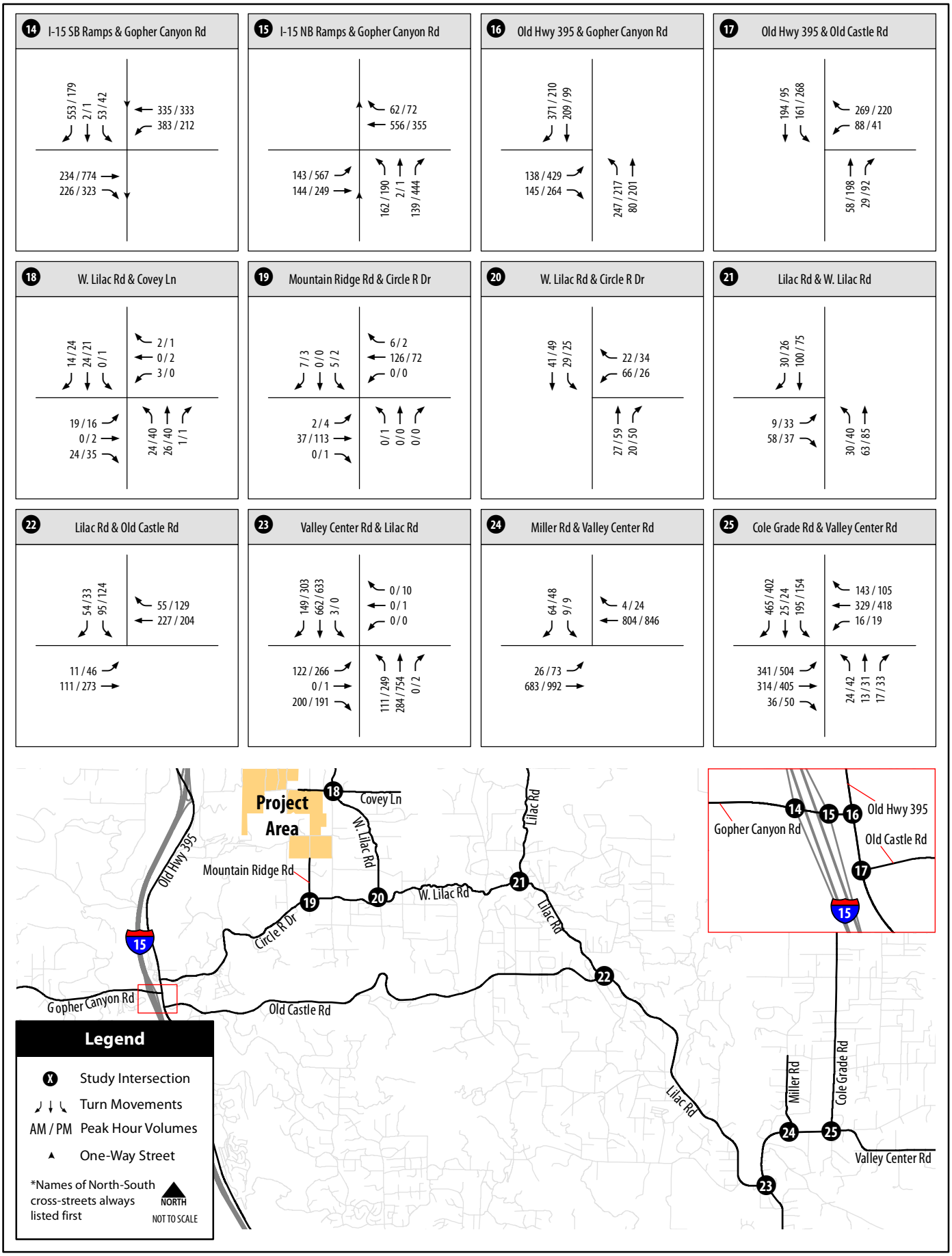
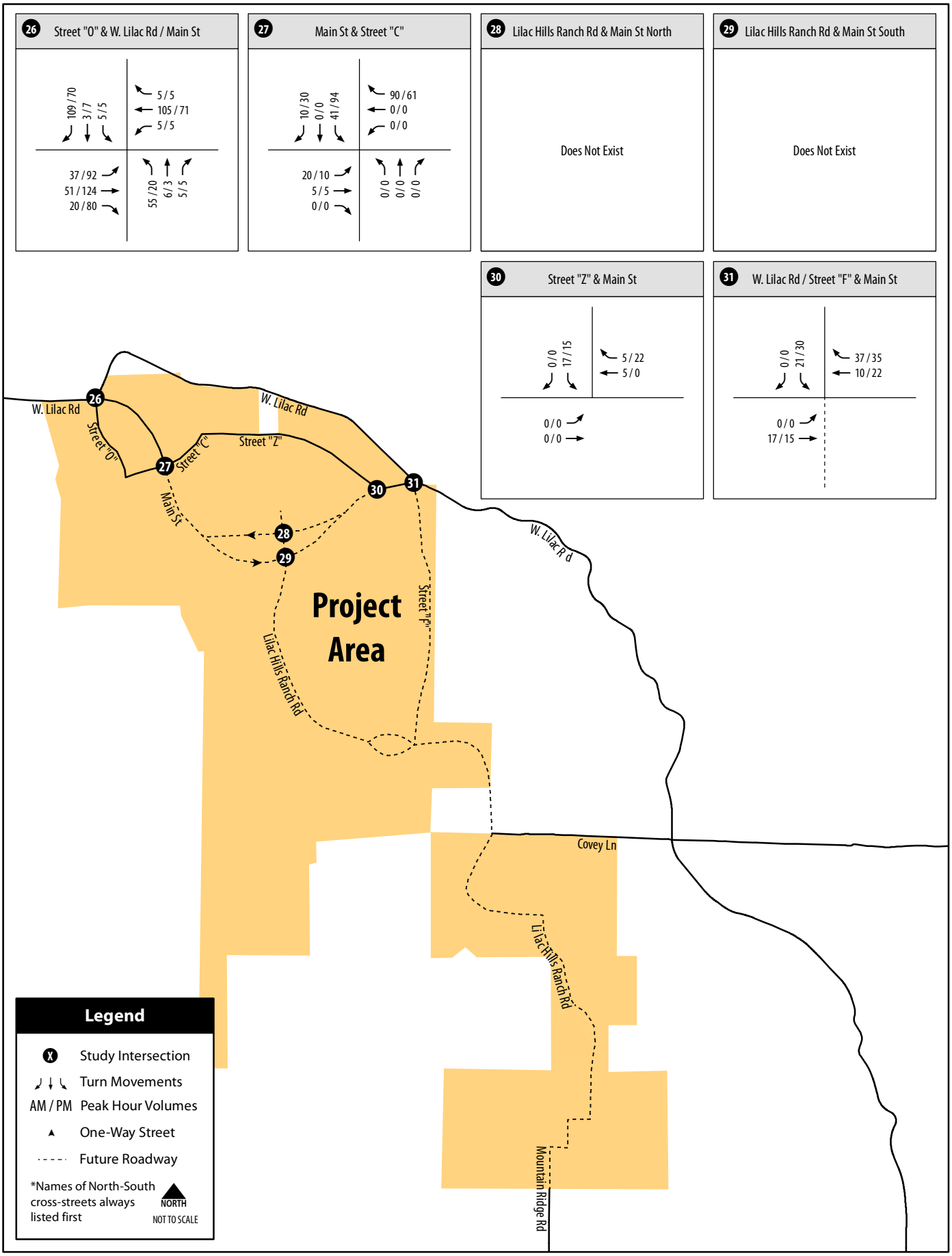


