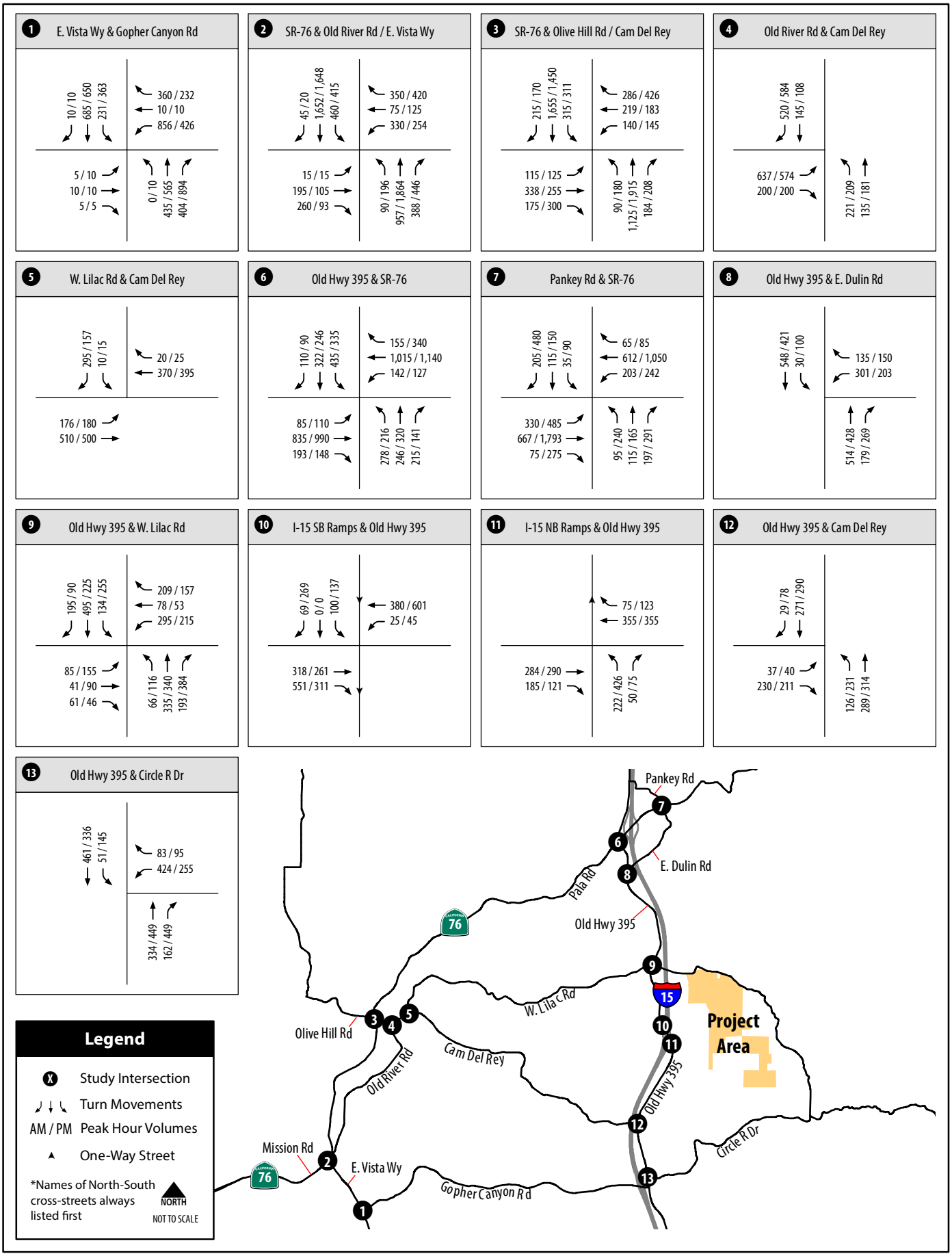


Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 6-3A

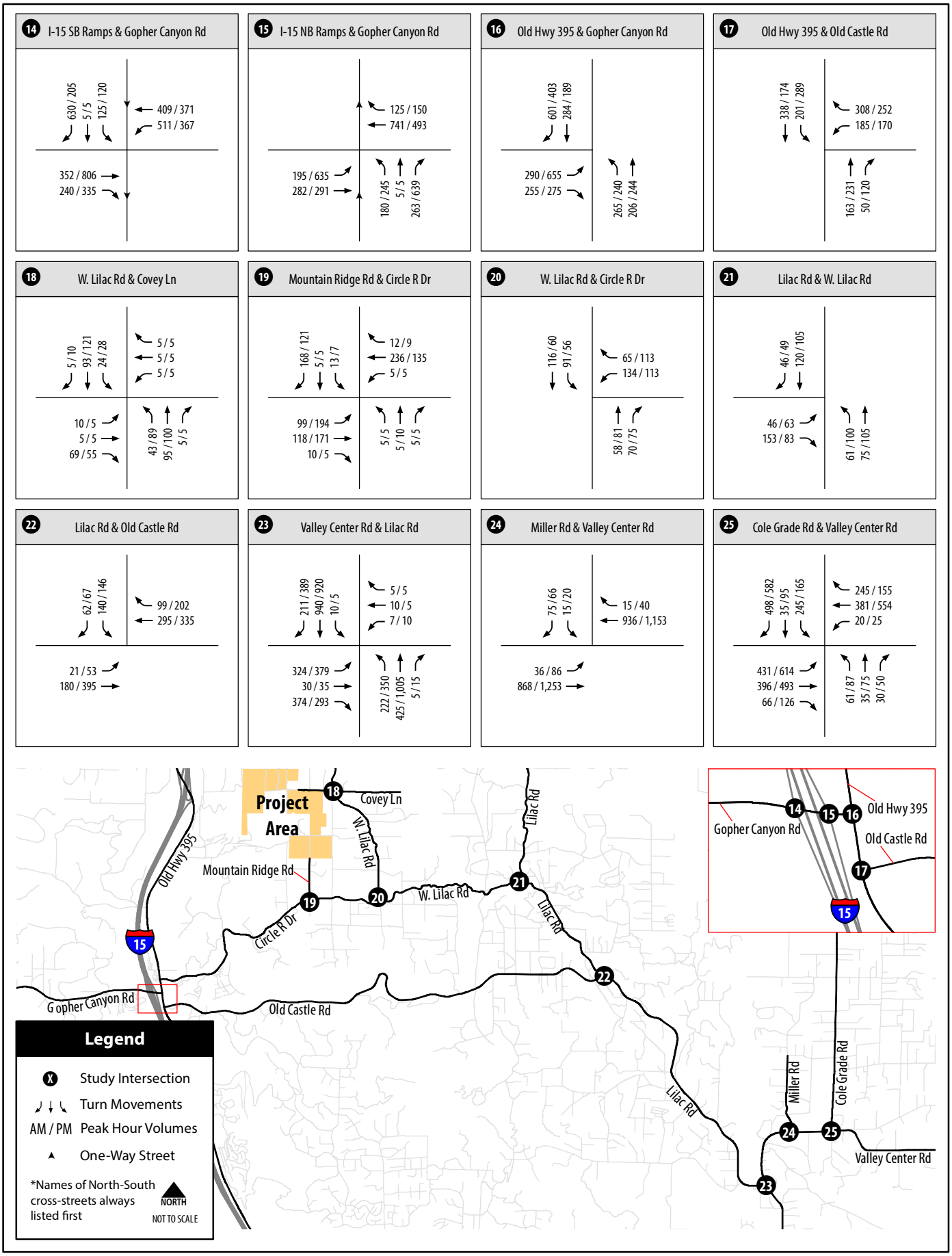
Roadway Average Daily Traffic Volumes - Existing Plus Cumulative Projects Plus Project Conditions



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 6-3B (Intersections 1-13)
Intersection Peak Hour Traffic Volumes - Existing Plus Cumulative Projects Plus Project Conditions



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 6-3B (Intersections 14-25)
Intersection Peak Hour Traffic Volumes - Existing Plus Cumulative Projects Plus Project Conditions

Roadway Segment Analysis

Table 6.2 displays the level of service analysis results for key roadway segments under Existing Plus Cumulative Projects Plus Project conditions. As shown in the table, the following nine (9) roadway segments would operate substandard LOS E or F:

- W. Lilac Road, between Old Highway 395 and Main Street – LOS F, and the cumulative projects plus the project would add more than 100 daily trips.
- Camino Del Rey, between Old River Road and W. Lilac Road - LOS E, and the cumulative projects plus the project would add more than 200 daily trips.
- Gopher Canyon Road, between E. Vista Way and Little Gopher Canyon Road – LOS F, and the cumulative projects plus the project would add more than 100 daily trips.
- Gopher Canyon Road, between Little Gopher Canyon Road and I-15 SB Ramps – LOS F, and the cumulative projects plus the project would add more than 100 daily trips.
- E. Vista Way, between SR-76 and Gopher Canyon Road – LOS F, and the cumulative projects plus the project would add more than 100 daily trips.
- E. Vista Way, between Gopher Canyon Road and Osborne Street – LOS F, and the cumulative projects plus the project would add more than 100 daily trips.
- Pankey Road, between Pala Mesa Drive and SR-76 - LOS F, and the cumulative projects would add more than 100 daily trips.
- Lilac Road, between Old Castle Road and Anthony Road - LOS E, and the cumulative projects plus the project would add more than 200 daily trips.
- Cole Grade Road, between Fruitvale Road and Valley Center Road - LOS E, and the cumulative projects plus the project would add more than 200 daily trips.

Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by the project and the anticipated cumulative projects would result in cumulative impacts to all nine (9) roadway segments.

TABLE 6.2
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Roadway	From	To	With Cumulative Projects + Project				Existing		Cumulative Projects + Project ADT	Cumulative Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
E. Dulin Road	Old Highway 395	SR-76	2-Ln	9,800	7,330	D	1,830	B	5,500	No
W. Lilac Road	Camino Del Rey	Camino Del Cielo	2-Ln	7,800	3,330	A	2,270	A	1,060	No
W. Lilac Road	Camino Del Cielo	Old Highway 395	2-Ln	7,800	3,530	A	2,140	A	1,390	No
W. Lilac Road	Old Highway 395	Main Street	2-Ln	8,700	11,690	F	1,150	A	12,350	*Yes > 100ADT*
W. Lilac Road	Main Street	Street "F"	2-Ln	7,800	4,150	A	1,150	A	2,000	No
W. Lilac Road	Street "F"	Covey Lane	2-Ln	7,800	2,910	A	1,150	A	760	No
W. Lilac Road	Covey Lane	Circle R Drive	2-Ln	7,800	3,120	A	480	A	2,140	No
W. Lilac Road	Circle R Drive	Lilac Road	2-Ln	7,800	3,820	A	1,170	A	2,400	No
Camino Del Cielo	Camino Del Rey	W. Lilac Road	2-Ln	10,900	980	A	630	A	350	No
Olive Hill Road	Shamrock Road	SR-76	2-Ln	8,700	4,410	A	3,380	A	1,030	No
Camino Del Rey	SR-76	Old River Road	2-Ln	10,900	10,300	D	9,350	D	950	No
Camino Del Rey	Old River Road	W. Lilac Road	2-Ln	9,800	11,960	E	8,640	D	3,320	*Yes > 200ADT*
Camino Del Rey	W. Lilac Road	Camino Del Cielo	2-ln w/ SM	13,500	9,550	D	6,730	C	2,820	No
Camino Del Rey	Camino Del Cielo	Old Highway 395	2-Ln	7,800	5,600	B	4,850	A	750	No
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	2-Ln	9,800	17,370	F	15,310	F	1,960	*Yes > 100ADT*
Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	4-Ln	30,800	18,715	B	12,390	A	6,325	No

TABLE 6.2
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Roadway	From	To	With Cumulative Projects + Project				Existing		Cumulative Projects + Project ADT	Cumulative Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	4-Ln	30,800	18,810	B	11,870	A	6,940	No
Circle R Drive	Old Highway 395	Mountain Ridge Road	2-Ln	9,800	8,920	D	4,030	C	4,890	No
Circle R Drive	Mountain Ridge Road	W. Lilac Road	2-Ln	9,800	3,040	B	1,770	B	1,270	No
Old Castle Road	Old Highway 395	Lilac Road	2-Ln	9,800	9,780	D	6,840	D	2,940	No
E. Vista Way	SR-76	Gopher Canyon Road	2-Ln w/ TWLTL	13,500	20,520	F	15,120	E	5,400	*Yes > 100ADT*
E. Vista Way	Gopher Canyon Road	Osborne Street	2-Ln w/ TWLTL	13,500	26,990	F	21,020	F	5,970	*Yes > 100ADT*
Old River Road	SR-76	Camino Del Rey	2-Ln	9,800	4,790	C	4,070	C	720	No
Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	2-Ln	10,700	8,270	D	4,170	C	3,600	No
Pankey Road	Pala Mesa Drive	SR-76	2-Ln	4,500	16,520	F	70	A	16,450	*Yes > 100ADT*
Lilac Road	Couser Canyon Road	W. Lilac Road	2-Ln	7,800	1,970	A	1,150	A	820	No
Lilac Road	W. Lilac Road	Old Castle Road	2-Ln	7,800	3,830	A	2,640	A	1,190	No
Lilac Road	Old Castle Road	Anthony Road	2-Ln	10,900	11,590	E	9,010	D	2,580	*Yes > 200ADT*
Lilac Road	Anthony Road	Betsworth Road	2-Ln	10,900	10,760	D	8,740	D	2,020	No
Lilac Road	Betsworth Road	Valley Center Road	2-Ln	13,500	11,920	D	9,620	D	2,300	No
Valley Center Road	Woods Valley Road	Lilac Road	4/Ln w/ TWLTL/RM	27,000	24,280	D	21,290	C	2,990	No

TABLE 6.2
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Roadway	From	To	With Cumulative Projects + Project				Existing		Cumulative Projects + Project ADT	Cumulative Impact?
			Cross-Section	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Valley Center Road	Lilac Road	Miller Road	4-Ln w/ RM	33,400	27,000	C	24,280	B	2,720	No
Valley Center Road	Miller Road	Cole Grade Road	4-Ln w/ RM	27,000	24,950	D	22,440	C	2,510	No
Valley Center Road	Cole Grade Road	Vesper Road	2-Ln	13,500	12,760	D	11,490	D	1,270	No
Miller Road	Misty Oak Road	Valley Center Road	2-Ln	7,000	2,280	A	1,460	A	820	No
Cole Grade Road	Fruitvale Road	Valley Center Road	2-Ln w/ TWLTL	13,500	16,650	E	10,660	D	5,990	*Yes > 200ADT*
Mountain Ridge Road	LHR Project Boundary	Circle R Drive	Rural Residential Collector (LPR)	4,500	3,430	B	160	A	3,270	*No*

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E or F.
RM = Raised Median.
SM = Striped Median.
TWLTL = Two-Way Left-Turn Lane.

Intersection Analysis

Table 6.3 displays intersection level of service and average vehicle delay results under Existing Plus Cumulative Projects Plus Project conditions. Level of service calculation worksheets are provided in **Appendix AO**. As shown in the table, the following twelve (12) study intersections would operate at substandard LOS E or F under Existing Plus Cumulative Projects Plus Project conditions:

- E. Vista Way / Gopher Canyon Road (County) – LOS F during both the AM and PM peak hour, and the cumulative projects plus project traffic would add more than 1 second of additional delay to this signalized intersection.
- Old River Road / Camino Del Rey (County) – LOS F during the AM peak hour, and the cumulative projects plus project traffic would not add more than 5 peak hour trips to the critical movement of this unsignalized intersection.
- SR-76 / Old Highway 395 (Caltrans) – LOS F during both the AM and PM peak hours, and the cumulative projects plus project traffic would add two seconds or more of additional delay to this signalized intersection.
- SR-76 / Pankey Road (Caltrans) – LOS F during both the AM and PM peak hours, and the cumulative projects plus project traffic would add two seconds or more additional delay to this unsignalized intersection.
- Old Highway 395 / E. Dulin Road (County) – LOS F during both the AM and PM peak hours, and the cumulative projects plus project traffic would add more than 5 peak hour trips to the critical movement of this unsignalized intersection.
- Old Highway 395 / W. Lilac Road (County) – LOS F during both the AM and PM peak hours, and the cumulative projects plus project traffic would add more than 5 peak hour trips to the critical movement of this unsignalized intersection.
- I-15 SB Ramps / Old Highway 395 (Caltrans) – LOS F during both the AM and PM peak hours, and the cumulative projects plus project traffic would add two seconds or more additional delay to this unsignalized intersection.
- I-15 SB Ramps / Old Highway 395 (Caltrans) – LOS F during the PM peak hour, and the cumulative projects plus project traffic would add two seconds or more additional delay to this unsignalized intersection.
- Old Highway 395 / Circle R Drive (County) – LOS F during both the AM and PM peak hours, and the cumulative projects plus project traffic would add more than 5 peak hour trips to the critical movement of this unsignalized intersection.
- I-15 SB Ramps / Gopher Canyon Road (Caltrans) – LOS F during both the AM and PM peak hours, and the cumulative projects plus project traffic would add more than two seconds of additional delay to this unsignalized intersection.
- I-15 NB Ramps / Gopher Canyon Road (Caltrans) – LOS F during both the AM and PM peak hour, and the cumulative projects plus project traffic would add more than two seconds of additional delay to this unsignalized intersection.

TABLE 6.3
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Intersection	Traffic Control	With Cumulative Projects + Project				Existing		Change in Delay (sec.) AM / PM	Cumulative Projects + Project Traffic to Critical Movements AM / PM	Cumulative Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
1. E. Vista Way / Gopher Canyon Road	Signal	250.0	F	275.5	F	172.8 / 212.0	F / F	77.2 / 63.5	-	*Yes County Int. LOS Degrade & > 1 sec.*
2. SR-76 / Old River Road/E. Vista Way	Signal	40.4	D	51.4	D	23.7 / 32	C / C	16.7 / 19.4	-	No
3. SR-76 / Olive Hill Road/Camino Del Rey	Signal	40.8	D	51.2	D	21.6 / 34.5	C / C	19.2 / 16.7	-	No
4. Old River Road / Camino Del Rey	OWSC	109.1	F	27.3	C	23.2 / 12.2	D / B	85.9 / 15.1	AM: NBL +3	No County Int. < 5 trips
5. W. Lilac Road / Camino Del Rey	OWSC	21.9	C	15.4	B	15.7 / 11.0	C / B	6.2 / 4.4	-	No
6. Old Highway 395 / SR-76	Signal	190.3	F	190.7	F	29.0 / 39.8	C / D	161.3 / 150.9	-	*Yes Caltrans Int. > 2 sec.*
7. Pankey Road / SR-76	TWSC	OVFL	F	OVFL	F	12.5 / 15.2	B / C	OVFL / OVFL	-	*Yes Caltrans Int. > 2 sec.*
8. Old Highway 395 / E. Dulin Road	OWSC	364.5	F	179.1	F	12.8 / 11.2	B / B	351.7 / 167.9	AM : WBL +89 PM : WBL +180	*Yes County Int. > 5 trips*

TABLE 6.3
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Intersection	Traffic Control	With Cumulative Projects + Project				Existing		Change in Delay (sec.) AM / PM	Cumulative Projects + Project Traffic to Critical Movements AM / PM	Cumulative Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
9. Old Highway 395 / W. Lilac Road	TWSC	OVFL	F	OVFL	F	14.7 / 13.3	C / B	OVFL / OVFL	AM : WBL +255 PM : WBL +180	*Yes* *County Int.* *> 5 trips*
10. I-15 SB Ramps / Old Highway 395	OWSC	40.1	E	138.5	F	10.6 / 12.1	B / B	29.5 / 126.4	-	*Yes* *Caltrans Int.* *> 2 sec.*
11. I-15 NB Ramps / Old Highway 395	OWSC	16.7	C	46.2	E	9.8 / 11.2	A / B	6.9 / 35	-	*Yes* *Caltrans Int.* *> 2 sec.*
12. Old Highway 395 / Camino Del Rey	OWSC	14.4	B	20.4	C	10.1 / 11.0	B / B	4.3 / 9.4	-	No
13. Old Highway 395 / Circle R Drive	OWSC	603.4	F	1,264.0	F	20.4 / 22.5	C / C	583 / 1241.5	AM : WBL +129 PM : WBL +90	*Yes* *County Int.* *> 5 trips*
14. I-15 SB Ramps / Gopher Canyon Road	OWSC	OVFL	F	OVFL	F	468.2 / 173.0	F / F	OVFL / OVFL	-	*Yes* *Caltrans Int.* *> 2 sec.*
15. I-15 NB Ramps / Gopher Canyon Road	OWSC	637.7	F	OVFL	F	30.5 / 1945.4	D / F	607.2 / OVFL	-	*Yes* *Caltrans Int.* *> 2 sec.*
16. Old Highway 395 / Gopher Canyon Road	Signal	29.8	C	41.1	D	11.0 / 14.7	B / B	18.8 / 26.4	-	No
17. Old Highway 395 / Old Castle Road	Signal	14.9	B	18.3	B	13.9 / 15.7	B / B	1.0 / 2.6	-	No

TABLE 6.3
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Intersection	Traffic Control	With Cumulative Projects + Project				Existing		Change in Delay (sec.) AM / PM	Cumulative Projects + Project Traffic to Critical Movements AM / PM	Cumulative Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
18. W. Lilac Road / Covey Lane	TWSC	11.3	B	13.4	B	8.8 / 9.3	B / A	2.5 / 4.1	-	No
19. Mountain Ridge Road / Circle R Drive	TWSC	15.5	C	17.8	C	9.3 / 9.6	A / A	6.2 / 8.2	-	No
20. W. Lilac Road / Circle R Drive	OWSC	14.6	B	12.4	B	9.3 / 9.3	A / A	5.3 / 3.1	-	No
21. Lilac Road / W. Lilac Road	OWSC	11.1	B	12.0	B	9.6 / 9.9	A / A	1.5 / 2.1	-	No
22. Lilac Road / Old Castle Road	OWSC	17.0	B	32.6	D	11.8 / 17.8	B / C	5.2 / 14.8	-	No
23. Valley Center Rd / Lilac Road	Signal	38.9	D	52.7	D	10.5 / 22.6	B / C	28.4 / 30.1	-	No
24. Miller Road / Valley Center Road	OWSC	23.3	C	103.0	F	16.9 / 25.0	C / D	6.4 / 77.8	PM : SB +29	*Yes County Int. > 5 trips*
25. Cole Grade Road / Valley Center Road	Signal	36.6	D	48.8	D	31.1 / 34.9	C / C	5.5 / 13.9	-	No
26. Street "O" / W. Lilac Road/Main Street	RA	10.0	A	12.2	B	DNE	DNE	10.0 / 12.2	-	No
27. Main Street / Street "C"	RA	6.7	A	7.5	A	DNE	DNE	6.7 / 7.5	-	No
28. Lilac Hills Ranch Road / Main Street North	AWSC	8.3	A	8.4	A	DNE	DNE	8.3 / 8.4	-	No
29. Lilac Hills Ranch Road / Main Street South	AWSC	8.2	A	9.6	A	DNE	DNE	8.2 / 9.6	-	No
30. Street "Z" / Main Street	OWSC	8.7	A	9.0	A	DNE	DNE	8.7 / 9	-	No

TABLE 6.3
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Intersection	Traffic Control	With Cumulative Projects + Project				Existing		Change in Delay (sec.) AM / PM	Cumulative Projects + Project Traffic to Critical Movements AM / PM	Cumulative Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
31. W. Lilac Road/Street "F" / Main Street	RA	4.4	A	4.6	A	DNE	DNE	4.4 / 4.6	-	No

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E of F.
AWSC = All-Way Stop Controlled.
TWSC = Two-Way Stop Controlled.
OWSC = One-Way Stop Controlled.
RA = Roundabout.
DNE = Does Not Exist.
For OWSC and TWSC intersections, the delay shown is the worst delay experienced by any of the approaches.

