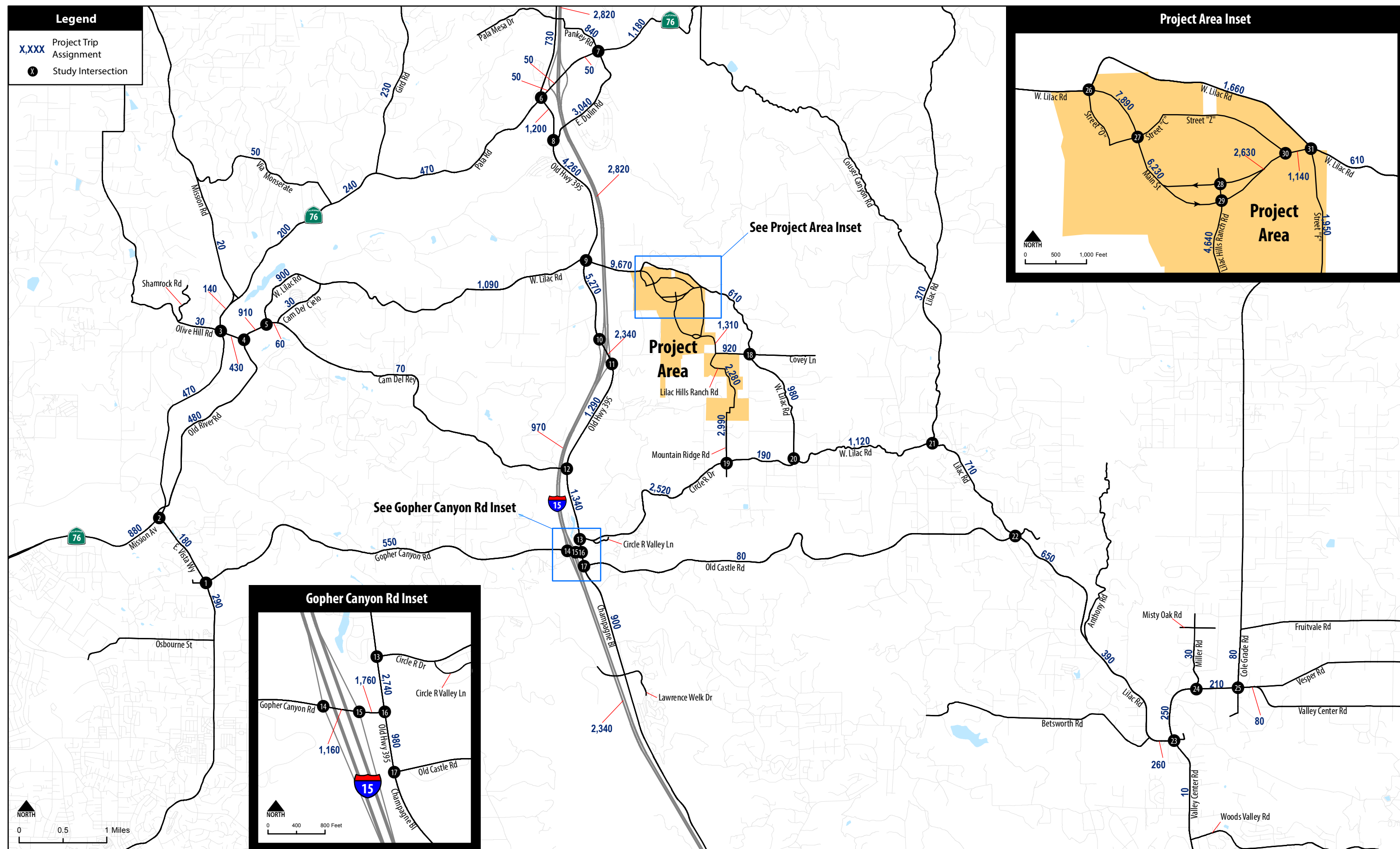




Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

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

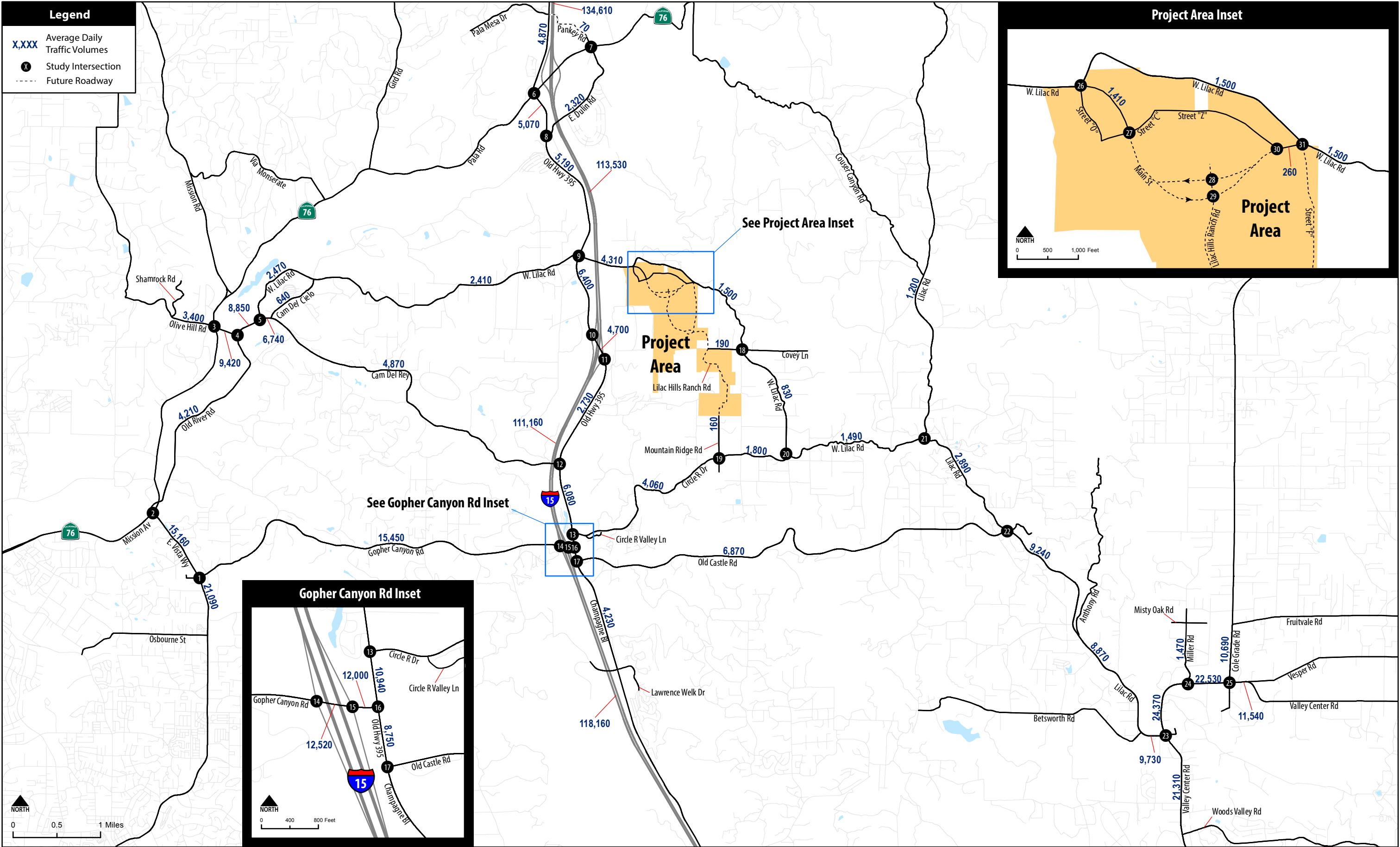
The Existing Plus Project (Phase A) scenario includes existing traffic volumes with the addition of traffic generated by traffic analysis Phase A. Intersection and roadway geometrics under Existing Plus Project conditions were assumed to be identical to Existing conditions, with the exception of the 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.