Lilac Hills Ranch Traffic Impact Study

CHEN RYAN

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



Lilac Hills Ranch Traffic Impact Study

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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.
Changes in this table are associated with "Change 3" as described in the "Summary of Major Changes to the TIS" section of the "Executive Summary".
* 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 project 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		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	118,260	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. 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**.

- *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 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.

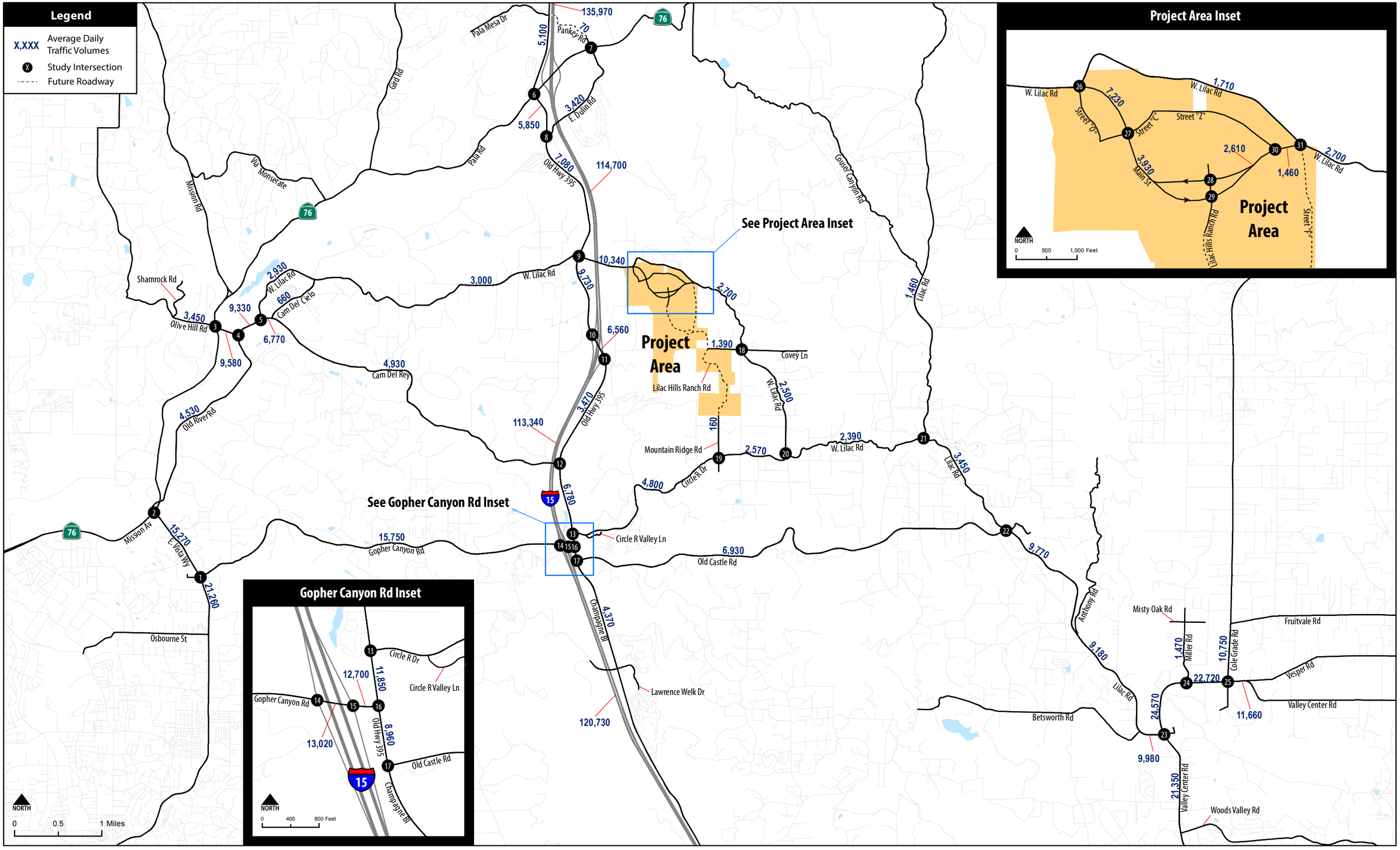
In addition to the project access and frontage roads assumed above, mitigation measure from Phase A was also carried forward into this Phase, including:

- 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 Traffic Impact Study

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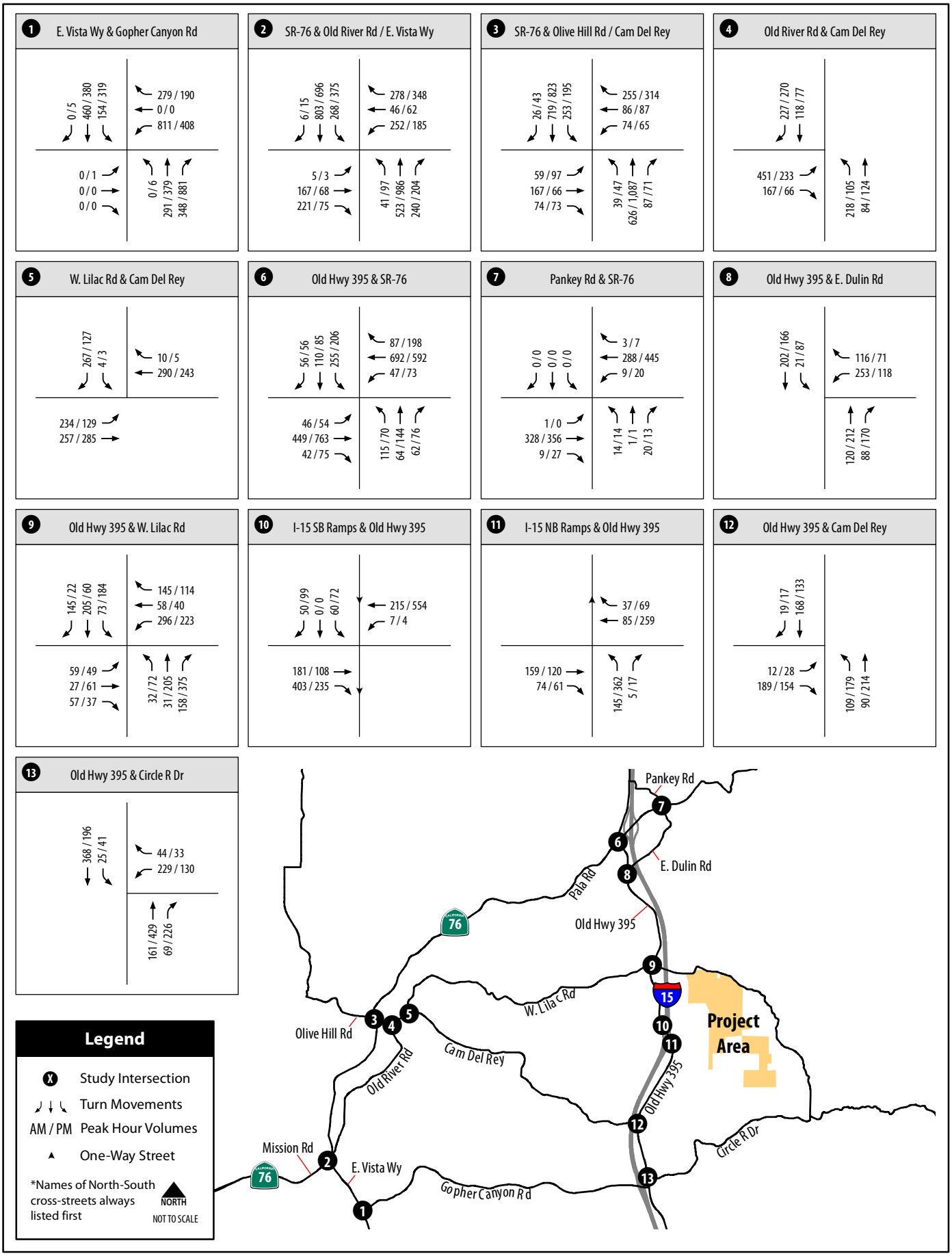
Figure 5-3A