- Miller Road / Valley Center Road (County) – LOS F during the PM peak hour, and the cumulative projects plus project would add more than 5 peak hour trips to the critical movement of this unsignalized intersection.

Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by the proposed Lilac Hills Ranch project and the other anticipated cumulative projects would result in cumulative impacts at all above mentioned intersections except for the intersection of Old River Road and Camino Del Rey.

Two-Lane Highway Analysis

Table 6.4 displays two-lane highway level of service analysis results for Old Highway 395 under Existing Plus Cumulative Projects Plus Project conditions. The two-lane highway level of service analysis was performed utilizing the methodology presented in Chapter 2.0.

As shown in the table, all segments along Old Highway 395 would operate at acceptable LOS D or better under Existing Plus Cumulative Projects Plus Project conditions and the additional traffic generated by the project and the other anticipated cumulative projects would not cause any direct impacts to Old Highway 395.

TABLE 6.4
TWO-LANE HIGHWAY LEVEL OF SERVICE RESULTS
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

2-Ln Highway	From	To	With Cumulative Projects + Project			Existing		Cumulative Projects + Project ADT	Cumulative Impact?
			LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Old Highway 395	Pala Mesa Drive	SR-76	16,200	11,230	D or better	4,770	D or better	6,460	No
Old Highway 395	SR-76	E. Dulin Road	16,200	9,890	D or better	4,720	D or better	5,170	No
Old Highway 395	E. Dulin Road	W. Lilac Road	16,200	13,280	D or better	4,340	D or better	8,440	No
Old Highway 395	W. Lilac Road	I-15 SB Ramps	16,200	13,250	D or better	4,450	D or better	8,800	No
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	16,200	10,695	D or better	3,600	D or better	7,095	No
Old Highway 395	I-15 NB Ramps	Camino Del Rey	16,200	7,070	D or better	2,430	D or better	4,390	No
Old Highway 395	Camino Del Rey	Circle R Drive	16,200	9,770	D or better	5,820	D or better	3,700	No
Old Highway 395	Circle R Drive	Gopher Canyon Road	16,200	16,140	D or better	10,710	D or better	5,430	No
Old Highway 395	Gopher Canyon Road	Old Castle Road	16,200	10,310	D or better	8,660	D or better	1,380	No

Source: Chen Ryan Associates; May 2014

Freeway Segment Analysis

The freeway segment level of service analysis was performed utilizing the methodology presented in Chapter 2.0. **Table 6.5** displays the resulting level of service for I-15 under Existing Plus Cumulative Projects Plus Project conditions.

As shown in the table, eight (8) of the I-15 freeway segments would operate at substandard LOS E or F under Existing Plus Cumulative Projects Plus Project conditions:

- I-15, between the Riverside County Boundary and Old Highway 395 – LOS F, and the cumulative projects plus project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Old Highway 395 and SR-76 – LOS F, and the cumulative projects plus project traffic would increase the V/C ratio by more than 0.01;
- I-15, between SR-76 and Old Highway 395 – LOS F, and the cumulative projects plus project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Old Highway 395 and Gopher Canyon Road – LOS F, and the cumulative projects plus project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Gopher Canyon Road and Deer Springs Road – LOS F, and the cumulative projects plus project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Deer Springs Road and Centre City Parkway – LOS F, and the cumulative projects plus project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Centre City Parkway and El Norte Parkway – LOS F, and the cumulative projects plus project traffic would increase the V/C ratio by more than 0.01; and
- I-15, between El Norte Parkway and SR-78 – LOS F, and the cumulative projects plus project traffic would increase the V/C ratio by more than 0.01.

Based upon the significance criteria discussed in Section 2.8, the additional traffic generated by the proposed Lilac Hills Ranch project and the other anticipated cumulative projects would result in cumulative impacts at all eight (8) I-15 freeway segments identified above.

TABLE 6.5
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Cumulative Impact?
I-15	Riverside County Boundary to Old Highway 395	203,380	8.4%	17,182	0.64	4	0.95	6.75%	2,970	1.264	F	0.431	*Yes > 0.01*
I-15	Old Highway 395 to SR-76	239,120	7.4%	17,789	0.73	4	0.95	6.75%	3,540	1.506	F	0.662	*Yes > 0.01*
I-15	SR-76 to Old Highway 395	169,920	7.8%	13,291	0.69	4	0.95	8.40%	2,498	1.063	F	0.356	*Yes > 0.01*
I-15	Old Highway 395 to Gopher Canyon Road	167,250	8.1%	13,507	0.67	4	0.95	8.40%	2,473	1.052	F	0.360	*Yes > 0.01*
I-15	Gopher Canyon Road to Deer Springs Road	167,120	8.1%	13,496	0.67	4	0.95	13.20%	2,528	1.076	F	0.323	*Yes > 0.01*
I-15	Deer Springs Road to Centre City Parkway	166,530	8.0%	13,379	0.66	4	0.95	13.20%	2,494	1.061	F	0.316	*Yes > 0.01*
I-15	Centre City Parkway to El Norte Parkway	157,730	8.0%	12,672	0.66	4	0.95	13.20%	2,362	1.005	F	0.298	*Yes > 0.01*
I-15	El Norte Parkway to SR-78	171,220	7.9%	13,516	0.66	4	0.95	10.00%	2,483	1.057	F	0.275	*Yes > 0.01*
I-15	SR-78 to W Valley Parkway	217,370	8.1%	17,691	0.60	5+2ML	0.95	10.00%	1,676	0.713	C	0.083	No
I-15	W Valley Parkway to Auto Parkway	199,990	8.1%	16,276	0.60	5+2ML	0.95	10.00%	1,542	0.656	C	0.069	No
I-15	Auto Parkway to W Citracado Parkway	191,830	7.8%	14,878	0.60	5+2ML	0.95	10.00%	1,401	0.596	B	0.062	No
I-15	W Citracado Parkway to Via Rancho Parkway	208,840	7.8%	16,197	0.60	5+2ML	0.95	7.00%	1,503	0.640	C	0.039	No

TABLE 6.5
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to Existing)	Cumulative Impact?
I-15	Via Rancho Parkway to Bernardo Drive	238,980	7.4%	17,588	0.58	5+2ML	0.95	7.00%	1,583	0.674	C	0.116	No
I-15	Bernardo Drive to Rancho Bernardo Road	214,110	7.4%	15,758	0.58	5+2ML	0.95	7.00%	1,419	0.604	B	0.037	No
I-15	Rancho Bernardo Road to Bernardo Center Drive	215,640	7.3%	15,832	0.54	5+2ML	0.95	7.00%	1,321	0.562	B	0.017	No
I-15	Bernardo Center Drive to Camino Del Norte	216,670	7.3%	15,908	0.54	5+2ML	0.95	7.00%	1,327	0.565	B	0.0070	No

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E or F.
ML = Managed Lane.

Ramp Intersection Capacity Analysis

Consistent with Caltrans' requirements, the signalized intersections along SR-76 within the study area were analyzed under Existing Plus Cumulative Projects Plus Project conditions using the ILV procedures as described in Chapter 2.0. ILV analysis results are displayed in **Table 6.6** and analysis worksheets are provided in **Appendix AP**.

TABLE 6.6
RAMP INTERSECTION CAPACITY ANALYSIS
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Ramp Intersection	Peak Hour	ILV / Hour	Description
SR-76 / Old River Road/E. Vista Way	AM	1,884	*>1500: (Over Capacity)*
	PM	1,996	*>1500: (Over Capacity)*
SR-76 / Olive Hill Road/Camino Del Rey	AM	2,163	*>1500: (Over Capacity)*
	PM	2,558	*>1500: (Over Capacity)*
SR-76 / Old Highway 395	AM	2,262	*>1500: (Over Capacity)*
	PM	2,044	*>1500: (Over Capacity)*

Source: Chen Ryan Associates; May 2014

As shown in the table, all three (3) signalized intersections along SR-76 would operate at "Over Capacity" during both the AM and PM peak hours under the Existing Plus Cumulative Projects Plus Project conditions.

6.4 Existing Plus Cumulative Projects Plus Project Impact Significance and Mitigation

This section identifies required mitigation measures for roadway, intersection, two-lane highway, and freeway facilities that would be significantly impacted by project-related traffic under Existing Plus Cumulative Projects Plus Project conditions.

Roadway Segments

The total traffic generated by anticipated cumulative projects and the project would result in cumulative impacts at nine (9) of the study area roadway segments. Mitigation measures would be required to mitigate significant cumulative traffic impacts. Generally, impacts to roadway segments that are included in the list of facilities included in the County's TIF would be mitigated through payment of TIF fees. For facilities not included in the County's TIF program, specific mitigation measures are proposed. The following improvements would be required to mitigate the identified cumulative impacts:

- *Camino Del Rey, between Old River Road and W. Lilac Road* - this roadway segment is included in the list of facilities included in the County's TIF.[1] The project applicant would be responsible for making TIF payments. This cumulatively impacted roadway segment would be mitigated through payment of the TIF fee.

- *Gopher Canyon Road, between Little Gopher Canyon Road and I-15 SB Ramps* – this roadway segment is included in the list of facilities included in the County's TIF. (see footnote 1 below) The project applicant would be responsible for making TIF payments. This cumulatively impacted roadway segment would be mitigated through payment of the TIF fee.

- *E. Vista Way, between SR-76 and Gopher Canyon Road* – this roadway segment is included in the list of facilities included in the County's TIF. (see footnote 1 below) The project applicant would be responsible for making TIF payments. This cumulatively impacted roadway segment would be mitigated through payment of the TIF fee.

- *E. Vista Way, between Gopher Canyon Road and Osborne Street* – this roadway segment is included in the list of facilities included in the County's TIF. (see footnote 1 below) The project applicant would be responsible for making TIF payments. This cumulatively impacted roadway segment would be mitigated through payment of the TIF fee.

- *Cole Grade Road, between Fruitvale Road and Valley Center Road* – this roadway segment is included in the list of facilities included in the County's TIF. (see footnote 1 below) The project applicant would be responsible for making TIF payments. This cumulatively impacted roadway segment would be mitigated through payment of the TIF fee.

- *W. Lilac Road, between Old Highway 395 and Main Street* – improve to the General Plan Mobility Element classification of 2.2C. The project was also identified as causing a direct impact at this segment under Existing Plus Project (Phase C) scenario and hence the project applicant would be responsible for the construction of this improvement. This cumulatively impacted roadway segment would operate at LOS E with the roadway widening to a 2.2C consistent with General Plan. The recommended mitigation measure for this impact would be to improve the road to 2.2C, install a traffic signal at the intersection of intersection of Old Highway 395 / W. Lilac Road, as well as constructing a left-turn lane at the westbound W. Lilac Road approach. The arterial analysis shown in **Appendix AQ** and summarized in **Table 6.7** below shows that the average travel speed along this segment would be LOS B.

[1]Although the improvement is included in the list of facilities to be improved from the currently approved TIF Program; it is anticipated that the currently approved TIF Program will be updated by the County to accommodate the land use changes that would result from the project's approval. This update would revise fee rates associated with adding the project's land uses to the program.

TABLE 6.7
ARTERIAL LEVEL OF SERVICE RESULTS AFTER MITIGATION
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Arterial	AM Peak Hour		PM Peak Hour	
	Speed (mph)	LOS	Speed (mph)	LOS
W. Lilac Road, between Old Highway 395 and Main Street	24.9	B	24.4	B

Source: Chen Ryan Associates; May 2014

In addition, traffic control along W. Lilac Road includes a number of roundabouts, with implementation of the project. It has been well documented by the La Jolla Bird Rock roundabouts 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 11,690 ADT for W. Lilac Road. A multi-purpose trail is also provided along the south side of W. Lilac Road and this will greatly improve safety and comfort for pedestrians and bicyclists. Therefore, the cumulative impact with the mitigation measure described above at the segment of W. Lilac Road, between Old Highway 395 and Main Street would be reduced to less than significant.

- *Gopher Canyon Road, between E. Vista Way and Little Gopher Canyon Road* – construct of this portion of the Gopher Canyon Road, to its Mobility Element 4.1B classification. The project contributes approximately 3.5 percent of the total trips to this road segment in the cumulative traffic condition. The cost of improving this 1.2 mile segment would be equivalent to approximately $7,097,000 per mile pursuant to the County of San Diego TIF Update Facilities Cost Analysis (2012). This resulting construction costs would total approximately $8.5M. The project's small contribution to the cumulative condition would not be proportional to the cost of mitigation of improving this segment of Gopher Canyon Road. Pursuant to CEQA, mitigation measures must be roughly proportional to the environmental impacts caused by the project. Therefore the legal feasibility of improving this segment as a mitigation measure is uncertain in that the cost of the improvements would not be reasonably related to the project's contribution of trips of 3.3 percent of the total trips and is not roughly proportional to the environmental impact caused by the project. There are no other feasible mitigation measures that would be comparable to mitigate the identified cumulative impact since the projected daily traffic volume along this segment would far exceed the threshold for a 2-lane roadway, thus the impact would remain significant and unavoidable.

- *Pankey Road, between Pala Mesa Drive and SR-76* - construct of this portion of the Pankey Road from Pala Mesa Drive to SR-76 to Mobility Element 4.2B classification. The improvement exceeds the General Plan Mobility Element classification designation of 2.1A for this road. This segment of Pankey Road is currently required to be improved as conditions of the previously approved Campus Park and Meadowood projects. Specifically, these projects have been conditioned to construct the roadway to its current Mobility Element Road Classification of 2.1A. The environmental impacts

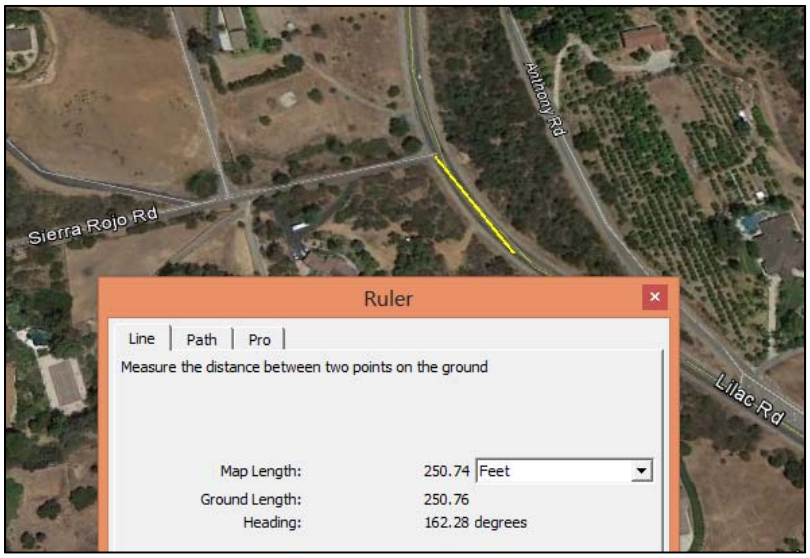
associated with the improvement of Pankey Road are described in the Campus Park EIR. The additional improvement to Mobility Element 4.2B classification is attributable to the project's cumulative contribution to cumulative impacts. The project contributes approximately 5.2 percent of the total trips to this road segment in the cumulative traffic condition. The cost of improving this 0.7 mile segment would be equivalent to $3,082,000 per mile pursuant to the County of San Diego TIF Update Facilities Cost Analysis (2012). The resulting construction costs would total $2.2M. The project's small contribution to the cumulative condition would not be proportional to the cost of mitigation of improving this segment of Panky Road. Pursuant to CEQA, mitigation measures must be roughly proportional to the environmental impacts caused by the project. Therefore the legal feasibility of improving this segment as a mitigation measure is uncertain in that the cost of the improvements would not be reasonably related to the project's contribution of trips of 5.2 percent of the total trips and is not roughly proportional to the environmental impact caused by the project. There are no other feasible mitigation measures that would be comparable to mitigate the identified cumulative impact since the projected daily traffic volume along this segment would far exceed the threshold for a 2-lane roadway, thus the impact would remain significant and unavoidable.

- *Lilac Road, between Old Castle Road and Anthony Road* - construct intermittent turn lanes at major access locations along Lilac Road, identified as 1) the segment between Robles Lane and Cumbres Road; and 2) the intersection at Sierra Rojo Road and Lilac Road.

  With the addition of left-turn lanes at these locations, left-turning vehicles would not impede through traffic moving in the same direction, resulting in the increase of roadway capacity and an improvement of traffic operations along Lilac Road. These improvements would allow the roadway to operate at LOS D or better.

  Should these improvements require additional grading outside the currently disturbed areas, potential impacts could result to surrounding biological and cultural resources. Pursuant to the County's vegetation mapping, the additional widening of Lilac Road necessary to add the turn lanes at the Robles Lane and Cumbres Road intersection could impact approximately 0.17 acre of chaparral. Impacts at Sierra Rojo and Lilac Road would affect approximately 0.14 acre of woodlands. Impacts to sensitive resources would be mitigated in accordance with the County's Biology Guidelines or relevant regulations. An additional mitigation measure would include a grading monitor to be present to assure the identification and proper handling of potential archeological resources that may be disturbed during grading of the limits of the road.





Intersections

The total traffic generated by anticipated cumulative projects and the project would result in cumulative impacts at eleven (11) of the study area intersections. Mitigation measure would be required to mitigate significant cumulative traffic impacts. Impacts to intersections within or connecting to roadway segments that are included in the list of facilities included in the County's TIF, and would be mitigated through payment of TIF fees. For facilities not included in the County's TIF program, specific mitigation measures are proposed. The following improvements would be required to mitigate the identified cumulative impacts:

- *E. Vista Way / Gopher Canyon Road* (County) – this intersection is a TIF facility, and the project applicant would be responsible for making TIF payments[2]. This cumulatively impacted intersection would be mitigated through payment of the TIF fee.

- *Old Highway 395 / W. Lilac Road* (County) – this intersection is a TIF facility, and the project applicant would be responsible for making TIF payments. (see footnote 2 below) This cumulatively impacted intersection would be mitigated through payment of the TIF fee.

- *I-15 SB Ramps / Old Highway 395* (Caltrans) – this intersection is a TIF facility, and the project applicant would be responsible for making TIF payments. (see footnote 2 below) This cumulatively impacted intersection would be mitigated through payment of the TIF fee.

- *I-15 NB Ramps / Old Highway 395* (Caltrans) – this intersection is a TIF facility, and the project applicant would be responsible for making TIF payments. (see footnote 2 below) This cumulatively impacted intersection would be mitigated through payment of the TIF fee.

- *I-15 SB Ramps / Gopher Canyon Road* (Caltrans) – this intersection is a TIF facility, and the project applicant would be responsible for making TIF payments. (see footnote 2 below) This cumulatively impacted intersection would be mitigated through payment of the TIF fee.

- *I-15 NB Ramps / Gopher Canyon Road* (Caltrans) – this intersection is a TIF facility, and the project applicant would be responsible for making TIF payments. (see footnote 2 below) This cumulatively impacted intersection would be mitigated through payment of the TIF fee.

- *SR-76 / Old Highway 395* (Caltrans) –convert the current northbound left-through-right shared lane to a northbound through lane, add one dedicated northbound left-turn lane and one dedicated northbound right-turn lane at the Old Highway 395 northbound approach, convert the current southbound left-through-right shared lane to a southbound through-right shared lane and add two dedicated southbound left-turn lanes at the Old Highway 395 southbound approach, convert the current eastbound through-right shared lane to an eastbound through lane, add one eastbound right-turn lane at the SR-76 approach and convert the current traffic signal phasing from northbound and southbound split phasing to a protected phase. This intersection is a Caltrans facility in which the County does not have jurisdiction. In addition, Caltrans does not have a plan or program in place where the project applicant could pay its fair-

[2]Although the improvement is included in the list of facilities to be improved from the currently approved TIF Program; it is anticipated that the currently approved TIF Program will be updated by the County to accommodate the land use changes that would result from the project's approval. This type of update would revise fee rates associated with adding the project's land uses to the program and would not be related to the improvements included in the program.

share towards the cost of such improvements. Therefore, mitigation is infeasible and the impacts would remain significant and unavoidable.

- *SR-76 / Pankey Road* (Caltrans) – signalization would be required at this intersection to mitigate cumulative traffic impacts. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA),* this intersection would meet both the "Minimum Vehicular Volume" and the "Interruption of Continuous Traffic" warrants. The signal warrant worksheet for this intersection is provided in **Appendix AR.** The following improvements would also be required to mitigate the impact: convert the current northbound left-through-right shared lane to a northbound through lane, add two dedicated northbound left-turn lanes, and one dedicated northbound right-turn lane at the Pankey Road approach, convert the current southbound left-through-right shared lane to a southbound through lane, add one dedicated southbound left-turn lane, and two dedicated southbound right-turn lanes with an overlap signal phasing at the Pankey Road approach, convert the current eastbound through-right shared lane to a through lane, add one dedicated eastbound left-turn lane and right-turn lane at the SR-76 EB approach, convert the current westbound through-right shared lane to a westbound through lane and add one westbound right-turn lane at the SR-76 WB approach. This intersection is a Caltrans facility in which the County does not have jurisdiction. In addition, Caltrans does not have a plan or program in place where the project applicant could pay its fair-share towards the cost of such improvements. Therefore, mitigation is infeasible and the impacts would remain significant and unavoidable.

- *Old Highway 395 / E. Dulin Road* (County) – signalization would be required at this intersection to mitigate the cumulative impacts. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA),* this intersection would meet both the "Minimum Vehicular Volume" and the "Interruption of Continuous Traffic" warrants. The signal warrant worksheet for this intersection is provided in Appendix AR. The project applicant would be responsible for constructing this improvement.

- *Old Highway 395 / Circle R Drive* (County) – signalization would be required at this intersection to mitigate the impacts. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA),* this intersection would meet both the "Minimum Vehicular Volume" and the "Interruption of Continuous Traffic" warrants. The signal warrant worksheet for this intersection is provided in Appendix AR. The project was also identified as causing a direct impact at this intersection under Existing Plus Project (Phase D) scenario and hence the project applicant would be responsible for the construction of this improvement.

