Roadway Segment Analysis

Table 5.3-28 displays the LOS analysis results for study area roadway segments within the City of Chula Vista under the Year 2020 conditions. As shown in Table 5.3-28, the proposed project would result in significant impacts to the following five roadway segments in the City of Chula Vista under Year 2020 conditions:

- Orange Avenue, between Melrose Avenue and I-805 SB Ramps (LOS D) – The proposed 2020 project traffic would comprise approximately 0.9% (less than 5%) of the total segment volume and would add 300 ADT (less than 800 ADT). However, one of the intersections (I-805 SB Ramps / Olympic Parkway) along this segment would operate at substandard LOS E/F during the AM/PM peak hours. Therefore, the project traffic would result in a significant cumulative impact at this location.
- Olympic Parkway, between I-805 SB Ramps and I-805 NB Ramps (LOS F) – The proposed 2020 project traffic would comprise approximately 6.6% (more than 5%) of the total segment volume and would add 4,200 ADT (more than 800 ADT). In addition, both ramps intersections along this segment would operate at substandard LOS E/F during the AM/PM peak hours. Therefore, the project traffic would result in a significant direct impact at this location.
- Olympic Parkway, between I-805 NB Ramps and Oleander Avenue (LOS F) – The proposed 2020 project traffic would comprise approximately 11.3% (more than 5%) of the total segment volume and would add 8,000 ADT (more than 800 ADT). In addition, one of the intersections (I-805 NB Ramps / Olympic Parkway) along this segment would operate at substandard LOS E/F during the AM/PM peak hours. Therefore, the project traffic would result in a significant direct impact at this location.
- Olympic Parkway, between Oleander Avenue and Brandywine Avenue (LOS F) – The proposed 2020 project traffic would comprise approximately 12.4% (more than 5%) of the total segment volume and would add 8,100 ADT (more than 800 ADT). In addition, one of the intersections (Brandywine Avenue / Olympic Parkway) along this segment would operate at substandard LOS E during both peak hours. Therefore, the project traffic would result in a significant direct impact at this location.
- Olympic Parkway, between Brandywine Avenue and Heritage Road (LOS E) – The proposed 2020 project traffic would comprise approximately 13.8% (more than 5%) of the total segment volume and would add 8,200 ADT (more than 800 ADT). In addition, one of the intersections (Brandywine Avenue / Olympic Parkway) along this segment would operate at substandard LOS E during both peak hours. Therefore, the project traffic would result in a significant direct impact at this location.

Table 5.3-28
Roadway Segment LOS Results – Year 2020 Conditions

Roadway	From	To	Cross Section	ADT w/ Project	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
H Street	Tierra Del Rey	Paseo Ranchero	6-Ln w/RM	49,000	50,000	C	700	1.4%	—	No
Telegraph Canyon Road	Medical Center Drive	Heritage Road / Paseo Ranchero	6-Ln w/RM	56,800	50,000	**E**	800	1.4%	Yes	No
Telegraph Canyon Road	Heritage Road / Paseo Ranchero	La Media Road / Otay Lakes Road	6-Ln w/RM	48,300	50,000	C	1,100	2.3%	—	No
Otay Lakes Road	H Street	Telegraph Canyon Road	6-Ln w/RM**	30,000	50,000	A	1,400	4.7%	—	No
Otay Lakes Road	La Media Road	Rutgers Avenue	6-Ln w/RM	42,100	50,000	B	900	2.1%	—	No
East Palomar Street	Medical Center Drive	Heritage Road	4-Ln w/RM	24,600	30,000	B	1,300	5.3%	—	No
East Palomar Street	Heritage Road	La Media Road	4-Ln w/RM	23,000	30,000	B	500	2.2%	—	No
East Palomar Street	La Media Road	Olympic Parkway	4-Ln w/RM	22,500	30,000	B	200	0.9%	—	No
Orange Avenue	3rd Avenue	Hilltop Drive	4-Ln w/TWLTL/RM	26,000	30,000	B	900	3.5%	—	No
Orange Avenue	Hilltop Drive	Melrose Avenue	4-Ln w/RM	28,600	30,000	C	200	0.7%	—	No
Orange Avenue	Melrose Avenue	I-805 SB Ramps	4-Ln w/RM	33,000	30,000	**D**	300	0.9%	No	Yes (Cumulative)
Olympic Parkway	I-805 SB Ramps	I-805 NB Ramps	6-Ln	64,000	50,000	**F**	4,200	6.6%	No	Yes (Direct)
Olympic Parkway	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	71,000	50,000	**F**	8,000	11.3%	No	Yes (Direct)
Olympic Parkway	Oleander Avenue	Brandywine Avenue	6-Ln w/RM	65,400	50,000	**F**	8,100	12.4%	No	Yes (Direct)
Olympic Parkway	Brandywine Avenue	Heritage Road	6-Ln w/RM	59,500	50,000	**E**	8,200	13.8%	No	Yes (Direct)

Table 5.3-28 (Continued)
Roadway Segment LOS Results – Year 2020 Conditions

Roadway	From	To	Cross Section	ADT w/ Project	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Olympic Parkway	Heritage Road	Santa Venetia Street	6-Ln w/RM	46,200	50,000	C	6,500	14.1%	—	No
Olympic Parkway	Santa Venetia Street	La Media Road	6-Ln w/RM	38,300	50,000	B	6,500	17.0%	—	No
Olympic Parkway	La Media Road	East Palomar Street	6-Ln w/RM	27,700	50,000	A	900	3.2%	—	No
Olympic Parkway	East Palomar Street	SR-125 SB Ramps	6-Ln w/RM	47,200	50,000	C	700	1.5%	—	No
Olympic Parkway	SR-125 SB Ramps	SR-125 NB Ramps	8-Ln w/RM	49,300	70,000	A	700	1.4%	—	No
Olympic Parkway	SR-125 NB Ramps	EastLake Parkway	8-Ln w/RM	51,800	70,000	A	700	1.4%	—	No
Olympic Parkway	EastLake Parkway	Hunte Parkway	6-Ln w/RM	34,400	50,000	A	400	1.2%	—	No
Olympic Parkway	Hunte Parkway	Olympic Vista Road	4-Ln w/RM	15,300	30,000	A	200	1.3%	—	No
Olympic Parkway	Olympic Vista Road	Lake Crest Drive	4-Ln w/RM	6,500	30,000	A	0	0.0%	—	No
Birch Road	La Media Road	Magdalena Avenue	6-Ln w/RM	27,500	40,000	A	900	3.3%	—	No
Birch Road	Magdalena Avenue	SR-125 SB Ramps	6-Ln w/RM	31,700	40,000	B	3,500	11.0%	—	No
Birch Road	SR-125 SB Ramps	SR-125 NB Ramps	6-Ln w/RM	32,700	50,000	A	2,800	8.6%	—	No
Birch Road	SR-125 NB Ramps	EastLake Parkway	6-Ln w/RM	33,900	50,000	A	1,800	5.3%	—	No
Main Street	4th Avenue	3rd Avenue	4-Ln w/TWLTL	22,300	30,000	A	500	2.2%	—	No
Main Street	3rd Avenue	Hilltop Drive	4-Ln w/TWLTL	29,000	30,000	C	900	3.1%	—	No
Main Street	Hilltop Drive	Melrose Avenue	4-Ln w/TWLTL	34,000	30,000	**E**	1,700	5.0%	Yes	No

Table 5.3-28 (Continued)
Roadway Segment LOS Results – Year 2020 Conditions

Roadway	From	To	Cross Section	ADT w/ Project	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Main Street	Melrose Avenue	I-805 SB Ramps	4-Ln w/TWLTL	34,700	30,000	**E**	1,900	5.5%	Yes	No
Main Street	I-805 SB Ramps	I-805 NB Ramps	6-Ln	43,900	50,000	C	6,600	15.0%	—	No
Main Street	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	50,100	50,000	**D**	11,600	23.2%	Yes	No
Main Street	Oleander Avenue	Brandywine Avenue	6-Ln w/TWLTL	51,300	50,000	**D**	12,100	23.6%	Yes	No
Main Street	Brandywine Avenue	Heritage Road	6-Ln w/RM	39,200	50,000	B	13,100	33.4%	—	No
Main Street	Heritage Road	La Media Road	Does Not Exist							
Main Street	La Media Road	West of SR-125 @ Int #65	6-Ln w/RM*	18,500	50,000	A	7,300	39.5%	—	No
Main Street	SR-125 SB Ramps	SR-125 NB Ramps	Does Not Exist							
Main Street	SR-125 NB Ramps	EastLake Parkway/ University Drive	Does Not Exist							
Otay Valley Road	Main Street	SR-125	Does Not Exist							
Otay Valley Road	SR-125	Village Nine Street "B"	Does Not Exist							
Hilltop Drive	Orange Avenue	Main Street	4-Ln	7,500	22,000	A	700	9.3%	—	No
Paseo Ranchero	H Street	Telegraph Canyon Road	4-Ln w/SM/RM	17,700	22,000	B	1,200	6.8%	—	No
Heritage Road	Telegraph Canyon Road	East Palomar Street	6-Ln w/RM	24,700	50,000	A	2,900	11.7%	—	No
Heritage Road	East Palomar Street	Olympic Parkway	6-Ln w/RM	46,000	50,000	C	4,800	10.4%	—	No
Heritage Road	Olympic Parkway	Santa Victoria Road	Does Not Exist							

Table 5.3-28 (Continued)
Roadway Segment LOS Results – Year 2020 Conditions

Roadway	From	To	Cross Section	ADT w/ Project	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Heritage Road	South of Santa Victoria Road @ Int #61	Main Street	6-Ln w/RM	17,500	50,000	A	17,500	100.0%	—	No
Heritage Road	Main Street	Avenida De Las Vistas	6-Ln w/RM**	17,400	50,000	A	3,300	19.0%	—	No
La Media Road	Telegraph Canyon Road	East Palomar Street	6-Ln w/RM	26,700	50,000	A	1,800	6.7%	—	No
La Media Road	East Palomar Street	Olympic Parkway	6-Ln w/RM	20,800	50,000	A	2,000	9.6%	—	No
La Media Road	Olympic Parkway	Santa Venetia Street	6-Ln w/RM	34,600	50,000	A	7,900	22.8%	—	No
La Media Road	Santa Venetia Street	Birch Road	6-Ln w/RM	31,700	50,000	A	7,700	24.3%	—	No
La Media Road	Birch Road	Santa Luna Street	6-Ln w/RM	20,700	50,000	A	8,000	38.6%	—	No
La Media Road	Santa Luna Street	Main Street	4-Ln w/RM*	19,500	30,000	A	7,400	37.9%	—	No
Magdalena Avenue	Santa Venetia Street	Birch Road	4-Ln	5,500	22,000	A	500	9.1%	—	No
Magdalena Avenue	Birch Road	Wolf Canyon Loop	4-Ln w/RM	15,400	22,000	A	3,300	21.4%	—	No
Magdalena Avenue	Wolf Canyon Loop	Santa Luna Street	2-Ln w/RM	8,000	12,000	A	3,100	38.8%	—	No
Magdalena Avenue	Santa Luna Street	Main Street	4-Ln w/RM	15,500	22,000	A	5,800	37.4%	—	No
EastLake Parkway	Corte Vista	Olympic Parkway	6-Ln w/RM	20,000	50,000	A	400	2.0%	—	No
EastLake Parkway	Olympic Parkway	Birch Road	6-Ln w/RM	23,500	40,000	A	500	2.1%	—	No

Table 5.3-28 (Continued)
Roadway Segment LOS Results – Year 2020 Conditions

Roadway	From	To	Cross Section	ADT w/ Project	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
EastLake Parkway	Birch Road	Main Street/Hunte Parkway	6-Ln w/RM	26,700	40,000	A	1,200	4.5%	—	No
University Drive	Main Street/Hunt e Parkway	University Driveway #1	Does Not Exist							
University Drive	University Driveway #1	University Driveway #2	Does Not Exist							
University Drive	University Driveway #2	Discovery Falls Drive	Does Not Exist							
Discovery Falls Drive	Hunte Parkway	University/RTP Driveway	Does Not Exist							
Discovery Falls Drive	University/RTP Driveway	University Drive	Does Not Exist							
Discovery Falls Drive	University Drive	Village Nine Street "B"	Does Not Exist							
University Drive	Main Street/Hunte Parkway	University Driveway #1	Does Not Exist							
Hunte Parkway	Otay Lakes Road	Olympic Parkway	4-Ln w/RM	16,000	30,000	A	200	1.3%	—	No
Hunte Parkway	Olympic Parkway	Discovery Falls Drive	6-Ln w/RM	13,900	50,000	A	200	1.4%	—	No
Hunte Parkway	Discovery Falls Drive	EastLake Parkway/ University Drive	6-Ln w/RM	12,500	50,000	A	1,300	10.4%	—	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS (D), E, or F.
RM = raised median; SM = striped median; TWLTL = two-way left-turn lane
* Facility is required for project access.
** Facility improvement is assumed to be implemented by others, including City's CIP.

Freeway / State Highway Segment Analysis

Table 5.3-29 displays freeway LOS analysis results for I-805, SR-125, and SR-905 under the Year 2020 conditions. As shown in the table, all study freeway/state highway segments along I-805, SR-125 and SR-905 would operate at acceptable LOS D or better under Year 2020 conditions, with the following two (2) exceptions:

- I-805, from Market Street to Imperial Avenue (LOS F) – The proposed project would comprise 1.0% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS F, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- I-805, from Imperial Avenue to E Division Street (LOS E) – The proposed project would comprise 1.1% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS E, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.

Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements and provided for information purposes only, the signalized ramp intersections along I-805 and SR-125 within the study area were analyzed under the Year 2020 conditions using the ILV procedures as described in Section 5.3.1.1. ILV analysis results are displayed in Table 5.3-30 and analysis worksheets for the Year 2020 conditions are provided in EIR Appendix M.

As shown in the table, all of the I-805 ramp intersections would operate "At Capacity" or "Under Capacity", with the following the four (4) exceptions:

- I-805 SB Ramps / Olympic Parkway – "Over Capacity" during both the AM and PM peak hour;
- I-805 NB Ramps / Olympic Parkway – "Over Capacity" during both the AM and PM peak hours; ~~and~~
- I-805 SB Ramps / Main Street – "Over Capacity" during both the AM and PM peak hour; and
- I-805 NB Ramps / Main Street – "Over Capacity" during the PM peak hour.

All of the SR-125 ramp intersections within the study area would continue to operate at "Under Capacity" during both the AM and PM peak hours under Year 2020 conditions.

Ramp Metering Analysis

Table 5.3-31 displays the ramp metering analysis conducted at the I-805 northbound on-ramps at Olympic Parkway and at Main Street under the Year 2020 conditions. Based on observed existing conditions, it is assumed that approximately 80% of the total arrival traffic (Demand) would utilize the two non-HOV lanes.

As shown in Table 5.3-31, the peak-hour capacity expected to be processed through the ramp meter (Meter Rate) would be greater than the peak-hour demand (Demand) at the I-805 northbound on-ramp at Olympic Parkway. In comparison, the peak-hour demand at the I-805 northbound on-ramp at Main Street would be greater than the capacity that the ramp meter provides under Year 2020 (with project) conditions. Moreover, based on the SANDAG CMP, the projected delay of 25.6 minutes would exceed the allowable threshold of 15 minutes (SANDAG 2008). Hence, the proposed project would result in a significant cumulative impact at the Main Street on-ramp in 2020.

Table 5.3-29
Freeway / State Highway Segment LOS Results – Year 2020 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Contribution (≥ 5%)	Significant Impact?
		ADT	*Peak Hour %*	*Peak Hour Volume*	*Directional Split*	*# of Lanes Per Direction*	*PHF*	*% of Heavy Vehicle*	*Volume (pc/h/ln)*	*V/C*	*LOS*	*ADT*	*LOS*		
I-805	Home Avenue to SR-94	263,400	6.9%	18,175	0.51	4+1HOV	0.97	4.2%	1,621	0.811	D	260,700	D	1.0%	No
I-805	SR-94 to Market Street	259,200	8.0%	20,736	0.50	4+1HOV	0.97	4.2%	1,821	0.908	D	256,500	D	1.0%	No
I-805	Market Street to Imperial Avenue	330,300	8.0%	26,424	0.50	5+1HOV	0.97	4.2%	1,989	1.053	**F**	326,900	**F**	1.0%	Yes (Cumulative)
I-805	Imperial Avenue to E Division Street	329,100	8.0%	26,328	0.50	5+1HOV	0.97	4.2%	1,979	0.960	**E**	325,500	**E**	1.1%	Yes (Cumulative)
I-805	E Division Street to Plaza Boulevard	312,000	7.2%	22,464	0.51	5+1HOV	0.95	3.8%	1,759	0.854	D	308,300	D	1.2%	No
I-805	Plaza Boulevard to SR-54	301,100	8.1%	24,389	0.52	5+1HOV	0.96	2.2%	1,906	0.926	D	297,000	D	1.4%	No
I-805	SR-54 to Bonita Road	325,600	7.2%	23,443	0.52	4+1Aux+1 HOV	0.96	1.7%	1,975	0.889	D	320,100	D	1.7%	No
I-805	Bonita Road to East H Street	280,300	7.8%	21,863	0.50	5+1HOV	0.95	1.7%	1,656	0.805	D	275,000	C	1.9%	No
I-805	East H Street to Telegraph Canyon Road	277,700	7.8%	21,661	0.50	5+1HOV	0.95	1.9%	1,647	0.801	D	272,400	C	1.9%	No
I-805	Telegraph Canyon Road to East Palomar Street	232,500	7.1%	16,508	0.51	4+1Aux+1 HOV	0.92	1.70%	1,425	0.640	C	227,700	B	2.1%	No

Table 5.3-29 (Continued)
Freeway / State Highway Segment LOS Results – Year 2020 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Contribution (≥ 5%)	Significant Impact?
		ADT	*Peak Hour %*	*Peak Hour Volume*	*Directional Split*	*# of Lanes Per Direction*	*PHF*	*% of Heavy Vehicle*	*Volume (pc/h/ln)*	*V/C*	*LOS*	*ADT*	*LOS*		
I-805	East Palomar Street to Olympic Parkway	209,500	7.1%	14,875	0.51	4M+1Aux	0.92	1.70%	1,853	0.772	C	205,300	C	2.0%	No
I-805	Olympic Parkway to Main Street	229,600	6.9%	15,842	0.51	4M+1Aux	0.93	5.40%	1,988	0.828	D	220,200	C	4.1%	No
I-805	Main Street to Palm Avenue	220,100	7.1%	15,627	0.58	4M+1Aux	0.95	10.3%	2,225	0.927	D	217,200	D	1.3%	No
I-805	Palm Avenue to SR-905	196,700	7.1%	13,966	0.58	4M+1Aux	0.95	10.3%	1,992	0.830	D	194,300	D	1.2%	No
SR-125	Telegraph Canyon Road to Olympic Parkway	18,000	7.0%	1,260	0.60	2M	0.92	2.0%	417	0.174	A	17,200	A	4.4%	No
SR-125	Olympic Parkway to Birch Road	15,400	7.0%	1,078	0.60	2M	0.92	2.0%	351	0.146	A	14,600	A	5.2%	No
SR-125	Birch Road to Main Street	25,800	7.0%	1,806	0.60	2M	0.92	2.0%	593	0.247	A	25,100	A	2.7%	No
SR-125	Main Street to Lone Star Road	25,800	7.0%	1,806	0.60	2M	0.92	2.0%	593	0.247	A	25,100	A	2.7%	No
SR-125	Lone Star Road to Otay Mesa Road	25,800	7.0%	1,806	0.60	2M	0.92	2.0%	593	0.247	A	25,100	A	3.5%	No

Table 5.3-29 (Continued)
Freeway / State Highway Segment LOS Results – Year 2020 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Contribution (≥ 5%)	Significant Impact?
		ADT	*Peak Hour %*	*Peak Hour Volume*	*Directional Split*	*# of Lanes Per Direction*	*PHF*	*% of Heavy Vehicle*	*Volume (pc/h/ln)*	*V/C*	*LOS*	*ADT*	*LOS*		
SR-125	Otay Mesa Road to SR-905	25,100	7.0%	1,757	0.60	2M	0.92	2.0%	582	0.243	A	25,100	A	2.7%	No
SR-905	I-805 to Calliente Avenue	130,300	7.0%	9,121	0.60	3M	0.92	5.0%	2,028	0.845	D	130,000	D	1.2%	No
SR-905	Calliente Avenue to Heritage Road	107,500	7.0%	7,525	0.60	3M	0.92	5.0%	1,682	0.701	C	107,300	C	0.2%	No
SR-905	Heritage Road to Britannia Boulevard	95,500	7.0%	6,685	0.60	3M	0.92	5.0%	1,493	0.622	B	95,300	B	0.2%	No
SR-905	Britannia Boulevard to La Media Road	89,500	7.0%	6,265	0.60	3M	0.92	5.0%	1,393	0.580	B	89,200	B	0.2%	No
SR-905	La Media Road to SR-125	66,100	7.0%	4,627	0.60	3M	0.92	5.0%	1,036	0.432	B	65,800	B	0.3%	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
M = mainline; Aux = auxiliary lane;
HOV = High Occupancy Vehicle lane.

Table 5.3-30
Ramp Intersection Capacity Analysis – Year 2020 Conditions

Ramp Intersection	Peak Hour	With Project		Without Project	
		ILV / Hour	*Description*	*ILV / Hour*	*Description*
I-805 SB Ramps / Olympic Parkway	AM	1,621	*>1500: (Over Capacity))*	1,443	*1200–1500: (At Capacity)*
	PM	2,198	*>1500: (Over Capacity)*	1,953	*>1500: (Over Capacity)*
I-805 NB Ramps / Olympic Parkway	AM	1,741	*>1500: (Over Capacity)*	1,528	*>1500: (Over Capacity)*
	PM	2,012	*>1500: (Over Capacity))*	1,714	*>1500: (Over Capacity))*
I-805 SB Ramps / Main Street	AM	1,539	*>1500: (Over Capacity))*	1,340	*1200–1500: (At Capacity)*
	PM	1,948	*>1500: (Over Capacity)*	1,848	*>1500: (Over Capacity)*
I-805 NB Ramps / Main Street	AM	1,254	*1200–1500: (At Capacity)*	1,192	*<1200: (Under Capacity)*
	PM	1,638	*>1500: (Over Capacity))*	1,435	*1200–1500: (At Capacity)*
SR-125 SB Ramps / Olympic Parkway	AM	696	*<1200: (Under Capacity)*	663	*<1200: (Under Capacity)*
	PM	622	*<1200: (Under Capacity)*	588	*<1200: (Under Capacity)*
SR-125 NB Ramps / Olympic Parkway	AM	631	*<1200: (Under Capacity)*	600	*<1200: (Under Capacity)*
	PM	708	*<1200: (Under Capacity)*	617	*<1200: (Under Capacity)*
SR-125 SB Ramps / Birch Road	AM	518	*<1200: (Under Capacity)*	506	*<1200: (Under Capacity)*
	PM	599	*<1200: (Under Capacity)*	590	*<1200: (Under Capacity)*
SR-125 NB Ramps / Birch Road	AM	432	*<1200: (Under Capacity)*	423	*<1200: (Under Capacity)*
	PM	740	*<1200: (Under Capacity)*	725	*<1200: (Under Capacity)*
SR-125 SB Ramps / Main Street	AM	Does Not Exist		Does Not Exist	
	PM				
SR-125 NB Ramps / Main Street	AM	Does Not Exist		Does Not Exist	
	PM				
SR-125 SB Ramps / Lone Star Road	AM	Does Not Exist		Does Not Exist	
	PM				
SR-125 NB Ramps / Lone Star Road	AM	Does Not Exist		Does Not Exist	
	PM				

Source: Chen Ryan Associates 2014 (EIR Appendix M).

Table 5.3-31
Ramp Metering Analysis – Year 2020 Conditions

Location	Peak Hour	With Project						Without Project					Significant Impact?
		P_{vol} Peak Hour Volume	*Demand Vol[1] (veh/hr per lane)*	*Meter Rate[2] (veh/hr)*	*Excess Demand[3] (veh/hr)*	*Delay[4] (min)*	*Queue[5] (ft)*	*P_{vol} Peak Hour Volume*	*Demand Vol (veh/hr per lane)*	*Excess Demand (veh/hr)*	*Delay (min)*	*Queue (ft)*	
I-805 NB On-Ramp @ Olympic Parkway	AM	1,439	576	887	0	0	0	1,390	~~782~~ 556	0	0	0	No
I-805 NB On-Ramp @ Main Street	AM	1,471	589	413	176	25.6	5,104	1,027	~~412~~ 411	0	0	0	**Yes**

Source: Chen Ryan Associates 2014 (EIR Appendix M).

1 Demand is the peak-hour demand expected to use the on-ramp.
2 Meter rate is the peak-hour capacity expected to be processed through the ramp meter.
3 Excess demand = (demand) – (meter rate) or zero, whichever is greater.
4 Delay = (excess demand / meter rate) × 60 min/hr.
5 Queue = (excess demand) × 29 ft/veh.

A.4 Year 2025 Traffic Conditions

This section provides an analysis of the proposed project's impacts under Year 2025 traffic conditions. For comparison purposes, LOS operations under existing conditions were previously provided in Table 5.3-8, Peak-Hour Intersection LOS Results, and Table 5.3-9, Roadway Segment LOS Results.

Year 2025 Roadway Network and Traffic Volumes

The Year 2025 roadway network was assumed to be identical to the Year 2020 network with the following additions provided for access or frontage impacts:

Roadway improvements to be constructed by the project for access and frontage:

- Main Street, from Santa Marisol to SR-125 right-of-way (western boundary) – this facility was included as a 6-lane Prime Arterial providing frontage and access for Village Eight East.
- Otay Valley Road, from Main Street to SR-125 right-of-way (western boundary)– This facility is included as a Four-Lane Major Road providing frontage and access for Village Eight East including the community park south of Otay Valley Road.
- Access road to the community park in Village Eight East (Community Park Driveway – This road is included as two lanes to provide access for the community park to Otay Valley Road.
- University Drive, between Main Street/Hunte Parkway and University Driveway #1 – This facility is included as a Class II Collector providing access for Village Ten.
- University Drive, between University Driveway #1 and Discovery Falls Drive – this facility is included as a Class II Collector providing access for Village Ten.
- Discovery Falls Drive, between Hunte Parkway and University / RTP Driveway – This facility is included as a Four-Lane Major Road providing frontage and access for Village Ten (project access and frontage, and the PFFP discussion are provided in Chapter 13 of EIR Appendix M).
- Discovery Falls Drive, between University / RTP Driveway and Village Nine Street "B" – this facility is included as a Class II Collector providing frontage and access for Village Ten.

In addition, the following seven driveways to be constructed as part of the project are also included in the 2025 analysis:

- Village Eight East R-16 Driveway @ Main Street (Int #70) – Right-turn in/out only
- Village Eight East Community Park Driveway @ Otay Valley Road (Int #71) – Signalized intersection
- Cutter Avenue @ Otay Valley Road (Int #72) – Right-turn in/out only

- Santa Marisol @ Otay Valley Road (Int #73) – Signalized intersection
- Santa Juilliard @ Discovery Falls Drive (Int #76) – Signalized intersection
- University Drive @ Discovery Falls Drive (Int #77) – Signalized intersection
- Santa Davis @ Discovery Falls Drive (Int #78) – Signalized intersection.

According to Section 12.24 of the City's Municipal Code, potentially significant impacts would occur if access and frontage improvements are not provided concurrent with development.

Roadway improvements to be constructed by others: None

Mitigation Being Carried Forward from 2020

As discussed in Section 5.3.5, Mitigation Measures, the following improvements would be implemented by the Project Applicant as mitigation measures under the 2020 scenario and, therefore, are included as part of the 2025 roadway network:

- Construction of Heritage Road, between Olympic Parkway and Main Street, as a Six-Lane Prime Arterial
- Heritage Road / Main Street – Signalized
- La Media Road (SB) / Main Street (WB) – Signalized
- La Media Road (NB) / Main Street (WB) – Signalized
- La Media Road (SB) / Main Street (EB) – Signalized
- La Media Road (NB) / Main Street (EB) – Signalized
- Magdalena Avenue / Main Street – Signalized.

Access and Frontage Improvements Being Carried Forward from 2020

- Main Street from Heritage Road to Village Three North R-20 driveway – this facility is included as a 2-lane roadway providing access to parcel R-20 of Village Three North. The addition of this facility would also convert the intersection of Heritage Road / Main Street into a 4-legged intersection. Quarry Driveway @ Main Street (Int #65) would be constructed as an all-way stop controlled intersection providing access to the existing quarry.
- Main Street, from La Media Road to SR-125 right-of-way (western boundary) – This facility is included as a Six-Lane Prime Arterial providing frontage and access for Village Eight East.
- La Media Road, from Santa Luna Street to Main Street – This facility is included as a Four-Lane Major Road providing access for the community park in Village Four (project access and frontage, and the PFFP discussions are provided in Chapter 13 of EIR Appendix M).

- Heritage Road along the frontage of Village Three North, between the northern project boundary and Int #62 – this facility is included as a 6-lane Prime Arterial providing frontage and access for Village Three North.
- Santa Macheto @ Heritage Road (Int #61) – Signalized intersection
- Santa Picacho @ Heritage Road (Int # 62) – Signalized intersection (was modeled as all way stop controlled T-intersection in the 2015 scenario)
- Santa Maya @ Heritage Road (Int #63) – Signalized intersection (was modeled as all way stop controlled T-intersection in the 2015 scenario)
- Village Three North R-20 Driveway @ Main Street (Int #66) – all-way stop controlled intersection
- La Media Road / Village Four Driveway @ Santa Luna Street (Int # 67) – Signalized intersection
- Santa Tipu @ Main Street (Int #68) – one-way controlled intersection
- Santa Marisol @ Main Street (Int #69) – Signalized intersection.

Circulation System Assumptions Being Carried Forward from 2020

- Heritage Road, south of Main Street to the Chula Vista city limit as a 6-lane Prime Arterial
- Otay Lakes Road between H Street and Telegraph Canyon Road as a 6-lane Prime Arterial
- Quarry Driveway (Int #65) @ Main Street as an all-way stop controlled intersection.

Intersection Analysis

Table 5.3-32 displays peak-hour intersection LOS results for the study area intersections under Year 2025 project conditions. LOS calculation worksheets for the Year 2025 conditions are provided in EIR Appendix M.

As shown in Table 5.3-32, under Year 2025 conditions the proposed project would result in significant impacts at the following three intersections in the City of Chula Vista:

- I-805 SB Ramps/Olympic Parkway – LOS F during the PM peak hour. The 2025 project traffic would comprise approximately 2.9% and 3.3% of the total intersection-entering volume in the AM and PM peak hours, respectively. Since the project contribution is less than 5% but the resulting LOS is F, the project would result in a significant cumulative impact at this intersection.
- Heritage Road/Olympic Parkway – LOS E during both the AM and PM peak hours. The 2025 project traffic would comprise approximately 14.7% and 16.4% of the total intersection-entering volume in the AM and PM peak hours, respectively. Since the

project contribution is more than 5%, the project would result in a significant direct impact at this intersection.

- La Media Road/Olympic Parkway – LOS E during the AM peak hour. The 2025 project traffic would comprise approximately 16.0% ~~and 20.6%~~ of the total intersection-entering volume in the AM ~~and PM~~ peak hours~~, respectively~~. Since the project contribution is more than 5%, the project would result in a significant direct impact at this intersection.

Table 5.3-32
Peak Hour Intersection LOS Results – Year 2025 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Project % of Entering Volume (> 5%)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*		
1. Paseo Ranchero / H Street	52.2	D	43.4	D	2.4% / 2.7%	No
2. Otay Lakes Road / H Street	28.8	C	34.0	C	2.3% / 2.5%	No
3. Paseo Ranchero / Heritage Road / Telegraph Canyon Road	51.4	D	51.6	D	4.3% / 5.1%	No
4. La Media Road / Telegraph Canyon Road / Otay Lakes Road	36.6	D	49.0	D	4.9% / 5.1%	No
5. Hunte Parkway / Otay Lakes Road	27.5	C	32.0	C	0.8% / 1.0%	No
6. Heritage Road / East Palomar Street	43.1	D	31.4	C	8.6% / 10.5%	No
7. La Media Road / East Palomar Street	47.6	D	48.1	D	6.9% / 7.5%	No
8. 3rd Avenue / Orange Avenue	23.9	C	34.6	C	2.8% / 2.6%	No
9. Hilltop Drive / Orange Avenue	39.7	D	30.1	C	2.7% / 3.2%	No
10. Melrose Avenue / Orange Avenue	41.1	D	48.6	D	1.0% / 1.0%	No
11. I-805 SB Ramps / Olympic Parkway	43.8	D	121.2	**F**	2.9% / 3.3%	Yes (Cumulative)
12. I-805 NB Ramps / Olympic Parkway	30.3	C	36.7	D	4.9% / 5.4%	No
13. Oleander Avenue / Olympic Parkway	43.1	D	46.5	D	6.0% / 6.4%	No
14. Brandywine Avenue / Olympic Parkway	50.9	D	53.5	D	5.4% / 6.0%	No
15. Heritage Road / Olympic Parkway	61.8	**E**	58.6	**E**	14.7% / 16.4%	Yes (Direct)
16. Santa Venetia Street / Olympic Parkway	5.5	A	3.6	A	14.3% / 22.0%	No
17. La Media Road / Olympic Parkway	62.4	**E**	51.2	D	16.0% / 20.6%	Yes (Direct)
18. East Palomar Street / Olympic Parkway	28.7	C	34.6	D	3.4% / 4.0%	No
19. SR-125 SB Ramps / Olympic Parkway	6.2	A	7.0	A	3.9% / 4.6%	No
20. SR-125 NB Ramps / Olympic Parkway	7.8	A	6.8	A	4.0% / 4.6%	No
21. EastLake Parkway / Olympic Parkway	26.6	C	32.7	D	4.0% / 4.0%	No
22. Hunte Parkway / Olympic Parkway	25.3	C	34.4	D	3.8% / 3.4%	No
23. Olympic Vista Road / Olympic Parkway	30.7	C	21.9	C	2.4% / 2.5%	No
24. La Media Road / Santa Venetia Street	51.7	D	52.7	D	22.3% / 27.8%	No
25. Heritage Road / Santa Victoria Road	48.8	D	51.7	D	13.7% / 14.7%	No
26. La Media Road / Birch Road	49.3	D	51.8	D	26.5% / 29.6%	No
27. Magdalena Avenue / Birch Road	52.1	D	44.1	D	11.7% / 15.4%	No
28. SR-125 SB Ramps / Birch Road	10.5	B	7.1	A	12.7% / 16.5%	No

Table 5.3-32 (Continued)
Peak Hour Intersection LOS Results – Year 2025 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Project % of Entering Volume (> 5%)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*		
29. SR-125 NB Ramps / Birch Road	10.8	B	9.9	A	11.7% / 15.0%	No
30. EastLake Parkway / Birch Road	48.4	D	41.7	D	9.9% / 11.5%	No
31. 4th Avenue / Main Street	26.8	C	36.4	D	1.9% / 1.9%	No
32. 3rd Avenue / Main Street	32.6	C	42.7	D	2.5% / 2.6%	No
33. Hilltop Drive / Main Street	18.3	B	17.3	B	5.0% / 5.4%	No
34. Melrose Avenue / Main Street	25.2	C	29.1	C	5.4% / 5.5%	No
35. I-805 SB Ramps / Main Street	34.7	C	42.4	D	9.4% / 9.9%	No
36. I-805 NB Ramps / Main Street	31.2	C	29.5	C	13.4% / 13.6%	No
37. Oleander Avenue / Main Street	10.5	B	9.8	B	16.6% / 16.1%	No
38. Brandywine Avenue / Main Street	36.4	D	50.3	D	16.2% / 15.5%	No
39. Heritage Road / Main Street	48.2	D	45.0	D	24.5% / 27.7%	No
40. La Media Road (SB) / Main Street (WB)	4.0	A	6.4	A	33.4% / 71.2%	No
41. La Media Road (NB) / Main Street (WB)	10.5	B	15.5	B	51.5% / 43.6%	No
42. La Media Road (SB) / Main Street (EB)	1.2	A	0.9	A	39.2% / 74.5%	No
43. La Media Road (NB) / Main Street (EB)	2.8	A	2.1	A	47.7% / 66.5%	No
44. Magdalena Avenue / Main Street	18.1	B	13.8	B	69.5% / 84.2%	No
45. SR-125 SB Ramps / Main Street	Does Not Exist					
46. SR-125 NB Ramps / Main Street	Does Not Exist					
47. EastLake Parkway / Main Street/Hunte Parkway	27.1	C	24.9	C	26.5% / 30.4%	No
48. Discovery Falls Drive / Hunte Parkway	30.2	C	35.2	D	31.3% / 35.5%	No
49. Santa Macheto @ Heritage Road	3.1	A	2.5	A	24.0% / 28.5%	No
50. Santa Picacho @ Heritage Road	16.9	B	17.6	B	28.2% / 32.1%	No
51. Santa Maya @ Heritage Road	13.2	B	29.3	C	30.0% / 35.7%	No
52. Energy Way / Heritage Road	Does Not Exist					
53. Quarry Driveway / Main Street	8.0	A	7.1	A	10.7% / 68.7%	No
54. Village Three North Project R-20 Driveway @ Main Street	7.0	A	6.8	A	100.0% / 100.0%	No
55. La Media Road / Village Four Driveway @ Santa Luna Street	10.5	B	32.1	C	95.0% / 90.3%	No
56. Santa Tipu @ Main Street (one-way stop RT in/out)*	10.5	B	15.0	C	98.7% / 98.9%	No
57. Santa Marisol @ Main Street	17.9	B	25.2	C	26.5% / 30.4%	No
58. Village Eight East R-16 Driveway @ Main Street (one-way stop RT in/out)*	9.7	A	9.3	A	100.0% / 100.0%	No
59. Village Eight East Community Park Driveway @ Otay Valley Road	1.8	A	3.0	A	31.3% / 35.5%	No
60. Cutter Avenue @ Otay Valley Road (one-way stop RT in/out)*	8.9	A	10.8	B	100.0% / 100.0%	No
61. Santa Marisol @ Otay Valley Road	11.2	B	15.0	B	100.0% / 100.0%	No

Table 5.3-32 (Continued)
Peak Hour Intersection LOS Results – Year 2025 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Project % of Entering Volume (> 5%)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*		
62. Village Nine Street "B" / Otay Valley Road	Does Not Exist					
63. Village Nine Street "B" / Discovery Falls Drive	Does Not Exist					
64. Santa Julliard @ Discovery Falls Drive	9.6	A	7.2	A	100.0% / 100.0%	No
65. University Drive @ Discovery Falls Drive	19.7	B	13.0	B	100% / 100%	No
66. Santa Davis @ Discovery Falls Drive	14.4	B	5.8	A	100% / 100%	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS E or F.
* For two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches
City of San Diego intersections (#49-#60) are not analyzed for interim years

Roadway Segment Analysis

Table 5.3-33 displays the LOS analysis results for study area roadway segments within the City of Chula Vista under the Year 2025 conditions. As shown in the table, the proposed project would result in significant impacts to the following three roadway segments:

- Orange Avenue, between Melrose Avenue and I-805 SB Ramps (LOS D) – The proposed 2025 project traffic would comprise approximately 1.2% (less than 5%) of the total segment volume and would add 400 ADT (less than 800 ADT). However, one of the intersections (I-805 SB Ramps / Olympic Parkway) along this segment would operate at LOS F during the PM peak hour. Therefore, the project traffic would result in a significant cumulative impact at this location.
- Olympic Parkway, between Heritage Road and Santa Venetia Street (LOS D) – The proposed 2025 project traffic would comprise approximately 20.3% (more than 5%) of the total segment volume and would add 11,100 ADT (more than 800 ADT). In addition, one of the intersections (Heritage Road / Olympic Parkway) along this segment would operate at LOS E during both peak hours. Therefore, the project traffic would result in a significant direct impact at this location.
- Heritage Road, between East Palomar Street and Olympic Parkway (LOS D) – The proposed 2025 project traffic would comprise approximately 12.2% (more than 5%) of the total segment volume and would add 6,300 ADT (more than 800 ADT). In addition, one of the intersections (Heritage Road / Olympic Parkway) along this segment would operate at LOS E during both peak hours. Therefore, the project traffic would result in a significant direct impact at this location.

Table 5.3-33
Roadway Segment LOS Results – Year 2025 Conditions

Roadway	From	To	Cross Section	ADT w/ Project	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (< 800)	Project Contribution (> 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
H Street	Tierra Del Rey	Paseo Ranchero	6-Ln w/RM	52,000	50,000	**D**	1,100	2.1%	Yes	No
Telegraph Canyon Road	Medical Center Drive	Heritage Road / Paseo Ranchero	6-Ln w/RM	58,900	50,000	**E**	1,600	2.7%	Yes	No
Telegraph Canyon Road	Heritage Road / Paseo Ranchero	La Media Road / Otay Lakes Road	6-Ln w/RM	51,500	50,000	**D**	1,400	2.7%	Yes	No
Otay Lakes Road	H Street	Telegraph Canyon Road	6-Ln w/RM	32,900	50,000	A	2,300	7.0%	—	No
Otay Lakes Road	La Media Road	Rutgers Avenue	6-Ln w/RM	45,200	50,000	C	1,200	2.7%	—	No
East Palomar Street	Medical Center Drive	Heritage Road	4-Ln w/RM	27,100	30,000	C	2,100	7.7%	—	No
East Palomar Street	Heritage Road	La Media Road	4-Ln w/RM	23,900	30,000	B	800	3.3%	—	No
East Palomar Street	La Media Road	Olympic Parkway	4-Ln w/RM	25,000	30,000	B	700	2.8%	—	No
Orange Avenue	3rd Avenue	Hilltop Drive	4-Ln w/TWLTL/RM	26,100	30,000	B	1,100	4.2%	—	No
Orange Avenue	Hilltop Drive	Melrose Avenue	4-Ln w/RM	28,800	30,000	C	400	1.4%	—	No
Orange Avenue	Melrose Avenue	I-805 SB Ramps	4-Ln w/RM	33,100	30,000	**D**	400	1.2%	No	Yes (Cumulative)
Olympic Parkway	I-805 SB Ramps	I-805 NB Ramps	6-Ln	42,300	50,000	B	1,800	4.3%	—	No
Olympic Parkway	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	45,900	50,000	C	3,200	7.0%	—	No
Olympic Parkway	Oleander Avenue	Brandywine Avenue	6-Ln w/RM	39,700	50,000	B	3,200	8.1%	—	No

Table 5.3-33 (Continued)
Roadway Segment LOS Results – Year 2025 Conditions

Roadway	From	To	Cross Section	ADT w/ Project	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (< 800)	Project Contribution (> 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Olympic Parkway	Brandywine Avenue	Heritage Road	6-Ln w/RM	38,600	50,000	B	3,000	7.8%	—	No
Olympic Parkway	Heritage Road	Santa Venetia Street	6-Ln w/RM	54,600	50,000	**D**	11,100	20.3%	No	Yes (Direct)
Olympic Parkway	Santa Venetia Street	La Media Road	6-Ln w/RM	46,700	50,000	C	11,100	23.8%	—	No
Olympic Parkway	La Media Road	East Palomar Street	6-Ln w/RM	30,600	50,000	A	2,000	6.5%	—	No
Olympic Parkway	East Palomar Street	SR-125 SB Ramps	6-Ln w/RM	51,200	50,000	**D**	2,300	4.5%	Yes	No
Olympic Parkway	SR-125 SB Ramps	SR-125 NB Ramps	8-Ln w/RM	53,500	70,000	B	2,300	4.3%	—	No
Olympic Parkway	SR-125 NB Ramps	EastLake Parkway	8-Ln w/RM	55,900	70,000	B	2,100	3.8%	—	No
Olympic Parkway	EastLake Parkway	Hunte Parkway	6-Ln w/RM	38,100	50,000	B	800	2.1%	—	No
Olympic Parkway	Hunte Parkway	Olympic Vista Road	4-Ln w/RM	20,000	30,000	A	800	4.0%	—	No
Olympic Parkway	Olympic Vista Road	Lake Crest Drive	4-Ln w/RM	9,400	30,000	A	600	6.4%	—	No
Birch Road	La Media Road	Magdalena Avenue	6-Ln w/RM	41,200	40,000	**D**	6,200	15.0%	Yes	No
Birch Road	Magdalena Avenue	SR-125 SB Ramps	6-Ln w/RM	44,200	40,000	**D**	6,100	13.8%	Yes	No
Birch Road	SR-125 SB Ramps	SR-125 NB Ramps	6-Ln w/RM	45,500	50,000	C	5,100	11.2%	—	No
Birch Road	SR-125 NB Ramps	EastLake Parkway	6-Ln w/RM	46,200	50,000	C	3,600	7.8%	—	No
Main Street	4th Avenue	3rd Avenue	4-Ln w/TWLTL	24,000	30,000	B	700	2.9%	—	No
Main Street	3rd Avenue	Hilltop Drive	4-Ln w/TWLTL	31,000	30,000	**D**	1,100	3.5%	Yes	No
Main Street	Hilltop Drive	Melrose Avenue	4-Ln w/TWLTL	35,400	30,000	**E**	1,800	5.1%	Yes	No

Table 5.3-33 (Continued)
Roadway Segment LOS Results – Year 2025 Conditions

Roadway	From	To	Cross Section	ADT w/ Project	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (< 800)	Project Contribution (> 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Main Street	Melrose Avenue	I-805 SB Ramps	4-Ln w/TWLTL	35,900	30,000	**E**	2,200	6.1%	Yes	No
Main Street	I-805 SB Ramps	I-805 NB Ramps	6-Ln	45,500	50,000	C	5,200	11.4%	—	No
Main Street	I-805 NB Ramps	Oleander Avenue	6-Ln w/RM	48,200	50,000	C	7,600	15.8%	—	No
Main Street	Oleander Avenue	Brandywine Avenue	6-Ln w/TWLTL	51,900	50,000	**D**	8,100	15.6%	Yes	No
Main Street	Brandywine Avenue	Heritage Road	6-Ln w/RM	37,900	50,000	B	9,400	24.8%	—	No
Main Street	Heritage Road	La Media Road	Does Not Exist							
Main Street	La Media Road	SR-125 SB Ramps	6-Ln w/RM	21,200	50,000	A	18,100	85.4%	—	No
Main Street	SR-125 SB Ramps	SR-125 NB Ramps	Does Not Exist							
Main Street	SR-125 NB Ramps	EastLake Parkway/ University Drive	Does Not Exist							
Otay Valley Road	Main Street	SR-125	4-Ln w/RM*	15,200	30,000	A	11,900	78.3%	—	No
Otay Valley Road	SR-125	Village Nine Street "B"	Does Not Exist							
Hilltop Drive	Orange Avenue	Main Street	4-Ln	8,400	22,000	A	700	8.3%	—	No
Paseo Ranchero	H Street	Telegraph Canyon Road	4-Ln w/SM/RM	19,300	22,000	B	1,500	7.8%	—	No
Heritage Road	Telegraph Canyon Road	East Palomar Street	6-Ln w/RM	26,900	50,000	A	3,600	13.4%	—	No
Heritage Road	East Palomar Street	Olympic Parkway	6-Ln w/RM	51,500	50,000	**D**	6,300	12.2%	No	Yes (Direct)
Heritage Road	Olympic Parkway	Santa Victoria Road	6-Ln w/RM	34,800	50,000	A	9,100	26.1%	—	No
Heritage Road	Santa Victoria Road	Main Street	6-Ln w/RM	41,200	50,000	B	22,000	53.4%	—	No
Heritage Road	Main Street	Avenida De Las Vistas	6-Ln w/RM	37,500	50,000	A	4,700	12.5%	—	No

Table 5.3-33 (Continued)
Roadway Segment LOS Results – Year 2025 Conditions

Roadway	From	To	Cross Section	ADT w/ Project	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (< 800)	Project Contribution (> 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
La Media Road	Telegraph Canyon Road	East Palomar Street	6-Ln w/RM	31,900	50,000	A	3,200	10.0%	—	No
La Media Road	East Palomar Street	Olympic Parkway	6-Ln w/RM	25,600	50,000	A	3,500	13.7%	—	No
La Media Road	Olympic Parkway	Santa Venetia Street	6-Ln w/RM	46,700	50,000	C	13,200	28.3%	—	No
La Media Road	Santa Venetia Street	Birch Road	6-Ln w/RM	43,300	50,000	B	13,300	30.7%	—	No
La Media Road	Birch Road	Santa Luna Street	6-Ln w/RM	35,200	50,000	A	18,200	51.7%	—	No
La Media Road	Santa Luna Street	Main Street	4-Ln w/RM	34,300	30,000	**E**	18,200	53.1%	Yes	No
Magdalena Avenue	Santa Venetia Street	Birch Road	4-Ln	6,700	22,000	A	700	10.4%	—	No
Magdalena Avenue	Birch Road	Wolf Canyon Loop	4-Ln w/RM	16,600	22,000	B	800	4.8%	—	No
Magdalena Avenue	Wolf Canyon Loop	Santa Luna Street	2-Ln w/RM	7,200	12,000	A	600	8.3%	—	No
Magdalena Avenue	Santa Luna Street	Main Street	4-Ln w/RM	19,800	22,000	C	6,000	30.3%	—	No
EastLake Parkway	Corte Vista	Olympic Parkway	6-Ln w/RM	22,800	50,000	A	800	3.5%	—	No
EastLake Parkway	Olympic Parkway	Birch Road	6-Ln w/RM	29,700	40,000	A	2,900	9.8%	—	No
EastLake Parkway	Birch Road	Main Street / Hunte Parkway	6-Ln w/RM	25,300	40,000	A	3,800	15.0%	—	No
University Drive	Main Street/Hunte Parkway	University Driveway #1	4-Ln w/RM*	20,500	30,000	A	3,100	15.1%	—	No
University Drive	University Driveway #1	University Driveway #2	2-Ln w/RM*	9,100	12,000	B	3,300	36.3%	—	No
University Drive	University Driveway #2	Discovery Falls Drive	2-Ln w/RM*	4,700	12,000	A	3,300	70.2%	—	No

Table 5.3-33 (Continued)
Roadway Segment LOS Results – Year 2025 Conditions

Roadway	From	To	Cross Section	ADT w/ Project	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (< 800)	Project Contribution (> 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Discovery Falls Drive	Hunte Parkway	University/RTP Driveway	4-Ln w/RM*	23,400	30,000	A	3,600	15.4%	—	No
Discovery Falls Drive	University/RTP Driveway	University Drive	2-Ln w/RM*	5,900	12,000	A	3,900	66.1%	—	No
Discovery Falls Drive	University Drive	Village Nine Street "B"	2-Ln w/RM*	2,100	12,000	A	2,100	100.0%	—	No
Hunte Parkway	Otay Lakes Road	Olympic Parkway	4-Ln w/RM	17,700	30,000	A	1,100	6.2%	—	No
Hunte Parkway	Olympic Parkway	Discovery Falls Drive	6-Ln w/RM	18,400	50,000	A	1,400	7.6%	—	No
Hunte Parkway	Discovery Falls Drive	EastLake Parkway / University Drive	6-Ln w/RM	19,800	50,000	A	2,700	13.6%	—	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS (D), E, or F.
RM = raised median; SM = striped median; TWLTL = two-way left-turn lane.
* Facility is required for project access.
** Facility improvement is assumed to be implemented by others, including City's CIP.

Freeway / State Highway Segment Analysis

Table 5.3-34 displays freeway LOS analysis results for I-805, SR-125, and SR-905 under the Year 2025 conditions. As shown in the table, all study freeway / state highway segments along I-805, SR-125, and SR-905 would operate at acceptable LOS D or better under Year 2025 conditions, with the following five exceptions:

- I-805, from SR-94 to Market Street (LOS E) – The proposed project would comprise 1.6% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS E, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- I-805, from Market Street to Imperial Avenue (LOS F) – The proposed project would comprise 1.5% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS F, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- I-805, from Imperial Avenue to E Division Street (LOS F) – The proposed project would comprise 1.4% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS F, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- I-805, from Plaza Boulevard to SR-54 (LOS E) – The proposed project would comprise 1.8% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS E, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- I-805, from SR-54 to Bonita Road (LOS E) – The proposed project would comprise 0.7% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS E, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.

Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements and provided for information purposes only, the signalized ramp intersections along I-805 and SR-125 within the study area were analyzed under the Year 2025 conditions using the ILV procedures as described in Section 5.3.1.1. ILV analysis results are displayed in Table 5.3-35 and analysis worksheets for the Year 2025 conditions are

provided in EIR Appendix M. As shown in Table 5.3-35, all of the I-805 ramp intersections would operate at capacity or under capacity, with the following the two exceptions:

- I-805 SB Ramps / Olympic Parkway – Over capacity during the PM peak hour
- I-805 NB Ramps / Olympic Parkway - Over capacity during the AM and PM peak hour
- I-805 SB Ramps / Main Street – Over capacity during the PM peak hour.

All of the SR-125 ramp intersections within the study area would continue to operate under capacity during both the AM and PM peak hours under the Year 2025 conditions.

Ramp Metering Analysis

Table 5.3-36 displays the ramp metering analysis conducted at the I-805 northbound on-ramps at Olympic Parkway and Main Street under the Year 2025 conditions. Based on observed existing conditions, it is assumed that approximately 80% of the total arrival traffic (Demand) would utilize the two non-HOV lanes. As shown in Table 5.3-36, the peak-hour capacity expected to be processed through the ramp meter (Meter Rate) would be greater than the peak hour demand (Demand) at the I-805 northbound on-ramp at Olympic Parkway. However, the peak hour demand at the I-805 northbound on-ramp at Main Street would be greater than the capacity provided by the ramp meter under Year 2025 conditions. Notwithstanding, based on the SANDAG CMP, the projected delay (with the proposed Year 2025 project traffic) of 11.3 minutes (less than 15 minutes) would be acceptable (SANDAG 2008). As such, the proposed project would not result in significant impacts at either on-ramp.

Table 5.3-34
Freeway / State Highway Segment LOS Results – Year 2025 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Contribution (≥ 5%)	Significant Impact?
		ADT	*Peak Hour %*	*Peak Hour Volume*	*Directional Split*	*# of Lanes Per Direction*	*PHF*	*% of Heavy Vehicle*	*Volume (pc/h/ln)*	*V/C*	*LOS*	*ADT*	*LOS*		
I-805	Home Avenue to SR-94	280,200	6.9%	19,334	0.51	4+1HOV	0.97	4.2%	1,726	0.864	D	276,100	D	1.5%	No
I-805	SR-94 to Market Street	275,300	8.0%	22,024	0.50	4+1HOV	0.97	4.2%	1,937	0.965	**E**	271,000	**E**	1.6%	Yes (Cumulative)
I-805	Market Street to Imperial Avenue	348,900	8.0%	27,912	0.50	5+1HOV	0.97	4.2%	2,095	1.114	**F**	343,800	**F**	1.5%	Yes (Cumulative)
I-805	Imperial Avenue to E Division Street	347,300	8.0%	27,784	0.50	5+1HOV	0.97	4.2%	2,084	1.018	**F**	342,400	**F**	1.4%	Yes (Cumulative)
I-805	E Division Street to Plaza Boulevard	331,400	7.2%	23,861	0.51	5+1HOV	0.95	3.8%	1,866	0.907	D	326,000	D	1.6%	No
I-805	Plaza Boulevard to SR-54	321,100	8.1%	26,009	0.52	5+1HOV	0.96	2.2%	2,033	0.988	**E**	315,300	**E**	1.8%	Yes (Cumulative)
I-805	SR-54 to Bonita Road	347,000	7.2%	24,984	0.52	4+1Aux+ 1HOV	0.96	1.7%	2,101	0.950	**E**	339,300	D	2.2%	Yes (Cumulative)
I-805	Bonita Road to East H Street	301,100	7.8%	23,486	0.50	5+1HOV	0.95	1.7%	1,783	0.867	D	293,600	D	2.5%	No
I-805	East H Street to Telegraph Canyon Road	298,700	7.8%	23,299	0.50	5+1HOV	0.95	1.9%	1,764	0.859	D	291,000	D	2.6%	No

Table 5.3-34 (Continued)
Freeway / State Highway Segment LOS Results – Year 2025 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Contribution (≥ 5%)	Significant Impact?
		ADT	*Peak Hour %*	*Peak Hour Volume*	*Directional Split*	*# of Lanes Per Direction*	*PHF*	*% of Heavy Vehicle*	*Volume (pc/h/ln)*	*V/C*	*LOS*	*ADT*	*LOS*		
I-805	Telegraph Canyon Road to East Palomar Street	251,700	7.1%	17,871	0.51	4+1Aux+ 1HOV	0.92	1.7%	1,535	0.694	C	244,800	C	2.7%	No
I-805	East Palomar Street to Olympic Parkway	225,900	7.1%	16,039	0.51	4+1Aux	0.92	1.7%	1,995	0.831	D	220,800	D	2.3%	No
I-805	Olympic Parkway to Main Street	219,300	6.9%	15,132	0.51	4+1Aux	0.93	5.4%	1,888	0.787	C	216,000	C	1.5%	No
I-805	Main Street to Palm Avenue	216,200	7.1%	15,350	0.58	4+1Aux	0.95	10.3%	2,192	0.913	D	213,400	D	1.3%	No
I-805	Palm Avenue to SR-905	193,100	7.1%	13,710	0.58	4+1Aux	0.95	10.3%	1,959	0.816	D	190,700	D	1.2%	No
SR-125	Telegraph Canyon Road to Olympic Parkway	21,900	7.0%	1,533	0.60	2M	0.92	2.0%	505	0.210	A	20,500	A	6.4%	No
SR-125	Olympic Parkway to Birch Road	18,600	7.0%	1,302	0.60	2M	0.92	2.0%	428	0.178	A	17,400	A	6.5%	No
SR-125	Birch Road to Main Street	32,600	7.0%	2,282	0.60	2M	0.92	2.0%	747	0.311	A	30,900	A	5.2%	No
SR-125	Main Street to Lone Star Road	32,600	7.0%	2,282	0.60	2M	0.92	2.0%	747	0.311	A	30,900	A	5.2%	No
SR-125	Lone Star Road to Otay Mesa Road	32,600	7.0%	2,282	0.60	2M	0.92	2.0%	747	0.311	A	30,900	A	5.2%	No
SR-125	Otay Mesa Road to SR-905	30,900	7.0%	2,163	0.60	2M	0.92	2.0%	714	0.298	A	30,200	A	2.3%	No

Table 5.3-34 (Continued)
Freeway / State Highway Segment LOS Results – Year 2025 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Contribution (≥ 5%)	Significant Impact?
		ADT	*Peak Hour %*	*Peak Hour Volume*	*Directional Split*	*# of Lanes Per Direction*	*PHF*	*% of Heavy Vehicle*	*Volume (pc/h/ln)*	*V/C*	*LOS*	*ADT*	*LOS*		
SR-905	I-805 to Calliente Avenue	124,800	7.0%	8,736	0.60	3M	0.92	5.0%	1,950	0.813	D	124,600	D	0.2%	No
SR-905	Calliente Avenue to Heritage Road	113,100	7.0%	7,917	0.60	3M	0.92	5.0%	1,760	0.733	C	112,900	C	0.2%	No
SR-905	Heritage Road to Britannia Boulevard	109,000	7.0%	7,630	0.60	3M	0.92	5.0%	1,705	0.710	C	108,600	C	0.4%	No
SR-905	Britannia Boulevard to La Media Road	104,100	7.0%	7,287	0.60	3M	0.92	5.0%	1,627	0.678	C	103,500	C	0.6%	No
SR-905	La Media Road to SR-125	79,900	7.0%	5,593	0.60	3M	0.92	5.0%	1,248	0.520	B	79,300	B	0.8%	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS E or F.
M = mainline; Aux = auxiliary lane;
HOV = High Occupancy Vehicle lane.

Table 5.3-35
Ramp Intersection Capacity Analysis – Year 2025 Conditions

Ramp Intersection	Peak Hour	With Project		Without Project	
		ILV / Hour	*Description*	*ILV / Hour*	*Description*
I-805 SB Ramps / Olympic Parkway	AM	1,336	*1200–1500: (At Capacity)*	1,273	*1200–1500: (At Capacity)*
	PM	1,915	*>1500: (Over Capacity)*	1,835	*>1500: (Over Capacity)*
I-805 NB Ramps / Olympic Parkway	AM	1,558	*>1500: (Over Capacity)*	1,445	*1200–1500: (At Capacity)*
	PM	1,514	*>1500: (Over Capacity))*	1,408	*1200–1500: (At Capacity)*
I-805 SB Ramps / Main Street	AM	1,343	*1200–1500: (At Capacity)*	1,265	*1200–1500: (At Capacity)*
	PM	1,782	*>1500: (Over Capacity)*	1,680	*>1500: (Over Capacity)*
I-805 NB Ramps / Main Street	AM	1,290	*1200–1500: (At Capacity)*	1,227	*1200–1500: (At Capacity)*
	PM	1,352	*1200–1500: (At Capacity)*	1,280	*1200–1500: (At Capacity)*
SR-125 SB Ramps / Olympic Parkway	AM	953	*<1200: (Under Capacity)*	889	*<1200: (Under Capacity)*
	PM	660	*<1200: (Under Capacity)*	564	*<1200: (Under Capacity)*
SR-125 NB Ramps / Olympic Parkway	AM	813	*<1200: (Under Capacity)*	745	*<1200: (Under Capacity)*
	PM	870	*<1200: (Under Capacity)*	705	*<1200: (Under Capacity)*
SR-125 SB Ramps / Birch Road	AM	586	*<1200: (Under Capacity)*	565	*<1200: (Under Capacity)*
	PM	675	*<1200: (Under Capacity)*	640	*<1200: (Under Capacity)*
SR-125 NB Ramps / Birch Road	AM	651	*<1200: (Under Capacity)*	625	*<1200: (Under Capacity)*
	PM	723	*<1200: (Under Capacity)*	697	*<1200: (Under Capacity)*
SR-125 SB Ramps / Main Street	AM	Does Not Exist		Does Not Exist	
	PM				
SR-125 NB Ramps / Main Street	AM	Does Not Exist		Does Not Exist	
	PM				
SR-125 SB Ramps / Lone Star Road	AM	Does Not Exist		Does Not Exist	
	PM				
SR-125 NB Ramps / Lone Star Road	AM	Does Not Exist		Does Not Exist	
	PM				

Source: Chen Ryan Associates 2014 (EIR Appendix M).

Table 5.3-36
Ramp Metering Analysis – Year 2025 Conditions

Location	Peak Hour	With Project						Without Project					Significant Impact?
		P_{Vol} Peak Hour Volume	*Demand Vol[1] (veh/hr per lane)*	*Meter Rate[2] (veh/hr)*	*Excess Demand[3] (veh/hr)*	*Delay[4] (min)*	*Queue[5] (ft)*	*P_{Vol} Peak Hour Volume*	*Demand Vol (veh/hr per lane)*	*Excess Demand (veh/hr)*	*Delay (min)*	*Queue (ft)*	
I-805 NB On-Ramp @ Olympic Parkway	AM	1,473	589	887	0	0	0	1,370	~~802~~ 548	0	0	0	No
I-805 NB On-Ramp @ Main Street	AM	1,228	491	413	78	11.3	2,262	1,075	~~432~~ 430	19	2.8	551	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
1 Demand is the peak hour demand expected to use the on-ramp per lane.
2 Meter rate is the peak hour capacity expected to be processed through the ramp meter.
3 Excess demand = (demand) – (meter rate) or zero, whichever is greater.
4 Delay = (excess demand / meter rate) × 60 min/hr.
5 Queue = (excess demand) × 29 ft/veh.

A.5 Year 2030 Traffic Conditions

This section provides an analysis of the proposed project's impacts at full buildout under Year 2030 traffic conditions. For comparison purposes, LOS operations under existing conditions were previously provided in Table 5.3-8, Peak-Hour Intersection LOS Results, and Table 5.3-9, Roadway Segment LOS Results. The analysis addresses all study area roadways and intersections in the cities of Chula Vista and San Diego.

Year 2030 Roadway Network and Traffic Volumes

The Year 2030 roadway network assumes buildout of the proposed City of Chula Vista General Plan Circulation Element and the City of San Diego's currently adopted Community Plan Circulation Element, with two exceptions including:

- The SR-125/Otay Valley Road interchange is analyzed as an overpass, as the interchange does not yet have an identified funding source. The interchange is not necessary to accommodate project and future traffic volumes. However, the project is not proposing to remove the SR-125/Otay Valley Road interchange from the General Plan. For informational purposes, a traffic analysis with "Interchange In" option was also conducted and included in EIR Appendix M.
- The SR-125/Lone Star Road intersection is analyzed as both "with" and "without" interchange scenarios. The interchange is included in both the SANDAG Series 11 model and the City of San Diego Otay Mesa Community Plan Circulation Element, but does not yet have an identified funding source.

When comparing to the Year 2025 network, the following additional roadway improvements would be constructed by the project for access and frontage:

- Village Nine Street "B" / Otay Valley Road (#74) – Signalized intersection.
- Village Nine Street "B" / Discovery Falls Drive (#75) – Signalized intersection, including construction of Discovery Falls Drive between Village Nine Street "B" and Santa Julliard.
- Heritage Road / Energy Way (Int #64) – Signalized intersection.

According to Section 12.24 of the City's Municipal Code, access related impacts would occur if access and frontage improvements are not provided concurrent with development.

Roadway improvements to be constructed by others (Assumed Build by the Year 2030):

- Main Street, between SR-125 right-of-way (western boundary) and EastLake Parkway/University Drive – This facility is included as a Six-Lane Gateway Street, consistent with the currently adopted Circulation Element.
- SR-125 / Main Street interchange is included, consistent with the currently adopted Circulation Element.[3] The SR-125/Main Street interchange (overpass and ramps) is included as part of the City of Chula Vista's TDIF program and was approved by the City Council on July 22, 2014.
- Otay Valley Road, between subdivision boundary and Village Nine Street "B" (Int #74), is included providing an overpass at SR-125. The SR-125/Otay Valley Road overpass is included as part of the City of Chula Vista's TDIF program and was approved by the City Council on July 22, 2014.

  ~~Heritage Road / Energy Way (Int #64) is included as a signalized intersection. This intersection is not needed by the proposed project; however the intersection was analyzed as a signalized intersection per city staff request.~~\

As previously noted, if the assumed roadway improvements are not constructed by others and in place as modeled for the Year 2030 scenario, the Project Applicant and the City will take those steps necessary to either construct the subject facilities or implement substitute measures to ensure adequate infrastructure as modeled is in place, as detailed in mitigation measure TCA-16.

Mitigation Being Carried Forward from 2025

As discussed in Section 5.3.5, Mitigation Measures, the following improvement would be implemented as a mitigation measure under the 2025 scenario and, therefore, is included as part of the 2030 roadway network:

- Construction of Main Street, between Heritage Road and La Media Road, as a Six-Lane Prime Arterial including construction of Main Street Bridge.
- Signalization of Quarry Driveway / Main Street (Int #65) as part of Main Street construction.
- Signalization of Village Three North R-20 Driveway / Main Street (Int #66) as a part of Main Street construction.

If the assumed roadway improvements are not constructed and in place as modeled for the Year 2030 scenario, the Project Applicant and the City will take those steps necessary to either construct the subject facilities or implement substitute measures to ensure adequate infrastructure as modeled is in place as detailed in TCA-16.

[3] Potential configurations and associated traffic and safety operations at the SR-125 / Main Street interchange are addressed in the TIA, EIR Appendix M, Chapter 15.0.

Access and Frontage Mitigation Being Carried Forward from 2025

- Main Street, from Santa Marisol to SR-125 right-of-way (western boundary) – this facility was included as a 6-lane Prime Arterial providing frontage and access for Village Eight East.
- Otay Valley Road, from Main Street to SR-125 right-of-way (western boundary) – This facility is included as a Four-Lane Major Road providing frontage and access for Village Eight East including the community park south of Otay Valley Road.
- Access road to the community park in Village Eight East (Community Park Driveway – This road is included as two lanes to provide access for the community park to Otay Valley Road.
- University Drive, between Main Street/Hunte Parkway and University Driveway #1 – This facility is included as a Class II Collector providing access for Village Ten.
- University Drive, between University Driveway #1 and Discovery Falls Drive – this facility is included as a Class II Collector providing access for Village Ten.
- Discovery Falls Drive, between Hunte Parkway and University / RTP Driveway – This facility is included as a Four-Lane Major Road providing frontage and access for Village Ten (project access and frontage, and the PFFP discussion are provided in Chapter 13 of EIR Appendix M).
- Discovery Falls Drive, between University / RTP Driveway and Village Nine Street "B" – this facility is included as a Class II Collector providing frontage and access for Village Ten.
- Hunte Parkway @ Eastlake Parkway (Int #47) – Signal modification
- Hunte Parkway @ Discovery Falls Drive (Int #48) – Signal modification
- Village Three North R-20 Driveway #4 @ Main Street (Int #66) – Signalized intersection (analyzed as an all-way stop controlled in 2020)
- Village Eight East R-16 Driveway @ Main Street (Int #66) – Signalized intersection (analyzed as AWSC in 2020)
- Village Eight East Community Park Driveway @ Otay Valley Road (Int #71) – Signalized intersection
- Cutter Avenue @ Otay Valley Road (Int #72) – Right-turn in/out only
- Santa Marisol @ Otay Valley Road (Int #73) – Signalized intersection
- Santa Juilliard @ Discovery Falls Drive (Int #76) – Signalized intersection
- University Drive @ Discovery Falls Drive (Int #77) – Signalized intersection
- Santa Davis @ Discovery Falls Drive (Int #78) – Signalized intersection.

Circulation System Assumptions Being Carried Forward from 2025

- Village Eight East R-16 Driveway @ Main Street (Int #66) – Signalized intersection (analyzed as AWSC in 2020)
- Quarry Driveway (Int #65) @ Main Street – Signalized Intersection

The signalization of these two (2) intersections would occur in conjunction with the construction of Main Street between Heritage Road and La Media Road (City of Chula Vista CIP # STM357). Signalization of these two (intersections) would not be needed until the completion of the Main Street connection between Heritage Road and La Media Road.

Within the City of San Diego

The 2030 network is based on the road improvements included in the City of San Diego's Otay Mesa PFFP FY 2007 for Transportation Projects. For additional detailed information regarding the Otay Mesa PFFP, see EIR Appendix M.