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



Lilac Hills Ranch Traffic Impact Study

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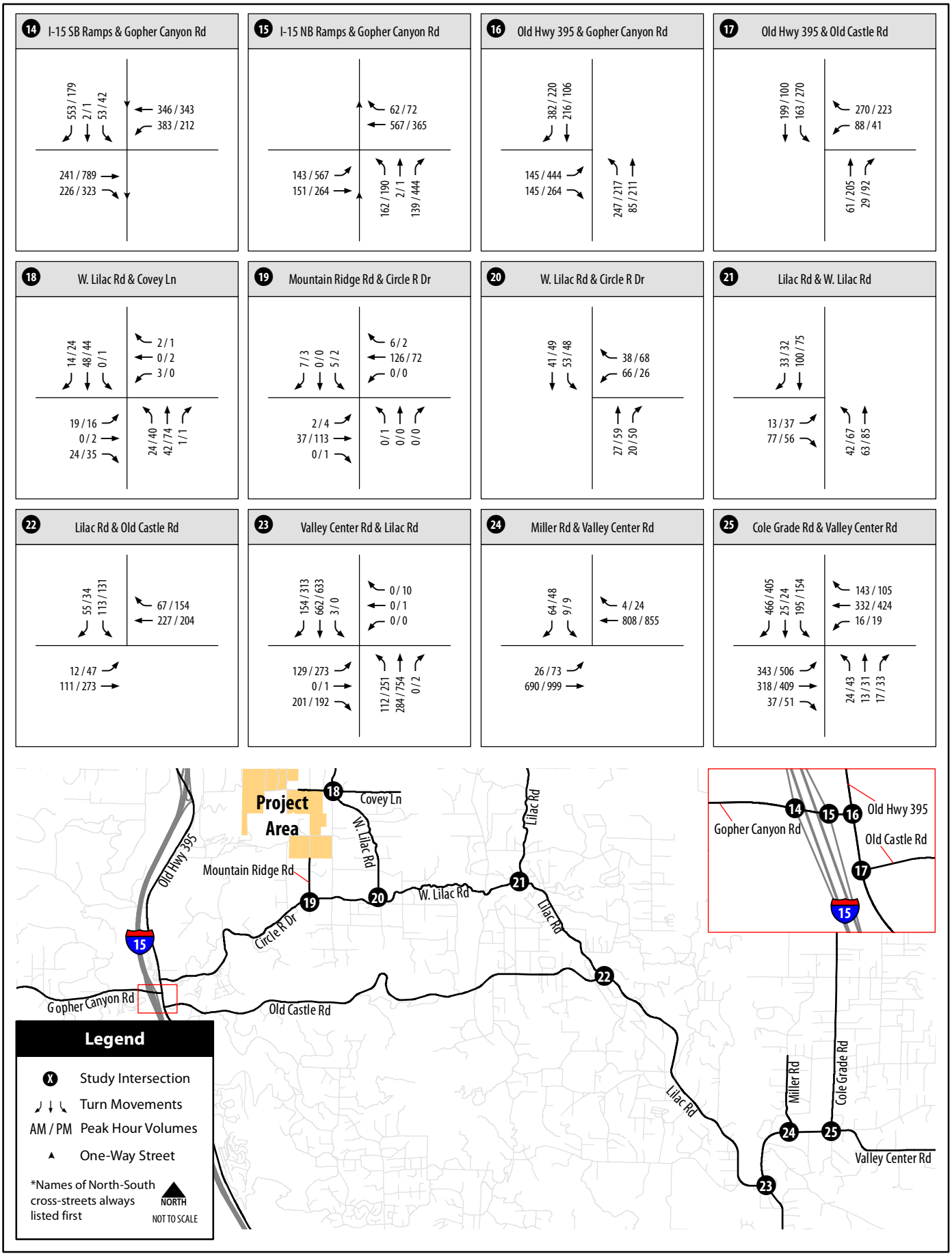
Figure 5-3B (Intersections 1-13)
Intersection Peak Hour Traffic Volumes - Existing Plus Project (Phase C) Conditions



Lilac Hills Ranch Traffic Impact Study

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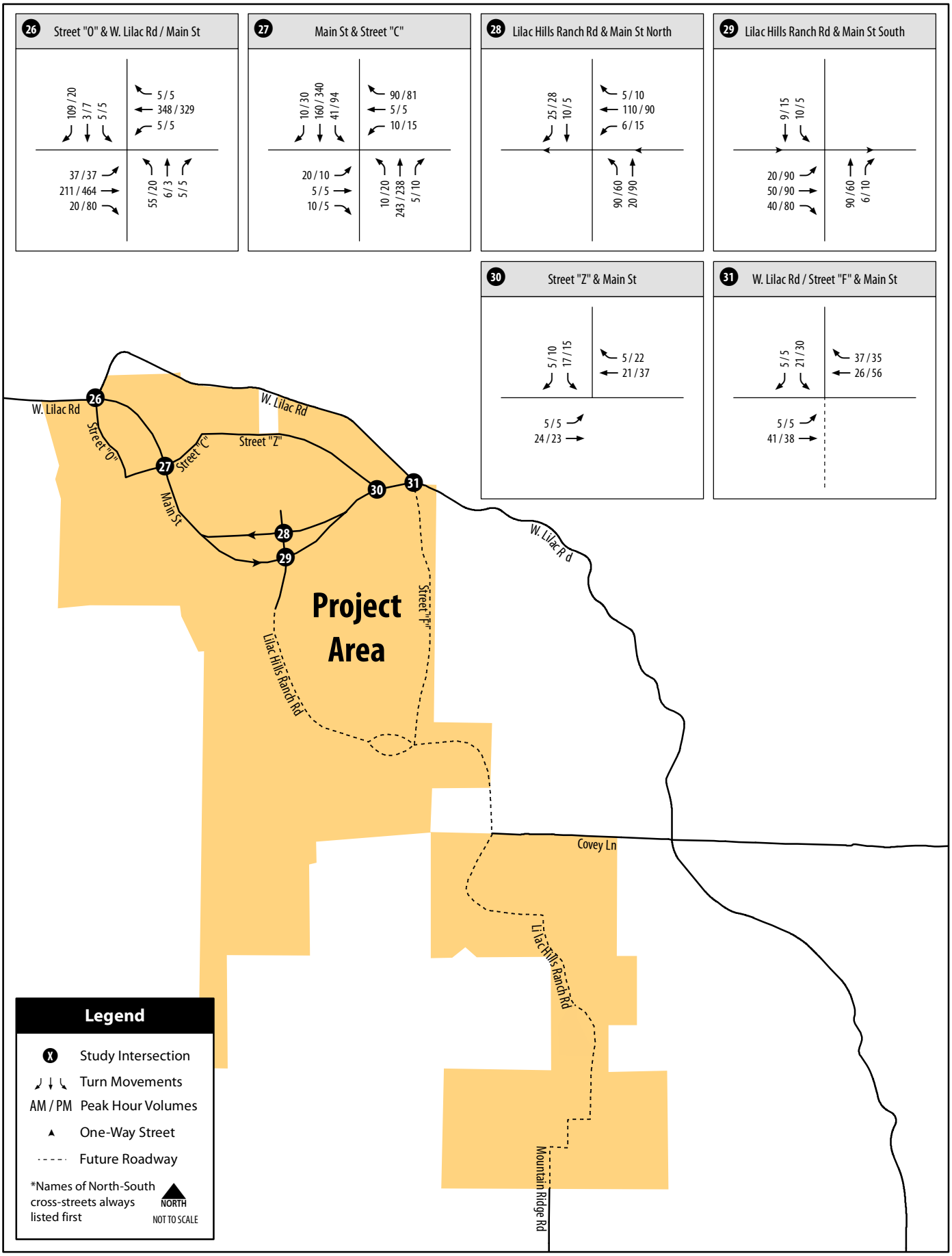
Figure 5-3B (Intersections 14-25)
Intersection Peak Hour Traffic Volumes - Existing Plus Project (Phase C) Conditions