- *Miller Road / Valley Center Road (County)* – signalization would be required at this intersection to mitigate the impacts. A traffic signal warrant was conducted. Based upon *California Manual of Uniformed Traffic Control Devices (MUTCD) 2012 Edition Figure 4C-103 (CA),* this intersection would meet the "Interruption of Continuous

Traffic" warrant. The signal warrant worksheet for this intersection is provided in Appendix AR. The project applicant would be responsible for constructing this improvement.

Table 6.8 displays level of service analysis results for the mitigated intersection under the Existing Plus Cumulative Project Plus Project conditions. Calculation worksheets for the intersection analysis are provided in **Appendix AS.**

TABLE 6.8
MITIGATED INTERSECTION LEVEL OF SERVICE
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Intersection	After Mitigation				Existing	
	AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM
	Delay (Sec.)	LOS	Delay (sec.)	LOS		
Non-TIF Intersection						
6. Old Highway 395 / SR-76	-	-	-	-	43.0 / 42.2	D / D
7. Pankey Road / SR-76	-	-	-	-	12.5 / 15.2	B / C
8. Old Highway 395 / E. Dulin Road	12.1	B	10.1	B	12.8 / 11.2	B / B
13. Old Highway 395 / Circle R Drive	14.2	B	26.4	C	20.4 / 22.5	C / C
24.Miller Road / Valley Center Road	5.6	A	7.3	A	16.9 / 25.0	C / D

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E or F.

As shown in Table 6.8, Old Highway 395 / SR-76 and Pankey Road / SR-76 are Caltrans facilities in which the County does not have jurisdiction. In addition, Caltrans does not have a plan or program in place where the project applicant could pay its fair-share towards the cost of such improvements. Therefore, mitigation is infeasible and the impacts would remain significant and unavoidable at these two intersections.

After implementation of the proposed mitigations, the other three impacted intersections would operate at acceptable LOS B or better during both the AM and PM peak hours under the cumulative traffic conditions.

Freeways

The total traffic generated by anticipated cumulative projects and the project would have cumulative impacts at the following eight (8) freeway segments:

- I-15, between the Riverside County Boundary and Old Highway 395;
- I-15, between Old Highway 395 and SR-76;
- I-15, between SR-76 and Old Highway 395;
- I-15, between Old Highway 395 and Gopher Canyon Road;

- I-15, between Gopher Canyon Road and Deer Springs Road;
- I-15, between Deer Springs Road and Centre City Parkway;
- I-15, between Centre City Parkway and El Norte Parkway; and
- I-15, between El Norte Parkway and SR-78.

According to the Regional Transportation Plan (RTP) 2050, I-15 between Riverside County Boundary and SR-78 is planned to be widened by adding four (4) toll lanes by 2050. However, no secured funding sources were identified, hence this improvement was not assumed in this study. In addition, I-15 (north of SR-78) mainline widening is not currently anticipated. As the necessary improvements are outside of jurisdiction and control of the County, and the agency with jurisdiction, Caltrans, has no funding program in place into which the project could pay its fair-share, the cumulative impacts would remain significant and unmitigable.

Table 6.9 summarizes potential cumulative impacts and recommended mitigation measures associated with anticipated cumulative projects and the proposed Lilac Hills Ranch project.

TABLE 6.9
IMPACT AND MITIGATION SUMMARY
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Impacted Facility	Mitigation Measures	
	Recommendation	Note
Roadway Segment		
Camino Del Rey, between Old River Road and W. Lilac Road	TIF Payments	-
Gopher Canyon Road, between Little Gopher Canyon Road and I-15 SB Ramps	TIF Payments	-
E. Vista Way, between SR-76 and Gopher Canyon Road	TIF Payments	-
E. Vista Way, between Gopher Canyon Road and Osborne Street	TIF Payments	-
Cole Grade Road, between Fruitvale Road and Valley Center Road	TIF Payments	-
W. Lilac Road, between Old Highway 395 and Main Street	• Improve to 2.2C • Install traffic signal at Old Highway 395 / W. Lilac Road and construct one left-turn lane at the westbound approach	Also identified as a direct impact under Existing Plus Project (Phase C) scenario - project applicant would be responsible for the construction of these improvements.
Gopher Canyon Road, between E. Vista Way and Little Gopher Canyon Road	Improve to 4.1B	Disproportionality – not feasible under CEQA, and the impact would remain significant and unavoidable.
Pankey Road, between Pala Mesa Drive and SR-76	Improve to 4.2B	Disproportionality – not feasible under CEQA, and the impact

TABLE 6.9
IMPACT AND MITIGATION SUMMARY
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Impacted Facility	Mitigation Measures	
	Recommendation	Note
		would remain significant and unavoidable.
Lilac Road, between Old Castle Road and Anthony Road	• provide intermittent turn lanes at major access locations along Lilac Road, identified as: 1) the segment between Robles Lane and Cumbres Road; and 2) the intersection at Sierra Rojo Road and Lilac Road	-
Intersection		
1. E. Vista Way / Gopher Canyon Road	TIF Payments	-
9. Old Highway 395 / W. Lilac Road	TIF Payments	Project to install traffic signal and +1WBL under Existing plus Project to mitigate direct impact.
10. I-15 SB Ramps / Old Highway 395	TIF Payments	-
11. I-15 NB Ramps / Old Highway 395	TIF Payments	-
14. I-15 SB Ramps / Gopher Canyon Road	TIF Payments	-
15. I-15 NB Ramps / Gopher Canyon Road	TIF Payments	-
6. Old Highway 395 / SR-76	• Conversion of NB L-T-R shared lane to NBT & +1NBL & +1NBR • Conversion of SB L-T-R shared lane to SB T-R shared lane & +2SBL • Conversion of EB T-R lane to EB T lane & +1EBR • Split to protected phase	Caltrans Facility - Significant and Unavoidable Impact
7. Pankey Road / SR-76	• Signalization • Conversion of NB L-T-R shared lane to NBT & +2NBL & +1NBR • Conversion of SB L-T-R shared lane to SBT & +1SBL & +2SBR (RTOL) • +1EBL; conversion of EB T-R shared lane to EBT & +1EBR • Conversion of WB T-R shared lane to WBT & +1WBR	Caltrans Facility - Significant and Unavoidable Impact
8. Old Highway 395 / E. Dulin Road	• Signalization	-
13. Old Highway 395 / Circle R Drive	• Signalization	Direct Impact – Project Improvement

TABLE 6.9
IMPACT AND MITIGATION SUMMARY
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT CONDITIONS

Impacted Facility	Mitigation Measures	
	Recommendation	Note
24. Miller Road / Valley Center Road	• Signalization	-
Two-Lane Highway		
None	-	-
Freeway		
I-15, between Riverside County Boundary and Old Highway 395	No feasible mitigation	No planned improvement - Significant and Unavoidable Impact
I-15, between Old Highway 395 and SR-76	No feasible mitigation	No planned improvement - Significant and Unavoidable Impact
I-15, between SR-76 and Old Highway 395	No feasible mitigation	No planned improvement - Significant and Unavoidable Impact
I-15, between Old Highway 395 and Gopher Canyon Road	No feasible mitigation	No planned improvement - Significant and Unavoidable Impact
I-15, between Gopher Canyon Road and Deer Springs Road	No feasible mitigation	No planned improvement - Significant and Unavoidable Impact
I-15, between Deer Springs Road and Centre City Parkway	No feasible mitigation	No planned improvement - Significant and Unavoidable Impact
I-15, between Centre City Parkway and El Norte Parkway	No feasible mitigation	No planned improvement - Significant and Unavoidable Impact
I-15, between El Norte Parkway and SR-78	No feasible mitigation	No planned improvement - Significant and Unavoidable Impact

Source: Chen Ryan Associates; May 2014

7.0 Site Access and On-Site Circulation

This chapter presents an assessment of transportation facilities providing access to the project. It also recommends functional classifications for all roadways internal to the project.

7.1 Site Access

As previously shown in Figure 3-1A, six (6) access points (study intersections #26 through #31) to the north are provided along Main Street to W. Lilac Road. Traffic controls consist of single-lane roundabouts at study intersections #26, 27, and 31, all-way stop controls in the one-way couplet at study intersections #28 and 29, and a one-way stop controlled T-intersection at study intersection #30. Main Street is anticipated to serve as the primary access for project trips.

Project access to the east is provided via Covey Lane to W. Lilac Road (study intersection #18, stop controlled). Covey Lane provides unrestricted access to community north of Covey Lane and a restricted access to the senior community to the southern portion of the project.

Project access to the south is provided via Mountain Ridge Road to Circle R Drive (study intersection #19, stop controlled). The Mountain Ridge Road Fire Station Alternative proposes to convert Mountain Ridge Road from a 2-lane private road with restricted access, to a public Rural Residential Collector (Local Public Road) at the beginning of Phase D (construction of Phase 5 of the project), as well as removing all access restriction (gates) along Lilac Hills Ranch Road.

Birdsong Drive, between Street "Z" and W. Lilac Road will serve as an interim secondary access route for the initial phase of Phase A (SFD-1 and SFD-2 as shown in Figure 1-3). After the construction of Main Street, between Street "Z" and W. Lilac Road, Birdsong Drive will be resumed as a private driveway for use by the owner of APN 128-280-56.

Based upon a review of the project site utilization plan and conditions in the field, the following comments on site access are offered:

- Sight distance analyses were conducted at the intersections of Mountain Ridge Road / Circle R Drive (southern project access) and Covey Lane / W. Lilac Road (eastern project access) by the project Civil Engineer, Landmark Consulting. Technical memorandums with findings and recommendations will be submitted under a separated cover, as attached in **Appendix AT**.
- The Project Civil Engineer, Landmark Consulting, will ensure that all proposed roundabouts are designed to meet applicable safety and design standards. Roundabout experts, Reid Middleton, provided a peer review (included as Appendix A) on the design and analysis of the proposed roundabouts.

- Based on the analyses in the previous sections, all project access intersections/roundabouts (#18, 19, and 26-31) would operate at acceptable Levels of Service under the various study scenarios.

7.2 On-Site Circulation

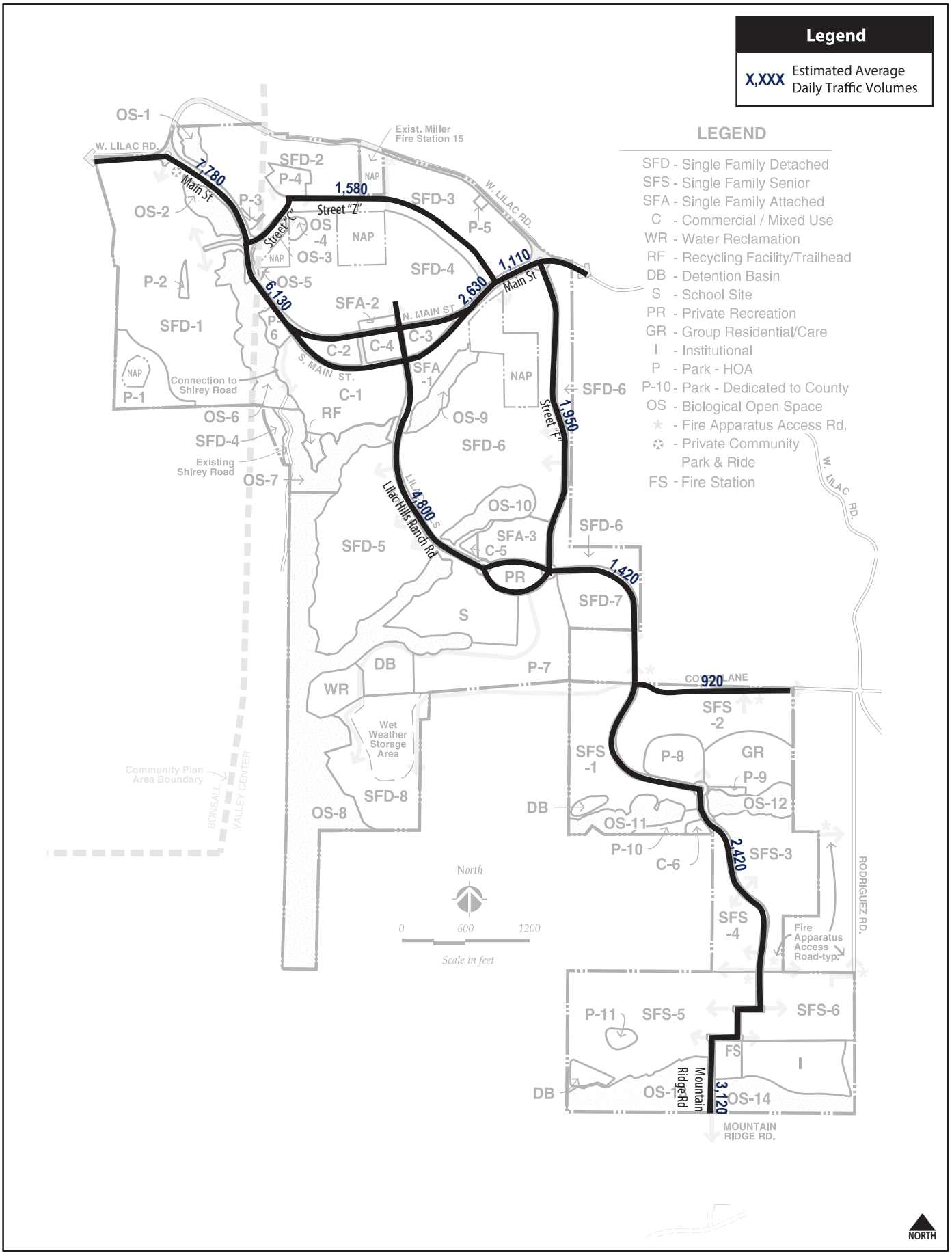
A system of private roads, including Main Street, Lilac Hills Ranch Road, Street "F", and Covey Lane, is proposed to provide site access and on-site circulation for Lilac Hills Ranch.

Main Street would serve as the primary access carrying approximately 6% to 51% (east to west) of the Fire Station Alternative trip, with the remaining Fire Station Alternative trips distributed along Mountain Ridge Road and Covey Lane at 21% and 6% respectively.

Based upon buildout of the project land uses and trip generation, ADT volumes were estimated for the internal roadway segments within the Lilac Hills Ranch project site. Project trips were distributed and assigned to the internal roadway system based on the location and characteristics of the proposed land uses.

Figure 7-1 displays the resulting internal roadway ADTs. As shown, Covey Lane, Street "F", as well as portions of Lilac Hills Ranch Road and Main Street would carry less than 2,500 estimated daily trips. The County's Private Road Design Standards Section 3.1 (D) states that *where it is determined that the number of trips per day on a particular road will exceed 2,500, the Director of Public Works may require that the road be dedicated and improved in conformance with the "County of San Diego Public Road Standards*".

In addition, the Director of Public Works has the discretion to approve private roads with higher design standards as noted in Section 1.2 of the County's Private Road Design Standards indicates that *the requirements set forth in these standards are considered minimum design standards. They may be exceeded at the option of the developer, subject to the approval of the Director of Public Works*.



Lilac Hills Ranch - Mountain Ridge Road
Fire Station Alternative

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Figure 7-1
Estimated Internal ADTs

The following roads are projected to carry more than the threshold of 2,500 ADT and are designed to exceed all minimum private road design standards in terms of road surfacing width, ROW, paved shoulders width, minimum curve radius, and maximum desirable grade:

- Main Street, between W. Lilac Road and Street "C" – 7,780 ADT;
- Main Street, between Street "C" and Lilac Hills Ranch Road – 6,130 ADT;
- Main Street, between Lilac Hills Ranch Road and Street "Z" – 2,630 ADT; and
- Lilac Hills Ranch Road, between Main Street and Street "F" – 4,800 ADT.

Arterial speed analysis was conducted for Main Street and Lilac Hills Ranch Road and **Table 7.1** summarizes the results. Highway Capacity Software (HCS) 2000 developed by McTrans was employed for this analysis. The HCS arterial analysis methodology is based upon Chapter 15 of the Highway Capacity Manual (HCM) 2000, which determines average travel speed and facility level of service according to roadway functional classification and characteristics. The respective analysis worksheets are included in **Appendix AU**.

TABLE 7.1
INTERNAL ROADWAY ARTERIAL LEVEL OF SERVICE RESULTS

Arterial	ADT	Free-Flow Speed (mph)	AM Peak Hour		PM Peak Hour	
			Travel Speed (mph)	LOS	Travel Speed (mph)	LOS
Main Street, between W. Lilac Road and Street "F"	7,780	30	24.0	B	23.4	B
Lilac Hills Ranch Road, between Main Street and Street "F"	4,800	30	24.2	B	18.8	C

Source: Chen Ryan Associates; May 2014

Note:
*The estimated daily traffic volumes along this facility range from 1,340 to 7,780, and the 7,780 ADT used in this analysis represents the highest volume and the worst case scenario.

As shown in the table, both Main Street and Lilac Hills Ranch Road would operate at LOS C or better at project buildout.

In addition to the operational arterial analysis, **Table 7.2** was created to compare the design features of all on-site circulation/spine roads (private) to the County's private and public road standards.

TABLE 7.2
ON-SITE CIRCULATION / SPINE ROADS DESIGN FEATURES

Road	Classification / ADT	# Lanes / Lane Width	Road Surfacing Width	ROW/ Esmt. Width	Paved Shoulders (# / Width)	Min. Curve Radius	Max. Desirable Grade	Design Speed (mph)
Standard	Private / 2,500	2 / 12'	24'	28'	-	200'	20%	30
Standard	Rural Residential Collector (LPR) / 4,500	2 / 12'	40'	60'	2 / 8'	300'	12%	30
Standard	2.3C / 7,000	2 / 12'	40'	68'	2 / 8'	350'	12%	35
Standard	2.2F / 8,700	2 / 12'	28'	52'	2 / 2'	500'	9%	40
Standard	2.2E / 10,900	2 / 12'	40'	64'	2 / 8'	500'	9%	40
Main Street (excluding couplet)	Private / 1,040-7,780	2 / 12'	40'–45'	51'-72'	5'*	500'	9%	30
Lilac Hills Ranch Road (north of the couplet)	Private / 4,800	2 / 12'	26'–40'	40'-60'	0'-8'	500'	9%	30
Lilac Hills Ranch Road (St "F" to Covey Ln)	Private / 1,420	2 /12'	26'–40'	40'-60'	0'-8'	300'	10%	30
Lilac Hills Ranch Road (Covey Ln to Mountain Ridge Rd)	Private / 2,420	2 /12'	26'–40'	40'-60'	0'-8'	300'	10%	30
Street "F"	Private / 1,950	2 / 12'	25'-37'	26.5'-38.5'	0'-8'	300'	15%	25-30
Street "Z"	Private / 1,580	2 / 12'	25'-37'	26.5'-38.5'	0'-8'	300'	15%	25-30
Covey Lane (within project boundary)	Private / 920	2 / 12'	24'	26'-40'	0'-8'	200'	15%	25-30
Covey Lane (project boundary to WLR)	IOD / 1,250	2 / 12'	29'	60'-74'	2 / 2'	1,000'	6.2%	30

Source: Landmark Consulting, Chen Ryan Associates; May 2014

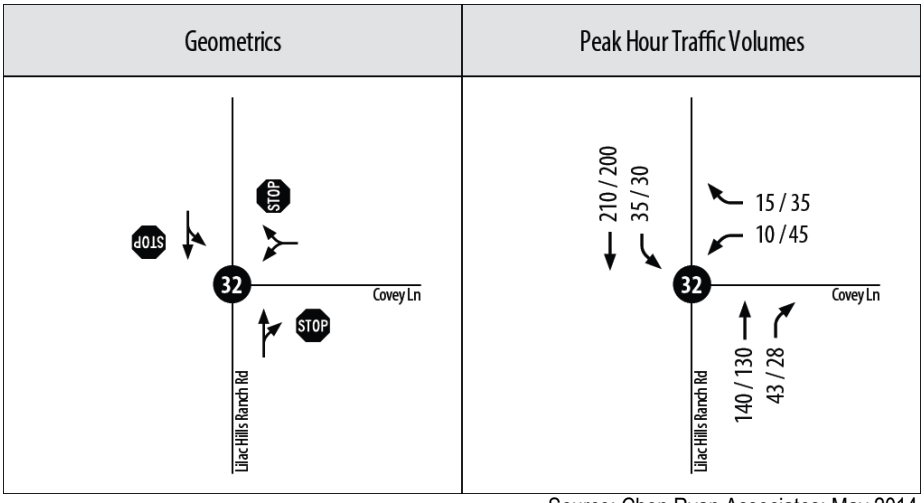
Note:
*5' bike lane which is also counts as shoulder.

As shown, Lilac Hills Ranch Road south of Street "F", Street "F", Covey Lane, and Mountain Ridge Road meet and exceed all private road design requirements with estimated ADTs of 2,500 or less.

Main Street and Lilac Hills Ranch Road north of Street "F" generally (with lower design speed) meet the design standards of 2.2E facilities, which have a capacity of 16,200 ADT (LOS D thresholds of 10,900 ADT). It is the project vision and desire to slow down traffic both through traffic calming measures (i.e. roundabouts) and design features (i.e. design speed) in the

proposed town center and within the vicinity of the school and parks where high pedestrian activity is anticipated and encouraged.

Additionally, the intersection of Lilac Hills Ranch Road/Covey Lane was analyzed as an All-Way Stop Controlled (AWSC) intersection to ensure an acceptable LOS within the project site. The figure below displays the Lilac Hills Ranch Road/Covey Lane intersection geometrics as well as peak hour traffic volumes.



Source: Chen Ryan Associates; May 2014

Table 7.3 displays the intersection delay and LOS under the project buildout conditions. Level of service calculation worksheets are provided in **Appendix AV**.

TABLE 7.3
PEAK HOUR INTERSECTION LEVEL OF SERVICE RESULTS
LILAC HILLS RANCH ROAD/COVEY LANE

Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
Lilac Hills Ranch Road / Covey Lane	AWSC	8.7	A	8.7	A

Source: Chen Ryan Associates; May 2014

As shown in Table 7.3, the intersection of Lilac Hills Ranch Road / Covey Lane would operate at acceptable LOS A during both the AM and PM peak hours.

Table 7.4 displays the projected daily volumes for Covey Lane, which is a private road, which provides access to the proposed Lilac Hills Ranch Project.