Intersection Analysis

Table 5.3-37 displays peak intersection LOS results for the study area intersections under Year 2030 project conditions. LOS calculation worksheets for the Year 2030 conditions are provided in EIR Appendix M. As shown in the table, the proposed project would result in significant impacts at the following two intersections located in the City of Chula Vista:

- I-805 SB Ramps / Olympic Parkway – LOS F during the PM peak hour. The buildout project traffic would comprise approximately 1.2% and 1.1% of the total intersection entering volume in the AM and PM peak hours, respectively. Since the project contribution is less than 5% but the resulting LOS is F, the project would result in a significant cumulative impact at this intersection.

- Discovery Falls Drive / Hunte Parkway – LOS E during the AM and PM peak hours. The buildout project traffic would comprise approximately 11.3% and 14.2% of the total intersection entering volume in the AM and PM peak hours, respectively. Since the project contribution is more than 5%, the project would result in a significant direct impact at this intersection.

Table 5.3-37
Peak Hour Intersection LOS Results – Year 2030 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Delay w/o Project (sec.) AM/PM	LOS w/o Project AM/PM	Project % of Entering Volume (> 5%)	Change in Delay (sec.)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*					
1. Paseo Ranchero / H Street	46.3	D	52.0	D	N/A	N/A	2.8% / 2.9%	N/A	No
2. Otay Lakes Road / H Street	48.3	D	45.6	D	N/A	N/A	0.6% / 0.9%	N/A	No
3. Paseo Ranchero/Heritage Road / Telegraph Canyon Road	54.0	D	53.7	D	N/A	N/A	3.4% / 3.9%	N/A	No
4. La Media Road / Telegraph Canyon Road/Otay Lakes Road	42.0	D	49.4	D	N/A	N/A	2.6% / 3.1%	N/A	No
5. Hunte Parkway / Otay Lakes Road	42.2	D	33.4	C	N/A	N/A	0.8% / 1.5%	N/A	No
6. Heritage Road / East Palomar Street	50.0	D	35.9	D	N/A	N/A	6.3% / 8.1%	N/A	No
7. La Media Road / East Palomar Street	53.6	D	52.4	D	N/A	N/A	3.1% / 4.1%	N/A	No
8. 3rd Avenue / Orange Avenue	24.6	C	49.2	D	N/A	N/A	2.5% / 2.1%	N/A	No
9. Hilltop Drive / Orange Avenue	40.6	D	32.3	C	N/A	N/A	3.0% / 3.2%	N/A	No
10. Melrose Avenue / Orange Avenue	37.5	D	52.1	D	N/A	N/A	0.8% / 0.8%	N/A	No
11. I-805 SB Ramps / Olympic Parkway	53.9	D	93.0	**F**	N/A	N/A	1.2% / 1.1%	N/A	Yes (Cumulative)
12. I-805 NB Ramps / Olympic Parkway	52.7	D	39.0	D	N/A	N/A	1.3% / 1.6%	N/A	No
13. Oleander Avenue / Olympic Parkway	52.9	D	46.2	D	N/A	N/A	1.4% / 1.9%	N/A	No
14. Brandywine Avenue / Olympic Parkway	53.3	D	52.2	D	N/A	N/A	1.8% / 2.2%	N/A	No
15. Heritage Road / Olympic Parkway	47.0	D	52.5	D	N/A	N/A	7.5% / 8.7%	N/A	No
16. Santa Venetia Street / Olympic Parkway	10.5	B	4.2	A	N/A	N/A	3.3% / 4.3%	N/A	No
17. La Media Road / Olympic Parkway	53.7	D	50.8	D	N/A	N/A	4.6% / 5.4%	N/A	No
18. East Palomar Street / Olympic Parkway	34.6	C	53.8	D	N/A	N/A	2.1% / 1.8%	N/A	No
19. SR-125 SB Ramps / Olympic Parkway	6.6	A	10.6	B	N/A	N/A	2.2% / 2.1%	N/A	No
20. SR-125 NB Ramps / Olympic Parkway	8.7	A	8.4	A	N/A	N/A	2.5% / 2.3%	N/A	No
21. EastLake Parkway / Olympic Parkway	30.7	C	32.4	C	N/A	N/A	2.5% / 2.4%	N/A	No
22. Hunte Parkway / Olympic Parkway	31.2	C	40.8	D	N/A	N/A	4.8% / 5.1%	N/A	No
23. Olympic Vista Road / Olympic Parkway	32.9	C	21.9	C	N/A	N/A	5.2% / 5.7%	N/A	No

Table 5.3-37 (Continued)
Peak Hour Intersection LOS Results – Year 2030 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Delay w/o Project (sec.) AM/PM	LOS w/o Project AM/PM	Project % of Entering Volume (> 5%)	Change in Delay (sec.)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*					
24. La Media Road / Santa Venetia Street	53.0	D	43.8	D	N/A	N/A	5.0% / 7.9%	N/A	No
25. Heritage Road / Santa Victoria Road	47.8	D	53.3	D	N/A	N/A	13.7% / 15.1%	N/A	No
26. La Media Road / Birch Road	51.7	D	51.5	D	N/A	N/A	7.2% / 8.7%	N/A	No
27. Magdalena Avenue / Birch Road	47.1	D	40.4	D	N/A	N/A	4.6% / 5.9%	N/A	No
28. SR-125 SB Ramps / Birch Road	11.8	B	6.7	A	N/A	N/A	1.0% / 1.3%	N/A	No
29. SR-125 NB Ramps / Birch Road	9.2	A	10.7	B	N/A	N/A	1.0% / 1.2%	N/A	No
30. EastLake Parkway / Birch Road	51.8	D	51.0	D	N/A	N/A	6.9% / 6.7%	N/A	No
31. 4th Avenue / Main Street	27.9	C	43.5	D	N/A	N/A	2.8% / 2.6%	N/A	No
32. 3rd Avenue / Main Street	40.8	D	50.7	D	N/A	N/A	3.1% / 2.8%	N/A	No
33. Hilltop Drive / Main Street	25.5	C	26.4	C	N/A	N/A	5.8% / 5.4%	N/A	No
34. Melrose Avenue / Main Street	26.8	C	29.6	C	N/A	N/A	6.0% / 6.0%	N/A	No
35. I-805 SB Ramps / Main Street	35.6	D	50.2	D	N/A	N/A	10.7% / 11.5%	N/A	No
36. I-805 NB Ramps / Main Street	43.3	D	37.7	D	N/A	N/A	16.4% / 16.2%	N/A	No
37. Oleander Avenue / Main Street	11.2	B	10.4	B	N/A	N/A	19.7% / 19.5%	N/A	No
38. Brandywine Avenue / Main Street	37.1	D	51.1	D	N/A	N/A	18.6% / 18.7%	N/A	No
39. Heritage Road / Main Street	46.1	D	53.8	D	N/A	N/A	25.3% / 26.4%	N/A	No
40. La Media Road (SB) / Main Street (WB)	4.1	A	16.0	B	N/A	N/A	29.1% / 30.4%	N/A	No
41. La Media Road (NB) / Main Street (WB)	4.5	A	7.7	A	N/A	N/A	31.6% / 27.0%	N/A	No
42. La Media Road (SB) / Main Street (EB)	2.6	A	16.3	B	N/A	N/A	19.9% / 33.1%	N/A	No
43. La Media Road (NB) / Main Street (EB)	12.6	B	6.4	A	N/A	N/A	29.6% / 26.2%	N/A	No
44. Magdalena Avenue / Main Street	28.9	C	25.9	C	N/A	N/A	22.3% / 26.8%	N/A	No
45. SR-125 SB Ramps / Main Street	~~8.5~~ 8.9	~~A~~ C	~~9.8~~ 24.3	~~A~~ C	N/A	N/A	28.0% / 30.5%	N/A	No
46. SR-125 NB Ramps / Main Street	~~9.6~~ 26.3	~~A~~ C	~~17.7~~ 37.2	~~B~~ D	N/A	N/A	23.6% / 29.6%	N/A	No
47. EastLake Parkway / Main Street/Hunte Parkway	33.1	C	33.8	C	N/A	N/A	13.9% / 15.8%	N/A	No
48. Discovery Falls Drive / Hunte Parkway	60.8	E	61.4	E	N/A	N/A	11.3% / 14.2%	N/A	Yes (Direct)

Table 5.3-37 (Continued)
Peak Hour Intersection LOS Results – Year 2030 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Delay w/o Project (sec.) AM/PM	LOS w/o Project AM/PM	Project % of Entering Volume (> 5%)	Change in Delay (sec.)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*					
49. Heritage Road / Avenida De Las Vistas (SD)	22.8	C	22.3	C	20.3 / 21.0	C / C	N/A	2.5 / 1.3	No
50. SR-125 SB Ramps / Lone Star Road (SD)	20.3	C	37.1	D	17.4 / 26.7	B / C	N/A	2.9 / 10.4	No
51. SR-125 NB Ramps / Lone Star Road (SD)	19.3	B	27.8	C	18.9 / 24.3	B / C	N/A	0.4 / 3.5	No
52. Ellis Road / Lone Star Road (SD)	27.0	C	29.7	C	25.7 / 27.1	C / C	N/A	1.3 / 2.6	No
53. Ocean View Hills Parkway / Otay Mesa Road (SD)	35.0	C	45.2	D	33.2 / 43.8	C / D	N/A	1.8 / 1.4	No
54. Heritage Road / Otay Mesa Road (SD)	35.9	D	42.2	D	30.6 / 38.7	C / D	N/A	5.3 / 3.5	No
55. Cactus Road / Otay Mesa Road (SD)	42.8	D	53.5	D	36.2 / 47.4	D / D	N/A	6.6 / 6.1	No
56. Britannia Boulevard / Otay Mesa Road (SD)	43.5	D	48.4	D	41.4 / 45.1	D / D	N/A	2.1 / 3.3	No
57. La Media Road / Otay Mesa Road (SD)	50.2	D	53.4	D	44.0 / 52.1	D / D	N/A	6.2 / 1.3	No
58. SR-125 SB Ramps / Otay Mesa Road (SD)	6.8	A	15.8	B	6.3 / 10.7	A / B	N/A	0.5 / 5.1	No
59. SR-125 NB Ramps / Otay Mesa Road (SD)	3.2	A	9.2	A	3.2 / 8.2	A / A	N/A	0.0 / 1.0	No
60. Ellis Road / Otay Mesa Road (SD)	43.0	D	39.0	D	38.3 / 36.2	D / D	N/A	4.7 / 2.8	No
61. Santa Macheto @ Heritage Road	1.9	A	4.8	A	N/A	N/A	28.3% / 31.3%	N/A	No
62. Santa Picacho @ Heritage Road	18.8	B	26.0	C	N/A	N/A	35.2% / 38.0%	N/A	No
63. Santa Maya @ Heritage Road	28.5	C	31.3	C	N/A	N/A	38.6% / 41.5%	N/A	No
64. Energy Way / Heritage Road	7.7	A	8.6	A	N/A	N/A	35.1% / 39.5%	N/A	No
65. Quarry Driveway / Main Street	9.0	A	1.0	A	N/A	N/A	24.5% / 27.8%	N/A	No
66. Village Three North Project R-20 Driveway @ Main Street	1.3	A	3.8	A	N/A	N/A	18.9% / 29.3%	N/A	No
67. La Media Road / Village Four Driveway @ Santa Luna Street	20.7	C	20.9	C	N/A	N/A	10.9% / 14.6%	N/A	No

Table 5.3-37 (Continued)
Peak Hour Intersection LOS Results – Year 2030 Conditions

Intersection	AM Peak Hour		PM Peak Hour		Delay w/o Project (sec.) AM/PM	LOS w/o Project AM/PM	Project % of Entering Volume (> 5%)	Change in Delay (sec.)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*					
68. Santa Tipu @ Main Street (one-way stop RT in/out)*	30.9	D	32.2	D	N/A	N/A	33.6% / 36.5%	N/A	No
69. Santa Marisol @ Main Street	41.6	D	27.3	C	N/A	N/A	30.7% / 45.8%	N/A	No
70. Village Eight East R-16 Driveway @ Main Street (one-way stop RT in/out)*	30.9	D	32.4	D	N/A	N/A	31.3% / 35.3%	N/A	No
71. Village Eight East Community Park Driveway @ Otay Valley Road	2.6	A	4.0	A	N/A	N/A	58.1% / 58.1%	N/A	No
72. Cutter Avenue @ Otay Valley Road (one-way stop RT in/out)*	9.8	A	12.8	B	N/A	N/A	60.1% / 60.2%	N/A	No
73. Santa Marisol @ Otay Valley Road	19.3	B	31.0	C	N/A	N/A	62.9% / 61.3%	N/A	No
74. Village Nine Street "B" / Otay Valley Road	26.6	B	22.5	C	N/A	N/A	39.6% / 41.3%	N/A	No
75. Village Nine Street "B" / Discovery Falls Drive	7.2	A	9.3	A	N/A	N/A	4.7% / 4.8%	N/A	No
76. Santa Julliard @ Discovery Falls Drive	3.5	A	6.9	A	N/A	N/A	44.6% / 44.4%	N/A	No
77. University Drive @ Discovery Falls Drive	21.2	C	21.5	C	N/A	N/A	64.4% / 44.4%	N/A	No
78. Santa Davis @ Discovery Falls Drive	3.6	A	7.0	A	N/A	N/A	69.8% / 61.2%	N/A	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS E or F.
N/A = information not applicable to the respective jurisdiction's impact analysis methodology
* For two-way stop controlled intersections, the delay shown is the worst delay experienced by any of the approaches.

Roadway Segment Analysis

Table 5.3-38 displays the LOS analysis results for study area roadway segments within the City of Chula Vista under the Year 2030 project conditions, while Table 5.3-39 displays the results for the roadway segments within the City of San Diego under the same conditions. As shown in the tables, all study area roadway segments within the City of San Diego would operate at acceptable LOS D or better with project buildout. Therefore, the proposed project's impacts to roadway segments in the City of San Diego at project buildout would be less than significant.

As to the City of Chula Vista, while project buildout traffic would comprise only approximately 0.8% of the total segment volume and less than 300 ADT on the segment of Orange Avenue between Melrose and the I-805 SB Ramps, the intersection along this segment (I-805 SB Ramps / Olympic Parkway) would operate at LOS F during the PM peak hour. Therefore, project traffic would result in a significant cumulative impact at this location.

Table 5.3-38
Roadway Segment LOS Results – Year 2030 Conditions (City of Chula Vista)

Roadway	From	To	Classification	ADT w/ Project	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
H Street	Tierra Del Rey	Paseo Ranchero	6-Ln Prime	49,800	50,000	C	900	1.8%	—	No
Telegraph Canyon Road	Medical Center Drive	Heritage Road / Paseo Ranchero	6-Ln Prime	55,700	50,000	**D**	200	0.4%	Yes	No
Telegraph Canyon Road	Heritage Road / Paseo Ranchero	La Media Road / Otay Lakes Road	6-Ln Prime	46,600	50,000	C	600	1.3%	—	No
Otay Lakes Road	H Street	Telegraph Canyon Road	6-Ln Prime	30,300	50,000	A	1,000	3.3%	—	No
Otay Lakes Road	La Media Road	Rutgers Avenue	6-Ln Prime	43,900	50,000	C	1,000	2.3%	—	No
East Palomar Street	Medical Center Drive	Heritage Road	4-Ln Major	23,000	30,000	B	1,100	4.8%	—	No
East Palomar Street	Heritage Road	La Media Road	4-Ln Major	22,400	30,000	A	700	3.1%	—	No
East Palomar Street	La Media Road	Olympic Parkway	4-Ln Major	26,000	30,000	B	500	1.9%	—	No
Orange Avenue	3rd Avenue	Hilltop Drive	4-Ln Major	26,900	30,000	C	900	3.4%	—	No
Orange Avenue	Hilltop Drive	Melrose Avenue	4-Ln Major	29,600	30,000	C	300	1.0%	—	No
Orange Avenue	Melrose Avenue	I-805 SB Ramps	4-Ln Major	35,600	30,000	**E**	300	0.8%	No	Yes (Cumulative)
Olympic Parkway	I-805 SB Ramps	I-805 NB Ramps	6-Ln Prime	45,500	50,000	C	1,100	2.4%	—	No
Olympic Parkway	I-805 NB Ramps	Oleander Avenue	6-Ln Prime	56,500	50,000	**E**	1,100	2.0%	Yes	No
Olympic Parkway	Oleander Avenue	Brandywine Avenue	6-Ln Prime	48,700	50,000	C	1,300	2.7%	—	No
Olympic Parkway	Brandywine Avenue	Heritage Road	6-Ln Prime	42,200	50,000	B	1,600	3.8%	—	No
Olympic Parkway	Heritage Road	Santa Venetia Street	6-Ln Prime	36,100	50,000	A	2,900	8.0%	—	No
Olympic Parkway	Santa Venetia Street	La Media Road	6-Ln Prime	29,800	50,000	A	2,900	9.7%	—	No
Olympic Parkway	La Media Road	East Palomar Street	6-Ln Prime	27,100	50,000	A	1,300	4.8%	—	No
Olympic Parkway	East Palomar Street	SR-125 SB Ramps	6-Ln Prime	47,600	50,000	C	1,400	2.9%	—	No

Table 5.3-38 (Continued)
Roadway Segment LOS Results – Year 2030 Conditions (City of Chula Vista)

Roadway	From	To	Classification	ADT w/ Project	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Olympic Parkway	SR-125 SB Ramps	SR-125 NB Ramps	8-Ln Expressway	49,800	70,000	A	1,300	2.6%	—	No
Olympic Parkway	SR-125 NB Ramps	EastLake Parkway	8-Ln Expressway	51,700	70,000	A	1,500	2.9%	—	No
Olympic Parkway	EastLake Parkway	Hunte Parkway	6-Ln Prime	36,300	50,000	A	200	0.6%	—	No
Olympic Parkway	Hunte Parkway	Olympic Vista Road	4-Ln Major	29,300	30,000	C	1,400	4.8%	—	No
Olympic Parkway	Olympic Vista Road	Lake Crest Drive	4-Ln Major	13,800	30,000	A	900	6.5%	—	No
Birch Road	La Media Road	Magdalena Avenue	6-Ln Major	31,300	40,000	B	1,500	4.8%	—	No
Birch Road	Magdalena Avenue	SR-125 SB Ramps	6-Ln Major	31,000	40,000	B	700	2.3%	—	No
Birch Road	SR-125 SB Ramps	SR-125 NB Ramps	6-Ln Prime	30,500	50,000	A	500	1.6%	—	No
Birch Road	SR-125 NB Ramps	EastLake Parkway	6-Ln Prime	31,100	50,000	A	1,500	4.8%	—	No
Main Street	4th Avenue	3rd Avenue	4-Ln Major	25,800	30,000	B	900	3.5%	—	No
Main Street	3rd Avenue	Hilltop Drive	4-Ln Major	31,900	30,000	**D**	1,100	3.5%	Yes	No
Main Street	Hilltop Drive	Melrose Avenue	4-Ln Major	36,900	30,000	**E**	2,200	6.0%	Yes	No
Main Street	Melrose Avenue	I-805 SB Ramps	4-Ln Major	36,500	30,000	**E**	2,400	6.6%	Yes	No
Main Street	I-805 SB Ramps	I-805 NB Ramps	6-Ln Prime	49,000	50,000	C	5,200	10.6%	—	No
Main Street	I-805 NB Ramps	Oleander Avenue	6-Ln Prime	51,100	50,000	**D**	8,500	16.6%	Yes	No
Main Street	Oleander Avenue	Brandywine Avenue	6-Ln Prime	54,900	50,000	**D**	9,400	17.1%	Yes	No
Main Street	Brandywine Avenue	Heritage Road	6-Ln Prime	49,300	50,000	C	10,300	20.9%	—	No
Main Street	Heritage Road	La Media Road	6-Ln Prime	49,200	50,000	C	10,500	21.3%	—	No
Main Street	La Media Road	SR-125 SB Ramps	6-Ln Prime	54,800	50,000	**D**	20,700	37.8%	Yes	No
Main Street	SR-125 SB Ramps	SR-125 NB Ramps	6-Ln Gateway*	54,900	61,200	D	13,900	25.3%	—	No
Main Street	SR-125 NB Ramps	EastLake Parkway / University Drive	6-Ln Gateway*	60,500	61,200	D	11,800	19.5%	—	No
Otay Valley Road	Main Street	SR-125	4-Ln Major	22,900	30,000	B	16,200	70.7%	—	No
Otay Valley Road	SR-125	Village Nine Street "B"	4-Ln Major*	15,400	30,000	A	7,100	46.1%	—	No

Table 5.3-38 (Continued)
Roadway Segment LOS Results – Year 2030 Conditions (City of Chula Vista)

Roadway	From	To	Classification	ADT w/ Project	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Hilltop Drive	Orange Avenue	Main Street	Class I Collector	11,300	22,000	A	800	7.1%	—	No
Paseo Ranchero	H Street	Telegraph Canyon Road	Class I Collector	22,200	22,000	**D**	1,700	7.7%	Yes	No
Heritage Road	Telegraph Canyon Road	East Palomar Street	6-Ln Prime	28,600	50,000	A	2,800	9.8%	—	No
Heritage Road	East Palomar Street	Olympic Parkway	6-Ln Prime	53,600	50,000	**D**	4,300	8.0%	Yes	No
Heritage Road	Olympic Parkway	Santa Victoria Road	6-Ln Prime	36,500	50,000	A	5,400	14.8%	—	No
Heritage Road	Santa Victoria Road	Main Street	6-Ln Prime	45,600	50,000	C	21,800	47.8%	—	No
Heritage Road	Main Street	Avenida De Las Vistas	6-Ln Prime	60,700	50,000	**E**	6,300	10.4%	Yes	No
La Media Road	Telegraph Canyon Road	East Palomar Street	6-Ln Prime	30,800	50,000	A	1,500	4.9%	—	No
La Media Road	East Palomar Street	Olympic Parkway	6-Ln Prime	27,600	50,000	A	1,800	6.5%	—	No
La Media Road	Olympic Parkway	Santa Venetia Street	6-Ln Prime	33,700	50,000	A	3,300	9.8%	—	No
La Media Road	Santa Venetia Street	Birch Road	6-Ln Prime	33,900	50,000	A	3,400	10.0%	—	No
La Media Road	Birch Road	Santa Luna Street	6-Ln Prime	21,700	50,000	A	3,400	15.7%	—	No
La Media Road	Santa Luna Street	Main Street	4-Ln Town Center Arterial	21,100	30,000	A	3,600	17.1%	—	No
Magdalena Avenue	Santa Venetia Street	Birch Road	Class I Collector	8,100	22,000	A	800	9.9%	—	No
Magdalena Avenue	Birch Road	Wolf Canyon Loop	Class I Collector	13,100	22,000	A	1,800	13.7%	—	No
Magdalena Avenue	Wolf Canyon Loop	Santa Luna Street	Class II Collector	4,900	12,000	A	1,700	34.7%	—	No

Table 5.3-38 (Continued)
Roadway Segment LOS Results – Year 2030 Conditions (City of Chula Vista)

Roadway	From	To	Classification	ADT w/ Project	LOS Threshold (LOS C)	LOS w/ Project	Project ADT (> 800)	Project Contribution (≥ 5%)	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
Magdalena Avenue	Santa Luna Street	Main Street	Class I Collector	11,600	22,000	A	2,500	21.6%	—	No
EastLake Parkway	Corte Vista	Olympic Parkway	6-Ln Prime	24,600	50,000	A	600	2.4%	—	No
EastLake Parkway	Olympic Parkway	Birch Road	6-Ln Major	29,700	40,000	A	1,500	5.1%	—	No
EastLake Parkway	Birch Road	Main Street / Hunte Parkway	6-Ln Major	23,000	40,000	A	2,100	9.1%	—	No
University Drive	Main Street / Hunte Parkway	University Driveway #1	4-Ln Major	19,930	30,000	A	4,500	22.6%	—	No
University Drive	University Driveway #1	University Driveway #2	Class II Collector	9,250	12,000	B	4,800	51.9%	—	No
University Drive	University Driveway #2	Discovery Falls Drive	Class II Collector	6,440	12,000	A	5,100	79.2%	—	No
Discovery Falls Drive	Hunte Parkway	University/RTP Driveway	4-Ln Major	20,470	30,000	A	5,000	24.4%	—	No
Discovery Falls Drive	University/RTP Driveway	University Drive	Class II Collector	6,600	12,000	A	5,100	77.3%	—	No
Discovery Falls Drive	University Drive	Village Nine Street "B"	Class II Collector	5,910	12,000	A	3,000	50.8%	—	No
Hunte Parkway	Otay Lakes Road	Olympic Parkway	4-Ln Major	21,700	30,000	A	1,300	6.0%	—	No
Hunte Parkway	Olympic Parkway	Discovery Falls Drive	6-Ln Prime	31,500	50,000	A	3,200	10.2%	—	No
Hunte Parkway	Discovery Falls Drive	EastLake Parkway/ University Drive	6-Ln Prime	38,400	50,000	B	3,300	8.6%	—	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS (D), E, or F.
* Facility improvement is assumed to be implemented by others, including City's CIP.

Table 5.3-39
Roadway Segment LOS Results – Year 2030 Conditions (City of San Diego)

Roadway	From	To	Classification	ADT w/ Project	LOS Threshold (LOS D)	LOS w/ Project	ADT w/o Project	LOS w/o Project	Change in V/C	Significant Impact?
Lone Star Road	La Media Road	Ellis Road	4-Ln Major	31,600	35,000	D	30,000	D	0.040	No
Otay Mesa Road	Ocean View Hills Parkway	Heritage Road	6-Ln Prime	48,800	55,000	C	47,900	C	0.015	No
Otay Mesa Road	Heritage Road	Cactus Road	6-Ln Prime	45,200	55,000	C	42,800	C	0.040	No
Otay Mesa Road	Cactus Road	Britannia Boulevard	6-Ln Prime	48,300	55,000	C	47,000	C	0.022	No
Otay Mesa Road	Britannia Boulevard	La Media Road	6-Ln Prime	47,100	55,000	C	45,200	C	0.032	No
Otay Mesa Road	La Media Road	Ellis Road	6-Ln Prime	49,400	55,000	C	47,200	C	0.037	No
Heritage Road	Avenida De Las Vistas	Otay Mesa Road	6-Ln Prime	53,700	55,000	D	49,100	C	0.077	No
La Media Road	Lone Star Road	Otay Mesa Road	6-Ln Prime	16,600	55,000	A	15,300	A	0.022	No
Ellis Road	Lone Star Road	Otay Mesa Road	4-Ln Major	32,000	35,000	D	30,900	D	0.028	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).

Freeway / State Highway Segment Analysis

Table 5.3-40 displays freeway LOS analysis results for I-805, SR-125, and SR-905 under the Year 2030 conditions. As shown in the table, all study freeway / state highway segments along I-805, SR-125, and SR-905 would operate at acceptable LOS D or better under the Year 2030 conditions, with the following 11exceptions:

- I-805, from SR-94 to Market Street (LOS F) – The proposed project would comprise 0.8% (less than 5%) of the total freeway segment volume; therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS F, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- I-805, from Market Street to Imperial Avenue (LOS F) – The proposed project would comprise 0.9% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS F, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- I-805, from Imperial Avenue to E Division Street (LOS F) – The proposed project would comprise 1.0% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS F, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- I-805, from Plaza Boulevard to SR-54 (LOS F) – The proposed project would comprise 1.2% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS F, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- I-805, from SR-54 to Bonita Road (LOS F) – The proposed project would comprise 1.4% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS F, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- I-805, from Bonita Road to East H Street (LOS E) – The proposed project would comprise 1.8% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS E, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.

- I-805, from East H Street to Telegraph Canyon Road (LOS E) – The proposed project would comprise 1.7% (less than 5%) of the total freeway segment volume and, therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS E, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- SR-905, from I-805 to Caliente Avenue (LOS F) – The proposed buildout project would comprise 0.3% (less than 5%) of the total freeway segment volume; therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS F with the project, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- SR-905, from Caliente Avenue to Heritage Road (LOS F) – The proposed project would comprise 0.3% (less than 5%) of the total freeway segment volume; therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS F with the project, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- SR-905, from Heritage Road to Britannia Boulevard (LOS F) – The proposed project would comprise 0.6% (less than 5%) of the total freeway segment volume; therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS F with the project, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.
- SR-905, from Britannia Boulevard to La Media Road (LOS F) – The proposed project would comprise 0.9% (less than 5%) of the total freeway segment volume; therefore, project traffic would not result in a significant direct impact. However, because the segment would operate at LOS F with the project, the addition of trips generated by the proposed project would result in a significant cumulative impact to this segment.

Ramp Intersection Capacity Analysis

Consistent with Caltrans requirements and provided for information purposes only, the signalized ramp intersections along I-805 and SR-125 within the study area were analyzed under the Year 2030 conditions using the ILV procedures as described in Section 5.3.1.1. ILV analysis results are displayed in Table 5.3-41 and analysis worksheets for the Year 2030 conditions are provided in EIR Appendix M. As shown in the table, all of the I-805 and SR-125 ramp intersections would operate "At Capacity" or "Under Capacity" during both the AM and PM peak hours under Year 2030 conditions, with the following four (4) exceptions:

- I-805 SB Ramps / Olympic Parkway – "Over Capacity" during the PM peak hour;
- I-805 NB Ramps / Olympic Parkway – "Over Capacity" during the AM peak hour;

- I-805 SB Ramps / Main Street – "Over Capacity" during the AM and PM peak hour; and
- I-805 NB Ramps / Main Street – "Over Capacity" during the PM peak hour.

Ramp Metering Analysis

Table 5.3-42 displays the ramp metering analysis conducted at the I-805 northbound on-ramps at Olympic Parkway and Main Street under the Year 2030 conditions. Based on observed existing conditions, it is assumed that approximately 80% of the total arrival traffic (Demand) would utilize the two non-HOV lanes.

As shown in the table, the peak hour capacity expected to be processed through the ramp meter (Meter Rate) would be greater than the peak hour demand (Demand) at the I-805 northbound on-ramp at Olympic Parkway. However, the peak hour demand at the I-805 northbound on-ramp at Main Street would be greater than the capacity that the ramp meter provides under the Year 2030 conditions and would result in 13.8 minutes of delay without the proposed project and 33.1 minutes with the proposed project. Therefore, based on the SANDAG CMP impact threshold (SANDAG 2008), the proposed project would result in a significant cumulative impact at the I-805 northbound on-ramp at Main Street.

Table 5.3-40
Freeway / State Highway Segment LOS Results – Year 2030 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Contribution (≥ 5%)	Significant Impact?
		ADT	*Peak Hour %*	*Peak Hour Volume*	*Directional Split*	*# of Lanes Per Direction*	*PHF*	*% of Heavy Vehicle*	*Volume (pc/h/ln)*	*V/C*	*LOS*	*ADT*	*LOS*		
I-805	Home Avenue to SR-94	258,600	6.9%	17,843	0.51	4+1HOV	0.97	4.2%	1,600	0.798	C	256,400	C	0.9%	No
I-805	SR-94 to Market Street	286,400	8.0%	22,912	0.50	4+1HOV	0.97	4.2%	2,010	1.004	F	284,200	E	0.8%	Yes (Cumulative)
I-805	Market Street to Imperial Avenue	353,600	8.0%	28,288	0.50	5+1HOV	0.97	4.2%	2,126	1.127	F	35+0,400	F	0.9%	Yes (Cumulative)
I-805	Imperial Avenue to E Division Street	352,100	8.0%	28,168	0.50	5+1HOV	0.97	4.2%	2,116	1.031	F	348,600	F	1.0%	Yes (Cumulative)
I-805	E Division Street to Plaza Boulevard	339,400	7.2%	24,437	0.51	5+1HOV	0.95	3.8%	1,909	0.930	D	335,600	D	1.1%	No
I-805	Plaza Boulevard to SR-54	330,500	8.1%	26,771	0.52	5+1HOV	0.96	2.2%	2,096	1.018	F	326,400	F	1.2%	Yes (Cumulative)
I-805	SR-54 to Bonita Road	372,700	7.2%	26,834	0.52	4+1Aux+1 HOV	0.96	1.7%	2,259	1.020	F	367,300	F	1.4%	Yes (Cumulative)
I-805	Bonita Road to East H Street	329,500	7.8%	25,701	0.50	5+1HOV	0.95	1.7%	1,953	0.947	E	323,700	D	1.8%	Yes (Cumulative)
I-805	East H Street to Telegraph Canyon Road	328,200	7.8%	25,600	0.50	5+1HOV	0.95	1.9%	1,945	0.943	E	322,600	E	1.7%	Yes (Cumulative)
I-805	Telegraph Canyon Road to East Palomar Street	287,000	7.1%	20,377	0.51	4+1Aux+1 HOV	0.92	1.7%	1,754	0.790	C	281,400	C	2.0%	No

Table 5.3-40 (Continued)
Freeway / State Highway Segment LOS Results – Year 2030 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Contribution (≥ 5%)	Significant Impact?
		ADT	*Peak Hour %*	*Peak Hour Volume*	*Directional Split*	*# of Lanes Per Direction*	*PHF*	*% of Heavy Vehicle*	*Volume (pc/h/ln)*	*V/C*	*LOS*	*ADT*	*LOS*		
I-805	East Palomar Street to Olympic Parkway	272,000	7.1%	19,312	0.51	4+1Aux+ 1HOV	0.92	1.7%	1,666	0.818	D	267,000	D	1.8%	No
I-805	Olympic Parkway to Main Street	266,000	6.9%	18,354	0.51	4+1Aux+ 1HOV	0.93	5.4%	1,590	0.782	C	262,300	C	1.4%	No
I-805	Main Street to Palm Avenue	258,100	7.1%	18,325	0.58	4+1Aux+ 1HOV	0.95	10.3%	1,815	0.890	D	255,800	D	0.9%	No
I-805	Palm Avenue to SR-905	237,000	7.1%	16,827	0.58	4+1Aux+ 1HOV	0.95	10.3%	1,660	0.816	D	235,000	D	0.8%	No
SR-125	Telegraph Canyon Road to Olympic Parkway	35,500	7.0%	2,485	0.60	2M	0.92	2.0%	823	0.343	A	34,300	A	3.4%	No
SR-125	Olympic Parkway to Birch Road	30,700	7.0%	2,149	0.60	2M	0.92	2.0%	703	0.293	A	29,800	A	2.9%	No
SR-125	Birch Road to Main Street	34,600	7.0%	2,422	0.60	2M	0.92	2.0%	801	0.334	A	33,700	A	2.6%	No
SR-125	Main Street to Lone Star Road	94,000	7.0%	6,580	0.60	2M	0.92	2.0%	2,163	0.901	D	82,500	C	12.2%	No
SR-125	Lone Star Road to Otay Mesa Road	82,700	7.0%	5,789	0.60	2M	0.92	2.0%	1,910	0.796	C	74,400	C	10.0%	No
SR-125	Otay Mesa Road to SR-905	47,800	7.0%	3,346	0.60	2M	0.92	2.0%	1,098	0.458	B	43,700	B	8.6%	No

Table 5.3-40 (Continued)
Freeway / State Highway Segment LOS Results – Year 2030 Conditions

Freeway/ State Highway	Segment	With Project										Without Project		Project Contribution (≥ 5%)	Significant Impact?
		ADT	*Peak Hour %*	*Peak Hour Volume*	*Directional Split*	*# of Lanes Per Direction*	*PHF*	*% of Heavy Vehicle*	*Volume (pc/h/ln)*	*V/C*	*LOS*	*ADT*	*LOS*		
SR-905	I-805 to Calliente Avenue	222,800	7.0%	15,596	0.60	3M	0.92	5.0%	3,476	1.448	**F**	222,200	**F**	0.3%	Yes (Cumulative)
SR-905	Calliente Avenue to Heritage Road	214,100	7.0%	14,987	0.60	3M	0.92	5.0%	3,342	1.393	**F**	213,400	**F**	0.3%	Yes (Cumulative)
SR-905	Heritage Road to Britannia Boulevard	196,400	7.0%	13,748	0.60	3M	0.92	5.0%	3,064	1.277	**F**	195,300	**F**	0.6%	Yes (Cumulative)
SR-905	Britannia Boulevard to La Media Road	171,200	7.0%	11,984	0.60	3M	0.92	5.0%	2,674	1.114	**F**	169,600	**F**	0.9%	Yes (Cumulative)
SR-905	La Media Road to SR-125	133,300	7.0%	9,331	0.60	3M	0.92	5.0%	3,476	1.448	D	131,700	D	1.2%	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS E or F.
M = mainline; Aux = auxiliary lane; HOV = High Occupancy Vehicle lane.

Table 5.3-41
Ramp Intersection Capacity Analysis – Year 2030 Conditions

Ramp Intersection	Peak Hour	With Project		Without Project	
		ILV / Hour	*Description*	*ILV / Hour*	*Description*
I-805 SB Ramps / Olympic Parkway	AM	1,352	*1200–1500: (At Capacity)*	1,340	*1200–1500: (At Capacity)*
	PM	1,895	*>1500: (Over Capacity)*	1,895	*>1500: (Over Capacity)*
I-805 NB Ramps / Olympic Parkway	AM	2,210	*>1500: (Over Capacity)*	2,183	*>1500: (Over Capacity)*
	PM	1,448	*1200–1500: (At Capacity)*	1,420	*1200–1500: (At Capacity)*

Table 5.3-41 (Continued)
Ramp Intersection Capacity Analysis – Year 2030 Conditions

Ramp Intersection	Peak Hour	With Project		Without Project	
		ILV / Hour	*Description*	*ILV / Hour*	*Description*
I-805 SB Ramps / Main Street	AM	1,597	*>1500: (Over Capacity)*	1,493	*1200–1500: (At Capacity)*
	PM	1,853	*>1500: (Over Capacity)*	1,733	*>1500: (Over Capacity)*
I-805 NB Ramps / Main Street	AM	1,429	*1200–1500: (At Capacity)*	1,352	*1200–1500: (At Capacity)*
	PM	1,664	*>1500: (Over Capacity))*	1,564	*>1500: (Over Capacity))*
SR-125 SB Ramps / Olympic Parkway	AM	566	*<1200: (Under Capacity)*	563	*<1200: (Under Capacity)*
	PM	552	*<1200: (Under Capacity)*	549	*<1200: (Under Capacity)*
SR-125 NB Ramps / Olympic Parkway	AM	520	*<1200: (Under Capacity)*	513	*<1200: (Under Capacity)*
	PM	668	*<1200: (Under Capacity)*	663	*<1200: (Under Capacity)*
SR-125 SB Ramps / Birch Road	AM	643	*<1200: (Under Capacity)*	632	*<1200: (Under Capacity)*
	PM	874	*<1200: (Under Capacity)*	850	*<1200: (Under Capacity)*
SR-125 NB Ramps / Birch Road	AM	653	*<1200: (Under Capacity)*	645	*<1200: (Under Capacity)*
	PM	785	*<1200: (Under Capacity)*	773	*<1200: (Under Capacity)*
SR-125 SB Ramps / Main Street	AM	684	*<1200: (Under Capacity)*	536	*<1200: (Under Capacity)*
	PM	820	*<1200: (Under Capacity)*	543	*<1200: (Under Capacity)*
SR-125 NB Ramps / Main Street	AM	665	*<1200: (Under Capacity)*	657	*<1200: (Under Capacity)*
	PM	688	*<1200: (Under Capacity)*	625	*<1200: (Under Capacity)*
SR-125 SB Ramps / Lone Star Road	AM	843	*<1200: (Under Capacity)*	763	*<1200: (Under Capacity)*
	PM	1,020	*<1200: (Under Capacity)*	935	*<1200: (Under Capacity)*
SR-125 NB Ramps / Lone Star Road	AM	986	*<1200: (Under Capacity)*	915	*<1200: (Under Capacity)*
	PM	1,218	*1200–1500: (At Capacity)*	1,004	*<1200: (Under Capacity)*
SR-125 SB Ramps / Otay Mesa Road	AM	762	*<1200: (Under Capacity)*	755	*<1200: (Under Capacity)*
	PM	1,020	*<1200: (Under Capacity)*	935	*<1200: (Under Capacity)*
SR-125 NB Ramps / Otay Mesa Road	AM	622	*<1200: (Under Capacity)*	615	*<1200: (Under Capacity)*
	PM	1,001	*<1200: (Under Capacity)*	948	*<1200: (Under Capacity)*

Source: Chen Ryan Associates 2014 (EIR Appendix M).

Table 5.3-42
Ramp Metering Analysis – Year 2030 Conditions

Location	Peak Hour	With Project						Without Project					Significant Impact?
		P_{vol} Peak Hour Volume	*Demand Vol[1] (veh/hr per lane)*	*Meter Rate[2] (veh/hr)*	*Excess Demand[3] (veh/hr)*	*Delay[4] (min)*	*Queue[5] (ft)*	*P_{vol} Peak Hour Volume*	*Demand Vol (veh/hr per lane)*	*Excess Demand (veh/hr)*	*Delay (min)*	*Queue (ft)*	
I-805 NB On-Ramp @ Olympic Parkway	AM	2,152	861	887	0	0	0	2,125	~~852~~ 850	0	0	0	No
I-805 NB On-Ramp @ Main Street	AM	1,603	641	413	228	33.1	6,612	1,365	~~508~~ 546	~~95~~ 133	~~13.8~~ 19.32	~~2,755~~ 3,857	**Yes (Cumulative)**

Source: Chen Ryan Associates 2014 (EIR Appendix M).

1 Demand is the peak hour demand expected to use the on-ramp.

2 Meter rate is the peak hour capacity expected to be processed through the ramp meter.

3 Excess demand = (demand) – (meter rate) or zero, whichever is greater.

4 Delay = (excess demand / meter rate) × 60 min/hr.

5 Queue = (excess demand) × 29 ft/veh.

A.6 Without SR-125/Lone Star Road Interchange

As discussed in Section A.5 above, the SR-125 / Lone Star Road interchange is included in the SANDAG Series 11 Model and the City of San Diego Otay Mesa Community Plan Circulation Element, but it is not a funded project in the City of San Diego FBA. Therefore, the analysis in Section A.5 assumes that the interchange is in. However, in the event the SR-125/Lone Star Road interchange is not constructed by Year 2030, this section discusses traffic operations and potential impacts associated with the "without interchange" scenario on the influenced surrounding roadway network.

Without the SR-125/Lone Star Road interchange, project traffic would utilize the SR-125/Otay Mesa Road interchange to/from Otay Mesa. This change in travel pattern would result in the addition of two intersections and four roadway segments located within the County of San Diego to the study area since the proposed project would contribute more than 25 peak hour trips (County criteria) to these facilities:

- Enrico Fermi Drive / Lone Star Road (Int #79)
- Enrico Fermi Drive / Otay Mesa Road (Int #80)
- Lone Star Road, between Ellis Road and Enrico Fermi Drive;
- Lone Star Road, east of Enrico Fermi Drive;
- Otay Mesa Road, between Ellis Road and Enrico Fermi Drive; and
- Otay Mesa Road, east of Enrico Fermi Drive.

Intersection Analysis

Table 5.3-43 displays intersection level of service and average vehicle delay results for the focused study area intersections under Year 2030 without the SR-125/Lone Star Road interchange conditions. Level of service calculation worksheets for Year 2030 without the SR-125/Lone Star Road interchange conditions are provided in EIR Appendix M.

As shown in the table, all of the focused study area intersections are projected to operate at acceptable levels under Year 2030 without the construction of the SR-125 / Lone Star Road interchange conditions and, therefore, the project would not result in any additional significant traffic impacts to the study area intersections under this scenario.

Table 5.3-43
Peak Hour Intersection LOS Results – Year 2030 Conditions
Without SR-125 / Lone Star Road Interchange

Intersection	AM Peak Hour		PM Peak Hour		Delay w/o Project (sec.) AM/PM	LOS w/o Project AM/PM	Change in Delay (sec.)	Significant Impact?
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*				
57. La Media Road / Otay Mesa Road (City of SD)	52.0	D	53.6	D	51.1 / 52.6	D / D	0.9 / 1.0	No
58. SR-125 SB Ramps / Otay Mesa Road (City of SD)	13.1	B	37.7	D	9.4 / 29.9	A / C	3.7 / 7.8	No
59. SR-125 NB Ramps / Otay Mesa Road (City of SD)	13.0	B	20.6	C	9.9 / 13.8	A / B	3.1 / 6.8	No
60. Ellis Road / Otay Mesa Road (City of SD)	42.5	D	50.9	D	/ 45.1	D / D	3.5 / 5.8	No
79. Enrico Fermi Drive / Otay Mesa Road (County)	19.5	B	25.2	C	18.4 / 23.2	B / C	1.1 / 2.0	No
80. Enrico Fermi Drive / Otay Mesa Road (County)	45.3	D	45.4	D	42.6 / 45.1	D / D	2.7 / 0.3	No

Source: Chen Ryan Associates 2014 (EIR Appendix M)

Roadway Segment Analysis

Table 5.13-44 displays level of service analysis results for the focused study area roadway segments under Year 2030 without the SR-125/Lone Star Road interchange conditions. As shown in the table, all of the roadway segments (both City and County of San Diego) within the focused study area are projected to operate at acceptable levels under Year 2030 without the construction of the SR-125 / Lone Star Road interchange conditions and, therefore, the project would not result in any additional significant traffic impacts along study roadway segments under this scenario.

Table 5.3-44
Roadway Segment LOS Results – Year 2030 Conditions
Without SR-125 / Lone Star Road Interchange

Roadway	From	To	Jurisdiction	Classification	LOS Threshold (LOS D)	With Project		Without Project		Change in V/C	Significant Impact?
						ADT	*LOS*	*ADT*	*LOS*		
Lone Star Road	La Media Road	Ellis Road	City of SD	4-ln Major	35,000	26,500	C	26,500	C	0.00	No
Lone Star Road	Ellis Road	Enrico Fermi Drive	County	4.1A*	55,000	47,100	C	45,200	C	0.03	No
Lone Star Road	Enrico Fermi Drive	East of Enrico Fermi Drive	County	4.1A*	55,000	54,500	D	50,700	C	0.06	No
Otay Mesa Road	Britannia Boulevard	La Media Road	City of SD	6-ln Prime	55,000	47,100	C	45,200	C	0.03	No
Otay Mesa Road	La Media Road	Ellis Road	City of SD	6-ln Prime	55,000	54,500	D	50,700	C	0.06	No
Otay Mesa Road	Ellis Road	Enrico Fermi Drive	County	6.2*	33,400	32,500	D	30,900	D	0.05	No
Otay Mesa Road	Enrico Fermi Drive	East of Enrico Fermi Drive	County	4.1A*	33,400	19,500	B	18,800	B	0.02	No
La Media Road	Lone Star Road	Otay Mesa Road	City of SD	6-ln Prime	55,000	13,100	A	11,800	A	0.02	No

Source: Chen Ryan Associates 2014 (EIR Appendix M)
Note: *County of San Diego General Plan Update, August 2011 and County of San Diego Public Road Standards; March 2012.

Freeway/State Highway Segment Analysis

Table 5.13-45 displays level of service analysis results for the SR-125 segments within the focused study area under Year 2030 without the SR-125/Lone Star Road interchange conditions.

As shown in the table, all three (3) segments of SR-125 are projected to operate at acceptable levels under Year 2030 without the construction of the SR-125 / Lone Star Road interchange and, therefore, the project would not result in any additional significant traffic impacts along freeway/state highway segments under this scenario.

Table 5.3-45
Freeway/State Highway Segment LOS Results – Year 2030 Conditions
Without SR-125 / Lone Star Road Interchange

Freeway / State Highway	Segment	With Project										Without Project		Project Contribution (> 5%)	Significant Impact?
		ADT	*Peak Hour %*	*Peak Hour Volume*	*Directional Split*	*# of Lanes Per Direction*	*PHF*	*% of Heavy Vehicle*	*Volume (pc/h/ln)*	*V/C*	*LOS*	*ADT*	*LOS*		
SR-125	Main Street to Lone Star Road	94,000	7.0%	6,580	0.60	2M	0.92	2.0%	2,163	0.901	D	82,500	C	12.2%	No
SR-125	Lone Star Road to Otay Mesa Road	94,000	7.0%	6,580	0.60	2M	0.92	2.0%	2,163	0.901	D	82,500	C	12.2%	No
SR-125	Otay Mesa Road to SR-905	47,800	7.0%	3,346	0.60	2M	0.92	2.0%	1,098	0.458	B	43,700	B	8.6%	No

Source: Chen Ryan Associates 2014 (EIR Appendix M)
Note: M = Mainline.

A.7 Plan-to-Plan (Proposed vs. Adopted) Analysis

The following discussion provides a plan-to-plan analysis assessing potential impacts to the City's General Plan Circulation Element roadways within the project study area that would result from changes in the transportation network, land uses, densities, and/or intensities associated with the proposed project (i.e., the Proposed Plan).

Adopted Plan

Amendments to the City of Chula Vista General Plan (GPA-09-01) and Otay Ranch GDP (PCM-09-11), as reflected in the Circulation Element shown in EIR Appendix M (Figure 1-4), were adopted by the City Council in 2013. Thus, the Circulation Element shown in the TIA prepared for the proposed project (Appendix M, Figure 1-4) is assumed to be the adopted Circulation Element (Adopted Plan). ADT volumes for study area roadway and freeway segments under the Adopted Plan were obtained from the TIA prepared in connection with the adopted amendments by LLG Engineers, dated May 11, 2012.

Plan-to-Plan Impact Assessments

Roadway Segment Analysis

Table 5.3-46 displays the LOS analysis results for study area roadway segments within the City of Chula Vista under both the Adopted and Proposed Plans, while Table 5.3-47 displays the analysis results for roadway segments within the City of San Diego.

Based upon the impact criteria discussed in Section 5.3.2, the Proposed Plan would have a significant cumulative impact to the roadway segment of Orange Avenue between Melrose Avenue and I-805 SB Ramps when compared to the Adopted Plan. Under the Proposed Plan, an additional 1,300 ADT would be generated (a 3.8% increase), resulting in an unacceptable LOS E. This impact also was identified previously under the existing plus project, Year 2020, 2025, and 2030 scenarios. As discussed in Section 5.3.5., Mitigation Measures, the recommended improvements would require widening of Orange Avenue/Olympic Parkway; however, there are right-of-way constraints that would make such improvements infeasible. An engineering right-of-way assessment was conducted and included in EIR Appendix M. Therefore, mitigation is considered infeasible and the impact will remain cumulatively significant and unavoidable at this location.

Freeway / State Highway Segment Analysis

Table 5.3-48 displays freeway LOS analysis results for I-805, SR-125, and SR-905 under both the Adopted and Proposed Plans. Based upon the impact criteria discussed in Section 5.3.2, the Proposed Plan would have a cumulative impact to the following seven freeway segments:

- I-805, from SR-94 to Market Street;
- I-805, from Market Street to Imperial Avenue;
- I-805, from Imperial Avenue to E Division Street;
- I-805, from Plaza Boulevard to SR-54
- I-805, from SR-54 to Bonita Road;
- I-805, from Bonita Road to East H Street; and
- I-805, from East H Street to Telegraph Canyon Road.

These impacts also were identified previously under the Year 2030 scenario. As explained in Section 5.3.5, Mitigation Measures, because neither Caltrans nor SANDAG will construct Phase 2 of the I-805 South Project, which would have provided the necessary additional capacity on the I-805 to accommodate project traffic, mitigation is infeasible and the model-identified impacts are determined to be significant and unavoidable. However, also as noted above and in Section 5.3.5, SANDAG has determined that freeway operations on I-805 would remain acceptable without implementation of Phase 2 as a result of the expected shift in traffic to SR-125. The Addendum to the *Transportation Plan for the San Diego Region* Final EIR (December 2011), determined that decreased tolls on SR-125 would attract more traffic to SR-125 and relieve congestion on I-805, eliminating the need for Phase 2 (SANDAG 2011) (this Addendum can be found in Appendix M).

Table 5.3-46
Roadway Segment LOS Results – Proposed Plan vs. Adopted Plan (City of Chula Vista)

Roadway	Segment	Proposed Plan				Adopted Plan				Delta	Change in %	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
		Classification	*ADT*	*LOS Threshold (LOS C)*	*LOS*	*Classification*	*ADT*	*LOS Threshold (LOS C)*	*LOS*				
H Street	Tierra Del Rey to Paseo Ranchero	6-Ln Prime	49,800	50,000	C	6-Ln Prime	49,000	50,000	C	800	1.6%		No
Telegraph Canyon Road	Medical Center Drive to Heritage Road / Paseo Ranchero	6-Ln Prime	55,700	50,000	**D**	6-Ln Prime	54,400	50,000	**D**	1,300	2.4%	Yes	No
Telegraph Canyon Road	Heritage Road / Paseo Ranchero to La Media Road/Otay Lakes Road	6-Ln Prime	46,600	50,000	C	6-Ln Prime	47,100	50,000	C	−500	-1.1%		No
Otay Lakes Road	H Street to Telegraph Canyon Road	6-Ln Prime	30,300	50,000	A	6-Ln Prime	29,800	50,000	A	500	1.7%		No
Otay Lakes Road	La Media Road to Rutgers Avenue	6-Ln Prime	43,900	50,000	C	6-Ln Prime	41,100	50,000	B	2,800	6.8%		No
East Palomar Street	Medical Center Drive to Heritage Road	4-Ln Major	23,000	30,000	B	4-Ln Major	21,000	30,000	A	2,000	9.5%		No
East Palomar Street	Heritage Road to La Media Road	4-Ln Major	22,400	30,000	A	4-Ln Major	22,500	30,000	B	−100	−0.4%		No
East Palomar Street	La Media Road to Olympic Parkway	4-Ln Major	26,000	30,000	B	4-Ln Major	24,700	30,000	A	1,300	5.3%		No
Orange Avenue	3rd Avenue to Hilltop Drive	4-Ln Major	26,900	30,000	C	4-Ln Major	27,000	30,000	C	−100	−0.4%		No
Orange Avenue	Hilltop Drive to Melrose Avenue	4-Ln Major	29,600	30,000	C	4-Ln Major	28,200	30,000	C	1,400	5.0%		No
Orange Avenue	Melrose Avenue to I-805 SB Ramps	4-Ln Major	35,600	30,000	**E**	4-Ln Major	34,300	30,000	**E**	1,300	3.8%	No	Yes (Cumulative)

Table 5.3-46 (Continued)
Roadway Segment LOS Results – Proposed Plan vs. Adopted Plan (City of Chula Vista)

Roadway	Segment	Proposed Plan				Adopted Plan				Delta	Change in %	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
		Classification	*ADT*	*LOS Threshold (LOS C)*	*LOS*	*Classification*	*ADT*	*LOS Threshold (LOS C)*	*LOS*				
Olympic Parkway	I-805 SB Ramps to I-805 NB Ramps	6-Ln Prime	45,500	50,000	C	6-Ln Prime	42,500	50,000	B	3,000	7.1%		No
Olympic Parkway	I-805 NB Ramps to Oleander Avenue	6-Ln Prime	56,500	50,000	**E**	6-Ln Prime	50,700	50,000	**D**	5,800	11.4%	Yes	No
Olympic Parkway	Oleander Avenue to Brandywine Avenue	6-Ln Prime	48,700	50,000	C	6-Ln Prime	42,800	50,000	B	5,900	13.8%		No
Olympic Parkway	Brandywine Avenue to Heritage Road	6-Ln Prime	42,200	50,000	B	6-Ln Prime	34,800	50,000	A	7,400	21.3%		No
Olympic Parkway	Heritage Road to Santa Venetia Street	6-Ln Prime	36,100	50,000	A	6-Ln Prime	33,300	50,000	A	2,800	8.4%		No
Olympic Parkway	Santa Venetia Street to La Media Road	6-Ln Prime	29,800	50,000	A	6-Ln Prime	27,500	50,000	A	2,300	8.4%		No
Olympic Parkway	La Media Road to East Palomar Street	6-Ln Prime	27,100	50,000	A	6-Ln Prime	24,800	50,000	B	2,300	9.3%		No
Olympic Parkway	East Palomar Street to SR-125 SB Ramps	6-Ln Prime	47,600	50,000	C	6-Ln Prime	43,900	50,000	C	3,700	8.4%		No
Olympic Parkway	SR-125 SB Ramps to SR-125 NB Ramps	8-Ln Expressway	49,800	70,000	A	8-Ln Expressway	46,400	70,000	A	3,400	7.3%		No
Olympic Parkway	SR-125 NB Ramps to EastLake Parkway	8-Ln Expressway	51,700	70,000	A	8-Ln Expressway	49,400	70,000	A	2,300	4.7%		No
Olympic Parkway	EastLake Parkway to Hunte Parkway	6-Ln Prime	36,300	50,000	A	6-Ln Prime	34,200	50,000	A	2,100	6.1%		No
Olympic Parkway	Hunte Parkway to Olympic Vista Road	4-Ln Major	29,300	30,000	C	4-Ln Major	30,100	30,000	**D**	−800	−2.7%		No

Table 5.3-46 (Continued)
Roadway Segment LOS Results – Proposed Plan vs. Adopted Plan (City of Chula Vista)

Roadway	Segment	Proposed Plan				Adopted Plan				Delta	Change in %	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
		Classification	*ADT*	*LOS Threshold (LOS C)*	*LOS*	*Classification*	*ADT*	*LOS Threshold (LOS C)*	*LOS*				
Olympic Parkway	Olympic Vista Road to Lake Crest Drive	4-Ln Major	13,800	30,000	A	4-Ln Major	14,100	30,000	A	−300	−2.1%		No
Birch Road	La Media Road to Magdalena Avenue	6-Ln Major	31,300	40,000	B	6-Ln Major	26,200	40,000	A	5,100	19.5%		No
Birch Road	Magdalena Avenue to SR-125 SB Ramps	6-Ln Major	31,000	40,000	B	6-Ln Major	26,000	40,000	A	5,000	19.2%		No
Birch Road	SR-125 SB Ramps to SR-125 NB Ramps	6-Ln Prime	30,500	50,000	A	6-Ln Prime	27,400	50,000	A	3,100	11.3%		No
Birch Road	SR-125 NB Ramps to EastLake Parkway	6-Ln Prime	31,100	50,000	A	6-Ln Prime	28,500	50,000	A	2,600	9.1%		No
Main Street	4th Avenue to 3rd Avenue	4-Ln Major	25,800	30,000	B	4-Ln Major	26,100	30,000	B	−300	−1.1%		No
Main Street	3rd Avenue to Hilltop Drive	4-Ln Major	31,900	30,000	**D**	4-Ln Major	32,200	30,000	**D**	−300	−0.9%		No
Main Street	Hilltop Drive to Melrose Avenue	4-Ln Major	36,900	30,000	**E**	4-Ln Major	37,500	30,000	**E**	−600	−1.6%		No
Main Street	Melrose Avenue to I-805 SB Ramps	4-Ln Major	36,500	30,000	**E**	4-Ln Major	37,400	30,000	**E**	−900	−2.4%		No
Main Street	I-805 SB Ramps to I-805 NB Ramps	6-Ln Prime	49,000	50,000	C	6-Ln Prime	54,200	50,000	**D**	−5,200	−9.46%		No
Main Street	I-805 NB Ramps to Oleander Avenue	6-Ln Prime	51,100	50,000	**D**	6-Ln Prime	59,300	50,000	**E**	−8,200	−13.8%		No
Main Street	Oleander Avenue to Brandywine Avenue	6-Ln Prime	54,900	50,000	**D**	6-Ln Prime	57,600	50,000	**E**	−2,700	−4.7%		No

Table 5.3-46 (Continued)
Roadway Segment LOS Results – Proposed Plan vs. Adopted Plan (City of Chula Vista)

Roadway	Segment	Proposed Plan				Adopted Plan				Delta	Change in %	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
		Classification	*ADT*	*LOS Threshold (LOS C)*	*LOS*	*Classification*	*ADT*	*LOS Threshold (LOS C)*	*LOS*				
Main Street	Brandywine Avenue to Heritage Road	6-Ln Prime	49,300	50,000	C	6-Ln Prime	50,200	50,000	**D**	−900	−1.8%		No
Main Street	Heritage Road to La Media Road	6-Ln Prime	49,200	50,000	C	6-Ln Prime	44,900	50,000	C	4,300	9.6%		No
Main Street	La Media Road to SR-125 SB Ramps	6-Ln Prime	54,800	50,000	**D**	6-Ln Prime	33,100	50,000	A	21,700	65.6%	Yes	No
Main Street	SR-125 SB Ramps to SR-125 NB Ramps	6-Ln Gateway*	54,900	61,200	D	6-Ln Gateway*	35,000	61,200	A	19,900	56.9%		No
Main Street	SR-125 NB Ramps to EastLake Parkway / University Drive	6-Ln Gateway*	60,500	61,200	D	6-Ln Gateway*	43,400	61,200	B	17,100	39.4%		No
Otay Valley Road	Main Street to SR-125	4-Ln Major	22,900	30,000	B	4-Ln Major	31,400	30,000	**D**	−8,500	−27.1%		No
Otay Valley Road	SR-125 to Street "B"	4-Ln Major	15,400	30,000	A	4-Ln Major	38,500	30,000	**D**	−23,100	−60.0%		No
Hilltop Drive	Orange Avenue to Main Street	Class I Collector	11,300	22,000	A	Class I Collector	11,500	22,000	A	−200	−1.7%		No
Paseo Ranchero	H Street to Telegraph Canyon Road	Class I Collector	22,200	22,000	**D**	Class I Collector	22,200	22,000	**D**	0	0.0%	Yes	No
Heritage Road	Telegraph Canyon Road to East Palomar Street	6-Ln Prime	28,600	50,000	A	6-Ln Prime	26,600	50,000	A	2,000	7.5%		No
Heritage Road	East Palomar Street to Olympic Parkway	6-Ln Prime	53,600	50,000	**D**	6-Ln Prime	50,700	50,000	**D**	2,900	5.7%	Yes	No

Table 5.3-46 (Continued)
Roadway Segment LOS Results – Proposed Plan vs. Adopted Plan (City of Chula Vista)

Roadway	Segment	Proposed Plan				Adopted Plan				Delta	Change in %	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
		Classification	*ADT*	*LOS Threshold (LOS C)*	*LOS*	*Classification*	*ADT*	*LOS Threshold (LOS C)*	*LOS*				
Heritage Road	Olympic Parkway to Santa Victoria Road	6-Ln Prime	36,500	50,000	A	6-Ln Prime	38,600	50,000	B	−2,100	−5.4%		No
Heritage Road	Santa Victoria Road to Main Street	6-Ln Prime	45,600	50,000	C	6-Ln Prime	42,300	50,000	B	3,300	7.8%		No
Heritage Road	Main Street to Avenida De Las Vistas	6-Ln Prime	60,700	50,000	**E**	6-Ln Prime	61,400	50,000	**E**	−700	−1.1%		No
La Media Road	Telegraph Canyon Road to East Palomar Street	6-Ln Prime	30,800	50,000	A	6-Ln Prime	29,900	50,000	A	900	3.0%		No
La Media Road	East Palomar Street to Olympic Parkway	6-Ln Prime	27,600	50,000	A	6-Ln Prime	26,600	50,000	A	1,000	3.8%		No
La Media Road	Olympic Parkway to Santa Venetia Street	6-Ln Prime	33,700	50,000	A	6-Ln Prime	27,500	50,000	A	6,200	22.5%		No
La Media Road	Santa Venetia Street to Birch Road	6-Ln Prime	33,900	50,000	A	6-Ln Prime	28,300	50,000	A	5,600	19.8%		No
La Media Road	Birch Road to Santa Luna Street	6-Ln Prime	21,700	50,000	A	6-Ln Prime	18,000	50,000	A	3,700	20.6%		No
La Media Road	Santa Luna Street to Main Street	4-Ln Town Center Arterial	21,100	30,000	A	4-Ln Town Center Arterial	18,000	50,000	A	3,100	17.2%		No
Magdalena Avenue	Santa Venetia Street to Birch Road	Class I Collector	8,100	22,000	A	Class I Collector	6,600	22,000	A	1,500	22.7%		No
Magdalena Avenue	Birch Road to Wolf Canyon Loop	Class I Collector	13,100	22,000	A	Class I Collector	12,300	22,000	A	800	6.5%		No

Table 5.3-46 (Continued)
Roadway Segment LOS Results – Proposed Plan vs. Adopted Plan (City of Chula Vista)

Roadway	Segment	Proposed Plan				Adopted Plan				Delta	Change in %	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
		Classification	*ADT*	*LOS Threshold (LOS C)*	*LOS*	*Classification*	*ADT*	*LOS Threshold (LOS C)*	*LOS*				
Magdalena Avenue	Wolf Canyon Loop to Santa Luna Street	Class II Collector	4,900	12,000	A	Class II Collector	5,000	12,000	A	−100	−2.0%		No
Magdalena Avenue	Santa Luna Street to Main Street	Class I Collector	11,600	22,000	A	Class I Collector	11,100	22,000	A	500	4.5%		No
EastLake Parkway	Corte Vista to Olympic Parkway	6-Ln Prime	24,600	50,000	A	6-Ln Prime	24,000	50,000	A	600	2.5%		No
EastLake Parkway	Olympic Parkway to Birch Road	6-Ln Major	29,700	40,000	A	6-Ln Major	27,600	40,000	A	2,100	7.6%		No
EastLake Parkway	Birch Road to Main Street/Hunte Parkway	6-Ln Major	23,000	40,000	A	6-Ln Major	22,800	40,000	A	200	0.9%		No
University Drive	Main Street/Hunte Parkway to University Driveway #1	4-Ln Major	19,930	30,000	A	4-Ln Major	18,600	30,000	A	200	0.9%		No
University Drive	University Driveway #1 to University Driveway #2	Class II Collector	9,250	12,00	B	4-Ln Major	18,600	30,000	A	1,330	7.2%		No
University Drive	University Driveway #2 to Discovery Falls Drive	Class II Collector	6,440	*12,000*	A	*4-Ln Major*	*18,600*	*30,000*	*A*	−9,350	-50.3%		No
Discovery Falls Drive	Hunte Parkway to University/RTP Driveway	4-Ln Major	20,470	*30,000*	A	2-Ln non-CE	*16,200*	*7,500*	***F***	-12,160	-65.4%		No
Discovery Falls Drive	University/RTP Driveway to University Drive	Class II Collector	6,600	*12,000*	A	2-Ln non-CE	*16,200*	*7,500*	***F***	4,270	26.4%		No

Table 5.3-46 (Continued)
Roadway Segment LOS Results – Proposed Plan vs. Adopted Plan (City of Chula Vista)

Roadway	Segment	Proposed Plan				Adopted Plan				Delta	Change in %	Intersection along Segment Operating @ LOS D or Better?	Significant Impact?
		Classification	*ADT*	*LOS Threshold (LOS C)*	*LOS*	*Classification*	*ADT*	*LOS Threshold (LOS C)*	*LOS*				
Discovery Falls Drive	University Drive to Street "B"	*Class II Collector*	5,910	*12,000*	A	2-Ln non-CE	*16,200*	*7,500*	***F***	-9,600	-59.3%		
Hunte Parkway	Otay Lakes Road to Olympic Parkway	4-Ln Major	21,700	30,000	A	4-Ln Major	20,700	30,000	A	1,000	4.8%		No
Hunte Parkway	Olympic Parkway to Discovery Falls Drive	6-Ln Prime	31,500	50,000	A	6-Ln Prime	31,600	50,000	A	−100	−0.3%		No
Hunte Parkway	Discovery Falls Drive to EastLake Parkway /University Drive	6-Ln Prime	38,400	50,000	B	6-Ln Prime	40,000	50,000	B	−1,600	−4.0%		No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS (D), E, or F.
* LOS D is considered acceptable for a six-lane Gateway.

Table 5.3-47
Roadway Segment LOS Results – Proposed Plan vs. Adopted Plan (City of San Diego)

Roadway	Segment	Proposed Plan				Adopted Plan				Change in V/C	Significant Impact?
		Classification	*ADT*	*LOS Threshold (LOS D)*	*LOS*	*Classification*	*ADT*	*LOS Threshold (LOS D)*	*LOS*		
Lone Star Road	La Media Road to Ellis Road	4-Ln Major	31,600	35,000	D	4-Ln Major	31,500	35,000	D	0.00	No
Otay Mesa Road	Ocean View Hills Parkway to Heritage Road	6-Ln Prime	48,800	55,000	C	6-Ln Prime	49,300	55,000	B	−0.01	No
Otay Mesa Road	Heritage Road to Cactus Road	6-Ln Prime	45,200	55,000	C	6-Ln Prime	45,600	55,000	C	-0.01	No
Otay Mesa Road	Cactus Road to Britannia Boulevard	6-Ln Prime	48,300	55,000	C	6-Ln Prime	45,600	55,000	C	0.05	No
Otay Mesa Road	Britannia Boulevard to La Media Road	6-Ln Prime	47,100	55,000	C	6-Ln Prime	47,300	55,000	C	0.00	No
Otay Mesa Road	La Media Road to Ellis Road	6-Ln Prime	49,400	55,000	C	6-Ln Prime	33,200	55,000	B	0.29	No
Heritage Road	Avenida De Las Vistas to Otay Mesa Road	6-Ln Prime	53,700	55,000	D	6-Ln Prime	52,600	55,000	C	0.02	No
La Media Road	Lone Star Road to Otay Mesa Road	6-Ln Prime	16,600	55,000	A	6-Ln Prime	16,400	55,000	A	0.00	No
Ellis Road	Lone Star Road to Otay Mesa Road	4-Ln Major	32,000	35,000	D	4-Ln Major	31,700	35,000	D	0.01	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS E or F.