Lilac Hills Ranch Traffic Impact Study

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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

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		
Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	4-Ln	30,800	12,700	A	11,870	A	830	No
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

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		
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
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.
Changes in this table are associated with "Change 3" as described in the "Summary of Major Changes to the TIS" section of the "Executive Summary".
* 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.

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

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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.
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. 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;
- 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**. Note that the traffic volume figures were modified to reflect the project access "Change 1" as described in the "Summary of Major Changes to the TIS" section of the "Executive Summary".

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.

- 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.

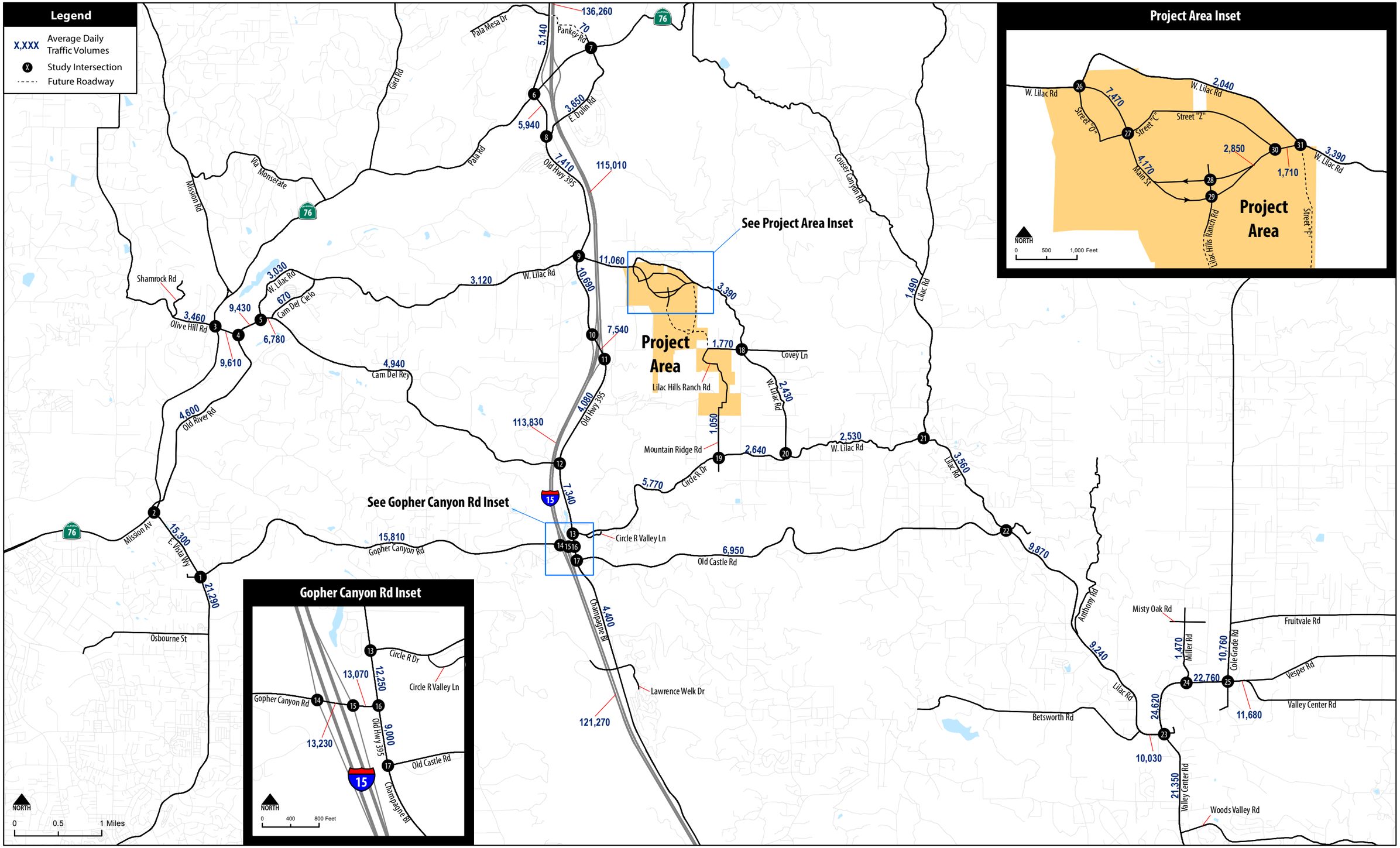

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Figure 5-5A
Roadway Average Daily Traffic Volumes - Existing Plus Project (Phase D) Conditions