TABLE 7.4
COVEY LANE AND MOUNTAIN RIDGE ROAD

Facility	Estimated ADT	Capacity*
Covey Lane	1,390	2,500

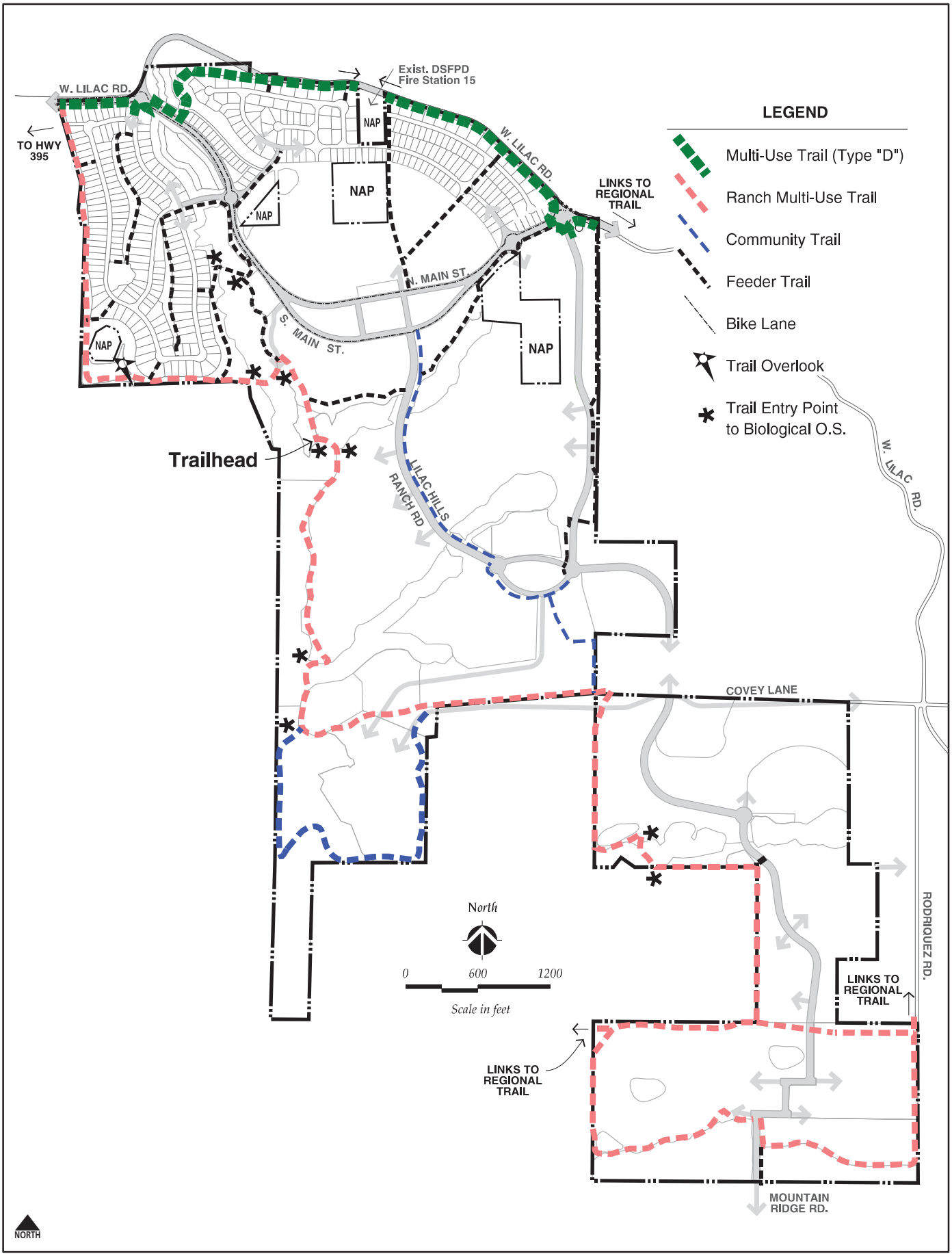
Source: Chen Ryan Associates; May 2014

Notes:
*The capacity is based on the County Private Road Standards with observed travel speed. Observed speed is based on speed survey conducted by NDS included in Appendix D.

8.0 Hazards to Pedestrians and Bicyclists

Lilac Hills Ranch currently has two east-west public trail segments, one along the northern boundary of the project site (W. Lilac Road) and the other along the most southern portion of the project. In addition to the two public trails, the Lilac Hills Ranch project proposes developing a system of multi-purpose trails that traverse the project site, linking the northern and southern public trails. The Lilac Hills Ranch's multi-purpose trails network will provide connectivity to parks, private recreation, schools, and commercial areas within the project site. The multi-purpose trail network is proposed as a combination of smaller feeder and natural trails in the open space area of Lilac Hills Ranch, and an 8-foot community pathway that traverses the project site providing connectivity to the existing County Regional Trail System. All trails should 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 and bicyclists. A map of the proposed trail network is displayed in **Figure 8-1**.

In addition to the trails system, a number of roundabouts are proposed along W. Lilac Road and Main Street. 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. The Project Civil Engineer, Landmark Consulting, will ensure that all proposed roundabouts are designed to meet applicable safety and design standards.



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 8-1
Trails Plan

9.0 General Plan Consistency Analyses

This chapter discusses the correlation between the General Plan Land Use Element and Mobility Element at build-out of the Land Use Element as amended by the project. Although a build-out analysis is not needed to evaluate project impacts under CEQA, projects that involve a general plan amendment must provide such an analysis as required by the County's Guidelines for Determining Significance, as modified on August 24, 2011. The purpose of the Buildout Analysis provided in Chapter 9 is to determine whether the proposed land use changes are consistent with the County's Circulation Element.

Mobility Element Policy 2.1 acknowledges that the preservation of valuable resources may outweigh the benefits of road improvements. Therefore, a lower LOS along specified roadways may be acceptable. Table M-4 of the Mobility Element identifies the deficient roadways and describes the rationale for accepting deficient roadway segments. Policy 2.1 requires development projects to provide associated road improvements necessary to achieve a level of service of "D" or higher on all Mobility Element roads except for those where a failing level of service has been accepted by the County pursuant to the specified criteria. The applicable situations for accepting a road classification where a LOS E or F is forecast includes those instances when the adverse impacts of adding travel lanes do not justify the resulting benefit of increased traffic capacity. This would include the following relevant situations:

- When marginal deficiencies are characterized along a short segment of a road and classifying the road with a designation that would add travel lanes for the entire road would be excessive; or

- When adding travel lanes to a road that would adversely impact environmental and cultural resources or in areas with steep slopes where widening roads would require massive grading, which would result in adverse environmental impacts and other degradation of the physical environment.

This chapter provides two plan-to-plan analyses assessing potential traffic impacts to the County's General Plan Mobility Element roadways due to changes in the project's land use, density, intensity, and/or network proposals. In addition to the project land uses described in Chapter 4, *the Lilac Hills Ranch project also proposes to downgrade W. Lilac Road, between Main Street (the most western project roundabout) and the planned Road 3 from 2.2C to 2.2F*. The two plan-to-plan analyses include comparisons of, first, the project and the currently adopted GP Mobility Element (with Road 3); and second, the project and the "Without Road 3" network. The purpose of these analyses is to determine whether the land use and network changes proposed by this project can be supported by the County's Mobility Element.

9.1 Horizon Year Roadway Network and Traffic Volumes

The Horizon Year roadway network is based on the County's General Plan Mobility Element, with the alternatives of Road 3 in or out, to reflect the currently adopted General Plan (with Road 3) and the "Without Road 3" network **Figure 9-1** displays the Horizon Year roadway geometrics.

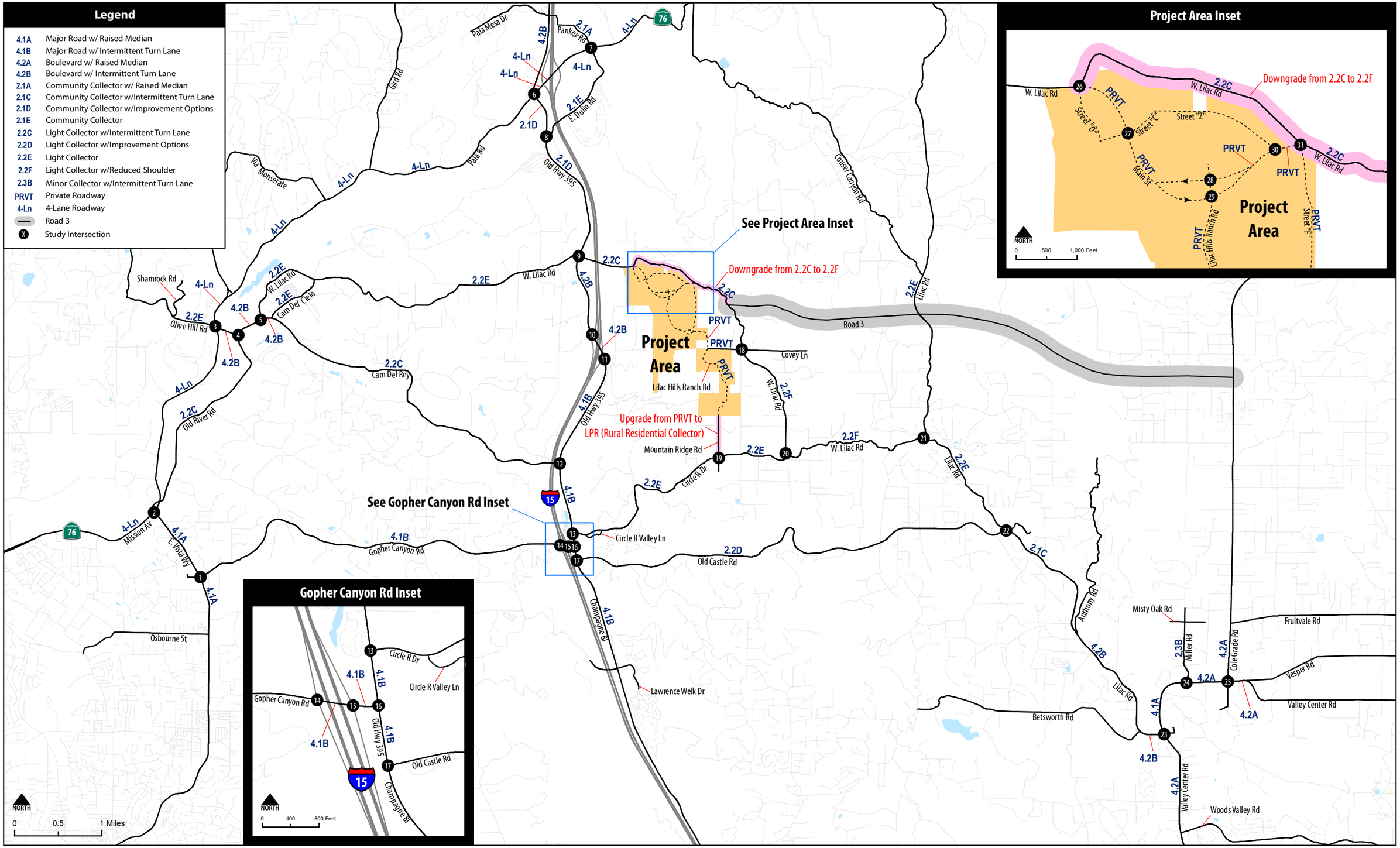
SANDAG traffic model forecasts are required for the Horizon Year analysis. The current Series 12 Regional Transportation Model, yet to be calibrated or validated at the community plan level for the unincorporated County of San Diego, has been found to generate forecast roadway average daily traffic (ADT) volumes that are significantly different from those illustrated in the recently adopted General Plan Update Mobility Element (Series 10). Unfortunately, the Series 10 County GPU Model is no longer available for our use. In order to utilize the best available and most defensible data for the CEQA-level traffic analysis, the following approach was utilized and approved by both the County of San Diego and Caltrans for developing the Horizon Year volumes:

County Facilities

- Utilize the Series 10 GPU 2030 model forecast ADT as a starting point – horizon year 2030 base volumes.
- Conduct "Select Zone" assignments for the proposed Lilac Hills Ranch project using the Series 12 Regional Transportation Model. Project trip distribution and assignment, as well as the potential study area, were derived from these "Select Zone" assignments.
- Compare the trip generation between the adopted and proposed land uses for the subject TAZs.
- The difference in trip generation between the adopted and proposed land uses, along with the project distribution from the Select Zone assignments mentioned above, were used to derive 2030 ADTs for the project.

Caltrans Facilities

- Utilize forecast ADTs from Year 2050 of the Series 12 Regional Transportation Model as adopted in the 2050 RTP. While this regional model is not calibrated at the arterial and local street level, it is calibrated and approved for use at the state facility level.
- The difference in trip generation (between the adopted and proposed land uses for the subject TAZs), along with the project distribution (from the Series 12 "Select Zone" assignments) was used to derive the Horizon Year with project freeway/state highway segment ADTs.



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 9-1
Roadway Geometrics - Horizon Year Conditions

9.2 Horizon Year with Road 3 Traffic Conditions

The following two (2) scenarios are discussed in this section:

- Horizon Year Base Conditions with Road 3
- Horizon Year Base Plus Project Conditions with Road 3

Level of service analyses under the Horizon Year conditions with Road 3 were conducted using the methodologies described in Chapter 2.0. At the County's request, intersection analysis was not conducted under Horizon Year scenarios. Roadway and freeway segment level of service results are discussed separately below.

9.2.1 Horizon Year Base with Road 3

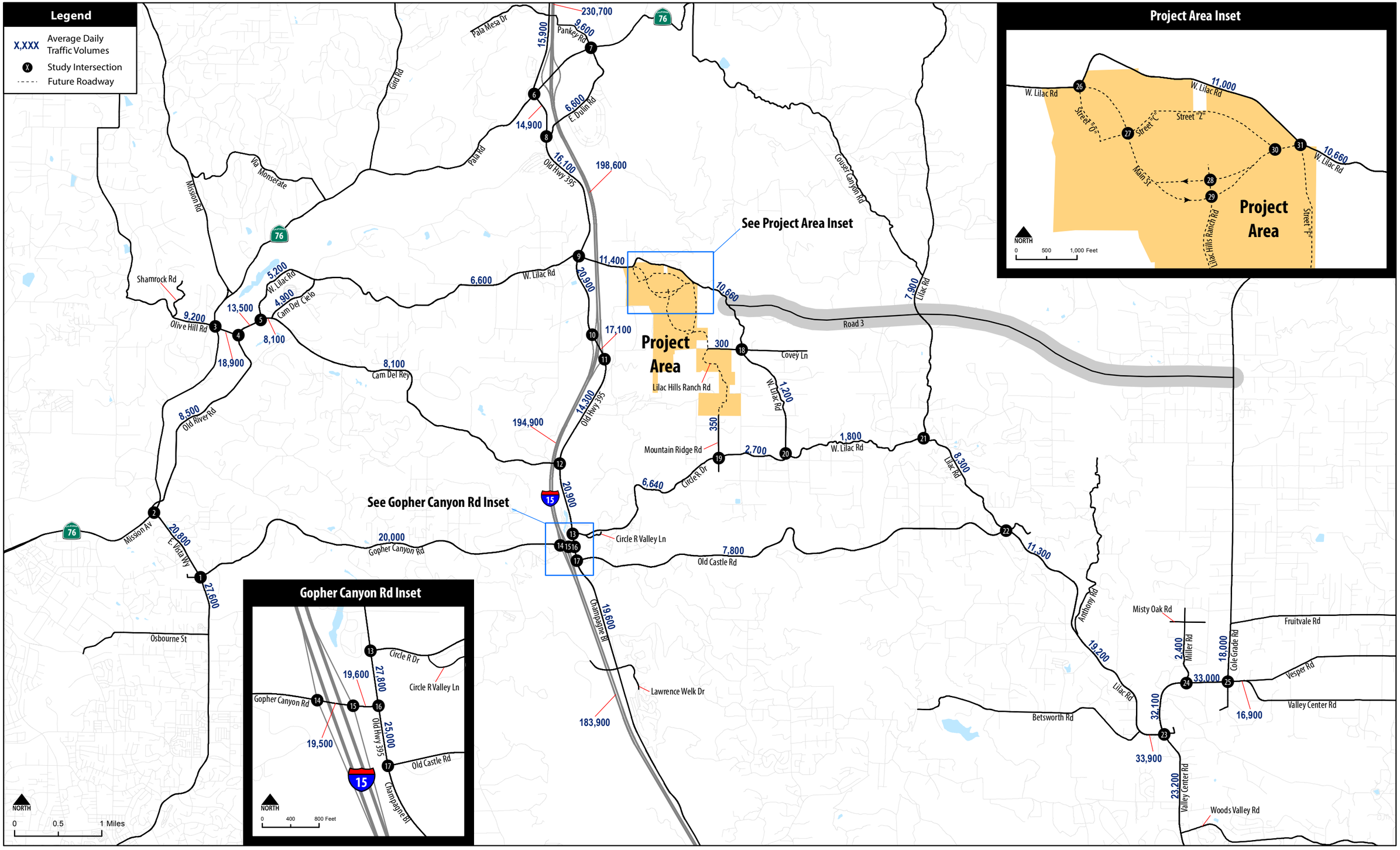
Average daily traffic volumes on study area roadway segments are displayed in **Figure 9-2**.

Roadway Segment Analysis

Table 9.1 displays the level of service analysis results for key roadway segments under Horizon Year Base Conditions with Road 3.

As shown in Table 9.1, the following four (4) study area roadway segments are projected to operate at substandard LOS E/F under Horizon Year Base conditions with Road 3:

- Old Highway 395, between SR-76 and E. Dulin Road – LOS E, and the County General Plan Update has accepted LOS E/F operations along this segment;
- Old Highway 395, between E. Dulin Road and W. Lilac Road – LOS E;
- Lilac Road, between New Road 19 (east of Betsworth Road) and Valley Center Road – LOS F, and the County General Plan Update has accepted LOS E/F operations along this segment; and
- Valley Center Road, between Miller Road and Indian Creek Road – LOS F, and the County General Plan Update has accepted LOS E/F operations along this segment.



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 9-2
Roadway Average Daily Traffic Volumes - Horizon Year Base Conditions with Road 3

TABLE 9.1
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE CONDITIONS
(with Road 3)

Roadway	From	To	Classification	LOS Threshold (LOS D)	Average Daily Traffic (ADT)	Level of Service (LOS)
E. Dulin Road	Old Highway 395	SR-76	2.1E	10,900	6,600	C
W. Lilac Road	Camino Del Rey	Camino Del Cielo	2.2E	10,900	5,200	C
W. Lilac Road	Camino Del Cielo	Old Highway 395	2.2E	10,900	6,600	C
W. Lilac Road	Old Highway 395	Main Street	2.2C	13,500	11,400	D
W. Lilac Road	Main Street	Street "F"	2.2C	13,500	11,000	D
W. Lilac Road	Street "F"	Road 3	2.2C	13,500	8,200	C
W. Lilac Road	Road 3	Covey Lane	2.2F	8,700	1,200	A
W. Lilac Road	Covey Lane	Circle R Drive	2.2F	8,700	1,200	A
W. Lilac Road	Circle R Drive	Lilac Road	2.2F	8,700	1,800	A
Camino Del Cielo	Camino Del Rey	W. Lilac Road	2.2E	10,900	4,900	C
Olive Hill Road	Shamrock Road	SR-76	2.2E	10,900	9,200	D
Camino Del Rey	SR-76	Old River Road	4.2B	25,000	18,900	B
Camino Del Rey	Old River Road	W. Lilac Road	4.2B	25,000	13,500	A
Camino Del Rey	W. Lilac Road	Camino Del Cielo	4.2B	25,000	8,100	A
Camino Del Rey	Camino Del Cielo	Old Highway 395	2.2C	13,500	8,100	C
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	4.1B	30,800	20,000	B
Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	4.1B	30,800	19,500	B
Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	4.1B	30,800	19,600	B
Circle R Drive	Old Highway 395	Mountain Ridge Road	2.2E	10,900	7,100	D
Circle R Drive	Mountain Ridge Road	W. Lilac Road	2.2E	10,900	2,700	B
Old Castle Road	Old Highway 395	Lilac Road	2.2D	13,500	7,800	C
E. Vista Way	SR-76	Gopher Canyon Road	4.1A	33,400	20,800	B
E. Vista Way	Gopher Canyon Road	Osborne Street	4.1A	33,400	27,600	C
Old River Road	SR-76	Camino Del Rey	2.2C	13,500	8,500	C
Old Highway 395	Pala Mesa Drive	SR-76	4.2B	25,000	15,900	A

TABLE 9.1
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE CONDITIONS
(with Road 3)

Roadway	From	To	Classification	LOS Threshold (LOS D)	Average Daily Traffic (ADT)	Level of Service (LOS)
Old Highway 395	SR-76	E. Dulin Road	2.1D	13,500	14,900	E accepted at LOS E/F
Old Highway 395	E. Dulin Road	W. Lilac Road	2.1D	13,500	16,100	E
Old Highway 395	W. Lilac Road	I-15 SB Ramps	4.2B	25,000	20,900	C
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	4.2B	25,000	17,100	B
Old Highway 395	I-15 NB Ramps	Camino Del Rey	4.1B	30,800	14,300	B
Old Highway 395	Camino Del Rey	Circle R Drive	4.1B	30,800	20,900	B
Old Highway 395	Circle R Drive	Gopher Canyon Road	4.1B	30,800	27,800	D
Old Highway 395	Gopher Canyon Road	Old Castle Road	4.1B	30,800	25,000	C
Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	4.1B	30,800	19,600	B
Pankey Road	Pala Mesa Drive	SR-76	2.1A	15,000	9,600	A
Lilac Road	Couser Canyon Road	W. Lilac Road	2.2E	10,900	7,900	D
Lilac Road	W. Lilac Road	Old Castle Road	2.2E	10,900	8,300	D
Lilac Road	Old Castle Road	Anthony Road	2.1C	13,500	11,300	D
Lilac Road	Anthony Road	New Road 19 (east of Betsworth Road)	4.2B	25,000	19,200	B
Lilac Road	New Road 19 (east of Betsworth Road)	Valley Center Road	4.2B	25,000	33,900	F accepted at LOS E/F
Valley Center Road	Woods Valley Road	Lilac Road	4.2A	27,000	23,200	C
Valley Center Road	Lilac Road	Miller Road	4.1A	33,400	32,100	D
Valley Center Road	Miller Road	Indian Creek Road	4.2A	27,000	33,000	F accepted at LOS E/F
Valley Center Road	Indian Creek Road	Cole Grade Road	4.2A	27,000	23,790	C

TABLE 9.1
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE CONDITIONS
(with Road 3)

Roadway	From	To	Classification	LOS Threshold (LOS D)	Average Daily Traffic (ADT)	Level of Service (LOS)
Valley Center Road	Cole Grade Road	Vesper Road	4.2A	27,000	16,900	A
Miller Road	Misty Oak Road	Valley Center Road	2.3B	8,000	2,400	A
Cole Grade Road	Fruitvale Road	Valley Center Road	4.2A	27,000	18,000	B

Source: Chen Ryan Associates; May 2014

Note:
Bold letter indicates unacceptable LOS E or F.