Table 5.3-48
Freeway / State Highway Segment LOS Results – Proposed Plan vs. Adopted Plan

Freeway/ State Highway	Segment	# of Lanes Per Direction	Proposed Plan		Adopted Plan		Project Contribution (≥ 5%)	Significant Impact?
			ADT	*LOS*	*ADT*	*LOS*		
I-805	Home Avenue to SR-94	4M+1ML	258,600	C	256,400	C	0.85%	No
I-805	SR-94 to Market Street	4M+1ML	286,400	**F**	284,200	**E**	0.77%	Yes (Cumulative)
I-805	Market Street to Imperial Avenue	5M+1ML	353,600	**F**	351,700	**F**	0.54%	Yes (Cumulative)
I-805	Imperial Avenue to E Division Street	5M+1ML	352,100	**F**	350,200	**F**	0.54%	Yes (Cumulative)
I-805	E Division Street to Plaza Boulevard	5M+1ML	339,400	D	337,300	D	0.62%	No
I-805	Plaza Boulevard to SR-54	5M+1ML	330,500	**F**	328,300	**F**	0.67%	Yes (Cumulative)
I-805	SR-54 to Bonita Road	4M+1Aux+1ML	372,700	**F**	370,500	**F**	0.59%	Yes (Cumulative)
I-805	Bonita Road to East H Street	5M+1ML	329,500	**E**	327,400	**E**	0.64%	Yes (Cumulative)
I-805	East H Street to Telegraph Canyon Road	5M+1ML	328,200	**E**	325,800	**E**	0.73%	Yes (Cumulative)
I-805	Telegraph Canyon Road to East Palomar Street	4M+1Aux+1ML	287,000	C	285,800	C	0.42%	No
I-805	East Palomar Street to Olympic Parkway	4M+1Aux+1ML	272,000	D	272,200	D	−0.07%	No
I-805	Olympic Parkway to Main Street	4M+1Aux+1ML	266,000	C	268,000	C	−0.75%	No
I-805	Main Street to Palm Avenue	4M+1Aux+1ML	258,100	D	258,100	D	0.00%	No
I-805	Palm Avenue to SR-905	4M+1Aux+1ML	237,000	D	201,800	C	14.85%	No
SR-125	Telegraph Canyon Road to Olympic Parkway	2M	35,500	A	34,500	A	2.82%	No
SR-125	Olympic Parkway to Birch Road	2M	30,700	A	28,100	A	8.47%	No
SR-125	Birch Road to Main Street	2M	34,600	A	30,200	A	12.72%	No
SR-125	Main Street to Otay Valley Road	2M	94,000	D	90,700	D	3.51%	No
SR-125	Otay Valley Road to Lone Star Road	2M	82,700	C	80,600	C	2.54%	No
SR-125	Lone Star Road to SR-905	2M	47,800	B	33,700	A	29.50%	No
SR-905	I-805 to Calliente Avenue	3M	222,800	**F**	223,600	**F**	−0.36%	No
SR-905	Calliente Avenue to Heritage Road	3M	214,100	**F**	214,900	**F**	−0.37%	No
SR-905	Heritage Road to Britannia Boulevard	3M	196,400	**F**	197,500	**F**	−0.56%	No
SR-905	Britannia Boulevard to La Media Road	3M	171,200	**F**	171,400	**F**	−0.12%	No
SR-905	La Media Road to SR-125	3M	133,300	D	133,200	D	0.08%	No

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Notes: Bold letter indicates unacceptable LOS E or F.
M = mainline; Aux = auxiliary lane; ML = managed lane.

Additional analysis of the proposed project's consistency with the Chula Vista General Plan and Otay Ranch GDP is provided below.

General Plan Transportation Policies

A consistency analysis of the proposed project with applicable General Plan transportation and transit policies is provided in EIR Appendix B, Project Consistency with General Plan Policies. As shown in the table (Appendix B), and summarized below, the project would be consistent with applicable transportation policies, taking into account all modes of transportation.

The proposed project is part of the Otay Ranch GDP, which planned for the extension of mass transit through the community and required right-of-way to be set aside in anticipation of future transit lines. The proposed land plans were designed to create village cores to accommodate transit stops by locating transit adjacent to high-density housing and/or mixed-use retail/commercial. In addition, the combination of land uses proposed within each village would reduce reliance on the automobile and reduce the length of vehicle trips because residents would not have to leave the villages to access these uses. Future transit stops could be located adjacent to or within village cores in Villages Three North, Eight East, and Ten. Transit plans have been coordinated with SANDAG and are included in the SPA plans. Additionally, traffic calming measures such as diagonal parking, reduced street widths, wide sidewalks, landscaped parkways, raised intersections, and bay parking with landscaped pop-outs would facilitate pedestrian activity in each village. Streets internal to Villages Three North, Eight East, and Ten would implement the Otay Ranch street standards, which were developed with City staff to slow traffic and allow for use of personal mobility devices. The project also would implement the City's Trail Plan, through compliance with the regional trail program on major arterials, OVRP Trails Plan, and Greenbelt Master Plan. Bicycle lanes also would be provided consistent with the designated bicycle routes as identified in the City's adopted Bikeway Master Plan (City of Chula Vista 2011). A pedestrian bridge over SR-125 would connect directly to Campus Boulevard and the University/RTP site.

General Development Plan Transportation Policies

The Otay Ranch GDP requires a traffic analysis to be conducted to identify additional transportation mitigation measures for the construction of new roads, bridges, and roadway improvements. In addition, projects are required to implement transportation demand/system management programs and/or facilities or other measures necessary to mitigate traffic impacts on circulation element roads. The standard to be achieved requires the proposed project to avoid reduction in the existing LOS C with the exception that LOS D may occur on signalized arterial segments for a period not to exceed a total of 2 hours per day. If the existing LOS is below C (with the exception of the allowable D), mitigation measures must be imposed as conditions of approval (City of Chula Vista 2005a, page IV-21).

As described above, a traffic analysis was conducted for the proposed project, which is summarized in detail in this section (Section 5.3). Mitigation measures are identified in Section 5.3.5 to mitigate impacts to the City's circulation system consistent with existing standards and thresholds. The project features a mixed-use setting and strong transit focus that will reduce vehicle trips on the City's circulation system. While the Otay Ranch GDP does not identify any thresholds for internal village streets, the proposed grid system has been designed to allow maximum buildout of land uses consistent with the General Plan and Otay Ranch GDP, and the PFFP identifies triggers to ensure the internal street system is constructed prior to or concurrent with the identified need. In addition, the proposed project would implement the City's adopted Bikeway Master Plan (City of Chula Vista 2011), as described above.

For these reasons, the proposed project would be consistent with the General Plan, Otay Ranch GDP, ordinances, and policies establishing measures of effectiveness for the performance of the circulation system. Therefore, impacts would be **less than significant**.

A.8 Construction Phasing

Construction of the proposed project is anticipated to begin with Village Three North in late 2014[4]. Construction of the residential portion of Village Three North is anticipated to be complete in September 2018 and the non-residential portion (Industrial) is anticipated to be complete by 2025. Generally, Village Three North is expected to phase from northwest to southeast. Construction of Village Eight East is anticipated to begin in February 2016 and to be complete in September 2024. Village Eight East is expected to phase from north to south. Lastly, construction of Village Ten is anticipated to begin in August 2023 and to be complete in September 2029. Village Ten is expected to phase from north to south. Phasing dates are different between the Traffic Impact Analysis (Appendix M) and the EIR, because the TIA only analyzes the project in 5-year increments.

The proposed project is analyzed in accordance with the assumed phasing schedule identified above, and further refined in Table 4-3. In the event that the proposed project is not constructed in accordance with the assumed phasing schedule then a **potentially significant** impact could occur.

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

The analysis presented under Threshold (A) considers the applicable congestion management program and the standards established for designated roads and highways as part of the analysis. Impacts are as designated under Threshold (A).

[4] The original construction schedule beginning in March 2014 is analyzed for the proposed project; however, as identified above, construction would start at a later date. The construction scenario and schedule analyzed as part of the proposed project analysis is considered conservative.

C. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

The proposed project is the development of a mixed-use residential and commercial project that does not include a change in air traffic patterns. While the proposed project would result in a population increase of approximately 23,594 people at buildout, which could result in an increase in demand for air travel at the San Diego International Airport, this increase is not anticipated to result in any changes in air traffic patterns that would result in substantial safety risks. Therefore, impacts would be **less than significant**.

D. Substantially increase hazards due to a design feature or incompatible uses.

The proposed project includes a circulation network that would serve the project area and surrounding uses. The proposed streets are designed to be consistent with the City of Chula Vista 2002 Street Design Standards and have been refined to reflect the specific opportunities and constraints within the project area. Since the proposed circulation network would be consistent with the County Street Design Standards, the proposed project would not increase hazards due to a design feature or incompatible uses. Therefore, impacts would be **less than significant**. For additional information regarding site access and on-site circulation, see EIR Appendix M, Chapter 12.

E. Result in inadequate emergency access.

The proposed project would result in the development of a currently undeveloped area, including the development of site access for each village, as described below. The project circulation system would be consistent with County Street Design Standards and all applicable emergency access standards that would facilitate emergency vehicle access to all areas of the villages.

Village Three North

Site access to Village Three North is proposed via three driveways, each accessing Heritage Road. Each of the three project driveways would be signalized, based on signal warrant, and would operate at LOS D or better during the peak hours with full development of the project.

A Portion of Village Four

Site access to the Portion of Village Four is proposed via La Media Road to form a four- legged intersection with Santa Luna Street. The project driveway would be signalized and would operate at LOS D or better during the peak hours with full development of the project.

Village Eight East

Site access to Village Eight East is proposed via five driveways: two accessing Main Street and three accessing Otay Valley Road. The proposed community park will be accessed from a separate roadway that connects to Otay Valley Road just west of the Village Eight East project site. The driveway off of Main Street and the middle driveway off of Otay Valley Road would be signalized, while the other driveways would be stop controlled right-turn in/out only. All of the driveways providing access to Village Eight East would operate at LOS D or better during the peak hours with full development of the project.

Village Ten

Site access to Village Ten is proposed via four driveways: three accessing Discovery Falls Drive and one accessing Otay Valley Road. Each of the four driveways would be signalized, based on signal warrants, and would operate at LOS D or better during the peak hours with full development of the project.

The proposed project would provide adequate access throughout the project area, including access for emergency vehicles. In addition, the project includes Emergency Disaster Plans within the SPA plans for each village that would ensure the project is incorporated into the existing emergency disaster programs to allow for adequate emergency access. Therefore, the proposed project would not result in inadequate emergency access and impacts would be **less than significant**.

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

As described in the response to Threshold (A), the proposed project is part of the Otay Ranch GDP, which planned for the extension of mass transit through the community and required right-of-way to be set aside in anticipation of future transit lines. As further described below, the proposed land plans were designed to create village cores to accommodate transit stops adjacent to high density housing and/or mixed use retail/commercial. Transit plans have been coordinated with SANDAG and are included in the SPA Plans. Additionally, traffic calming measures would facilitate pedestrian activity in each village. Internal streets would implement the Otay Ranch street standards, which were developed to slow traffic and allow for use of personal mobility devices (See Figures 4-5, 4-10, and 4-15). The proposed project would also implement the City's Trail Plan, through compliance with the regional trail program on major arterials, the OVRP Trails Plan, and the Greenbelt Master Plan (See Figures 4-8, 4-13, and 4-18). Bicycle lanes would also be provided consistent with the designated bicycle routes as identified in the City's adopted Bikeway Master Plan (See Figures 4-7, 4-12, and 4-17).

Public transportation is an integral part of the Otay Ranch Community, including the proposed University Villages project. The design of Otay Ranch promotes access to public transit and locates land uses in proximity to proposed transit stations. Transit stop locations and design within Otay Ranch are based on the following principles:

- Locate transit stops where there are a number of major pedestrian generators.
- Locate transit stops and pedestrian walkways to provide access while respecting the privacy of residential areas.
- At the intersection of two or more transit routes, locate bus stops to minimize walking distance between transfer stations.
- Locate bus turn-outs on the far side of the intersections to avoid conflicts between transit vehicles and automobile traffic, permitting right-turning vehicles to continue turning movements.
- Transit stops should be provided with adequate walkway lighting and well designated shelters.
- Walkway ramps should be provided at transit stops to ensure accessibility.

As noted in Section 5.3.1, the Metropolitan Transit System currently provides bus service through the East Planning Area of the City of Chula Vista; this service can be extended to serve the proposed project areas as development, and corresponding transit ridership demands, increase. Regional transit plans also provide for commuter lines to serve villages in Otay Ranch, as well as to connect Otay Ranch to other activity centers in the region. The SANDAG *2050 Regional Transportation Plan* Revenue Constrained scenario identifies several public transit improvements that will potentially serve the study area, such as BRT Route 628, 680, and rapid bus Route 635.

The Planned South Bay BRT will provide significant transit opportunities for those who live or work in Otay Ranch. It will follow a long-planned transit route as vehicles will travel north on SR-125 from the Otay Mesa border crossing, then west through eastern Chula Vista, head north on I-805 utilizing the carpool, or High Occupancy Vehicle (HOV), lanes, and then travel west on SR-94 into Downtown San Diego. The South Bay BRT will have a direct connection to the carpool lanes on I-805 via a direct access ramp at East Palomar Street. The BRT project will include 11 stations along the 21-mile BRT route, connecting South Bay residents to employment and activity centers in Downtown San Diego and other areas within the South Bay. The South Bay BRT will serve offices, shopping centers, recreational facilities, transit-oriented residential communities, schools, and Park & Ride lots, as well as the United States / Mexico port of entry at Otay Mesa.

Since the proposed project would incorporate public transit, bicycle, and pedestrian facilities in each village, consistent with the Otay Ranch GDP and related transit, bicycle, and pedestrian plans, it would not conflict with policies, plans, or programs related to these modes of transportation. Furthermore, based on the existing bus and trolley transit services described in Section 5.3.1, in combination with both planned transit improvements to serve the project study area and the transit features that are part of the Otay Ranch community, the proposed project would not conflict with public transit programs nor would it decrease the performance or safety of such facilities. As such, the project's transit-related impacts would be **less than significant**.

5.3.4 Level of Significance Prior to Mitigation

This section provides a summary of the potential significant impacts of the proposed project under each of the scenarios analyzed, prior to the implementation of mitigation measures.

Growth Management Ordinance Compliance (Section 19.09 of the CVMC)

In the short-term (0-4 years), a significant impact could occur on Olympic Parkway between Heritage Road and Oleander Avenue during the AM peak Hour if the 2,463rd building permit for units east of the I-805 is issued.

Year 2015 Conditions

Intersections

None of the study area intersections would be significantly impacted.

Roadway Segments

None of the study area roadway segments would be significantly impacted.

Freeways/State Highways

None of the study area freeway / state highway facilities would be significantly impacted.

Ramp Metering

Neither the I-805 northbound on-ramps at Olympic Parkway nor the ramps at Main Street would be significantly impacted.

Access and Frontage

According to Section 12.24 of the City's Municipal Code, access related impacts would occur if access and frontage improvements are not provided concurrent with development. Therefore, a potentially significant impact would occur.

Circulation System Assumptions

The traffic analysis assumed certain roadway improvements to be in place prior to commencement of each study scenario. These assumed roadways were taken into account due to other Otay Ranch communities planned improvements or City of Chula Vista and City of San Diego Circulation Element funded improvements in the project study area. If these improvements are not in place prior to each traffic scenario as assumed, additional traffic impacts would occur resulting in a potentially significant impact.

Year 2020 Conditions

Intersections

Under Year 2020 conditions, the proposed project would have significant project-specific/direct impacts at the following nine study area intersections, all of which are located in the City of Chula Vista:

- I-805 SB Ramps / Olympic Parkway
- I-805 NB Ramps / Olympic Parkway
- Brandywine Avenue / Olympic Parkway (all-way stop controlled)
- Heritage Road / Main Street (all-way stop controlled)
- La Media Road (SB) / Main Street (WB) (all-way stop controlled)
- La Media Road (NB) / Main Street (WB) (all-way stop controlled)
- La Media Road (SB) / Main Street (EB) (all-way stop controlled)
- La Media Road (NB) / Main Street (EB) (all-way stop controlled)
- Magdalena Avenue / Main Street (one-way stop controlled)

Roadway Segments

The following roadway segments in the City of Chula Vista would be significantly impacted by the proposed project traffic under the Year 2020 conditions (impacts are identified as direct or cumulative):

- Orange Avenue, between Melrose Avenue and I-805 SB Ramps (cumulative)
- Olympic Parkway, between I-805 SB Ramps and I-805 NB Ramps (direct)
- Olympic Parkway, between I-805 NB Ramps and Oleander Avenue (direct)
- Olympic Parkway, between Oleander Avenue and Brandywine Avenue (direct)
- Olympic Parkway, between Brandywine Avenue and Heritage Road (direct)

Freeways / State Highways

The following two freeway / state highway segments would be cumulatively impacted by the proposed project in the Year 2020.

- I-805, from Market Street to Imperial Avenue
- I-805, from Imperial Avenue to E. Division Street

Ramp Metering

The Year 2020 project traffic would have a significant cumulative impact at the I-805 northbound on-ramp at Main Street.

Access and Frontage

According to Section 12.24 of the City's Municipal Code, access related impacts would occur if access and frontage improvements are not provided concurrent with development. Therefore, a potentially significant impact would occur.

Circulation System Assumptions

The traffic analysis assumed certain roadway improvements to be in place prior to commencement of each study scenario. These assumed roadways were taken into account due to other Otay Ranch communities planned improvements or City of Chula Vista and City of San Diego Circulation Element funded improvements in the project study area. If these improvements are not in place prior to each traffic scenario as assumed, additional traffic impacts would occur resulting in a potentially significant impact.

Year 2025 Conditions

Intersections

Under Year 2025 conditions, the proposed project would have significant impacts (two project-specific and one cumulative) at the following three study area intersections in the City of Chula Vista:

- Heritage Road / Olympic Parkway (direct)
- La Media Road / Olympic Parkway (direct)
- I-805 SB Ramps / Olympic Parkway (cumulative)

Roadway Segments

The following roadway segments in the City of Chula Vista would be significantly impacted by the proposed project traffic under the Year 2025 conditions:

- Olympic Parkway between Heritage Road and Santa Venetia Street (direct)
- Heritage Road between East Palomar Street and Olympic Parkway (direct)
- Orange Avenue between Melrose Avenue and I-805 SB Ramps (cumulative)

Freeways/State Highways

The following five freeway / state highway segments would be cumulatively impacted under Year 2025 conditions.

- I-805, from SR-94 to Market Street
- I-805, from Market Street to Imperial Avenue
- I-805, from Imperial Avenue to E Division Street
- I-805, from Plaza Boulevard to SR-54
- I-805, from SR-54 to Bonita Road

Ramp Metering

None of the I-805 northbound on-ramps at Olympic Parkway or at Main Street would be significantly impacted under Year 2025 conditions.

Access and Frontage

According to Section 12.24 of the City's Municipal Code, access related impacts would occur if access and frontage improvements are not provided concurrent with development. Therefore, a potentially significant impact would occur.

Circulation System Assumptions

The traffic analysis assumed certain roadway improvements to be in place prior to commencement of each study scenario. These assumed roadways were taken into account due to other Otay Ranch communities planned improvements or City of Chula Vista and City of San Diego Circulation Element funded improvements in the project study area. If these improvements are not in place prior to each traffic scenario as assumed, additional traffic impacts would occur resulting in a potentially significant impact.

Year 2030 Conditions

Intersections

The proposed project would have significant impacts at the following two study area intersections in the City of Chula Vista:

- Discovery Falls Drive / Hunte Parkway (direct)
- I-805 SB Ramps / Olympic Parkway (cumulative)

Roadway Segments

The following roadway segment in the City of Chula Vista would be significantly cumulatively impacted by the proposed project traffic under the Year 2030 conditions:

- Orange Avenue between Melrose Avenue and I-805 SB Ramps

Freeways/State Highways

The following eleven freeways / state highway segments would be significantly cumulatively impacted by the buildout of the proposed project under Year 2030 conditions:

- I-805, from SR-94 to Market Street
- I-805, from Market Street to Imperial Avenue
- I-805, from Imperial Avenue to E Division Street
- I-805, from Plaza Boulevard to SR-54
- I-805 from SR-54 to Bonita Road
- I-805, from Bonita Road to East H Street
- I-805, from East H Street to Telegraph Canyon Road
- SR-905 from I-805 to Caliente Avenue
- SR-905 from Caliente Avenue to Heritage Road
- SR-905 from Heritage Road to Britannia Boulevard
- SR-905 from Britannia Boulevard to La Media Road

Ramp Metering

Project buildout traffic would have a significant cumulative impact at the I-805 northbound on-ramp at Main Street under Year 2030 conditions.

Access and Frontage

According to Section 12.24 of the City's Municipal Code, access related impacts would occur if access and frontage improvements are not provided concurrent with development. Therefore, a potentially significant impact would occur.

Circulation System Assumptions

The traffic analysis assumed certain roadway improvements to be in place prior to commencement of each study scenario. These assumed roadways were taken into account due to other Otay Ranch communities planned improvements or City of Chula Vista and City of San Diego Circulation Element funded improvements in the project study area. If these improvements are not in place prior to each traffic scenario as assumed, additional traffic impacts would occur resulting in a potentially significant impact.

Construction Phasing

In the event that the proposed project is not constructed in accordance with the assumed phasing schedule as identified in Section 4.0, Project Description, Table 4.3, a potentially significant impact would occur and mitigation is required.

5.3.5 Mitigation Measures

Unless otherwise noted, the following mitigation measures would reduce the identified significant impacts to traffic, circulation, and access, to less than significant. The impacts, mitigation measures, and post-mitigation LOS are summarized in Table 5.3-49. The mitigation triggers are derived based on the PFFP Assessment presented in EIR Appendix M, Chapter 13.0.

In addition, in accordance with CVMC Chapter 15.51, the project is also required to contribute to the Traffic Signal Fee Program.

Growth Management Ordinance Compliance (Section 19.09 of the CVMC)

To ensure that the segment of Olympic Parkway between Heritage Road and Oleander Avenue continues to operate within acceptable GMO threshold standards, the following mitigation measure is provided:

MM TCA-1 Prior to the issuance of the building permit for the 2,463rd DU for development east of I-805 commencing from April 4, 2011, the Applicant may:

a. Prepare a traffic study that demonstrates, to the satisfaction of the City Engineer, that the circulation system has additional capacity without exceeding the GMO traffic threshold standards.

b. Demonstrate that other improvements are constructed which provide the additional necessary capacity to comply with the GMO (Chapter 19.09 of the Chula Vista Municipal Code) traffic threshold to the satisfaction of the City Engineer.

c. Agree to the City Engineer's selection of an alternative method of maintaining GMO traffic threshold compliance.

d. Enter into agreement, approved by the City, with other Otay Ranch developers that alleviates congestion and achieves GMO traffic threshold compliance for Olympic Parkway. The agreement will identify the deficiencies in transportation infrastructure that will need to be constructed, the parties that will construct said needed infrastructure, and a timeline for such construction, as well as providing assurances for construction, in accordance with the City's customary requirements, for said infrastructure.

If GMO compliance cannot be achieved through 1a, 1b, 1c, or 1d, then the City may, in its sole discretion, stop issuing new building permits within the project area, after building permits for 2,463 DU have been issued for any development east of I-805 after April 4, 2011, until such time that GMO traffic threshold standard compliance can be assured to the satisfaction of the City Manager.

These measures shall constitute full compliance with growth management objectives and policies in accordance with the requirements of the General Plan, Chapter 10, and with regard to traffic thresholds set forth in the GMO.

Access and Frontage

To ensure the access and frontage improvements assumed as part of the traffic analysis are constructed concurrent with development, the following mitigation measure is provided:

MM TCA-2 Project Applicant shall construct the access and frontage improvements consistent with the triggers identified in Table 5.3-56 to the satisfaction of the Development Services Director and the City Engineer.

Year 2015 Conditions

Intersections and Roadway Segments

None of the study area intersections or roadway segments would be significantly impacted under Year 2015 conditions; therefore, no mitigation measures are required under this scenario.

Freeways / State Highways

None of the study area freeway / state highway facilities would be significantly impacted under Year 2015 conditions; therefore, no mitigation measures would be required under this scenario.

Ramp Metering

Neither the I-805 northbound on-ramps at Olympic Parkway nor the ramps at Main Street would be significantly impacted under Year 2015 conditions; therefore no mitigation measures would be required under this scenario.

Circulation System Assumptions

To ensure the circulation system improvements assumed in the University Villages Traffic Impact Analysis dated June 2014, are constructed and operational in accordance with the assumed circulation system improvements, the following mitigation measure is provided:

MM TCA-3 The year 2015 scenario assumes the following intersection and roadway improvements are in place:

- Phase 1 of the I-805 South Project, including improvements to I-805 between Home Avenue and East Palomar Street
- Heritage Road, south of Main Street to the Chula Vista city limit as a 4-lane Major Road

If the project equivalent dwelling unit limit of 611th EDU is exceeded prior to these improvements being constructed and open to traffic, then one of the following steps shall be taken, each to the satisfaction of the City Engineer:

i. Development in Village Three and the Portion of Village Four and Village Eight East shall stop until those assumed future roadways are constructed by others as presently planned; or

ii. City and the Applicant shall meet to determine the need for the incomplete roadway segments. Because a number of factors, including changes to the tolling structure at SR-125, may affect future traffic patterns in Otay Ranch, additional traffic analysis of the roadway network and levels of service assessment may be necessary at that time to determine: (i) if such improvements are in fact necessary; and (ii) the scope and timing of additional circulation improvements, if any; or

iii. Applicant shall construct the missing roadway links and receive a transportation development impact fee credit for those improvements as applicable; or

iv. An alternative measure is selected by the City in accordance with the City of Chula Vista Growth Management Ordinance (GMO) (Chapter 19.09 of the Chula Vista Municipal Code).

Year 2020 Conditions

Unless otherwise noted, the following mitigation measures would reduce the identified impacts to less than significant (the applicable jurisdiction is noted in (parentheticals)):

Intersections and Roadway Segments

Direct Impact Mitigation

MM TCA-4 **Intersections**: I-805 SB Ramps / Olympic Parkway (CV), I-805 NB Ramps / Olympic Parkway (CV), and Brandywine Avenue / Olympic Parkway (CV); **Roadways**: Olympic Parkway, between I-805 SB Ramps and I-805 NB Ramps (CV); Olympic Parkway, between I-805 NB Ramps and Oleander Avenue (CV); Olympic Parkway, between Oleander Avenue and Brandywine Avenue (CV); and Olympic Parkway, between Brandywine Avenue and Heritage Road (CV) – Prior to issuance of the Final Map that contains the 956th equivalent dwelling unit (EDU) in Village Three North, the Project Applicant shall construct Heritage Road, between Olympic Parkway and Main Street, as a Six-Lane Prime Arterial.

This connection will provide an important linkage and alleviate traffic congestion along Olympic Parkway, between I-805 and Heritage Road. As a result, the impacts identified at the intersections of I-805 NB Ramps / Olympic Parkway, and Brandywine Avenue / Olympic Parkway would be reduced to less than significant by this mitigation measure. Additionally, the impacts identified on Olympic Parkway between the I-805 SB Ramps and I-805 NB Ramps; Olympic Parkway between the I-805 NB Ramps and Oleander Avenue; Olympic Parkway between Oleander Avenue and Brandywine Avenue; and, Olympic Parkway between Brandywine Avenue and Heritage Road also would be reduced to less than significant with implementation of this mitigation measure.

However, as to the I-805 SB Ramps /Olympic Parkway intersection, while construction of the segment of Heritage Road between Olympic Parkway and Main Street as identified in the mitigation measure would reduce the identified significant *direct* impact to less than significant, the resulting change in traffic distribution and traffic volumes due to the opening of this segment of Heritage Road would result in a residual significant cumulative impact at the I-805 SB Ramps / Olympic Parkway intersection; that is, with the opening of Heritage Road, the project would now trigger a significant *cumulative* impact at the intersection.

However, to mitigate the remaining cumulative impact, construction of an additional left-turn lane at the I-805 southbound off-ramp, as well as a third through lane along the Olympic Parkway eastbound approach, would be required. These improvements would require widening of Orange Avenue / Olympic Parkway; however, there are right-of-way constraints that would make such improvements infeasible (an engineering right-of-way assessment was conducted and is included in EIR Appendix M). The right-of-way constraints which make widening infeasible are due to existing structures located north and south of Orange Avenue, as well as retaining walls supporting the structures. Any additional widening would require right-of-way acquisition from private property owners or condemnation. In addition to the proximity of existing residences, another limiting factor is the fixed width of the bridge over I-805. Any widening of Orange Avenue would require a corresponding widening of the bridge over I-805 and there is no plan or program in place into which the Project Applicant could pay its fair share toward the cost of such improvements.

Furthermore, since the freeway system is developed and managed by Caltrans, the City has only limited ability to affect the level of congestion on these roadways, as such, mitigation is not within the authority of the City of Chula Vista sufficient to avoid the cumulative contribution to traffic on these roadways. There are no other feasible physical improvements that would reduce the remaining cumulative impact to less than significant. Therefore, the impact at the intersection of I-805 SB Ramps / Olympic Parkway (CV) will remain significant and unavoidable at this location.

Impacts identified at the intersections of I-805 NB Ramps / Olympic Parkway (CV), and Brandywine Avenue / Olympic Parkway (CV) would be reduced to less than significant with implementation of TCA-4.

MM TCA-5 Heritage Road / Main Street (all-way stop controlled) (CV) – Prior to issuance of the Final Map that contains the 751st EDU in Village Three North, the Project Applicant shall signalize Heritage Road / Main Street intersection.

MM TCA-6 La Media Road (SB) / Main Street (WB) (all-way stop controlled) (CV) – Prior to issuance of the Final Map that contains the 880th EDU in Village Eight East, the Project Applicant shall signalize the La Media Road (SB) /Main Street (WB) intersection.

MM TCA-7 La Media Road (NB) / Main Street (WB) (all-way stop controlled) (CV) – Prior to issuance of the Final Map that contains the 880th EDU in Village Eight East, the Project Applicant shall signalize the La Media Road (NB) /Main Street (WB) intersection.

MM TCA-8 La Media Road (SB) / Main Street (EB) (all-way stop controlled) (CV) – Prior to issuance of the Final Map that contains the 880th EDU in Village Eight East, the Project Applicant shall signalize the La Media Road (SB) /Main Street (EB) intersection.

MM TCA-9 La Media Road (NB) / Main Street (EB) (all-way stop controlled) (CV) – Prior to issuance of the Final Map that contains the 880th EDU in Village Eight East, the Project Applicant shall signalize the La Media Road (NB) / Main Street (EB) intersection.

MM TCA-10 Magdalena Avenue / Main Street (one-way stop controlled) (CV) – Prior to issuance of the Final Map that contains the 1,693rd EDU in Village Eight East, the Project Applicant shall signalize the Magdalena Avenue / Main Street intersection.

Cumulative Impact Mitigation

- Orange Avenue, between Melrose Avenue and I-805 SB Ramps. The improvement necessary to mitigate the significant cumulative impact on Orange Avenue between Melrose Avenue and I-805 SB Ramps is to widen this segment from 4 lanes to 6 lanes. However, there are right-of-way constraints that would make such widening infeasible (an engineering right-of-way assessment was conducted and is included in EIR Appendix M). The right-of-way constraints which make widening infeasible are due to existing structures located north and south of Orange Avenue, as well as retaining walls supporting the structures. Any additional widening would require right-of-way acquisition from private property owners or condemnation. In addition to the proximity of existing residences, another limiting factor is the fixed width of the bridge over I-805. Any widening of Orange Avenue would require a corresponding widening of the bridge over I-805 and there is no plan or program in place into which the Project Applicant could pay its fair share toward the cost of such improvements.

  Furthermore, since the freeway system is developed and managed by Caltrans, the City has only limited ability to affect the level of congestion on these roadways, as such, mitigation is not within the authority of the City of Chula Vista sufficient to avoid the cumulative contribution to traffic on these roadways. There are no other feasible physical improvements that would reduce the remaining cumulative impact to less than significant. Therefore, the impact will remain cumulatively significant and unavoidable at this location.

Freeways/State Highways

As previously discussed, the traffic modeling identified that the proposed project would result in significant cumulative impacts at the following two freeway/state highway segments under the Year 2020 scenario:

- I-805, between Market Street and Imperial Avenue; and
- I-805, between Imperial Avenue and E. Division Street

As explained above, previously planned Phase 2 of the I-805 South Project included buildout of the HOV lanes constructed as part of Phase 1 into Express lanes for a total of four lanes, two in each direction. Phase 2 also would have included the addition of in-line transit stations and freeway-to-freeway direct connectors. With the previously planned Phase 2 improvements in place, impacts to freeways/state highways would be less than significant.

However, also as explained above, SANDAG has determined not to proceed with Phase 2 of the I-805 South Project because SANDAG's Addendum showed that the reduction in tolls on SR-125 will result in a shift of traffic from I-805 to SR-125 and, as such, freeway operations on both facilities would remain acceptable without implementation of Phase 2. (See EIR Appendix M (TIA), Appendix K.) Nonetheless, the Project traffic model did not account for the shift of traffic from I-805 to SR-125, so it continues to reflect a significant impact at the above two I-805 segments; that is, the analysis utilized the traffic model volumes (with four HOV lanes) with a reduced capacity (two HOV lanes). Because neither Caltrans nor SANDAG will construct Phase 2 of the I-805 South Project, and because there is no longer any plan or program in place to construct the Phase 2 improvements, mitigation is infeasible and the model-identified impacts are determined to be significant and unavoidable. However, as noted above, SANDAG has determined that freeway operations on both the I-805 and SR-125 facilities would remain acceptable without implementation of Phase 2 of the I-805 South Project.

Circulation System Assumptions

To ensure the circulation system improvements assumed in the University Villages Traffic Impact Analysis dated June 2014, are constructed and operational in accordance with the assumed, the following mitigation measure is provided:

MM TCA-11 The year 2020 scenario assumes the following intersection and roadway improvements are in place:

- Heritage Road, south of Main Street to the Chula Vista city limit as a 6-lane Prime Arterial
- Otay Lakes Road between H Street and Telegraph Canyon Road as a 6-lane Prime Arterial

- Quarry Driveway (Int #65) @ Main Street as an all-way stop controlled intersection

If the project equivalent dwelling unit of 4,070th EDU is exceeded prior to these improvements being constructed and open to traffic, then one of the following steps shall be taken each to the satisfaction of the City Engineer:

i. Development in Village Three and the Portion of Village Four and Village Eight East shall stop until those assumed future roadways are constructed by others as presently planned; or

ii. City and the Applicant shall meet to determine the need for the incomplete roadway segments. Because a number of factors, including changes to the tolling structure at SR-125, may affect future traffic patterns in Otay Ranch, additional traffic analysis of the roadway network and levels of service assessment may be necessary at that time to determine: (i) if such improvements are in fact necessary; and (ii) the scope and timing of additional circulation improvements, if any; or

iii. Applicant shall construct the missing roadway links and receive a transportation development impact fee credit for those improvements as applicable; or

iv. An alternative measure is selected by the City in accordance with the City of Chula Vista Growth Management Ordinance (GMO) (Chapter 19.09 of the Chula Vista Municipal Code).

Year 2025 Conditions

Unless otherwise noted, the following improvements would mitigate the identified significant impacts to less than significant.

Intersections and Roadway Segments

Direct Impact Mitigation

MM TCA-12 **Intersections**: Heritage Road / Olympic Parkway (CV) and La Media Road / Olympic Parkway (CV); **Roadways**: Olympic Parkway, between Heritage Road and Santa Venetia Street (CV); and Heritage Road, between East Palomar Street and Olympic Parkway (CV) – Prior to the issuance of each building permit, the Project Applicant shall pay the appropriate Transportation Development Impact Fees (TDIF) for the construction of Main Street, between Heritage Road and La Media Road, as a Six-Lane Prime Arterial, including the construction of Main Street bridge, the signalization of Quarry Driveway / Main Street (Int #65), and the signalization of Village Three North R-20 Driveway / Main Street (Int #66). The

project will signalize the intersection of Village Three North R-20 Driveway / Main Street (Int #66) in conjunction with the construction of Main Street, while the TDIF program will signalize the intersection of Quarry Driveway / Main Street (Int #65). The analysis shows the need for Main Street from the Heritage Road to La Media Road is triggered by the 4,737th EDU. If the project equivalent dwelling unit limit of 4,736 EDU is reached prior to this roadway segment being constructed and open to traffic, then one of the following steps shall be taken as determined by the City Engineer:

i. Development in Villages Three North, Eight East, and Ten shall stop until the future roadway is constructed by the City; or

ii. City and the Applicant shall meet to determine the need for the incomplete roadway segments. Because a number of factors, including changes to the tolling structure at SR-125, may affect future traffic patterns in Otay Ranch, additional traffic analysis of the roadway network and levels of service assessment may be necessary at that time to determine: (i) if such improvements are in fact necessary; and (ii) the scope and timing of additional circulation improvements, if any; or

iii. Applicant shall construct the missing roadway link and receive a transportation development impact fee credit for the improvements as applicable; or

iv. An alternative measure is selected by the City in accordance with the City of Chula Vista Growth Management Ordinance.

v. All to the satisfaction of the City Engineer.

~~Prior to the Final Map containing the 4,737th EDU, the Project Applicant shall pay the appropriate Transportation Development Impact Fees (TDIF) for the construction of Main Street, between Heritage Road and La Media Road, as a Six-Lane Prime Arterial, including the construction of Main Street bridge, the signalization of Quarry Driveway / Main Street (Int #65), and the signalization of Village Three North R-20 Driveway / Main Street (Int #66). The project will signalize the intersection of Village Three North R-20 Driveway / Main Street (Int #66) in conjunction with the construction of Main Street, while the TDIF program will signalize the intersection of Quarry Driveway / Main Street (Int #65).~~

The segment of Main Street between Heritage Road and La Media Road will provide an important direct east-west linkage and reduce traffic along Heritage Road – Olympic Parkway – La Media Road, thereby improving operations at the Heritage Road / Olympic Parkway intersection to acceptable levels and reducing the identified impact to less than significant. The

construction of this segment of Main Street is included within the City's TDIF program. The first phase of construction, as well as the preparation of subsequent environmental compliance documents, are included in the City's CIP Program for 2013-2016 (STM357).

The construction of Main Street between Heritage Road and La Media Road will also significantly reduce traffic on Olympic Parkway between Heritage Road and Santa Venetia Street, Heritage Road between Olympic Parkway and Main Street, and Olympic Parkway between Heritage Road and La Media Road. These reductions would improve the intersection operations at Heritage Road /Olympic Parkway to acceptable levels, hence, would mitigate the impact at the segment of Heritage Road between East Palomar Street and Olympic Parkway.

Potential impacts associated with the Main Street extension previously were addressed in several environmental documents, including the *Chula Vista Vision 2020 General Plan Update* (GPU) *Final Environmental Impact Report* (EIR) (2005b), the City's *Multiple Species Conservation Plan* (MSCP) *Subarea Plan* (2003), the *Otay Ranch Resource Management Plan* (RMP) (1993), and the *Otay Ranch Resource Management Plan Phase 2* (2002). The extension and the bridge are not required until 2025; therefore, assessing the design and impacts to resources would be speculative at this time. However, prior to the construction of Main Street between Heritage Road and La Media Road, the City will conduct a project-specific review of the potential environmental impacts associated with construction of the road extension. A preliminary analysis of the potential effects is provided in EIR Appendix M.5

<u>Cumulative Impact Mitigation</u>

- I-805 SB Ramps / Olympic Parkway (CV) – The improvement necessary to mitigate the significant cumulative impact at the intersection of I-805 SB Ramps and Olympic Parkway is to construct an additional left-turn lane at the I-805 southbound off-ramp, as well as a third through lane along the Olympic Parkway eastbound approach. However, there are right-of-way constraints that would make the recommended widening infeasible (an engineering right-of-way assessment was conducted and is included in EIR Appendix M). Any additional widening would require right-of-way acquisition from private property owners or condemnation. In addition, there is no plan or program in place into which the Project Applicant could pay its fair share toward the cost of such improvements. Therefore, impacts related to the I-805 interchange at Olympic parkway are infeasible due to specific constraints.

  Furthermore, since the freeway system is developed and managed by Caltrans, the City has only limited ability to affect the level of congestion on these roadways, as such, mitigation is not within the authority of the City of Chula Vista sufficient to avoid the

[5] Traffic operations at the quarry access off of Main Street under conditions with and without the Main Street connection over Wolf Canyon are addressed in EIR Appendix M, Chapter 14.0, Quarry Access.

cumulative contribution to traffic on these roadways. There are no other feasible physical improvements that would reduce the remaining cumulative impact to less than significant. Therefore, mitigation is infeasible and the impact at this location will remain cumulatively significant and unavoidable at this location.

- Orange Avenue, between Melrose Avenue and I-805 SB Ramps (CV) – The improvement necessary to mitigate the significant cumulative impact on Orange Avenue between Melrose Avenue and I-805 SB Ramps is to widen this segment from 4 lanes to 6 lanes. However, as previously noted, there are right-of-way constraints that would make such widening infeasible (an engineering right-of-way assessment was conducted and is included in EIR Appendix M). The right-of-way constraints which make widening infeasible are due to existing structures located north and south of Orange Avenue, as well as retaining walls supporting the structures. Any additional widening would require right-of-way acquisition from private property owners or condemnation. In addition to the proximity of existing residences, another limiting factor is the fixed width of the bridge over I-805. Any widening of Orange Avenue would require a corresponding widening of the bridge over I-805 and there is no plan or program in place into which the Project Applicant could pay its fair share toward the cost of such improvements.

  Furthermore, since the freeway system is developed and managed by Caltrans, the City has only limited ability to affect the level of congestion on these roadways, as such, mitigation is not within the authority of the City of Chula Vista sufficient to avoid the cumulative contribution to traffic on these roadways. There are no other feasible physical improvements that would reduce the remaining cumulative impact to less than significant. Therefore, mitigation is infeasible and the impact will remain cumulatively significant and unavoidable at this location.

Freeways/State Highways

As previously discussed, the traffic modeling determined that the proposed project would result in significant cumulative impacts at the following five freeway/state highway segments under the Year 2025 scenario:

- I-805, between SR-94 and Market Street;
- I-805, between Market Street and Imperial Avenue;
- I-805, between Imperial Avenue and E. Division Street;
- I-805, between Plaza Boulevard and SR-54; and
- I-805, between SR-54 and Bonita Road

As explained above, previously planned Phase 2 of the I-805 South Project included buildout of the HOV lanes constructed as part of Phase 1 into Express lanes for a total of four lanes, two in each direction. Phase 2 also would have included the addition of in-line transit stations and freeway-to-freeway direct connectors. With the previously planned Phase 2 improvements in place, impacts to freeways/state highways would be less than significant.

However, also as explained above, SANDAG has determined not to proceed with Phase 2 of the I-805 South Project because SANDAG's Addendum (State of California Clearinghouse #2002071059) showed that the reduction in tolls on SR-125 will result in a shift of traffic from I-805 to SR-125 and, as such, freeway operations on both facilities would remain acceptable without implementation of Phase 2. (See EIR Appendix M (TIA), Appendix K.) Nonetheless, the Project traffic model did not account for the shift of traffic from I-805 to SR-125, so it continues to reflect a significant impact at the above five I-805 segments; that is, the analysis utilized the traffic model volumes (with four HOV lanes) with a reduced capacity (two HOV lanes). Because neither Caltrans nor SANDAG will construct Phase 2 of the I-805 South Project, and because there is no longer any plan or program in place to construct the Phase 2 improvements, mitigation is infeasible and the model-identified impacts are determined to be significant and unavoidable. However, as noted above, SANDAG has determined that freeway operations on both the I-805 and SR-125 facilities would remain acceptable without implementation of Phase 2 of the I-805 South Project.

Year 2030 Conditions

Unless otherwise noted, the following mitigation measures would reduce the identified impacts to less than significant.

Intersections and Roadway Segments

Direct Impact Mitigation

MM TCA-13 **Intersection**: Discovery Falls Drive / Hunte Parkway (CV) – Prior to approval of the Final Map containing the 1,295th EDU of Village Ten, the Project Applicant shall construct a dedicated right-turn lane at the northbound Discovery Falls Drive approach to the Discovery Falls Drive/Hunte Parkway intersection.

Cumulative Impact Mitigation

- I-805 SB Ramps / Olympic Parkway (CV) – The improvement necessary to mitigate the identified significant cumulative impact at the I-805 SB Ramps / Olympic Parkway intersection is to construct an additional left-turn lane at the I-805 southbound off-ramp, as well as a third through lane along the Olympic Parkway eastbound approach prior to issuance of building permits. However, there are right-of-way constraints that would

make such widening infeasible (an engineering right-of-way assessment was conducted and is included in EIR Appendix M). Any additional widening would require right-of-way acquisition from private property owners or condemnation. In addition, there is no plan or program in place into which the Project Applicant could pay its fair share toward the cost of such improvements. Therefore, impacts related to the I-805 interchange at Olympic parkway are infeasible due to specific constraints.

Furthermore, since the freeway system is developed and managed by Caltrans, the City has only limited ability to affect the level of congestion on these roadways, as such, mitigation is not within the authority of the City of Chula Vista sufficient to avoid the cumulative contribution to traffic on these roadways. There are no other feasible physical improvements that would reduce the identified cumulative impact to less than significant. Therefore, mitigation is infeasible and the impact will remain cumulatively significant and unavoidable at this location.

- Orange Avenue, between Melrose Avenue and I-805 SB Ramps (CV)– The improvement necessary to mitigate the identified significant cumulative impact on Orange Avenue, between Melrose Avenue and I-805 SB Ramps is to widen Orange Avenue between Melrose Avenue and the I-805 SB Ramps from four lanes to six lanes (Major Road). However, there are right-of-way constraints that would make such widening infeasible (an engineering right-of-way assessment was conducted and is included in EIR Appendix M). The right-of-way constraints which make widening infeasible are due to existing structures located north and south of Orange Avenue, as well as retaining walls supporting the structures. Any additional widening would require right-of-way acquisition from private property owners or condemnation. In addition to the proximity of existing residences, another limiting factor is the fixed width of the bridge over I-805. Any widening of Orange Avenue would require a corresponding widening of the bridge over I-805 and there is no plan or program in place into which the Project Applicant could pay its fair share toward the cost of such improvements.

  Furthermore, since the freeway system is developed and managed by Caltrans, the City has only limited ability to affect the level of congestion on these roadways, as such, mitigation is not within the authority of the City of Chula Vista sufficient to avoid the cumulative contribution to traffic on these roadways. There are no other feasible physical improvements that would reduce the identified cumulative impact to less than significant. Therefore, mitigation is infeasible and the impact will remain cumulatively significant and unavoidable at this location.

Freeways/State Highways

As previously discussed, the traffic modeling identified that the proposed project would result in significant cumulative impacts at the following eleven freeway/state highway segments under the Year 2030 scenario:

- I-805, between SR-94 and Market Street;
- I-805, between Market Street and Imperial Avenue;
- I-805, between Imperial Avenue and E. Division Street;
- I-805, between Plaza Boulevard and SR-54;
- I-805, between SR-54 and Bonita Road;
- I-805, between Bonita Road and East H Street;
- I-805, between East H Street and Telegraph Canyon Road;
- SR-905, between I-805 and Caliente Avenue;
- SR-905, between Caliente Avenue and Heritage Road;
- SR-905, between Heritage Road and Britannia Boulevard; and
- SR-905, between Britannia Boulevard and La Media Road.

As explained above, previously planned Phase 2 of the I-805 South Project included buildout of the HOV lanes constructed as part of Phase 1 into Express lanes for a total of four lanes, two in each direction. Phase 2 also would have included the addition of in-line transit stations and freeway-to-freeway direct connectors. With the previously planned Phase 2 improvements in place, impacts to freeways/state highways would be less than significant.

However, also as explained above, SANDAG has determined not to proceed with Phase 2 of the I-805 South Project because SANDAG's Addendum showed that the reduction in tolls on SR-125 will result in a shift of traffic from I-805 to SR-125 and, as such, freeway operations on both facilities would remain acceptable without implementation of Phase 2. (See EIR Appendix M (TIA), Appendix K.) Nonetheless, the Project traffic model did not account for the shift of traffic from I-805 to SR-125, so it continues to reflect a significant impact at these I-805 segments. That is, the analysis utilized the traffic model volumes (with four HOV lanes) with a reduced capacity (two HOV lanes). Because neither Caltrans nor SANDAG will construct Phase 2 of the I-805 South Project, and because there is no longer any plan or program in place to construct the Phase 2 improvements, mitigation is infeasible and the model-identified impacts are determined to be significant and unavoidable. However, as noted above, SANDAG has determined that freeway operations on both the I-805 and SR-125 would remain acceptable without implementation of Phase 2.

With respect to SR-905, neither Caltrans nor SANDAG has any plans at this time to construct additional lanes on SR-905, nor is there a plan or program in place into which the Project Applicant could pay its fair-share towards the cost of any such improvements. Therefore, mitigation is infeasible and the impacts to SR-905 also are determined to be significant and unavoidable.

Ramp Metering

Cumulative Impact Mitigation

MM TCA-14 I-805 Northbound On-Ramp at Main Street - Prior to project buildout, the Project Applicant shall work with Caltrans to, and Caltrans can and should, adjust the ramp meter rate at the I-805 northbound on ramp at Main Street such that the ramp meter reflects the additional vehicle traffic attributable to the project.

Transportation Demand Management Program

To reduce vehicle generated trips to the extent feasible, the Project Applicant proposes implementation of a Transportation Demand Management (TDM) program to reduce vehicle trips in favor of alternative modes of transportation. The TDM program will facilitate increased opportunities for transit, bicycling, and pedestrian travel.

MM TCA-15 The Project Applicant shall incorporate the following measures as part of the project design and development, consistent with the identified triggers, to the satisfaction of the Development Services Director:

- Implement pedestrian circulation improvements to improve the internal pedestrian circulation and encourage the usage of public transportation (concurrent with the approval of improvement plans for each village).
- Implement bicycle circulation improvements to improve internal bicycle circulation and encourage the usage of bicycles (concurrent with the approval of improvement plans for each village).
- Participate in car sharing and bike sharing programs through HOA noticing, should such programs become available.
- Promote Carpool/Vanpool programs by providing preferential parking for carpools and vanpools (concurrent with the approval of site plans for each village core).
- Promote available websites providing transportation options for residents and businesses (concurrent with issuance of certificate of occupancy).
- Create and distribute a “new resident” information packet addressing alternative modes of transportation (concurrent with issuance of certificate of occupancy).

- Promote programs to encourage workplace peak hour trip reduction, including staggered work hours, regional ride-matching services, and telecommuting (concurrent with issuance of certificate of occupancy).
- Orient buildings to the main street or activity area, such that they are not separated from the street by vast parking areas or fences, thereby encouraging pedestrian traffic (concurrent with the approval of site plans for each village core).
- Where transit is available on-site, participate in providing the necessary transit facilities, such as bus pads, shelters, signs, lighting, and trash receptacles (concurrent with the approval of improvement plans for each village).
- Coordinate with the MPO as to the future siting of transit stops/stations within the project site (concurrent with the approval of improvement plans, and/or site plans, for each village).

Circulation System Assumptions

To ensure the circulation system improvements assumed in the University Villages Traffic Impact Analysis dated June 2014, are constructed and operational in accordance with the assumed, the following mitigation measure is provided:

MM TCA-16 The year 2030 scenario assumes the following intersection and roadway improvements are in place:

- Main Street between SR-125 right-of-way (western boundary) and Eastlake Parkway/University Drive; is constructed as a 6-lanes Gateway Street (6,432nd EDU)
- SR-125 / Main Street interchange constructed (6,432nd EDU)
- Otay Valley Road constructed between SR-125 right-of-way (western boundary) and Village Nine Street "B" (Int #74), including an overpass at SR-125 (7,767th EDU)
- ~~Heritage Road / Energy Way (Int #64) is included as a signalized intersection~~

If the project equivalent dwelling unit limit of the EDUs identified above are exceeded prior to the respective improvements being constructed and open to traffic, then one of the following steps shall be taken each to the satisfaction of the City Engineer:

i. Development in Village Three and the Portion of Village Four, Village Eight East, and Village Ten shall stop until those assumed future roadways are constructed by others as presently planned; or

ii. City and the Applicant shall meet to determine the need for the incomplete roadway segments. Because a number of factors, including changes to the tolling structure at SR-125, may affect future traffic patterns in Otay Ranch, additional traffic analysis of the roadway network and levels of service assessment may be necessary at that time to determine: (i) if such improvements are in fact necessary; and (ii) the scope and timing of additional circulation improvements, if any; or

iii. Applicant shall construct the missing roadway links and receive a transportation development impact fee credit for those improvements as applicable; or

iv. An alternative measure is selected by the City in accordance with the City of Chula Vista Growth Management Ordinance (GMO) (Chapter 19.09 of the Chula Vista Municipal Code).

Note: Potential secondary impacts as a result of the mitigation measures described above have been analyzed in this EIR as off-site improvement areas.

MM TCA-17 The proposed project shall be implemented, or phased, consistent with the development timeframe set forth in Project Description Table 4-3. In the event that project development substantially deviates from the phasing set forth in Table 4-3 (e.g., Village Three being built first, followed by Village Eight East and then Village Ten), the Applicant, or its designee, shall conduct additional environmental analysis consistent with the requirements of CEQA and as approved by the Development Services Director, or designee. Additional analysis may include a supplemental traffic study that analyzes the potential traffic circulation impacts associated with the phasing deviation, and identifies new circulation improvements or other mitigation measure(s), if needed.

Table 5.3-49
Summary of Significant Impacts and Mitigation Measures[6]

Impacted Facility	Note	Year 2015 Plus Project	Year 2020 Plus Project	Year 2025 Plus Project	Year 2030 Plus Project
Intersection					
I-805 SB Ramps / Olympic Parkway	Type of Impact	None	Direct	Cumulative	Cumulative
	Mitigation Measure	N/A	Construction of Heritage Road between Olympic Parkway and Main Street - reduce direct impact to cumulative impact. No feasible mitigation for the cumulative impact, impact remains cumulatively significant and unmitigable	No feasible mitigation, impact remains significant and unmitigable	No feasible mitigation, impact remains significant and unmitigable
	Trigger	N/A	956th EDU of V3N	N/A	N/A
I-805 NB Ramps / Olympic Parkway	Type of Impact	None	Direct	None	None
	Mitigation Measure	N/A	Construction of Heritage Road between Olympic Parkway and Main Street	N/A	N/A
	Trigger	N/A	956th EDU of V3N	N/A	N/A
Brandywine Avenue / Olympic Parkway	Type of Impact	None	Direct	None	None
	Mitigation Measure	—	Construction of Heritage Road between Olympic Parkway and Main Street	N/A	N/A
	Trigger	N/A	956th EDU of V3N	N/A	N/A

[6] Existing Plus Project impacts are not included in this table. Existing Plus Project analysis is included for disclosure, information, and comparison purposes only. For additional information see Section A.1.

Table 5.3-49 (Continued)
Summary of Significant Impacts and Mitigation Measures

Impacted Facility	Note	Year 2015 Plus Project	Year 2020 Plus Project	Year 2025 Plus Project	Year 2030 Plus Project
Heritage Road / Olympic Parkway	Type of Impact	None	None	Direct	N/A
	Mitigation Measure	N/A	N/A	Payment towards TDIF for the construction of Main Street between Heritage Road and La Media Road including Main Street Bridge	N/A
	Trigger	N/A	N/A	Prior to issuance of building permits	N/A
La Media Road / Olympic Parkway	Type of Impact	None	—	Direct	None
	Mitigation Measure	N/A	N/A	Payment towards TDIF for the construction of Main Street between Heritage Road and La Media Road Including Main Street Bridge	N/A
	Trigger	N/A	N/A	Prior to issuance of building permits	—
Heritage Road / Main Street	Type of Impact	None	Direct	None	None
	Mitigation Measure	N/A	Signalization	N/A	N/A
	Trigger	N/A	751st EDU of V3N	N/A	N/A
La Media Road (SB) / Main Street (WB) ~~(all-way stop controlled)~~	Type of Impact	None	Direct	None	None
	Mitigation Measure	N/A	Signalization	N/A	N/A
	Trigger	N/A	880th EDU of V8E	N/A	N/A
La Media Road (NB) / Main Street (WB)	Type of Impact	None	Direct	None	None
	Mitigation Measure	N/A	Signalization	N/A	N/A
	Trigger	N/A	880th EDU of V8E	N/A	N/A

Table 5.3-49 (Continued)
Summary of Significant Impacts and Mitigation Measures

Impacted Facility	Note	Year 2015 Plus Project	Year 2020 Plus Project	Year 2025 Plus Project	Year 2030 Plus Project
La Media Road (SB) / Main Street (EB)	Type of Impact	None	Direct	None	None
	Mitigation Measure	N/A	Signalization	N/A	N/A
	Trigger	N/A	880th EDU of V8E	N/A	N/A
La Media Road (NB) / Main Street (EB)	Type of Impact	None	Direct	None	None
	Mitigation Measure	N/A	Signalization	N/A	N/A
	Trigger	N/A	880th EDU of V8E	N/A	N/A
Magdalena Avenue / Main Street	Type of Impact	None	Direct	None	None
	Mitigation Measure	N/A	Signalization	N/A	N/A
	Trigger	N/A	1,693rd EDU of V8E	N/A	N/A
Discovery Falls Drive / Hunte Parkway	Type of Impact	None	None	None	Direct
	Mitigation Measure	N/A	N/A	N/A	+1NBR
	Trigger	N/A	N/A	N/A	1,295th EDU of V10
Heritage Road / Avenida De Las Vistas (SD) ~~(all-way stop controlled)~~	Type of Impact	DNE	DNE	DNE	None
	Mitigation Measure	DNE	DNE	DNE	N/A
	Trigger	DNE	DNE	DNE	N/A
Roadway Segment					
Orange Avenue, between Melrose Avenue and I-805 SB Ramps	Type of Impact	None	Cumulative Impact	Cumulative Impact	Cumulative Impact
	Mitigation Measure	N/A	No feasible mitigation, impact remains significant and unmitigable	No feasible mitigation, impact remains significant and unmitigable	No feasible mitigation, impact remains significant and unmitigable
	Trigger	N/A	N/A	N/A	N/A

Table 5.3-49 (Continued)
Summary of Significant Impacts and Mitigation Measures

Impacted Facility	Note	Year 2015 Plus Project	Year 2020 Plus Project	Year 2025 Plus Project	Year 2030 Plus Project
Olympic Parkway, between I-805 SB Ramps and I-805 NB Ramps	Type of Impact	None	Direct	None	None
	Mitigation Measure	N/A	Construction of Heritage Road between Olympic Parkway and Main Street	N/A	N/A
	Trigger	N/A	956th EDU of V3N	N/A	N/A
Olympic Parkway, between I-805 NB Ramps and Oleander Avenue	Type of Impact	None	Direct	None	None
	Mitigation Measure	N/A	Construction of Heritage Road between Olympic Parkway and Main Street	N/A	N/A
	Trigger	N/A	956th EDU of V3N	N/A	N/A
Olympic Parkway, between Oleander Avenue and Brandywine Avenue	Type of Impact	None	Direct	None	None
	Mitigation Measure	N/A	Construction of Heritage Road	N/A	N/A
	Trigger	N/A	956th EDU of V3N	N/A	N/A
Olympic Parkway, between Brandywine Avenue and Heritage Road	Type of Impact	None	Direct	None	None
	Mitigation Measure	N/A	Construction of Heritage Road between Olympic Parkway and Main Street	None	None
	Trigger	N/A	956th EDU of V3N	None	None
Olympic Parkway, between Heritage Road and Santa Venetia Street	Type of Impact	None	None	Direct	None
	Mitigation Measure	N/A	N/A	Payment towards TDIF for the construction of Main Street between Heritage Road and La Media Road including Main Street Bridge	N/A
	Trigger	N/A	N/A	Prior to issuance of each building permit	N/A

Table 5.3-49 (Continued)
Summary of Significant Impacts and Mitigation Measures

Impacted Facility	Note	Year 2015 Plus Project	Year 2020 Plus Project	Year 2025 Plus Project	Year 2030 Plus Project
Heritage Road, between East Palomar Street and Olympic Parkway	Type of Impact	None	None	Direct	None
	Mitigation Measure	N/A	N/A	Payment towards TDIF prior to the issuance of each building permit for the construction of Main Street between Heritage Road and La Media Road	N/A
	Trigger	N/A	N/A	Prior to issuance of each building permit	N/A
Heritage Road, between Main Street and Avenida De Las Vistas	Type of Impact	None	None	None	None
	Mitigation Measure	N/A	N/A	N/A	N/A
	Trigger	N/A	N/A	N/A	N/A
Heritage Road, between Avenida De Las Vistas and Otay Mesa Road (SD)	Type of Impact	DNE	DNE	DNE	None
	Mitigation Measure	DNE	DNE	DNE	N/A
	Trigger	DNE	DNE	DNE	N/A
Freeway / State Highway Segment					
I-805, from SR-94 to Market Street	—	—	—	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable
I-805 from Market Street to Imperial Avenue	—	—	-Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable	-Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable

Table 5.3-49 (Continued)
Summary of Significant Impacts and Mitigation Measures

Impacted Facility	Note	Year 2015 Plus Project	Year 2020 Plus Project	Year 2025 Plus Project	Year 2030 Plus Project
I-805, from Imperial Avenue to E Division Street	—	—	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable
I-805, from Plaza Boulevard to SR-54	—	—	—	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable
I-805, from SR-54 to Bonita Road	—	—	—	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable
I-805, from Bonita Road to East H Street	—	—	—	—	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable
I-805, from East H Street to Telegraph Canyon Road	—	—	—	—	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable
SR-905 from I-805 to Calliente Avenue	—	—	—	—	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable
SR-905 from Calliente Avenue to Heritage Road	—	—	—	—	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable

Table 5.3-49 (Continued)
Summary of Significant Impacts and Mitigation Measures

Impacted Facility	Note	Year 2015 Plus Project	Year 2020 Plus Project	Year 2025 Plus Project	Year 2030 Plus Project
SR-905 from Heritage Road to Britannia Boulevard	—	—	—	—	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable
SR-905 from Britannia Boulevard to La Media Road	—	—	—	—	Cumulative Impact: No feasible mitigation, impact remains significant and unmitigable
Freeway / State Highway Ramp Metering					
I-805 NB On-Ramp @ Main Street	—	—	—Cumulative Impact:: Adjust meter rate	—	—~~Cumulative Impact: Adjust meter rate~~
Access and Frontage					
Access and Frontage	—	Project Applicant shall construct the access and frontage improvements consistent with the triggers identified in Table 5.3-56 to the satisfaction of the Development Services Director and the City Engineer.	Project Applicant shall construct the access and frontage improvements consistent with the triggers identified in Table 5.3-56 to the satisfaction of the Development Services Director and the City Engineer.	Project Applicant shall construct the access and frontage improvements consistent with the triggers identified in Table 5.3-56 to the satisfaction of the Development Services Director and the City Engineer.	Project Applicant shall construct the access and frontage improvements consistent with the triggers identified in Table 5.3-56 to the satisfaction of the Development Services Director and the City Engineer.

Table 5.3-49 (Continued)
Summary of Significant Impacts and Mitigation Measures

Impacted Facility	Note	Year 2015 Plus Project	Year 2020 Plus Project	Year 2025 Plus Project	Year 2030 Plus Project
*Circulation System Assumptions **					
I-805 South Project	None	Phase 1: Improvements to I-805 between Home Avenue and East Palomar Street, including building one HOV lane in each direction, and the construction of a DAR, Transit Station and Park & Ride at East Palomar Street in Chula Vista	None	None	Widened of I-805 between East Palomar Street and SR-905
Heritage Road	None	Widen from South of Main Street to City Limit from a 2-lane Road to a 4-Lane Major Road	Widen from South of Main Street to City Limit from a 4-lane Major Road to a 6-lane Prime Arterial	None	None
Otay Lakes Road	None	None	Widen Otay Lakes Road between H Street to Telegraph Canyon Road from a 4-lane Major Road to a 6-Lane Prime Arterial	None	None

Table 5.3-49 (Continued)
Summary of Significant Impacts and Mitigation Measures

Impacted Facility	Note	Year 2015 Plus Project	Year 2020 Plus Project	Year 2025 Plus Project	Year 2030 Plus Project
Main Street	None	None	Construction of Quarry Driveway @ Main Street (Int #65) as an All Way Stop Control Construction of Village Three R-30 Driveway @ Main Street (Int #66) as an All Way Stop Control Main Street, constructed as a 2-Lane collector between Heritage Road and R-20 driveway	None	Construction of Main Street as a 6-lanes Gateway between SR-125 SB Ramps and East Lake Parkway/University Drive Signalization of Quarry Driveway @ Main Street (Int #65) and R-20 driveway and R-20 driveway @ Main Street (Int #66) Main Street, constructed as a 6-Lane Prime Arterial between Heritage Road and La Media Road
SR-125/Main Street Interchange	None	None	None	None	Construction of SR-125/Main Street Interchange
Otay Valley Road	None	None	None	None	Construction of Otay Valley Road between West of SR-125 and Street "B", including overpass.
Heritage Road/Energy Way Intersection	None	None	None	None	Signalization of intersection.

Source: Chen Ryan Associates 2014 (EIR Appendix M).
* For details regarding circulation system assumptions, please refer to EIR Appendix M.

5.3.6 Level of Significance After Mitigation

Year 2015 Conditions

No significant impacts to study area intersections, roadway segments, freeways/state highways, or freeway ramps would occur under the Year 2015 conditions; therefore, impacts would remain **less than significant**.

Year 2020 Conditions

Intersections

Table 5.3-50 displays LOS analysis results for the significantly impacted intersections under Year 2020 conditions. As shown in the table, after implementation of the identified improvements, all of the project-impacted intersections would operate at acceptable LOS D or better during both the AM and PM peak hours, with the exception of the intersection of I-805 SB Ramps / Olympic Parkway. The identified project-specific impact would be reduced to a cumulative impact; however, the cumulative impact would remain **significant and unavoidable**.

Table 5.3-50
Mitigated Intersection LOS – Year 2020 Conditions

Intersection	Before Mitigation				After Mitigation			
	AM Peak Hour		*PM Peak Hour*		*AM Peak Hour*		*PM Peak Hour*	
	Avg. Delay (sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*	*Avg. Delay (sec.)*	*LOS*	*Avg. Delay (sec.)*	*LOS*
11. I-805 SB Ramps / Olympic Parkway	70.9	**E**	155.2	**F**	No Feasible Mitigation			
12. I-805 NB Ramps / Olympic Parkway	60.0	**E**	97.8	**F**	50.8	D	36.9	D
14. Brandywine Avenue / Olympic Parkway	116.4	**F**	87.1F	**F**	51.8	D	48.5	D
39. Heritage Road / Main Street	71.7	**F**	70.7	**F**	27.0	C	47.9	D
40. La Media Road (SB) / Main Street (WB)	10.3	B	37.2	**E**	4.8	A	4.6	A
41. La Media Road (NB) / Main Street (WB)	41.4	**E**	23.8	C	3.3	A	3.8	A
42. La Media Road (SB) / Main Street (EB)	13.9	B	48.4	**E**	0.9	A	0.4	A
43. La Media Road (NB) / Main Street (EB)	13.4	B	38.8	**E**	2.3	A	1.7	A
44. Magdalena Avenue / Main Street	15.5	C	35.9	**E**	7.9	A	9.3	A

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS E or F.

Roadway Segments

Direct Impacts

Table 5.3-51 displays LOS analysis results for the significantly impacted roadway segments under Year 2020 conditions. As shown in the table, after implementation of the identified improvements, all four directly impacted roadway segments would operate at acceptable LOS C or better in Year 2020. Therefore, impacts would be **less than significant** after mitigation.

Table 5.3-51
Mitigated Roadway Segment LOS – Year 2020 Conditions

Roadway Segment	Before Mitigation			After Mitigation		
	ADT	*Cross Section*	*LOS*	*ADT*	*Cross Section*	*LOS*
Olympic Parkway, between I-805 SB Ramps and I-805 NB Ramps	64,000	6-Ln	**F**	41,500	No Change	B
Olympic Parkway, between I-805 NB Ramps and Oleander Avenue	71,000	6-Ln w/RM	**F**	45,100	No Change	C
Olympic Parkway, between Oleander Avenue and Brandywine Avenue	65,400	6-Ln w/RM	**F**	38,400	No Change	B
Olympic Parkway, between Brandywine Avenue and Heritage Road	59,500	6-Ln w/RM	**E**	31,500	No Change	A

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS D, E, or F.

Cumulative Impact

With respect to Orange Avenue between Melrose Avenue and the I-805 SB ramps, the recommended improvements would require widening Orange Avenue/Olympic Parkway; however, there are right-of-way constraints that would make such improvements infeasible (an engineering right-of-way assessment was conducted and is included in EIR Appendix M). In addition, there is no plan or program in place into which the Project Applicant could pay its fair share toward the cost of such improvement. Therefore, the impact will remain **cumulatively significant and unavoidable** at this location.

Freeways/State Highways

As previously noted, mitigation to reduce the identified significant cumulative impacts to the following freeway / state highway segments is infeasible:

- I-805, from Market Street to Imperial Avenue
- I-805, from Imperial Avenue to E Division Street

Therefore, the impacts would remain **significant and unavoidable**.

Ramp Metering

The Year 2020 project traffic would have a significant impact at the I-805 northbound on-ramp at Main Street. As previously noted, the construction of Heritage Road, between Olympic Parkway and Main Street, previously identified as a required mitigation measure, would provide traffic from Village Three North with a more direct route to the north and east of the project site, and hence reduce traffic utilizing the northbound on-ramp at Main Street. Table 5.3-52 displays the mitigated ramp metering analysis conducted at the I-805 northbound on-ramps at Main Street under the Year 2020 conditions with the Heritage Road connection between Olympic Parkway and Main Street.

Table 5.3-52
Mitigated Ramp Metering Analysis – 2020 Conditions With Heritage Road

Location	Peak Hour	Demand[1] (veh/hr)	Meter Rate[2] (veh/hr)	Excess Demand[3] (veh/hr)	Delay[4] (min)	Queue[5] (ft)
I-805 NB On-Ramp @ Main Street	AM	404	413	0	0	0

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Notes:
1 Demand is the peak hour demand expected to use the on-ramp.
2 Meter rate is the peak hour capacity expected to be processed through the ramp meter.
3 Excess demand = (demand) – (meter rate) or zero, whichever is greater.
4 Delay = (excess demand / meter rate) × 60 min/hr.
5 Queue = (excess demand) × 29 ft/veh.

As shown in Table 5.3-52, the peak hour capacity expected to be processed through the ramp meter (Meter Rate) would be greater than the peak hour demand (Demand) at the I-805 northbound on-ramp at Main Street with the construction of Heritage Road, between Olympic Parkway and Main Street. Hence, the project impact to this on-ramp would be mitigated by the Heritage Road connection. Therefore, impacts would be **less than significant**.

Year 2025 Conditions

Intersections

Direct Impacts

Table 5.3-53 displays LOS analysis results for the significantly impacted intersections under Year 2025 conditions. As shown in the table, after implementation of the identified improvements, both impacted intersections would operate at acceptable LOS D or better during both the AM and PM peak hours. Therefore, these impacts would be **less than significant** after mitigation.

Table 5.3-53
Mitigated Intersection LOS – Year 2025 Conditions

Intersection	Before Mitigation				After Mitigation			
	AM Peak Hour		*PM Peak Hour*		*AM Peak Hour*		*PM Peak Hour*	
	Avg. Delay (Sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*	*Avg. Delay (sec.)*	*LOS*	*Avg. Delay (sec.)*	*LOS*
15. Heritage Road / Olympic Parkway	61.8	**E**	58.6	**E**	46.9	D	52.3	D
17. La Media Road / Olympic Parkway	62.4	**E**	51.2	D	51.5	D	50.6	D

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS E or F.