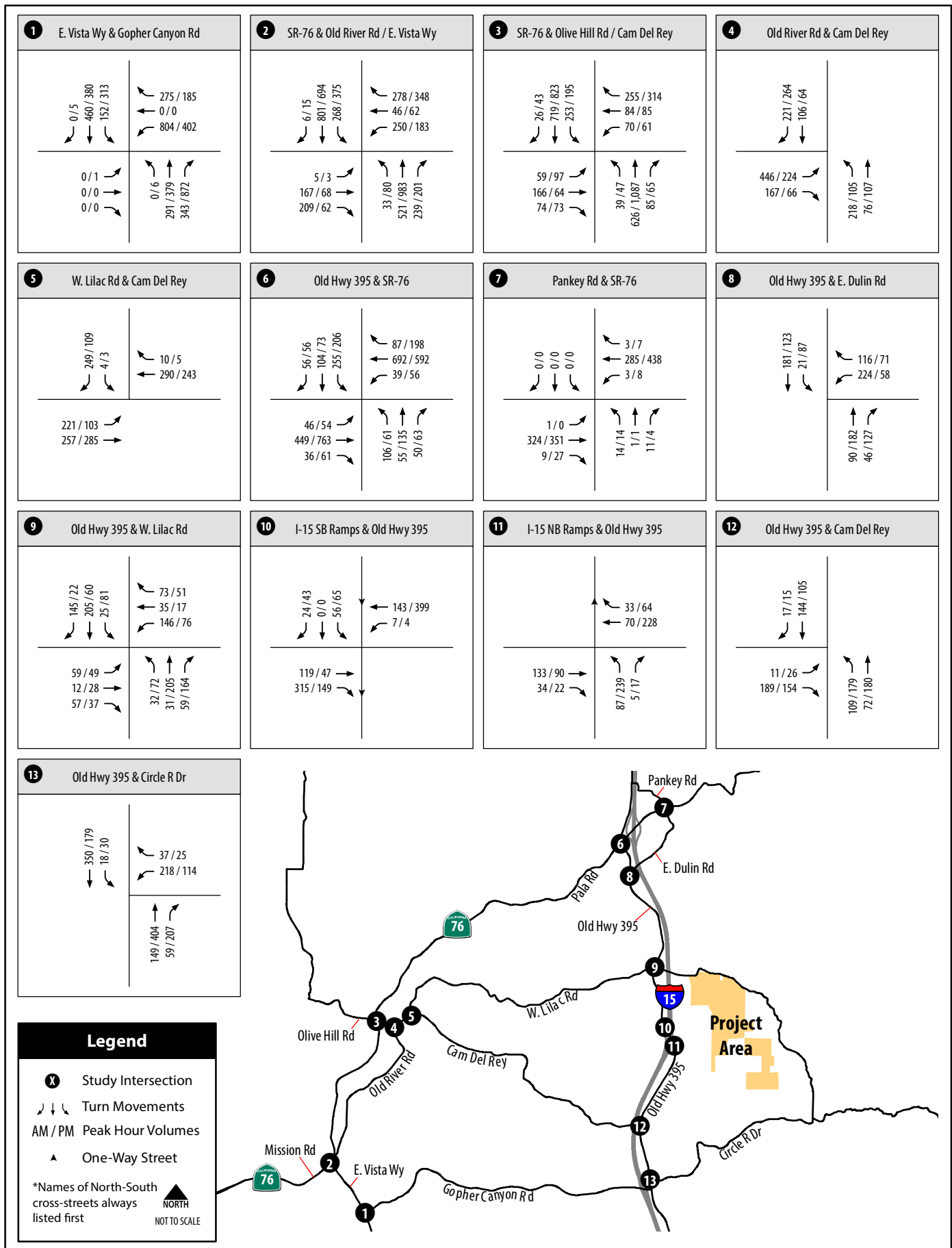
5.1.2 Existing Plus Project (Phase A) Traffic Conditions

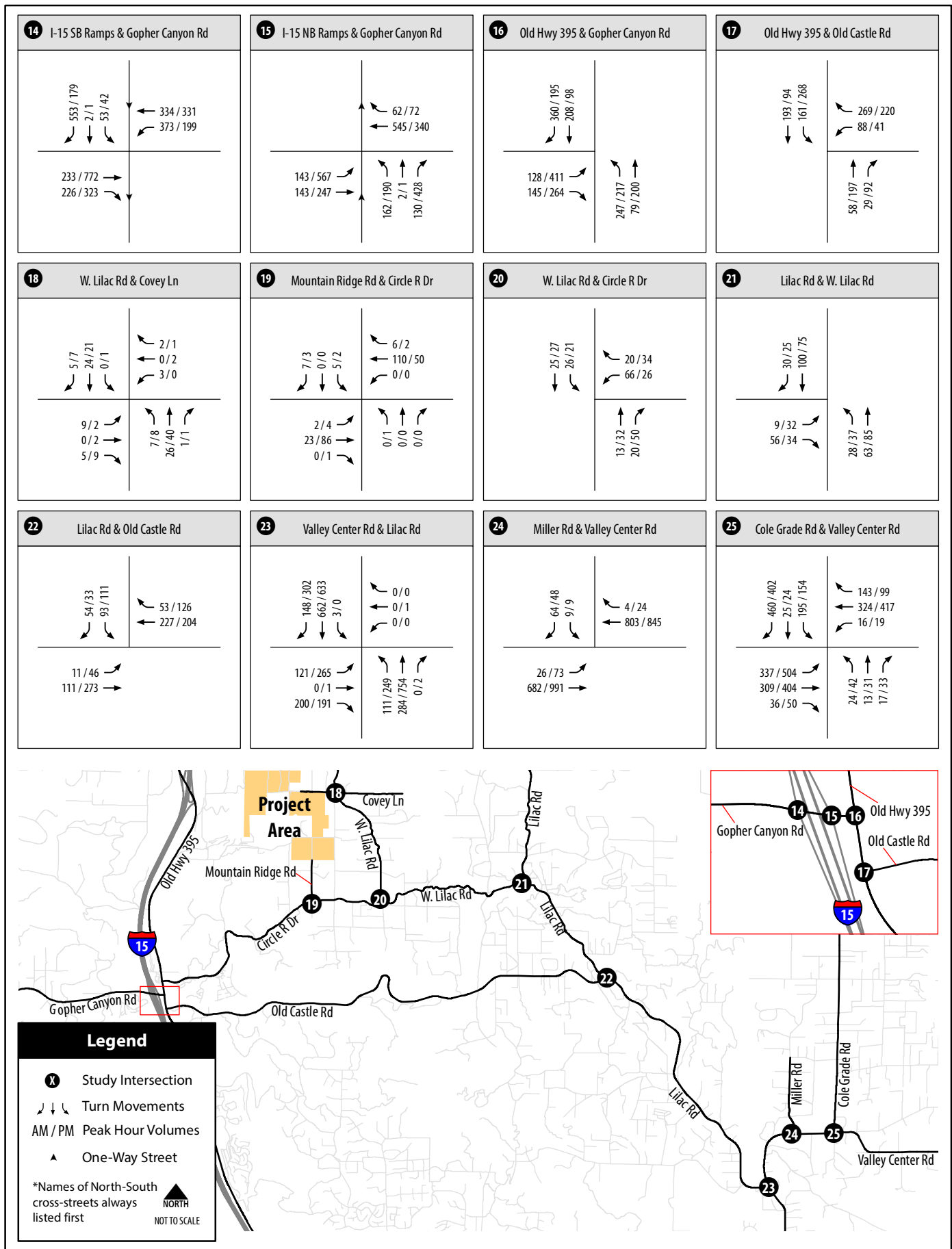
Level of service analyses under Existing Plus Project (Phase A) conditions were conducted using the methodologies described in Chapter 2.0. Roadway segment, intersection, two-lane highway, freeway segment, and ramp intersection level of service results are discussed separately below. Average daily traffic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