Freeway Segment Analysis

The freeway segment level of service analysis was performed utilizing the methodology presented in Chapter 2.0. **Table 9.2** displays the resulting level of service for I-15 under Horizon Year Base conditions with Road 3. It should be noted that according to the 2050 RTP, I-15 between the Riverside County Boundary and SR-78 is planned to be widened by adding four (4) toll lanes by 2050. However, no secured funding sources were identified, hence this improvement was not assumed in this study.

As shown in the table, the following ten (10) freeway segments along I-15 are projected to operate at substandard LOS E or F under Horizon Year Base conditions with Road 3:

- I-15, between the Riverside County Boundary and Old Highway 395 – LOS F;
- I-15, between Old Highway 395 and SR-76 – LOS F;
- I-15, between SR-76 and Old Highway 395 – LOS F;
- I-15, between Old Highway 395 and Gopher Canyon Road – LOS F;
- I-15, between Gopher Canyon Road and Deer Springs Road – LOS F;
- I-15, between Deer Springs Road and Centre City Parkway – LOS F;
- I-15, between Centre City Parkway and El Norte Parkway – LOS F;
- I-15, between El Norte Parkway and SR-78 – LOS F;
- I-15, between SR-78 and W Valley Parkway – LOS E; and
- I-15, between Via Rancho Parkway and Bernardo Drive – LOS F.

9.2.2 Horizon Year Base Plus Project with Road 3

Average daily traffic volumes on study area roadway segments are displayed in **Figure 9-3**.

TABLE 9.2
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE CONDITIONS
(with Road 3)

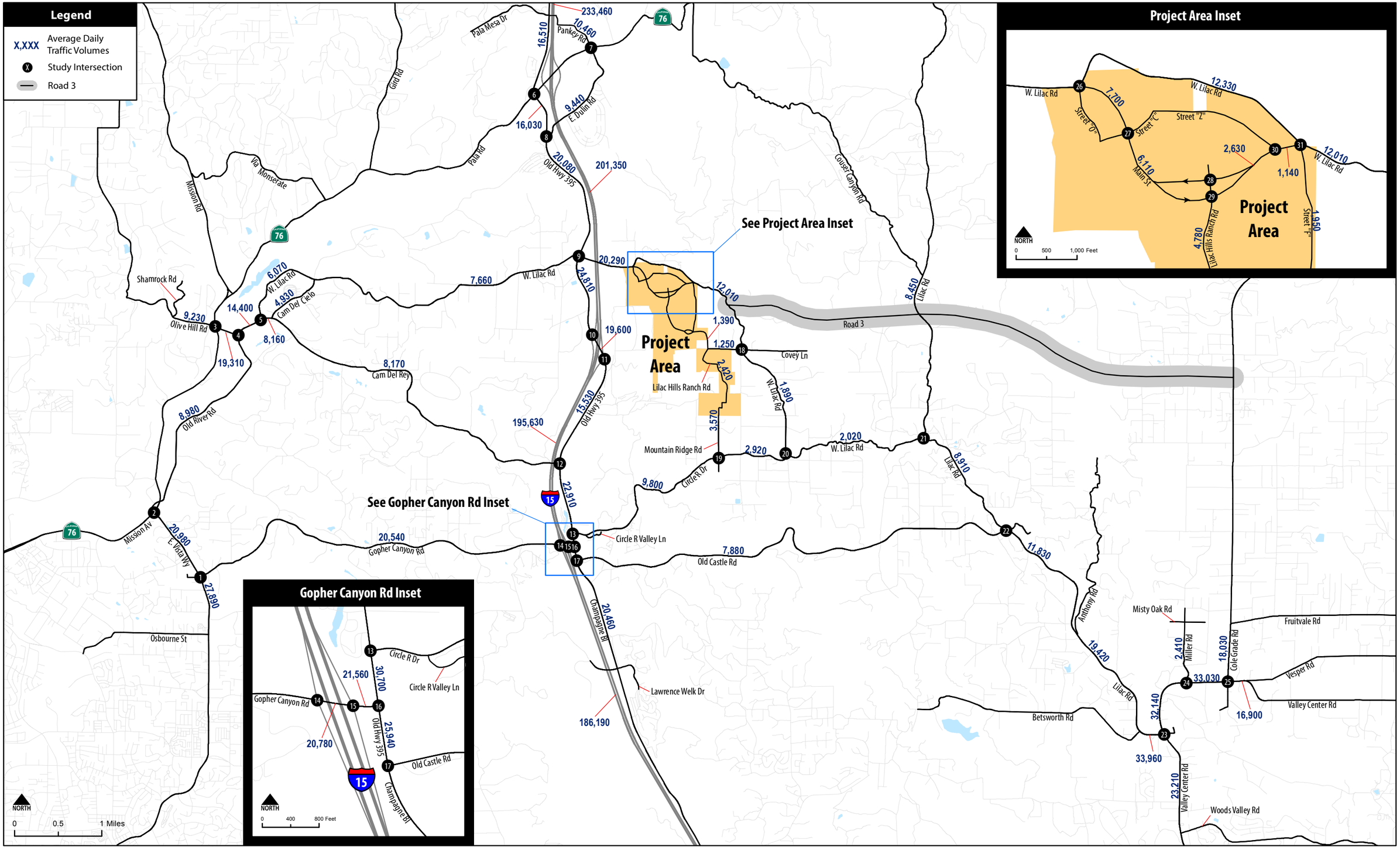
Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	Peak Hour Factor (PHF)	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS
I-15	Riverside County Boundary to Old Highway 395	267,800	8.4%	22,624	0.64	4	0.95	6.75%	3,911	1.664	F
I-15	Old Highway 395 to SR-76	230,700	7.4%	17,162	0.73	4	0.95	6.75%	3,415	1.453	F
I-15	SR-76 to Old Highway 395	198,600	7.8%	15,534	0.69	4	0.95	8.40%	2,920	1.243	F
I-15	Old Highway 395 to Gopher Canyon Road	194,900	8.1%	15,740	0.67	4	0.95	8.40%	2,882	1.226	F
I-15	Gopher Canyon Road to Deer Springs Road	183,900	8.1%	14,852	0.67	4	0.95	13.20%	2,782	1.184	F
I-15	Deer Springs Road to Centre City Parkway	178,700	8.0%	14,357	0.66	4	0.95	13.20%	2,676	1.139	F
I-15	Centre City Parkway to El Norte Parkway	169,200	8.0%	13,594	0.66	4	0.95	13.20%	2,534	1.078	F
I-15	El Norte Parkway to SR-78	193,600	7.9%	15,238	0.66	4	0.95	10.00%	2,799	1.191	F
I-15	SR-78 to W Valley Parkway	288,800	8.1%	23,504	0.60	5+2ML	0.95	10.00%	2,226	0.947	E
I-15	W Valley Parkway to Auto Parkway	281,300	8.1%	22,893	0.60	5+2ML	0.95	10.00%	2,168	0.923	D
I-15	Auto Parkway to W Citracado Parkway	276,100	7.8%	21,413	0.60	5+2ML	0.95	10.00%	2,016	0.858	D
I-15	W Citracado Parkway to Via Rancho Parkway	279,100	7.8%	21,646	0.60	5+2ML	0.95	7.00%	2,009	0.855	D
I-15	Via Rancho Parkway to Bernardo Drive	392,100	7.4%	28,857	0.58	5+2ML	0.95	7.00%	2,598	1.105	F

TABLE 9.2
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE CONDITIONS
(with Road 3)

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	Peak Hour Factor (PHF)	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS
I-15	Bernardo Drive to Rancho Bernardo Road	261,100	7.4%	19,216	0.58	5+2ML	0.95	7.00%	1,730	0.736	C
I-15	Rancho Bernardo Road to Bernardo Center Drive	300,500	7.3%	22,063	0.54	5+2ML	0.95	7.00%	1,840	0.783	C
I-15	Bernardo Center Drive to Camino Del Norte	269,300	7.3%	19,772	0.54	5+2ML	0.95	7.00%	1,649	0.702	C

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E or F.
ML = Managed Lane.



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 9-3

Roadway Average Daily Traffic Volumes - Horizon Year Base Plus Project Conditions with Road 3

Roadway Segment Analysis

Table 9.3 displays the level of service analysis results for key roadway segments under Horizon Year Base Plus Project conditions with Road 3. Note that the Lilac Hills Ranch project proposes downgrading W. Lilac Road, between Main Street and the planned Road 3 from 2.2C to 2.2F.

As shown in the table, the following eight (8) roadway segments are projected to operate at substandard LOS E or F:

- W. Lilac Road, between Old Highway 395 and Main Street – LOS F, and the project would add more than 100 daily trips.
- W. Lilac Road, between Main Street and Street "F" – LOS F, and the project would add more than 100 daily trips.
- W. Lilac Road, between Street "F" and Road 3 – LOS F, and the project would add more than 100 daily trips.
- Old Highway 395, between SR-76 and E. Dulin Road – LOS E, and the project would add more than 200 daily trips. The County General Plan Update has accepted LOS E/F operations along this segment.
- Old Highway 395, between E. Dulin Road and W. Lilac Road – LOS F, and the project would add more than 100 daily trips.
- Old Highway 395, between W. Lilac Road I-15 SB Ramps – LOS E, and the project would add more than 400 daily trips.
- Lilac Road, between New Road 19 (east of Betsworth Road) and Valley Center Road – LOS F, and the project would add less than 200 daily trips. In addition, the County General Plan Update has accepted LOS E/F operations at this segment.
- Valley Center Road, between Miller Road and Indian Creek Road – LOS F, and the project would add less than 200 daily trips. In addition, the County General Plan Update has accepted LOS E/F operations at this segment.

The additional traffic generated by the Lilac Hills Ranch project would result in GP inconsistencies to 6 out 8 of the roadway segments identified above and there include:

- W. Lilac Road, between Old Highway 395 and Main Street;
- W. Lilac Road, between Main Street and Street "F";
- W. Lilac Road, between Street "F" and Road 3;
- Old Highway 395, between SR-76 and E. Dulin Road;
- Old Highway 395, between E. Dulin Road and W. Lilac Road; and
- Old Highway 395, between W. Lilac Road and I-15 SB Ramps.

TABLE 9.3
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(with Road 3)

Roadway	From	To	Horizon Year with Project				Horizon Year w/o Project		Project ADT	GP Inconsistency ?
			Classification	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
E. Dulin Road	Old Highway 395	SR-76	2.1E	10,900	9,440	D	6,600	C	2,840	No
W. Lilac Road	Camino Del Rey	Camino Del Cielo	2.2E	10,900	6,070	C	5,200	C	870	No
W. Lilac Road	Camino Del Cielo	Old Highway 395	2.2E	10,900	7,660	D	6,600	C	1,060	No
W. Lilac Road	Old Highway 395	Main Street	2.2C	13,500	20,290	F	11,400	D	8,890	*Yes > 100ADT*
W. Lilac Road	Main Street	Street "F"	2.2F*	8,700	12,330	F	11,000	D	1,330	*Yes > 100ADT*
W. Lilac Road	Street "F"	Road 3	2.2F*	8,700	12,230	F	11,000	D	1,230	*Yes > 100ADT*
W. Lilac Road	Road 3	Covey Lane	2.2F	8,700	9,430	A	1,200	A	1,230	No
W. Lilac Road	Covey Lane	Circle R Drive	2.2F	8,700	1,890	A	1,200	A	690	No
W. Lilac Road	Circle R Drive	Lilac Road	2.2F	8,700	2,020	A	1,800	A	220	No
Camino Del Cielo	Camino Del Rey	W. Lilac Road	2.2E	10,900	4,930	C	4,900	C	30	No
Olive Hill Road	Shamrock Road	SR-76	2.2E	10,900	9,230	D	9,200	D	30	No
Camino Del Rey	SR-76	Old River Road	4.2B	25,000	19,310	B	18,900	B	410	No
Camino Del Rey	Old River Road	W. Lilac Road	4.2B	25,000	14,400	A	13,500	A	900	No
Camino Del Rey	W. Lilac Road	Camino Del Cielo	4.2B	25,000	8,160	A	8,100	A	60	No
Camino Del Rey	Camino Del Cielo	Old Highway 395	2.2C	13,500	8,170	C	8,100	C	70	No

TABLE 9.3
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(with Road 3)

Roadway	From	To	Horizon Year with Project				Horizon Year w/o Project		Project ADT	GP Inconsistency ?
			Classification	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	4.1B	30,800	20,540	B	20,000	B	540	No
Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	4.1B	30,800	20,780	B	19,500	B	1,280	No
Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	4.1B	30,800	21,560	B	19,600	B	1,960	No
Circle R Drive	Old Highway 395	Mountain Ridge Road	2.2E	10,900	9,800	D	7,100	D	2,700	No
Circle R Drive	Mountain Ridge Road	W. Lilac Road	2.2E	10,900	3,350	B	2,700	B	650	No
Old Castle Road	Old Highway 395	Lilac Road	2.2D	13,500	7,880	C	7,800	C	80	No
E. Vista Way	SR-76	Gopher Canyon Road	4.1A	33,400	20,980	B	20,800	B	180	No
E. Vista Way	Gopher Canyon Road	Osborne Street	4.1A	33,400	27,890	C	27,600	C	290	No
Old River Road	SR-76	Camino Del Rey	2.2C	13,500	8,980	C	8,500	C	480	No
Old Highway 395	Pala Mesa Drive	SR-76	4.2B	25,000	16,510	A	15,900	A	610	No
Old Highway 395	SR-76	E. Dulin Road	2.1D	13,500	16,030	E accepted at LOS E/F	14,900	E accepted at LOS E/F	1,130	*Yes > 200ADT*
Old Highway 395	E. Dulin Road	W. Lilac Road	2.1D	13,500	20,080	F	16,100	E	3,980	*Yes > 100ADT*
Old Highway 395	W. Lilac Road	I-15 SB Ramps	4.2B	25,000	24,810	D	20,900	C	3,910	No

TABLE 9.3
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(with Road 3)

Roadway	From	To	Horizon Year with Project				Horizon Year w/o Project		Project ADT	GP Inconsistency ?
			Classification	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	4.2B	25,000	19,600	C	17,100	B	2,500	No
Old Highway 395	I-15 NB Ramps	Camino Del Rey	4.1B	30,800	15,950	B	14,300	B	1,650	No
Old Highway 395	Camino Del Rey	Circle R Drive	4.1B	30,800	22,600	B	20,900	B	1,700	No
Old Highway 395	Circle R Drive	Gopher Canyon Road	4.1B	30,800	30,700	D	27,800	D	2,900	No
Old Highway 395	Gopher Canyon Road	Old Castle Road	4.1B	30,800	25,940	C	25,000	C	940	No
Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	4.1B	30,800	20,460	B	19,600	B	860	No
Pankey Road	Pala Mesa Drive	SR-76	2.1A	15,000	10,460	B	9,600	A	860	No
Lilac Road	Couser Canyon Road	W. Lilac Road	2.2E	10,900	8,450	D	7,900	D	550	No
Lilac Road	W. Lilac Road	Old Castle Road	2.2E	10,900	8,910	D	8,300	D	610	No
Lilac Road	Old Castle Road	Anthony Road	2.1C	13,500	11,830	D	11,300	D	530	No
Lilac Road	Anthony Road	New Road 19 (east of Betsworth Road)	4.2B	25,000	19,420	B	19,200	B	220	No
Lilac Road	New Road 19 (east of Betsworth Road)	Valley Center Road	4.2B	25,000	33,960	F accepted at LOS E/F	33,900	F accepted at LOS E/F	60	No < 200ADT
Valley Center Road	Woods Valley Road	Lilac Road	4.2A	27,000	23,210	C	23,200	C	10	No
Valley Center Road	Lilac Road	Miller Road	4.1A	33,400	32,140	D	32,100	D	40	No

TABLE 9.3
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(with Road 3)

Roadway	From	To	Horizon Year with Project				Horizon Year w/o Project		Project ADT	GP Inconsistency ?
			Classification	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Valley Center Road	Miller Road	Indian Creek Road	4.2A	27,000	33,030	F accepted at LOS E/F	33,000	F accepted at LOS E/F	30	No < 200ADT
Valley Center Road	Indian Creek Road	Cole Grade Road	4.2A	27,000	23,820	C	23,790	C	30	No
Valley Center Road	Cole Grade Road	Vesper Road	4.2A	27,000	16,900	A	16,900	A	0	No
Miller Road	Misty Oak Road	Valley Center Road	2.3B	8,000	2,410	A	2,400	A	10	No
Cole Grade Road	Fruitvale Road	Valley Center Road	4.2A	27,000	18,030	B	18,000	B	30	No
Mountain Ridge Road	LHR Project Boundary	Circle R Drive	Rural Residential Collector (LPR)	4,500	3,570	acceptable	350	acceptable	3,220	No

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E or F.
*Proposed downgrade from 2.2C to 2.2F.

Freeway Segment Analysis

The freeway segment level of service analysis was performed utilizing the methodology presented in Chapter 2.0. **Table 9.4** displays the resulting level of service for I-15 under Horizon Year Base Plus Project conditions with Road 3. It should be noted that according to the 2050 RTP, I-15 between the Riverside County Boundary and SR-78 is planned to be widened by adding four (4) toll lanes by 2050. However, no secured funding sources were identified, hence this improvement was not assumed in this study.

As shown in the table, similar to the base (no-project) conditions, the following ten (10) freeway segments along I-15 would continue to operate at substandard LOS E or F under Horizon Year Base Plus Project conditions with Road 3:

- I-15, between the Riverside County Boundary and Old Highway 395 – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Old Highway 395 and SR-76 – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between SR-76 and Old Highway 395 – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Old Highway 395 and Gopher Canyon Road – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Gopher Canyon Road and Deer Springs Road – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Deer Springs Road and Centre City Parkway – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Centre City Parkway and El Norte Parkway – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between El Norte Parkway and SR-78 – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between SR-78 and W Valley Parkway – LOS E, and the project traffic would not increase the V/C ratio by more than 0.01; and
- I-15, between Via Rancho Parkway and Bernardo Drive – LOS F, and the project traffic would not increase the V/C ratio by more than 0.01.

TABLE 9.4
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(with Road 3)

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to 2030 w/o project)	GP Inconsistency ?
I-15	Riverside County Boundary to Old Highway 395	270,510	8.4%	22,853	0.64	4	0.95	6.75%	3,950	1.681	F	0.017	*Yes* *> 0.01*
I-15	Old Highway 395 to SR-76	233,460	7.4%	17,368	0.73	4	0.95	6.75%	3,456	1.471	F	0.017	*Yes* *> 0.01*
I-15	SR-76 to Old Highway 395	201,350	7.8%	15,750	0.69	4	0.95	8.40%	2,960	1.260	F	0.017	*Yes* *> 0.01*
I-15	Old Highway 395 to Gopher Canyon Road	195,630	8.1%	15,799	0.67	4	0.95	8.40%	2,893	1.237	F	0.011	*Yes* *> 0.01*
I-15	Gopher Canyon Road to Deer Springs Road	186,170	8.1%	15,035	0.67	4	0.95	13.20%	2,817	1.199	F	0.015	*Yes* *> 0.01*
I-15	Deer Springs Road to Centre City Parkway	180,790	8.0%	14,525	0.66	4	0.95	13.20%	2,707	1.152	F	0.013	*Yes* *> 0.01*
I-15	Centre City Parkway to El Norte Parkway	171,000	8.0%	13,738	0.66	4	0.95	13.20%	2,560	1.090	F	0.011	*Yes* *> 0.01*
I-15	El Norte Parkway to SR-78	195,280	7.9%	15,370	0.66	4	0.95	10.00%	2,823	1.201	F	0.010	*Yes* *> 0.01*
I-15	SR-78 to W Valley Parkway	290,040	8.1%	23,605	0.60	5+2ML	0.95	10.00%	2,236	0.951	E	0.004	No < 0.01
I-15	W Valley Parkway to Auto Parkway	282,360	8.1%	22,980	0.60	5+2ML	0.95	10.00%	2,177	0.926	D	0.003	No

TABLE 9.4
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(with Road 3)

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to 2030 w/o project)	GP Inconsistency ?
I-15	Auto Parkway to W Citracado Parkway	277,100	7.8%	21,491	0.60	5+2ML	0.95	10.00%	2,023	0.861	D	0.003	No
I-15	W Citracado Parkway to Via Rancho Parkway	280,020	7.8%	21,717	0.60	5+2ML	0.95	7.00%	2,016	0.858	D	0.003	No
I-15	Via Rancho Parkway to Bernardo Drive	392,960	7.4%	28,921	0.58	5+2ML	0.95	7.00%	2,604	1.108	F	0.002	No < 0.01
I-15	Bernardo Drive to Rancho Bernardo Road	261,900	7.4%	19,275	0.58	5+2ML	0.95	7.00%	1,735	0.738	C	0.002	No
I-15	Rancho Bernardo Road to Bernardo Center Drive	301,230	7.3%	22,116	0.54	5+2ML	0.95	7.00%	1,845	0.785	C	0.002	No
I-15	Bernardo Center Drive to Camino Del Norte	269,980	7.3%	19,822	0.54	5+2ML	0.95	7.00%	1,653	0.704	C	0.002	No

Source: Chen Ryan Associates; May 2014

The additional traffic generated by the project would result in GP inconsistencies at eight (8) of the above freeway segments:

- I-15, between Riverside County Boundary and Old Highway 395;
- I-15, between Old Highway 395 and SR-76;
- I-15, between SR-76 and Old Highway 395;
- I-15, between Old Highway 395 and Gopher Canyon Road;
- I-15, between Gopher Canyon Road and Deer Springs Road;
- I-15, between Deer Springs Road and Centre City Parkway;
- I-15, between Centre City Parkway and El Norte Parkway; and
- I-15, between El Norte Parkway and SR-78.

9.2.3 Horizon Year with Road 3 GP Inconsistencies

This section identifies recommended improvement measures for roadway and freeway facilities that would be considered inconsistent with the currently adopted GP.

Roadway Segments

Based on the currently adopted County General Plan, the project traffic would result in GP inconsistencies at five (5)) of the study area roadway segments:

- W. Lilac Road, between Old Highway 395 and Main Street;
- W. Lilac Road, between Main Street and Street "F";
- W. Lilac Road, between Street "F" and Road 3;
- Old Highway 395, between SR-76 and E. Dulin Road; and
- Old Highway 395, between E. Dulin Road and W. Lilac Road.