Cumulative Impact

As previously noted, there are right-of-way constraints that would make widening the I-805 SB Ramps/Olympic Parkway intersection infeasible (an engineering right-of-way assessment was conducted and is included in EIR Appendix M). In addition, there is no plan or program in place into which the Project Applicant could pay its fair share toward such improvement. Therefore, mitigation is infeasible and the impact will remain **cumulatively significant and unavoidable** at this location.

Roadway Segments

Direct Impacts

Table 5.3-54 displays LOS analysis results for the significantly impacted roadway segments under Year 2025 conditions. As shown in the table, with the construction of Main Street between Heritage Road and La Media Road, Olympic Parkway between Heritage Road and Santa Venetia would operate at acceptable LOS B, while Heritage Road between East Palomar Street and Olympic Parkway would continue to operate at substandard LOS D. However, the construction of Main Street between Heritage Road and La Media Road would improve the intersection operations at Heritage Road / Olympic Parkway to acceptable LOS D during the peak hours, and indirectly improve operations along the connecting roadway segment of Heritage Road between East Palomar Street and Olympic Parkway. As a result, the project impact to Heritage Road between East Palomar Street and Olympic Parkway would be **less than significant** after mitigation.

Table 5.3-54
Mitigated Roadway Segment LOS – Year 2025 Conditions

Roadway Segment	Before Mitigation			After Mitigation		
	ADT	*Cross Section*	*LOS*	*ADT*	*Cross Section*	*LOS*
Olympic Parkway, between Heritage Road and Santa Venetia Street	54,600	6-Ln w/RM	**D**	40,300	No Change	B
Heritage Road, between East Palomar Street and Olympic Parkway	51,500	6-Ln w/RM	**D**	51,500	No Change	**D**

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS D, E, or F.

Cumulative Impact

The recommended improvements to Orange Avenue, between Melrose Avenue and I-805 SB Ramps, would require widening Orange Avenue/Olympic Parkway between Melrose Avenue and the I-805 SB Ramps; however, as previously noted, there are right-of-way constraints that would make such improvements infeasible (an engineering right-of-way assessment was conducted and is included in EIR Appendix M). In addition, there is no plan or program in place into which the Project Applicant could pay its fair share toward such improvement. Therefore, mitigation is infeasible and the impact will remain **cumulatively significant and unavoidable** at this location.

Freeways/State Highways

As previously noted, mitigation to reduce the identified significant cumulative impacts to the following freeway / state highway segments is infeasible:

- I-805, from SR-94 to Market Street;
- I-805, from Market Street to Imperial Avenue;
- I-805, from Imperial Avenue to E Division Street;
- I-805, from Plaza Boulevard to SR-54; and
- I-805, from SR-54 to Bonita Road.

Therefore, impacts are determined to be **significant and unavoidable.**

Ramp Metering

None of the I-805 northbound on-ramps at Olympic Parkway or at Main Street would be significantly impacted, and therefore no mitigation measures would be required under Year 2025 conditions and impacts would be **less than significant**.

Year 2030 Conditions

Intersections

Direct Impacts

Table 5.3-55 displays LOS analysis results for the significantly impacted intersection under Year 2030 conditions. As shown in the table, after implementation of the identified improvement, the project-impacted intersection of Discovery Falls Drive/Hunte Parkway would operate at acceptable LOS D during both the AM and PM peak hours.

Table 5.3-55
Mitigated Intersection LOS – Year 2030 Conditions

Intersection	Before Mitigation				After Mitigation			
	AM Peak Hour		*PM Peak Hour*		*AM Peak Hour*		*PM Peak Hour*	
	Avg. Delay (Sec.)	*LOS*	*Avg. Delay (sec.)*	*LOS*	*Avg. Delay (sec.)*	*LOS*	*Avg. Delay (sec.)*	*LOS*
Discovery Falls Drive / Hunte Parkway	60.8	**E**	61.4	**E**	52.5	D	50.5	D

Source: Chen Ryan Associates 2014 (EIR Appendix M).
Note: Bold letter indicates unacceptable LOS E or F.

Cumulative Impact

As previously noted, there are right-of-way constraints that would make widening the intersection of I-805 SB Ramps / Olympic Parkway infeasible (an engineering right-of-way assessment was conducted and is included in EIR Appendix M). In addition, there is no plan or program in place into which the Project Applicant could pay its fair share toward such improvement. Therefore, mitigation is infeasible and the impact will remain **cumulatively significant and unavoidable** at this location.

Roadway Segments

The recommended improvements to Orange Avenue between Melrose Avenue and I-805 SB Ramps would require widening Orange Avenue/Olympic Parkway; however, as previously noted, there are right-of-way constraints that would make such widening infeasible (an engineering right-of-way assessment was conducted and is included in EIR Appendix M). In addition, there is no plan or program in place into which the Project Applicant could pay its fair share toward such improvement. Therefore, mitigation is infeasible and the impact will remain **cumulatively significant and unavoidable** at this location.

Freeways/State Highways

As previously noted, mitigation to reduce the identified significant cumulative impacts to the following freeway / state highway segments is infeasible:

- I-805, from SR-94 to Market Street
- I-805, from Market Street to Imperial Avenue
- I-805, from Imperial Avenue to E Division Street
- I-805, from Plaza Boulevard to SR-54
- I-805 from SR-54 to Bonita Road
- I-805, from Bonita Road to East H Street
- I-805, from East H Street to Telegraph Canyon Road
- SR-905 from I-805 to Caliente Avenue
- SR-905 from Caliente Avenue to Heritage Road
- SR-905 from Heritage Road to Britannia Boulevard
- SR-905 from Britannia Boulevard to La Media Road.

Therefore, impacts are determined to be **significant and unavoidable.**

Ramp Metering

Implementation of MM TCA-14 would reduce previously identified significant impacts to the I-805 northbound on-ramp at Main Street to **less than significant**.

Construction Phasing

Implementation of MM TCA-17 would reduce previously identified significant impacts associated with construction phasing to **less than significant**.

5.3.7 Off-Site Project Frontage and Access

Table 5.3-56 summarizes the roadway segments and intersection to be constructed by the project for Frontage and Access, their cross-section/geometric configuration, as well as their associated EDU threshold.

Table 5.3-56
University Villages Frontage and Access Threshold

Street	Segment	Classification	EDU threshold[1]	Year assumed build in TIA
Heritage Road	Village Three Northern Boundary to Santa Macheto	6-Ln w/RM	612th EDU of Village Three	2020
Heritage Road	Santa Macheto to Santa Picacho	6-Ln w/RM	201st EDU of Village Three	2015
Heritage Road	Santa Picacho to Santa Maya	6-Ln w/RM	121st EDU of Village Three	2015
Heritage Road	Santa Maya to Main Street	6-Ln w/RM	prior to the first Final Map of Village Three	2015
Main Street	Heritage Road to Village Three R-20 Driveway (Int #66)	2-Ln w/ RM 6-Ln w/RM	prior to the first Final Map of Village Three R-20 widen to 6-Ln w/ RM in conjunction with the construction of Main Street Bridge	2020 2025
Main Street	La Media Road to Magdalena Avenue	6-Ln w/RM	prior to the first Final Map of Village Eight East	2020
Main Street	Magdalena Avenue to Santa Tipu	6-Ln w/RM	prior to the first Final Map of Village Eight East	2020
Main Street	Santa Tipu to Santa Marisol	6-Ln w/RM	121st EDU of Village Eight East	2020
Main Street	Santa Marisol to SR-125 right-of-way	6-Ln w/RM	prior to the first Final Map of Village Eight East R-16	2020
La Media Road	Santa Luna Street to Main Street	6-Ln w/RM	prior to the first Final Map of Village Eight East	2020
Otay Valley Road	Main Street to Community Park Driveway (Int #71)	4-Ln w/RM	1929th EDU of Village Eight East	2025
Otay Valley Road	Community Park Driveway (Int #71) to Santa Marisol	4-Ln w/RM	1929th EDU of Village Eight East	2025
Otay Valley Road	Santa Marisol to SR-125 right-of-way	4-Ln w/RM	1929th EDU of Village Eight East	2025
Village Eight East Community Park Driveway	Otay Valley Road / Community Park (P-2)	2-Ln	1929th EDU of Village Eight East	2025
University Drive	Hunte Parkway to University Driveway #1	2-Ln w/RM 4-Ln w/RM	prior to the first Final Map of Village Ten Widen to 4-Lanes in conjunction with the construction of the University/RTP site	2025

Table 5.3-56 (Continued)
University Villages Frontage and Access Threshold

Street	Segment	Classification	EDU threshold	Year assumed build in TIA
University Drive	University Driveway #1 to Discovery Falls Drive	2-Ln w/RM	prior to the first Final Map of Village Ten	2025
Discovery Falls Drive	Hunte Parkway to University/RTP Driveway	2-Ln w/RM 4-Ln w/RM	642nd EDU of Village Ten Widen to 4-Lanes in conjunction with the construction of the University/RTP site	2025
Discovery Falls Drive	University/RTP Driveway to Santa Davis	2-Ln w/RM	642nd EDU of Village Ten	2025
Discovery Falls Drive	Santa Davis to University Drive	2-Ln w/RM	121st EDU of Village Ten	2025
Discovery Falls Drive	University Drive to Santa Julliard	2-Ln w/RM	201st EDU of Village Ten	2025
Community Park Driveway	Otay Valley Road to Village Eight Community Park	2-Ln	1929th EDU of Village 8 East (Prior to the 1313th EDU in Village 8 East, the Applicant shall submit and obtain approval for improvement plans and appropriate security for the construction of the Village 8 East community park access road to the satisfaction of the Director of Development Services.)	2025
Discovery Falls Drive	Santa Julliard to Village Nine Street "B"	2-Ln w/RM	After Village Nine Street B is built	2025
Otay Valley Road	SR-125 right-of-way (western boundary) to Village Nine Street "B" including freeway overpass	2-Ln w/RM	Prior to the Final Map containing the 1,553rd EDU of Village Ten	2030
Village Ten - #47	Hunte Parkway / Eastlake Parkway	Signal Mod	prior to the first Final Map of Village Ten	2025
Village Ten - #48	Hunte Parkway / Discovery Falls Drive	Signal Mod	prior to the first Final Map of Village Ten	2025
Village Three - #61	Santa Macheto / Heritage Road	Signal	201st EDU of Village Three 612th EDU of Village Three	2020
Village Three – #62	Santa Picacho / Heritage Road	AWSC Signal	121st EDU of Village Three 612th EDU of Village Three	2015 2020
Village Three – #63	Santa Maya / Heritage Road	AWSC Signal	prior to the first Final Map of Village Three 612th EDU of Village Three	2015 2020
Village Three – #65	Quarry Driveway / Main Street	AWSC	prior to the first Final Map of Village Three R-20	2020

Table 5.3-56 (Continued)
University Villages Frontage and Access Threshold

Street	Segment	Classification	EDU threshold	Year assumed build in TIA
Village Three – #65	Quarry Driveway / Main Street	AWSC Signal	prior to the first Final Map of Village Three R-20 Signalized in conjunction with the construction of Main Street Bridge	2020 2025
Village Three - #66	Village Three North R-20 Driveway / Main Street	AWSC Signal	prior to the first Final Map of Village Three R-20 Signalized in conjunction with the construction of Main Street Bridge	2020
Village Four - #67	La Media Road / Village Four Driveway/Santa Luna Street	Signal	prior to the first Final Map of Village Four	2020
Village Eight E - #68	Santa Tipu / Main Street (one-way stop RT in/out)	OWSC	prior to the first Final Map of Village Eight East	2020
Village Eight E – #69	Santa Marisol / Main Street	Signal	121st EDU of Village Eight East	2020
Village Eight E - #70	Village Eight East R-16 Driveway / Main Street (one-way stop RT in/out)	OWSC	prior to the first Final Map of Village Eight East – R16	2025
Village Eight E – #71	Village Eight East Community Park Driveway / Otay Valley Road	Signal	1929th EDU of Village Eight East	2025
Village Eight E – #72	Cutter Avenue / Otay Valley Road (one-way stop RT in/out)	OWSC	1929th EDU of Village Eight East	2025
Village Eight E - #73	Santa Marisol / Otay Valley Road	Signal	1929th EDU of Village Eight East	2025
Village Ten - #74	Village Nine Street "B" / Otay Valley Road	Signal	Prior to the Final Map containing the 1,553rd EDU of Village Ten	2030
Village Ten - #75	Village Nine Street "B" / Discovery Falls Drive	Signal	After Village Nine Street B is built	2030
Village Ten - #76	Santa Julliard / Discovery Falls Drive	Signal	201st EDU of Village Ten	2025
Village Ten - #77	University Drive / Discovery Falls Drive	Signal	prior to the first Final Map of Village Ten	2025
Village Ten - #78	Santa Davis / Discovery Falls Drive	Signal	121st EDU of Village Ten	2025

1 Project residential street system to comply with Chula Vista Subdivision Manual Section 3-403.2(7) Design Criteria for Streets.

5.4 AIR QUALITY

This section of the EIR addresses the potential air quality impacts resulting from the proposed University Villages project. The discussion found in this section is primarily based on the Air *Quality and Global Climate Change Technical Report for the Otay Ranch University Villages Project* that was prepared by Dudek in June 2014. The complete report is contained in Appendix D, Part I of this EIR. Health risk impact analysis provided in this section is based on the *Air Toxics Health Risk Assessment for Otay Ranch Village 3 North* prepared by SCS Engineers in June 2014, included as Appendix D, Part II; and the *Air Toxics Health Risk Assessment for the Otay Ranch Village 8 East Project* prepared by Scientific Resources Associated (SRA) in April 2014, included as Appendix D, Part III. Odor impact analysis provided in this section is based on the *Otay Ranch Village 3 North Nuisance Study* prepared by SCS Engineers in June 2014, included as Appendix D, Part IV.

This section tiers from the 1993 Otay Ranch GDP Program EIR, because that Program EIR analyzed air quality impacts for the entire Otay Ranch including the project site. The Otay Ranch GDP Program EIR concluded that potentially significant air quality impacts would occur with implementation of the Otay Ranch GDP. Potentially significant impacts would occur because air quality impacts would exceed the State Implementation Plan (SIP) air quality attainment regulations which are based on SANDAG Series 7 growth projections. This EIR determined that the mitigation measures would substantially lessen the impacts on air quality, but the impacts would still remain significant.

This section also tiers from the 2005 GPU/GDPA Program EIR, because air quality conditions for the entire Otay Ranch area, including the project site, were analyzed at a programmatic level. The 2005 GPU/GDPA Program EIR found that potentially significant impacts to air quality could occur as a result of planned development, because development would not be consistent with the Regional Air Quality Standards (RAQS) and because operational emissions resulting from particulates for which the region is not in conformance would occur. Therefore, impacts were determined to be significant and unavoidable.

Additionally, this section incorporates by reference mitigation measure 5.8-1 as identified in the 2005 GPU. Mitigation measure 5.8-1 states, that the City shall continue to implement the Energy Strategy and Action Plan that addresses demand side management, energy efficient and renewable energy outreach programs for businesses and residents, energy acquisition, power generation, and distribution energy resources and legislative actions, and continue to implement the CO_2 Reduction Plan to lessen the impacts on energy.

5.4.1 Existing Conditions

5.4.1.1 Regulatory Framework

Federal

Clean Air Act

The federal Clean Air Act, passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The U.S. Environmental Protection Agency (U.S. EPA) is responsible for implementing most aspects of the Clean Air Act, including the setting of National Ambient Air Quality Standards (NAAQS) for major air pollutants, hazardous air pollutant standards, state attainment plan approvals, motor vehicle emission standards, stationary source emission standards and permits, acid rain control measures, stratospheric ozone (O_3) protection, and enforcement provisions.

NAAQS are established by the U.S. EPA for "criteria pollutants" under the Clean Air Act, which are O_3, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM_{10} and $PM_{2.5}$), and lead (Pb). The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The Clean Air Act requires the U.S. EPA to reassess the NAAQS at least every 5 years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States with areas that exceed the NAAQS must prepare a State Implementation Plan (SIP) that demonstrates how those areas will attain the standards within mandated time frames.

State Level

California Clean Air Act

The federal Clean Air Act allows states to adopt ambient air quality standards and other regulations, provided those standards and regulations are at least as stringent as federal standards. Accordingly, the California Clean Air Act was adopted in 1988, and establishes the state's air quality goals, planning mechanisms, regulatory strategies, and standards of progress.

Under the California Clean Air Act, the task of air quality management and regulation has been legislatively granted to the California Air Resources Board (CARB), with subsidiary responsibilities assigned to air quality management districts (AQMDs) and air pollution control districts (APCDs) at the regional and county levels. CARB is responsible for ensuring implementation of the California Clean Air Act, responding to the federal Clean Air Act, and regulating emissions from motor vehicles and consumer products. Pursuant to the authority

granted to it, CARB has established California Ambient Air Quality Standards (CAAQS), which are generally more restrictive than the NAAQS.

The NAAQS and CAAQS are presented in Table 5.4-1, Ambient Air Quality Standards.

Table 5.4-1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]	National Standards[2]	
		Concentration[3]	*Primary*[3,4]	*Secondary*[3,5]
O_3	1 hour	0.09 ppm (180 μg/m³)	—	Same as Primary Standard
	8 hour	0.070 ppm (137 μg/m³)	0.075 ppm (147 μg/m³)	
CO	1 hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	—
	8 hour	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	
NO_2[6]	1 hour	0.18 ppm (339 μg/m³)	0.100 ppm (188 μg/m³)	Same as Primary Standard
	Annual Arithmetic Mean	0.030 ppm (57 μg/m³)	0.053 ppm (100 μg/m³)	
SO_2[7]	1 hour	0.25 ppm (655 μg/m³)	0.75 ppm (196 μg/m³)	—
	3 hour	—	—	0.5 ppm (1300 μg/m³)
	24 hour	0.04 ppm (105 μg/m³)	0.14 ppm (for certain areas)[7]	
	Annual Arithmetic Mean	—	0.030 ppm (for certain areas)[7]	—
PM_{10}[8]	24 hour	50 μg/m³	150 μg/m³	Same as Primary Standard
	Annual Arithmetic Mean	20 μg/m³	—	
$PM_{2.5}$[8]	24 hour	—	35 μg/m³	Same as Primary Standard
	Annual Arithmetic Mean	12 μg/m³	12.0 μg/m³	15.0 μg/m³
Lead[9,10]	30-day Average	1.5 μg/m³	—	—
	Calendar Quarter	—	1.5 μg/m³ (for certain areas)[10]	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 μg/m³	
Hydrogen sulfide	1 hour	0.03 ppm (42 μg/m³)	—	—
Vinyl chloride[9]	24 hour	0.01 ppm (26 μg/m³)	—	—
Sulfates	24 hour	25 μg/m3	—	—
Visibility reducing particles[11]	8 hour (10:00 a.m. to 6:00 p.m. PST)	See footnote 11	—	—

ppm = parts per million by volume μg/m³ = micrograms per cubic meter mg/m³ = milligrams per cubic meter

Source: CARB 2013b.

Notes:

1 California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles) are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2 National standards (other than O_3, NO_2, SO_2, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For NO_2 and SO_2, the standard is attained when the 3-year average of the 98th and 99th percentile, respectively, of the daily maximum 1-hour average at each monitor within an area does not exceed the standard. For PM_{10}, the 24-hour standard is attained when the

expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

3 Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. (Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.)

4 National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

5 National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

6 To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

7 On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that, in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

8 On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

90 CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

10 The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that, in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

11 In 1989, CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Toxic Air Contaminants

In 1983, the California Legislature enacted a program to identify the health effects of toxic air contaminants (TACs) and to reduce exposure to these contaminants to protect the public health (AB 1807; Health and Safety Code Sections 39650-39674). The legislature established a two-step process to address the potential health effects from TACs. The first step is the risk assessment (or identification) phase. The second step is the risk management (or control) phase of the process.

Diesel exhaust particulate matter emissions have since been established as TACs. Since identification of diesel particulate matter as an air toxic in 1998, CARB has worked on developing strategies and regulations aimed at reducing the risk from diesel particulate matter. The overall strategy for achieving these reductions is found in the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel Fueled Engines and Vehicles* (CARB 2000). A stated goal of the plan is to reduce the cancer risk statewide arising from exposure to diesel particulate matter by 85% by 2020. A number of programs and strategies to reduce diesel particulate matter that have been or are in the process of being developed include:

- **The Carl Moyer Program:** This program, administered by CARB, was initially approved in February 1999 and is regularly updated. The most recent program guidelines were approved in April 2011. It provides grants to private companies, public agencies, or

individuals operating heavy-duty diesel engines to cover an incremental portion of the cost of cleaner on-road, off-road, marine, locomotive, and agricultural irrigation pump engines.

- **California Diesel Fuel Regulations:** The California Diesel Fuel Regulations (CCR, Title 13, Sections 2281-2285, and Title 17, Section 93114) set limits on the aromatic hydrocarbon and sulfur content for diesel fuel marketed in California. Under these rules, starting in June 2006 in accordance with the phase-in schedule, vehicular diesel fuel must not have a sulfur content that exceeds 15 parts per million (ppm) by weight. The regulations also specify that, on or after October 1, 1993, the aromatic hydrocarbon content of vehicular diesel fuel must not exceed 10% by volume.
- **On-Road Heavy-Duty Diesel New Engine Program:** This program develops strategies and regulations to reduce diesel emissions from new on-road diesel-powered equipment. Emission control regulations have been coordinated with the U.S. EPA and require that new engines manufactured in and subsequent to 2004 meet new emissions requirements for particulates and other pollutants.
- **Heavy-Duty Diesel In-Use Strategies Program:** The goal of this program is to develop and implement strategies for reducing diesel emissions from existing on and off-road diesel engines. The Retrofit Assessment section is responsible for the development and implementation of procedures for assessing, recommending, and approving emission control devices. The Retrofit Implementation section is responsible for developing plans for retrofitting on- and off-road engines with emission reducing technologies. To date, plans being developed or implemented have targeted solid waste collection vehicles, on-road heavy-duty public fleet vehicles, and fuel delivery trucks. Generally, these plans require that a percentage of the fleet, based on age of the vehicles, be retrofitted on a predetermined schedule.
- **Off-Road Mobile Sources Emission Reduction Program:** The goal of this program is to develop regulations to control emissions from diesel, gasoline, and alternative-fueled off-road mobile engines. These sources include a range of equipment from lawn mowers to construction equipment to locomotives.
- **Heavy-Duty Vehicle Inspection and Periodic Smoke Inspection Program:** This program provides periodic inspections to ensure that truck and bus fleets do not emit excessive amounts of smoke.
- **Lower-Emission School Bus Program:** Under this program, and in coordination with the California Energy Commission, CARB is developing guidelines to provide criteria for the purchase of new school buses and the retrofit of existing school buses to reduce particulate matter emissions.

As an ongoing process, CARB continues to establish new programs and regulations for the control of diesel particulate emissions as appropriate. The continued development and implementation of these programs and policies ensures that public exposure to diesel particulate matter will continue to decline.

California Health and Safety Code Section 41700

This section of the Health and Safety Code states that a person shall not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or that endanger the comfort, repose, health, or safety of any of those persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property. This section also applies to sources of objectionable odors.

Local Level

San Diego Air Pollution Control District

While CARB is responsible for the regulation of mobile emission sources within the state, local AQMDs and APCDs are responsible for enforcing standards and regulating stationary sources. The project site is located within the San Diego Air Basin (SDAB) and is subject to the guidelines and regulations of the San Diego Air Pollution Control District (SDAPCD).

In San Diego County, O_3 and particulate matter are the pollutants of main concern, since exceedances of state ambient air quality standards for those pollutants are experienced here in most years. For this reason, the SDAB has been designated as a nonattainment area for the state PM_{10}, $PM_{2.5}$, and O_3 standards. The SDAB is also a federal O_3 nonattainment area and a CO maintenance area (western part of the SDAB only); the project area is a CO attainment area).

The SDAPCD and the San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The *Regional Air Quality Strategy* (RAQS) for the SDAB was initially adopted in 1991, and is updated on a triennial basis (most recently in 2009). The RAQS outlines SDAPCD's plans and control measures designed to attain the state air quality standards for O_3. The RAQS relies on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in San Diego County and the cities in the County, to project future emissions and then determine from that the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source emission projections and SANDAG growth projections are based on population, vehicle trends, and land use plans developed by San Diego County and the cities in the County as part of the development of their general plans.

The *Eight-Hour Ozone Attainment Plan for San Diego County* indicates that local controls and state programs would allow the region to reach attainment of the federal 1997 8-hour O_3 standard

by 2009 (SDAPCD 2007). In this plan, SDAPCD relies on the RAQS to demonstrate how the region will comply with the federal O_3 standard. The RAQS details how the region will manage and reduce O_3 precursors (oxides of nitrogen (NO_x) and volatile organic compounds (VOCs)) by identifying measures and regulations intended to reduce these contaminants. The control measures identified in the RAQS generally focus on stationary sources; however, the emissions inventories and projections in the RAQS address all potential sources, including those under the authority of CARB and the U.S. EPA. Incentive programs for reduction of emissions from heavy-duty diesel vehicles, off-road equipment, and school buses are also established in the RAQS. In the *Redesignation Request and Maintenance Plan for the 1997 National Ozone Standard for San Diego County*, the San Diego Air Basin did not reach attainment of the federal 1997 standard until 2011 (SDAPCD 2012a). This plan demonstrates the region's attainment of the 1997 ozone NAAQS and outlines the plan for maintaining attainment status.

In December 2005, SDAPCD prepared a report titled *Measures to Reduce Particulate Matter in San Diego County* to address implementation of Senate Bill (SB) 656 in San Diego County (SB 656 required additional controls to reduce ambient concentrations of PM_{10} and $PM_{2.5}$) (SDAPCD 2005). In the report, SDAPCD evaluated the implementation of source-control measures that would reduce particulate matter emissions associated with residential wood combustion; various construction activities including earthmoving, demolition, and grading; bulk material storage and handling; carryout and trackout removal and cleanup methods; inactive disturbed land; disturbed open areas; unpaved parking lots/staging areas; unpaved roads; and windblown dust.

As stated above, the SDAPCD is responsible for planning, implementing, and enforcing federal and state ambient standards in the SDAB. The following rules and regulations would apply to the construction of the proposed project:

- **SDAPCD Regulation IV: Prohibitions; Rule 51: Nuisance.** Prohibits the discharge, from any source, of such quantities of air contaminants or other materials that cause or have a tendency to cause injury, detriment, nuisance, annoyance to people and/or the public, or damage to any business or property (SDAPCD 1969).
- **SDAPCD Regulation IV: Prohibitions; Rule 55: Fugitive Dust.** Regulates fugitive dust emissions from any commercial construction or demolition activity capable of generating fugitive dust emissions, including active operations, open storage piles, and inactive disturbed areas, as well as track-out and carry-out onto paved roads beyond a project site (SDAPCD 2009).
- **SDAPCD Regulation IV: Prohibitions; Rule 67.0: Architectural Coatings.** Requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories (SDAPCD 2001).

City of Chula Vista

The Chula Vista City Council has adopted the 2008 State Energy Code (Title 24) with an amendment requiring an increased energy efficiency standard. This amendment went into effect on February 26, 2010, as Section 15.26.030 of the Municipal Code. As required by this amendment, all building permits applied for and submitted on or after this date are subject to these increased energy efficiency standards. The increase in energy efficiency is a percentage above the 2008 Energy Code and is dependent on climate zone and type of development proposed. The designation is as follows:

- New residential and nonresidential projects that fall within climate zone 7 must be at least 15% more energy efficient than the 2008 Energy Code. Climate zone 7 encompasses the majority of the City Of Chula Vista (City of Chula Vista 2010) and includes the project site.
- New low-rise residential projects (three-stories or less) that fall within climate zone 10 must be at least 20% more energy efficient than the 2008 Energy Code. New non-residential, high-rise residential or hotel/motel projects that fall within climate zone 10 must be at least 15% more energy efficient than the 2008 Energy Code. Climate zone 10 encompasses the easternmost portion of the City of Chula Vista (City of Chula Vista 2010).

Additionally, Objective-E 6 of the Chula Vista General Plan contains multiple policies focused on improving local air quality. Specifically, Objective-E 6 is intended to improve "local air quality by minimizing the production and emission of air pollutants and toxic air contaminants and limit the exposure of people to such pollutants." The General Plan contains 15 policies designed to facilitate achievement of this objective, including the encouragement of compact, mixed use development (E 6.1); facilitation of transit use (E 6.2); not placing a sensitive receptor within 1,000 feet of a major toxic emitter (E 6.4); development of strategies to minimize CO hot spots (E 6.11); and, siting of new development in locations that minimize potential impacts of poor air quality on sensitive receptors (E 6.15).

Also included in the City's General Plan is the Growth Management Ordinance. Air quality is identified as an important part of the quality of life in Chula Vista; and, one of the stated policies (Policy GM 4.4) adapts city regulations to meet federal and state air quality standards. In addition, the Growth Management Ordinance (Municipal Code Section 19.09.050B) requires that an Air Quality Improvement Plan (AQIP) be prepared for all major development projects as part of the SPA Plan process.

Part II, Chapter 6, Section 6 of the Otay Ranch General Development Plan (GDP) establishes goals to minimize the adverse air quality impacts of development, including creating a safe and efficient multi-modal transportation network that serves to minimize the number and length of single-passenger vehicle trips. Specifically, the GDP provides as follows:

- **Objective:** Minimize the number and length of single passenger vehicle trips to and from employment and commercial centers to achieve an average of 1.5 persons per passenger vehicle during weekday commute hours.
- **Policies:**
  - Encourage, as appropriate, alternative transportation incentives offered to employees, alternative work hour programs, alternative transportation promotional materials, information on car pool and van pool matching services, transit pass information, space for car-pool and van-pool-riders-wanted advertisements, information about transit and rail service, as well as information about bicycle facilities, routes, storage, and location of nearby shower and locker facilities.
  - Promote telecommuting and teleconferencing programs and policies in employment centers.
  - Establish or participate in education-based commute programs, which minimize the number and length of single passenger vehicle trips.
  - Provide on-site amenities in commercial and employment centers to include childcare facilities, post offices, banking services, cafeterias/delis/restaurants, etc.

5.4.1.2 Existing Setting

5.4.1.2.1 Climate and Topography

The weather of the San Diego region, as in most of Southern California, is influenced by the Pacific Ocean and its semi-permanent high-pressure systems that result in dry, warm summers and mild, occasionally wet winters. The average temperature ranges (in degree Fahrenheit (°F)) from the mid-40s to the high 90s. Most of the region's precipitation falls from November to April, with infrequent (approximately 10%) precipitation during the summer. The average seasonal precipitation along the coast is approximately 10 inches; the amount increases with elevation as moist air is lifted over the mountains.

The topography in the San Diego region varies greatly, from beaches on the west to mountains and desert on the east; along with local meteorology, it influences the dispersal and movement of pollutants in the basin. The mountains to the east prohibit dispersal of pollutants in that direction and help trap them in inversion layers.

The proposed project site is topographically diverse. At Village Three North/Portion of Village Four, elevations range from approximately 150 feet above mean sea level along the south/southwestern boundary of the site to 470 feet to the north. At Village Eight East, elevations range from approximately 190 feet in the south/southwest portion of the site to 600 feet in the

northern/north-central portion of the site. At Village Ten, elevations range from approximately 280 feet in the very south to 500 feet along the northern boundary of the site.

The interaction of ocean, land, and the Pacific High Pressure Zone maintains clear skies for much of the year and influences the direction of prevailing winds (westerly to northwesterly). Local terrain is often the dominant factor inland, and winds in inland mountainous areas tend to blow through the valleys during the day and down the hills and valleys at night.

5.4.1.2.2 Air Pollution Climatology

The project site is located within the SDAB, which is one of 15 air basins that geographically divide the State of California. The SDAB is currently classified as a federal nonattainment area for O_3 and a state nonattainment area for PM_{10}, $PM_{2.5}$, and O_3.

The SDAB lies in the southwest corner of California and comprises the entire San Diego region, covering 4,260 square miles, and is an area of high air pollution potential. The basin experiences warm summers, mild winters, infrequent rainfalls, light winds, and moderate humidity. This usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds.

The SDAB experiences frequent temperature inversions. Subsidence inversions occur during the warmer months as descending air associated with the Pacific High Pressure Zone meets cool marine air. The boundary between the two layers of air creates a temperature inversion that traps pollutants. Another type of inversion, a radiation inversion, develops on winter nights when air near the ground cools by heat radiation and air aloft remains warm. The shallow inversion layer formed between these two air masses also can trap pollutants. As the pollutants become more concentrated in the atmosphere, photochemical reactions occur that produce O_3, commonly known as smog.

Light daytime winds, predominately from the west, further aggravate the condition by driving air pollutants inland, toward the mountains. During the fall and winter, air quality problems are created due to CO and NO_x emissions. CO concentrations are generally higher in the morning and late evening. In the morning, CO levels are elevated due to cold temperatures and the large number of motor vehicles traveling. Higher CO levels during the late evenings are a result of stagnant atmospheric conditions trapping CO in the area. Since CO is produced almost entirely from automobiles, the highest CO concentrations in the basin are associated with heavy traffic. NO_2 levels are also generally higher during fall and winter days.

Under certain conditions, atmospheric oscillation results in the offshore transport of air from the Los Angeles region to San Diego County. This often produces high O_3 concentrations, as measured at air pollutant monitoring stations within the County. The transport of air pollutants

from Los Angeles to San Diego has also occurred within the stable layer of the elevated subsidence inversion, where high levels of O_3 are transported.

5.4.1.2.3 Sensitive Receptors

Reduced visibility, eye irritation, and adverse health impacts upon those persons termed sensitive receptors are the most serious hazards of existing air quality conditions in the area. Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. People most likely to be affected by air pollution, as identified by CARB, include children, the elderly, athletes, and people with cardiovascular and chronic respiratory diseases. Sensitive receptors include residences, schools, playgrounds, child care centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes.

The project site is currently vacant, and the nearest existing residences are located directly north of the project site across Olympic Parkway. Residences are currently being built within Village Two as well, adjacent to the project site. Additionally, Otay Ranch High School and Olympian High School are located northeast and north of the project site, respectively. Table 5.4-2 shows sensitive receptors and respective distances from Village Three, Village Four, Village Eight East and Village Ten including sensitive receptors located near proposed off-site improvements.

Table 5.4-2
Sensitive Receptors

Village Three/Village Four		Village Eight East		Village Ten	
Receptor Type	*Distance*	*Receptor Type*	*Distance*	*Receptor Type*	*Distance*
Single-Family Residences	0.6 mile southwest	East Hills Academy/Olympian High School	North adjacent	High Tech High	Adjacent/0.4 mile north
Single-Family Residences	0.7 mile south	Single-Family Residences	0.1 mile northeast	Single-Family Residences	Adjacent/0.5 mile north
Single-Family Residences	1.1 mile north	Wolf Canyon Elementary School	0.4 mile north	Concordia Church and School	0.9 mile north
Single-Family Residences	1.6 miles north	Single-Family Residences	0.4 mile north	Olympic Training Center	1.2 mile northeast
—	—	—	—	Future University	North adjacent

5.4.1.2.4 Pollutants and Effects

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. The federal and state standards have been set, with an adequate margin of safety, at levels

above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Pollutants of concern include: O_3, NO_2, CO, SO_2, PM_{10}, $PM_{2.5}$, and lead. These pollutants are discussed below.[1] In California, sulfates, vinyl chloride, hydrogen sulfide, and visibility-reducing particles are also regulated as criteria air pollutants.

Ozone. O_3 is a colorless gas that is formed in the atmosphere when VOCs,[2] sometimes referred to as reactive organic gases (ROGs), and NO_x react in the presence of ultraviolet sunlight. O_3 is not a primary pollutant; it is a secondary pollutant formed by complex interactions of two pollutants directly emitted into the atmosphere. The primary sources of VOCs and NO_x, the precursors of O_3, are automobile exhaust and industrial sources. Meteorology and terrain play major roles in O_3 formation and ideal conditions occur during summer and early autumn, on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. Short-term exposures (lasting for a few hours) to O_3 at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes.

Nitrogen Dioxide. Most NO_2, like O_3, is not directly emitted into the atmosphere but is formed by an atmospheric chemical reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO_2 are collectively referred to as NO_x and are major contributors to O_3 formation. High concentrations of NO_2 can cause breathing difficulties and result in a brownish-red cast to the atmosphere with reduced visibility. There is some indication of a relationship between NO_2 and chronic pulmonary fibrosis and some increase in bronchitis in children (2 and 3 years old) has also been observed at concentrations below 0.3 parts per million by volume (ppm).

Carbon Monoxide. CO is a colorless and odorless gas formed by the incomplete combustion of fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, such as the project location, automobile exhaust accounts for the majority of CO emissions. CO is a non-reactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions; primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature

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1 The following descriptions of health effects for each of the criteria air pollutants associated with project construction and operation are based on the U.S. EPA's Six Common Air Pollutants (EPA 2010) and CARB's Glossary of Air Pollutant Terms (CARB 2013a).

2 VOCs are defined to include any compound of carbon, excluding CO, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate. While there are no CAAQS or NAAQS for this pollutant, VOCs are regulated because a reduction in VOC emissions reduces certain chemical reactions that contribute to the formation of O_3. VOCs are also transformed into organic aerosols in the atmosphere, which contributes to higher PM_{10} levels and lower visibility.

inversions are combined with calm atmospheric conditions, a typical situation at dusk in urban areas between November and February. The highest levels of CO typically occur during the colder months of the year when inversion conditions are more frequent. In terms of health, CO competes with oxygen, often replacing it in the blood, thus reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can be dizziness, fatigue, and impairment of central nervous system functions.

Sulfur Dioxide. SO_2 is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Main sources of SO_2 are coal and oil used in power plants and industries; as such, the highest levels of SO_2 are generally found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels. SO_2 is an irritant gas that attacks the throat and lungs and can cause acute respiratory symptoms and diminished ventilator function in children. SO_2 can also yellow plant leaves and erode iron and steel.

Particulate Matter. Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. Fine particulate matter, or $PM_{2.5}$, is roughly 1/28 the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur oxides (SO_x), NO_x, and VOC. Inhalable or coarse particulate matter, or PM_{10}, is about 1/7 the thickness of a human hair. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions.

$PM_{2.5}$ and PM_{10} pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{2.5}$ and PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances, such as lead, sulfates, and nitrates, can cause lung damage directly or be absorbed into the blood stream, causing damage elsewhere in the body. Additionally, these substances can transport absorbed gases, such as chlorides or ammonium, into the lungs, also causing injury. Whereas PM_{10} tends to collect in the upper portion of the respiratory system, $PM_{2.5}$ is so tiny that it can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle, as well as produce haze and reduce regional visibility.

Lead. Lead in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline, the manufacturing of batteries, paint, ink, ceramics, and ammunition and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phase-out of leaded gasoline reduced the overall inventory of airborne lead by nearly 95%. With the phase-out of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are becoming lead-emission sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance including intelligence quotient performance, psychomotor performance, reaction time, and growth.

Toxic Air Contaminants. A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute and/or chronic noncancer health effects. A toxic substance released into the air is considered a TAC. Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources such as automobiles; and area sources such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced either on short-term (acute) or long-term (chronic) exposure to a given TAC. CARB has identified diesel engine exhaust particulate matter as the predominant TAC in California. Diesel particulate matter is emitted into the air by diesel-powered mobile vehicles, including heavy-duty diesel trucks, construction equipment, and passenger vehicles. Certain ROGs may also are designated as TACs.

5.4.1.2.5 Local Air Quality

SDAB Attainment Designation

An area is designated in attainment when it is in compliance with the NAAQS and/or CAAQS. These standards are set by the U.S. EPA or CARB for the maximum level of a given air pollutant that can exist in the outdoor air without unacceptable effects on human health or the public welfare.

The criteria pollutants of primary concern that are considered in this analysis include O_3, NO_2, CO, SO_2, PM_{10}, and $PM_{2.5}$. Although there are no ambient standards for VOCs or NO_x, they are important as precursors to O_3.

The portion of the SDAB where the project site is located is designated by the U.S. EPA as an attainment area for the 1997 8-hour NAAQS for O_3 and as a marginal nonattainment area for the

2008 8-hour NAAQS for O_3.The SDAB is designated in attainment for all other criteria pollutants under the NAAQS with the exception of PM_{10}, which was determined to be unclassifiable.

The SDAB is currently designated nonattainment for O_3, PM_{10} and $PM_{2.5}$ under the CAAQS. It is designated attainment for the CAAQS for CO, NO_2, SO_2, lead, and sulfates.

Table 5.4-3, SDAB Attainment Classification, summarizes the SDAB's federal and state attainment designations for each of the criteria pollutants.

Table 5.4-3
SDAB Attainment Classification

Pollutant	Federal Designation[a]	State Designation[b]
O_3 (1 hour)	Attainment[1]	Nonattainment
O_3 (8 hour – 1997) (8 hour – 2008)	Attainment (Maintenance) Nonattainment (Marginal)	Nonattainment
CO	Unclassifiable/Attainment[2]	Attainment
PM_{10}	Unclassifiable[3]	Nonattainment
$PM_{2.5}$	Attainment	Nonattainment
NO_2	Unclassifiable/Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(no federal standard)	Attainment
Hydrogen Sulfide	(no federal standard)	Unclassified
Visibility-Reducing Particles	(no federal standard)	Unclassified

Sources: [a] EPA 2013a; [b] CARB 2013c.
Notes:
1 The federal 1-hour standard of 0.12 ppm was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because it was employed for such a long period and because this benchmark is addressed in State Implementation Plans.
2 The western and central portions of the SDAB are designated attainment, while the eastern portion (where the project site is located) is designated unclassifiable/attainment.
3 At the time of designation, if the available data does not support a designation of attainment or nonattainment, the area is designated as unclassifiable.

Air Quality Monitoring Data

The SDAPCD operates a network of ten ambient air monitoring stations throughout San Diego County, which measure ambient concentrations of the pollutants and determine whether the ambient air quality meets the CAAQS and the NAAQS. The Chula Vista monitoring station is the nearest location to the project site where criteria pollutant concentrations are monitored.

Ambient concentrations of pollutants from 2008 through 2012 are presented in Table 5.4-4, Ambient Air Quality Data. The number of days exceeding the respective ambient air quality standards is shown in Table 5.4-5, Frequency of Air Quality Standard Violations. Air quality within the project region is in compliance with both CAAQS and NAAQS for NO_2, CO, and SO_2.

Table 5.4-4
Ambient Air Quality Data (ppm unless otherwise indicated)

Pollutant	Averaging Time	2008	2009	2010	2011	2012	Most Stringent Ambient Air Quality Standard	Monitoring Station 1
O_3	8 hour	0.084	0.075	0.083	0.057	0.079	0.070	Chula Vista
	1 hour	0.107	0.098	0.107	0.083	0.085	0.09	
PM_{10}	Annual	26.7 µg/m³	26.2 µg/m³	24.6 µg/m³	21.9	21.5	20 µg/m³	Chula Vista
	24 hour	54.0 µg/m³	58.0 µg/m³	45.0 µg/m³	46.0 µg/m³	38.0 µg/m³	50 µg/m³	
$PM_{2.5}$	Annual[3]	12.3 µg/m³	11.4 µg/m³	10.8 µg/m³	10.6 µg/m³	—	12 µg/m³	Chula Vista
	24 hour	32.9 µg/m³	43.7 µg/m³	22.7 µg/m³	27.9 µg/m³	34.3 µg/m³	35 µg/m³	
NO_2	Annual	0.015	0.013	0.012	0.012	0.011	0.030	Chula Vista
	1 hour	0.072	0.065	0.050	0.057	0.057	0.18 [2]	
CO	8 hour	1.87	1.43	1.56	1.46	1.85	9.0	Chula Vista
	1 hour [4]	3	2	2	1.7	2.2	20	
SO_2	Annual	0.002	0.002	0.001	NA	NA	0.030	Chula Vista
	24 hour	0.004	0.003	0.002	NA	NA	0.04	

Sources: CARB 2013d; EPA 2013b.
Data represent maximum values
Notes:
1 Chula Vista Monitoring Station located at 80 E. J Street, Chula Vista, California.
2 A new 1-hour NAAQS for NO_2 became effective in April 2010. Data reflect compliance with the 1-hour CAAQS.
3 Annual data for 2010 and 2011 $PM_{2.5}$ taken from El Cajon Monitoring Station.
4 Data were taken from EPA 2013b.
NA = data not available

Table 5.4-5
Frequency of Air Quality Standard Violations

Monitoring Site	Year	Number of Days Exceeding Standard					
		State 1-Hour Ozone	*State 8-Hour Ozone*	*National 8-Hour Ozone*	*State 24-Hour PM_{10} **	*National 24-Hour PM_{10}**	*National 24-Hour $PM_{2.5}$**
Chula Vista	2008	1	4	3	6.1 (1)	0	0
	2009	1	3	0	12.2 (2)	0	3.1 (1)
	2010	1	3	2	0	0	—
	2011	0	0	0	0	0	—
	2012	0	1	1	0	0	0

Source: CARB 2013d.
* Measurements of PM_{10} and $PM_{2.5}$ are usually collected every 6 days and 3 days, respectively. "Number of days exceeding the standards" is a mathematical estimate of the number of days concentrations would have been greater than the level of the standard had each day been monitored. The numbers in parentheses are the measured number of samples that exceeded the standard.

5.4.2 Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), are utilized here to determine the significance of an air quality impact. Impacts to air quality would be significant if the proposed project would:

A. Conflict with or obstruct implementation of the applicable air quality plan or General Plan policies.

B. Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

C. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

D. Expose sensitive receptors to substantial pollutant concentrations.

E. Create objectionable odors affecting a substantial number of people.

Criteria Pollutants

The City of Chula Vista evaluates project emissions based on the quantitative emission thresholds established by the South Coast Air Quality Management District (SCAQMD) in its *CEQA Air Quality Handbook*, which were updated in 2011 (SCAQMD 2011). The SCAQMD sets forth quantitative emission significance thresholds below which a project would not have a significant impact on ambient air quality. It should be noted that the use of these significance thresholds is conservative, as the SCAQMD's significance thresholds were originally based on the South Coast Air Basin's extreme ozone nonattainment status for the 1-hour NAAQS, whereas the SDAB was designated as an attainment area for that NAAQS.

Project-related air quality impacts estimated in this environmental analysis pursuant to Significance Threshold (B), above, would be considered significant if any of the applicable significance thresholds presented in Table 5.4-6, City of Chula Vista Air Quality Significance Thresholds, are exceeded. For these pollutants, if emissions exceed the thresholds shown in Table 5.4-6, the project also could have the potential to result in a cumulatively considerable net increase in these pollutants and thus could have a significant impact on the ambient air quality pursuant to Significance Threshold (C), above.

Table 5.4-6
City Of Chula Vista Air Quality Significance Thresholds

Pollutant	Construction	Operation
Criteria Pollutants Mass Daily Thresholds		
VOC	75 lbs/day	55 lbs/day
NO_x	100 lbs/day	55 lbs/day
CO	550 lbs/day	550 lbs/day
SO_x	150 lbs/day	150 lbs/day
PM_{10}	150 lbs/day	150 lbs/day
$PM_{2.5}$	55 lbs/day	55 lbs/day

Source: SCAQMD CEQA Handbook (SCAQMD 2011).
VOC – volatile organic compounds
NO_x – oxides of nitrogen
CO – carbon monoxide
SO_x – sulfur oxides
PM_{10} – particulate matter less than or equal to 10 microns
$PM_{2.5}$ – particulate matter less than or equal to 2.5 microns

5.4.3 Impacts

A. Conflict with or obstruct implementation of the applicable air quality plan or General Plan policies.

The air quality plans relevant to this discussion are the SIP and RAQS.[3] The SIP includes a demonstration that current strategies and tactics will maintain acceptable air quality in the SDAB based on the NAAQS, while the RAQS includes strategies for the SDAB to meet the CAAQS. Consistency with the SIP and RAQS is assessed via two lines of inquiry: (1) whether the proposed project exceeds the growth assumptions contained in the SIP and RAQS; and, (2) if the growth assumptions are exceeded, whether the proposed project (a) increases the frequency or severity of existing air quality violations, contributes to new violations, or delays the timely attainment of air quality standards or interim reductions, as specified in the RAQS, or (b) results in failure to maintain attainment under the SIP.

As to the first line of inquiry: The SIP and RAQS rely on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in San Diego County and the cities in the county, to project future emissions and determine the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source emission projections and SANDAG growth projections are based on population, vehicle trends, and land use plans developed by San Diego County and the cities in the county as part of the development of their general plans. If a project proposes development that is greater than

[3] For the purpose of this discussion, the relevant federal air quality plan is the ozone maintenance plan (SDAPCD 2012a). The RAQS is the applicable plan for purposes of state air quality planning. Both plans reflect growth projections in the SDAB.

anticipated in the local plan and SANDAG's growth projections, the project might conflict with the SIP and RAQS and may contribute to a potentially significant cumulative impact on air quality.

Through previous planning efforts, the project area was allocated a total of 1,570 residential units, including 928 units in Village Eight East and 642 units in Village Ten. Village Three North and the Portion of Village Four were not allocated any residential units. The proposed project includes a total of 6,897 residential units. As such, the proposed project would result in an additional 5,327 residential units above the planned/allocated 1,570 residential units. This increase in land use intensity and associated increase in vehicle trips has not been anticipated in applicable air quality plans; therefore, the proposed project would be inconsistent at a regional level with the underlying growth forecasts in the SIP and RAQS.[4]

As to the second line of inquiry: As shown in Tables 5.4-8 and 5.4-9, project-related emissions of VOCs (construction and operation), NO_x (construction and operation), CO (operation), PM_{10} (construction and operation), and $PM_{2.5}$ (construction and operation) would be significant, and thereby may lead to air quality violations. The specific number of future daily exceedances of the CAAQS or NAAQS, however, attributable to emissions from any singular project are difficult, if not impossible, to predict at this time because of the many variables influencing air pollutant concentrations (e.g., background concentrations, meteorology and weather patterns, effectiveness of regulatory programs, and availability of predictive computer models).

Because the proposed project exceeds the growth projections in the SIP and RAQS and would exceed the significance thresholds for certain criteria air pollutants during construction and operation, the proposed project may conflict with or obstruct implementation of applicable air quality plans; as such, impacts would be **significant and unavoidable**.

Despite the significance of the proposed project in this regard, for informational purposes, the proposed project would be consistent with all applicable transportation and area source control measures proposed in the RAQS to reduce emissions in the region, as shown in Table 5.4-7, due to its inclusion of pedestrian and bicycle facilities, smart growth principles, transit improvements, and traffic calming techniques.

[4] SANDAG is currently in the process of updating the 2050 Regional Growth Forecast, which will merge the planning efforts behind the development of the Regional Comprehensive Plan and the Regional Transportation Plan, to be known as San Diego Forward. San Diego Forward and associated growth forecasts are scheduled to be adopted in July 2015. Although the proposed project would conflict with currently adopted growth forecasts as developed by SANDAG, growth forecasts associated with San Diego Forward are expected to accommodate population growth and trip generation resulting from the proposed project.

Table 5.4-7
Project Consistency with RAQS Control Measures

RAQS Control Measure	Project Consistency
Transit Improvements	The proposed project would include the following transit improvements: • Otay Ranch GDP provides for the expansion of the regional transit-way system into Otay Ranch. A transit stop/station is planned within the mixed use village core area of Village Three North. An additional transit stop/station is located at the intersection of Main Street and Heritage Road. • Within Village Eight East, an east–west bus rapid transit (BRT) commuter service line is planned to be located along Main Street. A potential local bus stop is conceptually planned within and/or adjacent to Village Eight East. • A north–south BRT route is planned through the Eastern Urban Center, connecting to Village Nine adjacent to Village Ten.
Park-and-Ride Facilities	The proposed project does not specifically include park-and-ride facilities, and park-and-ride facilities are not included in the SPA plan; however, the proposed project would locate transit stops throughout the project area as described in *Transit Improvements* above. Bicycle and pedestrian facilities would be designed to improve non-motorized access to these transit stops to reduce automobile dependence and increase transit ridership in the area.
Bicycle Facilities	The circulation plan for the proposed project encourages the use of bicycles through the provision of the Village Pathway, an off-street paved path, and bike lanes. Bicycle facilities, bike lanes, and bike paths would be provided throughout the proposed project area and would be designed to improve non-motorized access to designated bus transit stops.
Smart Growth Development	The proposed project includes village development supported by mixed-use centers, transit service, pedestrian and bicycle facilities, and planned open spaces, all of which promote smart growth development. Higher-density residential development would be located toward the village cores, and lower-density development would occur at the periphery to support smart growth practices.

Table 5.4-7 (Continued)
Project Consistency with RAQS Control Measures

RAQS Control Measure	Project Consistency
Pedestrian Facilities	The circulation plan encourages pedestrian activity. Design of all village streets includes sidewalks and landscaped parkways to promote pedestrian circulation. The preferred design for all village streets provides for minimum five-foot wide sidewalks separated from the roadway by landscaped parkways. In the village core commercial areas, wider sidewalks are provided to allow for window shopping and pedestrian amenities such as seating and outdoor dining. The Modified Residential Promenade Street includes a wider sidewalk on one side flanked by a double row of street trees and special pedestrian lighting. This Promenade Trail links the residential neighborhoods to the village activity core and pedestrian network.
Traffic Calming Practices	The proposed project would include traffic calming features, such as curb extensions, raised and narrowed intersections, and landscaped pop-outs may also be located in the internal circulation network at appropriate locations. The SPA Plan for each village includes discussion about traffic calming features and the tentative maps show selected locations.
Support and Bus Rapid Transit	See *Transit Improvements* above.

The City's General Plan includes the objective to "improve local air quality by minimizing the production and emission of air pollutants and toxic air contaminants and limit the exposure of people to such pollutants." (General Plan Objective-E 6.) The General Plan also includes a policy to "not site sensitive receptors within 1,000 feet of major toxic air emitters." (General Plan, Policy E 6.4 as ~~will be~~ corrected).

The proposed project has been designed to limit the exposure of people to air pollutant and toxic air contaminant emissions. To demonstrate consistency with the referenced General Plan objective and policy, the proposed project analyzed air quality impacts in the Air Quality and Global Climate Change Technical Report (EIR, Appendix D, Part I). It also evaluated potential air pollutant and toxic air contaminant emissions in Village Three North and Village Eight East due to their proximity to the Otay Landfill and SR-125, respectively. Additionally, the proposed project includes Energy Conservation Plans and AQIPs. As previously discussed, the proposed project is consistent with all applicable transportation and area source control measures proposed in the RAQS.

In terms of the proposed project's consistency with General Plan Policy E 6.4, the proposed Village Three North residential land uses are considered "sensitive receptors," and the existing Otay Landfill to the north of Village Three is considered a "toxic emitter" by the City. However,

the proposed project's residential units are approximately 700 feet from the waste containing portion of the landfill (i.e. – the portion of the landfill eligible to accept waste). While that distance is about 300 feet less than called for in General Plan Policy E 6.4, the project's HRA (EIR, Appendix D) analyzed the landfill gas (LFG)-derived odors from air pollutant and toxic air contaminant emissions emitted from the Otay Landfill, and determined that the toxicity of such emissions are below the threshold for each respective receptor within the development; therefore, such emissions are not considered significant under CEQA.

In addition, in response to the above General Plan objective and policy, the EIR's alternatives section identified and evaluated a "Nuisance Easement Alternative." This alternative, if adopted, would remove residential land uses within 1,000 feet from the active portion of the existing Otay Landfill. The alternative also presents the City Council, as the final decision-making body, with an alternative evaluated at the project-level in the event it determines that further consistency between the project and its General Plan (Objective-E 6) is preferred or more desirable.

Based on the above HRA determinations, the EIR's alternatives analysis (i.e., Nuisance Easement Alternative), and the Otay Landfill requirements to control and minimize such emissions (e.g., routing LFG to flares to destroy such emissions), all of which is documented in the project's Nuisance Study (EIR, Appendix D), the proposed project is considered consistent with General Plan Objective-E 6.

Additionally, the project would not conflict with or obstruct implementation of any other General Plan policies or Otay Ranch GDP policies as shown in Appendix B, with the potential exception of General Plan Policy E 6.4 (as ~~will be~~ corrected). As discussed in Section 5.1 of this EIR, an inconsistency may occur if any residential units in Village Three North shall be located within 1,000 feet from the then active solid waste disposal areas of the Otay Landfill at the time of approval of building permits for those units within Village Three North. A potentially significant land use impact was identified in Section 5.1 and MM LU-4 has been provided to reduce potential impacts to a less than significant level.

The proposed project includes village development supported by mixed-use centers, transit service, pedestrian and bicycle facilities, and planned open spaces, all of which promote reduced vehicle use and air emission sources. A detailed analysis of the proposed project's consistency with the General Plan and Otay Ranch GDP is provided in Appendix B.

As indicated in Appendix B, the land plans were designed to create village cores to accommodate transit stops by locating adjacent to high density housing and/or mixed use retail/commercial. Future transit stops could be located adjacent to or within the village cores in Village Three North and a Portion of Village Four, Village Eight East and Village Ten.

The proposed project also includes (1) Energy Conservation Plans, consistent with the requirement of the Otay Ranch GDP, and (2) an AQIP, consistent with the City's Growth Management Program.

Therefore, the proposed project would result in a **less than significant impact** as it relates to consistency with the General Plan and the Otay Ranch GDP with implementation of MM LU-4.

B. Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Construction Emissions

Construction of the proposed project would result in a temporary, short-term addition of pollutants to the local airshed caused by soil disturbance, fugitive dust emissions, and combustion pollutants from on-site construction equipment, as well as from off-site trucks hauling construction materials. Emission resulting from construction of the proposed project would be temporary because construction activities would occur intermittently over the construction phase of the project, and construction activities and associated emissions would cease following project built-out. Construction emissions can vary substantially from day to day depending on the level of activity, the specific type of operation and, for dust, prevailing weather conditions. Therefore, such emission levels can only be approximately estimated with a corresponding uncertainty in precise ambient air quality impacts. For the purposes of modeling, a worst-case maximum daily emission scenario for proposed project construction activities is analyzed. Fugitive dust (PM_{10} and $PM_{2.5}$) emissions would primarily result from grading and site preparation activities. NO_x and CO emissions would primarily result from the use of construction equipment and motor vehicles.

Emissions from the construction phase of the project were estimated through the use of emission factors from the URBEMIS 2007, Version 9.2.4, land use and air emissions model (Jones and Stokes 2007). Construction of the proposed project is anticipated to begin with Village Three North and a Portion of Village Four in March 2014. Project construction would end with buildout of Village Ten, which is anticipated to occur in July 2029[5]. A detailed description of construction subphases (mass grading, fine grading, trenching, paving, building construction, and

[5] The original construction schedule beginning in March 2014 is analyzed for the Proposed Project; however, construction would start at a later date. The construction scenario and schedule analyzed as part of the Proposed Project analysis is considered conservative because over time, emissions for both the construction and operational scenario would decrease due to more stringent air quality standards implemented over time, vehicle fleet turnover to more efficient engines, fuel mix, etc. As the duration of construction would not change (i.e., construction would occur over a 16-year period regardless of start date), the scenario analyzed as part of this analysis is considered conservative for the purposes of quantitatively analyzing air quality impacts.

architectural coatings), as well as other assumptions made for the purposes of modeling, is included in Appendix D, Part I.

Total construction is expected to take approximately 16 years. For the analysis, it was generally assumed that heavy construction equipment would be operating at the site for approximately 8 hours per day, 5 days per week (22 days per month), during project construction. During grading activities, a maximum of 15 acres per day would be graded. URBEMIS model assumptions for construction equipment were used in calculating construction emissions as equipment and machinery mix would be typical of residential development. The equipment mix is meant to represent a reasonably conservative estimate of construction activity. Additional project-specific assumptions regarding vehicle trips, construction schedule, soil import/export, and architectural coatings are included in Appendix D, Part I.

The proposed project is subject to SDAPCD Rule 55 – Fugitive Dust Control. This requires that the project take steps to restrict visible emissions of fugitive dust beyond the property line. Compliance with Rule 55 would reduce fugitive dust (PM_{10} and $PM_{2.5}$) that may be generated during grading and construction activities. To account for dust control measures in the calculations, it was assumed that the active sites would be watered at least two times daily, resulting in an approximately 55% reduction of particulate matter.

The proposed project is also subject to SDAPCD Rule 67.0 – Architectural Coatings. This rule requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.

Table 5.4-8, Estimated Maximum Daily Construction Emissions (Unmitigated and Mitigated), shows the estimated maximum daily construction emissions associated with the construction phase of the proposed project. As shown in Table 5.4-8, unmitigated daily construction emissions for CO and SO_x, would not exceed the City's significance thresholds. However, the VOC, NO_x, PM_{10} and $PM_{2.5}$ emissions associated with project construction without mitigation would exceed the City of Chula Vista's emission threshold.

Mitigation Measures AQ-1 and AQ-2 are provided in Section 5.4.5 to reduce the NO_x, PM_{10} and $PM_{2.5}$ emissions to the extent feasible. Table 5.4-8 also shows construction emissions following implementation of identified mitigation measures.

Table 5.4-8
Estimated Maximum Daily Construction Emissions (Unmitigated and Mitigated) (pounds/day)[1]

	VOC[2]	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Proposed Project Emissions (not compliant with SDAPCD Rules 55 and 67)						
2014	14.99	94.29	108.02	0.10	603.75	128.74
2015	64.44	86.18	107.19	0.11	305.47	67.40
2016	103.46	155.79	202.89	0.20	908.02	195.04
2017	101.83	141.79	194.88	0.20	608.89	132.94
2018	91.99	80.71	145.21	0.19	305.44	67.14
2019	37.55	58.04	89.20	0.10	303.62	65.62
2020	36.83	52.86	86.18	0.10	303.34	65.46
2021	36.46	51.57	76.23	0.10	303.31	65.44
2022	36.46	51.57	76.23	0.10	303.31	65.44
2023	62.99	94.48	130.40	0.16	905.29	192.55
2024	58.65	62.29	104.74	0.16	304.29	66.17
2025	28.75	51.33	68.63	0.07	303.12	65.33
2026	28.59	50.83	64.86	0.07	303.11	65.33
2027	28.59	50.83	64.86	0.07	303.11	65.33
2028	28.59	50.83	64.86	0.07	303.11	65.33
2029	21.88	12.18	25.06	0.06	0.97	0.72
Proposed Project Emissions (compliant with SDAPCD Rules 55 and 67)						
2014	14.99	94.29	108.02	0.10	273.75	59.82
2015	47.65	86.18	107.19	0.11	140.47	32.94
2016	77.50	155.79	202.89	0.20	413.02	91.66
2017	75.87	141.79	194.88	0.20	278.89	64.02
2018	66.03	80.71	145.21	0.19	140.44	32.69
2019	28.38	58.04	89.20	0.10	138.62	31.26
2020	27.66	52.86	86.18	0.10	138.34	31.01
2021	27.29	51.57	76.23	0.10	138.31	30.98
2022	27.29	51.57	76.23	0.10	138.31	30.98
2023	47.22	94.48	130.40	0.16	410.29	89.17
2024	42.88	62.29	104.74	0.16	139.29	31.71
2025	22.15	51.33	68.63	0.07	138.12	30.88
2026	21.99	50.83	64.86	0.07	138.11	30.87
2027	21.99	50.83	64.86	0.07	138.11	30.87
2028	21.99	50.83	64.86	0.07	138.11	30.87
2029	15.28	12.18	25.06	0.06	0.97	0.72
Maximum Daily Emissions (Unmitigated)	*103.46*	*155.79*	*202.89*	*0.20*	*908.02*	*195.04*
Maximum Daily Emissions (Mitigated)	*77.50*	*155.79*	*202.89*	*0.20*	*413.02*	*91.66*

Table 5.4-8 (Continued)
Estimated Maximum Daily Construction Emissions (Unmitigated and Mitigated)
(pounds/day)[1]

	VOC[2]	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
City of Chula Vista Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Threshold Exceeded?	Yes	Yes	No	No	Yes	Yes

Source: URBEMIS 2007 Version 9.2.4. See Appendix D, Part I for complete results.
Note: Construction emissions shown include emissions from construction of all Villages analyzed under the proposed project, including Village Three and a Portion of Village Four, Village Eight East, and Village Ten.

1 Construction emissions that would be generated under the Village Eight East Alternative Development Scenario would be essentially the same to those shown in Table 5.4-8. Although the construction footprint under the Alternative Development Scenario would be slightly greater than that of the proposed Village Eight East, construction emissions would be essentially the same on a daily basis, as construction equipment fleet, daily equipment and construction crew operations, and daily construction trips to and from the site would be the same as those analyzed under the proposed project. A pounds/per day daily threshold is the only threshold numerically considered for criteria pollutants; therefore, the quantitative analysis under both the proposed project and alternative scenario would be essentially the same.

2 "Unmitigated" PM_{10} and $PM_{2.5}$ emissions as shown in Table 5.4-8 do not reflect compliance with SDAPCD Rule 55, which restricts visible fugitive dust emissions beyond the property line. Similarly, "Unmitigated" VOC emissions as shown do not reflect compliance with SDAPCD Rule 67 which restricts the VOC content in architectural coatings. "Mitigated" emissions as shown, account for compliance with these rules.

There is no feasible mitigation that would reduce construction-related VOC emissions to a level that is less than significant. This impact, therefore, is considered **significant and unavoidable**.

Mitigation Measure AQ-1 would reduce construction-related NO_x emissions; however, even with incorporation of this mitigation measure, NO_x emissions are anticipated to be above the threshold. (Note that the mitigation available for the reduction of NO_x emissions (as described in mitigation measure AQ-1) is not quantifiable; therefore, emission reductions for NO_x are not shown in Table 5.4-8.) There are no other feasible mitigation measures that would reduce the identified significant impacts to less than significant. This impact, therefore, is considered **significant and unavoidable**.

Mitigation Measure AQ-2 would reduce construction-related PM_{10} and $PM_{2.5}$ emissions; however, even with incorporation of this mitigation measure, PM_{10} and $PM_{2.5}$ emissions are anticipated to be above the threshold. There are no other feasible mitigation measures that would reduce the identified significant impacts to less than significant. This impact, therefore, is considered **significant and unavoidable**.

Dust from construction activities would also have the potential to impact sensitive biological resources in the Multiple Species Conservation Program Preserve area. However, the Biological Technical Report prepared for the project (Dudek 2014, included as Appendix E to this EIR) includes mitigation for potential indirect impacts to biological resources, including dust from construction (see Mitigation Measure BIO-6).

Operational Emissions

Following the completion of construction activities, the proposed project would generate VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions from project land uses, as well as mobile and stationary sources including vehicular traffic from residents, space heating and cooling, water heating, and fireplace (hearth) use.

The proposed project would impact air quality through the vehicular traffic generated by project residents. According to the project's Traffic Impact Analysis (Chen Ryan Associates 2014, included as Appendix M to this EIR), total project-generated daily traffic is estimated to be 77,663 trips per day at full buildout (2030). The URBEMIS 2007 model was utilized to estimate daily emissions from proposed vehicular sources (refer to Appendix D, Part I).

In addition to estimating mobile source emissions, the URBEMIS 2007 model was also used to estimate emissions from the project area stationary sources, which include natural gas appliances, hearths, landscaping (which would not produce winter emissions), and consumer products. All residential units would be constructed with natural gas fireplaces and no wood-burning fire places would be constructed. Similar to construction-related architectural coating emission estimates, VOC emissions generated from architectural coatings were estimated based on the number of multifamily dwelling units and square footage of retail space for each development phase, the calculation method in URBEMIS 2007, and VOC content per SDAPCD Rule 67.0 to determine the VOC emission rate in pounds per day (see Appendix D, Part I, "Emissions of Architectural Coatings").

The estimation of proposed operational emissions is based upon typical residential, retail, and industrial uses, and the analysis is considered a reliable estimate of the project's likely emissions. Table 5.4-9, Estimated Daily Maximum Operational Emissions, presents the maximum daily emissions associated with the operation of the proposed project after all phases of construction have been completed. The values shown are the maximum summer and winter daily emissions results from URBEMIS 2007. Complete details of the emissions calculations are provided in Appendix D, Part I of this document.

Table 5.4-9
Estimated Daily Maximum Operational Emissions – 2030 (pounds/day)

Proposed Project Emissions	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Summer						
Motor Vehicles	248.06	242.40	2,753.76	8.32	1,349.61	261.83
Area Sources	396.82	87.52	168.02	0.01	0.52	0.52
Total	644.88	329.92	2,921.78	8.33	1,350.13	262.35

Table 5.4-9 (Continued)
Estimated Daily Maximum Operational Emissions – 2030 (pounds/day)

Proposed Project Emissions	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
City of Chula Vista Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**
Winter						
Motor Vehicles	266.89	291.97	2,576.56	6.92	1,349.61	261.83
Area Sources	377.07	131.50	56.44	0.29	3.84	3.80
Total	643.96	423.47	2,633	7.21	1,353.45	265.63
City of Chula Vista Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**Yes**	**Yes**	**Yes**	**No**	**Yes**	**Yes**

Source: URBEMIS 2007 Version 9.2.4 (Jones and Stokes 2007). See Appendix D, Part I for complete results.
"Summer" emissions are representative of the conditions that may occur during the ozone season (May 1 to October 31) and "Winter" emissions are representative of the conditions that may occur during the balance of the year (November 1 to April 30).

As shown, daily operational emissions for SO_x would not exceed the City's significance thresholds. However, the VOC, NO_x, CO, PM_{10}, and $PM_{2.5}$ emissions associated with operation of the project would exceed the City of Chula Vista's significance thresholds. Project design features identified in Appendix D, Part I, including general design standards, transit planning principles, and non-motorized transportation features, would help to reduce operational emissions; however, significant reductions in VOC, NO_x, CO, PM_{10}, and $PM_{2.5}$ emissions would be required to reduce emissions of these pollutants to less than significant and feasible mitigation measures are not available to achieve these reductions. Therefore, even with incorporation of these design features, criteria pollutant emissions for VOC, NO_x, CO, PM_{10}, and $PM_{2.5}$ are anticipated to be above the thresholds. This impact, therefore, is considered **significant and unavoidable**.

C. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

In analyzing cumulative impacts from the proposed project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the SDAB is designated as nonattainment for selected air pollutants under the CAAQS and NAAQS. If the proposed project does not exceed thresholds and is determined to have less than significant project-specific impacts, it may still contribute to a significant cumulative impact on air quality if the emissions from the project, in combination with the emissions from other proposed or

reasonably foreseeable future projects, are in excess of established thresholds. However, the project would only be considered to have a significant cumulative impact if the project's contribution accounts for a significant proportion of the cumulative total emissions (i.e., it represents a "cumulatively considerable contribution" to the cumulative air quality impact).

The SDAB is currently classified as a nonattainment area for the NAAQS and CAAQS for O_3, which is caused by contributions from O_3 precursors NO_x and VOCs. The SDAB is also classified as a nonattainment area for the CAAQS for PM_{10} and $PM_{2.5}$.