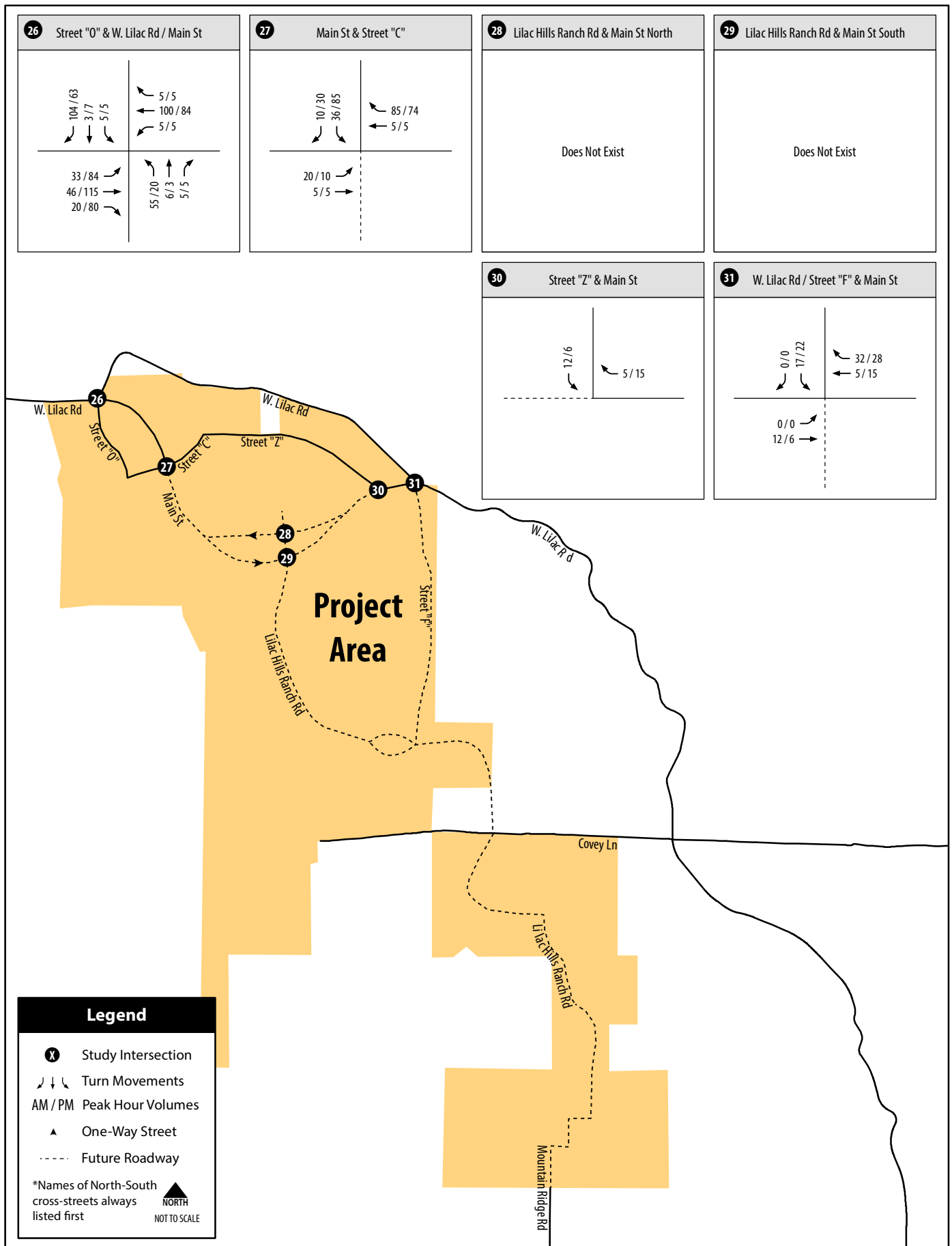


Lilac Hills Ranch - Mountain Ridge Road Fire Station Alternative

Figure 5-1A
Roadway Average Daily Traffic Volumes -
Existing Plus Project (Phase A) Conditions







Lilac Hills Ranch - Mountain Ridge Road
Fire Station Alternative

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			Phase A Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM	Change in Delay (sec.) 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			Phase A Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM	Change in Delay (sec.) 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	<u>1.4 / 0.0</u>	-	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 / <u>0.1</u>	-	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			Phase A Traffic to Critical Movements AM / PM	Direct Impact?