W. Lilac Road, between Main Street and Street "F" and between Street "F" and Road 3, are projected to operate at LOS F mainly due to the classification downgrade (from 2.2C to 2.2F) proposal while Road 3 is still assumed as a part of the Mobility Element. However, after adoption of the County General Plan Update, SANDAG acquired the 902-acre Rancho Lilac property through its EMP in October 2011. SANDAG recorded a conservation easement over the entire 902 acres and designated this land as part of a 1,600 acre open space preserve in the State Route 76 corridor in North San Diego County. This acquisition may prevent implementation of the County's planned Road 3, and make the deletion or substantial realignment of Road 3 from the currently adopted Mobility Element network a reasonable assumption for purposes of this scenario. In addition, traffic control along W. Lilac Road includes a number of roundabouts, with implementation of the project. It has been well documented by the La Jolla Bird Rock roundabouts 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 12,330 ADT (maximum) for W. Lilac Road.

A more detailed arterial analysis was conducted for the other 3 segments. The Highway Capacity Software (HCS) 2000 developed by McTrans was employed for a more detailed arterial analysis. The HCS arterial analysis methodology is based upon Chapter 15 of the Highway Capacity Manual (HCM) 2000, which determines average travel speed and facility level of service according to roadway functional classification. The subject segments were evaluated with free-flow speeds (FFS) of 35-40 mph. **Table 9.5** displays the arterial travel speed and level of service for W. Lilac Road and Old Highway 395, and the respective analysis worksheets are included in **Appendix AW**.

TABLE 9.5
ARTERIAL LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(with Road 3)

Arterial	Free-Flow Speed (mph)	AM Peak Hour		PM Peak Hour	
		Speed (mph)	LOS	Speed (mph)	LOS
W. Lilac Road, between Old Highway 395 and Main Street	35	16.5	C	16.1	C
Old Highway 395, between SR-76 and E. Dulin Road	40	20.9	D	17.7	D
Old Highway 395, between E. Dulin Road and W. Lilac Road	40	24.2	C	22.4	C

Source: Chen Ryan Associates; April 2014

As shown in the table above, all three (3) segments would operate at acceptable LOS D or better under Horizon Year Base Plus Project (with Road 3) conditions based on the arterial analysis.

In addition, traffic control along W. Lilac Road includes a number of roundabouts, with implementation of the project. It has been well documented by the La Jolla Bird Rock roundabouts 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 20,290 ADT (maximum) for W. Lilac Road. A multi-purpose trail is also provided along the south side of W. Lilac Road and this will greatly improve safety and comfort for pedestrians and bicyclists.

Freeways

The additional traffic generated by the project would result in GP inconsistencies at eight (8) of the following freeway segments:

- I-15, between Riverside County Boundary and Old Highway 395;
- I-15, between Old Highway 395 and SR-76;

- I-15, between SR-76 and Old Highway 395;
- I-15, between Old Highway 395 and Gopher Canyon Road;
- I-15, between Gopher Canyon Road and Deer Springs Road;
- I-15, between Deer Springs Road and Centre City Parkway;
- I-15, between Centre City Parkway and El Norte Parkway; and
- I-15, between El Norte Parkway and SR-78.

The 2050 RTP indicates that four (4) toll lanes are planned to be added along I-15, between the Riverside County Boundary and SR-78 by 2050. However, no secured funding sources were identified, hence this improvement was not assumed in this study. Furthermore, there are no planned I-15 (north of SR-78) mainline improvements as per SANDAG's 2050 RTP, thus the GP inconsistencies would remain significant and unmitigable.

Table 9.6 summarizes GP inconsistencies and recommended mitigation measures associated with the Lilac Hills Ranch project under Horizon Year with Road 3 conditions.

TABLE 9.6
GP CONSISTENCIES SUMMARY
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(with Road 3)

GP Inconsistency Facility	Recommendation	Rationale
Roadway Segment		
W. Lilac Road, between Old Highway 395 and Main Street	None	• Roundabouts increase operational capacity • Improve pedestrian and bicycle facility - multi-purpose trail • Acceptable arterial speed • R-O-W constrains at the I-15 overpass
W. Lilac Road, between Main Street and Street "F"	None	• Roundabouts increase operational capacity • Road 3 could be eliminated from the Mobility Element network – this road would operate at acceptable LOS as a 2.2F without Road 3.
W. Lilac Road, between Street "F" and Road 3	None	• Roundabouts increase operational capacity • Road 3 could be eliminated from the Mobility Element network – this road would operate at acceptable LOS as a 2.2F without Road 3.
Old Highway 395, between SR-76 and E. Dulin Road	Option 1 - None	• Continue accepting LOS E/F as in the current GP • Acceptable arterial speed
	Option 2 – Improve to 4.2B	Improve to acceptable LOS based on County's planning-level analysis.

TABLE 9.6
GP CONSISTENCIES SUMMARY
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(with Road 3)

GP Inconsistency Facility	Recommendation	Rationale
Old Highway 395, between E. Dulin Road and W. Lilac Road	Option 1 - None	Acceptable arterial speed
	Option 2 – Improve to 4.2B	Improve to acceptable LOS based on County's planning-level analysis.
Freeway		
I-15, between Riverside County Boundary and Old Highway 395	No feasible mitigation	No planned improvement - Significant and Unavoidable Impact
I-15, between Old Highway 395 and SR-76	No feasible mitigation	No planned improvement - Significant and Unavoidable Impact
I-15, between SR-76 and Old Highway 395	No feasible mitigation	No planned improvement - Significant and Unavoidable Impact
I-15, between Old Highway 395 and Gopher Canyon Road	No feasible mitigation	No planned improvement - Significant and Unavoidable Impact
I-15, between Gopher Canyon Road and Deer Springs Road	No feasible mitigation	No planned improvement - Significant and Unavoidable Impact
I-15, between Deer Springs Road and Centre City Parkway	No feasible mitigation	No planned improvement - Significant and Unavoidable Impact
I-15, between Centre City Parkway and El Norte Parkway	No feasible mitigation	No planned improvement - Significant and Unavoidable Impact
I-15, between El Norte Parkway and SR-78	No feasible mitigation	No planned improvement - Significant and Unavoidable Impact

Source: Chen Ryan Associates; May 2014

9.3 Horizon Year without Road 3 Traffic Conditions

The following two (2) scenarios are discussed in this section:

- Horizon Year Base Conditions without Road 3
- Horizon Year Base Plus Project Conditions without Road 3

Level of service analyses under the Horizon Year conditions without Road 3 were conducted using the methodologies described in Chapter 2.0. At the County's request, intersection analysis was not conducted under the Horizon Year scenarios. Roadway and freeway segment level of service results are discussed separately below.

9.3.1 Horizon Year Base without Road 3

Average daily traffic volumes on study area roadway segments are displayed in **Figure 9-4**.

Roadway Segment Analysis

Table 9.7 displays the level of service analysis results for key roadway segments under Horizon Year Base Conditions without Road 3.

TABLE 9.7
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE CONDITIONS
(without Road 3)

Roadway	From	To	Classification	LOS Threshold (LOS D)	Average Daily Traffic (ADT)	Level of Service (LOS)
E. Dulin Road	Old Highway 395	SR-76	2.1E	10,900	6,700	C
W. Lilac Road	Camino Del Rey	Camino Del Cielo	2.2E	10,900	4,700	C
W. Lilac Road	Camino Del Cielo	Old Highway 395	2.2E	10,900	6,200	C
W. Lilac Road	Old Highway 395	Main Street	2.2C	13,500	3,600	B
W. Lilac Road	Main Street	Street "F"	2.2C	13,500	4,400	B
W. Lilac Road	Street "F"	Running Creek Road	2.2C	13,500	5,300	B
W. Lilac Road	Running Creek Road	Covey Lane	2.2F	8,700	3,000	A
W. Lilac Road	Covey Lane	Circle R Drive	2.2F	8,700	1,300	A
W. Lilac Road	Circle R Drive	Lilac Road	2.2F	8,700	1,900	A
Camino Del Cielo	Camino Del Rey	W. Lilac Road	2.2E	10,900	4,900	C
Olive Hill Road	Shamrock Road	SR-76	2.2E	10,900	8,400	D
Camino Del Rey	SR-76	Old River Road	4.2B	25,000	18,400	B
Camino Del Rey	Old River Road	W. Lilac Road	4.2B	25,000	13,100	A
Camino Del Rey	W. Lilac Road	Camino Del Cielo	4.2B	25,000	8,100	A
Camino Del Rey	Camino Del Cielo	Old Highway 395	2.2C	13,500	8,200	C
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	4.1B	30,800	19,600	B
Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	4.1B	30,800	19,100	B
Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	4.1B	30,800	19,100	B
Circle R Drive	Old Highway 395	Mountain Ridge Road	2.2E	10,900	6,500	C
Circle R Drive	Mountain Ridge Road	W. Lilac Road	2.2E	10,900	2,000	B
Old Castle Road	Old Highway 395	Lilac Road	2.2D	13,500	9,100	C

TABLE 9.7
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE CONDITIONS
(without Road 3)

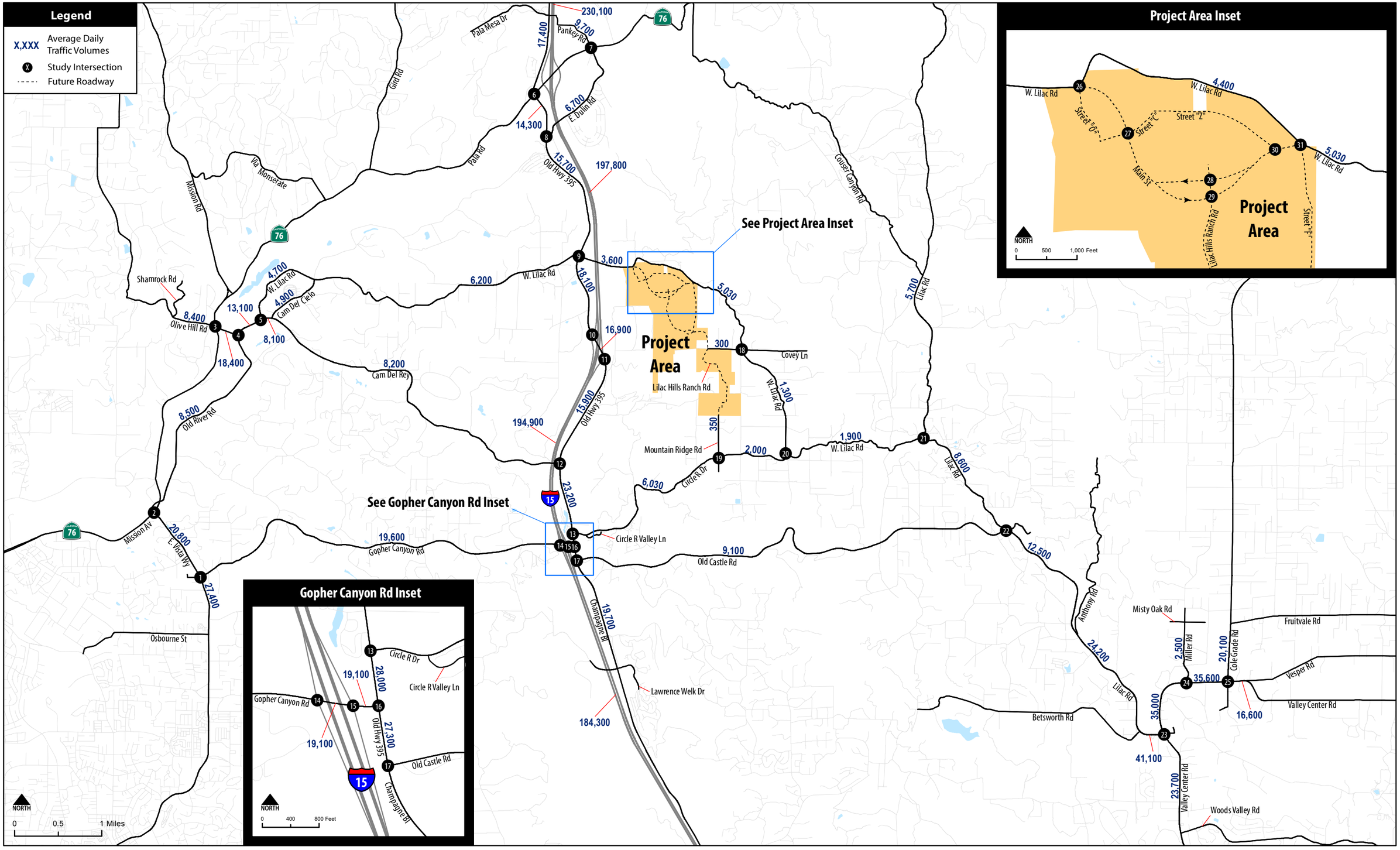
Roadway	From	To	Classification	LOS Threshold (LOS D)	Average Daily Traffic (ADT)	Level of Service (LOS)
E. Vista Way	SR-76	Gopher Canyon Road	4.1A	33,400	20,800	B
E. Vista Way	Gopher Canyon Road	Osborne Street	4.1A	33,400	27,400	C
Old River Road	SR-76	Camino Del Rey	2.2C	13,500	8,500	C
Old Highway 395	Pala Mesa Drive	SR-76	4.2B	25,000	17,400	B
Old Highway 395	SR-76	E. Dulin Road	2.1D	13,500	14,300	E accepted at LOS E/F
Old Highway 395	E. Dulin Road	W. Lilac Road	2.1D	13,500	15,700	E
Old Highway 395	W. Lilac Road	I-15 SB Ramps	4.2B	25,000	18,100	B
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	4.2B	25,000	16,900	B
Old Highway 395	I-15 NB Ramps	Camino Del Rey	4.1B	30,800	15,900	B
Old Highway 395	Camino Del Rey	Circle R Drive	4.1B	30,800	23,200	C
Old Highway 395	Circle R Drive	Gopher Canyon Road	4.1B	30,800	28,000	D
Old Highway 395	Gopher Canyon Road	Old Castle Road	4.1B	30,800	27,300	C
Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	4.1B	30,800	19,700	B
Pankey Road	Pala Mesa Drive	SR-76	2.1A	15,000	9,700	A
Lilac Road	Couser Canyon Road	W. Lilac Road	2.2E	10,900	5,700	C
Lilac Road	W. Lilac Road	Old Castle Road	2.2E	10,900	8,600	D
Lilac Road	Old Castle Road	Anthony Road	2.1C	13,500	12,500	D
Lilac Road	Anthony Road	New Road 19 (east of Betsworth Road)	4.2B	25,000	24,200	D
Lilac Road	New Road 19 (east of Betsworth Road)	Valley Center Road	4.2B	25,000	41,100	F accepted at LOS E/F

TABLE 9.7
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE CONDITIONS
(without Road 3)

Roadway	From	To	Classification	LOS Threshold (LOS D)	Average Daily Traffic (ADT)	Level of Service (LOS)
Valley Center Road	Woods Valley Road	Lilac Road	4.2A	27,000	23,700	C
Valley Center Road	Lilac Road	Miller Road	4.1A	33,400	35,000	E
Valley Center Road	Miller Road	Indian Creek Road	4.2A	27,000	35,600	F accepted at LOS E/F
Valley Center Road	Indian Creek Road	Cole Grade Road	4.2A	27,000	25,680	D
Valley Center Road	Cole Grade Road	Vesper Road	4.2A	27,000	16,600	A
Miller Road	Misty Oak Road	Valley Center Road	2.3B	8,000	2,500	A
Cole Grade Road	Fruitvale Road	Valley Center Road	4.2A	27,000	20,100	B

Source: Chen Ryan Associates; May 2014

Note:
Bold letter indicates unacceptable LOS E or F.



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 9-4
Roadway Average Daily Traffic Volumes - Horizon Year Base Conditions without Road 3

As shown in Table 9.7, the following five (5) study area roadway segments are projected to operate at substandard LOS E/F under Horizon Year Base conditions without Road 3:

- Old Highway 395, between SR-76 and E. Dulin Road – LOS E, and the County General Plan Update has accepted LOS E/F operations along this segment;
- Old Highway 395, between E. Dulin Road and W. Lilac Road – LOS E;
- Lilac Road, between New Road 19 (east of Betsworth Road) and Valley Center Road – LOS F, and the County General Plan Update has accepted LOS E/F operations along this segment;
- Valley Center Road, between Lilac Road and Miller Road – LOS E; and
- Valley Center Road, between Miller Road and Indian Creek Road – LOS F, and the County General Plan Update has accepted LOS E/F operations along this segment.

Freeway Segment Analysis

The freeway segment level of service analysis was performed utilizing the methodology presented in Chapter 2.0. **Table 9.8** displays the resulting level of service for I-15 under Horizon Year Base Conditions without Road 3. It should be noted that according to the 2050 RTP, I-15 between the Riverside County Boundary and SR-78 is planned to be widened by adding four (4) toll lanes by 2050. However, no secured funding sources were identified, hence this improvement was not assumed in this study.

As shown in the table, similar to the Horizon Year Base with Road 3 scenario, the following ten (10) freeway segments along I-15 are projected to operate at substandard LOS E or F under Horizon Year Base conditions without Road 3:

- I-15, between the Riverside County Boundary and Old Highway 395 – LOS F;
- I-15, between Old Highway 395 and SR-76 – LOS F;
- I-15, between SR-76 and Old Highway 395 – LOS F;
- I-15, between Old Highway 395 and Gopher Canyon Road – LOS F;
- I-15, between Gopher Canyon Road and Deer Springs Road – LOS F;
- I-15, between Deer Springs Road and Centre City Parkway – LOS F;
- I-15, between Centre City Parkway and El Norte Parkway – LOS F;
- I-15, between El Norte Parkway and SR-78 – LOS F;
- I-15, between SR-78 and W Valley Parkway – LOS E; and
- I-15, between Via Rancho Parkway and Bernardo Drive – LOS F.

TABLE 9.8
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE CONDITIONS
(without Road 3)

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	Peak Hour Factor (PHF)	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS
I-15	Riverside County Boundary to Old Highway 395	266,100	8.4%	22,481	0.64	4	0.95	6.75%	3,886	1.654	F
I-15	Old Highway 395 to SR-76	230,100	7.4%	17,118	0.73	4	0.95	6.75%	3,406	1.449	F
I-15	SR-76 to Old Highway 395	197,800	7.8%	15,472	0.69	4	0.95	8.40%	2,908	1.238	F
I-15	Old Highway 395 to Gopher Canyon Road	194,900	8.1%	15,740	0.67	4	0.95	8.40%	2,882	1.226	F
I-15	Gopher Canyon Road to Deer Springs Road	184,300	8.1%	14,884	0.67	4	0.95	13.20%	2,788	1.186	F
I-15	Deer Springs Road to Centre City Parkway	179,200	8.0%	14,397	0.66	4	0.95	13.20%	2,683	1.142	F
I-15	Centre City Parkway to El Norte Parkway	169,500	8.0%	13,618	0.66	4	0.95	13.20%	2,538	1.080	F
I-15	El Norte Parkway to SR-78	193,700	7.9%	15,246	0.66	4	0.95	10.00%	2,801	1.192	F
I-15	SR-78 to W Valley Parkway	289,100	8.1%	23,528	0.60	5+2ML	0.95	10.00%	2,229	0.948	E
I-15	W Valley Parkway to Auto Parkway	281,600	8.1%	22,918	0.60	5+2ML	0.95	10.00%	2,171	0.924	D
I-15	Auto Parkway to W Citracado Parkway	276,300	7.8%	21,429	0.60	5+2ML	0.95	10.00%	2,018	0.859	D
I-15	W Citracado Parkway to Via Rancho Parkway	279,100	7.8%	21,646	0.60	5+2ML	0.95	7.00%	2,009	0.855	D
I-15	Via Rancho Parkway to Bernardo Drive	392,400	7.4%	28,880	0.58	5+2ML	0.95	7.00%	2,600	1.106	F

TABLE 9.8
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE CONDITIONS
(without Road 3)

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	Peak Hour Factor (PHF)	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS
I-15	Bernardo Drive to Rancho Bernardo Road	261,000	7.4%	19,209	0.58	5+2ML	0.95	7.00%	1,729	0.736	C
I-15	Rancho Bernardo Road to Bernardo Center Drive	300,800	7.3%	22,085	0.54	5+2ML	0.95	7.00%	1,842	0.784	C
I-15	Bernardo Center Drive to Camino Del Norte	270,100	7.3%	19,831	0.54	5+2ML	0.95	7.00%	1,654	0.704	C

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E or F.
ML = Managed Lane.

9.3.2 Horizon Year Base Plus Project without Road 3

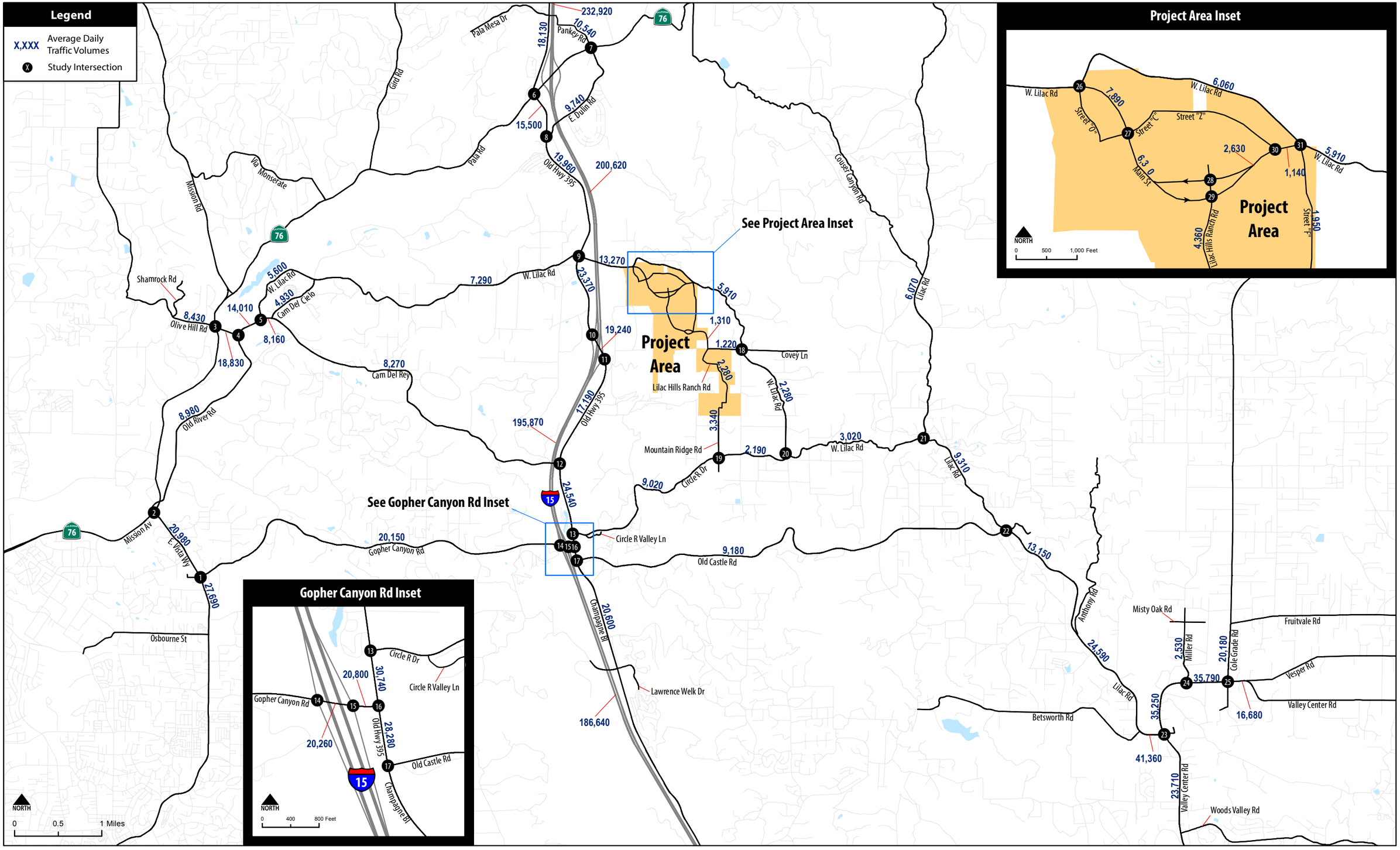
Average daily traffic volumes on study area roadway segments are displayed in **Figure 9-5**.