Construction of cumulative projects simultaneously with the proposed project would result in a temporary addition of pollutants to the local airshed caused by soil disturbance and hauling activities, fugitive dust emissions, and combustion pollutants from on-site construction equipment, as well as from off-site trucks hauling construction materials and worker vehicular trips. Fugitive dust (PM_{10} and $PM_{2.5}$) emissions would primarily result from site preparation activities. NO_x and CO emissions would primarily result from the use of construction equipment and motor vehicles, the latter of which would generally be dispersed over a large area where the vehicles are traveling. The closest cumulative projects to be constructed in the vicinity of the project site are Village Two located northeast of Village Three North and north of Village Four, the remaining segments of Village Four located immediately east of Village Three, Village Eight West located immediately west of Village Eight East, Village Nine located east of Village Eight East, and Planning Area-12. The construction of surrounding villages would employ similar construction practices, equipment fleets, and construction schedules as the proposed project; therefore, the potential exists for various construction phases of these projects to occur concurrently, resulting in cumulatively considerable air emissions.

As discussed previously, the emissions of VOC, NO_x, PM_{10} and $PM_{2.5}$ would exceed the applicable significance threshold levels during construction. Emissions of PM_{10}, $PM_{2.5}$, NO_x, and/or VOCs generated during project construction would be localized to the proposed project site. Additionally, the proposed project would be required to comply with SDAPCD Rule 55. However, PM_{10} emissions would exceed the threshold. The VOC and NO_x emissions from the proposed project would exceed the significance threshold and project design features included as part of the project would not substantially reduce those emissions from the proposed project. Accordingly, generation of these criteria pollutant emissions when combined with other cumulative projects, particularly those occurring simultaneously during various construction periods of the proposed project, would result in a temporary significant cumulative impact to air quality. As such, the project's contribution to cumulative construction emissions would be **significant and unavoidable**.

Regarding operational emissions, as stated under Threshold (A), the RAQS relies on SANDAG growth projections based on population, vehicle trends, and land use plans developed by the cities and by the county as part of the development of their general plans. If a project proposes

development that is greater than that anticipated in the local plan and SANDAG's growth projections, the project might conflict with the RAQS and may contribute to a potentially significant cumulative impact on air quality. Through previous planning efforts, the project area was allocated a total of 1,570 residential units, including 928 units in Village Eight East and 642 units in Village Ten. Village Three North and the Portion of Village Four were not allocated any residential units. The proposed project includes a total of 6,897 residential units. As such, the proposed project would result in an additional 5,327 residential units above the planned/allocated 1,570 residential units.

This increase in land use intensity and associated increase in vehicle trips has not been anticipated in local air quality plans; therefore, the proposed project would be inconsistent at a regional level with the underlying growth forecasts in the RAQS. Furthermore, as discussed under Threshold (B), the emissions VOCs and NO_x (precursors of O_3), as well as those of PM_{10} and $PM_{2.5}$, would exceed operational significance thresholds. The health effects attributed to criteria air pollutants emitted by any singular project, however, cannot be accurately predicted at this time because of the numerous variables that influence public health (e.g., background air pollutant concentrations, meteorology and weather patterns, diet, preexisting conditions, genetic predispositions, and personal habits such as smoking). Nonetheless, operation of the proposed project would result in a cumulatively considerable contribution to regional O_3, PM_{10}, and $PM_{2.5}$ concentrations. Impacts would be **significant and unavoidable**.

D. Expose sensitive receptors to substantial pollutant concentrations.

Construction Impacts

The greatest potential for TAC emissions during construction would be diesel particulate emissions from heavy equipment operations and heavy-duty trucks.

The project site is currently vacant. The nearest existing sensitive receptors are generally located north of the project site. Residences are currently being built within Village Two, located north of Village Three North. Additionally, Otay Ranch High School and Olympian High School are located northeast and north of the project site, respectively. Table 5.4-2 shows sensitive receptors and respective distances from Village Three, Village Four, Village Eight East and Village Ten, including sensitive receptors located near proposed off-site improvements.

Health effects from carcinogenic air toxics are usually described in terms of cancer risk. The SDAPCD recommends an incremental cancer risk threshold of 10 in 1 million. "Incremental Cancer Risk" is the likelihood that a person continuously exposed to concentrations of TACs resulting from a project over a 70-year lifetime will contract cancer based on the use of standard risk-assessment methodology.

The project would require use of (i) heavy-duty construction equipment, which is subject to a CARB Airborne Toxics Control Measure (ATCM) for in-use diesel construction equipment to reduce diesel particulate emissions, and (ii) diesel trucks, which are also subject to an ATCM. Total construction of the proposed project would last for approximately 16 years, after which time project-related TAC emissions would cease. A majority of the TAC emissions would occur during site grading activities from large grading equipment. These emissions would be distributed over the entire site and not concentrated in a particular area for extended periods. The grading phases for each village would last for 7 months. Thus, the proposed project would not result in a long-term (i.e., 70 years) source of TAC emissions. No residual TAC emissions and corresponding cancer risk are anticipated after construction. As such, the exposure of project-related TAC emission impacts to sensitive receptors (including nearby residential development) during construction would be **less than significant**.

Operational Impacts

Project Operation – On-Site Land Uses

CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB 2005) lists land uses that are considered major air toxic emitters. These land uses are generally industrial and processing land uses that require a permit from the SDAPCD to operate, though CARB also considers dry cleaning facilities and gas stations to be stationary sources of TAC emissions that should not be located near sensitive receptors.

Here, the proposed project contemplates that light industrial uses, and gas stations and/or dry cleaners could be located on the project site in order to accommodate the other residential and non-residential development. Provided that on-site development conforms to the siting standards of CARB's above-mentioned handbook and SDAPCD permitting standards, as required by Mitigation Measure AQ-3, impacts would be **less than significant with mitigation**.

Project Operation – Village Three and a Portion of Village Four

The Village Three and Portion of Village Four SPA Plan allows for a variety of uses. The development of Village Three and a Portion of Village Four would occur within an existing 1,000-foot nuisance easement area around the Otay Landfill currently designated for industrial uses. The Otay Ranch Planned Community District Regulations for the Industrial Park identify specific industrial uses permitted within the landfill buffer zone. Uses include manufacturing, storage and wholesale trades, services such as cleaning and dying plants and distribution, commercial and retail uses, high-technology uses, bio-technical uses, bio-medical uses, public and semi-public uses, and various industrial temporary uses.

A health risk assessment (HRA) was prepared by SCS Engineers (SCS 2014a) to evaluate the potential health impacts resulting from the emission of TACs by the Otay Landfill (see Appendix D, Part II). The results of the HRA show that chronic and acute noncancer health effects would be less than significant for all off-site locations based on the hazard index threshold of one (1.0) for adverse noncancer health effects. Specifically, the calculated chronic hazard index is 0.128, and the calculated acute hazard index is 0.003.

As for cancer risk, the calculated cancer risk for residential receptors does not exceed the threshold of 1.0 in 1 million for areas proposed for residential development. An area beyond the Landfill's property boundary exceeds the referenced threshold, but that location is proposed for industrial use; thus, the residential receptor threshold is not applicable. Further, carcinogenic risks to commercial and industrial receptors do not exceed the conservative 1.0 in 1 million risk threshold at any location outside the Landfill's property boundary.

As such, the proposed development area does not exceed the health effect thresholds. Impacts would be **less than significant.**

Project Operation – Village Eight East

The Village Eight East portion of the project site is located on the west side of State Route 125 (SR-125). Due to the project site's location within 500 feet of the SR-125 freeway, an HRA was conducted in accordance with Policy EE 6.10 of the City of Chula Vista General Plan, which states:

> The siting of new sensitive receivers within 500 feet of highways resulting from development or redevelopment projects shall require the preparation of a health risk assessment as part of the CEQA review of the project. Attendant health risks identified in the Health Risk Assessment (HRA) shall be feasibly mitigated to the maximum extent practicable, in accordance with CEQA, in order to help ensure that applicable federal and state standards are not exceeded.

The Village Eight East HRA was prepared by Scientific Resources Associated (SRA 2014), and focuses on traffic-generated TAC emissions from SR-125, specifically diesel particulate matter, which is designated by CARB as a carcinogen (see Appendix D, Part III).

Average annual daily trips on the freeway segment adjacent to the project site were estimated from the project's Traffic Impact Analysis (Chen Ryan Associates 2014, included as Appendix M to this EIR), which projected approximately 94,000 ADT on the segment of SR-125 between Main Street and Lone Star Road in 2030. This represents the highest segment volume within the project study area and, therefore, presents a worse-case scenario. Of the 94,000 trips, it was estimated that the percentage of truck traffic would be 4.4%, for a total of 4,136 truck trips based on Caltrans data for SR-125 between Interstate 8 and SR-94.

Mobile source emission factors were modeled using CARB's motor vehicle emission inventory model, EMFAC2011. Mobile source emission estimates were derived by averaging SR-125 vehicle emissions along the project freeway segment over a 9-year and 70-year period.

The American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) air dispersion model was used to calculate ground-level concentrations at the project site associated with diesel particulate matter emissions from SR-125. Surface and upper air profile meteorological data from the Otay Mesa monitoring station were used in the AERMOD model.

Cancer Risk

The highest individual excess cancer risk for the point of maximum impact, calculated on the basis of residential risk, is 11.5 in 1 million, based on a 70-year residential exposure scenario where the residents are assumed to be present 24 hours per day, 7 days per week for 70 years. This maximum risk level is predicted at a receptor located in the eastern portion Village Eight East, adjacent to SR-125 in the open space area located next to the proposed pedestrian bridge across SR-125. There are no residences proposed to be located at this point.

The highest individual excess cancer risk for the maximally exposed individual resident is 10.3 in 1 million, based on a 70-year residential exposure scenario. This point occurs in the mixed-use area MU-1d adjacent to the SR-125 freeway. For the 30-year residential exposure scenario, the maximum individual excess cancer risk at the MEIR is 9.9 in 1 million. For the 9-year residential exposure scenario, the highest individual excess cancer risk at the maximally exposed individual resident is 3.0 in 1 million for adults and 4.0 in 1 million for children. Because it is unlikely that an individual would reside in this location for the entire 70-year exposure period, the 30- and 9-year exposure scenarios present a more realistic estimate of the potential excess cancer risk to an individual residing at this point. Therefore, impacts specific to TACs, including diesel particulate matter generated from traffic volumes on SR-125, would be below the 10 in 1 million significance threshold, are **less than significant**, and no mitigation is required (SRA 2014).

Also of note, according to a Federal Highway Administration analysis, on a nationwide basis, even if vehicle miles traveled increase by 64%, reductions of 57% to 87% in mobile source air toxics are projected, with the 87% referring to diesel particulate matter. Based on these estimates of substantial future reductions, which are not accounted for in the HRA, the HRA results of 10.3 in 1 million cancer risk for residents near the SR-125 segment adjacent to the project are likely overstated and would contribute to a low amount of risk (approximately 2.4% of the estimated existing risk) to the overall risk predicted by CARB in San Diego County (SRA 2014).

Noncancer Risk

The chronic noncancer hazard index associated with diesel particulate matter predicted at the project site was 0.008. This is below the level of 1.0 at which adverse noncancer health effects would be anticipated. Impacts would be **less than significant**.

CO Hotspots

Mobile source impacts occur on two scales of motion. Regionally, project-related travel will add to regional trip generation and increase the vehicle-miles traveled within the SDAB. Locally, project traffic will be added to the City of Chula Vista roadway system in the vicinity of the proposed project. If such traffic occurs during periods of poor atmospheric ventilation, is composed of a large number of vehicles "cold-started" and operating at pollution-inefficient speeds, and is operating on roadways already crowded with non-project traffic, there is a potential for the formation of microscale CO "hotspots" in the area immediately around points of congested traffic. Because of continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SDAB is steadily decreasing.

Carbon monoxide transport is extremely limited and disperses rapidly with distance from the source. However, under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthy levels, affecting sensitive receptors. Typically, high CO concentrations are associated with roadways or intersections operating at an unacceptable level of service. Projects contributing to adverse traffic impacts may result in the formation of CO hotspots.

To verify whether the proposed project would cause or contribute to a violation of the CO standard, a screening evaluation of the potential for CO hotspots was conducted. The project's Traffic Impact Analysis (Chen Ryan 2014, included as Appendix M to this EIR) evaluated whether there would be a decrease in the level of service (LOS) (e.g., congestion) at the intersections potentially affected by the project. The potential for CO hotspots was evaluated based on the results of the Traffic Impact Analysis. The California Department of Transportation (Caltrans) Transportation Project-Level Carbon Monoxide Protocol (CO Protocol) (Caltrans 1997) was followed. In accordance with the CO Protocol, CO hotspots are typically evaluated when (1) the LOS of an intersection or roadway decreases to a LOS E or worse; (2) signalization and/or channelization is added to an intersection; and (3) sensitive receptors such as residences, schools, and hospitals are located in the vicinity of the affected intersection or roadway segment.

To analyze a maximum, or worst-case, CO hotspot scenario, a site-specific CO hotspot analysis was performed for the intersection of the 805 Southbound Ramps and Olympic Parkway during the Year 2020 Plus Project scenario. The potential impact of the proposed project on local CO

levels was assessed at this intersection with the Caltrans CL4 interface based on the California LINE Source Dispersion Model (CALINE4), which allows microscale CO concentrations to be estimated along each roadway corridor or near intersections.

Six receptor locations were modeled to determine CO ambient concentrations. A receptor was assumed on the sidewalk at each corner of the modeled intersection, for a total of four receptors adjacent to the intersection, to represent the possibility of extended outdoor exposure. CO concentrations were modeled at these locations to assess the maximum potential CO exposure that could occur in 2020. Additional nearby sensitive receptors (i.e., residences located northwest and southwest of the intersection) were modeled. A receptor height of 1.8 meters (5.9 feet) was used in accordance with EPA recommendations for all receptor locations.

The maximum 1-hour CO background concentration of 2.5 ppm, as measured in 2008, was assumed in the CALINE4 model (see Table 5.4-4, which presented 2008 concentration rounded up to 3.0 ppm). The model provides predicted concentrations in ppm at each of the receptor locations. To estimate an 8-hour average CO concentration, a persistence factor of 0.7, as is recommended for urban locations, was applied to the output values.

The results of the model are shown in Table 5.4-10, CALINE4 Predicted CO Concentrations. Model input and output data are contained in Appendix D, Part I.

Table 5.4-10
CALINE4 Predicted CO Concentrations

Intersection	Maximum Modeled Impact Year 2020 with Project	
	1 hour (ppm)	*8 hour (ppm)1*
I-805 SB Ramps / Olympic Parkway	3.2	2.2

Source: CALINE4 (Caltrans 1998). See Appendix D, Part I.
1 8-hour concentrations were obtained by multiplying the 1-hour concentration by a factor of 0.7, as referenced in Caltrans 1997, Table B.15.

As shown in Table 5.4-10, maximum CO concentrations predicted for the 1-hour averaging period would be 3.2 ppm, which is below the state 1-hour CO standard of 20 ppm (see Table 5.4-1 for state standards). Maximum predicted 8-hour CO concentrations of 2.2 ppm would be below the state CO standard of 9.0 ppm. As neither the state 1-hour standard nor the 8-hour standard would be equaled or exceeded at any of the intersections studied, potential CO hotspot impacts would be **less than significant.**

E. Create objectionable odors affecting a substantial number of people.

Land uses and industrial operations that are associated with objectionable odors typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding.

The proposed project involves residential and mixed use communities that would not generate objectionable odors. However, the proposed project, specifically Village Three North and a Portion of Village Four, would be constructed in the vicinity of the Otay Landfill. This facility could occasionally produce odors that can be detected outside of the landfill boundary. The 2005 GPU/GDPA included a mitigation measure (5.11-2), which indicated that no residential use shall be permitted within 1,000 feet of the Otay Landfill unless a project specific analysis is completed demonstrating that odor effects fall below odor thresholds for common compounds. Therefore, a site-specific odor nuisance study for the Otay Landfill was conducted by SCS Engineers (SCS Engineers 2014b) and is included as part of Appendix D of this EIR[6].

The Village Three North development would include approximately 1,597 additional residential units, and approximately 5,174 residents. Of these 5,174 residents, 259 would be located in the 200% to 400% zone (compared to zero residents currently) and 3,904 would be located in the 100% to 200% zone (compared to 39 residents currently). These two zones represent exposure to the maximum current odor exposure for an existing resident or greater exposure. 1,011 residents would be located in the 50% to 100% zone (compared to 7,128 residents currently), meaning they would be exposed to expected odor impacts equal to or below the current maximally exposed resident. As stated in the Village Three North Nuisance Study (Appendix D), the proposed development will not result in a change in odor emissions from the Landfill; thus, no additional or new impacts are expected.

As determined in the case *Ballona Wetlands Trust v. City of Los Angeles* (2011) 201 Cal.App.4th 455, "An EIR must identify and analyze the significant environmental impacts that may result from the project (PRC Section § 21100(a)(b); Guidelines,§§ 15126.2(a), 15143). It must include facts and analysis sufficient to allow the decision makers and the public to understand the environmental consequences of the project. The analysis need not be exhaustive, but it must be reasonably complete and reflect a good faith effort at full disclosure (*Ballona Wetlands Trust v. City of Los Angeles* (2011) 201 Cal.App.4th 455, 473-474)." The purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project. Therefore, the Village Three North Nuisance Study is included herein for disclosure purposes only. Additional information regarding the Village Three North HRA and Nuisance Study can be found in Section 5.1 Land Use.

In addition to odors generated as a result of landfill operations, odors would be generated from vehicles and/or equipment exhaust emissions during construction of the proposed project. Odors produced during construction would be attributable to concentrations of unburned hydrocarbons

[6] The site-specific nuisance study conducted by SCS Engineers is provided for informational and disclosure purposes only, as a study of this nature is beyond the scope of CEQA. Under CEQA, only the project's impacts on the environment are required to be analyzed; not the impacts of the environment on the project. However, for disclosure purposes, an odor analysis pertaining to the Otay Landfill is provided.

from tailpipes of construction equipment and architectural coatings. Such odors are temporary and generally occur at magnitudes that would not affect substantial numbers of people. Additionally, SDAPCD Rule 67.0 limits the amount of VOCs from coatings and solvents. Therefore, impacts associated with odors during construction would be considered **less than significant**.

Lastly, the proposed project entails residential, commercial, office, parks, schools and light industrial uses and would not result in the creation of a land use that is commonly associated with odors; however, commercial uses such as restaurants would be permitted under the zoning identified in the Planned Community District Regulations and could generate objectionable odors related to facility exhaust. Such odors would be subject to SDAPCD Rule 51 – Nuisance, which would ensure odors generated on site would not adversely affect sensitive receptors including residential units. Moreover, sensitive receptors would be located away from such uses to reduce odor-related land use conflicts. Therefore, project operations would result in a **less-than-significant** odor impact.

5.4.4 Level of Significance Prior to Mitigation

As discussed in Section 5.1 of this EIR, and under Threshold (A) an inconsistency may occur if any residential units in Village Three North shall be located within 1,000 feet from the then active solid waste disposal areas of the Otay Landfill at the time of approval of building permits for those units within Village Three North. A potentially significant land use impact was identified in Section 5.1 and MM LU-4 has been provided to reduce potential impacts to a **less than significant** level.

As described under Threshold (A), the proposed project would result in an increase in land use intensity and associated increase in vehicle trips that have not been anticipated in the applicable air quality plans. Therefore, the proposed project would be not be consistent with the SIP and RAQS, and impacts would be **significant and unavoidable**.

As described under Threshold (B), daily construction emissions for CO and SO_x, would not exceed the City's significance thresholds. However, the VOC, NO_x, PM_{10} and $PM_{2.5}$ emissions associated with project construction would exceed the City of Chula Vista's emission threshold and impacts would be **significant and unavoidable**.

As described under Threshold (B), daily operational emissions for SO_x would not exceed the City's significance thresholds. However, the VOC, NO_x, CO, PM_{10}, and $PM_{2.5}$ emissions associated with operation of the project would exceed the City of Chula Vista's significance thresholds. Project design features identified in Appendix D, Part I, including general design standards, transit planning principles, and non-motorized transportation features, would help to reduce operational emissions; however, significant reductions in VOC, NO_x, CO, PM_{10}, and $PM_{2.5}$ emissions would be required to reduce emissions of these pollutants to less than significant

and feasible mitigation measures are not available to achieve these reductions. Therefore, even with incorporation of these design features, criteria pollutant emissions for VOC, NO_x, CO, PM_{10}, and $PM_{2.5}$ are anticipated to be above the thresholds. This impact, therefore, is considered **significant and unavoidable**.

As described under Threshold (C), the project's contribution to cumulative construction and operational emissions of VOC, NO_x, PM_{10} and $PM_{2.5}$ and would be **significant and unavoidable**.

As described under Threshold (D), during construction, the grading phases for each village would last for 7 months. Thus, the proposed project would not result in a long-term (i.e., 70 years) source of TAC emissions. No residual TAC emissions and corresponding cancer risk are anticipated after construction. For Village Eight East, the excess cancer risk based on the 70-year exposure period is less than 10 in 1 million; therefore, impacts specific to TACs, including diesel particulate matter generated from traffic volumes on SR-125, would be **less than significant**.

As to the development of on-site land uses, impacts arising from the emission of TACs would be **potentially significant** if the site is developed to accommodate any light industrial uses, gas stations, or dry cleaning facilities in close proximity to sensitive receptors.

For Village Three North and a Portion of Village Four, the area where the risk exceeds 1 in 1 million is proposed for industrial development, so the residential risk calculation is not applicable. Cancer risk for commercial and industrial receptors does not exceed 1 in 1 million at any off-site location. Therefore, the proposed industrial land use and all proposed residential and industrial land uses are outside the area of their respective 1 in 1 million cancer risk. As such, the proposed development area does not exceed the threshold for risk. Impacts would be **less than significant.**

Regarding CO hotspots, maximum CO concentrations predicted for the 1-hour averaging period would be 3.2 ppm, which is below the state 1-hour CO standard of 20 ppm (see Table 5.4-1 for state standards). Maximum predicted 8-hour CO concentrations of 2.2 ppm would be below the state CO standard of 9.0 ppm. As neither the state 1-hour standard nor the 8-hour standard would be equaled or exceeded at any of the intersections studied, potential CO hotspot impacts would be **less than significant.**

As described under Threshold (E), impacts associated with odors during construction and operations, would be less than significant. Additionally, odor impacts from the Otay Landfill on the proposed project would be **less than significant**.

5.4.5 Mitigation Measures

MM AQ-1 Prior to approval of any grading permits, the Project Applicant or its designee shall place the following on all grading plans to the satisfaction of the Development Services Director and City Engineer, and these requirements shall be implemented during grading of each phase of the project to minimize NO_x emissions:

- Minimize simultaneous operation of multiple construction equipment units. During construction, vehicles in loading and unloading queues shall turn their engines off when not in use to reduce vehicle emissions;
- All construction equipment shall be outfitted with best available control technology (BACT) devices certified by CARB. A copy of each unit's BACT documentation shall be provided at the time of mobilization of each applicable unit of equipment;
- All construction equipment shall be properly tuned and maintained in accordance with manufacturer's specifications;
- All diesel-fueled, on-road construction vehicles shall meet the emission standards applicable to the most current year to the greatest extent possible. To achieve this standard, new vehicles shall be used, or older vehicles shall use post-combustion controls that reduce pollutant emissions to the greatest extent feasible;
- The effectiveness of the latest diesel emission controls is highly dependent on the sulfur content of the fuel. Therefore, diesel fuel used by on- and off-road construction equipment shall be low sulfur (less than 15 ppm) or other alternative, low-polluting diesel fuel formulation;
- The use of electrical construction equipment shall be employed where feasible;
- The use of catalytic reduction for gasoline-powered equipment shall be employed where feasible;
- The use of injection timing retard for diesel-powered equipment shall be employed where feasible.

MM AQ-2 Prior to approval of any grading permits, the Project Applicant or its designee shall place the following Standard Construction Best Management Practices (BMPs) on all grading plans to the satisfaction of the Development Services Director and City Engineer and shall implement these BMPs during project construction to minimize PM_{10} and $PM_{2.5}$ emissions, including:

- Water, or utilize another acceptable SDAPCD dust control agent on, the grading areas at least twice daily to minimize fugitive dust;
- Stabilize grading areas as quickly as possible to minimize fugitive dust;
- Apply chemical stabilizer or pave the last 100 feet of internal travel path within the construction site prior to public road entry;
- Install wheel washers adjacent to a paved apron prior to vehicle entry on public roads;
- Remove any visible track-out into traveled public streets within 30 minutes of occurrence;
- Wet wash the construction access point at the end of the workday if any vehicle travel on unpaved surfaces has occurred;
- Provide sufficient perimeter erosion control to prevent washout of silty material onto public roads;
- Cover haul trucks or maintain at least 12 inches of freeboard to reduce blow-off during hauling;
- Suspend all soil disturbance and travel on unpaved surfaces if winds exceed 25 miles per hour (mph);
- Cover/water on-site stockpiles of excavated material;
- Enforce a 20 mph speed limit on unpaved surfaces;
- Pave permanent roads as quickly as possible to minimize dust;
- During construction, site grading activities within 500 feet of a school in operation shall be discontinued or all exposed surfaces shall be discontinued or all exposed surfaces shall be watered to minimize dust transport off site to the maximum degree feasible, when the wind velocity is greater than 15mph in the direction of the school;
- During blasting, utilize control measures to minimize fugitive dust. Control measures may include, but are not limited to, blast enclosures, vacuum blasters, drapes, water curtains or wet blasting.

MM AQ-3 Prior to approval of the building permit for any uses that are regulated for TACs by the SDAPCD, the Project Applicant shall demonstrate to the satisfaction of the Development Services Director (or their designee) that the use complies with established criteria (such as those established by SDAPCD Rule 1200 and CARB). Also, gas stations shall not be located within 50 feet of a sensitive receptor, in accordance with CARB's siting recommendations.

5.4.6 Level of Significance After Mitigation

The potentially significant impacts arising from the possible siting of residential units in Village Three North within 1,000 feet from the then active solid waste disposal areas of the Otay Landfill at the time of approval of building permits for those units within Village Three would be reduced to **less than significant** with implementation of MM LU-4.

As the proposed project exceeds the growth projections in the SIP and RAQS, and the construction and operational emission limits for the pollutants specified above, the project would result in a **significant and unavoidable** impact due to its conflict with applicable air quality plans.

Implementation of Mitigation Measure AQ-1 and AQ-2 would reduce construction-related NO_x, PM_{10} and $PM_{2.5}$ emissions generated by the proposed project. There is no feasible mitigation, however, to reduce construction-related VOC emissions. Even with incorporation of these mitigation measures, VOC, NO_x, PM_{10} and $PM_{2.5}$ emissions are anticipated to be above the threshold. Therefore, project construction would result in a **significant and unavoidable** impact at the project and cumulative levels, even with incorporation of all feasible mitigation measures.

Additionally, daily operational emissions for VOCs, NO_x, CO, PM_{10}, and $PM_{2.5}$ would remain **significant and unavoidable** at the project and cumulative levels due to the absence of feasible mitigation measures.

The potentially significant impacts arising from the siting of on-site land uses that emit TACs would be reduced to **less than significant** with implementation of MM AQ-3.

Odor impacts would remain **less than significant**. No mitigation is required.

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5.5 NOISE

This section of the EIR addresses the potential noise impacts resulting from the proposed project. The discussion found in this section is based on the *Noise Assessment Technical Report for the Otay Ranch University Villages Project* that was prepared by Dudek in May 2014. The complete report is contained in Appendix L.

This section tiers from the 1993 Otay Ranch GDP Program EIR, because that Program EIR analyzed noise impacts for the entire Otay Ranch including the project site. The Otay Ranch GDP Program EIR concluded that potentially significant impacts regarding noise levels would occur with implementation of the Otay Ranch GDP. This EIR determined that development would exceed the 60dBA CNEL standard for residential uses as well as exceed the standard for Least Bell's viero and California Gnatcatcher habitat. Mitigation measures were incorporated, which would substantially lessen the identified noise impacts, but not to below a level of significance.

This section also tiers from the 2005 GPU/GDPA Program EIR, because noise impacts for the entire Otay Ranch area, including the project site, were analyzed at a programmatic level. The 2005 GPU/GDPA Program EIR found that potentially significant noise impacts could occur as a result of planned development. This EIR determined that impacts would be potentially significant because noise impacts require a project level analysis, which is infeasible at the General Plan stage. Therefore impacts were found to be significant and unavoidable.

5.5.1 Existing Conditions

5.5.1.1 Regulatory Framework

Federal

Federal Aviation Administration Standards

Enforced by the FAA, Code of Federal Regulations (CFR) Title 14, Part 150 prescribes the procedures, standards and methodology governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs, including the process for evaluating and approving or disapproving those programs. Title 14 also identifies those land uses which are normally compatible with various levels of exposure to noise by individuals. The FAA has determined that interior sound levels up to 45 dBA Ldn (or CNEL) are acceptable within residential buildings. The FAA also considers residential land uses to be compatible with exterior noise levels at or less than 65 dBA Ldn (or CNEL).

Federal Highway Administration Standards

CFR Title 23, Part 772 sets procedures for the abatement of highway traffic noise and construction noise. Title 23 is implemented by the Department of Transportation Federal Highway Administration (FHWA). The purpose of this regulation is to provide procedures for noise studies and noise abatement measures to help protect the public health and welfare, to supply noise abatement criteria, and to establish requirements for information to be given to local officials for use in the planning and design of highways. All highway projects which are developed in conformance with this regulation shall be deemed to be in conformance with the Department of Transportation FHWA Noise Standards. Title 23 establishes 67 dBA as the worst-case hourly average noise level standard for impacts of federal highway projects to land uses including residences, recreational uses, hotels, hospitals, and libraries (23 CFR Chapter 1, Part 772, Section 772.19).

Federal Transit Administration Standards and Federal Railroad Administration Standards

Although the Federal Transit Administration (FTA) standards are intended for federally funded mass transit projects, the impact assessment procedures and criteria included in the FTA Transit Noise and Vibration Impact Assessment Manual (May 2006) are routinely used for projects proposed by local jurisdictions. The FTA and Federal Railroad Administration (FRA) have published guidelines for assessing the impacts of groundborne vibration associated with rail projects, which have been applied by other jurisdictions to other types of projects. The FTA measure of the threshold of architectural damage for conventional sensitive structures from groundborne vibration is 0.2 inches/second PPV.

State

California Noise Control Act of 1973

Sections 46000 through 46080 of the California Health and Safety Code, known as the California Noise Control Act of 1973, finds that excessive noise is a serious hazard to the public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. It also finds that there is a continuous and increasing bombardment of noise in the urban, suburban, and rural areas. The California Noise Control Act declares that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the state to provide an environment for all Californians free from noise that jeopardizes their health or welfare.

California Code of Regulations, Title 24

Title 24 of the California Code of Regulations (CCR) sets standards which new development in California must meet. According to Title 24, interior noise levels are not to exceed 45 dB CNEL for new multi-family residences, hotels and other attached residences. Title 24 does not apply to single-family homes. However, as a matter of practice the City of Chula Vista applies a 45 dB CNEL standard to single-family homes.

Title 24 also requires that an interior acoustical study demonstrating that interior noise levels due to exterior sources will be less than or equal to 45 CNEL be performed for affected multi-family structures that are exposed to exterior noise levels in excess of 60 CNEL.

2013 California Green Building Standards Code

Section 5.507 of the California Green Building Standards Code (CalGreen) establishes requirements for acoustical control in non-residential buildings. The standards require that wall and roof-ceiling assemblies making up the building envelope shall have a sound transmission class value of at least 50, and exterior windows shall have a minimum sound transmission class of 40 for building locations within the 65 dB CNEL noise contour of an airport or of a freeway or expressway, railroad, industrial source or fixed-guideway source as determined by the Noise Element of the General Plan. Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have a sound transmission class of at least 40.

Local

City of Chula Vista General Plan

The City of Chula Vista General Plan Noise Element establishes noise criteria for various land uses (City of Chula Vista 2005). The maximum allowable exterior noise level at outdoor usable areas for new residential development is an annual CNEL of 65 dB. The City's exterior land use-noise compatibility guidelines for various land uses are depicted in Table 5.5-1. For residential development, the City typically applies the noise criteria at the backyards of single-family homes and at private patios, exterior balconies, and exterior common use areas of multi-family developments.

In addition, Objective E22 (Protect the community from the effects of transportation noise) of the City's General Plan Noise Element, Policy E22.5 requires projects to construct appropriate mitigation measures to attenuate existing and projected traffic noise levels, in accordance with applicable standards, including the exterior land use/noise compatibility guidelines listed in Table 5.5-1.

Table 5.5-1
City of Chula Vista Exterior Land Use/Noise Compatibility Guidelines

Land Use	Annual CNEL in Decibels					
	50	*55*	*60*	*65*	*70*	*75*
Residential						
Schools, Libraries, Daycare Facilities, Convalescent Homes, Outdoor Use Areas, and other Similar Uses Considered Noise Sensitive						
Neighborhood Parks, Playgrounds						
Community Parks, Athletic Fields						
Offices and Professional						
Places of Worship (excluding outdoor use areas)						
Golf Courses						
Retail and Wholesale Commercial, Restaurants, Movie Theaters						
Industrial, Manufacturing						

For off-site project-related traffic, the City considers a noise impact to be significant if implementation of the proposed project results in noise levels that exceed the exterior noise limits established in the City's General Plan, including 65 dBA CNEL for residences, schools, and recreational uses; 70 dBA CNEL for offices, community parks and athletic fields; and 75 dBA CNEL for commercial uses. For transportation-related noise, a significant impact would occur if the proposed project results in a 3 dBA CNEL or greater increase in traffic noise on a roadway segment and the resultant noise level would exceed the General Plan exterior noise limits.

City of Chula Vista Municipal Code

The City of Chula Vista Noise Ordinance (Municipal Code Section 19.68) contains regulations restricting land use-related noise-generating activities and operations to avoid noise nuisance in the community. Section 19.68.030 establishes the maximum allowable exterior noise limits, based upon the classification of the receiving land use. These standards typically apply to stationary sources such as noise from mechanical equipment or event noise, as opposed to traffic noise. For instance, a school, commercial enterprise, or industrial operation must not generate noise which exceeds a certain specified noise level at any property boundary where an adjacent residential use exists. These standards are shown in Table 5.5-2. The noise standards in Table 5.5-2 do not apply to construction activities.

Title 17 of the Chula Vista Municipal Code (Environmental Quality), Chapter 24, addresses managing noisy and disorderly conduct. Section 17.24.040.C.8 specifically addresses restrictions against generation of construction noise in overnight periods.

Table 5.5-2
Exterior Noise Limits

Noise Level (dBA)[1,2,3]		
Receiving Land Use Category	*10:00 p.m. to 7:00 a.m. (Weekdays)* *10:00 p.m. to 8:00 a.m. (Weekends)*	*7:00 a.m. to 10:00 p.m. (Weekdays)* *8:00 a.m. to 10:00 p.m. (Weekends)*
All residential (except multiple dwelling)	45	55
Multiple dwelling residential	50	60
Commercial	60	65
Light industry – I-R and I-L zones	70	70
Heavy Industry – I zone	80	80

(1) Environmental Noise – Leq in any hour, Nuisance Noise – not be exceeded any time
(2) According to Section 19.68.030(B)(2), if the alleged offensive noise contains a steady, audible sound such as a whine, screech or hum, or contains a repetitive impulsive noise such as hammering or riveting, the standard limits shall be reduced by 5 dB.
(3) If the measured ambient level, measured when the alleged noise violation source is not operating, exceeds the standard noise limit, the allowable noise exposure standard shall be the ambient noise level.

Source: City of Chula Vista 2013

The use of any tools, power machinery, or equipment, or the conduct of construction and building work in residential zones so as to cause noises disturbing to the peace, comfort, and quiet enjoyment of property of any person residing or working in the vicinity, shall be prohibited between the hours of 10:00 p.m.–7:00 a.m., Monday–Friday, and between the hours of 10:00 p.m.–8:00 a.m., Saturday and Sunday, except when the work is necessary for emergency repairs required for the health and safety of any member of the community (City of Chula Vista 2010).

City of Chula Vista Multiple Species Conservation Program Subarea Plan

The Multiple Species Conservation Program (MSCP) Subarea Plan regulates impacts to sensitive biological resources, including noise impacts. In accordance with Section 7.5.2 of the Chula Vista MSCP Subarea Plan, Adjacency Management Issues, uses in or adjacent to the Preserve should be designed to minimize noise impacts. Berms or walls should be constructed adjacent to commercial areas and any other use that may introduce noises that could impact or interfere with wildlife utilization of the Preserve. Excessively noisy areas or activities adjacent to breeding areas, including temporary grading activities, must incorporate noise reduction measures or be curtailed during the breeding season of sensitive bird species, consistent with Table 3-5 of the MSCP Subregional Plan, included as Appendix A to the MSCP Subarea Plan. In general, the construction noise threshold for sensitive biological resources is an hourly average noise level of 60 dBA and no clearing, grubbing, and/or grading is permitted within the MSCP Preserve during the breeding season of the sensitive species present.

5.5.1.2 Existing Setting

The project area is generally located along the southern boundary of the City of Chula Vista, east of Interstate 805, north of State Route 905, and roughly bisected by State Route 125 (SR-125). Main Street and Olympic Parkway have existing interchanges on Interstate 805; Olympic Parkway also currently extends to, and has an interchange with SR-125. Regional access to the project is generally provided by the roadway facilities described immediately above. Major local roadways providing direct access to each village area are described below. Traffic along these major local roadways would be the dominant source of noise contributing to the future community noise level within each village.

5.5.1.3 Ambient Noise

Typical Conditions (Undeveloped Land)

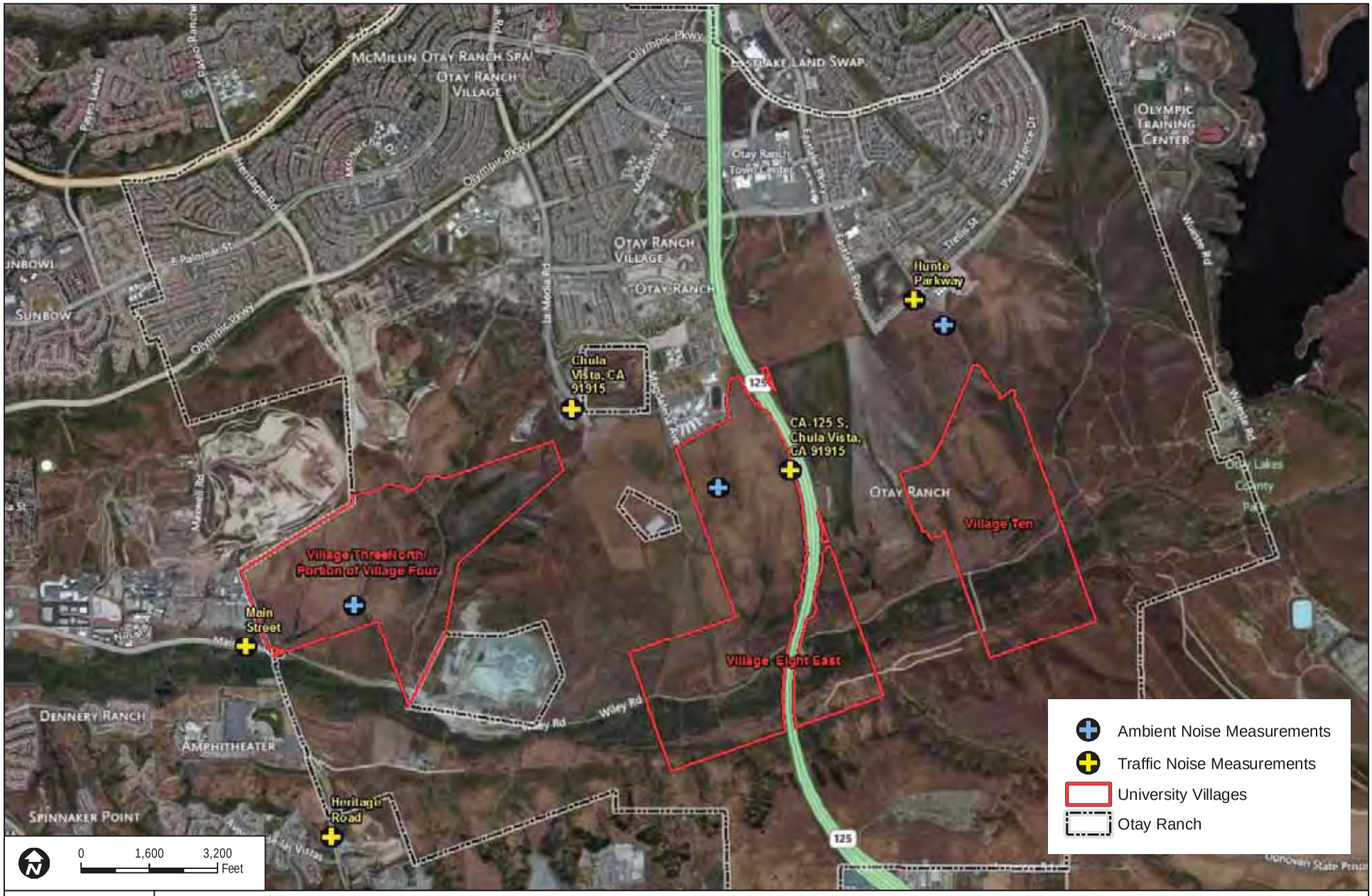
Currently, much of the project site exists as undeveloped open space. Areas within each proposed village that are not located immediately adjacent to an existing roadway would be expected to have ambient noise levels less than typical levels found in the urban environment. In order to characterize the baseline conditions representative of the undeveloped areas within the proposed project site, one short-term noise measurement was conducted each for Village Three North, Eight East, and Ten (refer to Figure 5.5-1).

Table 5.5-3 provides the results of the noise measurements. If the noise measurement is assumed to represent the hourly average noise level (which is valid for environmental noise sources that are steady or nearly steady), an approximate CNEL value can be calculated by adding 7 dB to the hourly average noise level. Table 5.5-3 provides a calculated existing CNEL level, based on the approach of employing the measured L_{EQ} value as the hourly average noise level.

Table 5.5-3
Existing Community Noise Equivalent Level (CNEL) Distant from Existing Roadways

Description	Date/Time	L_{EQ}	CNEL
Village Three	11/02/12 9:00–9:20 a.m.	39 dB	46 dB
Village Eight	11/02/12 10:00–10:20 a.m.	43 dB	50 dB
Village Ten	11/02/12 11:30–11:50 a.m.	45 dB	52 dB

Source: Dudek 2014



AERIAL SOURCE: BING MAPPING SERVICE

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Transportation Noise Sources

Existing Roadway Related Noise and Modeled Calibration Results

No paved roadways currently exist on the project site. A few dirt roads are located on the project site which experience occasional vehicle trips. Vehicular traffic along roadways in the vicinity contributes to the overall noise environment on the project site. Noise measurements were conducted along existing segments of the major roadways described for each Village. In instances where these major roadways do not exist today, noise measurements were conducted along existing roadway segments with the same characteristics (section width, number of lanes, pavement type, shoulder geometry) as the target future roadway. Please refer to Figure 5.5-1, which depicts the location of noise measurements conducted for the assessment of roadway traffic noise. Table 5.5-4 provides descriptions of the measurement locations with respect to each roadway centerline, observed traffic speeds, measured noise levels (as equivalent noise level, or L_{eq}), concurrent traffic volumes for each vehicle type (i.e., number of vehicles passing the measurement point during the measurement), and the corresponding CadnaA noise modeling results. As shown in Table 5.5-4, the difference between the measured and modeled traffic noise levels was found to be 1 to 2 decibels for each of the measurements, which is regarded in the state of the practice as an acceptable degree of tolerance between measured and modeled (California Department of Transportation 2009). As such, the model is properly calibrated and no corrections or K-factors[1] were applied to any of the subsequent traffic modeling results.

Table 5.5-4
Existing Measured Average Sound Levels Associated with Local Roadways Near Proposed Project and Calibration Results

Site	Description	Date/Time	Measured L_{eq}[1]	Cars	MT[2]	HT[3]	MC[4]	MPH[5]	Corresponding Model Calibration Result (L_{eq}[1])	Difference (Measured – Modeled)
1	Approximately 40 feet to center line of Main Street	04/10/12 12:00–12:20 p.m.	71 dB	191	15	15	4	55	70 dB	1 dB
2	Approximately 40 feet to center line of Heritage Road	04/10/12 12:45–1:05 p.m.	68 dB	142	3	5	5	45	67 dB	1 dB

[1] Peak hour volumes are estimated from the application of design hour ("K"), directional ("D") and truck ("T") factors to Average Daily Traffic (ADT) volumes (Chen Ryan 2014).

Table 5.5-4 (Continued)
Existing Measured Average Sound Levels Associated with Local Roadways Near Proposed Project and Calibration Results

Site	Description	Date/Time	Measured L_{eq}[1]	Cars	MT[2]	HT[3]	MC[4]	MPH[5]	Corresponding Model Calibration Result (L_{eq}[1])	Difference (Measured – Modeled)
3	Approximately 300 feet to center line of SR-125	04/10/12 1:45–2:05 p.m.	55 dB	125	5	3	0	55	53 dB	2 dB
4	Approximately 40 feet to center line of Hunte Parkway	04/10/12 2:45–3:05 p.m.	60 dB	145	1	0	0	35	59 dB	1 dB
5	Approximately 40 feet to center line of La Media Road	04/10/12 3:30–3:50 p.m.	56 dB	64	8	0	0	35	55 dB	1 dB

Source: Dudek 2014
Notes:
1 Equivalent Continuous Sound Level (Time-Average Sound Level)
2 Medium Trucks (Includes busses)
3 Heavy Trucks
4 Motorcycle
5 Miles Per Hour (observed speed of traffic during noise measurement)
General Notes: Temperature 70 degrees, clear sky, calm wind.

Traffic Noise Modeling – Existing Conditions

The existing CNEL along major roadways anticipated to affect future noise levels within each of the Villages was determined based on the ambient noise measurement, using the current daily traffic volume pertinent to each road as identified in the Chen-Ryan traffic impact assessment (normalized for automobile [95%], medium and heavy truck [2% each], and motorcycle [1%] percentages) in the traffic noise prediction model. The existing CNEL modeled for each major roadway is presented in Table 5.5-5.

It should be noted the dB values in Table 5.5-5 calculated for existing roadway traffic volumes are on a CNEL basis, and are therefore different than the dB L_{eq} values measured for each roadway in the field (and presented in Table 5.5-4). The measured L_{eq} values simply reflect actual traffic occurring during the short term measurement, which is used to calibrate the traffic noise model. The noise level (CNEL) from existing traffic volume is then calculated using the calibrated traffic noise model.

Table 5.5-5
Existing Community Noise Equivalent Level (CNEL) Associated with Local Roadways

Description of Roadway/ Noise Modeling Location	Traffic Analysis Period	Traffic Volume (Average Daily Trips)	Observed /Modeled Average Traffic Speed	CNEL
Approximately 40 feet to center line of Main Street	Existing Conditions	10,860	55 MPH	70 dB
Approximately 40 feet to center line of Heritage Road	Existing Conditions	8,800	50 MPH	69 dB
Approximately 300 feet to center line of SR-125	Existing Conditions	4,800	55 MPH	54 dB
Approximately 40 feet to center line of Hunte Parkway	Existing Conditions	1,880	40 MPH	60 dB
Approximately 40 feet to center line of La Media Road	Existing Conditions	2,080	35 MPH	57 dB

Source: Dudek 2014

Olympian High School is a source of operational noise. Noise sources associated with Olympian High School includes bells, other signaling devices, and activities on the campus such as crowd noise and loudspeakers at football games. Bells and other signaling devices are classified as stationary non-emergency signaling devices by the city, and schools are prohibited in the noise ordinance from sounding these devices for more than 120 seconds continually in an hourly period or intermittent sounding over a five-minute period in any hour. Typically, the main sources of noise from high schools to the surrounding area are organized sports activities at the football stadium that involve amplified speakers and crowd noise. The football field is located on the east side of the campus, approximately 150 feet west of the Village Eight East northern boundary.

The Noise Technical Report for Otay Ranch Villages 2 and 3, Planning Area 1B, and a Portion of Village Four (RECON 2005) determined that the worst-case noise level for a championship game event at the Otay Ranch High School would be 71 dBA at a distance of 50 feet from stadium loudspeakers located approximately 30 feet above the playing field. This type of event is considered a worst-case scenario for game noise because championship games generally include a full stadium of spectators. Otay Ranch High School has a maximum stadium capacity of 5,500 people. The maximum capacity of the Olympian High School stadium is 3,071 people; therefore, this estimate is conservative for Olympian High School (SUHSD 2011). When the speakers were not in use, crowd noise was estimated to emit a noise level of approximately 65 dBA at 60 feet from the top of the stadium stands. Based on these estimates, football games currently generate a noise level of 43 dBA at the Village Eight East site when speakers are in use, and 39 dBA when crowd noise is the noise source, and thus do not exceed city noise standards. However, large events may occasionally be audible in the northeastern area of the SPA.

Village Eight West and Village Nine are planned for mixed-use and residential development in the Otay Ranch GDP. Future land uses planned for Village Four, to the south of the Portion of Village Four, include residential development. However, these areas have not yet been developed and do not generate operational noise. The Otay Valley Regional Park (OVRP) and the Otay River Valley form the southerly boundary of the project site and are proposed to remain undeveloped.

Otay Valley Quarry is a mining and resource extraction site which produces rock products for construction material. The quarry is located southwest of Village Four, adjacent to the project site. Intermittent noise from particularly loud operations, such as blasting, is occasionally audible on the project site. The Otay Valley Quarry Reclamation Plan Amendment was approved, and the accompanying EIR certified, in June 2011.

Noise Sensitive Land Uses

NSLUs are land uses that may be subject to stress and/or interference from excessive noise. The Chula Vista General Plan defines NSLUs as residences, schools, hospitals, libraries, parks, places of worship, and outdoor use areas, including outdoor dining spaces. Industrial and commercial land uses are generally not considered sensitive to noise. There are no NSLU currently located on the project site. The nearest NSLU to the project site is Olympian High School, located approximately 150 feet north of the northern edge of Village Eight East. Other NSLU in the project vicinity are the Wolf Canyon Elementary school and residences located north of the high school. The elementary school is located approximately 875 feet (0.2 mile) northeast of the project site, and the nearest residence is located approximately 1,500 feet (0.3 mile) northeast of the project site. Residences are also located 1,750 feet (0.3 mile) north of the project site. The Chula Vista MSCP Subarea Plan defines sensitive wildlife species as noise sensitive. MSCP Preserve area is located adjacent to the southern boundary of each Village.

Based upon the modeled CNEL values presented in Table 5.5-5, Main Street and Heritage Road currently generate noise levels in excess of 65 dB CNEL beyond the roadway rights-of-way (i.e., approximately 40 feet or 300 feet from the centerline, as applicable).

Aviation

The nearest airport to the project site is Brown Field, located approximately 1.5 miles to the southwest. This general aviation airport is located in and operated by the City of San Diego. It accommodates propeller and jet powered aircraft and serves as a port of entry for private aircraft entering the United States from Mexico. It is also used for military and law enforcement agencies and is classified as a “reliever airport” by the FAA. According to the ALUCP for Brown Field, the airport has an 8,000 foot long runway. The predominant runway alignments are east-west. The types of aircraft that use the airport vary from small single-engine pistons to large corporate

jets and military aircraft, including helicopters. There were 101,117 operations at Brown Field in 2011, and 91,025 operations in 2010. Due to distance and the orientation of the runway, the project area is not located within 60 dBA CNEL noise contour for the airport, or within the airport's area of influence.

Railroads

Chula Vista is served by the San Diego trolley system, which is operated by the San Diego Metropolitan Transit System. The San Diego Trolley Blue Line passes through the western part of Chula Vista, along the east side of I-5, with stations at E Street, H Street, and Palomar Street. Freight trains also utilize the same rail line during nighttime hours. Two primary rail haulers of freight, the Burlington Northern Santa Fe (BNSF) and the San Diego and Imperial Valley (SDIV) railroads, link the San Diego County coastal region (including Chula Vista) to the larger national railway system. The SDIV operates freight service on the SANDAG-owned railway in the southwestern part of San Diego County, including Chula Vista, where it is known as the San Diego and Arizona Eastern (SD&AE) Railway. The rail line is located in the coastal area of Chula Vista near I-5, approximately 6 miles west of the project site. Due to distance, railway noise is not audible at the project site.

Operational Noise Sources

The project site is currently undeveloped. The lands surrounding the project site are described above. The only developed area adjacent to the project site is Village Seven, to the north of the Village Eight East project site. Olympian High School and Main Street border the northern corner of Village Eight East. Land uses north of the high school include an elementary school and residences. Village Seven has been planned in accordance with the traditional village model consisting of predominantly low-medium village residential neighborhoods, a small mixed use village core, and limited multi-family uses adjacent to SR-125.

5.5.2 Thresholds of Significance

The following significance criteria, adapted from Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of a noise impact. Impacts to noise would be significant if the proposed project would:

A. Result in the exposure of persons to or generation of noise levels in excess of standards established in the Chula Vista General Plan or noise ordinance, or applicable standards of other agencies.

B. Result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

C. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

D. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

E. For a project located within an airport land use plan (ALUP) or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.

F. For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

G. Be inconsistent with the Chula Vista General Plan, Otay Ranch General Development Plan or other objectives and policies regarding noise thereby resulting in a significant physical impact.

5.5.3 Impacts

A. Expose persons to or generate noise levels in excess of standards established in the Chula Vista General Plan or noise ordinance, or applicable standards of other agencies.

On-Site Traffic Noise Exposure – Major Roadways

Major local roadways providing direct access to each village area would be the predominant source of noise contributing to the future community noise level within each village. Future traffic along these major roadways represents the principle source for potential noise exposure levels that exceed adopted criterion for noise sensitive land uses within the proposed project. Figure 5.5-2 shows the roadway segments analyzed within the proposed project as well as the regional roadway network.

AERIAL SOURCE: BING MAPPING SERVICE

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Acoustical calculations were made for buildout (2030) traffic volumes along roadway segments using the CadnaA noise prediction model (using FHWA's (1997) TNM version 2.5 emission levels). The modeling calculations take into account the posted vehicle speed, traffic volume, the estimated vehicle mix, and site topography. The traffic volumes are based upon data from the traffic study prepared for the project by Chen Ryan Associates (Chen Ryan 2014). The "Year 2030 Plus Project" scenario represents the worst-case condition for off-site roadway noise impacts.

Noise levels were modeled for a series of receiver locations throughout the project area to determine the future noise traffic noise levels at locations where NSLU have been proposed according to the TMs for Villages Three North, Eight East and Ten (October 2013). In areas where individual lots have not been planned yet, receptor locations were placed along the roadways. The approximate geometry and distance from the roadway centerline to the closest existing noise sensitive use located along each roadway segment of concern was determined from aerial photographs, and receiver numbers were assigned for each modeled sensitive receptor. Noise levels were modeled for ground level and upper story receptors at each location. See Figure 5.5-1 for ambient and traffic noise measurement locations, and Figure 5.5-2 for modeled roadway segments.

Village Three North

As shown on Figure 5.5-2, Main Street provides access from Interstate 805 to the immediate vicinity of Village Three North, and is aligned along the southern boundary of the development portion of the Village. Main Street under the Year 2030 Plus Project scenario would carry up to 49,200 ADTs adjacent to Village Three North. Modeled noise levels for representative noise-sensitive receptors are summarized in Table 5.5-6. There are residences at the southern boundary of the development area, which are adjacent to Main Street. The first row of homes aligned closest to Main Street could be exposed to noise levels ranging to 67 dB CNEL from future traffic along Main Street. This noise level associated with future Main Street traffic volumes would exceed the exterior noise criterion of 65 dB CNEL, and is considered a **potentially significant impact**. Mitigation for this potentially significant impact is provided which includes construction of a sound wall along the top of the slope on the side of the lots adjacent to Main Street (see Mitigation Measure NOI-1). Table 5.5-6 and Figure 5.5-3 depict the resulting noise levels and corresponding noise contours with placement of the recommended sound walls.

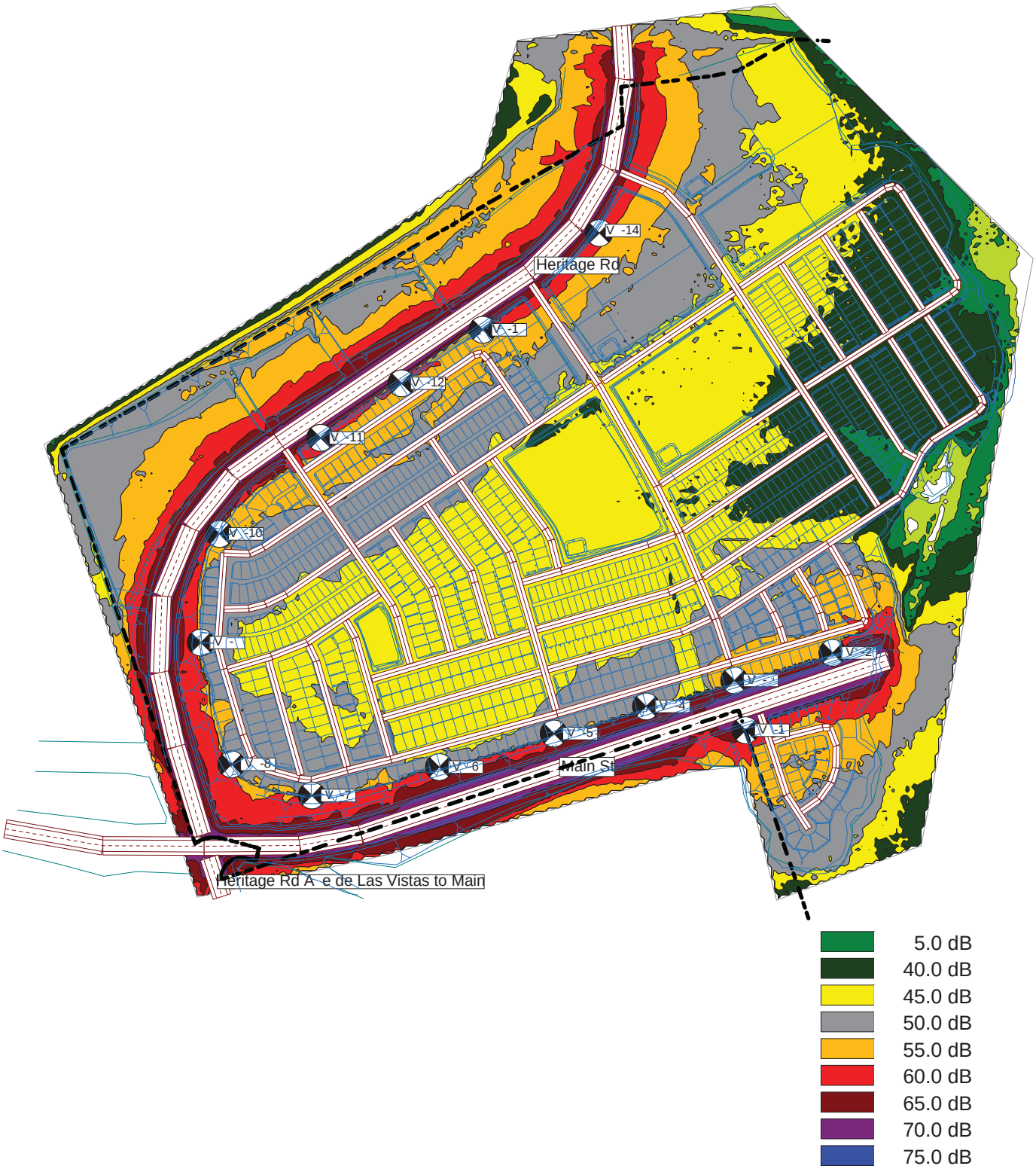
Heritage Road would extend northward from Main Street through Village Three North, at the western end of the Village. Heritage Road is a major arterial forecast to carry 45,600 ADT through Village Three North in 2030. As shown on Table 5.5-6, the first row of homes aligned closest to Heritage Road could be exposed to noise levels ranging to 67 dB CNEL from future traffic along Heritage Road. This noise level associated with future Heritage Road traffic volumes would exceed the exterior noise criterion of 65 dB CNEL, and is considered a

potentially significant impact. Mitigation for this potentially significant impact is provided which includes construction of a sound wall along the easterly or southerly frontage of Heritage Road (see Mitigation Measure NOI-1). Table 5.5-6 and Figure 5.5-3 show the noise levels and corresponding noise contours with the recommended sound walls.

Table 5.5-6
Traffic Noise Modeling Results - Village Three North

Receiver #	Receiver Location	Year 2030 w Project (CNEL)	Greater than 65 dBA CNEL?	Year 2030 w Project w walls (6 foot height) (CNEL)	Greater than 65 dBA CNEL?
V3-1	Main Street	67	Yes	61	No
V3-1-2	Main Street	67	Yes	67	Yes
V3-2	Main Street	64	No	59	No
V3-2-2	Main Street	67	Yes	66	Yes
V3-3	Main Street	59	No	58	No
V3-3-2	Main Street	63	No	63	No
V3-4	Main Street	61	No	52	No
V3-4-2	Main Street	64	No	64	No
V3-5	Main Street	58	No	53	No
V3-5-2	Main Street	61	No	61	No
V3-6	Main Street	57	No	52	No
V3-6-2	Main Street	63	No	63	No
V3-7	Main Street	57	No	54	No
V3-7-2	Main Street	59	No	59	No
V3-8	Heritage Road	58	No	55	No
V3-8-2	Heritage Road	59	No	59	No
V3-9	Heritage Road	60	No	55	No
V3-9-2	Heritage Road	61	No	61	No
V3-10	Heritage Road	59	No	57	No
V3-10-2	Heritage Road	63	No	63	No
V3-11	Heritage Road	65	No	63	No
V3-11-2	Heritage Road	66	Yes	66	Yes
V3-12	Heritage Road	67	Yes	60	No
V3-12-2	Heritage Road	67	Yes	67	Yes
V3-13	Heritage Road	64	No	59	No
V3-13-2	Heritage Road	65	No	65	No
V3-14	Heritage Road	64	No	64	No
V3-14-2	Heritage Road	64	No	64	No

Note: Receiver numbers ending in "-2" (V3-8-2, etc.) represent second-story noise exposures; otherwise, reported noise levels represent ground-floor noise exposures.



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With respect to non-residential uses, receiver V3-14 represents a mixed-use land area; such an area could include retail commercial, outdoor dining/use areas or similar land uses. As shown in Table 5.5-6, the predicted noise level at this location would not exceed the City's 65 dB CNEL noise standard for outdoor dining/use areas, and would therefore be less than significant

Interior noise levels at residences adjacent to Main Street and Heritage Road would have the potential to exceed 45 dBA CNEL; therefore, a **potentially significant impact** related to interior noise levels would also occur.

With respect to the potential impacts to on-site noise sensitive land uses due to increased traffic noise levels attributable to the project, an analysis of these increased noise levels as measured against existing ambient noise levels is presented below (Existing Plus Project Conditions). However, the results of this type of traffic-related analysis are misleading when used in connection with the University Villages project, which is a long-term development project not anticipated to reach full buildout until approximately 2030. The results are misleading because the analysis incorrectly assumes that the project would be built out immediately and the corresponding full buildout traffic volumes added to the existing roadway volumes and infrastructure. As such, the analysis does not take into account future increases in cumulative traffic, nor changing land uses and infrastructure and, therefore, the analysis both understates and overstates impacts. For that reason, the analysis of the proposed project's impacts as measured against existing conditions presented below is provided for disclosure, information, and comparison purposes only; the identification of significant impacts and corresponding mitigation measures, if any, are based on the long-term Year 2030 analysis that follows thereafter.

In addition to the Year 2030 analysis described above, traffic noise modeling was also conducted for the Existing Plus Project scenario for Village Three North for informational purposes. The same modeled noise receivers and model configurations were used, with the Existing Plus Project volumes from the Traffic Impact Assessment. As shown in Table 5.5-7, modeled noise levels for the Existing Plus Project scenario would range up to 62 dBA CNEL, at homes adjacent to Heritage Road. This noise level would not exceed the City's exterior noise criterion of 65 dB CNEL, and is therefore considered a less than significant impact.

Interior noise levels at residences adjacent to Main Street and Heritage Road would have the potential to exceed 45 dBA CNEL; therefore, a potentially significant impact related to interior noise levels would occur under the Existing Plus Project scenario. Mitigation for this potentially significant impact is provided (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-2 and NOI-3).

Table 5.5-7
Traffic Noise Modeling Results - Village Three Existing Plus Project Conditions

Receiver #	Receiver Location	Exist w Project (CNEL)	Greater than 65 dBA CNEL?	Exist w Proj w walls (6 foot height) (CNEL)	Greater than 65 dBA CNEL?
V3-1	Main Street	61	No	55	No
V3-1-2	Main Street	61	No	61	No
V3-2	Main Street	58	No	53	No
V3-2-2	Main Street	61	No	60	No
V3-3	Main Street	53	No	52	No
V3-3-2	Main Street	57	No	57	No
V3-4	Main Street	55	No	46	No
V3-4-2	Main Street	58	No	57	No
V3-5	Main Street	52	No	47	No
V3-5-2	Main Street	55	No	55	No
V3-6	Main Street	51	No	46	No
V3-6-2	Main Street	56	No	56	No
V3-7	Main Street	51	No	49	No
V3-7-2	Main Street	51	No	51	No
V3-8	Heritage Road	52	No	49	No
V3-8-2	Heritage Road	54	No	54	No
V3-9	Heritage Road	55	No	49	No
V3-9-2	Heritage Road	55	No	55	No
V3-10	Heritage Road	54	No	52	No
V3-10-2	Heritage Road	56	No	56	No
V3-11	Heritage Road	60	No	58	No
V3-11-2	Heritage Road	61	No	61	No
V3-12	Heritage Road	62	No	55	No
V3-12-2	Heritage Road	62	No	62	No
V3-13	Heritage Road	59	No	54	No
V3-13-2	Heritage Road	60	No	60	No
V3-14	Heritage Road	59	No	59	No
V3-14-2	Heritage Road	59	No	59	No

Source: Dudek 2014

The results of an analysis of the project's impacts as measured against future Year 2030 conditions, which takes into account future increases in cumulative traffic levels, and changing infrastructure and land uses and, therefore, more accurately depicts potential impacts, is provided in Table 5.5-7 above.

Village Eight East

As shown on Figure 5.5-2, Main Street provides access from SR-125 to the immediate vicinity of Village Eight East, and is aligned along the northern boundary of the development portion of the Village. Main Street under the Year 2030 Plus Project scenario would carry up to 54,800 ADTs adjacent to Village Eight East. There are residences at the northern boundary of the development area that are adjacent to Main Street. Modeled noise levels for representative noise-sensitive receptors are summarized in Table 5.5-8. As shown, the first row of homes closest to Main Street could be exposed to noise levels ranging to 66 dB CNEL from future traffic along Main Street. This noise level associated with future Main Street traffic volumes would exceed the exterior noise criterion of 65 dB CNEL, and is considered a **potentially significant impact**. Mitigation for this potentially significant impact is provided which includes construction of a sound wall (see Mitigation Measure NOI-1). Table 5.5-8 and Figure 5.5-4 depict the resulting noise levels and corresponding noise contours with placement of the recommended sound walls.

Table 5.5-8
Traffic Noise Modeling Results – Village Eight East

Receiver #	Receiver Location	Yr2030 w Project (CNEL)	Greater than 65 dBA CNEL?	Yr2030 w Project w walls (6 foot height) (CNEL)	Greater than 65 dBA CNEL or greater?
V8-1	Main Street	65	No	60	No
V8-1-2	Main Street	65	No	64	No
V8-2	Main Street	65	No	63	No
V8-2-2	Main Street	66	Yes	65	No
V8-3	Main Street	63	No	63	No
V8-3-2	Main Street	64	No	63	No
V8-4	SR-125	61	No	61	No
V8-4-2	SR-125	63	No	63	No
V8-5	SR-125	57	No	57	No
V8-5-2	SR-125	57	No	57	No
V8-6	SR-125	58	No	58	No
V8-6-2	SR-125	65	No	65	No
V8-7	SR-125	57	No	57	No
V8-7-2	SR-125	60	No	60	No
V8-8	SR-125	59	No	59	No
V8-8-2	SR-125	60	No	60	No
V8-9	SR-125	57	No	57	No
V8-9-2	SR-125	56	No	56	No
V8-10	Otay Valley Road	61	No	57	No
V8-10-2	Otay Valley Road	62	No	62	No
V8-11	Otay Valley Road	61	No	56	No
V8-11-2	Otay Valley Road	61	No	61	No
V8-12	Otay Valley Road	61	No	56	No

Table 5.5-8 (Continued)
Traffic Noise Modeling Results – Village Eight East

Receiver #	Receiver Location	Yr2030 w Project (CNEL)	Greater than 65 dBA CNEL?	Yr2030 w Project w walls (6 foot height) (CNEL)	Greater than 65 dBA CNEL or greater?
V8-12-2	Otay Valley Road	62	No	62	No
V8-13	Otay Valley Road	60	No	53	No
V8-13-2	Otay Valley Road	61	No	61	No
V8-14	Otay Valley Road	59	No	53	No
V8-14-2	Otay Valley Road	60	No	60	No
V8-15	Otay Valley Road	61	No	55	No
V8-15-2	Otay Valley Road	61	No	61	No
V8-16	Otay Valley Road	61	No	56	No
V8-16-2	Otay Valley Road	61	No	61	No
V8-17	Otay Valley Road	65	No	55	No
V8-17-2	Otay Valley Road	65	No	65	No
V8-18	Otay Valley Road	61	No	58	No
V8-18-2	Otay Valley Road	63	No	63	No
V8-19	Otay Valley Road	62	No	59	No
V8-19-2	Otay Valley Road	62	No	63	No
V8-20	Otay Valley Road	61	No	58	No
V8-20-2	Otay Valley Road	63	No	63	No
V8-21	Otay Valley Road	60	No	59	No
V8-21-2	Otay Valley Road	62	No	62	No

Source: Dudek 2014
Note: Receiver numbers ending in "-2" (V8-8-2, etc.) represent second-story noise exposures; otherwise, reported noise levels represent ground-floor noise exposures.