		AM Peak Hour		PM Peak Hour		Delay (sec.) AM / PM	LOS AM / PM	Change in Delay (sec.) 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	118,040	8.0%	9,483	0.66	4	0.95	13.20%	1,767	0.752	C	0.007	No
I-15	Centre City Parkway to El Norte Parkway	111,850	8.0%	8,986	0.66	4	0.95	13.20%	1,675	0.713	C	0.005	No
I-15	El Norte Parkway to SR-78	127,790	7.9%	10,058	0.66	4	0.95	10.00%	1,848	0.786	C	0.005	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; November 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 238 th 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 238 th 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 dedicated right-turn lane at the westbound Gopher Canyon Road approach of the intersection of E. Vista Way and Gopher Canyon Road.

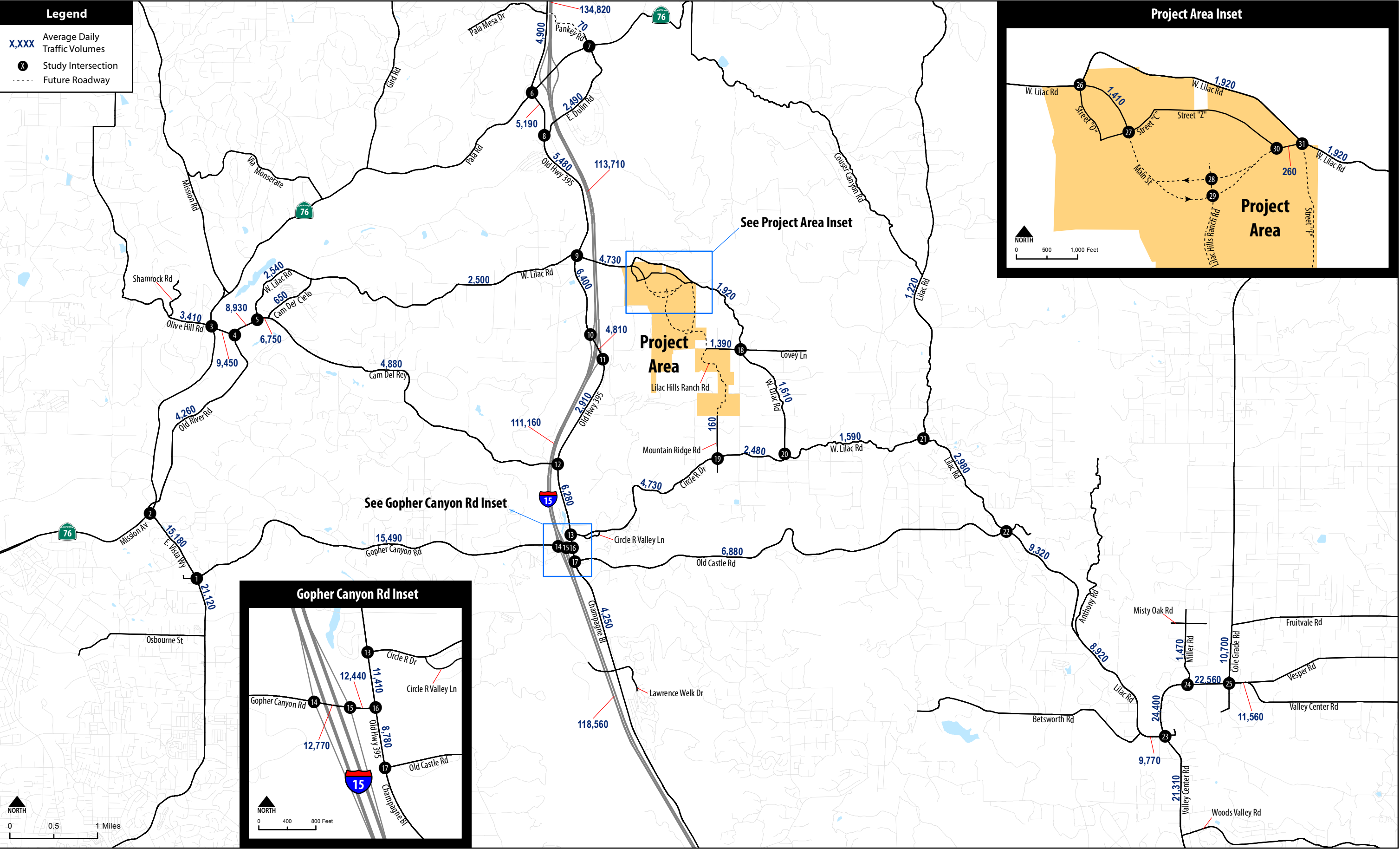
5.2.2 Existing Plus Project (Phase B) Traffic Conditions