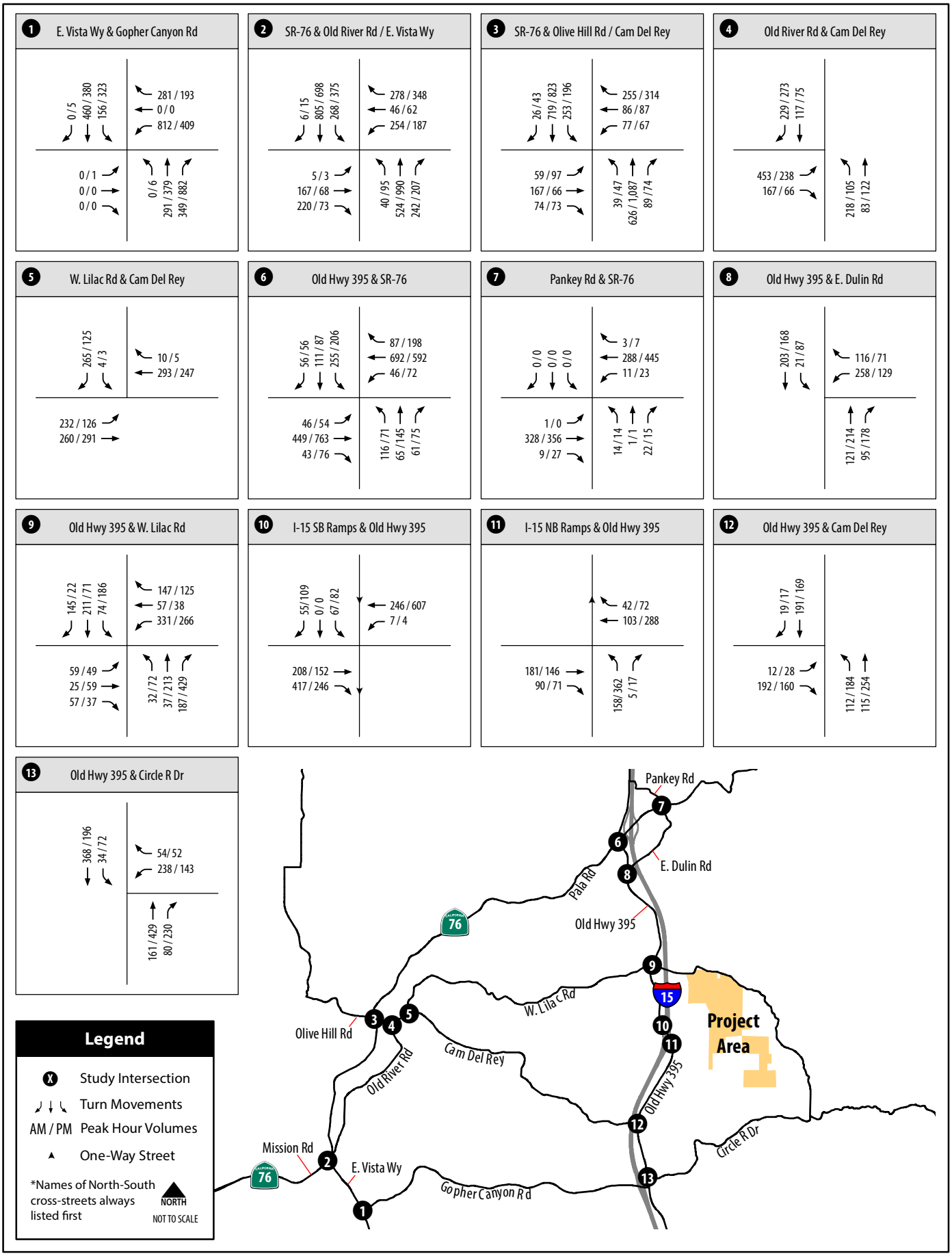

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Figure 5-5B (Intersections 1-13)
Intersection Peak Hour Traffic Volumes - Existing Plus Project (Phase D) Conditions