Also as shown on Figure 5.5-2, SR-125 is located adjacent to the eastern boundary of Village Eight East and is also located immediately adjacent to the planned Community Park (P-2) as well as the Active Recreation Area (AR-11). South of Otay Valley Road, SR-125 is substantially lower in elevation than future residential lots, which provides for some attenuation of traffic noise, along with the distance between the proposed residences and the freeway. The elevation difference decreases somewhat between SR-125 and residential development areas within Village Eight East, north of Otay Valley Road. Under the 2030 Plus Project Scenario, SR-125 is predicted to carry approximately 94,000 ADT on the segment adjacent to Village Eight East.

For residential areas north of Otay Valley Road, the row of homes closest to SR-125 could be exposed to noise levels ranging up to 61 dB CNEL at ground level / first floor elevations and up to 65 dB CNEL at second-floor elevations from future traffic along SR-125. The ground level noise levels associated with future SR-125 traffic volumes would not exceed the exterior noise criterion of 65 dB CNEL, as shown in Table 5.5-8. Impacts would be considered **less than significant**.

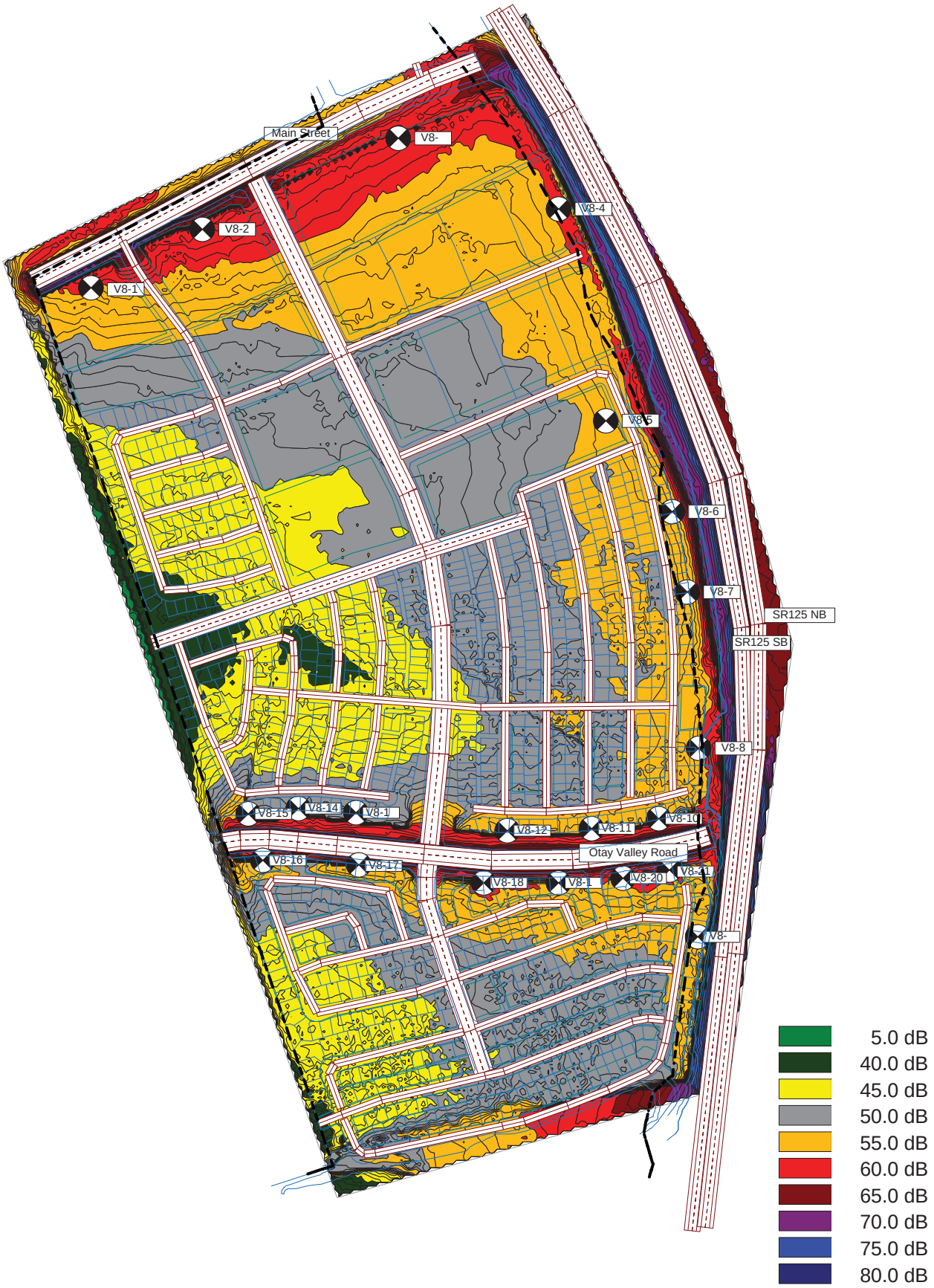

FIGURE -4

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Also as shown on Figure 5.5-2, Otay Valley Road bisects Village Eight East in an east/west direction. Otay Valley Road would carry approximately 22,900 ADT under the Year 2030 Plus Project scenario. Residences are proposed along the north and south sides of Otay Valley Road in Village Eight East. As shown on Table 5.5-8, the first row of homes closest to Otay Valley Road could be exposed to noise levels ranging to 65 dB CNEL from future traffic along Otay Valley Road. This noise level associated with future Otay Valley Road traffic volumes would equal, but not exceed, the exterior noise criterion of 65 dB CNEL; therefore, impacts would be **less than significant**.

Regarding interior noise impacts, with standard construction practices common in California, typical buildings achieve outdoor to indoor noise reductions of 20 dB with the windows closed. Thus, because exterior noise levels at certain locations could exceed 65 dBA CNEL, even with closed windows, the interior noise levels at residences adjacent to Main Street, SR-125 and Otay Valley Road could exceed California's Title 24 Interior Noise Standard of 45 dBA CNEL. Therefore, a **potentially significant impact** related to interior noise levels would also occur.

Similar to Village Three North, in addition to the Year 2030 analysis described above, traffic noise modeling was also conducted for the Existing Plus Project scenario for Village Eight East for informational purposes only. The same modeled noise receivers and model configurations were used, with the Existing Plus Project volumes from the Traffic Impact Assessment (Chen Ryan 2014). As shown in Table 5.5-9, modeled noise levels for the Existing Plus Project scenario would range up to 60 dBA CNEL, at homes adjacent to Main Street and Otay Valley Road. This noise level would not exceed the City's exterior noise criterion of 65 dB CNEL, and is therefore considered a less than significant impact.

Interior noise levels at residences adjacent to Main Street and Otay Valley Road would have the potential to exceed 45 dBA CNEL; therefore, a potentially significant impact related to interior noise levels would occur under the Existing Plus Project scenario. Mitigation for this potentially significant impact is provided (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-2 and NOI-3).

Table 5.5-9
Traffic Noise Modeling Results - Village Eight East Existing Plus Project Conditions

Receiver #	Receiver Location	Exist w Project (CNEL)	Greater than 65 dBA CNEL?	Exist w Proj w walls (6 foot height) (CNEL)	Greater than 65 dBA CNEL or greater?
V8-1	Main Street	59	No	53	No
V8-1-2	Main Street	59	No	58	No
V8-2	Main Street	59	No	57	No
V8-2-2	Main Street	60	No	59	No
V8-3	Main Street	56	No	56	No
V8-3-2	Main Street	57	No	57	No

Table 5.5-9 (Continued)
Traffic Noise Modeling Results - Village Eight East Existing Plus Project Conditions

Receiver #	Receiver Location	Exist w Project (CNEL)	Greater than 65 dBA CNEL?	Exist w Proj w walls (6 foot height) (CNEL)	Greater than 65 dBA CNEL or greater?
V8-4	SR-125	50	No	50	No
V8-4-2	SR-125	53	No	53	No
V8-5	SR-125	46	No	46	No
V8-5-2	SR-125	47	No	47	No
V8-6	SR-125	47	No	47	No
V8-6-2	SR-125	54	No	54	No
V8-7	SR-125	46	No	46	No
V8-7-2	SR-125	49	No	49	No
V8-8	SR-125	49	No	49	No
V8-8-2	SR-125	50	No	49	No
V8-9	SR-125	50	No	50	No
V8-9-2	SR-125	50	No	50	No
V8-10	Otay Valley Road	58	No	52	No
V8-10-2	Otay Valley Road	59	No	59	No
V8-11	Otay Valley Road	57	No	51	No
V8-11-2	Otay Valley Road	57	No	57	No
V8-12	Otay Valley Road	57	No	53	No
V8-12-2	Otay Valley Road	58	No	57	No
V8-13	Otay Valley Road	55	No	50	No
V8-13-2	Otay Valley Road	57	No	57	No
V8-14	Otay Valley Road	54	No	50	No
V8-14-2	Otay Valley Road	55	No	54	No
V8-15	Otay Valley Road	56	No	52	No
V8-15-2	Otay Valley Road	56	No	56	No
V8-16	Otay Valley Road	58	No	52	No
V8-16-2	Otay Valley Road	58	No	58	No
V8-17	Otay Valley Road	60	No	53	No
V8-17-2	Otay Valley Road	60	No	60	No
V8-18	Otay Valley Road	57	No	55	No
V8-18-2	Otay Valley Road	59	No	59	No
V8-19	Otay Valley Road	57	No	56	No
V8-19-2	Otay Valley Road	59	No	59	No
V8-20	Otay Valley Road	58	No	55	No
V8-20-2	Otay Valley Road	60	No	60	No
V8-21	Otay Valley Road	57	No	55	No
V8-21-2	Otay Valley Road	60	No	60	No

Source: Dudek 2014

Village Ten

As shown on Figure 5.5-2, Eastlake Parkway would be extended southward from Hunte Parkway into Village Ten, where it would become University Drive. University Drive is a major arterial oriented north/south, which is forecast to carry approximately 9,600 ADT between Hunte Parkway and Discovery Falls Drive under the Year 2030 Plus Project scenario. This portion of University Drive is outside the Village Ten boundary and would not be anticipated to significantly impact Village Ten land uses. However, Discovery Falls Drive would also be extended southward from Hunte Parkway, and would form the northern boundary of Village Ten. Discovery Falls Drive is forecast to carry approximately 27,900 ADT between Hunte Parkway and Street "B" in the Year 2030 Plus Project scenario. Residences and a neighborhood park are proposed along the southern side of Discovery Falls Drive in Village Ten. Modeled noise levels for representative noise-sensitive receptors are summarized in Table 5.5-10. As shown, the first row of homes closest to Discovery Falls Drive could be exposed to noise levels ranging to 68 dB CNEL from future traffic along Discovery Falls Drive and University Drive. This noise level would exceed the exterior noise criterion of 65 dB CNEL, and is considered a **potentially significant impact**. Mitigation for this potentially significant impact is provided which includes construction of a sound wall (see Mitigation Measure NOI-1). Table 5.5-10 and Figure 5.5-5 present the traffic noise levels and corresponding noise contours (Year 2030 with Project) for Village Ten with the recommended sound walls.

Also as shown on Figure 5.5-2, Otay Valley Road would approximately bisect Village Ten in an east/west direction. Otay Valley Road would eventually extend from Eastlake Parkway on the east to a north/south extension of La Media Road on the west. Within Village Ten, Otay Valley Road would carry approximately 4,900 ADT under the Year 2030 Plus Project scenario. Residences are proposed along the north and south sides of Otay Valley Road in Village Ten. As shown on Table 5.5-10, noise levels along Otay Valley Road, based upon Year 2030 Plus Project traffic, would range up to 63 dB CNEL at proposed noise-sensitive land uses. These noise levels would be less than the exterior noise criterion of 65 dB CNEL. Therefore Otay Valley Road noise levels within Village Ten would not generate significant noise levels upon adjacent land uses, and the impact would be **less than significant**.

Table 5.5-10
Traffic Noise Modeling Results – Village Ten

Receiver #	Receiver Location	Yr2030 w Project (CNEL)	Greater than 65 dBA CNEL?	Yr2030 w Project w walls (6 foot height) (CNEL)	Greater than 65 dBA CNEL?
V10-1	Discovery Falls Drive	66	Yes	60	No
V10-1-2	Discovery Falls Drive	66	Yes	66	Yes
V10-2	Discovery Falls Drive	66	Yes	60	No
V10-2-2	Discovery Falls Drive	67	Yes	67	Yes

Table 5.5-10 (Continued)
Traffic Noise Modeling Results – Village Ten

Receiver #	Receiver Location	Yr2030 w Project (CNEL)	Greater than 65 dBA CNEL?	Yr2030 w Project w walls (6 foot height) (CNEL)	Greater than 65 dBA CNEL?
V10-3	Discovery Falls Drive	67	Yes	62	No
V10-3-2	Discovery Falls Drive	68	Yes	68	Yes
V10-4	Discovery Falls Drive	66	Yes	61	No
V10-4-2	Discovery Falls Drive	66	Yes	66	Yes
V10-5	Otay Valley Road	62	No	62	No
V10-5-2	Otay Valley Road	63	No	63	No
V10-6	Otay Valley Road	61	No	61	No
V10-6-2	Otay Valley Road	62	No	62	No
V10-7	Otay Valley Road	62	No	62	No
V10-7-2	Otay Valley Road	63	No	63	No
V10-8	Otay Valley Road	61	No	61	No
V10-8-2	Otay Valley Road	62	No	62	No
V10-9	Otay Valley Road	61	No	61	No
V10-9-2	Otay Valley Road	61	No	61	No
V10-10	Discovery Falls Drive	56	No	54	No
V10-10-2	Discovery Falls Drive	58	No	57	No
V10-11	Discovery Falls Drive	54	No	51	No
V10-11-2	Discovery Falls Drive	55	No	53	No
V10-12	Otay Valley Road	60	No	60	No
V10-12-2	Otay Valley Road	62	No	62	No
V10-13	Discovery Falls Drive	52	No	51	No
V10-13-2	Discovery Falls Drive	53	No	53	No
V10-14	Discovery Falls Drive	49	No	48	No
V10-14-2	Discovery Falls Drive	51	No	50	No
V10-15	Discovery Falls Drive	47	No	46	No
V10-15-2	Discovery Falls Drive	49	No	48	No

Source: Dudek 2014
Note: Receiver numbers ending in "-2" (V10-8-2, etc.) represent second-story noise exposures; otherwise, reported noise levels represent ground-floor noise exposures.

FIGURE -

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Regarding interior noise impacts, with standard construction practices common in California, typical buildings achieve outdoor to indoor noise reductions of 20 dB with the windows closed. Thus, because exterior noise levels at certain locations could exceed 65 dBA CNEL, even with closed windows, the interior noise levels at residences adjacent to Discovery Falls Drive and Otay Valley Road would have the potential to exceed California's Title 24 Interior Noise Standard of 45 dBA CNEL. Therefore, a **potentially significant** impact related to interior noise levels would occur. Mitigation for this potentially significant impact is provided (see Mitigation Measures NOI-2 and NOI-3).

In addition to the Year 2030 analysis described above, traffic noise modeling was also conducted for the Existing Plus Project scenario for Village Ten for informational purposes. The same modeled noise receivers and model configurations were used, with the Existing Plus Project volumes from the Traffic Impact Assessment. As shown in Table 5.5-11, modeled noise levels for the Existing Plus Project scenario would range up to 63 dBA CNEL at homes adjacent to Discovery Falls Drive. This noise level would not exceed the City's exterior noise criterion of 65 dB CNEL, and is therefore considered a less than significant impact.

Interior noise levels at residences adjacent to Discovery Drive and Otay Valley Road would have the potential to exceed 45 dBA CNEL; therefore, a potentially significant impact related to interior noise levels would occur under the Existing Plus Project scenario. Mitigation for this potentially significant impact is provided (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-2 and NOI-3).

Table 5.5-11
Traffic Noise Modeling Results - Village Ten Existing Plus Project Conditions

Receiver #	Receiver Location	Exist w Project (CNEL)	Greater than 65 dBA CNEL?	Exist w Proj w walls (6 foot height) (CNEL)	Greater than 65 dBA CNEL?
V10-1	Discovery Falls Drive	59	No	53	No
V10-1-2	Discovery Falls Drive	59	No	59	No
V10-2	Discovery Falls Drive	59	No	54	No
V10-2-2	Discovery Falls Drive	60	No	60	No
V10-3	Discovery Falls Drive	62	No	57	No
V10-3-2	Discovery Falls Drive	63	No	63	No
V10-4	Discovery Falls Drive	59	No	54	No
V10-4-2	Discovery Falls Drive	59	No	59	No
V10-5	Otay Valley Road	61	No	61	No
V10-5-2	Otay Valley Road	61	No	61	No
V10-6	Otay Valley Road	59	No	59	No
V10-6-2	Otay Valley Road	60	No	60	No
V10-7	Otay Valley Road	61	No	61	No
V10-7-2	Otay Valley Road	61	No	61	No

Table 5.5-11 (Continued)
Traffic Noise Modeling Results - Village Ten Existing Plus Project Conditions

Receiver #	Receiver Location	Exist w Project (CNEL)	Greater than 65 dBA CNEL?	Exist w Proj w walls (6 foot height) (CNEL)	Greater than 65 dBA CNEL?
V10-8	Otay Valley Road	59	No	59	No
V10-8-2	Otay Valley Road	60	No	60	No
V10-9	Otay Valley Road	59	No	59	No
V10-9-2	Otay Valley Road	59	No	59	No
V10-10	Discovery Falls Drive	50	No	49	No
V10-10-2	Discovery Falls Drive	52	No	51	No
V10-11	Discovery Falls Drive	49	No	47	No
V10-11-2	Discovery Falls Drive	50	No	49	No
V10-12	Otay Valley Road	59	No	59	No
V10-12-2	Otay Valley Road	60	No	60	No
V10-13	Discovery Falls Drive	48	No	48	No
V10-13-2	Discovery Falls Drive	50	No	50	No
V10-14	Discovery Falls Drive	46	No	45	No
V10-14-2	Discovery Falls Drive	46	No	46	No
V10-15	Discovery Falls Drive	41	No	41	No
V10-15-2	Discovery Falls Drive	44	No	44	No

Source: Dudek 2014

Noise Generation – Commercial and Industrial Land Uses

Two commercial mixed use sites are designated for Village Three North, while one mixed use site is designated for Village Eight East. These sites are envisioned to provide opportunities for neighborhood-oriented retail, such as grocery and convenience stores, services for residences including financial institutions, health clubs, insurance agencies, and restaurants. The mixed use commercial sites for Village Three North are centrally located between multiple family residences and the school and park site. The mixed use site for Village Eight East is also centrally located, adjacent to the north-south arterial road, adjacent to multi-family residences on the west, and across the street from the school site.

Sources of commercial noise typically include activities at loading/unloading docks and parking lots; heating/ventilation and air conditioning equipment (HVAC); maintenance activities; and additional truck traffic along adjacent roads. Future uses in the CPF sites located within the mixed use village core areas are unknown at this time; as such, it would speculative to analyze the potential noise generated by a specific use at the CPF location. However, it can reasonably be assumed the CPF would include a structure for community use that would involve HVAC equipment. Therefore, the CPF is included in the discussion of commercial HVAC equipment below.

Noise levels associated with the commercial activities would vary depending on the number of delivery trucks, loading dock areas and customer traffic generated by the commercial site, as well as the location of parking areas. Similarly, HVAC equipment noise would vary depending on the number and types of equipment selected. Typical HVAC equipment can result in noise levels that average between 50 and 65 dBA Leq at 50 feet (City of Santa Ana 2010). For a single point source such as a piece of mechanical equipment, the sound level normally decreases by about 6 dBA for each doubling of distance from the source. Therefore, it is assumed that HVAC equipment would generate noise levels that exceed 45 dBA within 500 feet for the equipment, 50 dBA within approximately 275 feet of the equipment, and 55 dBA within 155 feet of the equipment. Consequently, residences or other NSLU located in or in close proximity to a mixed-use building or other building that requires an HVAC system could result in a **potentially significant impact**. To reduce such impacts, mitigation is provided (see Mitigation Measure NOI-4).

An industrial zone is designated along the north side of Heritage Road, and occupying the area between Heritage Road and the northerly boundary of Village Three North. The proposed industrial areas are encompassed within the buffer for the municipal landfill located north of the project boundaries. Because of the presence of the landfill along the northerly property boundary along the proposed industrial use zone, the project industrial land uses are not anticipated to have noise impacts upon neighboring off-site areas and land uses. In other words, sanitary landfill operations are quasi-industrial themselves, and are not classified as noise-sensitive.

As to future noise sensitive land uses that would be built as part of the project, industrial land uses possess many of the same noise generating characteristics as commercial uses (loading/unloading docks and parking lots; HVAC equipment; maintenance activities; and additional truck traffic along adjacent roads), and often include manufacturing processes and materials handling operations with additional noise generation potential. These industrial activities would have the potential to result in average noise levels above the City's noise thresholds. Therefore, each proposed industrial development will be required to prepare a detailed acoustic evaluation as part of the development permit application review process to ensure elevated noise generation, which could adversely affect project residences to the south, are avoided. To avoid any potential impacts related to industrial use noise, mitigation is provided (see Mitigation Measure NOI-5).

Noise sources from parking lots include car alarms, door slams, radios, tire squeals. These sources typically range from about 30 to 66 dBA at a distance of 100 feet (Gordon Bricken & Associates 1996), and are generally short-term and intermittent. Parking lots have the potential to generate noise levels that exceed 65 dBA depending on the location of the source; however, noise sources from the parking lot would be different from each other in kind, duration, and location, so that the overall effects would be separate and in most cases would not affect noise-

sensitive receptors at the same time. Therefore, noise generated from parking lots would be less than significant.

Additionally, the existing landfill currently exercises noise-generating activities such as horns, amplified sound or explosive-noise devices to deter avian vectors as a result of landfill operations. These noise sources are part of the existing ambient noise environment, and would be buffered by the proposed industrial development that would be located at the northerly property boundary along the proposed industrial use zone. Moreover, a review of available documents, including recent LEA inspection reports and the landfill expansion EIR, shows that vectors have not been a problem at the landfill; however, there were some "Area of Concern" notes regarding proper waste coverage. Since proper waste coverage is the primary control mechanism for vectors, maintaining proper waste coverage should continue to prevent vector issues from occurring (SCS 2014).

Community Park/Neighborhood Park

One community park is located in Village Three and a Portion of Village Four (Community Park (P-2)), and one is located in Village Eight East (Community Park (P-2)). Visitors to the community parks would participate in active and passive recreational activities. As such, visitors and recreational activity participants are expected to generate a range of noise levels typical of recreational activities. Potential community park amenities and facilities would include, but are not limited to, play equipment, seating areas, athletic fields, a skate park, sport courts, multi-purpose fields, a gymnasium, a recreation complex building, and walking trails. Passive recreational activities such as walking, reading, and dining in open turf areas and group picnic areas will typically generate lower noise levels as compared to active sports play. Normal park operating hours would be daily from 6:30 a.m. to 10:30 p.m.; however, indoor use areas (such as the gymnasium or recreation complex building at the Village Four Community Park (P-2)) may be in use past 10:30 p.m.

At any one location, the hourly average sound level associated with recreational noise is difficult to predict due to many variables. These factors include the type of recreational activity, the number of players and spectators, the location of people and the amount and level of conversation and cheering. However, to determine the approximate noise levels that would be generated at ball fields/other recreational activities and predict potential noise impacts, noise measurements conducted by Dudek staff at several existing recreational parks, including Stagecoach Park in Carlsbad, Cardiff Sports Park in Encinitas, and Vista National Little League in Vista, were utilized. The proposed project could have similar ball fields as these facilities. The results of these measurements indicate that ball field activities (including use of a public address system) generate a one-hour average noise level of approximately 55–65 dB at a distance of 50 feet from the stands and/or spectator areas.

The Village Three and a Portion of Village Four Community Park (P-2) is part of a larger proposed community park. The remaining park area is immediately adjacent to the Community Park (P-2), located in Village Four. The EIR for the Otay Ranch Village Two, Three, and Portion of Four SPA Plan (SCH #2003091012) included an analysis of noise that would potentially be generated by activity at the Village Four Community Park (P-2) (City of Chula Vista 2006). The analysis determined that multi-purpose fields would have the potential to generate noise levels of approximately 54 dBA at 50 feet, and a skate park facility would have the potential to generate noise levels of 70 dBA at 50 feet. The locations of any potential community park uses are not known at this time. However, consistent with the Village Four Community Park analysis in the EIR for the Villages 2, 3, and Portion of 4 SPA Plan, skate park noise is considered the worst-case noise level that could be generated at 50 feet from the Village Four Community Park (P-2). Therefore, the Village Four Community Park (P-2) would have the potential to exceed the daytime one-hour 60 dBA Leq limit if the loudest noise sources are placed within 100 feet of sensitive habitat. Because the Portion of Village Four is located on the very western edge of the Community Park (P-2), the adjacent noise sensitive land use would be the MSCP Preserve. Therefore, this impact would be considered **potentially significant**. To avoid potential impacts related to park use noise, mitigation is provided (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-6).

Similarly, the Village Eight East Community Park (P-2) would generate a one-hour average noise level of approximately 55–65 dB at a distance of 50 feet from the stands and/or spectator areas, which is comparable to the Community Park (P-2) noise levels located within Village Four. The Village Eight East Community Park (P-2) would have the potential to exceed the daytime one-hour 60 dBA Leq limit if the loudest noise sources are placed within approximately 100 feet of sensitive habitat. Therefore, this impact would be considered **potentially significant**. To avoid potential impacts related to park use noise, mitigation is provided (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-6).

Regarding electronic amplification systems, such systems may be used in conjunction with active sport activities such as skating, softball, soccer, court sports, and swimming. Public events may also occur that required amplified noise. Activities that would include amplified noise or other temporary noise generating equipment would be required to obtain a permit from the City of Chula Vista Director of Library and Recreation. If a permit is not obtained, Section 2.66.185 of the Chula Vista Municipal Code prohibits any park or recreation center user to operate a radio, television, stereo or any similar electronic or mechanical device capable of producing or emitting sound at a volume where the sound is audible at a distance greater than 100 feet from the point of emission. Activities that require permitted amplified noise would be limited to normal park operation hours. Additionally, amplified noise would not be a continuous source of noise. Activities would occur on various dates and times, and at varied locations. Permitted uses would still be subject to the city hourly exterior noise level limits established in the municipal code. The

Chula Vista Police Department enforces the nuisance noise provisions of the city municipal code and the Development Services Department enforces the remaining provisions of the noise ordinance. Therefore, nuisance noise and permitted amplified noise from events at a Community Park would result in a **less than significant** impact.

Scheduled maintenance by maintenance crews would occur at these park sites. Maintenance activities would include the use of gasoline-powered mowers, trimmers, blowers, and edgers resulting in intermittent short-term temporary noise increases. Maintenance activities are permitted uses and would be subject to the one-hour Leq noise limits of 60 dBA in multi-family neighborhoods. Additionally, maintenance equipment would not be operating at any one location for more than a few minutes, and all equipment would not be operating simultaneously. Due to the limited amount of time equipment would be operating in one location, operation of landscape equipment would generally not exceed the hourly noise level limit at a particular receptor. Therefore, landscape maintenance would result in a **less than significant** impact.

Neighborhood Park

One neighborhood park site is planned for each of the three Villages. Based upon the most recent conceptual design drawings, each of the park sites is surrounded on all four sides by a street having a minimum 58 foot wide right of way. Thus, noise levels from the proposed parks would be approximately 64 dB (i.e., slightly less than 65 dB) during park operating hours. According to the Chula Vista Municipal Code Section 2.66.270, some parks in the city are permitted to stay open as late as 10:30 p.m. It is reasonable to assume that noise levels would generally be lower between 10:00 p.m. and 10:30 p.m. than those occurring during peak park activity hours. Noise levels from Neighborhood Parks would not be expected to exceed nighttime noise standards between 10:00 p.m. and 10:30 p.m.; however the noise threshold after 10:00 p.m. is lower and therefore there could be significant impacts after 10 p.m. Therefore, impacts would be potentially significant and mitigation is provided limiting park hours to 10:00 p.m. (see Mitigation Measure NOI-6).

Other Recreation Facilities

Private Recreation Facilities would be located throughout each Village. In addition, trails, and playgrounds are a permitted use throughout the SPA. The proposed trails throughout the project site and the off-site trail connection to the OVRP would be used for walking and bicycling and would generally not support activities that would generate noise levels higher than normal conservation. The PRFs would not include athletic fields or other major active use facilities. Playgrounds would generate noise levels less than the Neighborhood Park noise level of 54.3 dBA at 50 feet. The neighborhood playgrounds would generally not be in use after dark, and nighttime activity would be expected to be limited to normal conversation levels. Therefore,

these facilities would not generate noise levels that exceed the City's noise level limits and significant impacts would not occur.

School-Related Noise

One elementary school each is designated for Village Three North, Village Eight East, and Village Ten. Schools are both noise-sensitive and noise generating. With respect to its position as a noise-sensitive land use, the relationship to major roadways within the project site is the primary determinant for whether potentially significant increased noise levels could occur at the school sites.

In Village Three North, the proposed school site is located approximately at the center of the development area, bounded on all four sides by local roads. Traffic volume projections are not available for the roads bordering this school site; therefore, future noise contours from roadway operations are not available. However, it is possible that future traffic volumes carried on one or more of these bordering roads could have an associated 65 dB CNEL contour that extends to the school site.

In Village Eight East, the elementary school site is bounded along the south side by Street "B" and along the east side by Street "A," a road connecting to Main Street on the north and Otay Valley Road on the south. Traffic volume projections are not available for the two roads bounding the school site; however, given the arterial road represents a north-south access spine for Village Eight East, and connects two major east/west arterial roadways, it is likely that future traffic volumes along the arterial road bounding the east side of the school would have a 65 dB CNEL contour that extends to the school site.

In Village Ten, the elementary school site would abut Street "C" to the north, while Street "B" would border the west side of the site. Traffic volume projections are not available for the roads bordering this school site; therefore, future noise contours from roadway operation are not available. However, it is possible that future traffic volumes carried on one or more of these bordering roads could have an associated 65 dB CNEL contour that extends to the school site.

Therefore, traffic-related noise exposure levels within exterior use areas for the schools (i.e., playground, sports fields, athletic courts, etc.) could exceed the established noise standards, thereby resulting in **potentially significant** noise impacts and mitigation is provided (see Mitigation Measure NOI-7). Consistent with the recommended mitigation, the *School Site Selection and Approval Guide* prepared by the California Department of Education provides that if a school district is considering a potential school site near a freeway or other source of noise, it should hire an acoustical engineer to determine the level of sound that location is subject to and also assist in designing the school site that should be chosen.

With respect to being a noise-generating land use, schools may generate noise from amplified noise such as bells and loudspeaker announcements. Bells or other announcement devices are classified as stationary non-emergency signaling devices by the city. The noise ordinance prohibits schools from sounding these devices for more than 120 seconds (2 minutes) continually in an hourly period, or intermittent sounding over a five-minute period in any hour. The elementary schools would comply with city noise standards and would not result in significant impacts related to bells and loudspeaker announcements.

The elementary schools would each include recreational facilities in the form of a school playground. Noise from these facilities would be limited to daytime hours. The level of activity at these facilities during recess and afterschool activities is assumed to be similar to active use of the multi-purpose fields at the Parks and Recreation areas addressed in Section 5.4. Therefore, the schools would have the potential to generate noise levels up to 65 dBA at 50 feet.

The elementary school sites in Village Three North, Village Eight East and Village Ten have a roadway on each frontage of the school site, separating the school site from adjacent residential properties. These boundary roads have a minimum right-of-way width of 58 feet. Based upon the noise source data described above, and typical environmental (i.e., outdoor) attenuation rates for a point source, playground noise from the school should not be greater than 65 dB (Leq) at the edge of the road right-of-way adjacent to residential property boundaries (the right-of-way edge is not less than 58 feet from the playground, the playground noise would be 65 dB or less at 50 feet, or 8 feet within the right-of-way boundary). For comparison to the General Plan, the sound exposure level from the playground at 50 feet would be approximately 51 dB CNEL which is within acceptable ranges, and impacts would be **less than significant**.

Olympian High School is an existing source of operational noise, and is located north of Village Eight East. Noise sources associated with Olympian High School include bells, other signaling devices, and activities on the campus such as crowd noise and loudspeakers at football games. Bells and other signaling devices are classified as stationary non-emergency signaling devices by the City, and schools are prohibited in the noise ordinance from sounding these devices for more than 120 seconds continually in an hourly period or intermittent sounding over a five-minute period in any hour. Typically, the main sources of noise from high schools to the surrounding area are organized sports activities at the football stadium that involve amplified speakers and crowd noise. The football field is located on the east side of the campus, approximately 200 feet west of the proposed multi-family residential uses in Neighborhood R-16 of Village Eight East.

The Noise Technical Report for Otay Ranch Villages Two and Three, Planning Area 1B, and a Portion of Village Four (RECON 2005) determined that the worst-case noise level for a championship game event at the Otay Ranch High School would be 71 dBA at a distance of 50 feet from stadium loudspeakers located approximately 30 feet above the playing field. This type

of event is considered a worst-case scenario for game noise because championship games generally include a full stadium of spectators. Otay Ranch High School has a maximum stadium capacity of 5,500 people. The maximum capacity of the Olympian High School stadium is 3,071 people; therefore, this estimate is conservative for Olympian High School. When the speakers were not in use, crowd noise was estimated to emit a noise level of approximately 65 dBA at 60 feet from the top of the stadium stands. Based on these estimates, football games currently generate a noise level of approximately 59 dB at the proposed multi-family residential use in Neighborhood R-16 when speakers are in use, and 53 dB when crowd noise is the noise source. Therefore, recreational activities at Olympian High School would not exceed the City's noise standards at the proposed project site, and impacts would be **less than significant**.

B. Expose persons to or generation of excessive groundborne vibration or groundborne noise levels.

Project-related construction activities have the potential to create groundborne vibration. Construction activities can result in varying degrees of ground vibration, depending on the equipment and methods employed. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings founded on the soil in the vicinity of the construction site respond to these vibrations, with varying results ranging from no perceptible effects at the lowest levels, perceptible vibrations at moderate levels, and slight damage at the highest levels (FTA 2006). There are no businesses or institutions with highly sensitive equipment (such as hospitals, laboratories or printing presses) in the vicinity of the project. The nearest such institution would be the Sharp Chula Vista Medical Center, located approximately two miles from the project site. At two miles from the nearest construction activity, the facility would be located outside of the vibration screening distances for major construction activity (200 feet) and pile driving (600 feet). Therefore construction activity would not affect any off-site vibration-sensitive land use. Therefore, impacts related to groundborne vibration during construction at off-site land uses would be **less than significant**.

The highest vibration levels during construction typically occur during pile-driving, blasting or demolition activities. Neither pile driving or demolition activities are anticipated as part of this project. Blasting may be required for a small portion of the project and is addressed in the following section. Should these activities (as well as the operation of heavy, large machinery such as excavators and large graders) be necessary as part of the project, they would take place during the early phases of the project, when the site would be unoccupied. Vibrations from

smaller, rubber-tired trucks and other equipment would typically not result in perceptible or damage-inducing vibration levels beyond a distance of approximately 45 feet[2].

It should be noted that ground vibrations from construction activities do not often reach the levels that can damage structures or affect activities that are not vibration-sensitive, although the vibrations may be felt by nearby persons in close proximity and result in annoyance (FTA 2006). Additionally, the Village Eight West development would consist of new buildings constructed in accordance with all building codes and would not be susceptible to vibration damage. Vibration impacts would be temporary and would cease following construction. Thus, the potential for on-site impacts from vibration is **less than significant**.

Blasting

Blasting may be required in the Village Four Community Park (P-2)area. At this time, it is unknown how much quantity of rock and therefore how much blasting may be required, if at all. Rock material is generally located in areas identified for fill; however, because of the potential for some blasting, the following analysis has been prepared.

Rock blasting is typically done as a single event to break up rock material which can then be processed. The duration is very brief (fractions of a second) for a blasting event, and typically only one blast occurs per day. Neither the City of Chula Vista nor the City of San Diego have a threshold for this type of temporary, impulsive and intermittent construction-related noise. The U.S. Bureau of Mines Report of Investigations 8485 recommends a maximum safe overpressure of 0.013 pound per square inch (133 dB peak) for impulsive airblast (Siskind et al. 1980). Typical rock blasting operations generate approximately 119–123 dB at 600 feet (City of Riverside 2009). Given that the location of the Village Four Community Park (P-2)is within approximately 3,000 feet of existing sensitive receptors, this would result in a potential peak noise level of approximately 104 dB Peak. A peak noise level of this magnitude would fall within the range (90–120 dB Peak) of strongly perceptible to mildly unpleasant, and would be well below the threshold of damage to physical property. Although this would not exceed any City thresholds, blasting, if determined to be necessary, is considered to have a **potentially significant impact** and, therefore, mitigation is provided (see Mitigation Measure NOI-9)

As part of ongoing activities at the Otay Valley Quarry, occasional blasting operations may occur within 1,600 feet for the Village Three North. However, the proposed residential land uses along the eastern edge of Village Three North and park uses along the southern edge of Village Four are not vibration sensitive. Additionally, according to the Declaration of Covenants of

[2] Assumes vibration levels from a loaded truck (86 VdB at reference distance of 25 feet). Resulting vibration level at a distance of 45 feet would be approximately 78 VdB, which is below the FTA criteria for Type 2 (residential) land uses of 80 VdB for infrequent events.

Operation for the quarry, blasting would be limited to the hours between 10:00 a.m. and 4:00 p.m. and would not disturb residences' sleep.

The Mining Operator is also required to retain a qualified blasting specialist to develop a site specific blasting program report to assess, control, and monitor ground vibration from blasting, for any residences located within 1,000 feet of the mining operation. The Mine Operator is required to provide public notification of the blasting schedule for residents within 1,000 feet of blasting. The Mine Operator will give a monthly blasting schedule in writing to residences within 1,000 feet of potential blast locations. The notice will disclose the anticipated blasting schedule and provide a contact phone number for the blasting contractor. Unscheduled changes to the blasting schedule will require the blasting schedule to be reissued no less than 24 hours prior to the blasting. Therefore, groundborne vibration impacts would be **less than significant**.

C. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

As shown in Figure 5.5-6, numerous off-site improvements would be constructed as part of this project to provide adequate circulation and public utilities to the project site; these are described in detail in Section 4.2.3 of this EIR. The off-site improvements would consist primarily of roadway realignments, widening and off-site grading activities. Potential noise impacts during construction of these improvements is addressed in responses (B) and (D). None of the off-site improvements would have long-term (operational) noise impacts because once constructed, all of the improvements excepting the roadway improvements would be passive in nature (i.e., no mechanical equipment that would produce noise). The potential effects of the roadway improvements are addressed in Chapter 6, Cumulative Impacts. Noise effects of the project would, for the most part, be confined to the project area and are evaluated on a project-specific basis.

With respect to the potential impacts to off-site noise sensitive land uses due to increased traffic noise levels attributable to the project, an analysis of these increased noise levels as measured against existing ambient noise levels is presented below. However, as discussed above and in EIR Section 5.3, Transportation, Circulation and Access, the results of this type of traffic-related analysis are misleading when used in connection the University Villages project, which is a long-term development project not anticipated to reach full buildout until approximately 2030. Accordingly, the analysis of the proposed project's impacts as measured against existing conditions presented below is provided for disclosure, information, and comparison purposes only; the identification of significant impacts and corresponding mitigation measures, if any, are based on the long-term Year 2030 analysis that follows thereafter. See Threshold (A) above for analysis regarding Existing Plus Project conditions.

As previously noted, Table 5.5-12, below, presents the results of an analysis of the project's impacts as measured against future Year 2030 conditions, which takes into account future increases in cumulative traffic levels, and changing infrastructure and land uses and, therefore, more accurately depicts potential impacts. The methodology to assess these cumulative impacts again uses noise traffic modeling to compare the resulting noise levels from Year 2030 traffic volumes alone, or without the project, versus Year 2030 Plus Project, or with project, traffic volumes.

Table 5.5-12
Project Contribution to Off-Site Traffic Noise – Year 2030
(Off-Site Traffic Noise Level Increase)

Roadway (segment)	Rcvr #	CNEL (dB)		
		Year 2030	*Year 2030 + Project*	*dB Change*
SR-125 Telegraph to Olympic	1-1	52	53	1
	1-2	55	55	0
	1-3	62	62	0
	1-4	63	63	0
	1-5	60	60	0
	1-6	66	66	0
	1-7	66	66	0
	1-8	65	65	0
	1-9	67	67	0
	1-10	62	62	0
SR-125 Olympic to Birch	2-1	53	53	0
	2-2	56	56	0
	2-3	57	57	0
	2-4	59	60	1
	2-5	60	61	1
	2-6	64	64	0
	2-7	61	61	0
	2-8	60	60	0
	2-9	63	63	0
	2-10	62	62	0
	2-11	60	61	1
	2-12	58	58	0
SR-125 Birch to Main	3-1	57	57	0
	3-2	59	59	0
	3-3	60	60	0
	3-4	60	60	0
	3-5	63	63	0
	3-6	61	61	0
	3-7	63	64	1
	3-8	56	56	0
SR-125 Main to Lone Star	4-1	61	62	1

Table 5.5-12 (Continued)
Project Contribution to Off-Site Traffic Noise – Year 2030
(Off-Site Traffic Noise Level Increase)

Roadway (segment)	Rcvr #	CNEL (dB)		
		Year 2030	*Year 2030 + Project*	*dB Change*
Olympic Parkway Olympic Vista Road to Lake Center Drive	5-1	38	38	0
	5-2	53	53	0
	5-3	52	52	0
	5-4	57	57	0
	5-5	55	55	0
	5-6	48	48	0
	5-7	45	45	0
	5-8	47	47	0
	5-9	47	47	0
	5-10	50	50	0
	5-11	50	51	1
Birch Rd La Media to SR-125	6-1	59	59	0
	6-2	57	57	0
	6-3	58	59	1
	6-4	58	58	0
	6-5	57	57	0
	6-6	54	54	0
	6-7	61	62	1
	6-8	60	61	1
	6-9	57	57	0
	6-10	56	56	0
	6-11	55	56	1
	6-12	53	53	0
	6-13	53	53	0
	6-14	53	54	1
	6-15	55	55	0
	6-16	56	56	0
	6-17	55	56	1
	6-18	55	55	0
	6-19	56	56	0
	6-20	58	58	0
	6-21	57	57	0
	6-22	56	56	0
	6-23	62	63	1
	6-24	61	62	1
	6-25	62	62	0
Birch Rd SR-125 to Eastlake	7-1	60	60	0

Table 5.5-12 (Continued)
Project Contribution to Off-Site Traffic Noise – Year 2030
(Off-Site Traffic Noise Level Increase)

Roadway (segment)	Rcvr #	CNEL (dB)		
		Year 2030	*Year 2030 + Project*	*dB Change*
Main Street Brandywine to Heritage	8-1	56	57	1
	8-2	56	57	1
	8-3	53	54	1
	8-4	53	54	1
	8-5	54	55	1
	8-6	54	55	1
	8-7	55	56	1
Heritage Rd Olympic to Santa Victoria	9-1	59	60	1
	9-2	51	52	1
	9-3	59	59	0
	9-4	54	54	0
	9-5	52	53	1
Heritage Road Main St to Ave de las Vistas	10-1	52	52	0
	10-2	55	55	0
La Media Rd E Palomar to Santa Venetia	11-1	62	62	0
	11-2	63	63	0
	11-3	62	62	0
	11-4	59	60	1
	11-5	58	58	0
	11-6	57	57	0
	11-7	55	55	0
	11-8	59	59	0
	11-9	58	58	0
	11-10	56	57	1
	11-11	56	56	0
	11-12	59	59	0
	11-13	58	59	1
	11-14	57	58	1
	11-15	62	62	0
	11-16	63	64	1

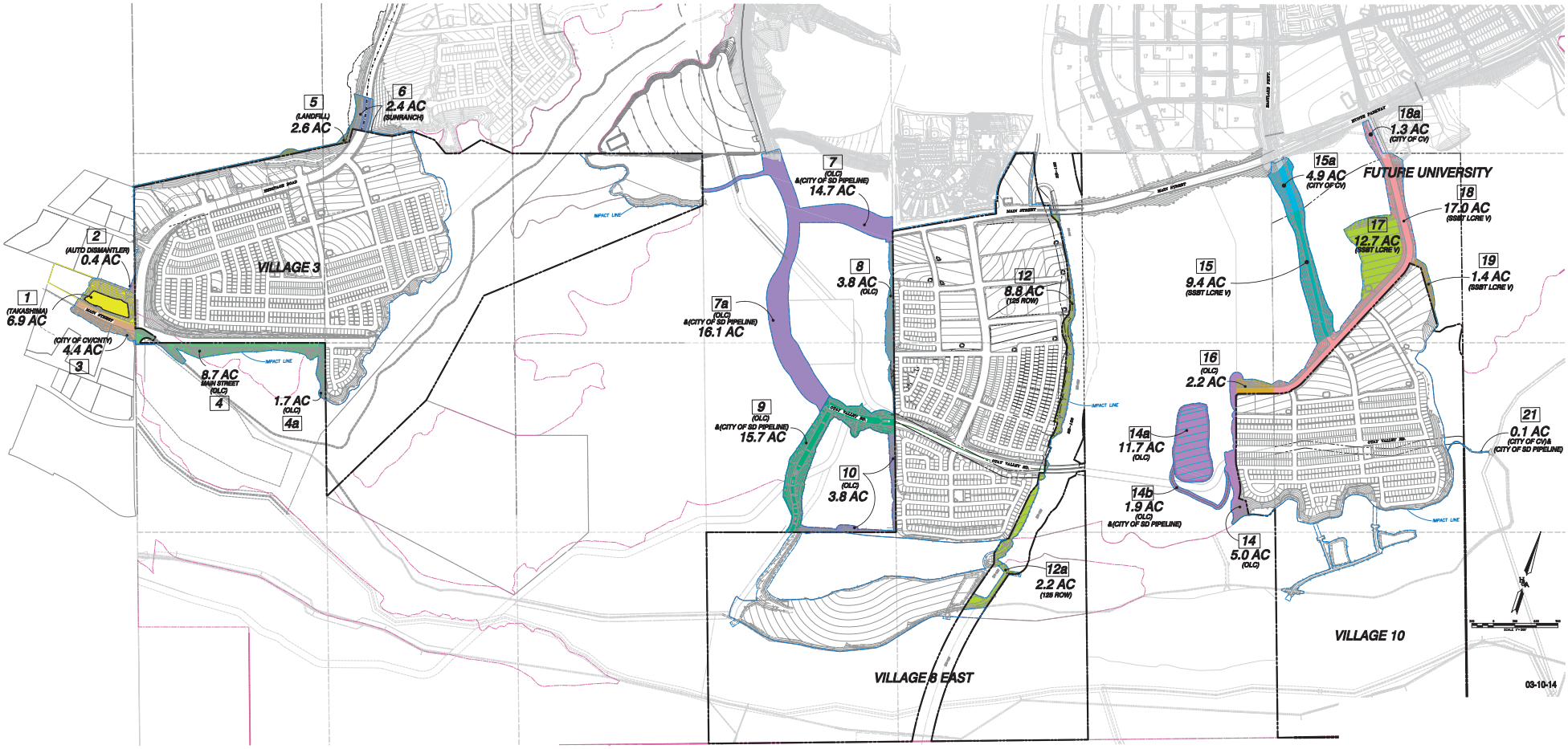
Table 5.5-12 (Continued)
Project Contribution to Off-Site Traffic Noise – Year 2030
(Off-Site Traffic Noise Level Increase)

Roadway (segment)	Rcvr #	CNEL (dB)		
		Year 2030	*Year 2030 + Project*	*dB Change*
La Media Rd/Magdelena Ave Birch to Santa Luna St	12-1	53	53	0
	12-2	55	55	0
	12-3	58	59	1
	12-4	59	59	0
	12-5	56	56	0
	12-6	56	56	0
	12-7	57	57	0
	12-8	58	59	1
	12-9	58	59	1
	12-10	59	60	1
	12-11	59	60	1
	12-12	59	59	0
	12-13	57	58	1
	12-14	53	54	1
	12-15	54	55	1
	12-16	58	59	1
	12-17	58	59	1
	12-18	57	58	1
	12-19	56	57	1
	12-20	59	59	0
	12-21	59	60	1
	12-22	59	60	1
La Media Rd/Magdalena Ave Santa Luna St to Main	13-1	52	53	1
	13-2	55	55	0
	13-3	54	54	0
	13-4	55	56	1
	13-5	53	54	1
	13-6	61	62	1
	13-7	61	62	1
	13-8	60	60	0

Table 5.5-12 (Continued)
Project Contribution to Off-Site Traffic Noise – Year 2030
(Off-Site Traffic Noise Level Increase)

Roadway (segment)	Rcvr #	CNEL (dB)		
		Year 2030	*Year 2030 + Project*	*dB Change*
Eastlake Parkway Olympic Parkway to Hunte	14-1	58	58	0
	14-2	56	57	1
	14-3	58	58	0
	14-4	58	58	0
	14-5	59	59	0
	14-6	59	60	1
	14-7	61	61	0
	14-8	56	56	0
	14-9	56	56	0
	14-10	55	56	1
	14-11	54	55	1
	14-12	55	55	0
Hunte Pkwy Olympic Pkwy to Eastlake Pkwy	15-1	60	60	0
	15-2	55	56	1
	15-3	53	54	1
	15-4	55	55	0
	15-5	55	56	1
	15-6	55	55	0
	15-7	54	54	0
	15-8	54	54	0
	15-9	55	55	0
	15-10	56	56	0
	15-11	56	56	0
	15-12	56	56	0
	15-13	55	56	1
	15-14	56	57	1
	15-15	56	56	0
	15-16	56	56	0
	15-17	55	56	1
	15-18	55	55	0
	15-19	56	57	1
	15-20	56	56	0

NA - No current noise-sensitive uses at this location
Source: Dudek 2014



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As seen in Table 5.5-12, the project's contribution to cumulative noise levels would be limited, a 1 dB increase at most, which by itself is not a discernible increase. Additionally, as shown in Table 5.5-12, the project would not contribute any increase in noise levels at those locations equal to or exceeding the City's 65 dB CNEL noise standard for residential land use under without project conditions. Therefore, the project's contribution to increased noise levels would not be cumulatively considerable and cumulative impacts would be **less than significant**. Consequently, mitigation is not required for the project's contribution to off-site noise impacts associated with general plan build out traffic volumes.

D. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Impacts to Sensitive Receptors

Because the development of each village would be a multi-year endeavor, portions of the development would be completed and occupied during the construction of subsequent portions (phases); the occupied project phases have the potential to be impacted by noise from on-going construction activities. Additionally, construction of the villages which are adjacent to existing noise-sensitive uses (such as Olympian High School, located to the north of Village Eight) and construction of off-site improvements (i.e., utility and roadway realignments and widenings) have the potential to result in short-term noise impacts at adjacent noise-sensitive land uses.

Noise from construction activity is generated by the broad array of powered, noise-producing mechanical equipment used in the construction process. This equipment ranges from hand-held pneumatic tools to bulldozers, dump trucks, and front loaders. The exact complement of noise-producing equipment that would be in use during any particular period has not yet been determined. Noise-generating construction activities could be in progress on more than one part of the project site at a given time. However, the noise levels from construction activity during various phases of a typical construction project have been evaluated, and their use provides a prediction of the project's potential noise impacts.

To assess the potential noise effects of construction, this noise analysis used data from an extensive field study of various types of industrial and commercial construction projects (EPA 1971). Noise levels associated with various construction phases where all pertinent equipment is present and operating, at a reference distance of 50 feet, are shown in Table 5.5-13. Because of vehicle technology improvements and stricter noise regulations since the field study was published, this analysis would use the average noise levels shown in Table 5.5-13 for the loudest construction phase. This information indicates that the overall average noise level generated on a construction site could be 89 dBA at a distance of 50 feet during excavation and finishing phases. The noise levels presented are value ranges; the magnitude

of construction noise emission typically varies over time because construction activity is intermittent and the power demands on construction equipment (and the resulting noise output) are cyclical.

Table 5.5-13
Typical Noise Levels from Construction Activities for Large Construction Projects

Construction Activity	Average Sound Level at 50 feet (dBA L_{eq})[a]	Standard Deviation (dB)
Ground Clearing	84	7
Excavation	89	6
Foundations	78	3
Erection	87	6
Finishing	89	7

Source: EPA 1971
[a] Sound level with all pertinent equipment operating.

Noise levels generated by construction equipment (or by any point source) decrease at a rate of approximately 6 dBA per doubling of distance from the source (Harris 1979). Therefore, if a particular construction activity generated average noise levels of 89 dBA at 50 feet, the Leq would be 83 dBA at 100 feet, 77 dBA at 200 feet, 71 dBA at 400 feet, and so on. This calculated reduction in noise level is based on the loss of energy resulting from the geometric spreading of the sound wave as it leaves the source and travels outward. Intervening structures that block the line of sight, such as buildings, would further decrease the resultant noise level by a minimum of 5 dBA. The effects of molecular air absorption and anomalous excess attenuation would reduce the noise level from construction activities at more distant locations at the rates of 0.7 dBA and 1.0 dBA per 1,000 feet, respectively.

The generation of noise from construction activities during noise sensitive time periods upon completed and occupied components of the project is considered a significant nuisance. Additionally, construction noise, both from on-site and off-site improvements, could affect existing off-site noise-sensitive land uses. The nearest off-site noise-sensitive land uses relative to the project site is Olympian High School, located north of Village Eight. The nearest off-site noise-sensitive land use to off-site improvements is High Tech High Chula Vista, located to the north of Village Ten.

Olympian High School is located approximately 125 feet from the Village Eight project site boundary, and approximately 250 feet from the nearest off-site improvement work. High Tech High Chula Vista is located approximately 250 feet from the nearest off-site improvement work. As such, project generated construction noise would pose a potentially significant impact on noise-sensitive receptors if construction hour limitations are not imposed. However, and as required by Mitigation Measure NOI-8, with adherence to a restricted construction schedule dictating project-related site preparation and construction activities limited to the hours between

7:00 am–6:00 pm, Monday–Friday and between the hours of 8:00 am–6:00 pm Saturday, significant construction-related noise impacts could be avoided.

Impacts to MSCP Preserve Areas

There are no operational noise significance thresholds for the Preserve; however, for purposes of consistency with construction noise requirements, the following analyzes the potential for operational noise levels that would exceed 60 dBA, which is the construction noise threshold for the Preserve during breeding season.

Following construction, the southernmost residences in Village Eight East and Village Ten, and easternmost residences in Villages Three North and Village Ten would be located adjacent to MSCP Preserve area, and the OVRP, Greenbelt trail and Village Ten Connector Trails would traverse the Preserve. However, residences and trails are not sources of substantial noise. Occasional maintenance activities would be required along the trail and edge of development, such as vegetation and sediment removal; however, these activities would not require heavy construction equipment that would generate excessive noise. Occasional vehicle trips would not result in a substantial increase in noise levels.

All development located adjacent to the Preserve is required to prepare an Edge Plan (Section 7.2 of the RMP). The Preserve edge is a strip of land 100 feet wide that surrounds the perimeter of the Preserve; however, it is not part of the Preserve. Preserve Edge Plans have been prepared for each SPA Plan in consultation with a qualified biologist. These plans detail the uses allowed within the 100-foot Preserve edge, provide a list of plant species that are appropriate adjacent to the Preserve, and overlap with the proposed 100-foot fuel modification zone. These Preserve Edge Plans also analyze how each village complies with the Preserve adjacency guidelines from Section 7.5.2 of the Chula Vista MSCP Subarea Plan. As described in the Preserve Edge Plan in the SPA Plans, a manual weeding program would be prepared for the Preserve edge. Occasional maintenance of the off-site utilities may require heavy equipment; however, such activities would be infrequent and temporary. The Chula Vista MSCP Plan states that infrastructure repairs and maintenance are allowable as needed in the MSCP Preserve. Maintenance would be subject to the MSCP requirement that, to the extent practicable, access for non-emergency routine maintenance would be limited during bird breeding seasons (April 1 through June 31) in areas where breeding and/or nesting activity may occur. Therefore, impacts would be **less than significant**.

Another MSCP preserve area (Wolf Canyon) is located west of Village Four, which would be developed as a community park. The Community Park would potentially include sports fields, playgrounds, and other uses that could generate noise levels of 60 dBA up to 100 feet from the park. However, a 100-foot Preserve edge is required per the MSCP Subarea Plan in order to

reduce indirect impacts. As a result, no active park uses would be placed within 100 feet of the Preserve, and any indirect noise impacts would be less than 60 dBA. Additionally, biological noise mitigation measures are identified to reduce operational noise levels within the Preserve (see Section 5.8, Biological Resources, Mitigation Measures BIO-17 and BIO-18). Therefore, impacts would be **less than significant**.

In Village Three North, the extension of Main Street along the southern edge of Village Three North would result in noise levels of up to 67 dBA. However, similar to Village Four, biological noise mitigation measures are identified to reduce operational noise levels within the Preserve (see Section 5.8, Biological Resources, Mitigation Measures BIO-17 and BIO-18). Additionally, Main Street is a planned facility within the Preserve. As a result, impacts would be **less than significant**.

E. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.

Development containing noise-sensitive land uses which is proposed in proximity to an airport has the potential to experience nuisance noise from airport operations. Typically, if the development proposal is located within the Airport Influence Area of an adopted Airport Land Use Plan (ALUP) or Airport Land Use Compatibility Plan (ALUCP), or within the vicinity of a private airstrip not subject to an airport land use plan, noise from airport operations is to be assessed for potential impacts upon the development.

Brown Field is located along the north side of Otay Mesa Road, approximately 1 mile south of Village Four and a similar distance from the other Villages. The runways are oriented in an east/west direction. According to the City of San Diego General Plan EIR (2007), some southerly portions of the project site may be located within the 60–65 dB CNEL contour line. The 65–70 dB contour line does not encompass any portion of the project site (refer to Appendix L for the noise contour map from the General Plan EIR).

The project site is subject to overflights of planes and helicopters taking off from Brown Field, which are audible on the project site and would be audible in the future. Overflights from Brown Field may be considered a nuisance to residents. In accordance with standard condition #46 in Section 5-300 of the City's Subdivision Manual, Applicants are required to record an Airport Overflight Agreement against the property to the satisfaction of the Development Services Director prior to recordation of any Final Map. This condition would run with the property, and as such, potential nuisance noise from aircraft overflights would be disclosed to future residents. Therefore, impacts would be **less than significant.**

The San Diego County Airport Land Use Commission adopted an ALUCP for Brown Field in 2005 (County of San Diego 2005). The graphics in the 2005 ALUCP indicate that the project site (i.e., Villages 3 North, 4, 8 East, and 10) is north and outside of the 60 and 65 dB CNEL noise contours for Brown Field (refer to Appendix L). According to existing data for Brown Field, the project site would not be exposed to noise levels from aircraft operations that exceed 60–65 dB CNEL. In that 65 dB CNEL is an acceptable exterior noise exposure level for all of the land uses proposed within the project, airport noise exposure levels would remain at **less than significant** levels.

F. For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

See the discussion of Threshold E above. Impacts would be **less than significant**.

G. Be inconsistent with General Plan, Otay Ranch GDP or other objectives and policies regarding noise thereby resulting in a significant physical impact.

Appendix B evaluates the consistency of the proposed project with the applicable General Plan policies, and the analysis demonstrates the proposed project's consistency. All project development proposed under the proposed project would be built and designed according to the City of Chula Vista General Plan noise compatibility guidelines and noise regulations outlined in the City's municipal code. A complete analysis of consistency with General Plan policies is provided in Appendix B.

Appendix B evaluates the consistency of the proposed project with the applicable Otay Ranch GDP policies, and the analysis demonstrates the proposed project's consistency. The proposed project would promote a quiet community where residents live without noise which is detrimental to health and enjoyment of property. Mitigation measures have been included when necessary to reduce potential impacts from noise and the City of Chula Vista Noise Ordinance would continue to be enforced with implementation of the SPA Plans. As shown in Appendix B, the proposed project would be consistent with applicable Otay Ranch GDP policies. A more detailed analysis of the proposed project's consistency is provided in Appendix B.

As shown in Appendix B, the proposed project would be consistent with all applicable noise policies found in the General Plan and Otay Ranch GDP. Impacts associated with project implementation would be **less than significant**.

5.5.4 Level of Significance Prior to Mitigation

On-Site Traffic Noise Exposure – Major Roadways

Village Three North

The noise level associated with future Main Street traffic volumes in Village Three North would exceed the exterior noise criterion of 65 dB CNEL, and is considered a **potentially significant impact**. Additionally, the noise level associated with future Heritage Road traffic volumes would equal or exceed the exterior noise criterion of 65 dB CNEL, and is considered a potentially significant impact. Mitigation for this potentially significant impact is provided (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-1).

Interior noise levels at residences adjacent to Main Street and Heritage Road would have the potential to exceed 45 dBA CNEL; therefore, a **potentially significant impact** related to interior noise levels would also occur. Mitigation for this potentially significant impact is provided (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-2 and NOI-3).

Village Eight East

The noise level associated with future Main Street traffic volumes in Village Eight East would exceed the exterior noise criterion of 65 dB CNEL, and is considered a **potentially significant impact**. Additionally, noise level associated with future Otay Valley Road traffic volumes would equal or exceed the exterior noise criterion of 65 dB CNEL, and is considered a potentially significant impact. Mitigation for this potentially significant impact is provided (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-1).

For residential areas north of Otay Valley Road, the row of homes closest to SR-125 could be exposed to noise levels ranging to 61 dB CNEL from future traffic along SR-125. This noise level associated with future SR-125 traffic volumes would not exceed the exterior noise criterion of 65 dB CNEL, and is thus considered a **less than significant** impact.

Interior noise levels at residences adjacent to Main Street, SR-125 and Otay Valley Road would have the potential to exceed 45 dBA CNEL; therefore, a **potentially significant impact** related to interior noise levels would also occur. Mitigation for this potentially significant impact is provided (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-2 and NOI-3).

Village Ten

The first row of homes in Village Ten closest to Discovery Falls Drive could be exposed to noise levels ranging to 67 dB CNEL from future traffic along Discovery Falls Drive and University Drive. The noise level would equal or exceed the exterior noise criterion of 65 dB CNEL, and is

considered a **potentially significant impact**. Mitigation for this potentially significant impact is provided (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-1). Noise levels along Otay Valley Road, based upon Year 2030 Plus Project traffic, would not exceed 62 dB CNEL at proposed noise-sensitive land uses and impacts would be less than significant along this road.

Interior noise levels at residences adjacent to Discovery Falls Drive and Otay Valley Road would have the potential to exceed 45 dBA CNEL; therefore, a **potentially significant impact** related to interior noise levels would also occur. Mitigation for this potentially significant impact is provided (*see* Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-2 and NOI-3).

Off-Site Noise Impacts Associated with Project Traffic

With distribution of project generated trips onto the area roadway network off site, the noise attributable to project contributed trips versus regional traffic becomes largely indistinguishable. Additionally, the project would not cause noise levels to increase from below 65 dB CNEL to greater than 65 dB CNEL along any of the existing off-site roadways with adjacent noise-sensitive land uses. In addition, the existing homes along the nearby segments of the roads in Table 5.5-10 already include sound walls designed to reduce the noise exposure from the adjacent roadway to 65 dB CNEL or less; these sound walls were previously constructed in anticipation of substantial increases in the traffic volume along these roadways. Impacts associated with off-site noise would be **less than significant**.

Noise Generation – Commercial and Industrial Land Uses

Noise levels associated with the commercial activities would vary depending on the number of delivery trucks, loading dock areas and customer traffic generated by the commercial site, as well as the location of parking areas. Similarly, HVAC equipment noise would vary depending on the number and types of equipment selected. To avoid **potentially significant impacts** related to commercial use noise, mitigation is provided (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-4).

The proposed industrial areas are encompassed within the buffer for the municipal landfill located north of the project boundaries. Because of the presence of the landfill along the northerly property boundary along the proposed industrial use zone, the project industrial land uses are not anticipated to have noise impacts upon neighboring off-site areas and land uses. Although impacts would likely be less than significant, industrial land uses possess many of the same noise generating characteristics as commercial uses (loading/unloading docks and parking lots; HVAC equipment; maintenance activities; and additional truck traffic along adjacent roads), but often include manufacturing processes and materials handling operations with additional noise generation potential. These industrial activities would have the potential to result in average noise levels above the City's noise thresholds, and would be considered a **potentially**

significant impact. Therefore, each proposed industrial development will be required to prepare a detailed acoustic evaluation as part of the development permit application review process to ensure elevated noise generation, which could adversely affect project residences to the south, are avoided. To avoid any potential impacts related to industrial use noise, mitigation is provided (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-5).

Additionally, the existing landfill currently exercises noise-generating activities such as horns, amplified sound or explosive-noise devices to deter avian vectors as a result of landfill operations. These noise sources are part of the existing ambient noise environment, and would be buffered by the proposed industrial development that would be located at the northerly property boundary along the proposed industrial use zone. Moreover, a review of available documents, including recent LEA inspection reports, shows that vectors have not been a problem at the landfill; however, there were some "Area of Concern" notes regarding proper waste coverage. Since proper waste coverage is the primary control mechanism for vectors, maintaining proper waste coverage should continue to prevent vector issues from occurring (SCS 2014). Impacts would be **less than significant**.

Parks and Recreation Related Noise

For the Village Eight East Community Park (P-2) and the Village Four Community Park (P-2), a 100-foot Preserve edge is required per the MSCP Subarea Plan in order to reduce indirect impacts. As a result, no active park uses would be placed within 100 feet of the Preserve, and any indirect noise impacts would be less than 60 dBA. Additionally, biological noise mitigation measures are identified to reduce operational noise levels within the Preserve (see Section 5.8, Biological Resources, Mitigation Measures BIO-17 and BIO-18). Therefore, impacts would be **less than significant**.

Based upon the most recent conceptual design drawings, each of the park sites is surrounded on all four sides by a street having a minimum 58 foot wide right of way. Thus, noise levels from the proposed parks would be less than 65 dB during park operating hours. Nighttime noise at the parks would be negligible because the parks would be closed after approximately 10 P.M. However, as the City of Chula Vista normally allows parks to remain open until 10:30 P.M., a potentially significant impact could result. Therefore, a mitigation measure is included which requires parks within the project to close at 10 P.M. (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-6). Landscape maintenance would result in a less than significant impact.

Other Recreation Facilities

Private Recreation Facilities would be located throughout each Village. In addition, trails, and playgrounds are a permitted use throughout the SPA. The proposed trails throughout the project site and the off-site trail connection to the OVRP would be used for walking and bicycling and

would generally not support activities that would generate noise levels higher than normal conservation. The PRFs would not include athletic fields or other major active use facilities. Playgrounds would generate noise levels less than the Neighborhood Park noise level of 54.3 dBA at 50 feet. The neighborhood playgrounds would generally not be in use after dark, and nighttime activity would be expected to be limited to normal conversation levels. Therefore, these facilities would not generate noise levels that exceed the City's noise level limits and significant impacts would not occur.

School-Related Noise

Traffic-related noise exposure levels within exterior use areas for the schools (i.e., playground, sports fields, athletic courts, etc.) could exceed the established noise standards, thereby resulting in **potentially significant noise impacts**. To avoid potentially significant noise impacts, mitigation is provided (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-7).

Future school buildings that are located in areas exposed to a noise level greater than 60 dB CNEL could exceed an interior noise level of 45 dB CNEL. To avoid these **potentially significant impacts**, mitigation is provided (see Section 5.5.5, Mitigation Measures, Mitigation Measure NOI-7).

Recreational activities at Olympian High School would not exceed the City's noise standards at the proposed project site. Impacts would be less than significant.

Temporary or Periodic Increase in Ambient Noise Levels

Project generated construction noise would pose a **potentially significant impact** on noise-sensitive receptors if construction hour limitations are not imposed. However, with adherence to a restricted construction schedule dictating project-related site preparation and construction activities limited to the hours between 7:00 am–6:00 pm, Monday–Friday and between the hours of 8:00 am–6:00 pm Saturday, significant construction-related noise impacts could be avoided. To avoid potentially significant construction-related noise impacts, mitigation is provided (see Section 5.5.5, Mitigation Measures, NOI-8).

Groundborne Vibration or Groundborne Noise Levels

Blasting may be required in the Village Four Community Park (P-2) area. Although this would not exceed any City thresholds, blasting, if determined to be necessary, is considered to have a **potentially significant impact** unless mitigated. To avoid potentially significant impacts, mitigation is provided (see Section 5.5.5, Mitigation Measures, NOI-9).

Permanent Increase in Ambient Noise Levels

As seen in Table 5.5-12, the proposed project's contribution to cumulative traffic noise levels would be limited, a 1 dB increase at most, which by itself is not a discernible increase. Additionally, also as shown in Table 5.5-12, the proposed project would not contribute any increase in noise levels at those locations equal to or exceeding the City's 65 dB CNEL noise standard for residential land use under Without Project conditions. Impacts would be **less than significant** and mitigation is not required.

Airport Noise

The graphics in the 2005 ALUCP indicate that the project site (i.e., Villages 3 North, 4, 8 East, and 10) is north and outside of the 60 and 65 dB CNEL noise contours for Brown Field. According to existing data for Brown Field, the project site would not be exposed to noise levels from aircraft operations that exceed 60–65 dB CNEL. In that 65 dB CNEL is an acceptable exterior noise exposure level for all of the land uses proposed within the project, airport noise exposure levels would remain below significant levels. No mitigation is required.

Consistency with General Plan, Otay Ranch GDP or Other Objectives and Policies

The project would be consistent with all applicable noise policies found in the General Plan. The Otay Ranch GDP objectives and policies related to noise are consistent with those in the City's General Plan.

5.5.5 Mitigation Measures

The following mitigation measures are recommended to address the identified potentially significant noise impacts. In addition to the following mitigation measures, MM BIO-17 and MM BIO-18 would also contribute to a reduction in noise related impacts.