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

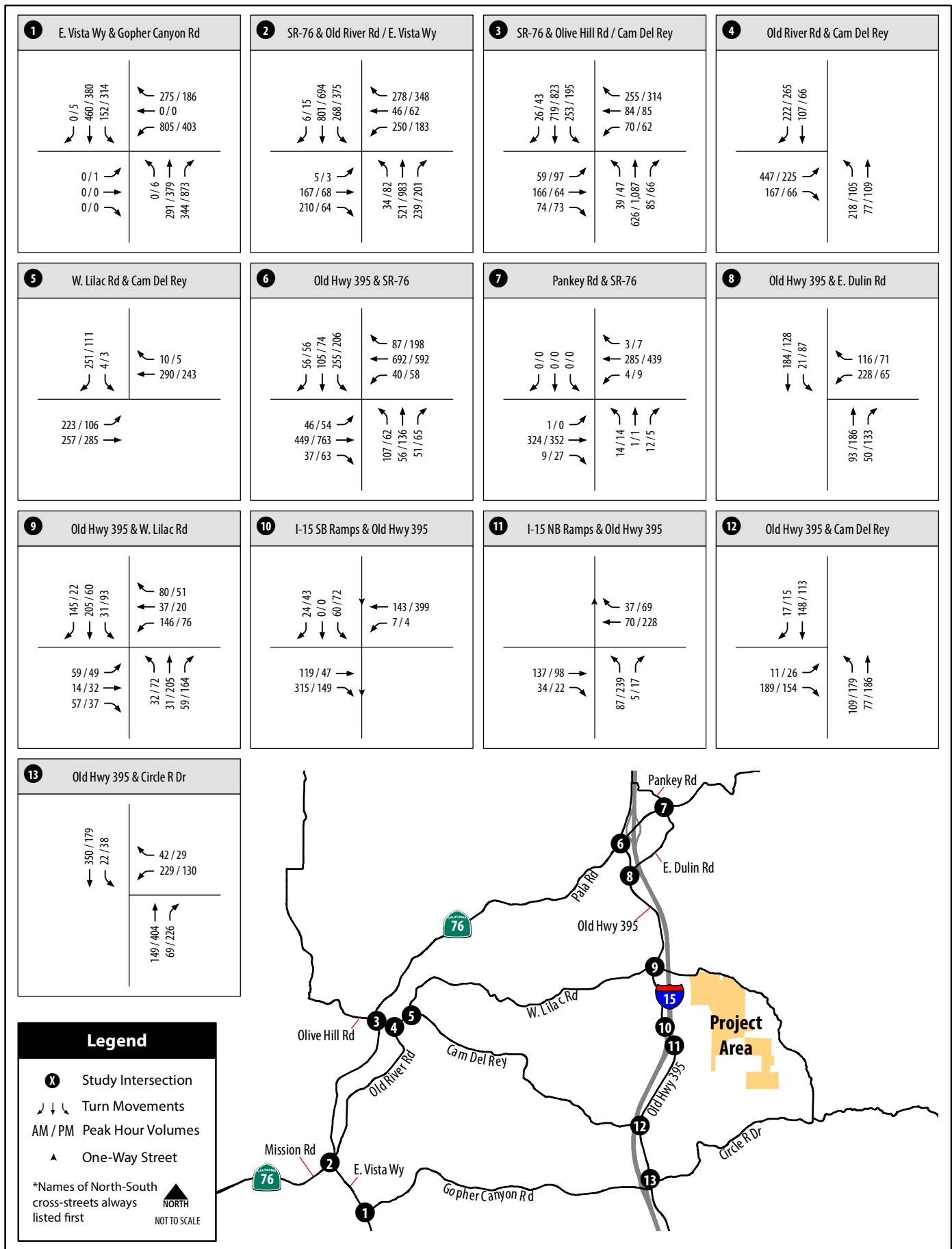
Table 5.9 displays the level of service analysis results for key roadway segments under Existing Plus Project (Phase B) conditions. As shown, similar to Existing conditions, the following three (3) roadway segments would continue to operate at substandard LOS E or F:

- 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

Figure 5-2A
Roadway Average Daily Traffic Volumes -
Existing Plus Project (Phase B) Conditions



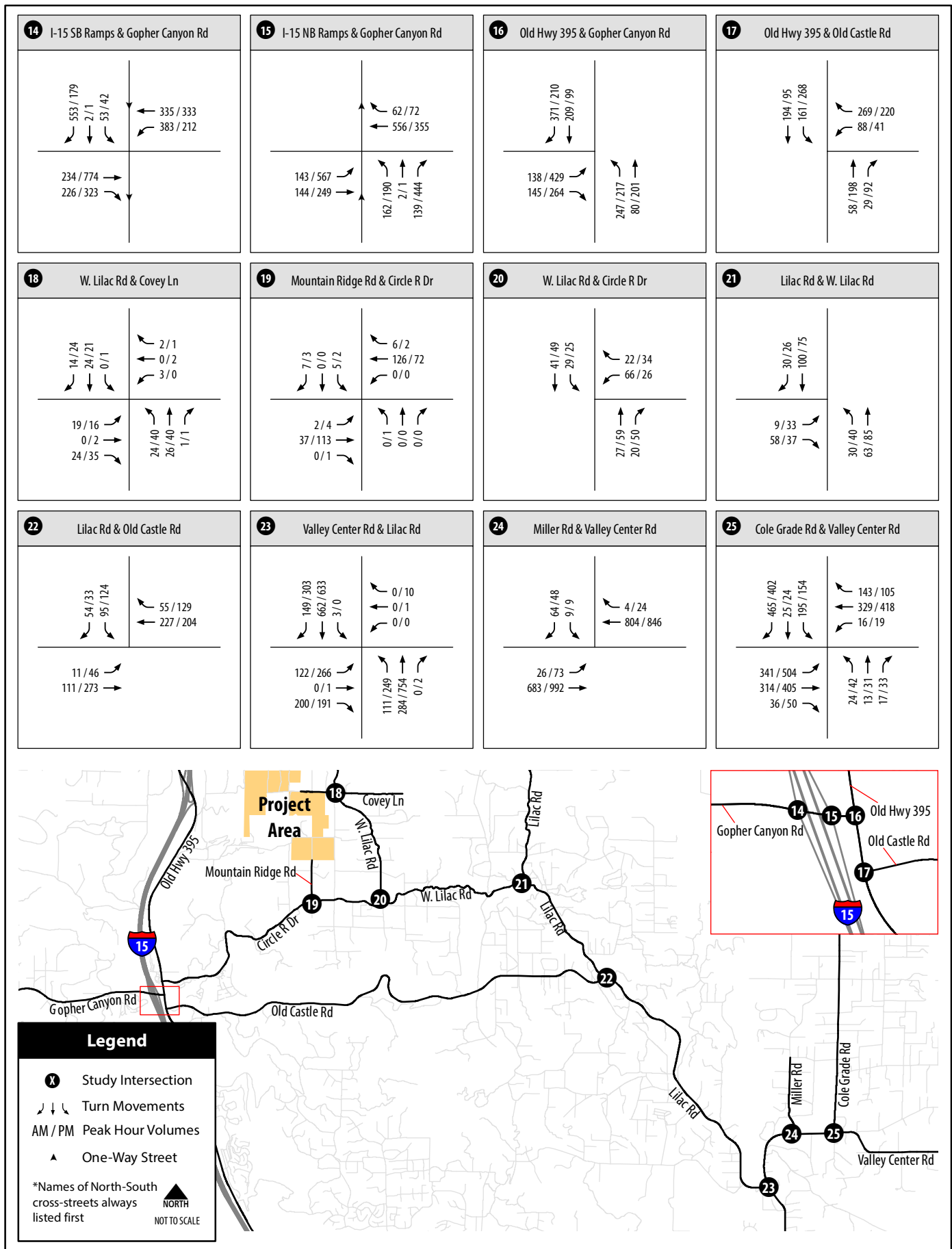
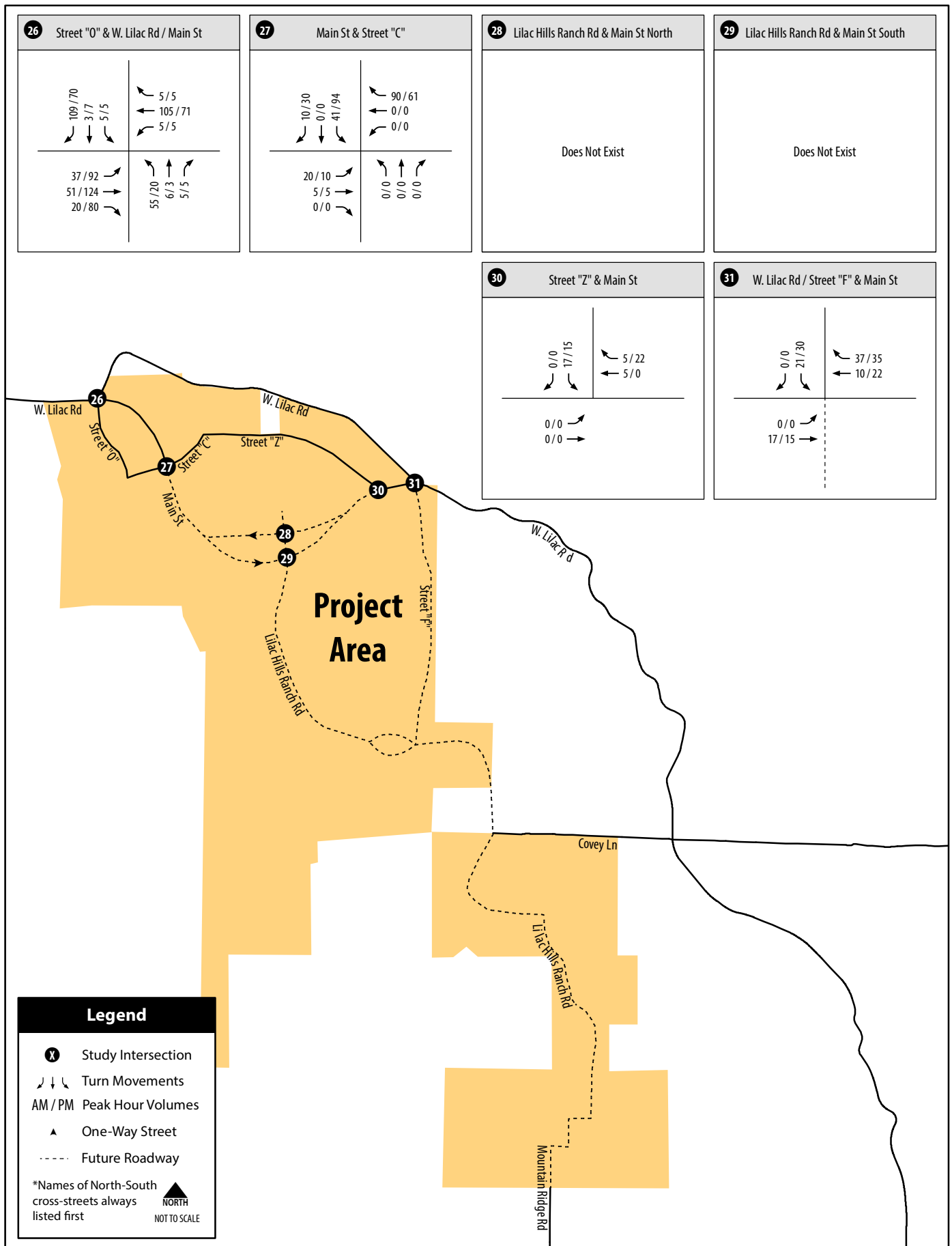