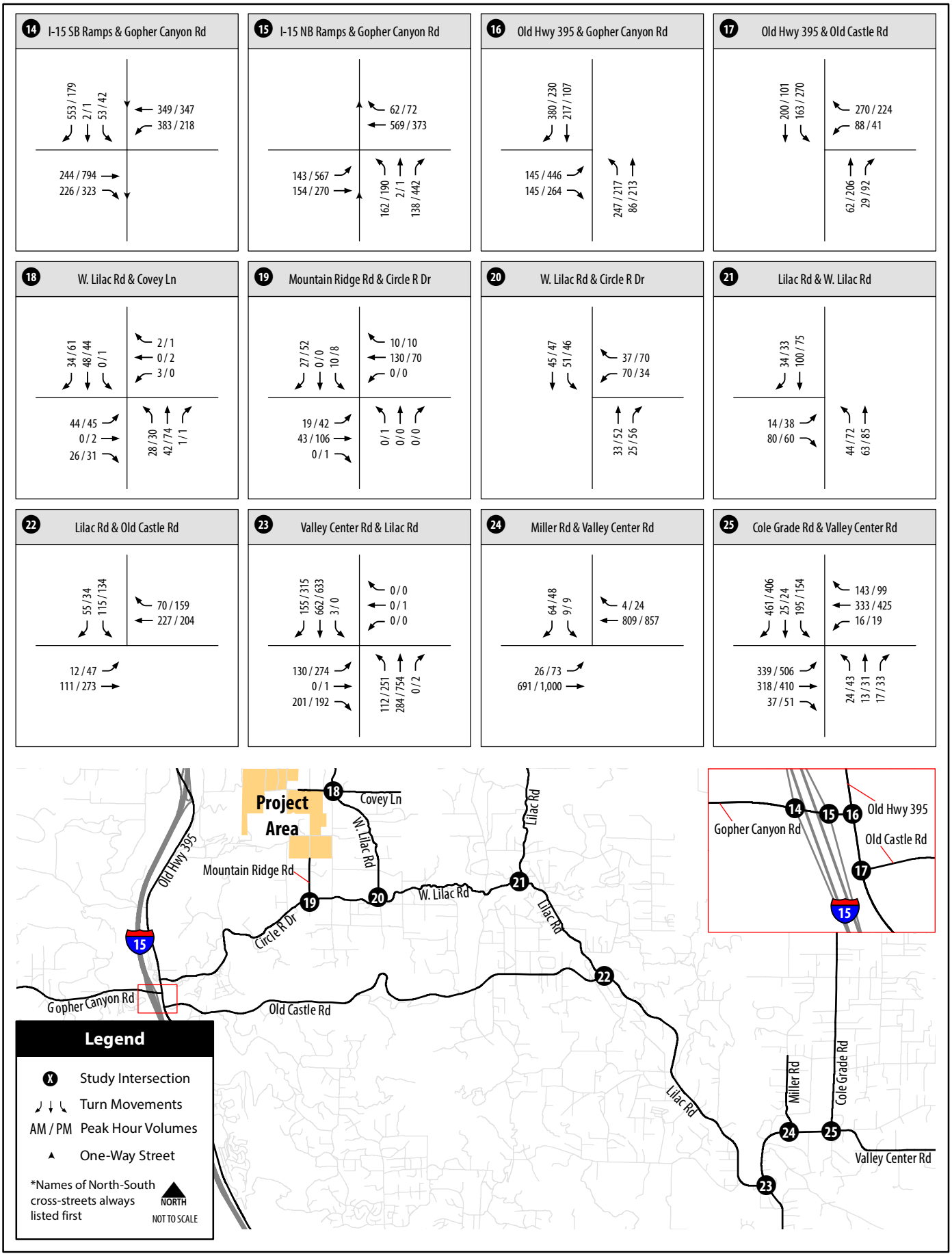

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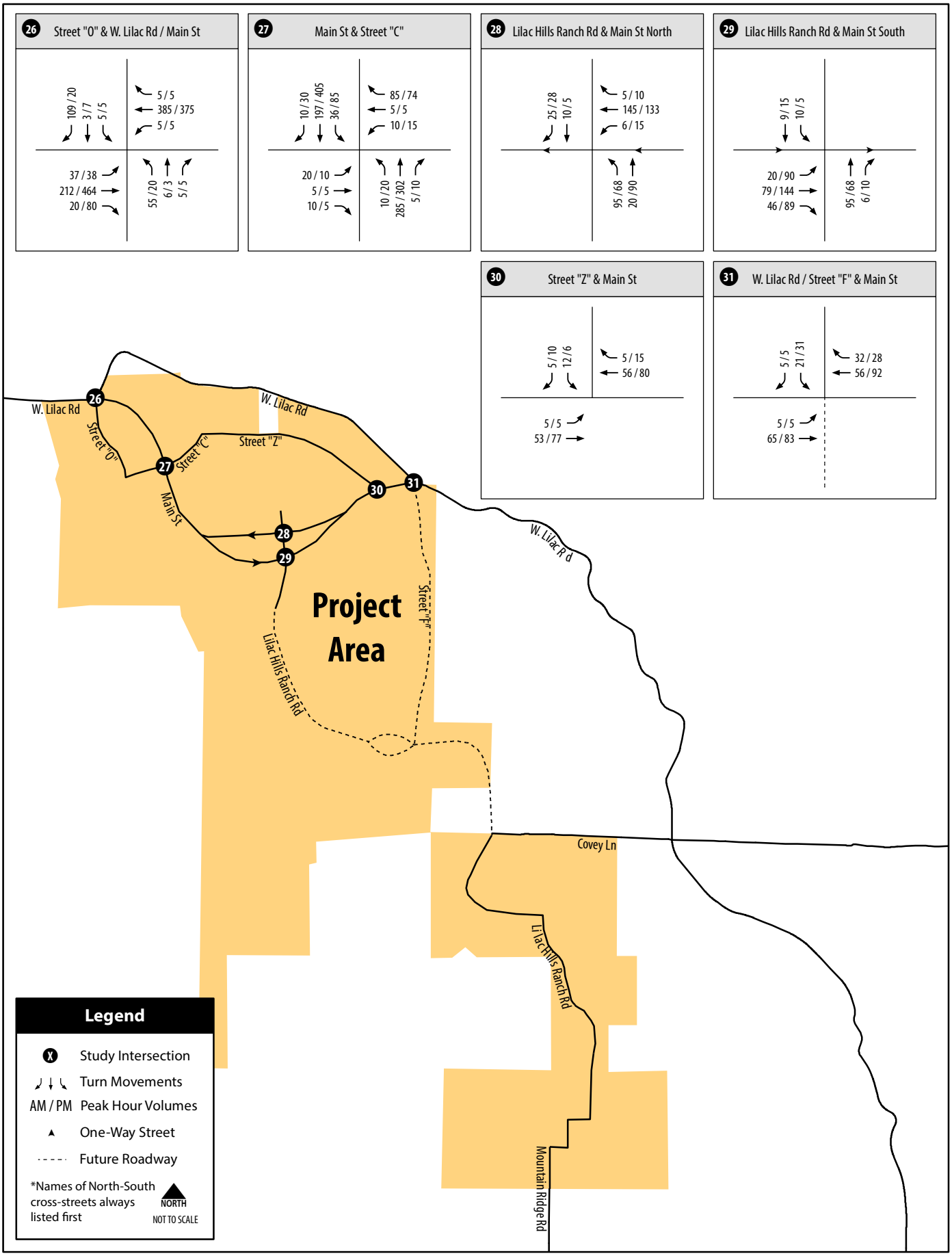
Figure 5-5B (Intersections 14-25)
Intersection Peak Hour Traffic Volumes - Existing Plus Project (Phase D) Conditions