MM NOI-1 Site-Specific Acoustical Analysis – Single- and Multi-Family Residential Development - Exterior. Prior to the approval of rough grading permits for residential development adjacent to Main Street and Heritage Road (Village Three), Otay Valley Road, SR-125 and Main Street (Village Eight), and Discovery Falls Drive and University Drive (Village Ten), the Project Applicant or its designee shall: (i) prepare a site-specific acoustical study based on the Final Map design; (ii) construct noise barriers as specified below; and (iii) implement any additional noise control measures recommended as a result of the analysis necessary to achieve compliance with the City's Land Use/Noise Compatibility Guidelines and the City's Noise Ordinance (Municipal Code Section 19.68) for exterior noise sensitive land uses. Implementation of all recommended measures

shall be to the satisfaction of the Development Services Director (or their designee) and all required noise control measures shall be made conditions of grading permit issuance. The acoustical study shall include, but not be limited to the following:

1. Specification of the location, height, and building material to be used for the noise barriers to be constructed in accordance with Figures 12, 13 and 14 (Approximate Sound Wall Locations), contained in the Noise Assessment Technical Report for the Otay Ranch University Villages Project (Dudek 2014). The sound wall noise barriers shall be a minimum of six feet in height, must have a surface density of at least four pounds per square foot, and be free of openings and cracks (with the exception of expansion joints gaps and other construction techniques, which could create an opening or crack). The wall may be constructed of acrylic glass, masonry material, earthen berm, or a combination of these materials. Heights are provided relative to final pad elevation. Required heights may be achieved through construction of walls, berms or a wall/berm combination;
2. A detailed analysis that demonstrates that barriers and/or setbacks have been incorporated into the project design, such that noise exposure to residential receivers placed in all useable outdoor areas, including multi-family residential patios and balconies, are at or below 65 dBA CNEL. Measures to reduce noise levels may include, but are not limited to, setback of structures from the roadway, installing acoustic barriers, or orienting outdoor activity areas away from roadways so that surrounding structures provide noise attenuation; and
3. Should pad grade elevations, lot configuration/site design, and/or traffic assumptions change during the processing of any Final Maps, the barriers shall be refined to reflect those modifications.

MM NOI-2 Site-Specific Acoustical Analysis – Single-Family Residences - Interior. Concurrent with design review and prior to the approval of building permits for single-family residential development where the exterior noise level exceeds 60 dBA CNEL as indicated in the Noise Assessment Technical Report for the Otay Ranch University Villages Project (Dudek 2014), the Applicant or its designee shall: (i) prepare a site-specific acoustical analysis identifying those noise control measures necessary to ensure that interior noise levels due to exterior noise sources will be at or below 45 dBA CNEL; and (ii) implement all measures recommended as a result of the analysis necessary to achieve compliance with the

City's Land Use/Noise Compatibility Guidelines and the City's Noise Ordinance (Municipal Code Section 19.68) for single-family residential interior uses.

This mitigation measure shall apply to neighborhoods R-1, R-2, R-9, R-11 and R-20 in Village Three North; and neighborhoods R-11a and R-13 in Village Eight East where exterior noise levels exceed 60 dBA CNEL.

Measures to reduce noise levels may include, but are not limited to, setback of structures from the roadway, installing acoustic barriers, or orienting outdoor activity areas away from roadways so that surrounding structures provide noise attenuation. The analysis shall also demonstrate that barriers or setbacks have been incorporated into the project design, such that, when considered with proposed construction specifications, ground level and upper story interior noise levels shall not exceed 45 dBA CNEL. Roof-ceiling assemblies making up the building envelope shall have a sound transmission class value of at least 50, and exterior windows shall have a minimum sound transmission class of 30 in compliance with the California Green Building standards code.

Design-level architectural plans shall be used to assess the exterior-to-interior transmissions loss for habitable rooms. Contingent upon the results of the interior acoustical analysis, the units may need to include an air conditioning system to provide a habitable interior environment with the windows closed while meeting the interior standard of 45 dBA CNEL. The acoustical analysis shall be prepared to the satisfaction of the Development Services Director (or their designee), and all required noise control measures identified in the acoustical analysis shall be made conditions of building permit issuance.

MM NOI-3 Site-Specific Acoustical Analysis – Multi-Family Residences - Interior. Concurrent with design review and prior to the approval of building permits for multi-family areas where first and/or second floor exterior noise levels exceed 60 dBA CNEL and/or where required outdoor area (patios or balconies) noise levels exceed 65 dBA CNEL as indicated in the Noise Assessment Technical Report for the Otay Ranch University Villages Project (Dudek 2014), the Applicant or its designee shall: (i) prepare a site-specific acoustical analysis identifying those noise control measures necessary to achieve compliance with California's Title 24 Interior Noise Standards (i.e., 45 dBA CNEL) and the City's Exterior Land Use/Noise Compatibility Guidelines for outdoor use areas (i.e., 65 dBA CNEL); and (ii) implement those measures necessary to achieve compliance with all applicable noise standards.

This mitigation measure shall apply to neighborhoods R-14a, R-15a, R-16, R-17 and R-18d in Village Eight East; and neighborhoods R-5, R-6, R-7, R-8, R-9, R-10, R-17a, R-17b, R-17c, R-18a, R-18b, R-19a, R-19b, and R-19c in Village Ten, where exterior noise levels exceed 60 dBA CNEL.

Measures to reduce noise levels may include, but would not be limited to, setback of structures from the roadway, installing acoustic barriers, or orienting outdoor activity areas away from roadways so that surrounding structures provide noise attenuation. The analysis shall also demonstrate that barriers or setbacks have been incorporated into the project design, such that, when considered with proposed construction specifications, ground level and upper story interior noise levels shall not exceed 45 dBA CNEL. Roof-ceiling assemblies making up the building envelope shall have a sound transmission class value of at least 50, and exterior windows shall have a minimum sound transmission class of 30 in compliance with the California Green Building standards code.

Design-level architectural plans will be available during design review and will permit the accurate calculation of transmissions loss for habitable rooms. For these areas, it may be necessary for the windows to be able to remain closed to ensure that interior noise levels meet the interior standard of 45 dBA CNEL. Consequently, the design for buildings in these areas may need to include a ventilation or air conditioning system to provide a habitable interior environment with the windows closed based on the result on the interior acoustical analysis.

The acoustical analysis shall be prepared to the satisfaction of the Development Services Director (or their designee), and all required noise control measures identified in the acoustical analysis shall be made conditions of building permit issuance.

MM NOI-4 Site-Specific Acoustic Analysis – Non-Residential Commercial and/or Mixed-Use Residential – Exterior. Concurrent with design review and prior to the approval of building permits for non-residential commercial and/or mixed use residential area where exterior noise levels exceed 65 dBA CNEL as indicated in the Noise Assessment Technical Report for the Otay Ranch University Villages Project (Dudek 2014), the Applicant or its designee shall: (i) prepare a site-specific acoustical analysis identifying those noise control measures necessary to ensure that exterior noise levels at the boundary of the proposed noise sensitive land use will be below 65 dBA CNEL; and (ii) implementation of any measures recommended as a result of the analysis.

Measures to reduce noise levels may include, but would not be limited to, setback of structures from the roadway, installing acoustic barriers, or orienting outdoor activity areas away from roadways so that surrounding structures provide noise attenuation. The analysis shall also demonstrate that barriers or setbacks have been incorporated into the project design, such that, when considered with proposed construction specifications, ground level and upper story interior noise levels shall not exceed 45 dBA CNEL. Roof-ceiling assemblies making up the building envelope shall have a sound transmission class value of at least 50, and exterior windows shall have a minimum sound transmission class of 30 in compliance with the California Green Building standards code.

The acoustical analysis shall be prepared to the satisfaction of the Development Services Director (or their designee), and all required noise control measures identified in the acoustical analysis shall be made conditions of building permit issuance.

MM NOI-5 Site-Specific Acoustical Analysis – Industrial Zone. As part of the site plan/development plan review process conducted in connection with future industrial development applications submitted to the City, the Applicant or its designee shall prepare a site-specific acoustical analysis to identify those noise control measures necessary to ensure noise levels generated by the proposed use will comply with the City's General Plan noise standards for residential property boundaries proximate to the industrial zone (maximum exterior noise levels of 65 CNEL). The acoustical analysis shall be prepared to the satisfaction of the Development Services Director (or their designee). All required noise control measures identified in the acoustical analysis shall be made conditions of development approval.

MM NOI-6 As a condition of approval of the proposed project, the City shall limit the active programming operational hours for neighborhood park sites to 7:00 am–10:00 pm, 7 days a week.

MM NOI-7 Concurrent with design review and prior to the approval of building permits for the elementary schools: an acoustical analysis shall be prepared identifying the noise control measures necessary to ensure that noise levels at exterior use areas (i.e., playground, sports fields, athletic courts, etc.) will be below 65 dBA CNEL and requiring implementation of any measures recommended as a result of the analysis. Measures to reduce noise levels may include, but would not be limited to, setback of structures from the roadway, installing acoustic barriers, or

orienting outdoor activity areas away from roadways so that surrounding structures provide noise attenuation.

The acoustical analysis shall also address control measures for outdoor school activity noise and its effect upon immediately adjacent residential land uses, to ensure school activity related noise levels do not exceed 65 dB CNEL at exterior use areas of adjacent residential properties.

The analysis shall also demonstrate that barriers or setbacks have been incorporated into the project design, such that, when considered with proposed construction specifications, ground level and upper story interior noise levels shall not exceed 45 dBA CNEL. Roof-ceiling assemblies making up the building envelope shall have a sound transmission class value of at least 50, and exterior windows shall have a minimum sound transmission class of 30 in compliance with the California Green Building standards code.

The acoustical analysis shall be prepared consistent with all applicable requirements to the satisfaction of the school district, and all required noise control measures identified in the acoustical analysis shall be made conditions of development approval.

Mitigation measure NOI-7 is consistent with the School Site Selection and Approval Guide prepared by the California Department of Education, which provides that if a school district is considering a potential school site near a freeway or other source of noise, it should hire an acoustical engineer to determine the level of sound that location is subject to and assist in designing the school site that should be chosen. The *Guide* provides further that the American Speech-Language-Hearing Association guidelines recommend that in classrooms sounds dissipate in 0.4 seconds or less (and not reverberate) and that background noise not rise above 30 decibels.

MM NOI-8 The Project Applicant or its designee shall limit all project-related site preparation and construction activities to the hours between 7:00 am–6:00 pm, Monday–Friday, and between 8:00 am–6:00 pm Saturday. No construction activities shall occur on Federal holidays (e.g., Thanksgiving, July 4th, Labor Day, etc.). All maintenance of construction equipment shall be limited to the same hours. This language shall be added to the project grading plans. Minor construction (i.e., minor household do-it-yourself type projects) and non-noise-generating construction activities such as interior painting are not subject to these restrictions.

MM NOI-9 Prior to the issuance of a grading permit, and in the event that blasting is proposed in Village Four, the Project Applicant or its designee shall prepare a blasting plan to ensure that exterior noise levels at noise sensitive land uses are in compliance with the City of Chula Vista General Plan Exterior Land Use / Noise Compatibility Guidelines and the City's Noise Ordinance Exterior Noise Limits. The plan shall be prepared by a licensed blasting engineer and identify when such blasting events would occur, the approximate amount of explosives to be used (which amount shall be limited to the extent practicable so as to minimize resulting noise), and the location and proximity of the blasting event relative to sensitive receptors. If deemed beneficial for noise reduction purposes, the plan shall include a requirement that blasting mats be used. The blasting plan shall also detail the surrounding zone in which noise-sensitive land uses would be notified of planned blasting activities, and of the nature of audible warning signals to be used just prior to blasting. The blasting plan shall be prepared to the satisfaction of the Development Services Director (or their designee), and all noise control measures identified in the blasting plan shall be made conditions of grading permit issuance.

5.5.6 Level of Significance After Mitigation

The mitigation measures listed in Section 5.5.5, and MM BIO-17 and MM BIO-18 would reduce potential noise impacts to **less than significant**.

5.6 CULTURAL RESOURCES

This section of the EIR tiers from the 1993 Otay Ranch GDP Program EIR, because potential impacts to cultural resources due to development in the entire Otay Ranch area was analyzed as part of the 1993 Otay Ranch GDP including the project site. The 1993 Otay Ranch GDP Program EIR determined that impacts to cultural resources would be significant and unmitigable; however, the Chula Vista City Council determined that the significant impacts identified in that EIR were acceptable because of specific overriding considerations.

This section of the EIR also tiers from the 2005 GPU/GDPA Program EIR, because potential impacts to cultural resources due to development in the entire Otay Ranch area were also analyzed as part of the 2005 GPU/GDPA. The 2005 GPU/GDPA determined that compliance with City policies and objectives, as well as specific mitigation measures, would result in less than significant impacts to cultural resources.

This section of the EIR addresses potential impacts to cultural resources resulting from the proposed project. The discussion in this section is based on the *Cultural Resources Study for the University Villages Project at Otay Ranch* ("Cultural Resources Study") prepared by Brian F. Smith and Associates Inc. in March 2014. The complete report is contained in Appendix F of this EIR.

5.6.1 Existing Conditions

Cultural resources include prehistoric resources and historical-period resources. Prehistoric resources are physical properties resulting from human activities that predate written records and are generally identified as isolated finds or sites. Prehistoric resources can include village sites, temporary camps, lithic (stone tool) scatters, roasting pits/hearths, milling features, rock features, and burials. Historic resources consist of physical properties, structures, or built items resulting from human activities after the time of written records. In North America, the historical-period is generally considered to be equivalent to the time period since European contact, beginning in A.D. 1492. Historic resources can include archaeological remains and architectural structures. Historic archaeological site types include town sites, homesteads, agricultural or ranching features, mining-related features, refuse concentrations, and features or artifacts associated with early military use of the land. Historic architectural resources can include houses, cabins, barns, lighthouses, early military structures, and local structures, such as missions, post offices, and meeting halls.

5.6.1.1 Regulatory Framework

Federal Level

National Historic Preservation Act

The National Historic Preservation Act (NHPA) (16 U.S.C. 470 et seq.) establishes the nation's policy for historic preservation and sets in place a program for the preservation of historic

properties by requiring federal agencies to consider effects to significant cultural resources (e.g., historic properties) prior to undertakings.

Section 106 of the NHPA requires federal agencies to take into account the effects of projects on historic properties (resources included in or eligible for the National Register of Historic Places (NRHP)). It also gives the Advisory Council on Historic Preservation and the state historic preservation offices an opportunity to consult. Federal agencies issuing permits for the proposed project will be required to comply with NHPA requirements.

Executive Order 11593, "Protection and Enhancement of the Cultural Environment"

Executive Order 11593 (36 FR 8921) (1) orders the protection and enhancement of the cultural environment through requiring federal agencies to administer the cultural properties under their control in a spirit of stewardship and trusteeship for future generations; (2) initiates measures necessary to direct their policies, plans, and programs in such a way that federally owned sites, structures, and objects of historical, architectural, or archaeological significance are preserved, restored, and maintained for the inspiration and benefit of the people; and (3) in consultation with the Advisory Council on Historic Preservation, institutes procedures to assure that federal plans and programs contribute to the preservation and enhancement of non-federally owned sites, structures, and objects of historical, architectural, or archaeological significance (16 U.S.C. 470-1).

National Register of Historic Places

The NRHP is the nation's official list of historic places. The register is overseen by the National Park Service and requires that a property or resource eligible for listing in the register meet one or more of the following four criteria at the national, state, or local level to ensure integrity and obtain official designation.

- The property is associated with events that have made a significant contribution to the broad patterns of our history.
- The property is associated with the lives of persons significant to our past. Eligible properties based on this criterion are generally those associated with the productive life of the individual in the field in which the person achieved significance.
- The property embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic value, or represents a significant and distinguishable entity whose components lack individual distinction.
- The property has yielded, or is likely to yield, information important to prehistory or history.

In addition to meeting at least one of these four criteria, listed properties must also retain sufficient physical integrity of those features necessary to convey historic significance. The register has identified the following seven aspects of integrity: (1) location, (2) design, (3) setting, (4) materials, (5) workmanship, (6) feeling, and (7) association.

Properties are nominated to the register by the state historic preservation officer of the state in which the property is located, by the federal preservation officer for properties under federal ownership or control, or by the tribal preservation officer if on tribal lands. Listing in the NRHP provides formal recognition of a property's historic, architectural, or archaeological significance based on national standards used by every state. Once a property is listed in the NRHP, it becomes searchable in the NRHP database of research information. Documentation of a property's historic significance helps encourage preservation of the resource.

State Level

California Public Resources Code

California Public Resources Code (PRC), Sections 5097–5097.6, identify that the unauthorized disturbance or removal of archaeological, historical, or paleontological resources located on public lands is a misdemeanor. It prohibits the knowing destruction of objects of antiquity without a permit (express permission) on public lands, and it provides for criminal sanctions. This section was amended in 1987 to require consultation with the Native American Heritage Commission (NAHC) whenever Native American graves are found. Violations that involve taking or possessing remains or artifacts are felonies.

Public Resources Code, Section 5097.5, states that "no person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface, any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historic feature situated on public lands, except with the express permission of the public agency having jurisdiction over the lands."

California Register of Historical Resources

The California Office of Historic Preservation maintains the California Register of Historical Resources (CRHR). The CRHR is the authoritative guide to the state's significant historic and archaeological resources. The program provides for the identification, evaluation, registration, and protection of California's historic resources. The CRHR encourages public recognition and protection of resources of architectural, historic, archaeological, and cultural significance; identifies historic resources for state and local planning purposes; determines eligibility for state

historic preservation grant funding; and affords certain protection to resources under the California Environmental Quality Act (CEQA).

The CRHR also has established context types to be used when evaluating the eligibility of a property or resource for listing. The four criteria are as follows:

- It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
- It is associated with the lives of persons important to local, California, or national history.
- Represents the work of a master, or possesses high artistic values.
- It has yielded, or is likely to yield, information important to prehistory or history of the local area, California, or the nation.

Similar to the NRHP, eligibility for the CRHR requires an establishment of physical integrity, including the seven aspects previously described. The CRHR's list of special considerations is less stringent than the NRHP's, providing allowances for relocated buildings, structures, or objectives as reduced requirements for physical integrity.

California Health and Safety Code

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Health and Safety Code, Section 7050.5, requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the county coroner has examined the remains (Section 7050.5b). If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the NAHC within 24 hours (Section 7050.5c). The NAHC will notify a Most Likely Descendant (MLD). With the permission of the landowner, the MLD may inspect the site of discovery. The inspection must be completed within 24 hours of notification of the MLD by the NAHC. The MLD may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the State. CEQA requires lead agencies to determine if a proposed project would have a significant effect on archaeological resources (PRC, Sections 21000 et seq.). As defined in Section 21083.2 of the PRC a "unique" archaeological resource is an archaeological artifact, object, or site, about which

it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

In addition, CEQA Section 15064.5 broadens the approach to CEQA by using the term "historical resource" instead of "unique archaeological resource." The CEQA Guidelines recognize that certain historical resources may also have significance. The Guidelines recognize that a historical resource includes: (1) a resource in the California Register of Historical Resources; (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

If a lead agency determines that an archaeological site is a historical resource, the provisions of Section 21084.1 of the PRC and Section 15064.5 of the Guidelines apply. If an archaeological site does not meet the criteria for a historical resource contained in the Guidelines, then the site is to be treated in accordance with the provisions of PRC §21083, which is a unique archaeological resource. The Guidelines note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (14 CCR 15064.5(c)(4)).

Local Level

Otay Ranch Resource Management Plan

The Otay Ranch Resource Management Plan (RMP) was adopted in 1993 with the approval of the Otay Ranch General Development Plan to establish a permanent preserve within Otay Ranch. The purpose of the Otay Ranch Preserve is to protect and enhance biological, paleontological, cultural, and scenic resources. Plan objectives include biological diversity and promotion of the survival and recovery of native species and habitats. The RMP identifies an open space system of 11,375 acres to be dedicated within the Otay Ranch, targeting lands that include important

resources such as vernal pools, coastal sage scrub habitat, coastal California gnatcatcher populations, and potential wetlands restoration areas. The Otay Ranch Preserve would also connect large areas of open space through a series of wildlife corridors, and cover portions of Salt Creek Canyon to Otay Valley. The preserve boundaries from the RMP have been incorporated into the adopted Otay Ranch GDP. The preserve/development boundary of the Otay Ranch GDP is consistent with the objectives, policies, and criteria established in the RMP (City of Chula Vista and County of San Diego 1993, 2002).

The Phase 2 Resource Management Plan (Phase 2 RMP or RMP 2), adopted in 1996 and revised in 2002, identified implementation measures that included procedures for dedicating parcels of land to the resource preserve and for determining the proportionate share for each village.

Land identified by the RMP as part of the 11,375-acre Otay Ranch Preserve is required to be conveyed to the preserve prior to the approval of final maps. The conveyance ratio (ratio of land to be dedicated per acre of development) is 1.188 acres dedicated for each developable acre that is final mapped. This ratio was established by the RMP 2. The RMP 2 identified 9,574 "developable acres" in Otay Ranch, which are defined as the total amount of developable acreage minus "common uses" (local parks, schools arterials, SR-125 and lands designated as a public use area) and "Limited Development Areas." In order for the conveyance of the entire 11,375-acre Otay Ranch Preserve, the RMP 2 calculated that 1.188 acres of preserve land must be dedicated for each developable acre (11,375 acres of preserve divided by 9,574 developable acres). The conveyance obligation is required to be met on a village-by village basis.

The City of Chula Vista

The City of Chula Vista assesses and mitigates the potential impacts of private development and public facilities and infrastructure to significant cultural resources pursuant to the provisions of CEQA. Sections 15064.5 and 15126.4 of the State CEQA Guidelines define historical resources (i.e., cultural resources) and addresses, in general terms, mitigation requirements for significant and potentially significant impacts to such resources. Pursuant to the State CEQA Guidelines, historical resources are not limited to officially listed resources, but also include resources found to be eligible for listing at the local, state, and federal levels. Cultural resources that reflect the history of a community, from descendants of the earliest Native Americans to later explorers, settlers, and immigrants, are important to the community and, therefore, warrant protection by the City. Furthermore, the accessibility of important cultural resources to the public for educational, religious, cultural, scientific and other purposes should be supported and encouraged by the City. The proposed project's consistency with applicable goals, objectives and policies found in the City of Chula Vista General Plan and Otay Ranch GDP is provided in Appendix B.

Title 21 of the Chula Vista Municipal Code (CVMC) defines the Historic Preservation Ordinance, which creates a process for designating and delisting historical resources, requires review of alterations to historical resources, and establishes a qualified historic preservation commission (HPC). The HPC inherited the historic preservation duties that were previously vested with the City's Resource Conservation Commission. The HPC meets the requirements of a qualified review board for Certified Local Government (CLG) status (City of Chula Vista 2011). The HPC has authority on historic preservation matters, including designations, Major Alteration Certificate of Appropriateness applications, historical resource determinations and appeals. The HPC also provides advice to Council and other City boards and commissions on historic preservation matters. The HPC consist of seven members. Four of the seven members are selected from the disciplines of related fields such as: History, Architecture, Architectural History, Archeology, and Landscape Architecture, one licensed realtor, and two members with an interest competence or knowledge in historic preservation (City of Chula Vista 2011).

5.6.1.2 Existing Setting

The following discussion provides a summary of the existing historic and cultural setting of the overall project area, as well as the villages that comprise the project area, Village Three North and a Portion of Village Four, Village Eight East, and Village Ten. A detailed overview of the archaeological conditions of the project vicinity is provided in Appendix F of the EIR.

The project area is located within the Otay River watershed, on terraces, ridges, and mesas overlooking the Otay Valley Regional Park (OVRP). Comparatively little is known about the prehistory of the Otay region of San Diego County; the development of the National City and Chula Vista areas prior to the establishment of CEQA laws resulted in the loss of a considerable amount of archaeological sites. Recent development of the area east of Chula Vista has resulted in the discovery of and recovery from numerous archaeological sites in that area. Several prehistoric habitation sites have been identified within the eastern Otay River watershed, which may be related to the occupants of the sites within the project area, described in greater detail in the following subsections.

The cultures that have been identified in the general vicinity of the project consist of the possible Paleo-Indian manifestation of the San Dieguito Complex, the Archaic and Early Milling Stone horizons represented by the La Jolla Complex, and the Late Prehistoric Kumeyaay culture. The area was used for ranching and farming following the Hispanic intrusion into the region, and extending into the historic period. A brief discussion of the cultural elements in the project area is provided in the following subsections.

5.6.1.2.1 Paleontological Environment

At the end of the final period of glaciation, approximately 11,000-10,000 years before the present (YBP), the sea level was considerably lower than it is now; the coastline at that time would have been two to two-and-one-half miles west of its present. At approximately 9,000 YBP, the sea level rose rapidly, filling in many coastal canyons that had been dry during the glacial period. The period between 7,000 and 4,000 YBP was characterized by conditions that were drier and warmer than previously, followed by a cooler, moister environment, similar to the present-day climate. Changes in sea level and coastal topography are often manifested in archaeological sites in the types of shellfish that were utilized by prehistoric groups. Different species of shellfish prefer certain types of environments; dated sites that contain shellfish remains reflect the setting that was exploited by the prehistoric occupants.

Unfortunately, pollen studies have not been conducted for this area of San Diego; however, studies in other areas of Southern California, such as Santa Barbara, indicate that the coastal plains supported a pine forest between approximately 12,000 and 8,000 YBP. After 8,000 YBP, this environment was replaced by more open habitats, which supported oak and non-arboreal communities. The coastal sage scrub and chaparral environments of today appear to have become dominant after 2,200 YBP.

5.6.1.2.2 Prehistory

The San Dieguito Complex was a group of people who occupied sites in this region between 10,000 and 8,000 YBP and was related to or contemporaneous with the Paleo-Indian groups in the Great Basin area and the Midwest. The artifacts recovered from San Dieguito sites duplicate the typology attributed to the Western Pluvial Lakes Tradition. These artifacts generally consist of scrapers and scraper planes, choppers, and bifacially flaked knives, but few or no milling tools. Tools recovered from sites of the San Dieguito Complex and the general pattern of site locations indicate that they were a wandering, hunting and gathering society. Very little evidence of the San Dieguito Complex has been identified within the project area. It is probable that environmental changes associated with climatic change affected the subsistence base of the San Dieguito Complex, resulting in their exodus from this area sometime before 9,000 YBP.

The La Jolla Complex

Approximately 9,000-8,500 YBP, a second major cultural tradition was established in the San Diego region, primarily along the coast. Locally, this cultural tradition has been called the La Jolla Complex, and radiocarbon dates from sites attributed to this culture span a period of more than 7,000 years in this region (between 9,000 and 2,000 YBP). The La Jolla Complex is best recognized for its pattern of shell middens, grinding tools closely associated with marine resources, and flexed burials.

The tool typology of the La Jolla Complex displays a wide range of sophisticated lithic manufacturing techniques. Scrapers, the most common type of flaked tool recovered from La Jolla sites, were created by either splitting cobbles or finely flaking quarried material. La Jolla sites also contain large numbers of milling tools (manos and metates) and utilized flakes that appear to have been used to pry open shellfish. Inland sites of the La Jolla Complex, sometimes called the Pauma Complex, were situated at a distance from marine food resources and generally lack marine-related refuse, but contain large quantities of milling tools and food bone, suggesting seasonal migration from the coast to the inland valleys.

The Late Prehistoric Kumeyaay Indians

The last major migration into the coastal zone occurred approximately 1,500 YBP, when Yuman- and Shoshonean-speaking people moved from the Colorado River Basin to the coast, in search of a more plentiful food supply. This group is known locally as the Late Prehistoric Diegueno, or Kumeyaay, culture. Sites associated with the Kumeyaay are focused in the foothills and mountains, rather than along the coast. Their subsistence pattern was based on the collection of seeds, berries, and bulbs, and the hunting of small game. Artifact collections from late prehistoric occupations include milling tools, ceramics, projectile points, scrapers, planes, beads, shaft straighteners, and hammerstones. Ethnographic information indicates that the culture of the Kumeyaay Indians consisted of a close clan system with definitive religious beliefs and complex trade associations with relatives living in the Colorado River Basin.

The last phase of the Kumeyaay culture began approximately 400 YBP, with the first contact by Europeans (Juan Rodriguez Cabrillo, in 1542). By 1769, at the time of the first European settlement in San Diego, at least 20 permanent or semi-permanent villages had been established near the Pueblo of San Diego. These living sites were primarily coastal, although some were located in valleys that were a short distance inland. Historical accounts generally agree that a few villages were located along the bay side of Point Lorna, and several were scattered along the shores of Mission Bay. Others were situated in the present area of the City of San Diego and near the mouths of the major streams that emptied into San Diego Bay. Major river valleys, such as the San Diego River Valley, were well populated because of their resources of plant foods and water. Villages were also located in the La Jolla area, in Soledad Canyon, at the mouth of Rose Canyon, and in the inland valleys of the Otay Mesa, east of San Diego. A number of temporary shellfish-gathering and fishing sites were situated on the shores of bays and the ocean.

History

Exploration Period (1530-1769)

The historic period around San Diego Bay began with the landing of Juan Rodriguez Cabrillo and his men in 1542. Sixty years after the Cabrillo expeditions, an expedition under

Sebastian Vizcaino made an extensive and thorough exploration of the Pacific Coast. Although the voyage did not extend beyond the northern limits of the Cabrillo tract, Vizcaino had the most lasting effect on the nomenclature of the coast. Cabrillo gave the name of "San Miguel" to the first port at which he stopped in what is now the United States; sixty years later, Vizcaino changed it to "San Diego".

Spanish Period (1769-1821)

The Spanish occupation of the claimed territory of Alta California took place during the reign of King Carlos III of Spain. The powerful representative of the King in Mexico was Jose de Galvez, who conceived of the plan to colonize Alta California and thereby secure the area for the Spanish Crown. Actual colonization of the San Diego area began on July 16, 1769, when the first Spanish exploring party, commanded by Gaspar de Portola (with Father Junipero Serra in charge of religious conversion of the native populations), arrived in San Diego to secure California for the Spanish Crown. Missions were constructed from San Diego to as far north as San Francisco.

Mexican Period (1821-1846)

By 1821, Mexico had gained independence from Spain, and the northern territories were subject to political repercussions. By 1834, all of the mission lands had been removed from the control of the Franciscan Order under the Acts of Secularization. The mission lands were divided into smaller tracts, or ranchos, which were granted to persons who had gained favor with the Mexican government. The proposed project lies within one such grant: Otay Ranch.

Anglo-American Period (1846-present)

California was invaded by United States troops during the Mexican War of 1846 to 1848. The acquisition of strategic Pacific ports and California land was one of the United States' principal objectives of the war. At the time, the inhabitants of California were practically defenseless, and they quickly surrendered to the United States Navy in July 1847.

During the first two decades of the twentieth century, the population of San Diego County continued to grow. After World War I, the history of San Diego County was primarily determined by the growth of San Diego Bay. An increasing demand for water both within the City of San Diego and Coronado Island led to the development of an aqueduct system. CA-SDI-11,383H is a portion of a little documented flume system that originated in Otay Reservoir and passed to the south and just outside the current project boundary on its way toward San Diego. In 1919, the United States Navy decided to make San Diego Bay the home base for the Pacific Fleet and during the 1920s, the aircraft industry also established itself in San Diego. Establishment of these industries led to growth of the county as a whole. Just before World War II, urbanization began to spread inland, including the area of eastern Chula Vista.

Otay Ranch History

The proposed project lies within the Mexican-era Otay Ranch. In 1829, Mexican Governor Jose Maria Echeandia granted the rancho to Dona Magdalena Estudillo; at the time it totaled 6,657 acres. Land use on the rancho consisted of grazing livestock and raising crops such as winter wheat for export. Hay, corn, beans, squash, tomatoes, peppers, olives for oil and for the table, grapes to make wine and for the table, and other staples were grown for local use. Otay Rancho later became Otay Ranch and expanded in size to 20,000 acres, which were at least partially utilized for grazing cattle. For the first half of the twentieth century, land use in the project area appeared to be limited to grazing of livestock, although artificial irrigation allowed some production of row crops. More recently, development of the area for residential communities and for the Olympic Training Center has taken place.

5.6.1.2.3 Cultural Resources

The Cultural Resources Study (Appendix F) identifies all cultural resources within the project area and assesses the potential significance of those resources. A records search of previously recorded archaeological sites on or near the project area was conducted; the project area was surveyed to locate any archaeological resources, and all cultural resources identified within the project boundary were tested for the evaluation process. 60 sites were identified within the project area. A summary of the findings within each village and the off-site improvement areas is provided below.

Village Three North and a Portion of Village Four

The archaeological survey of the Village Three North and a Portion of Village Four project area resulted in the relocation of 13 previously recorded prehistoric sites and the identification of one previously unrecorded prehistoric site. All sites were previously tested or tested as part of a significance evaluation; only one of the sites (SDI-12,291b) was determined to be an important cultural resource under criteria set out in CEQA (Section 15064.5). The results of the archaeological site evaluations and testing programs for Village Three North and a Portion of Village Four are provided in Table 5.6-1.

No historic elements were recorded within the Village Three North and a Portion of Village Four project area.

Table 5.6-1
Archaeological Site Evaluations and Test Results
Village Three North and a Portion of Village Four

Site Number	Site Description	Evaluation
CA-SDI-11,968	Moderate surface scatter and localized, shallow cultural deposit.	Not Significant
CA-SDI-12,290	Widely dispersed scatter of lithic artifacts over a terrace formation.	Not Significant
CA-SDI-12,291a	Moderate surface scatter; localized, shallow cultural deposit.	Not Significant
CA-SDI-12.291b	Expansive artifact scatter covering multiple terraces on slopes descending toward the Otay River. The analysis revealed a dense surface and subsurface deposit of artifacts, including a wide variety of lithic tools, groundstone, lithic production waste, and ecofacts. The subsurface excavations indicate that the site contains an intact subsurface cultural deposit extending to 120 centimeters, and therefore have the potential to answer questions important to understanding the prehistory of Otay Valley area, particularly during the Archaic period.	Significant
CA-SDI-12,292	Sparse lithic artifact scatter.	Not Significant
CA-SDI-12,293	Dense surface scatter and three localized, shallow cultural deposits. Tested area reveals sparse cultural deposits with little research potential.	Not Significant
CA-SDI-14,203	Sparse lithic artifact scatter; subsurface testing revealed a lack of an associated cultural deposit.	Not Significant
CA-SDI-14,211	Sparse lithic artifact scatter; subsurface testing revealed a lack of an associated cultural deposit.	Not Significant
CA-SDI-16,437	Sparse lithic artifact scatter; subsurface testing revealed a lack of an associated cultural deposit.	Not Significant
CA-SDI-4738	Sparse lithic artifact scatter; subsurface testing revealed a lack of an associated cultural deposit.	Not Significant
CA-SDI-11,378	Sparse lithic artifact scatter; subsurface testing revealed a lack of an associated cultural deposit.	Not Significant
CA-SDI-14,176	Sparse lithic artifact scatter; subsurface testing revealed a lack of an associated cultural deposit.	Not Significant
CA-SDI-14,204	Sparse lithic artifact scatter; subsurface testing revealed a lack of an associated cultural deposit.	Not Significant

Village Eight East

The Village Eight East project area contains 25 recorded cultural resource sites. Of the 26 sites located within the boundaries of Village Eight East, six sites were not tested because they fall outside of the development area, one site was not tested because it was removed during construction of State Route 125, and 19 sites were tested and evaluated for significance. From the collection of sites within Village Eight East, two sites (SDI-4740 and SDI-12,809) were determined to be important cultural resources under criteria set out in CEQA Section 15064.5. The six sites that were not tested because they are not within the development envelope are considered potentially significant. The results of the archaeological site evaluations and testing programs for Village Eight East are provided in Table 5.6-2.

The sites and isolated finds studied within the Village Eight East project area conform to a pattern of prehistoric cultural resources with similar characteristics located on the higher slopes north of the Otay River. Previous studies, especially within Otay Ranch, have recorded essentially superficial scatters of artifacts and shell along the rolling hills and terraces that separate the Otay River and Poggi Canyon drainages. It appears the large habitation sites along Otay River were the staging locations for resource collecting forays through the hills to the north. The apparent centralization of occupation sites near the river negated the need for task sites in less desirable areas on the slopes north of the floodplain.

The historic elements recorded in Village Eight East are very marginal sites that consist of either minimal historic artifact scatters or linear water conveyance features. None of the historic sites nor the historic components of multi-component sites, produced data that supported findings of significance.

Table 5.6-2
Archaeological Site Evaluations and Test Results – Village Eight East

Site Number	Site Description	Evaluation
I-446	Three prehistoric lithic artifacts. No subsurface recovery.	Not Significant
CA-SDI-4731	Dispersed lithic scatter on steep slopes above the Otay River. This site was not tested as it is outside the development area.	Potentially Significant
CA-SDI-4740	Lithic artifact scatter of wide terrace slope above Otay River. Subsurface deposit indicates long-term site use. This site is in direct association with the prehistoric village complex at SDI-12,809.	Significant
CA-SDI-4741	Lithic scatter on terrace above village site at SDI-12,809. No subsurface deposits identified.	Not Significant
CA-SDI-4743	Dense lithic scatter on terrace above SDI-12,809. No subsurface deposits identified.	Not Significant
CA-SDI-4789	Dense lithic scatter on terrace and adjacent slopes above SDI-12,809. Shallow subsurface deposits lack research potential.	Not Significant
CA-SDI-4790	Sparse lithic scatter on slopes above canyon at the west end of SDI-12,809.	Not Significant
CA-SDI-9980	Resource extraction and lithic workshop site situated at the intersection of Johnson Canyon and Otay River. Not tested for this study.	Potentially Significant
CA-SDI-9981	Lithic scatter along floodplain of the Otay River. This site was not tested for this study, as it is located outside of the development area.	Potentially Significant
CA-SDI-11,372	Spare lithic scatter that has been disturbed by agricultural activities.	Not Significant
CA-SDI-11,373	Sparse surface scatter of lithic artifacts lacking any subsurface deposit.	Not Significant
CA-SDI-11,374/H	Sparse scatter of lithic artifacts in Otay River floodplain, adjacent to SDI-12,809. Historic materials reported in 1989 no longer present.	Not Significant
CA-SDI-11,383/H	Recorded as historic linear feature of irrigation pipe and water flume. Flume is no longer present; irrigation pipeline has been removed, destroyed, or buried.	Not Significant
CA-SDI-11,952	Limited function prehistoric lithic scatter. Not tested for this study.	Potentially Significant
CA-SDI-12,272/H	Prehistoric component includes marine shell and lithic scatter; historic component includes glass, metal, and plateware. Both components lack further research potential.	Not Significant

Table 5.6-2 (Continued)
Archaeological Site Evaluations and Test Results – Village Eight East

Site Number	Site Description	Evaluation
CA-SDI-12,287	Prehistoric lithic scatter with marine shell along drainage in north area of project.	Not Significant
CA-SDI-12,809	Multi-loci occupation site located along the Otay River floodplain. The site is multi-component (Archaic and Late-Prehistoric) and contains multiple subsurface deposits. Research potential is considered high.	Significant
CA-SDI-14,194	Lithic scatter of tools and flakes along Otay River floodplain. Not tested for this study.	Potentially Significant
CA-SDI-14,195	Lithic scatter recorded south of the Otay River. The site was not tested for this study and may have been disturbed by State Route 125 construction.	Potentially Significant
CA-SDI-14,205	Recorded as lithic scatter. This site was destroyed by State Route 125 construction.	Not Significant
CA-SDI-18,615	Limited function prehistoric task site and shell scatter.	Not Significant
CA-SDI-18,616	Limited function prehistoric task site and shell scatter.	Not Significant
CA-SDI-18,617	Limited function prehistoric task site focused on lithic reduction and resource processing activities.	Not Significant
CA-SDI-18,618	Limited function prehistoric task site focused on lithic reduction and resources processing activities.	Not Significant
CA-SDI-20,201	Limited function prehistoric task site focused on lithic reduction and resources processing activities.	Not Significant
CA-SDI-20,742	Shell scatter indicative of limited use site without any subsurface deposit or lithic artifacts observed.	Not Significant

Village Ten

The archaeological survey of the Village Ten project area resulted in the identification of 13 cultural resources. The resources within Village Ten are primarily prehistoric artifact and ecofact scatters, although one historic corral was also recorded. The results of the archaeological site evaluations and testing programs for Village Ten are provided in Table 5.6-3.

The sites studied within the project area conform to a pattern of prehistoric cultural resources with similar characteristics located on the higher slopes north of the Otay River. Previous studies, especially within Otay Ranch, have recorded essentially superficial scatters of artifacts and shell along the rolling hills and terraces that separate the Otay River and Poggi Canyon drainages. It appears that the large habitation sites along the Otay River were the staging locations for resource collecting forays though the hills to the north. The apparent centralization of occupation sites near the river negated the need for task sites in the less desirable areas on the slopes north of the floodplain.

Table 5.6-3
Archaeological Site Evaluations and Test Results – Village Ten

Site Number	Site Description	Evaluation
CA-SDI-20,441	Deflated temporary camp and shell scatter.	Not Significant
CA-SDI-20,442	Limited function prehistoric resource procurement and processing site.	Not Significant
P-37-032254	Historic corral associated with past agricultural and farming activities.	Not Significant
CA-SDI-20,443	Limited function prehistoric task site.	Not Significant
CA-SDI-4727	Limited function prehistoric task site focused on lithic reduction and possible resource processing.	Not Significant
CA-SDI-4728	Limited function prehistoric task site focused on lithic reduction and resource processing activities.	Not Significant
CA-SDI-4729	Limited function prehistoric task site focused on lithic reduction and resource processing activities.	Not Significant
CA-SDI-4730	Limited function prehistoric task site focused on lithic reduction and resource processing activities.	Not Significant
CA-SDI-10,875	Lithic scatter along floodplain of the Otay River. This site was not tested for this study, as it is located outside of the development area.	Potentially Significant
CA-SDI-11,375	Limited function prehistoric task site focused on lithic reduction and resource processing activities.	Not Significant
CA-SDI-11,377	Limited function prehistoric task site focused on lithic reduction and resource processing activities.	Not Significant
CA-SDI-14,199	Lithic scatter along floodplain of the Otay River. This site was not tested for this study, as it is located outside of the development area.	Not Significant
CA-SDI-20,551	A sparse lithic and marine shell scatter lacking any subsurface deposit or cultural features.	Not Significant

Off-Site Improvement Areas

The off-site improvement areas of the proposed project include 18 different areas where land outside of the ownership of Village Three North and Portion of Village Four, Village Eight East, and Village Ten is needed to facilitate the proposed development. Within the off-site improvement areas, archaeological surveys completed between 2010 and 2012 identified 8 cultural resources that would be impacted by the development of these areas. The testing of the 8 sites was confined to the projected limits of disturbance of the improvements and not the areas of the archaeological sites that lie outside of the limits of disturbance. None of the resources evaluated for the off-site improvement areas have been identified as significant. The management considerations for sites within the off-site improvement areas are summarized in Table 5.6-4.

Table 5.6-4
Archaeological Site Evaluations and Test Results – Village Ten

Site Number	Site Description	Evaluation
CA-SDI-20,553	Marine shell scatter that has been disturbed by agricultural activities. Testing revealed any subsurface deposits of marine shell, but no lithic artifacts.	Not Significant
CA-SDI-20,554	Sparse marine shell scatter that has been disturbed by agricultural activities. Testing did not reveal any subsurface deposits.	Not Significant
CA-SDI-20,737	Sparse lithic scatter on a terrace overlooking the Otay River. No subsurface deposit recorded.	Not Significant
CA-SDI-20,738	Sparse lithic scatter on a terrace overlooking the Otay River. No subsurface deposit recorded.	Not Significant
CA-SDI-20,739	Sparse lithic scatter of 17 artifacts that has been disturbed by agricultural activities. No subsurface deposit recorded.	Not Significant
CA-SDI-20,741	Sparse marine shell scatter that has been disturbed by agricultural activities. Testing did not reveal any subsurface deposits.	Not Significant
CA-SDI-12,286	Sparse shell scatter that has been disturbed by agricultural activities.	Not Significant
CA-SDI-4726	Sparse shell scatter that has been disturbed by agricultural activities. A subsurface deposit was not identified by testing.	Not Significant

Summary of Findings

The study of cultural resources within the project area identified 60 cultural resource sites. The study determined that three sites retain sufficient research potential to be considered significant under CEQA criteria. These significant sites are located at lower elevations near to the Otay River. The remaining 57 sites were determined to be not significant (49 sites) based upon a lack of research potential and eight sites were determined not to be significant because they fall outside the development area; they would have otherwise been considered to be potentially significant.

The historic elements recorded are very marginal sites that consist of either minimal historic artifact scatters or linear water conveyance features. Neither the historic sites nor the historic components of multi-component sites produced data that supported findings of significance for any historic resources within the project area.

5.6.2 Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of a cultural resources impact. Impacts to cultural resources would be significant if the proposed project would:

A. Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.

B. Cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines Section 15064.5.

C. Disturb any human remains, including those interred outside of formal cemeteries.

5.6.3 Impacts

The following discussion of impacts includes an analysis of impacts associated with the construction of the proposed project. Once constructed, the proposed project would not have the potential to impact cultural resources; therefore, operational impacts are not analyzed in this section.

A. Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.

As described in Section 5.6.1.2 Existing Setting, the historic elements recorded within the project area are very marginal sites that consist of either minimal historic artifact scatters or linear water conveyance features. Neither the historic sites nor the historic components, of multi-component sites, are considered significant. Therefore, construction and operation of the proposed project would not cause a substantial change in the significance of an historical resource as defined in CEQA Guidelines Section 15064.5, and **less than significant** impacts would occur.

B. Cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines Section 15064.5.

Village Three North and a Portion of Village Four

As listed in Table 5.6-1, a total of 13 recorded cultural resources were identified during the survey conducted within the Village Three North and a Portion of Village Four project area. Following a significance evaluation program, only one site (SDI-12,291b) was determined to be significant under CEQA Guidelines Section 15064.5. The other 12 sites are not significant. Grading and excavation associated with construction of the proposed project would impact nine of the 13 recorded cultural resources within Village Three North and a Portion of Village Four; however, all nine sites are characterized as non-significant resources. Although nine non-significant sites are impacted, the majority of these sites are recorded as sparse, low density lithic scatters lacking any substantial subsurface component or further research potential.

A total of four sites (SDI-11,378, SDI-14,204, SDI-12,291b, and SDI-14,211) were identified outside of the development area. These sites would not be directly impacted by the project since they are within proposed open space areas. Of the four sites within Village Three North and a Portion of Village Four that would not be directly impacted, only SDI-12,291b is identified as a significant resource. Although no direct impacts to this site are anticipated as a result of

development of Village Three North and a Portion of Village Four, potential indirect impacts associated with intrusion into this site during or after construction of the proposed project, may occur. Therefore, since development of Village Three North and a Portion of Village Four could cause a substantial change in the significance of this identified archaeological resource as defined in CEQA Guidelines Section 15064.5, impacts to this site would be **potentially significant** and mitigation would be required.

Village Eight East

The archaeological study of the Village Eight East project area identified 26 cultural resource sites. Of the 26 resources recorded, 15 sites would be directly impacted by the proposed development of Village Eight East. One regionally/locally important site (Site SDI-12,809) would be directly affected by the project and 14 are identified as not significant.

Site SDI-12,809 is characterized as a major occupation site and would be directly impacted, although the eastern third of the site would not. Direct potential impacts to this site would be significant. Within the grading envelope for Village Eight East, the portion of SDI-12,809 that will be impacted measures approximately 175,443 square meters (the remaining 152,106 square meters of the site has either been affected by SR-125 or lies east of SR-125 and will be preserved). SDI-12,809 is comprised of 11 loci, five of which will be disturbed as a result of the proposed project. A Data Recovery Program for these five loci will be required in order to reduce potential impacts.

14 sites (SDI-I-446, SDI-4741, SDI-4789, SDI-11,372, SDI-11,373, SDI-11,383/H, SDI-12,272/H, SDI-12,287, SDI-18,615, SDI-18,616, SDI-18,617, SDI-18,618, SDI-20,201, and SDI-20,472) are identified as having limited importance, and thus are not significant. The loss of 14 non-significant sites may appear to be an issue; however, the majority of these sites are recorded as very sparse, low density lithic scatters lacking any substantial subsurface component or any further research potential.

The remaining 11 sites are outside of the proposed development area and would not be directly impacted by the development of Village Eight East. Furthermore, for those resources located outside of the development envelope, whether evaluated as significant or not, no indirect impacts are likely to occur, as these will all be protected as part of the open space preserve, with the exception of Site SDI-14,205, which was previously destroyed by the construction of SR-125 (SDI-4731, SDI-4740, SDI-4743, SDI-4790, SDI-9980, SDI-9981, SDI-11,374, SDI-11,952, SDI-14,194, SDI-14,195, and SDI-14,205).

Although no direct impacts to these sites are anticipated as a result of development of Village Eight East, potential indirect impacts associated with intrusion into these sites during or after construction of the proposed project, may occur. In addition, one regionally/locally important

site would be directly impacted by grading and brushing associated with development of Village Eight East (SDI-12,809). SDI-12,809 is characterized as a major occupation site, although the entire site would not be impacted by the proposed project. Development of Village Eight East could cause a substantial change in the significance of these identified archaeological resources as defined in CEQA Guidelines Section 15064.5. Therefore, impacts to these sites would be **potentially significant** and mitigation would be required.

Village Ten

The archaeological study of the Village Ten project area identified a total of 13 cultural resources. Ten of the 13 sites would be impacted by the proposed development of Village Ten (SDI-4727, SDI-4728, SDI-4729, SDI-4730, SDI-11,375, SDI-11,377, SDI-20,441, SDI-20,442, SDI-20,443, and SDI-20,551). These ten cultural resources identified in the Village Ten project area were determined to be not significant under the guidelines set forth by CEQA Guidelines Section 15064.5. The loss of ten non-significant sites would not be critical since these sites were recorded as very sparse, low density lithic scatters lacking any substantial subsurface component or any further research potential.

The remaining three sites would not be directly impacted since they are located outside the proposed development area (SDI-14,199, SDI-10,875, and P-37-032254). Two of the three sites are assumed to be significant based on the CEQA criteria (SDI-14,199 and SDI-10,875). However, no direct impacts to these sites are anticipated as a result of development of Village Ten because they are all located outside the development envelope. Potential indirect impacts associated with intrusion into these sites during or after construction of the proposed project, may occur. Therefore, since development of Village Ten could cause a substantial change in the significance of these identified archaeological resources as defined in CEQA Guidelines Section 15064.5, impacts to these sites would be **potentially significant** and mitigation would be required.

Off-Site Improvement Areas

The archaeological study of the off-site improvement areas identified a total of 16 cultural resources (SDI-4726, SDI-12,286, SDI-20,553, SDI-20,554, SDI-20,737, SDI-20,738, SDI-20,739, SDI-20,741,SDI-12,293, SDI-14,203, SDI-12,291a, SDI-14,176, SDI-20,551, SDI-20,441, SDI-20,443, and SDI-12,809 Locus E). All of these resources would be impacted by the development of the proposed off-Site Improvements. None of these tested archaeological sites were identified as significant based on CEQA Guidelines Section 15064.5. The loss of these 16 non-significant sites may appear to be an issue; however, the majority of these sites were recorded as very sparse, low density lithic and marine shell scatters lacking any substantial subsurface component or any further research potential. Since development of the off-site

improvement areas would not cause a substantial change in the significance of identified archaeological resources as defined in CEQA Guidelines Section 15064.5, impacts would be **less than significant**.

Overall Project Area

In addition to the specific cultural resources that have been identified within each the areas described above, the potential to encounter unrecorded cultural sites during grading is considered high, given the density of archaeological sites within the project area. In the event that unrecorded cultural resources are discovered during grading for the proposed project, impacts to such resources would be **potentially significant** and mitigation would be required.

C. Disturb any human remains, including those interred outside of formal cemeteries.

No human remains were identified within the project area during the cultural testing program. However, the possibility exists that human remains may be discovered during project grading and construction. Any disturbance of human remains that may occur during project grading or construction would be significant. Therefore, impacts would be **potentially significant** and mitigation would be required to reduce potential impacts.

5.6.4 Level of Significance Prior to Mitigation

Implementation of the proposed project would result in direct and indirect impacts to cultural resources. Impacts would be considered **potentially significant** prior to mitigation.

5.6.5 Mitigation Measures

The following mitigation measures are recommended to reduce significant impacts to recorded archaeological resources, unrecorded subsurface archaeological resources, and unrecorded human remains within the project area and off-site improvement areas. In addition to the following mitigation measures, MM PAL-2 through MM PAL-4 would also reduce significant impacts to cultural resources.

MM CUL-1 Prior to issuance of land development permits, including clearing or grubbing and grading permits, the Applicant shall provide written confirmation and incorporate into grading plans, to the satisfaction of the Development Services Director or their designee, that a principal investigator (PI) meeting the criteria listed in the Secretary of the Interior guidelines (36 CFR 61) has been retained in an oversight capacity to ensure that an archaeological monitor(s) will be present during all cutting of previously undisturbed soil. If these cutting activities occur in more

than one location, multiple monitors shall be provided to monitor these areas, as determined necessary by the PI.

MM CUL-2 During the initial grading of previously undisturbed soils within the SPA Plan areas) and off-site improvement areas, prehistoric and historic resources may be encountered. In the event that the archaeological monitor identifies a potentially significant site, the monitor shall secure the discovery site from further impacts by delineating the site with staking and flagging, and by diverting grading equipment away from the archaeological site. Following notification to the City, the archaeological monitor shall conduct investigations as necessary to determine if the discovery is significant under the criteria listed in CEQA and the environmental guidelines of the City. If the discovery is determined to be not significant, grading operations may resume and the archaeological monitor shall summarize the findings in a letter report submitted to the City following the completion of mass grading activities. The letter report shall describe the results of the on-site archaeological monitoring, each archaeological site observed, the scope of testing conducted, results of laboratory analysis (if applicable), and conclusions. The letter report shall be completed to the satisfaction of the City of Chula Vista's Development Services Director or their designee prior to the release of grading bonds. Any artifacts recovered during the evaluation of resources shall be curated at a facility approved by the City.

MM CUL-3 For the cultural prehistoric/historic resources that are determined to be significant, alternate means of achieving mitigation shall be pursued. In general, these forms of mitigation include:

A. site avoidance by preservation of archaeological site in a natural state in open space, or in specific open space easements,

B. site avoidance by preservation through capping the site and placing landscaping on top of the fill,

C. data recovery through implementation of an excavation and analysis program,

D. a combination of one or more of the above measures.

See Chapter 9.0 in the *Cultural Resources Study for the University Villages Project at Otay Ranch* (Appendix F of this EIR) for the detailed mitigation and monitoring program for each of the identified significant sites that would be impacted.

MM CUL-4 For those sites that are found to contain significant resources and for which avoidance and preservation is not feasible or appropriate, the Applicant shall prepare a Data Recovery Plan. The plan will, at a minimum, include the following:

A. a statement of why data recovery is appropriate as a mitigation measure,

B. a research plan that explicitly provides the research questions that can reasonably be expected to be addressed by excavation and analysis of the site,

C. a statement of the types and kinds of data that can reasonably be expected to exist at the site and how these data will be used to answer important research questions,

D. a step-by-step discussion of field and laboratory methods to be employed,

E. provisions for curation and storage of the artifacts, notes, and photographs will be stated.

Grading operations within the affected area may resume once the site has been fully evaluated and mitigated to the satisfaction of the Development Services Director or their designee. All significant artifacts collected during the implementation of the Data Recovery Plan shall be curated at a facility approved by the City.

MM CUL-5 Following the completion of mass grading operations, the Applicant shall prepare a plan that addresses the temporary on-site presentation and interpretation of the results of the archaeological studies for the proposed project. This could be accomplished through exhibition within a future community center, civic building and/or multi-purpose building. Any artifacts used for public displays shall be selected from the curated collections originating from the project. This exhibition will only be for temporary display of artifacts for public interpretation and display purposes. Artifacts selected for the exhibit shall be withdrawn on loan from the curation facility and will subsequently returned to that facility upon the close of the exhibition. The applicant will be responsible for the artifacts during the display period and for the return of the artifacts at the close of the exhibition. The consulting archaeologist shall act on the applicant's behalf to coordinate the curation of all collections and the subsequent use of selected artifacts for the public display.

MM CUL-6 If human remains are discovered during grading or site preparation activities within the SPA Plan area(s) and off-site improvement areas, the archaeological monitor shall secure the discovery site from any further disturbance. State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur until the San Diego County Coroner has made the necessary findings as to the

origin and disposition of the remains pursuant to PRC Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC). The NAHC will then identify the person(s) thought to be the Most likely Descendent (MLD) of the deceased Native American. The MLD will assist the City in determining what course of action shall be taken to deal with the remains. Grading operations within the affected area may resume once the site has been fully evaluated and mitigated to the satisfaction of the Development Services Director or their designee. The Archaeological Monitor shall summarize the findings in a letter report to the City following the completion of mass grading activities.

5.6.6 Level of Significance After Mitigation

The mitigation measures listed in Section 5.6.5 would reduce potential impacts to cultural resources to a **less than significant** level.

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5.7 PALEONTOLOGICAL RESOURCES

This section of the EIR tiers from the 1993 Otay Ranch GDP Program EIR, because potential impacts to paleontological resources due to development in the entire Otay Ranch area were analyzed as part of the 1993 Otay Ranch GDP. The 1993 Otay Ranch GDP Program EIR determined that impacts to paleontological resources would be less than significant with implementation of specific mitigation measures.

This section of the EIR also tiers from the 2005 GPU/GDPA Program EIR, because potential impacts to paleontological resources due to development in the entire Otay Ranch area were also analyzed as part of the 2005 GPU/GDPA. Similar to the 1993 Otay Ranch GDP Program EIR, the 2005 GPU/GDPA determined that compliance with City policies and objectives, as well as specific mitigation measures, would result in less than significant impacts to paleontological resources.

This section of the EIR analyzes impacts to paleontological resources resulting from the proposed project. The discussion found in this section is based on the *University Villages Paleontological Resource and Monitoring Assessments for Village Three North, a Portion of Village Four, Village Eight East, and Village Ten,* prepared by Brian F. Smith and Associates Inc. in March 2014. The complete reports are contained in Appendix G of this EIR.

5.7.1 Existing Conditions

Paleontology is a branch of geology that studies the life forms of the past, especially prehistoric life forms, through the study of plant and animal fossils. Paleontological resources represent a limited, non-renewable, and impact-sensitive scientific and educational resource. As defined in this section, paleontological resources are the fossilized remains or traces of multi-cellular invertebrate and vertebrate animals and multi-cellular plants, including their imprints from a previous geologic period. Fossil remains such as bones, teeth, shells, and leaves are found in the geologic deposits (rock formations) where they were originally buried. Paleontological resources include not only the actual fossil remains, but also the collecting localities, and the geologic formations containing those localities.

5.7.1.1 Regulatory Framework

State Level

California Environmental Quality Act

The California Environmental Quality Act (CEQA) is the principal statute governing environmental review of projects occurring in the state. CEQA requires lead agencies to determine if a proposed project would have a significant effect on archeological resources (Public Resources

Code [PRC] Sections 21000 et seq.). Paleontological resources are also afforded protection by environmental legislation under CEQA. Appendix G (part V) of the CEQA Guidelines provides guidance relative to significant impacts on paleontological resources and states, "a project will normally result in a significant impact on the environment if it will …disrupt or adversely affect a paleontological resource or site or unique geologic feature, except as part of a scientific study." The City of Chula Vista assesses and mitigates the potential impacts of private development and public facilities and infrastructure to paleontological resources pursuant to the provisions of CEQA. Pursuant to Section 15065 of the CEQA Guidelines, a lead agency must find that a project may have a significant effect on the environment where the project has the potential to eliminate important examples of the major periods of California prehistory, which includes the destruction of significant paleontological resources.

California Public Resources Code

Section 5097.5 of the Public Resources Code (PRC) specifies that any unauthorized removal of paleontological remains is a misdemeanor. Further, the California Penal Code Section 622.5 sets the penalties for damage or removal of paleontological resources.

Local Level

The City of Chula Vista General Plan

The City of Chula Vista includes protections for paleontological resources in the General Plan. The Environmental Element includes objectives to protect important paleontological resources and support and encourage public education and awareness of such resources (Objective E 10).

5.7.1.2 Existing Setting

The following discussion describes the existing paleontological conditions within each of the villages that comprise the project site, Village Three North and a Portion of Village Four, Village Eight East, and Village Ten. A detailed overview of the paleontology of the project vicinity is provided in Appendix G of the EIR.

Geologic Setting

Sweetwater Formation

The upper middle Eocene (~ 42- to ~ 37-million-year-old) Sweetwater Formation is exposed in the southwestern corner of the project site along the north bank of the Otay Valley Regional Park (OVRP). These sensitive paleontological exposures are located the confluence of Wolf Canyon and Otay Valley. The Sweetwater Formation is composed of several stacked sedimentary sequences with each sequence containing a basal channel fill of gravelly gritstone and sandstone,

which fine upward into reddish siltstones and mudstones. The Sweetwater Formation overlies gray sandstones of the Mission Valley Formation farther to the west. At Wolf Canyon, on the east side of the project site, the Sweetwater Formation is about 60 feet thick. Sedimentary structures and the nature of the mudstones indicate an entirely non-marine origin for the formation. The Sweetwater Formation has been assigned a "high paleontological sensitivity" (Brian F. Smith 2014).

Otay Formation

The Otay Formation is divided into three informal members by paleontologists at the San Diego Natural History Museum: an upper sandstone-mudstone member, a middle gritstone member, and a basal angular-clast fanglomerate member. On local geologic maps, the formation is divided into an upper member, and a lower pebbly conglomerate, gritstone and sandstone member. Numerous fossil localities have been discovered in the upper sandstone-mudstone member and the middle gritstone member, but have yet to be recorded from the basal fanglomerate. The upper member of the Otay Formation has been assigned a "high paleontological resource sensitivity," and the middle and lower members have been assigned a "moderate paleontological resource sensitivity." The lower member is relatively thick around Lower Otay Reservoir, but thins to the west and is exposed on either side of Otay Valley above the Quaternary terrace deposits and below the middle and upper members of the Otay Formation (Brian F. Smith 2014).

San Diego Formation

The San Diego Formation is divided into a lower sandstone member and an upper conglomerate member. Numerous fossil localities have been discovered in the sandstone member, but none from the conglomerate member. Because of the extremely important remains of fossil marine mammals, sea birds, bivalve and gastropod mollusks, as well as other groups of invertebrates and paleobotanical remains that have been found, this formation has been assigned "high paleontological resource sensitivity." Because of the great diversity of organisms known from the San Diego Formation, it is now considered to be one of the most important sources of Pliocene marine life in California (Brian F. Smith 2014). A list of species found at each of the documented localities is provided in Appendix G.

Lindavista Formation

The Lindavista Formation is present across all of the older Pleistocene marine terraces in San Diego County from the San Onofre area in the northern part of the county and southward into northernmost Baja California. The Lindavista Formation is rarely fossiliferous, and the only published faunal account, mainly of bivalve mollusks and barnacles, is from the Tierrasanta area of San Diego many miles to the north. Nevertheless, most exposures of the Lindavista Formation are assigned a "moderate paleontological resource sensitivity" (Brian F. Smith 2014).

Quaternary Terrace Deposits

Quaternary terrace deposits, which represent remnants of flood plain deposits of the ancestral Otay River, are present on both the north and south sides of the present OVRP. The major river drainages in San Diego County, from the Santa Margarita River Valley in the north, and including the Sweetwater River Valley in the south, have on occasion yielded important late Pleistocene ("Ice Age") terrestrial vertebrate fossils such as extinct bison, camel, mammoth, mastodon, giant ground sloth, and others. The Quaternary terrace deposits have thus been assigned "moderate paleontological resource sensitivity" (Brian F. Smith 2014).

Quaternary Alluvium and Slope Wash

Quaternary alluvium, fluvial flood plain deposits and slope wash are mapped across the present OVRP. Geologically, these deposits are considered to be geologically too young to yield significant fossil resources, and thus are typically assigned a "low paleontological resource sensitivity." Paleontological monitoring of Quaternary alluvial deposits is not regarded as necessary or even warranted (Brian Smith 2014).

Santiago Peak Volcanics

The Santiago Peak Volcanics consist of mildly metamorphosed volcanic and volcaniclastic rocks, but are predominantly andesite and dacite in composition. The only exposures of the metavolcanic rocks in the project area are within Village Eight East project site in the far western corner of the area below Rock Mountain. The metavolcanic parts of the Santiago Peak Volcanics are assigned a "marginal paleontological resource sensitivity" and would not be expected to yield any fossils (Brian F. Smith 2014).

Village Three North and a Portion of Village Four

Geologically, the Village Three North and a Portion of Village Four project area is underlain by several sedimentary formational rock units, being, from oldest to youngest, the middle Eocene Sweetwater Formation (fringing the north side of the OVRP), the upper Oligocene Otay Formation (across most of the northern part of the property), the middle Pliocene San Diego Formation, the lower Pleistocene Lindavista Formation (both along the northern fringe of the project), and upper Quaternary alluvial and fluvial sediments deposited on ancestral floodplain terraces of the Otay River (terraces above the current valley floor). Minor exposures of Holocene alluvium and slope wash of the modern Otay River floodplain are present in the extreme southwest and southeast corners of the project area.

A collections and records search by the Department of Paleontology at the San Diego Natural History Museum didn't produce any records of fossil localities within Village Three North and

Portion of Village Four; however, the records search did yield a total of 56 fossil localities identified within a 1-mile radius of the Village Three North and a Portion Village Four project site.

Village Eight East

Geologically, the Village Eight East project area is underlain by sedimentary and metamorphic formational rock units, being, from oldest to youngest, the Lower Cretaceous Santiago Peak Volcanics (westernmost corner of the project area below Rock Mountain), the upper Oligocene Otay Formation (the upper sandstone-mudstone member and middle gritstone member across most of the northern part of the property, as well as the lower fanglomerate member in exposures on the north side of the Otay Valley), and upper Quaternary alluvial and fluvial sediments deposited on floodplain terraces of the ancestral Otay River (terraces above the north and south sides of the current valley floor). Holocene alluvium and fluvial sediments of the modern Otay River floodplain encompass much of the southern part of the project area.

A collections and records search by the Department of Paleontology at the San Diego Natural History Museum yielded a total of 28 fossil localities, one within the bounds of the project site (SDSNH loc. 5946) and 27 more within a 1-mile radius of the Village Eight East project site.

Village Ten

The geology of the Village Ten project site within Otay Ranch is shown on the geologic map of the Otay Mesa quadrangle. Geologically, the Village Ten project site is underlain by several sedimentary units representing, from oldest to youngest, the upper Oligocene lower, middle, and upper members of the Otay Formation, and upper Quaternary alluvial and fluvial sediments deposited on ancestral floodplain terraces of the Otay River. The lower, fanglomerate member of the Otay Formation is present along the southern and eastern edges of the project site and is mapped as Tertiary fanglomerate, whereas the middle and upper members, which encompass the northern two thirds of the project site. Minor exposures of Holocene alluvium and slopewash of the modern Otay River floodplain may be present along the southernmost margin of the project site.

A collections and records search by the Department of Paleontology at the San Diego Natural History Museum produced no previously recorded fossil localities within Village Ten; however, the records search did yield a total of 25 fossil localities located within a 1-mile radius of the Village Ten project site.

5.7.2 Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of a paleontological impact. Impacts to paleontological resources would be significant if the proposed project would:

A. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

B. Be inconsistent with General Plan paleontological policies thereby resulting in a significant physical impact.

5.7.3 Impacts

The following discussion of impacts includes an analysis of impacts associated with the construction of the proposed project. Once constructed, the proposed project would not have the potential to impact paleontological resources; therefore, operational impacts are not analyzed in this section.

A. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Village Three North and a Portion of Village Four

No fossil sites were found within the bounds of the Village Three North and a Portion of Village Four project site. However, development of the area within Village Three North and a Portion of Village Four would encounter sedimentary rocks with a "high paleontological resource sensitivity" that are assigned to the Sweetwater Formation, the upper sandstone-mudstone member of the Otay Formation and the San Diego Formation; sedimentary rocks with a "moderate paleontological resource sensitivity" are assigned to the Lindavista Formation and Quaternary terrace deposits. Therefore, grading and construction activities may impact fossils potentially buried in the underlying formations. Based upon the recognized potential to encounter fossils in these formations, impacts are considered **potentially significant,** and mitigation would be required.

Village Eight East

One fossil site was found within the bounds of the Village Eight East project site (SDSNH loc. 5946). This exposure was a road cut made during the construction of SR-125, but was subsequently graded away (SDNHM collections records, Appendix G). The analysis of the paleontological data gathered for this project has led to the conclusion that the Village Eight East property contains geological formations characterized as fossiliferous. A "high paleontological

resource sensitivity" has been assigned to the upper sandstone-mudstone member of the Otay Formation, and a "moderate paleontological resource sensitivity" to the middle and lower members of the Otay Formation and the Quaternary terrace deposits. Grading and construction activities may impact fossils potentially buried in the underlying formations. The occurrence of fossils within the covered bedrock cannot be evaluated prior to exposure. Based upon the recognized potential to encounter fossils in these formations, impacts are considered **potentially significant**, and mitigation measures would be required.

Village Ten

Based on records search, no fossil sites were found within the bounds of the Village Ten project site. However, the analysis of the paleontological data gatered for this project has lead to the conclusion that the Village Ten project site contains geological formations characterized as fossiliferous. A "high paleontological resource sensitivity" has been assigned to the upper sandstone-mudstone member of the Otay Formation and a "moderate paleontological resource sensitivity" to the middle and lower members of the Otay Formation and the Quaternary terrace deposits. Grading and construction activities may impact fossils potentially buried in the underlying formations. The occurrence of fossils within the covered bedrock cannot be evaluated prior to exposure. Based upon the recognized potential to encounter fossils in these formations, impacts are considered **potentially significant,** and mitigation measures would be required.

Off-Site Improvement Areas

Similar to the project sites described above, off-site improvement areas are designated as "moderate to high paleontological resource sensitivity." Grading and construction activities may impact fossils potentially buried in the underlying formations. The occurrence of fossils within the covered bedrock cannot be evaluated prior to exposure. Based upon the recognized potential to encounter fossils in these formations, impacts are considered **potentially significant,** and mitigation measures would be required.

The scientific value of fossils is in the information they contain rather than in the fossilized materials themselves. Thus, any mitigation program must focus upon recovering, not every fossil and/or fossil fragment encountered, but rather those fossils that are sufficiently complete and diagnostic to allow generic and specific identifications. Potential impacts caused by construction of the proposed project would be mitigated through implementation of a comprehensive program of construction monitoring, fossil salvage, fossil preparation, fossil curation, fossil storage and summary report preparation. While sensitive resources may be encountered during project grading, the recovery of these resources for scientific study would minimize potential impacts. However, impacts would still be considered **potentially significant** prior to mitigation.

B. Would the project be inconsistent with General Plan paleontological policies thereby resulting in a significant physical impact?

Appendix B lists the relevant paleontological goals, objectives, and policies found in the General Plan. The table also verifies the proposed project's consistency with each. The proposed project would comply with all necessary procedures to protect and minimize damage to paleontological resources through mitigation measures, public education, and awareness of such resources. The proposed project would be consistent with all General Plan goals, objectives, and policies related to paleontological resources, impacts would be **less than significant** with respect to this threshold.