Figure 5-2B (Intersections 14-25)
Intersection Peak Hour Traffic Volumes -
Existing Plus Project (Phase B) Conditions



Lilac Hills Ranch - Mountain Ridge Road
Fire Station Alternative

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	<u>2.1</u> / 0.0	-	Yes <i>Caltrans Int. > 2 sec.</i>
15. I-15 NB Ramps / Gopher Canyon Road	OWSC	31.8	D	1970.0	F	30.5 / 1945.4	D / F	1.3 / <u>24.6</u>	-	Yes <i>Caltrans Int. > 2 sec.</i>
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		Delay (sec.) AM / PM	LOS AM / PM			
		Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS					
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	118,360	8.0%	9,509	0.66	4	0.95	13.20%	1,772	0.754	C	0.009	No
I-15	Centre City Parkway to El Norte Parkway	112,100	8.0%	9,006	0.66	4	0.95	13.20%	1,679	0.714	C	0.007	No
I-15	El Norte Parkway to SR-78	128,030	7.9%	10,077	0.66	4	0.95	10.00%	1,851	0.788	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; November 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
<i>Roadway Segment</i>	
None	-
<i>Intersection</i>	
I-15 SB Ramps / Gopher Canyon Road	Signalization by the 1 st EDU of Phase 4 or 363 rd total EDU - Caltrans' facility, significant and unavoidable impact.
I-15 NB Ramps / Gopher Canyon Road	Signalization by the 1 st EDU of Phase 4 or 363 rd total EDU - Caltrans' facility, significant and unavoidable impact.
<i>Two-Lane Highway</i>	
None	-
<i>Freeway</i>	
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**.