Roadway Segment Analysis

Table 9.9 displays the level of service analysis results for key roadway segments under Horizon Year Base Plus Project Conditions without Road 3. Note that the Lilac Hills Ranch project proposes to downgrade W. Lilac Road, between Main Street and the planned Road 3 (Running Creek Road) from 2.2C to 2.2F.

As shown in the table, the following five (5) roadway segments would operate at substandard LOS E or F:

- Old Highway 395, between SR-76 and E. Dulin Road – LOS E, and the project would add more than 200 daily trips. The County General Plan Update has accepted LOS E/F operations along this segment. The additional traffic generated by the Lilac Hills Ranch project would result in a GP inconsistency at this segment.
- Old Highway 395, between E. Dulin Road and W. Lilac Road – LOS F, and the project would add more than 100 daily trips. The additional traffic generated by the Lilac Hills Ranch project would result in a GP inconsistency at this segment.
- Lilac Road, between New Road 19 (east of Betsworth Road) and Valley Center Road – LOS F, and the project would add more than 200 daily trips. The County General Plan Update has accepted LOS E/F operations at this segment. The additional traffic generated by the Lilac Hills Ranch project would result in a GP inconsistency at this segment.
- Valley Center Road, between Lilac Road and Miller Road - LOS E, and the project would add less than 400 daily trips. The additional traffic generated by the Lilac Hills Ranch project would not result in GP inconsistency at this segment.
- Valley Center Road, between Miller Road and Indian Creek Road – LOS F, and the project would add less than 200 daily trips. The County General Plan Update has accepted LOS E/F operations at this segment. The additional traffic generated by the Lilac Hills Ranch project would not result in GP inconsistency at this segment.



Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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Figure 9-5

Roadway Average Daily Traffic Volumes - Horizon Year Base Plus Project Conditions without Road 3

TABLE 9.9
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(without Road 3)

Roadway	From	To	Horizon Year with Project				Horizon Year w/o Project		Project ADT	GP Inconsistency ?
			Classification	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
E. Dulin Road	Old Highway 395	SR-76	2.1E	10,900	9,740	D	6,700	C	3,040	No
W. Lilac Road	Camino Del Rey	Camino Del Cielo	2.2E	10,900	5,600	C	4,700	C	900	No
W. Lilac Road	Camino Del Cielo	Old Highway 395	2.2E	10,900	7,290	D	6,200	C	1,090	No
W. Lilac Road	Old Highway 395	Main Street	2.2C	13,500	13,270	D	3,600	B	9,670	No
W. Lilac Road	Main Street	Street "F"	2.2F*	8,700	6,060	B	4,400	B	1,660	No
W. Lilac Road	Street "F"	Running Creek Road	2.2F*	8,700	5,910	A	5,300	B	610	No
W. Lilac Road	Running Creek Road	Covey Lane	2.2F	8,700	3,610	B	3,000	A	610	No
W. Lilac Road	Covey Lane	Circle R Drive	2.2F	8,700	2,710	A	1,300	A	1,410	No
W. Lilac Road	Circle R Drive	Lilac Road	2.2F	8,700	3,020	A	1,900	A	1,120	No
Camino Del Cielo	Camino Del Rey	W. Lilac Road	2.2E	10,900	4,930	C	4,900	C	30	No
Olive Hill Road	Shamrock Road	SR-76	2.2E	10,900	8,430	D	8,400	D	30	No
Camino Del Rey	SR-76	Old River Road	4.2B	25,000	18,830	B	18,400	B	430	No
Camino Del Rey	Old River Road	W. Lilac Road	4.2B	25,000	14,010	A	13,100	A	910	No
Camino Del Rey	W. Lilac Road	Camino Del Cielo	4.2B	25,000	8,160	A	8,100	A	60	No
Camino Del Rey	Camino Del Cielo	Old Highway 395	2.2C	13,500	8,270	C	8,200	C	70	No
Gopher Canyon Road	E. Vista Way	I-15 SB Ramps	4.1B	30,800	20,150	B	19,600	B	550	No
Gopher Canyon Road	I-15 SB Ramps	I-15 NB Ramps	4.1B	30,800	20,260	B	19,100	B	1,160	No

TABLE 9.9
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(without Road 3)

Roadway	From	To	Horizon Year with Project				Horizon Year w/o Project		Project ADT	GP Inconsistency ?
			Classification	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	4.1B	30,800	20,860	B	19,100	B	1,760	No
Circle R Drive	Old Highway 395	Mountain Ridge Road	2.2E	10,900	9,020	D	6,500	C	2,520	No
Circle R Drive	Mountain Ridge Road	W. Lilac Road	2.2E	10,900	2,620	B	2,000	B	620	No
Old Castle Road	Old Highway 395	Lilac Road	2.2D	13,500	9,180	C	9,100	C	80	No
E. Vista Way	SR-76	Gopher Canyon Road	4.1A	33,400	20,980	B	20,800	B	180	No
E. Vista Way	Gopher Canyon Road	Osborne Street	4.1A	33,400	27,690	C	27,400	C	290	No
Old River Road	SR-76	Camino Del Rey	2.2C	13,500	8,980	C	8,500	C	480	No
Old Highway 395	Pala Mesa Drive	SR-76	4.2B	25,000	18,130	B	17,400	B	730	No
Old Highway 395	SR-76	E. Dulin Road	2.1D	13,500	15,500	E accepted at LOS E/F	14,300	E accepted at LOS E/F	1,200	*Yes > 200ADT*
Old Highway 395	E. Dulin Road	W. Lilac Road	2.1D	13,500	19,960	F	15,700	E	4,260	*Yes > 100ADT*
Old Highway 395	W. Lilac Road	I-15 SB Ramps	4.2B	25,000	23,370	D	18,100	B	5,270	No
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	4.2B	25,000	19,240	B	16,900	B	2,340	No
Old Highway 395	I-15 NB Ramps	Camino Del Rey	4.1B	30,800	17,600	B	15,900	B	1,700	No
Old Highway 395	Camino Del Rey	Circle R Drive	4.1B	30,800	24,960	C	23,200	C	1,760	No
Old Highway 395	Circle R Drive	Gopher Canyon Road	4.1B	30,800	30,740	D	28,000	D	2,740	No
Old Highway 395	Gopher Canyon Road	Old Castle Road	4.1B	30,800	28,280	D	27,300	C	980	No

TABLE 9.9
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(without Road 3)

Roadway	From	To	Horizon Year with Project				Horizon Year w/o Project		Project ADT	GP Inconsistency ?
			Classification	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Champagne Boulevard	Old Castle Road	Lawrence Welk Drive	4.1B	30,800	20,600	B	19,700	B	900	No
Pankey Road	Pala Mesa Drive	SR-76	2.1A	15,000	10,540	B	9,700	A	840	No
Lilac Road	Couser Canyon Road	W. Lilac Road	2.2E	10,900	6,070	C	5,700	C	370	No
Lilac Road	W. Lilac Road	Old Castle Road	2.2E	10,900	9,310	D	8,600	D	710	No
Lilac Road	Old Castle Road	Anthony Road	2.1C	13,500	13,150	D	12,500	D	650	No
Lilac Road	Anthony Road	New Road 19 (east of Betsworth Road)	4.2B	25,000	24,590	D	24,200	D	390	No
Lilac Road	New Road 19 (east of Betsworth Road)	Valley Center Road	4.2B	25,000	41,360	F accepted at LOS E/F	41,100	F accepted at LOS E/F	260	*Yes > 200ADT*
Valley Center Road	Woods Valley Road	Lilac Road	4.2A	27,000	23,710	C	23,700	C	10	No
Valley Center Road	Lilac Road	Miller Road	4.1A	33,400	35,250	E	35,000	E	250	No < 400ADT
Valley Center Road	Miller Road	Indian Creek Road	4.2A	27,000	35,790	F accepted at LOS E/F	35,600	F accepted at LOS E/F	190	No < 200ADT
Valley Center Road	Indian Creek Road	Cole Grade Road	4.2A	27,000	25,890	D	25,680	D	190	No

TABLE 9.9
ROADWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(without Road 3)

Roadway	From	To	Horizon Year with Project				Horizon Year w/o Project		Project ADT	GP Inconsistency ?
			Classification	LOS Threshold (LOS D)	ADT	LOS	ADT	LOS		
Valley Center Road	Cole Grade Road	Vesper Road	4.2A	27,000	16,680	A	16,600	A	80	No
Miller Road	Misty Oak Road	Valley Center Road	2.3B	8,000	2,530	A	2,500	A	30	No
Cole Grade Road	Fruitvale Road	Valley Center Road	4.2A	27,000	20,180	B	20,100	B	80	No
Mountain Ridge Road	LHR Project Boundary	Circle R Drive	Rural Residential Collector (LPR)	7,000	3,340	acceptable	350	acceptable	2,990	No

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E or F.
*Proposed downgrade from 2.2C to 2.2F.

Freeway Segment Analysis

The freeway segment level of service analysis was performed utilizing the methodology presented in Chapter 2.0. **Table 9.10** displays the resulting level of service for I-15 under Horizon Year Base Plus Project Conditions without Road 3. It should be noted that according to the 2050 RTP, I-15 between the Riverside County Boundary and SR-78 is planned to be widened by adding four (4) toll lanes by 2050. However, no secured funding sources were identified, hence this improvement was not assumed in this study.

As shown in the table, the following ten (10) freeway segments along I-15 would continue to operate at substandard LOS E or F under Horizon Year Base Plus Project conditions without Road 3:

- I-15, between the Riverside County Boundary and Old Highway 395 – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Old Highway 395 and SR-76 – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between SR-76 and Old Highway 395 – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Old Highway 395 and Gopher Canyon Road – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Gopher Canyon Road and Deer Springs Road – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Deer Springs Road and Centre City Parkway – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between Centre City Parkway and El Norte Parkway – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between El Norte Parkway and SR-78 – LOS F, and the project traffic would increase the V/C ratio by more than 0.01;
- I-15, between SR-78 and W Valley Parkway – LOS E, and the project traffic would not increase the V/C ratio by more than 0.01; and
- I-15, between Via Rancho Parkway and Bernardo Drive – LOS F, and the project traffic would not increase the V/C ratio by more than 0.01.

TABLE 9.10
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(without Road 3)

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to 2030 w/o project)	GP Inconsistency ?
I-15	Riverside County Boundary to Old Highway 395	268,880	8.4%	22,716	0.64	4	0.95	6.75%	3,926	1.671	F	0.017	*Yes* *> 0.01*
I-15	Old Highway 395 to SR-76	232,920	7.4%	17,327	0.73	4	0.95	6.75%	3,448	1.467	F	0.018	*Yes* *> 0.01*
I-15	SR-76 to Old Highway 395	200,620	7.8%	15,692	0.69	4	0.95	8.40%	2,950	1.255	F	0.018	*Yes* *> 0.01*
I-15	Old Highway 395 to Gopher Canyon Road	196,980	8.1%	15,908	0.67	4	0.95	8.40%	2,913	1.240	F	0.013	*Yes* *> 0.01*
I-15	Gopher Canyon Road to Deer Springs Road	186,620	8.1%	15,071	0.67	4	0.95	13.20%	2,823	1.201	F	0.015	*Yes* *> 0.01*
I-15	Deer Springs Road to Centre City Parkway	181,330	8.0%	14,568	0.66	4	0.95	13.20%	2,715	1.155	F	0.014	*Yes* *> 0.01*
I-15	Centre City Parkway to El Norte Parkway	171,330	8.0%	13,765	0.66	4	0.95	13.20%	2,565	1.092	F	0.012	*Yes* *> 0.01*
I-15	El Norte Parkway to SR-78	195,420	7.9%	15,381	0.66	4	0.95	10.00%	2,826	1.202	F	0.011	*Yes* *> 0.01*
I-15	SR-78 to W Valley Parkway	290,370	8.1%	23,632	0.60	7	0.95	10.00%	2,238	0.952	E	0.004	No < 0.01
I-15	W Valley Parkway to Auto Parkway	282,690	8.1%	23,007	0.60	7	0.95	10.00%	2,179	0.927	D	0.004	No

TABLE 9.10
FREEWAY SEGMENT LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(without Road 3)

Freeway	Segment	ADT	Peak Hour %	Peak Hour Volume	Directional Split	# of Lanes Per Direction	PHF	% of Heavy Vehicle	Volume (pc/h/ln)	V/C	LOS w/ Project	Change in V/C (compare to 2030 w/o project)	GP Inconsistency ?
I-15	Auto Parkway to W Citracado Parkway	277,330	7.8%	21,509	0.60	7	0.95	10.00%	2,025	0.862	D	0.003	No
I-15	W Citracado Parkway to Via Rancho Parkway	280,040	7.8%	21,719	0.60	7	0.95	7.00%	2,016	0.858	D	0.003	No
I-15	Via Rancho Parkway to Bernardo Drive	393,280	7.4%	28,944	0.58	7	0.95	7.00%	2,606	1.109	F	0.002	No < 0.01
I-15	Bernardo Drive to Rancho Bernardo Road	261,810	7.4%	19,268	0.58	7	0.95	7.00%	1,735	0.738	C	0.002	No
I-15	Rancho Bernardo Road to Bernardo Center Drive	301,540	7.3%	22,139	0.54	7	0.95	7.00%	1,847	0.786	C	0.002	No
I-15	Bernardo Center Drive to Camino Del Norte	270,770	7.3%	19,880	0.54	7	0.95	7.00%	1,658	0.706	C	0.002	No

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E or F.
ML = Managed Lane.

The additional traffic generated by the project would result in GP inconsistencies at eight (8) of the above freeway segments:

- I-15, between Riverside County Boundary and Old Highway 395;
- I-15, between Old Highway 395 and SR-76;
- I-15, between SR-76 and Old Highway 395;
- I-15, between Old Highway 395 and Gopher Canyon Road;
- I-15, between Gopher Canyon Road and Deer Springs Road;
- I-15, between Deer Springs Road and Centre City Parkway;
- I-15, between Centre City Parkway and El Norte Parkway; and
- I-15, between El Norte Parkway and SR-78.

9.3.3 Horizon Year without Road 3 Impact Significance and Mitigation

This section identifies inconsistencies with the currently adopted GP without Road 3.

Roadway Segments

Based on the County planning level impact criteria, the project traffic would result in GP inconsistencies at three (3)) of the study area roadway segments, including:

- Old Highway 395, between SR-76 and E. Dulin Road;
- Old Highway 395, between E. Dulin Road and W. Lilac Road; and
- Lilac Road, between New Road 19 (east of Betsworth Road) and Valley Center Road.

A more detailed arterial analysis was conducted for these segments. The Highway Capacity Software (HCS) 2000 developed by McTrans was employed for a more detailed arterial analysis. The HCS arterial analysis methodology is based upon Chapter 15 of the Highway Capacity Manual (HCM) 2000, which determines average travel speed and facility level of service according to roadway functional classification. The subject segments were evaluated with free-flow speeds (FFS) of 35-40 mph. **Table 9.11** displays the arterial travel speed and level of service for Old Highway 395, Lilac Road and Valley Center Road, and the respective analysis worksheets are included in **Appendix AX**.

TABLE 9.11
ARTERIAL LEVEL OF SERVICE RESULTS
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(without Road 3)

Arterial	Free-Flow Speed (mph)	AM Peak Hour		PM Peak Hour	
		Speed (mph)	LOS	Speed (mph)	LOS
Old Highway 395, between SR-76 and E. Dulin Road	40	21.0	D	18.0	D
Old Highway 395, between E. Dulin Road and W. Lilac Road	40	22.6	C	22.4	C
Lilac Road, between New Road 19 (east of Betsworth Road) and Valley Center Road	35	19.3	D	18.7	D

Source: Chen Ryan Associates; May 2014

As shown in the table above, all three (3) segments would operate at acceptable LOS D or better under Horizon Year Base Plus Project (without Road 3) conditions based on the arterial analysis.

Freeways

The additional traffic generated by the proposed Lilac Hills Ranch project would have result in GP inconsistencies at the following eight (8) freeway segments:

- I-15, between Riverside County Boundary and Old Highway 395;
- I-15, between Old Highway 395 and SR-76;
- I-15, between SR-76 and Old Highway 395;
- I-15, between Old Highway 395 and Gopher Canyon Road;
- I-15, between Gopher Canyon Road and Deer Springs Road;
- I-15, between Deer Springs Road and Centre City Parkway;
- I-15, between Centre City Parkway and El Norte Parkway; and
- I-15, between El Norte Parkway and SR-78.

The 2050 RTP indicates that four (4) toll lanes are planned to be added along I-15, between the Riverside County Boundary and SR-78 by 2050. However, no secured funding sources were identified, hence this improvement was not assumed in this study. Furthermore, there are no planned I-15 (north of SR-78) mainline improvements as per SANDAG's 2050 RTP, thus the impacts would remain significant and unmitigable.

Table 9.12 summarizes potential inconsistencies associated with the Lilac Hills Ranch project under Horizon Year with Road 3 conditions.

TABLE 9.12
GP CONSISTENCIES SUMMARY
HORIZON YEAR BASE PLUS PROJECT CONDITIONS
(without Road 3)

GP Inconsistency Facility	Recommendation	Rationale
Roadway Segment		
Old Highway 395, between SR-76 and E. Dulin Road	Option 1 - None	• Continue accepting LOS E/F as in the current GP • Acceptable arterial speed
	Option 2 – Improve to 4.2B	Improve to acceptable LOS based on County's planning-level analysis.
Old Highway 395, between E. Dulin Road and W. Lilac Road	Option 1 - None	• Acceptable arterial speed
	Option 2 – Improve to 4.2B	Improve to acceptable LOS based on County's planning-level analysis.
Lilac Road, between New Road 19 (east of Betsworth Road) and Valley Center Road	Option 1 - None	• Continue accepting LOS E/F as in the current GP • Acceptable arterial speed
	Option 2 – Improve to 6.2	Improve to acceptable LOS based on County's planning-level analysis.
Freeway		
I-15, between Riverside County Boundary and Old Highway 395	None	No planned improvement – no feasible mitigation
I-15, between Old Highway 395 and SR-76	None	No planned improvement – no feasible mitigation
I-15, between SR-76 and Old Highway 395	None	No planned improvement – no feasible mitigation
I-15, between Old Highway 395 and Gopher Canyon Road	None	No planned improvement – no feasible mitigation
I-15, between Gopher Canyon Road and Deer Springs Road	None	No planned improvement – no feasible mitigation
I-15, between Deer Springs Road and Centre City Parkway	None	No planned improvement – no feasible mitigation
I-15, between Centre City Parkway and El Norte Parkway	None	No planned improvement – no feasible mitigation
I-15, between El Norte Parkway and SR-78	None	No planned improvement – no feasible mitigation

Source: Chen Ryan Associates; May 2014

10.0 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 scenarios.

10.1 Summary of Roadway Segment Analysis

Tables 10.1 displays roadway segment level of service results for each of the study scenarios analyzed. Note that Old Highway 395 was analyzed as a two-lane highway under Existing, Existing Plus Project (all phases), and Existing Plus Cumulative Projects Plus Project conditions.

10.2 Summary of Intersection Analysis

Table 10.2 displays intersection level of service results for each of the analyzed scenarios. Note that based on the County's request, no intersection analysis was conducted under Horizon Year conditions.

10.3 Summary of Freeway Analysis

Table 10.3 displays freeway level of service results for each of the analyzed scenarios.

10.4 Summary of Ramp Intersection Capacity Analysis

Table 10.4 displays freeway ramp intersection capacity analysis level of service results for each of the scenarios analyzed.

10.5 Summary of Significant Impacts and Mitigation Recommendations

Based upon the significant impact criteria discussed in Section 2.8, **Table 10.5** summarizes identified significant project-related impacts and recommended mitigations to roadway segments, intersections, and freeway segments under each of the scenarios analyzed. Detailed rationale for mitigation measures are display at the end of each study scenario in previous chapters.