Lilac Hills Ranch Traffic Impact Study

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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	11,060	D	1,150	A	9,910	No
W. Lilac Road	Main Street	Street "F"	2-Ln	7,800	2,040	A	1,150	A	890	No
W. Lilac Road	Street "F"	Covey Lane	2-Ln	7,800	3,390	A	1,150	A	2,240	No
W. Lilac Road	Covey Lane	Circle R Drive	2-Ln	7,800	2,430	A	480	A	1,950	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	13,230	A	12,390	A	840	No
Gopher Canyon Road	I-15 NB Ramps	Old Highway 395	4-Ln	30,800	13,070	A	11,870	A	1,200	No
Circle R Drive	Old Highway 395	Mountain Ridge Road	2-Ln	9,800	5,770	C	4,030	C	1,740	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	2,640	B	1,770	B	870	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

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).
Changes in this table are associated with "Change 1" as described in the "Summary of Major Changes to the TIS" section of the "Executive Summary".
Changes in this table are also associated with "Change 3" as described in the "Summary of Major Changes to the TIS" section of the "Executive Summary".
* 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 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*	45.4	D	48.7	D	172.8 / 212.0	F / F	-127.4 / -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*	22.5	C	36.1	D	14.7 / 13.3	C / B	7.8 / 22.8	-	No
10. I-15 SB Ramps / Old Highway 395	OWSC	12.4	B	16.2	C	10.6 / 12.1	B / B	1.8 / 4.1	-	No
11. I-15 NB Ramps / Old Highway 395	OWSC	12.0	B	22.2	C	9.8 / 11.2	A / B	2.2 / 11.0	-	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	31.2	D	51.2	F	20.4 / 22.5	C / C	10.8 / 28.7	AM: WBL +20 PM: WBL +29	*Yes* *County Int.* *> 5 trips* *>1 sec.*
14. I-15 SB Ramps / Gopher Canyon Road	OWSC	592.9	F	288.9	F	468.2 / 173.0	F / F	124.7 / 115.9	-	Yes *Caltrans Int. > 2 sec.*
15. I-15 NB Ramps / Gopher Canyon Road	OWSC	34.3	D	2254.2	F	30.5 / 1945.4	D / F	3.8 / 308.8	-	Yes *Caltrans Int. > 2 sec.*
16. Old Highway 395 / Gopher Canyon Road	Signal	17.9	B	15.6	B	11.0 / 14.7	B / B	6.9 / 0.9	-	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	10.5	B	11.2	B	8.8 / 9.3	B / A	1.7 / 1.9	-	No
19. Mountain Ridge Road / Circle R Drive	TWSC	9.7	A	13.8	B	9.3 / 9.6	A / A	0.4 / 4.2	-	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	7.3	A	15.0	B	DNE	DNE	7.3 / 15.0	-	No
27. Main Street / Street "C"	RA	6.1	A	8.6	A	DNE	DNE	6.1 / 8.6	-	No
28. Lilac Hills Ranch Road / Main Street North	AWSC	8.3	A	8.5	A	DNE	DNE	8.3 / 8.5	-	No
29. Lilac Hills Ranch Road / Main Street South	AWSC	7.9	A	9.3	A	DNE	DNE	7.9 / 9.3	-	No
30. Street "Z" / Main Street	OWSC	9.2	A	9.4	A	DNE	DNE	9.2 / 9.4	-	No
31. W. Lilac Road/Street "F" / Main Street	RA	3.9	A	4.2	A	DNE	DNE	3.9 / 4.2	-	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.
Changes in this table are associated with "Change 1" as described in the "Summary of Major Changes to the TIS" section of the "Executive Summary".

- Old Highway 395 / Circle R Drive (County) – 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 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.

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	10,690	D or better	4,450	D or better	6,240	No
Old Highway 395	I-15 SB Ramps	I-15 NB Ramps	16,200	7,540	D or better	3,600	D or better	3,940	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	12,250	D or better	10,710	D or better	1,540	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

Note:
Changes in this table are associated with "Change 1" as described in the "Summary of Major Changes to the TIS" section of the "Executive Summary".

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	114,070	8.1%	9,212	0.67	4	0.95	8.40%	1,687	0.718	C	0.026	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.
Changes in this table are associated with “Change 1” as described in the “Summary of Major Changes to the TIS” section of the “Executive Summary”.

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 210th EDU from combined Phases 4 and 5 to mitigate direct project impacts; or a 1,220 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	9.2	A	10.2	B	20.4 / 22.5	C / C
14. I-15 SB Ramps / Gopher Canyon Road	29.1	C	23.6	C	468.2 / 173.0	F / F
15. I-15 NB Ramps / Gopher Canyon Road	12.8	B	33.9	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, 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 210th EDU from combined Phases 4 and 5 or 1,220th 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**. Note that the traffic volume figures were modified to reflect the project access "Change 1" as described in the "Summary of Major Changes to the TIS" section of the "Executive Summary".

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.