TABLE 10.1
SUMMARY OF ROADWAY SEGMENT LEVEL OF SERVICE RESULTS

Roadway	Segment	Existing	E+P (Ph A)	E+P (Ph B)	E+P (Ph C)	E+P (Ph D)	E+P (Buildout)	E+C+P	Horizon w/ Road 3	H+P w/ Road 3	Horizon w/o Road 3	H+P w/o Road 3
E. Dulin Road	Old Highway 395 to SR-76	B	B	B	B	B	C	D	C	D	C	D
W. Lilac Road	Camino Del Rey to Camino Del Cielo	A	A	A	A	A	A	A	C	C	C	C
W. Lilac Road	Camino Del Cielo to Old Highway 395	A	A	A	A	A	A	A	C	D	C	D
W. Lilac Road	Old Highway 395 to Main Street	A	A	A	F	D	D	F	D	F	B	D
W. Lilac Road	Main Street to Street "F"	A	A	A	A	A	A	A	D	F	B	B
W. Lilac Road	Street "F" to Road 3 (Running Creek Road)	A	A	A	A	A	A	A	C	F	B	A
W. Lilac Road	Road 3 (Running Creek Road) to Covey Lane	A	A	A	A	A	A	A	A	A	A	B
W. Lilac Road	Covey Lane to Circle R Drive	A	A	A	A	A	A	A	A	A	A	A
W. Lilac Road	Circle R Drive to Lilac Road	A	A	A	A	A	A	A	A	A	A	A
Camino Del Cielo	Camino Del Rey to W. Lilac Road	A	A	A	A	A	A	A	C	C	C	C
Olive Hill Road	Shamrock Road to SR-76	A	A	A	A	A	A	A	D	D	D	D
Camino Del Rey	SR-76 to Old River Road	D	D	D	D	D	D	D	B	B	B	B
Camino Del Rey	Old River Road to W. Lilac Road	D	D	D	D	D	D	E	A	A	A	A
Camino Del Rey	W. Lilac Road to Camino Del Cielo	C	C	C	C	C	C	D	A	A	A	A
Camino Del Rey	Camino Del Cielo to Old Highway 395	A	A	A	A	A	A	B	C	C	C	C
Gopher Canyon Road	E. Vista Way to I-15 SB Ramps	F	F	F	F	F	F	F	B	B	B	B

TABLE 10.1
SUMMARY OF ROADWAY SEGMENT LEVEL OF SERVICE RESULTS

Roadway	Segment	Existing	E+P (Ph A)	E+P (Ph B)	E+P (Ph C)	E+P (Ph D)	E+P (Buildout)	E+C+P	Horizon w/ Road 3	H+P w/ Road 3	Horizon w/o Road 3	H+P w/o Road 3
Gopher Canyon Road	I-15 SB Ramps to I-15 NB Ramps	A	A	A	A	A	B	B	B	B	B	B
Gopher Canyon Road	I-15 NB Ramps to Old Highway 395	A	A	A	A	A	B	B	B	B	B	B
Circle R Drive	Old Highway 395 to Mountain Ridge Road	C	C	C	C	D	D	D	D	D	D	D
Circle R Drive	Mountain Ridge Road to W. Lilac Road	B	B	B	B	B	B	B	B	B	B	B
Old Castle Road	Old Highway 395 to Lilac Road	D	D	D	D	D	D	D	C	C	C	C
E. Vista Way	SR-76 to Gopher Canyon Road	E	E	E	E	E	E	F	B	B	B	B
E. Vista Way	Gopher Canyon Road to Osborne Street	F	F	F	F	F	F	F	C	C	C	C
Old River Road	SR-76 to Camino Del Rey	C	C	C	C	C	C	C	C	C	C	C
Old Highway 395*	Pala Mesa Drive to SR-76	D or better	D or better	D or better	D or better	D or better	D or better	D or better	A	A	B	B
Old Highway 395*	SR-76 to E. Dulin Road	D or better	D or better	D or better	D or better	D or better	D or better	D or better	E accepted at LOS E/F	E accepted at LOS E/F	E accepted at LOS E/F	E accepted at LOS E/F
Old Highway 395*	E. Dulin Road to W. Lilac Road	D or better	D or better	D or better	D or better	D or better	D or better	D or better	E	F	E	F
Old Highway 395*	W. Lilac Road to I-15 SB Ramps	D or better	D or better	D or better	D or better	D or better	D or better	D or better	C	E	B	D
Old Highway 395*	I-15 SB Ramps to I-15 NB Ramps	D or better	D or better	D or better	D or better	D or better	D or better	D or better	B	C	B	B

TABLE 10.1
SUMMARY OF ROADWAY SEGMENT LEVEL OF SERVICE RESULTS

Roadway	Segment	Existing	E+P (Ph A)	E+P (Ph B)	E+P (Ph C)	E+P (Ph D)	E+P (Buildout)	E+C+P	Horizon w/ Road 3	H+P w/ Road 3	Horizon w/o Road 3	H+P w/o Road 3
Old Highway 395*	I-15 NB Ramps to Camino Del Rey	D or better	D or better	D or better	D or better	D or better	D or better	D or better	B	B	B	B
Old Highway 395*	Camino Del Rey to Circle R Drive	D or better	D or better	D or better	D or better	D or better	D or better	D or better	B	B	C	C
Old Highway 395*	Circle R Drive to Gopher Canyon Road	D or better	D or better	D or better	D or better	D or better	D or better	D or better	D	D	D	D
Old Highway 395*	Gopher Canyon Road to Old Castle Road	D or better	D or better	D or better	D or better	D or better	D or better	D or better	C	C	C	D
Champagne Boulevard	Old Castle Road to Lawrence Welk Drive	C	C	C	C	C	C	D	B	B	B	B
Pankey Road	Pala Mesa Drive to SR-76	A	A	A	A	A	A	F	A	B	A	B
Lilac Road	Couser Canyon Road to W. Lilac Road	A	A	A	A	A	A	A	D	D	C	C
Lilac Road	W. Lilac Road to Old Castle Road	A	A	A	A	A	A	A	D	D	D	D
Lilac Road	Old Castle Road to Anthony Road	D	D	D	D	D	D	E	D	D	D	D
Lilac Road	Anthony Road to New Road 19 (east of Betsworth Road)	D	D	D	D	D	D	D	B	B	D	D
Lilac Road	New Road 19 (east of Betsworth Road) to Valley Center Road	D	D	D	D	D	D	D	F accepted at LOS E/F	F accepted at LOS E/F	F accepted at LOS E/F	F accepted at LOS E/F
Valley Center Road	Woods Valley Road to Lilac Road	C	C	C	C	C	C	D	C	C	C	C
Valley Center Road	Lilac Road to Miller Road	B	B	B	B	B	B	C	D	D	E	E

TABLE 10.1
SUMMARY OF ROADWAY SEGMENT LEVEL OF SERVICE RESULTS

Roadway	Segment	Existing	E+P (Ph A)	E+P (Ph B)	E+P (Ph C)	E+P (Ph D)	E+P (Buildout)	E+C+P	Horizon w/ Road 3	H+P w/ Road 3	Horizon w/o Road 3	H+P w/o Road 3
Valley Center Road	Miller Road to Indian Creek Road	C	C	C	C	C	C	D	F accepted at LOS E/F	F accepted at LOS E/F	F accepted at LOS E/F	F accepted at LOS E/F
Valley Center Road	Indian Creek Road to Cole Grade Road	C	C	C	C	C	C	D	C	C	D	D
Valley Center Road	Cole Grade Road to Vesper Road	D	D	D	D	D	D	D	A	A	A	A
Miller Road	Misty Oak Road to Valley Center Road	A	A	A	A	A	A	A	A	A	A	A
Cole Grade Road	Fruitvale Road to Valley Center Road	D	D	D	D	D	D	E	B	B	B	B
Mountain Ridge Road	Project Boundary to Circle R Drive**	-	-	-	-	acceptable	acceptable	acceptable	acceptable	acceptable	acceptable	acceptable

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E or F.
E = Existing
P = Project
Ph = Phase
C = Cumulative Projects
H = Horizon Year
*Old Highway 395 was analyzed as a two-lane highway prior to the Horizon Year analyses.

TABLE 10.2
SUMMARY OF INTERSECTION PEAK HOUR LEVEL OF SERVICE RESULTS

Intersection	Existing	E+P (Ph A)	E+P (Ph B)	E+P (Ph C)	E+P (Ph D)	E+P (Buildout)	E+C+P
	AM / PM	AM / PM	AM / PM	AM / PM	AM / PM	AM / PM	AM / PM
1. E. Vista Way / Gopher Canyon Road	F / F	F / F	F / F	F / F	D / D	D / D	F / F
2. SR-76 / Old River Road/E. Vista Way	C / C	C / C	C / C	C / C	C / C	C / C	D / D
3. SR-76 / Olive Hill Road/Camino Del Rey	C / C	C / C	C / C	C / C	C / C	C / C	D / D
4. Old River Road / Camino Del Rey	D / B	D / B	D / B	D / B	D / B	D / B	F / C
5. W. Lilac Road / Camino Del Rey	C / B	C / B	C / B	C / B	C / B	C / B	C / B
6. Old Highway 395 / SR-76	C / D	C / D	C / D	C / D	C / D	C / D	F / F
7. Pankey Road / SR-76	B / C	B / C	B / C	B / C	B / C	B / C	F / F
8. Old Highway 395 / E. Dulin Road	B / B	B / B	B / B	C / D	C / C	C / D	F / F
9. Old Highway 395 / W. Lilac Road	C / B	C / C	C / D	F / F	C / C	C / C	F / F
10. I-15 SB Ramps / Old Highway 395	B / B	B / B	B / B	B / B	B / B	B / B	E / F
11. I-15 NB Ramps / Old Highway 395	A / B	B / B	B / B	B / C	B / C	B / C	C / E
12. Old Highway 395 / Camino Del Rey	B / B	B / B	B / B	B / B	B / B	B / B	B / C
13. Old Highway 395 / Circle R Drive	C / C	C / C	C / D	D / D	E / F	B / B	F / F
14. I-15 SB Ramps / Gopher Canyon Road	F / F	F / F	F / F	F / F	F / F	F / F	F / F
15. I-15 NB Ramps / Gopher Canyon Road	D / F	D / F	D / F	E / F	F / F	F / F	F / F
16. Old Highway 395 / Gopher Canyon Road	B / B	B / B	B / B	B / B	B / B	B / C	C / D
17. Old Highway 395 / Old Castle Road	B / B	B / B	B / B	B / B	B / B	B / B	B / B
18. W. Lilac Road / Covey Lane	B / A	A / A	A / A	A / B	A / A	B / C	B / B
19. Mountain Ridge Road / Circle R Drive	A / A	A / A	A / B	A / B	A / B	A / C	C / C
20. W. Lilac Road / Circle R Drive	A / A	A / A	A / A	B / B	B / B	B / B	B / B

TABLE 10.2
SUMMARY OF INTERSECTION PEAK HOUR LEVEL OF SERVICE RESULTS

Intersection	Existing	E+P (Ph A)	E+P (Ph B)	E+P (Ph C)	E+P (Ph D)	E+P (Buildout)	E+C+P
	AM / PM	AM / PM	AM / PM	AM / PM	AM / PM	AM / PM	AM / PM
21. Lilac Road / W. Lilac Road	A / A	A / B	A / B	B / B	B / B	B / B	B / B
22. Lilac Road / Old Castle Road	B / C	B / C	B / C	B / C	B / C	B / C	B / D
23. Valley Center Rd / Lilac Road	B / C	B / C	B / C	B / C	B / C	B / C	D / D
24. Miller Road / Valley Center Road	C / D	C / D	C / D	C / D	C / D	C / D	C / F
25. Cole Grade Road / Valley Center Road	C / C	C / C	C / D	C / C	C / D	C / D	D / D
26. Street "O" / W. Lilac Road/Main Street	DNE	A / A	A / A	A / A	A / B	A / B	A / B
27. Main Street / Street "C"	DNE	A / A	A / A	A / A	A / A	A / A	A / A
28. Lilac Hills Ranch Road / Main Street North	DNE	DNE	DNE	A / A	A / A	A / A	A / A
29. Lilac Hills Ranch Road / Main Street South	DNE	DNE	DNE	A / A	A / A	A / A	A / A
30. Street "Z" / Main Street	DNE	A / A	A / A	A / A	A / A	A / A	A / A
31. W. Lilac Road/Street "F" / Main Street	DNE	A / A	A / A	A / A	A / A	A / A	A / A

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E or F.
DNE = Does Not Exist
E = Existing
P = Project
Ph = Phase
C = Cumulative Projects

TABLE 10.3
SUMMARY OF FREEWAY SEGMENT LEVEL OF SERVICE RESULTS

Freeway	Segment	Existing	E+P (Ph A)	E+P (Ph B)	E+P (Ph C)	E+P (Ph D)	E+P (Buildout)	E+C+P	Horizon w/Road 3	H+P w/ Road 3	Horizon w/o Road 3	H+P w/o Road 3
I-15	Riverside County Boundary to Old Highway 395	D	D	D	D	D	D	F	F	F	F	F
I-15	Old Highway 395 to SR-76	D	D	D	D	D	D	F	F	F	F	F
I-15	SR-76 to Old Highway 395	C	C	C	C	C	C	F	F	F	F	F
I-15	Old Highway 395 to Gopher Canyon Rd	C	C	C	C	C	C	F	F	F	F	F
I-15	Gopher Canyon Rd to Deer Springs Rd	C	C	C	C	C	C	F	F	F	F	F
I-15	Deer Springs Rd to Centre City Pkwy	C	C	C	C	C	C	F	F	F	F	F
I-15	Centre City Pkwy to El Norte Pkwy	C	C	C	C	C	C	F	F	F	F	F
I-15	El Norte Pkwy to SR-78	C	C	C	C	C	C	F	F	F	F	F
I-15	SR-78 to W Valley Pkwy	B	C	C	C	C	C	C	F	F	F	F
I-15	W Valley Pkwy to Auto Pkwy	B	B	B	B	B	B	C	F	F	F	F
I-15	Auto Pkwy to W Citracado Pkwy	B	B	B	B	B	B	B	F	F	F	F
I-15	W Citracado Pkwy to Via Rancho Pkwy	B	B	B	B	B	B	C	E	E	E	E
I-15	Via Rancho Pkwy to Bernardo Dr	B	B	B	B	B	B	C	F	F	F	F

TABLE 10.3
SUMMARY OF FREEWAY SEGMENT LEVEL OF SERVICE RESULTS

Freeway	Segment	Existing	E+P (Ph A)	E+P (Ph B)	E+P (Ph C)	E+P (Ph D)	E+P (Buildout)	E+C+P	Horizon w/Road 3	H+P w/ Road 3	Horizon w/o Road 3	H+P w/o Road 3
I-15	Bernardo Dr to Rancho Bernardo Rd	B	B	B	B	B	B	B	E	E	E	E
I-15	Rancho Bernardo Rd to Bernardo Center Dr	B	B	B	B	B	B	B	F	F	F	F
I-15	Bernardo Center Dr to Camino Del Norte	B	B	B	B	B	B	B	E	E	E	E

Source: Chen Ryan Associates; May 2014

Notes:
Bold letter indicates unacceptable LOS E or F.
E = Existing
P = Project
Ph = Phase
C = Cumulative Projects
H = Horizon Year

TABLE 10.4
SUMMARY OF RAMP INTERSECTION CAPACITY ANALYSIS

Ramp Intersection	Peak Hour	Existing	E+P (Ph A)	E+P (Ph B)	E+P (Ph C)	E+P (Ph D)	E+P (Buildout)	E+C+P
SR-76 / Old River Road/E. Vista Way	AM	Over	Over	Over	Over	Over	Over	Over
	PM	At	At	At	At	At	At	Over
SR-76 / Olive Hill Road/Camino Del Rey	AM	At	At	At	At	At	At	Over
	PM	At	At	At	At	At	At	Over
SR-76 / Old Highway 395	AM	Under	Under	Under	Under	Under	Under	Over
	PM	Under	Under	Under	Under	Under	Under	Over

Source: Chen Ryan Associates; May 2014

Notes:
E = Existing
P = Project
Ph = Phase
C = Cumulative Projects

TABLE 10.5
SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Location	E+P (Phase A)	E+P (Phases B)	E+P (Phases C)	E+P (Phases D)	E+P (Buildout)	Existing + Cumulative Projects + Project
Roadway Segment						
Camino Del Rey, Old River Road to W. Lilac Road	-	-	-	-	-	Cumulative Impact TIF Payments
W. Lilac Road, Old Highway 395 to Main Street	-	-	Direct Impact Improve to 2.2C	-	-	Cumulative Impact Project Improvement to 2.2C also Direct Impact under E+P (Phase C) Signalization at Old Highway 395 / W. Lilac Road and +1WBL
Gopher Canyon Road, E. Vista Way to Little Gopher Canyon Road	Direct Impact +1WBR @ E. Vista Way / Gopher Canyon Road	-	-	-	-	Cumulative Impact No feasible mitigation
Gopher Canyon Road, Little Canyon Road to I-15 SB Ramps	Direct Impact +1WBR @ E. Vista Way / Gopher Canyon Road	-	-	-	-	Cumulative Impact TIF Payments
E. Vista Way, SR-76 to Gopher Canyon Road	-	-	-	-	Direct Impact +1WBR & +1 NBR @ E. Vista Way / Gopher Canyon Road	Cumulative Impact TIF Payments

TABLE 10.5
SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Location	E+P (Phase A)	E+P (Phases B)	E+P (Phases C)	E+P (Phases D)	E+P (Buildout)	Existing + Cumulative Projects + Project
E. Vista Way, Gopher Canyon Road to Osborne Street	-	-	Direct Impact +1WBR & +1 NBR @ E. Vista Way / Gopher Canyon Road	-	-	Cumulative Impact TIF Payments
Pankey Road, Pala Mesa Drive to SR-76	-	-	-	-	-	Cumulative Impact No feasible mitigation
Lilac Road, Old Castle Road to Anthony Road	-	-	-	-	-	Cumulative Impact Provide intermittent turn-lane
Cole Grade Road, Fruitvale Road and Valley Center Road	-	-	-	-	-	Cumulative Impact TIF Payments
Intersection						
1. E. Vista Way / Gopher Canyon Road	Direct Impact +1WBR	-	-	-	-	Cumulative Impact TIF Payments
6. Old Highway 395 / SR-76	-	-	-	-	-	Cumulative Impact Caltrans Facility – Significant and Unavoidable Impact
7. Pankey Road / SR-76	-	-	-	-	-	Cumulative Impact Caltrans Facility – Significant and Unavoidable Impact
8. Old Highway 395 / E. Dulin Road	-	-	-	-	-	Cumulative Impact Signalization

TABLE 10.5
SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Location	E+P (Phase A)	E+P (Phases B)	E+P (Phases C)	E+P (Phases D)	E+P (Buildout)	Existing + Cumulative Projects + Project
9. Old Highway 395 / W. Lilac Road	-	-	Direct Impact Signalization +1WBL	-	-	Cumulative Impact TIF Payments also Direct Impact under E+P (Phase C) Project Improvements for Signalization and +1WBL
10. I-15 SB Ramps / Old Highway 395	-	-	-	-	-	Cumulative Impact TIF Payments
11. I-15 NB Ramps / Old Highway 395	-	-	-	-	-	Cumulative Impact TIF Payments
13. Old Highway 395 / Circle R Drive	-	-	-	Direct Impact Signalization	-	Cumulative Impact Signalization
14. I-15 SB Ramps / Gopher Canyon Road	-	Direct Impact Signalization – Caltrans' facility, significant and unavoidable impact	Direct Impact Signalization – Caltrans' facility, significant and unavoidable impact	Direct Impact Signalization – Caltrans' facility, significant and unavoidable impact	Direct Impact Signalization – Caltrans' facility, significant and unavoidable impact	Cumulative Impact TIF Payments
15. I-15 NB Ramps / Gopher Canyon Road	-	Direct Impact Signalization– Caltrans' facility, significant and unavoidable impact	Direct Impact Signalization– Caltrans' facility, significant and unavoidable impact	Direct Impact Signalization– Caltrans' facility, significant and unavoidable impact	Direct Impact Signalization– Caltrans' facility, significant and unavoidable impact	Cumulative Impact TIF Payments
24. Miller Road / Valley Center Road	-	-	-	-	-	Cumulative Impact Signalization

TABLE 10.5
SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Location	E+P (Phase A)	E+P (Phases B)	E+P (Phases C)	E+P (Phases D)	E+P (Buildout)	Existing + Cumulative Projects + Project
Freeway Segment						
I-15, Riverside County Boundary to Old Highway 395	-	-	-	-	-	Cumulative Impact No feasible mitigation
I-15, Old Highway 395 to SR-76	-	-	-	-	-	Cumulative Impact No feasible mitigation
I-15, SR-76 to Old Highway 395	-	-	-	-	-	Cumulative Impact No feasible mitigation
I-15, Old Highway 395 to Gopher Canyon Rd	-	-	-	-	-	Cumulative Impact No feasible mitigation
I-15, Gopher Canyon Rd to Deer Springs Rd	-	-	-	-	-	Cumulative Impact No feasible mitigation
I-15, Deer Springs Rd to Centre City Pkwy	-	-	-	-	-	Cumulative Impact No feasible mitigation
I-15, Centre City Pkwy to El Norte Pkwy	-	-	-	-	-	Cumulative Impact No feasible mitigation
I-15, El Norte Pkwy to SR-78	-	-	-	-	-	Cumulative Impact No feasible mitigation

Source: Chen Ryan Associates; May 2014

Notes:
E = Existing
P = Project
N/A = Not Analyzed

11.0 Transportation Demand Management Program

To reduce the number of vehicle trips generated by the proposed development, the project applicant proposes implementation of all or some of Transportation Demand Management (TDM) measures listed below in order to reduce vehicle trips in favor of alternative modes of transportation. The TDM program will facilitate increased opportunities for transit, bicycling, and pedestrian travel, as well as providing the resources, means and incentives for ridesharing and carpooling opportunities. The following measures may be included in the TDM:

1. As shown in Figure 8-1, the project has developed a comprehensive trails network that was designed to provide safe bicycle and pedestrian access between the various project phases, land uses, parks/open spaces, schools and the Town Center area. The trails network will also provide connections to the various recreational trails and multi-modal facilities accessing the project site.
2. Provide bicycle racks along main travel corridors, adjacent to commercial developments, and at public parks and open spaces within the project site.
3. Provide bicycle racks at the office, multi-family and live/work buildings within the project site.
4. Coordinate a ride share or shuttle system that connects the various phases of the project to the Town Center area, as well as to external transit facilities and resources.
5. To help encourage carpooling, the project will include or identify a Park-n-Ride lot that will be available to its residents and employees.
6. Coordinate with SANDAG's iComute program for Carpool, Vanpool, and rideshare programs that are specific to the Lilac Hills development.
7. Promote available websites providing transportation options for residents and businesses.
8. Create and distribute a "new resident" information packet addressing alternative modes of transportation.
9. Coordinate with NCTD/MTS and SANDAG as to the future sighting of transit stops/stations within the project site.
10. Provide interim connections between Lilac Hills Ranch and the planned regional transit system, until such transit system is extended to the community. This will reduce vehicle trips and vehicle miles traveled (VMT) and could reduce the incidence of obesity, heart disease and hypertension by encouraging daily physical activity. The interim private transit services would be provided at complete buildout of the community and would terminate when a public transit linkage is proposed by the local transit district.

    a) Service would be provided on demand rather than a service that is operated whether or not someone wants to travel at that time.

b) Subsidize rides on commercially available services such as taxis and/or shuttle vans.

c) Pick-ups and drop-offs would be at a central location in the development.

d) The HOA would set up accounts with the providers allowing residents to call a dispatcher to request service and obtain the discounted rate. The same or similar service could be called to return the rider to Lilac Hills Ranch.

Additional Options - The subsidized private or group shuttle trips could be supplemented by any of the options below to provide alternative ways to make connections to the regional transit system or to local destinations not served by that system:

1) Provide subsidized transit passes to encourage use of public or private transit. The subsidized private or group shuttle rides would increase the convenience of the regional public transportation system and therefore encourage a higher level of utilization.

2) Provide coordination/support of a Car Sharing system for those who want/need the improved convenience of driving to encourage Lilac Hills Ranch residents to drive themselves and other residents to their employment destination or a regional transit center.

3) Provide coordination/support for ride sharing or shuttle services with volunteer drivers such as the ones sponsored by the Independent Transportation Network once 75% of the community is occupied. ITN chapters around the country use volunteer drivers to provide rides to seniors. There is no reason that a general public version of this volunteer service could not operate successfully. The service could be coordinated/supported by the Homeowners' Association or by the local Transportation Management Organization.