Appendix B also details the proposed project's consistency with the Otay Ranch GDP. The proposed project identified sensitive and significant paleontological resources and mitigation measures have been provided to reduce potential impacts to these resources, including fossil recovery. The proposed project would be consistent with all Otay Ranch GDP goals, objectives, and policies related to paleontological resources, impacts would be **less than significant** with respect to this threshold.

The proposed project is in compliance with the General Plan and Otay Ranch GDP. The project site has a high potential for paleontological resources in certain areas and the paleontological resource investigation outlined in this chapter identified potential paleontological resources, and provided adequate mitigation to reduce or avoid impacts. Since the project would be consistent with the General Plan and Otay Ranch GDP's policies regarding paleontological resources, potential impacts would be **less than significant** with respect to this threshold.

5.7.4 Level of Significance Prior to Mitigation

Due to the proximity of potential paleontological resources, impacts associated with the proposed project would be considered potentially significant prior to mitigation.

5.7.5 Mitigation Measures

MM PAL-1 Prior to the issuance of grading permits for the proposed project, including the Off-site Improvement Areas, the Applicant shall confirm to the Development Services Director, or their designee, that a qualified paleontologist (QP) has been retained to carry out an appropriate mitigation program. A QP is defined as an individual with a doctorate or a master's degree in paleontology or geology, who is familiar with paleontological procedures and techniques. A pre-grade meeting shall be held between the paleontologist and the grading and excavation contractors.

MM PAL-2 A paleontological monitor shall be on site at all times during the original cutting of previously undisturbed sediments of highly sensitive geologic formations (i.e., San Diego, Otay, and Sweetwater formations) to inspect cuts for contained fossils. (A paleontological monitor is defined as an individual who has experience in the collection and salvage of fossil materials.) The paleontological monitor shall work under the direction of a qualified paleontologist. The monitor shall be on site on at least a half-time basis during the original cutting of previously undisturbed sediments of moderately sensitive geologic formations (i.e., unnamed river terrace deposits of the Mission Valley Formation) to inspect cuts for contained fossils.

a. The monitor shall be on site on at least a quarter-tie basis during the original cutting of previously undisturbed sediments of low sensitivity geologic formations (i.e., Lindavista Formation and Santiago Peak Volcanics [metasedimentary portion only] to inspect cuts for contained fossils. He or she shall periodically (every several weeks) inspect original cuts in deposits with an unknown resource sensitivity (i.e., Quaternary alluvium).

b. In the event that fossils are discovered in unknown, low, or moderately sensitive formations, the Applicant shall increase the per-day field monitoring time. Conversely, if fossils are not discovered, the monitoring, at the discretion of the Planning Department, shall be reduced. A paleontological monitor is not needed during grading of rocks with no resource sensitivity (i.e., Santiago Peak Volcanics, metavolcanic portion).

MM PAL-3 When fossils are discovered, the paleontologist (or paleontological monitor) shall recover them. In most cases, this fossil salvage can be completed in a short period of time. However, some fossil specimens (such as a complete whale skeleton) may require an extended salvage time. In these instances, the paleontologist (or paleontological monitor) shall be allowed to temporarily direct, divert, or halt grading to allow recovery of fossil remains in a timely manner. Because of the potential for the recovery of small fossil remains such as isolated mammal teeth, it may be necessary in certain instances and at the discretion of the paleontological monitor to set up a screen-washing operation on the site.

MM PAL-4 Prepared fossils along with copies of all pertinent field notes, photos, and maps shall be deposited in a scientific institution with paleontological collections such as the San Diego Natural History Museum. A final summary report shall be completed. This report shall include discussions of the methods used, stratigraphy exposed, fossils collected, and significance of recovered fossils.

5.7.6 Level of Significance After Mitigation

The mitigation measures explained above would reduce potential impacts to paleontological resources to **less than significant** level.

5.8 BIOLOGICAL RESOURCES

This EIR tiers from the 2005 GPU EIR and the 1993 Program EIR for the Otay Ranch GDP because biological resources for the entire Otay Ranch area, including the proposed project area, were analyzed as part of the 2005 GPU Program EIR and the 1993 Otay Ranch GDP Program EIR. The 2005 GPU determined impacts to biological resources to be less than significant with implementation of General Plan objectives and policies, and no mitigation measures were recommended. Conversely, the 1993 Otay Ranch GDP determined that impacts to biological resources would be significant and unavoidable even with required mitigation measures. This section describes the existing biological resources within the project area, analyzes the potential environmental effects of development on Village Three North, Portion of Village Four, Village Eight East, and Village Ten (proposed project), and recommends mitigation measures where necessary to reduce or avoid significant effects. Findings are based on the *Biological Technical Report for the Otay Ranch University Villages Project City Of Chula Vista, San Diego County, California* (Biological Technical Report) prepared by Dudek in March 2014 (see Appendix E).

5.8.1 Existing Conditions

Biological resource surveys of portions of the project site were conducted by various consultants during the early 1990s. Supplemental resource surveys of the project site were conducted by biologists from Dudek from 1997 to 2011 to map vegetation and jurisdictional waters and survey for plant and animal species recognized as special-status by local, state, or federal wildlife agencies and/or environmental organizations. Vegetation mapping that was previously completed for the project site was verified in 2012 and 2013 during mapping of off-site areas.

5.8.1.1 Regulatory Setting

Federal Level

Federal Endangered Species Act

The federal Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 et seq.), provides for listing of endangered and threatened species of plants and animals and designation of critical habitat for listed animal species. The ESA also prohibits all persons subject to U.S. jurisdiction from “taking” endangered species, which includes any harm or harassment. Section 7 of the ESA requires that federal agencies, prior to project approval, consult the U.S. Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS) to ensure adequate protection of listed species that may be affected by the project.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703 et seq.) is a federal statute that implements treaties with several countries on the conservation and protection of migratory

birds. The list of bird species covered by the MBTA is extensive and is detailed in 50 CFR 10.13. The regulatory definition of "migratory bird" is broad and includes any mutation or hybrid of a listed species, including any part, egg, or nest of such a bird (50 CFR 10.12). Migratory birds are not necessarily federally listed endangered or threatened birds under the ESA. The MBTA, which is enforced by USFWS, makes it unlawful "by any means or in any manner, to pursue, hunt, take, capture, [or] kill" any migratory bird or attempt such actions, except as permitted by regulation. The applicable regulations prohibit the take, possession, import, export, transport, sale, purchase, barter, or offering of these activities, except under a valid permit or as permitted in the implementing regulations (50 CFR 21.11).

Clean Water Act

The federal Water Pollution Control Act Amendments of 1972 (Clean Water Act; 33 U.S.C. 1251 et seq.), as amended by the Water Quality Act of 1987 (PL 1000-4), is the major federal legislation governing water quality. The purpose of the Clean Water Act is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Discharges into waters of the United States are regulated under Section 404. Waters of the United States include (1) all navigable waters (including all waters subject to the ebb and flow of tides); (2) all interstate waters and wetlands; (3) all other waters, such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, or natural ponds; (4) all impoundments of waters mentioned above; (5) all tributaries to waters mentioned above; (6) the territorial seas; and (7) all wetlands adjacent to waters mentioned above. In California, the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs) are responsible for implementing the Clean Water Act. Important applicable sections of the Clean Water Act are discussed below:

- **Section 303** requires states to develop water quality standards for inland surface and ocean waters and submit to the EPA for approval. Under Section 303(d), the state is required to list waters that do not meet water quality standards and to develop action plans, called total maximum daily loads, to improve water quality.
- **Section 304** provides for water quality standards, criteria, and guidelines.
- **Section 401** requires an Applicant for any federal permit that proposes an activity that may result in a discharge to waters of the United States to obtain certification from the state that the discharge will comply with other provisions of the Clean Water Act. Certification is provided by the respective RWQCB.
- **Section 402** establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharge of any pollutant (except for dredge or fill material) into waters of the United States. The NPDES program is administered by the RWQCB. Conformance with Section 402 is typically addressed in conjunction with water quality certification under Section 401.

- **Section 404** provides for issuance of dredge/fill permits by the U.S. Army Corps of Engineers (ACOE). Permits typically include conditions to minimize impacts on water quality. Common conditions include (1) ACOE review and approval of sediment quality analysis before dredging, (2) a detailed pre- and postconstruction monitoring plan that includes disposal site monitoring, and (3) required compensation for loss of waters of the United States.

U.S. Army Corps of Engineers

The ACOE has primary federal responsibility for administering regulations that concern waters and wetlands in the project area. In this regard, the ACOE acts under two statutory authorities, the Rivers and Harbors Act (33 U.S.C., Sections 9 and 10), which governs specified activities in navigable waters, and the Clean Water Act (Section 404), which governs specified activities in waters of the United States, including wetlands and special aquatic sites. Wetlands and non-wetland waters, e.g., rivers, streams and natural ponds, are a subset of waters of the United States and receive protection under Section 404 of the Clean Water Act. The ACOE has primary federal responsibility for administering regulations that concern waters and wetlands in the project area under statutory authority of the Clean Water Act (Section 404). In addition, the regulations and policies of various federal agencies mandate that the filling of wetlands be avoided to the extent feasible. The ACOE requires obtaining a permit if a project proposes placing structures within navigable waters and/or alteration of waters of the United States.

State Level

California Endangered Species Act

Similar to the federal ESA, the California ESA of 1970 provides protection to species considered threatened or endangered by the State of California (California Fish and Game Code, Section 2050 et seq.). The California ESA recognizes the importance of threatened and endangered fish, wildlife, and plant species and their habitats, and prohibits the taking of any endangered, threatened, or rare plant and/or animal species unless specifically permitted for education or management purposes.

California Fish and Game Code

The California Fish and Game Code regulates the handling and management of the state's fish and wildlife. Most of the code is administered or enforced by the California Department of Fish and Wildlife (CDFW; prior to September 2012, California Department of Fish and Game (CDFG)). One section of the code generally applies to public infrastructure projects such as the proposed project:

- **Section 1602** regulates activities that would divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. CDFW has jurisdiction over riparian habitats associated with watercourses. Jurisdictional waters are delineated by the outer edge of riparian vegetation or at the top of the bank of streams or lakes, whichever is wider. CDFW jurisdiction does not include tidal areas or isolated resources.

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act of 1969, updated in 2012 (California Water Code, Section 13000 et seq.), provides for statewide coordination of water quality regulations. The act established the California SWRCB as the statewide authority, and nine separate RWQCBs were developed to oversee water quality on a day-to-day basis.

Local Level

County of San Diego

One of the off-site improvement areas is located within the jurisdiction of the County of San Diego, and, therefore, impacts to this off-site area (Otay Landfill) are required to comply with the regulations set forth by the County. In compliance with the MSCP Subregional Plan and the County of San Diego Subarea Plan (County MSCP; October 1997), the County established the Biological Mitigation Ordinance (BMO; March 1998) to provide the requirements and mitigation measures necessary for projects within the Plan area. Certain areas within the County MSCP were designated as pre-authorized "take" areas. The take areas designated in the County MSCP were developed through a comprehensive planning effort with the affected jurisdictions and describe areas that are not subject to further mitigation because direct and cumulative impacts to MSCP covered species were considered in the overall MSCP planning effort. The County specifically exempted the take areas from the BMO at Article III. A. 4., which states that "[t]his Ordinance shall not apply to the following: any Take Authorization Area approved by the Board of Supervisors and the wildlife agencies as part of the County MSCP Subarea Plan, as shown on Attachment B, or any approved Habitat Loss Permit issued pursuant to 16 U.S. C. sec. 1533 (d)." The landfill is located within the South County section and the proposed impact area is designated as Take Authorized. As such and in accordance with the County MSCP and BMO, no additional biological mitigation is required for development to occur. The "take" as defined by the Endangered Species Act already has been adequately mitigated in the form of land set aside as "Hard Lined" preserves during the negotiations between the landowners, wildlife agencies, and County during preparation of the MSCP Subarea Plan.

City of Chula Vista General Plan

The Environmental Section of the Chula Vista General Plan includes Goals and Policies designed to conserve the City's sensitive biological resources. This is accomplished primarily through the City of Chula Vista MSCP Subarea Plan, which was adopted as part of the General Plan on May 13, 2003.

City of Chula Vista Multiple Species Conservation Program Subarea Plan

The MSCP Subregional Plan is implemented through local Subarea Plans adopted by each jurisdiction receiving Take authorization for covered species. The Chula Vista Subarea Plan was prepared pursuant to the general outline developed by the Wildlife Agencies to meet the requirements of the NCCP. The Chula Vista Subarea Plan is also consistent with the MSCP Subregional Plan and qualifies as a Subarea Plan document to implement the MSCP Subregional Preserve within the City.

The Chula Vista Subarea Plan was approved in 2003 and formed the basis for Take Authorization pursuant to Federal 10(a)(1)(B) permit and State 2835 permit. Take Authorization was granted to the City in January 2005 with the execution of the Implementing Agreement by and among the City and Wildlife Agencies and subsequent permit issuance. The MSCP Subarea Plan provides for conservation of upland habitats and species through preserve design, regulation of impacts and uses, and management of the Preserve. The proposed project is considered a "Covered Project" under the Chula Vista MSCP Subarea Plan. The 100% Conservation Areas are either already in public ownership or will be dedicated to the Preserve as part of the development approval process for Covered Projects. Any portions of Covered Projects that are located within 100% Conservation Areas must be consistent with conditions allowing specific land uses within the Preserve as outlined in Section 6.0 of the MSCP Subarea Plan and are subject to the narrow endemic Species Policy (avoidance and minimization) and the Wetlands Protection Program.

<u>Narrow Endemic Species Protection</u>

The following specific provisions are applicable to the project area.

***Development Areas within Covered Projects*:** Covered Projects provide protection of narrow endemic species through consideration of narrow endemic species in the Preserve design for those projects. Take of Covered Species, including narrow endemic species, for development areas within Covered Projects will be extended at the time of development approval. There are no limitations on impacts to narrow endemic species within the development areas of Covered Projects.

***100% Conservation Areas within Covered Projects*:** Projects located within the 100% Conservation Areas of Covered Projects (i.e., within the Preserve) are limited to uses described in Sections 6.1, 6.2, and 6.3 of the MSCP Subarea Plan. Impacts to covered narrow endemic species from planned and future facilities located within the 100% Conservation Areas of Covered Projects will be avoided to the maximum extent practicable. Where impacts are demonstrated to be unavoidable, impacts will be limited to 5% of the total narrow endemic species population within the project area. Unavoidable impacts to narrow endemics are subject to the equivalency findings, limitations and provisions of Section 5.2.3.6, Equivalency Findings, of the MSCP Subarea Plan.

Wetlands Protection

As part of the CEQA review, development projects that contain wetlands will be required to demonstrate that impacts to wetlands have been avoided to the greatest extent practicable and, where impacts are nonetheless proposed, that such impacts have been minimized. For unavoidable impacts to wetlands within the development footprint, the mitigation ratio will be in accordance with the wetlands mitigation ratios identified in the MSCP Subarea Plan. The wetlands mitigation ratios provide a standard for each habitat type but may be adjusted depending on the functions and values of both the impacted wetlands, as well as the wetlands mitigation proposed by the project. The City may also consider the wetland habitat type(s) being impacted and utilized for mitigation in establishing whether these standards have been met.

Otay Ranch General Development Plan

The Otay Ranch GDP was approved jointly by the City of Chula Vista and County of San Diego in 1993 for the future development of Otay Ranch. The Otay Ranch GDP was amended in December 2005 as part of the City's General Plan Update and most recently was amended in February 2013. The Otay Ranch GDP establishes land use plans, design guidelines, objectives, policies, and implementation measures that apply to all portions of Otay Ranch while supporting a balance of housing, shops, workplaces, schools, parks, civic facilities, and open spaces. The majority of development is intended to be clustered in villages, with conveniently located "core" features and well-defined edges such as the Chula Vista greenbelt, open spaces, and wildlife corridors. The goals of the Otay Ranch GDP are to: (1) create a well-integrated, balanced land use; (2) reduce reliance on the automobile and promotion of alternative modes of transportation; and (3) diversify the economic base within Otay Ranch.

Otay Ranch Resource Management Plan

The Otay Ranch Resource Management Plan (RMP) was adopted in 1993 with the approval of the Otay Ranch General Development Plan to establish a permanent preserve within Otay Ranch. The RMP is comprised of two separate documents, the Phase 1 RMP and Phase 2 RMP (adopted in 1996 and revised in 2002). The Phase 1 RMP identifies Preserve areas within Otay Ranch, and contains policies regarding species and habitat conservation and long-term management of the Preserve. The Phase 2 RMP includes ranch-wide studies that were conducted pursuant to the Phase 1 RMP and provides additional detail on conveyance, management and funding (City of Chula Vista and County of San Diego 1993 and 2002). The purpose of the Otay Ranch Preserve is to protect and enhance biological, paleontological, cultural, and scenic resources. Plan objectives include biological diversity and promotion of the survival and recovery of native species and habitats. The RMP identifies an open space system of 11,375 acres to be dedicated within the Otay Ranch, targeting lands that include important resources such as vernal pools, coastal sage scrub habitat, coastal California gnatcatcher populations, and potential wetlands

restoration areas. The Otay Ranch Preserve would also connect large areas of open space through a series of wildlife corridors, and cover portions of Salt Creek Canyon to Otay Valley. The preserve boundaries from the RMP have been incorporated into the adopted Otay Ranch GDP. The preserve/development boundary of the Otay Ranch GDP is consistent with the objectives, policies, and criteria established in the RMP (City of Chula Vista and County of San Diego 1993 and 2002).

The Phase 2 Resource Management Plan (Phase 2 RMP or RMP 2), adopted in 1996 and revised in 2002, identified implementation measures that included procedures for dedicating parcels of land to the resource preserve and for determining the proportionate share for each village.

Land identified by the RMP as part of the 11,375-acre Otay Ranch Preserve is required to be conveyed to the preserve prior to the approval of Final Maps. The conveyance ratio (ratio of land to be dedicated per acre of development) is 1.188 acres dedicated for each developable acre that is Final Mapped. This ratio was established by the RMP 2. The RMP 2 identified 9,574 "developable acres" in Otay Ranch, which are defined as the total amount of developable acreage minus "common uses" (local parks, schools arterials, SR-125 and lands designated as a public use area) and "Limited Development Areas." In order for the conveyance of the entire 11,375-acre Otay Ranch Preserve, the RMP 2 calculated that 1.188 acres of preserve land must be dedicated for each developable acre (11,375 acres of preserve divided by 9,574 developable acres). The conveyance obligation is required to be met on a village-by village basis.

5.8.2 Methodology

The biological analysis included a literature review, resources mapping, focused surveys for plant and wildlife species, and a jurisdictional delineation.

Resource Mapping

Vegetation mapping, jurisdictional delineations, and focused plant and wildlife surveys for the proposed project, including off-site areas, occurred from 2003 to 2013. Resource mapping for off-site areas that overlap with property owned by Otay Land Company, specifically Village Eight West and Village Nine, was obtained from the biological resources reports for those villages (URS 2012a, 2012b).

Vegetation mapping was conducted for Village Three North in February and July 2003. The vegetation for Portion of Village Four and Village Eight East was mapped in 2008. Vegetation mapping at Village Ten was conducted in 2008 and 2010. The off-site areas south and west of Village Three North (Areas 1 and 5) were mapped in September 2011 and in March 2012. Vegetation mapping for all project components (i.e., all three villages, Portion of Village Four, off-site areas and areas associated with the Boundary Adjustment) were verified during the 2012 and 2013 off-site mapping. Area 2 of the off-site impact areas outside of Otay Ranch, and within

the County jurisdiction, was mapped by using regional MSCP mapping; no site-specific survey was conducted due to lack of permission to access.

Jurisdictional Resources

A jurisdictional delineation for Village Three North was conducted in February and July 2003 and for the Portion of Village Four it was conducted in 2008. The jurisdictional delineation for the Village Eight East site was conducted in 2008 and 2010 and at this time the delineation for Village Three North was verified. The jurisdictional delineation for Village Ten was conducted in 2011.

Rare Plants

Focused surveys for special-status plant species were conducted at the Village Three North site in May 2003 and surveys for Otay tarplant (*Deinandra conjugens*) on the Village Three North site were conducted in June and July 2003. In summer 2010 and spring 2011, the 2003 surveys were updated or confirmed by conducting new focused surveys for special-status plant species including surveys for Otay tarplant. At the Village Eight East site and Village Ten, rare plant surveys were conducted in spring 2011 and the focused survey for Otay tarplant was conducted in summer 2010.

All surveys were conducted on foot via meandering transects throughout the entire project site with the exception of areas of intense agricultural disturbance and the revegetated maritime succulent scrub areas. The areas of intense agricultural disturbance were surveyed first from a vehicle to identify remnant patches of potential habitat for native species. The remnant patches were then surveyed on foot. The revegetated maritime succulent scrub areas were not surveyed for individual stem counts in order to avoid disturbing revegetation efforts. Population estimates were made based on estimated densities of sample plots.

California Gnatcatcher

Focused surveys for California gnatcatcher (*Polioptila californica californica)* were conducted in February 2003 by Dudek Biologist Brock A. Ortega at Village Three North. In 2011, Dudek conducted focused surveys for California gnatcatcher within the project area site in accordance with the USFWS survey protocol (USFWS 1997) using standard meandering transects within suitable habitat during suitable weather conditions. All suitable habitats for California gnatcatcher, including all forms of coastal sage scrub and maritime succulent scrub, were surveyed at each site.

Quino Checkerspot Butterfly

Focused surveys for the Quino checkerspot butterfly (*Euphydryas editha quino*) were conducted in 2011 by Dudek Biologists. The survey area within Village Three North included the Boundary Adjustment areas along Wolf Canyon in the eastern portion of the project site. Within Village Eight East, the non-agricultural lands in the southern portion were surveyed for Quino checkerspot. Almost all of Village Ten was surveyed for Quino checkerspot, except for some areas in the northern portion of the site. These surveys were conducted in accordance with the USFWS protocol (USFWS 2002).

Vernal Pool Branchiopods

Wet season surveys of a potential vernal pool within the Village Three North project area were conducted in the winter of 2003–2004, 2004–2005, and 2011–2012. Surveys were conducted in accordance with USFWS survey protocol by Dudek biologists. The updated 2011 wet season survey for Village Three North was initiated in November 2011 and was completed in 2012. No vernal pool branchiopod surveys were conducted on Village Eight East and Village Ten due to lack of suitable habitat.

Burrowing Owl/Raptor Nests

Surveys for burrowing owl (*Athene cunicularia*) and raptor nest sites were conducted within all potential development areas on Village Three North in 2003. In 2011, focused surveys for burrowing owl were conducted on all portions of the proposed project. Dudek wildlife biologists evaluated all areas of suitable habitat on foot and via vehicle for suitability for burrowing owl. Suitable habitat for burrowing owl included all areas with the exception of dense chaparral and coastal sage scrub, cactus scrub, and riparian habitats. Suitability for burrowing owl was based on the potential presence of ground squirrel (*Spermophilus beecheyi*) burrows. Suitable areas were surveyed on foot with specific inspection of all visible burrows for sign of burrowing owl. All trees and large stature shrubs were surveyed for sign of potential raptor nests.

5.8.3 Existing Conditions

Of the 1,375.6 acres within the SPA Plan Areas for the three villages, 750.3 acres are designated as outside of the Otay Ranch RMP and Chula Vista MSCP Preserve (i.e., preserve lands, Preserve), while the remaining 624.3 acres are within the Preserve. Within the Preserve, the project includes 18.1 acres of planned and future facilities. The Existing Conditions addresses the total Development Area of 768.4 acres. This includes 32.8 acres of land which is within the SPA Plan Area which is not proposed to be developed as part of the proposed project but are

labeled for future development areas (AR-11, Freeway Lots and "Future Development Area" east of SR-125 in the Village Eight East SPA Plan Area).

5.8.3.1 Special-Status Plant Species

Focused surveys of the project site were conducted according to the methods presented in Section 5.8.2. The data for species locations was recorded using a GPS unit and is represented on Figures 5.8-1 through 5.8-4 by point records where the occurrence is of a single individual and as polygons for a population. GPS of the polygons for a population of special status plants also included recorded the number of individuals within the polygon.

One listed plant species was detected within the project area: Otay tarplant (*Deinandra conjugens*) (federally threatened and state endangered, MSCP Covered, narrow endemic). Twelve other species considered sensitive by various agencies also occur on the project site: California adolphia (*Adolphia californica*), variegated dudleya (*Dudleya variegata*) (MSCP Covered, narrow endemic), South Coast saltscale (*Atriplex pacifica*), Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*), San Diego barrel cactus (MSCP Covered), singlewhorl burrobrush (*Ambrosia monogyra*), small-flowered morning glory (*Convolvulus simulans*), Palmer's grapplinghook (*Harpagonella palmeri*), graceful tarplant (*Holocarpha virgata* ssp. *elongata*), southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*), California boxthorn (*Lycium californicum*), and San Diego County viguiera (*Bahiopsis laciniata*) (Table 5.8-1).

Table 5.8-1
Summary of Special-Status Plant Populations

Special-Status Plant Species	Village Three North and Portion of Village Four	Village Eight East	Village Ten	Total
California adolphia (*Adolphia californica*)	1	—	—	1
California boxthorn (*Lycium californicum*)	9	59	—	68
Graceful tarplant (*Holocarpha virgata* ssp. *elongata*)	—	25	—	25
Otay tarplant (*Deinandra conjugens*)	4,672	—	100	4,772
Palmer's grapplinghook (*Harpagonella palmeri*)	20	—	—	20
Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*)	50	—	—	50
San Diego barrel cactus (*Ferocactus viridescens*)	71	78		149
San Diego County viguiera (*Bahiopsis [Viguiera] laciniata*)	2,796	1,829	2,627	7,085
Singlewhorl burrobrush (*Ambrosia monogyra*)		48		48
Small-flowered morning glory (*Convolvulus simulans*)	17	—	—	17
South Coast saltscale (*Atriplex pacifica*)	12	3	—	15
Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*)	—	95	20	115
Variegated dudleya (*Dudleya variegata*)	100	—	—	100

FIGURE 5.8-1

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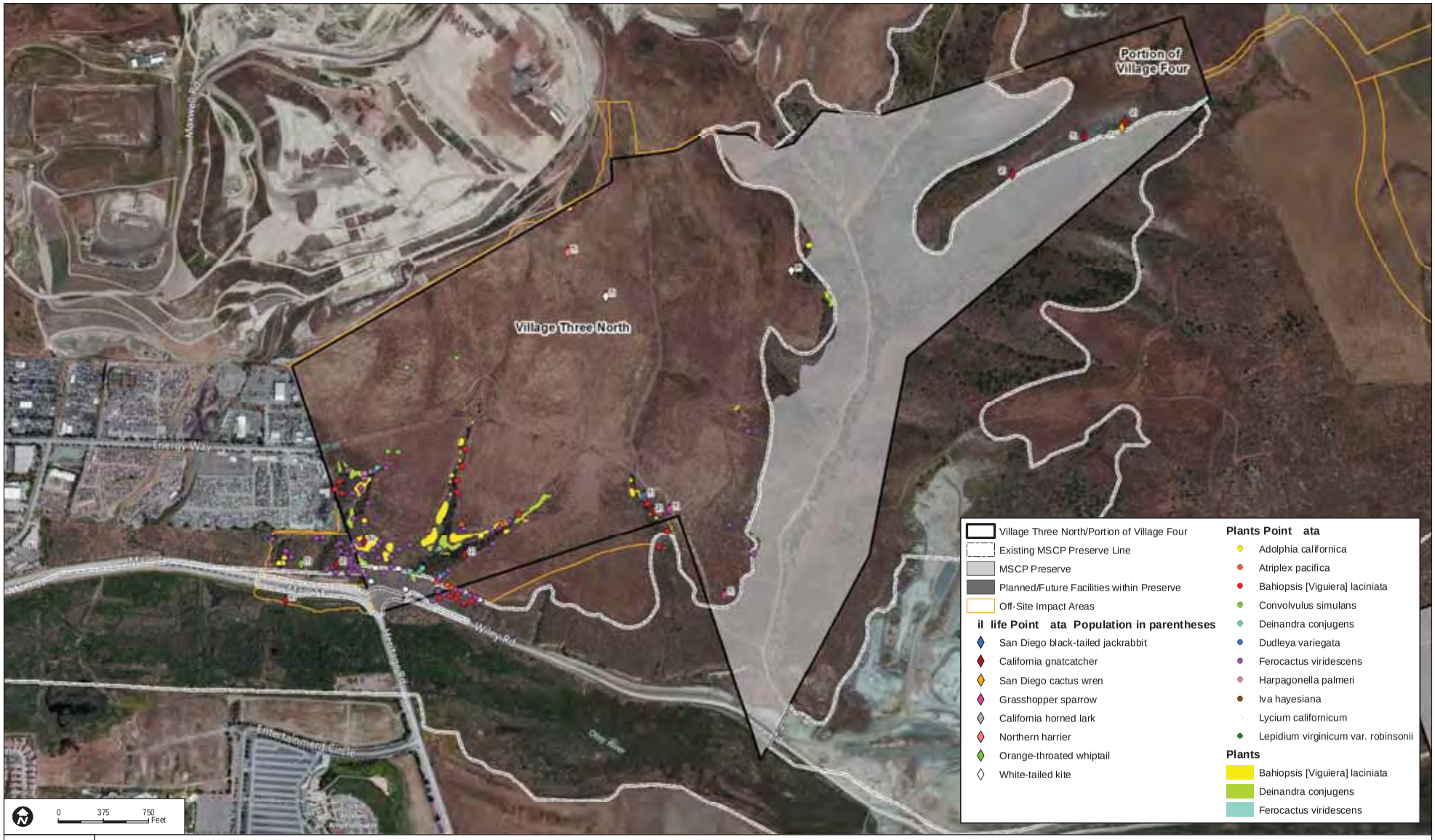

FIGURE 5.8-2

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FIGURE 5.8-3

pecial tatus pecies Map - Village Eight East

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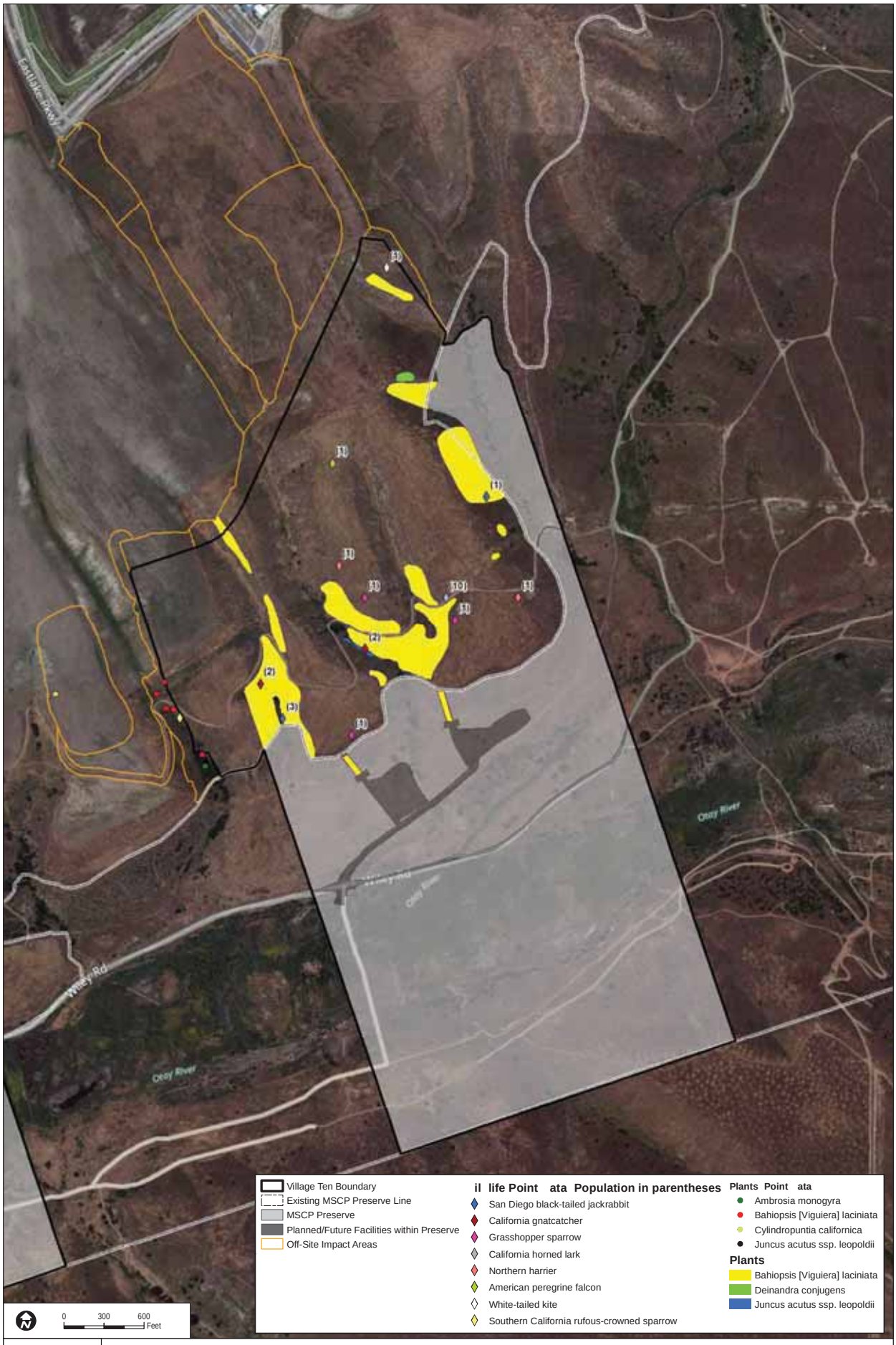

FIGURE 5.8-4

pecial tatus pecies Map - Village Ten

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California adolphia (*Adolphia californica*), CRPR 4.2

California adolphia is a deciduous shrub that blooms from December through May and occurs in chaparral, coastal sage scrub, and valley and foothill grasslands with clay soils (CNPS 2011). One plant was observed within the Village Three North site, along the western edge.

California boxthorn (*Lycium californicum*), CRPR 4.2

California boxthorn is a perennial shrub that blooms December through August and grows in coastal bluff scrub and coastal scrub (CNPS 2011). Approximately 68 individuals were recorded throughout the project site in 2010–2011 and previous years. On the Village Three North site, California boxthorn occurs in the southwestern portion of the site. In addition, this species occurs within the Preserve adjacent to Village Three along Wolf Canyon and in the southwest corner of Village Three North. On Village Eight East, approximately 59 individuals were observed, primarily recorded north of the road along the southern boundary of the site and in an area closer to the center of the site. No California boxthorn individuals were observed on the Village Ten site.

Graceful tarplant *(Holocarpha virgata* ssp. *elongata*), CRPR 4.2

Graceful tarplant is an annual herb that blooms May through November and grows in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland (CNPS 2011). On the Village Eight East site, approximately 25 graceful tarplant individuals occur in the southeastern portion of the project site. No graceful tarplant were observed on Villages Three North and Portion of Village Four or Village Ten.

Otay tarplant (*Deinandra conjugens*), Federally Threatened, State Endangered, CRPR 1B.1, MSCP Covered, Narrow Endemic

Otay tarplant is an annual herb that blooms May through June and grows in coastal scrub and valley and foothill grassland with clay soils (CNPS 2011). On the Village Three North site, locations of Otay tarplant are generally clustered within the canyon topography in the southwest corner of the project site (Figure 5.8-2). In total, the on-site population for all three villages was estimated at 4,637 individuals in 2010–2011. It should be noted that population size of this species varies dramatically from year-to-year depending on rainfall patterns. Approximately 100 individuals were observed near the northeastern section of the Village Ten site (Figure 5.8-4).

Palmer's grapplinghook (*Harpagonella palmeri*), CRPR 4.2

Palmer's grapplinghook is an annual herb that blooms March through May and grows in chaparral, coastal scrub, and valley and foothill grassland (CNPS 2011). On the Village Three North site, Palmer's grapplinghook occurs near the western boundary of the site (Figure 5.8-2).

Approximately 20 individuals were recorded in 2010–2011. Palmer's grapplinghook was not observed on a Portion of Village Four, Village Eight East or Village Ten.

Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*), CRPR 1B.2

Robinson's pepper-grass is an annual herb that blooms January through July and grows in chaparral and coastal scrub (CNPS 2011). On the Village Three North site, Robinson's pepper-grass occurs in the southwest corner, along the western and southern boundaries (Figure 5.8-2). There were approximately 50 individuals in 2010–2011. No Robinson's pepper-grass was observed on the Village Eight East or Ten project sites.

San Diego barrel cactus (*Ferocactus viridescens*), CRPR 2.1, MSCP Covered

San Diego barrel cactus is a perennial stem succulent that blooms May through June and grows in chaparral, coastal scrub, valley and foothill grassland, and vernal pools (CNPS 2011). On the Village Three North site, San Diego barrel cactus occurs commonly in the southwest portion and along the edge of Wolf Canyon (Figure 5.8-2). There were approximately 71 individuals recorded on Village Three North/Portion of Village Four in 2010–2011 and previous years. Approximately 78 San Diego barrel cactus individuals occur throughout the southern portion of Village Eight East (Figure 5.8-3).

San Diego County viguiera (*Bahiopsis [Viguiera] laciniata*), CRPR 4.2

San Diego County viguiera is a perennial shrub that blooms February through August and grows in chaparral and coastal scrub (CNPS 2011). On the Village Three North site, San Diego County viguiera occurs as a common component of scrub communities on site. Approximately 2,645 individuals were recorded throughout this area in 2010–2011. Approximately 1,829 individuals were mapped throughout the southern portion of Village Eight East, and approximately 2,611 individuals were mapped throughout Village Ten.

Singlewhorl burrobrush (*Ambrosia monogyra*), CRPR 2.2

Singlewhorl burrobrush is a perennial shrub that blooms August through November and grows in sandy chaparral and Sonoran desert scrub (CNPS 2011). On Village Three North and Portion of Village Four, there are approximately 6 individuals (Figure 5.8-2). On Village Eight, there are approximately 48 individuals of singlewhorl burrobrush observed along the southern boundary of the site (Figure 5.8-3). On Village Ten, there approximately 8 individuals (Figure 5.8-4). This is species also occurs within Preserve areas adjacent to all three Villages.

Small-flowered morning glory (*Convolvulus simulans*), CRPR 4.2

Small-flowered morning glory is an annual herb that blooms March through July and grows in openings in chaparral, coastal scrub, and valley and foothill grassland. The species is also associated with clay, serpentinite seeps (CNPS 2011). On the Village Three North site, small-flowered morning glory occurs in the northwest corner of the site (Figure 5.8-2). Approximately 17 individuals were recorded in 2010–2011 and previous years. This species was not observed on the Village Eight East or Village Ten sites.

South Coast saltscale (*Atriplex pacifica*), CRPR 1B.2

South Coast saltscale is an annual herb that blooms March through October and grows in coastal bluff scrub, coastal dunes, coastal scrub, and on playas (CNPS 2011). On the Village Three North site, populations of South Coast saltscale are generally located in the southwest corner of the site (Figure 5.8-2). In total, the on-site population in Village Three North was estimated at 12 individuals in 2010–2011. Approximately 3 individuals were recorded on the Village Eight East site along the southern boundary (Figure 5.8-3). No South Coast saltscale was recorded on Village Ten.

Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*), CRPR 4.2

Southwestern spiny rush is a perennial rhizomatous herb that blooms March through June and grows in mesic coastal dunes, alkaline seeps, and coastal salt marshes and swamps (CNPS 2011). This species was not recorded on Village Three North and Portion of Village Four. On the Village Eight East site, approximately 95 southwestern spiny rush were recorded in the southern portion of the site (Figure 5.8-3). On Village Ten, approximately 20 individuals were observed near the center of the site (Figure 5.8-4).

Variegated dudleya (*Dudleya variegata*), CRPR 1B.2, MSCP Covered, Narrow Endemic

Variegated dudleya is a perennial herb that blooms April through June and grows in chaparral, cismontane woodland, coastal scrub, valley and foothill grassland with clay soils, and vernal pools (CNPS 2011). On the Village Three North site, locations of variegated dudleya are generally located within the canyon topography in the southwest corner of the site (Figure 5.8-2). In total, the on-site population was estimated at approximately 100 individuals in 2011. No variegated dudleya were observed on the Village Eight East or Village Ten project sites.

5.8.3.2 Special-Status Wildlife Species

Information from previous surveys is reported in the Biological Technical Report for Villages Two, Three and Portion of Village Four (Dudek 2006). Because the surveys have

been updated, the more current information is presented. Surveys from 2008 to 2011 found nine special-status wildlife species on the project site, which are discussed below; their locations are displayed in Figure 5.8-1. Only those species within the Development Area are depicted on the figures; species only observed in the Preserve are not displayed.

Coastal California Gnatcatcher (*Polioptila californica californica*) Federally Threatened, State Species of Special Concern, MSCP Covered Species

A total of three gnatcatcher pairs (two pair were with fledglings) were detected in the finger canyons of Village Three North and two pairs and one male were detected in the Portion of Village Four during focused surveys in 2011. One pair was located within the Portion of Village Four, along the Preserve boundary that also likely use habitat within the Portion of Village Four on-site areas as well as the habitat within the Preserve, and, therefore, that point location is displayed. In addition, two pairs were observed within the area outside of Otay Ranch located adjacent to the southwestern side of Village Three North.

Two pairs of gnatcatchers were observed during focused surveys on Village Ten. The on-site pairs were both located within coastal sage scrub in the southern portion of the village.

White-Tailed Kite (*Elanus leucurus*) State Fully Protected

During the 2010–2011 surveys on Village Three North and Portion of Village Four, one individual was observed hunting in the non-native grassland in the north-central portion of the development site and nine individuals were observed roosting at the western edge of Wolf Canyon, likely a communal roost activity. White-tailed kite was observed at three locations in the western portion of Village Eight East, north of the Preserve boundary. White-tailed kite was observed at one location on Village Ten, within the northern most portion of the Village.

Peregrine Falcon (*Falco peregrinus anatum*) State Fully Protected

Peregrine falcon was observed flying over the center of Village Ten, outside of the Preserve; it was not observed foraging but could forage on waterfowl on the Lower Otay Reservoir. This species was not observed within other Villages.

San Diego Black-Tailed Jackrabbit (*Lepus californicus bennettii*) State Species of Special Concern

One black-tailed jackrabbit was recorded during 2010–2011 surveys along the southern edge of the Village Three North site. However, this species is likely common throughout the site and associated Preserve. Fourteen black-tailed jackrabbits were observed within Village Eight East, primarily within the Community Park (P-2). Four black-tailed jack rabbits were observed within Village Ten.

Coastal Cactus Wren (*Campylorhynchus brunneicapillus sandiegensis*) USFWS Birds of Conservation Concern, State Species of Special Concern, MSCP Covered Species

During surveys conducted in 2010, two coastal cactus wrens were recorded within the Portion of Village Four, likely comprising a pair. One coastal cactus wren was observed in Village Eight East, east of SR 125 within a portion of the village that is not planned for development.

Grasshopper Sparrow (*Ammodramus savannarum*) State Species of Special Concern

On Village Three North, two grasshopper sparrows were recorded in the non-native grassland in the southern portion of the site during 2010–2011 surveys. Four grasshopper sparrows were recorded within the agricultural areas on Village Eight East, one in the southern portion and two in the north-central portion of the project site. Three sparrows were observed in the southern portion of Village Ten in and around the grassland areas.

Northern Harrier (*Circus cyaneus*) State Species of Special Concern, MSCP Covered Species

One northern harrier was observed hunting during 2010–2011 surveys on the Village Three North site in the northern portion of the site. Four individuals were observed within Village Eight East, a pair were observed foraging in the northwestern corner of the village; an individual was observed west of the village center; and a third one was observed along the edge of the Community Park (P-2) in the southern portion of the village. On Village Ten, two northern harriers were observed foraging near the center of the site.

Cooper's Hawk (*Accipiter cooperii*) State Watch List, MSCP Covered Species

A single Cooper's hawk was observed in the southern portion of Village Eight East, along the Preserve boundary. Cooper's hawk was not observed on Village Three North/Portion of Village Four or Village Ten.

California Horned Lark (*Eremophila alpestris actia*) State Watch List

California horned lark was not observed during surveys in 2010–2011 on the Village Three North Project site, but had been recorded in 2004. California horned lark was not observed on Portion of Village Four or Eight East. On Village Ten, 10 California horned larks were observed along the road near the center of the project site during 2011 surveys.

Southern California Rufous-Crowned Sparrow (*Aimophila ruficeps canescens*) State Watch List, MSCP Covered Species

One occurrence of this species was observed in an off-site area associated with Village Ten. This occurrence is mapped along the western edge of the village. No Southern California rufous-crowned sparrows were observed within the Development Area during any of the surveys.

5.8.3.3 Plant Communities

Based on species composition and general physiognomy, nine native or naturalized plant communities, including disturbed forms, were identified within the area proposed for development: broom baccharis scrub (including disturbed), cismontane alkali marsh (including disturbed), coastal sage scrub (including disturbed), freshwater marsh (only for planned and future facilities, not within the SPA Plan development area), maritime succulent scrub (including disturbed), mulefat scrub (including disturbed), non-native grassland, southern mixed chaparral, and southern willow scrub. Four non-native or disturbed land covers also occur on site: agriculture, developed, disturbed habitat, and tamarisk scrub (Table 5.8-2). The area proposed for development includes the approximate 750.3 acres of land identified in the SPA Plan, and 18.1 acres identified as Planned and Future Facilities within the Preserve (i.e., access road to the Community Park (P-2) in Village Eight East and the Village Ten utility corridors and water quality basins) for a total of 768.4 acres of impacted areas. Figures 5.8-5 through 5.8-8 depict vegetation communities within the entire project area.

Table 5.8-2
Acreages of Existing Vegetation Community and Land Cover Types Within the Development Area

Vegetation Community/Land Cover	Village Three North/ Portion of Village Four	Village Eight East	Village Ten	Total University Villages Development Area
Development Area Outside of Preserve				
Agriculture	25.3	277.2 (261.1)	7.6	310.1
Broom Baccharis Scrub	--	--	<0.1 (0)	<0.1 (0)
Broom Baccharis Scrub (Disturbed)	--	0.4 (0.4)	--	0.4
Cismontane Alkali Marsh	--	0.1 (0.1)	--	0.1
Cismontane Alkali Marsh (Disturbed)	--	0.2 (0.2)	--	0.2
Coastal Sage Scrub	18.4	15.9 (7.4)	46.0	80.3
Coastal Sage Scrub (Disturbed)	6.3	6.7 (4.4)	21.6	34.6
Developed	--	8.1 (7.1)	--	8.1
Disturbed Habitat	0.9	5.1 (4.6)	2.2	8.2
Maritime Succulent Scrub	4.6	0.7 (0.7)	2.8	8.1
Maritime Succulent Scrub (Disturbed)	0.4	<0.1 (0)	--	0.4

Table 5.8-2 (Continued)
Acreages of Existing Vegetation Community and Land Cover Types Within the Development Area

Vegetation Community/Land Cover	Village Three North/ Portion of Village Four	Village Eight East	Village Ten	Total University Villages Development Area
Mulefat Scrub	–	0.5 (0)	0.3	0.8
Mulefat Scrub (Disturbed)	–	0.5 (0)	–	0.5
Non-Native Grassland	222.0	4.2 (2.8)	69.9	296.1
Southern Mixed Chaparral	–	–	<0.1 (.1)	<0.1 (.1)
Southern Willow Scrub	–	–	0.2	0.2
Tamarisk Scrub	<0.1	2.1	–	2.1 (the <.1 is a 0)
Subtotal Development Area (non-preserve) – SPA Plan	*277.9*	*321.7*[1] *(288.9 w/o AR)*	*150.7*	*750.3 (717.5 w/o AR)*
Planned and Future Facilities				
Agriculture	–	2.9	0.5	3.4
Broom Baccharis Scrub (Disturbed)	–	<.1 (0)	–	<.1 (0)
Coastal Sage Scrub	1.2	1.1	0.5	2.8
Coastal Sage Scrub (Disturbed)	0.4	–	0.1	0.6
Developed	0.3	1.1	1.5	2.9
Disturbed Habitat	0.3	<0.1 (.1)	0.8	1.2
Fresh Water Marsh	–	–	<0.1 (0)	<0.1 (0)
Maritime Succulent Scrub	–	0.6	–	0.6
Maritime Succulent Scrub (Disturbed)	0.2	–	–	0.2
Non-Native Grassland	0.7	–	5.6	6.3
Tamarisk Scrub	–	<0.1 (.1)	–	<0.1 (.1)
Subtotal Planned and Future Facilities	*3.1*	*5.9*	*9.1*	*18.1*
Total	281.0	327.6 (294.8 w/o AR-11)	159.8	768.4 (735.6 w/o AR-11)

Agriculture

Agriculture refers to areas that have been under cultivation or are pastures actively grazed by livestock and that contain less than 20% native plant cover. These areas contain very few native shrubs, and pastures are dominated by non-native grasses, dove weed (*Croton setigerus*), and black mustard (*Brassica nigra*). Agriculture dominates Village Eight East and occurs in the northeastern portion of Village Three North and Portion of Village Four.

[1] Includes 32.8 acres within the Development area (non-preserve) which is not proposed to be impacted by the proposed project but is designated future development.

Broom Baccharis Scrub (including disturbed)

Broom baccharis scrub is a native plant community very similar to Coastal Sage Scrub but dominated by broom baccharis (*Baccharis sarothroides*). It is typically associated with disturbed sites; sites with nutrient poor soils, such as along alluvial floodplains; or areas of sandy soils. Areas mapped as disturbed broom baccharis scrub included the intrusion of tamarisk (*Tamarix* spp.) along the perimeter.

Cismontane Alkali Marsh

According to Holland (1986), cismontane alkali marsh typically occurs in areas that are wet or inundated throughout most to all of the year. Dominant species include rushes (*Juncus* spp.), saltgrass (*Distichlis spicata*), sedges (*Carex* spp.), yerba mansa (*Anemopsis californica*), and alkali heath (*Frankenia grandifolia*). On site, the cismontane alkali marsh is dominated by spiny rush (*Juncus acutus*) and includes saltgrass, and tamarisk. There is cismontane alkali marsh along the southern boundary of the northern portion of the Village Eight East site that totals 0.1 acre. These areas are considered wetland under the jurisdiction of the CDFW, ACOE, and RWQCB. In addition, cismontane alkali marsh is considered to be a wetland as defined in the Chula Vista MSCP Subarea Plan.

<u>Disturbed Cismontane Alkali Marsh</u>

Disturbed cismontane alkali marsh is similar to cismontane alkali marsh described above, but is dominated by non-native tamarisk. There is one 0.2-acre area along the southern boundary of Village Eight East that is occupied by disturbed cismontane alkali marsh. This area is considered wetland under the jurisdiction of CDFW, ACOE, and RWQCB.

Coastal Sage Scrub

Coastal sage scrub is a native plant community composed of a variety of soft, low, aromatic shrubs. On site, this community consists primarily of California buckwheat, California sagebrush, jojoba (*Simmondsia chinensis*), San Diego viguiera (*Bahiopsis [Viguiera] laciniata*), and annual grasses. Lemonadeberry is dominant in some of the drainage bottoms within some areas of coastal sage scrub on site. Coastal sage scrub within the Development Area is generally found in the southern portion of Villages Eight East, throughout much of Village Ten, and in the eastern and southern portions of Village Three North and Portion of Village Four. Coastal sage scrub (and disturbed coastal sage scrub) is considered a sensitive vegetation community by the Chula Vista MSCP Subarea Plan

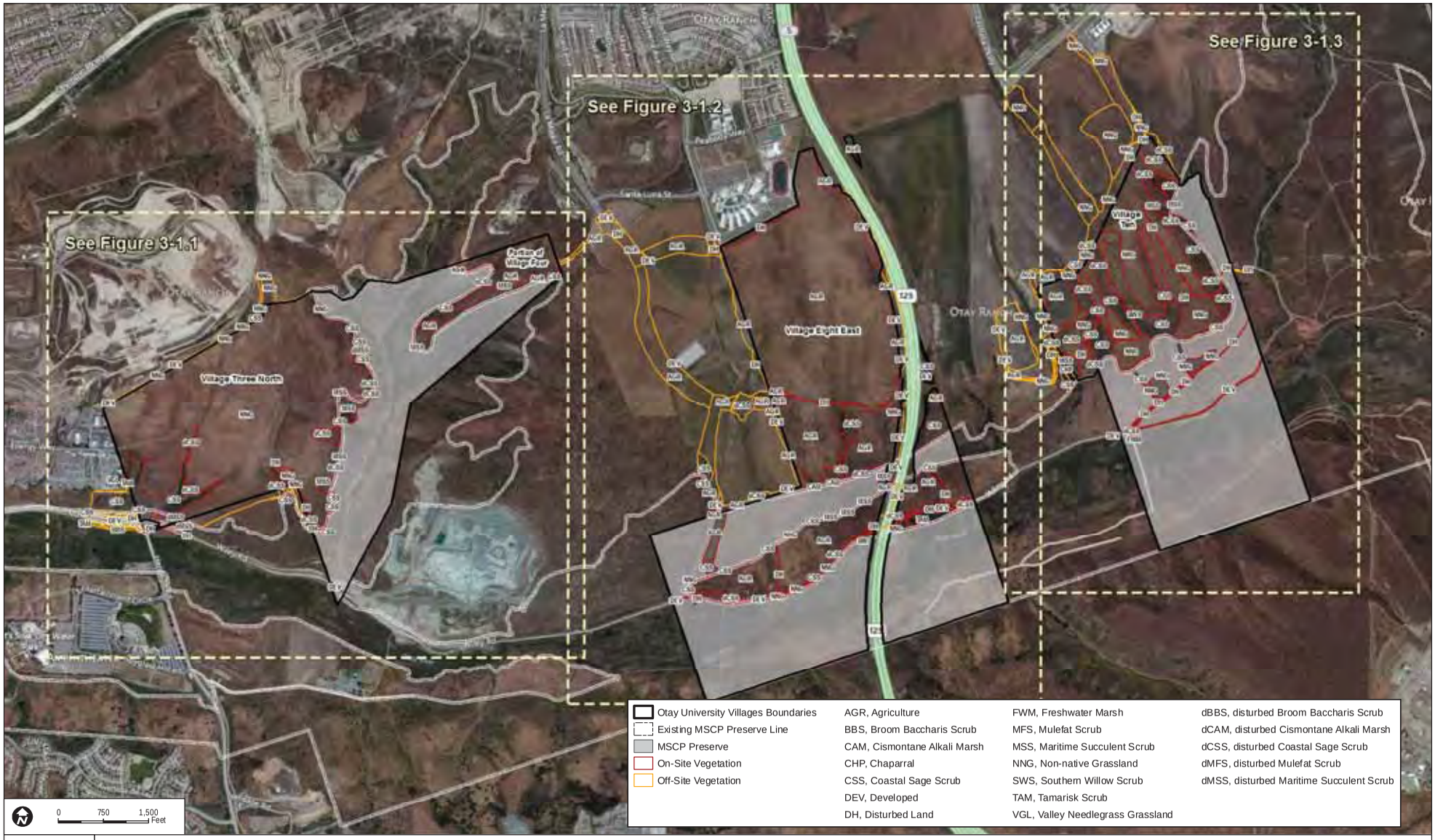

FIGURE 5.8-5

Vegetation In e Map

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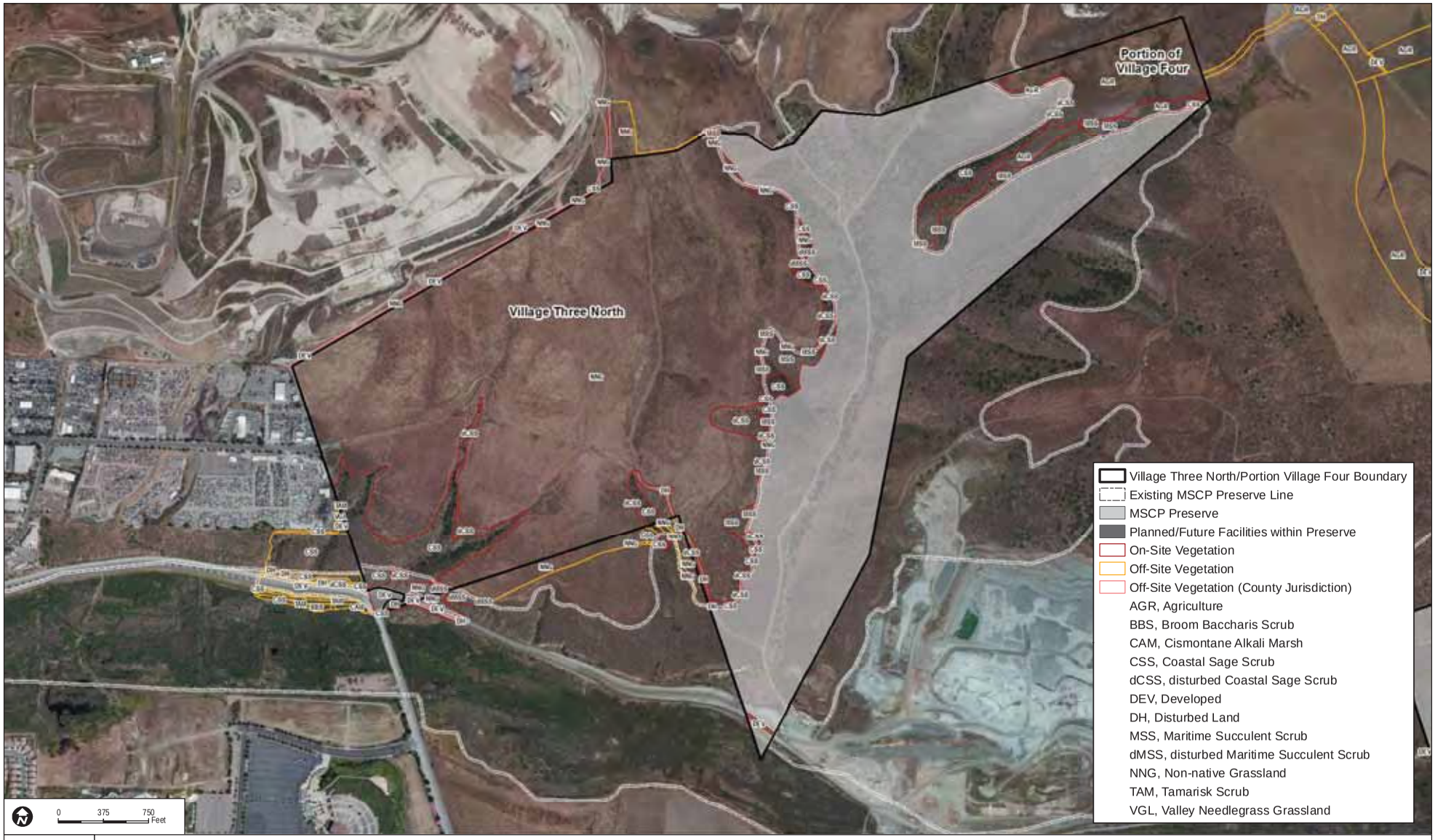

FIGURE 5.8-6

Vegetation Map - Village Three North Portion of Village Four

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FIGURE 5.8-7

Vegetation Map - Village Eight East

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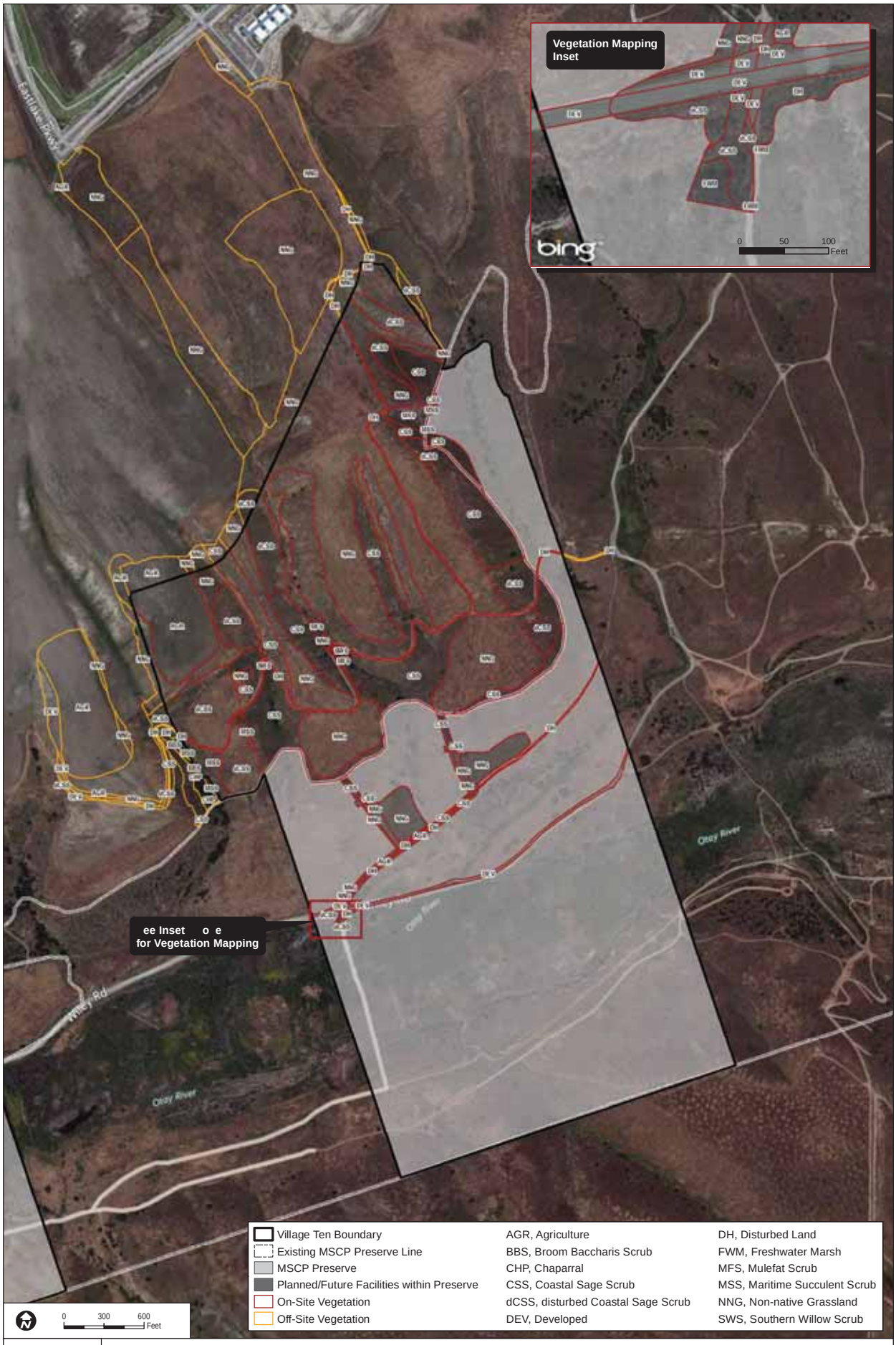

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FIGURE 5.8-8

Vegetation Map - Village Ten

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Disturbed Coastal Sage Scrub

Disturbed coastal sage scrub habitat was identified throughout the Development Area, but primarily adjacent to coastal sage scrub often between agricultural lands and steeper hillsides of undisturbed native vegetation.

Developed Land

Developed land refers to areas that lack vegetation and support permanent or temporary structures and paved roads. Developed lands are primarily located in Village Eight East, but there is a small sliver of developed land along the southern border of Village Ten.

Disturbed Habitat

For purposes of this document, disturbed habitat includes all dirt roads, graded areas, and other places that lack vegetation. In general, these areas have been subject to mechanical perturbations that have greatly limited the growth of any vegetation. This habitat type occurs on all three Village sites.

Freshwater Marsh

Freshwater marsh is an emergent wetland habitat type that occurs where the water table is at or just above the ground surface. It is typically dominated by tall monocot species such as cattail (*Typha* spp.) and bulrush (*Scirpus* spp). Less than 0.1 acre of freshwater marsh occurs within Planned and Future facilities associated with Village Ten. This area is considered wetland under the jurisdiction of CDFG, ACOE, and RWQCB. In addition, freshwater marsh is considered to be a wetland as defined in the Chula Vista MSCP Subarea Plan.

Maritime Succulent Scrub

Maritime succulent scrub habitat is found on thin rocky or sandy soils, often on steep slopes, where there is a small amount of summer rainfall. It integrates with coastal sage scrub on better-developed soils away from the immediate coast. On site, maritime succulent scrub is dominated by jojoba and coast cholla (*Cylindropuntia prolifera*) with lemonadeberry, California buckwheat, coastal prickly-pear (*Opuntia littoralis*), and San Diego barrel cactus (*Ferocactus viridescens*) as conspicuous subdominant species. A total of 9.1 acres of maritime succulent scrub is located in the eastern portions of Village Three North and Portion of Village Four, Village Ten, and the southern portion of Village Eight East. Maritime succulent scrub (including areas mapped as disturbed maritime succulent scrub) is considered a sensitive vegetation community by the Chula Vista MSCP Subarea Plan.

Disturbed Maritime Succulent Scrub

Floral species of this disturbed maritime succulent scrub found within the Development Area are characteristic of maritime succulent scrub habitat with components of bare ground and non-native grasses and forbs, including ripgut grass (*Bromus diandrus*) and Maltese star-thistle (*Centaurea melitensis*). Disturbed maritime succulent scrub habitat was identified in the eastern portion of Village Three North on a slope of Wolf Canyon, in a small area in the southwestern corner of Village Three North, and along the northern boundary of the southern portion of Village Eight East. A total of 0.6 acre of disturbed maritime succulent scrub is located within the Development Area, of which 0.2 acre is associated with a Planned Facility in Village Three North.

Mulefat Scrub

Mulefat scrub is a tall, depauperate riparian community typically dominated by mulefat (*Baccharis salicifolia*), which develops along intermittent stream channels (Holland 1986). Mulefat scrub occurs long the southern boundary of Village Eight East and in the southwestern portion of Village Ten. The 0.8 acre of mulefat scrub is mapped, considered a wetland community under certain conditions, and as such, is under the jurisdiction of ACOE, RWQCB, and/or CDFW in some areas. In addition, these areas are considered to be wetland as defined in the Chula Vista MSCP Subarea Plan.

Disturbed Mulefat Scrub

The species composition of this habitat type found within the Development Area is characteristic of mulefat scrub habitat with components of non-native species or other evidence of physical disturbance. Disturbed mulefat scrub occurs in one area along the southern boundary of the Village Eight East site. A total of 0.5 acre of mulefat scrub is mapped. This area is considered to be a wetland as defined in the Chula Vista MSCP Subarea Plan.

Non-Native Grassland

Where the native vegetation has been disturbed frequently or intensively by grazing, fire, agriculture, or other activities, the native community usually is incapable of recovering. These areas are characterized by weedy, introduced annuals, primarily grasses that often include slender wild oat, bromes, mustards (*Brassica* and *Sisymbrium* spp.); broad-lobed filaree (*Erodium botrys*); and prickly Russian thistle (*Salsola tragus*).

Non-native grassland is the second largest land cover within the Development Area and is the dominant vegetation community on Villages Three North and Ten, but also occurs on Village Eight East. Species, such as wild oat (*Avena* sp.), foxtail chess, ripgut grass, and prickly Russian thistle are dominant in these areas. Non-native grassland is generally considered sensitive by the

Chula Vista MSCP Subarea Plan, because it supports species that are covered under the plan. The sensitivity of this community is based on its function as foraging habitat for several wildlife species, including raptors, as well as its function as resident habitat for special-status species, such as loggerhead shrike, horned lark, and burrowing owl.

Southern Mixed Chaparral

Southern mixed chaparral is a drought- and fire-adapted community of woody shrubs that is 1.5 to 3 meters (5 to 10 feet) tall, frequently forming dense, impenetrable stands. This vegetation community is typically a mixture of chamise (*Adenostoma fasciculatum*), mission manzanita (*Xylococcus bicolor*), ceanothus (*Ceanothus* spp.), interior scrub oak (*Quercus berberidifolia*), laurel sumac, and black sage. Less than <0.1 acre of southern mixed chaparral is found within the Development Area in one area in the southern portion of Village Ten. Southern mixed chaparral is considered a sensitive vegetation community by the Chula Vista MSCP Subarea Plan.

Southern Willow Scrub

Southern willow scrub is a broad-leafed, winter-deciduous riparian community dominated by willow species (*Salix* spp.) with scattered Fremont's cottonwood (*Populus fremontii*) and western sycamore (*Platanus racemosa*). The 0.2 acre of southern willow scrub occurs within Village Ten. These areas are considered wetland under the jurisdiction of CDFW, ACOE, and RWQCB. In addition, southern willow scrub is considered to be a wetland as defined in the Chula Vista MSCP Subarea Plan.

Tamarisk Scrub

Tamarisk scrub is a non-native riparian community dominated by stands of tamarisk. Other species commonly associated with this community include Bermuda grass (*Cynodon dactylon*), mulefat, and San Diego marsh-elder (*Iva hayesiana*). There is a total of 2.1 acres of tamarisk scrub within the Development Area. A small area of tamarisk scrub occurs within a small drainage on the western edge of the Village Three North boundary. Given the lack of predominant hydrophytic vegetation, this community would not be considered a wetland by ACOE or RWQCB; however, given the riparian overstory and association with a drainage, it would be considered a wetland community under the jurisdiction of CDFW. Tamarisk scrub also occurs in two areas along the southern boundary of Village Eight East. These areas are wetlands under the jurisdiction of the CDFW, ACOE and RWQCB.

5.8.3.4 Jurisdictional Waters and Wetlands

This section describes the jurisdictional features located within each village, Figure 5.8-9, 5.8-10, 5.8-12, and 5.8-13 show where these areas are located within the area proposed for

development. These acreages do not include off-site areas, which are provided in Section 5.8.5. All waters and wetlands described below are City of Chula Vista MSCP Subarea Plan wetlands.

Village Three North and Portion of Village Four

Village Three North supports several open ephemeral drainages (0.21 acre within the SPA Plan and 0.01 in a Planned Facility) that eventually flow south, outside of the Development Area, into the Otay River (Hunsaker & Associates 2014a, Table 5.8-3). In addition, there is approximately 0.04 acre of CDFW jurisdictional riparian habitat on the Village Three North Development Area that is comprised of tamarisk scrub (Figure 5.8-10). No riparian habitat or stream channels were mapped within the Portion of Village Four.

Table 5.8-3
Jurisdictional Wetlands and Waters on Village Three North

Wetlands Vegetation Community	Jurisdiction	Acres
Development Area – SPA Plan		
Tamarisk Scrub	CDFW only	0.04
Ephemeral Drainage	ACOE/CDFW/RWQCB	0.21
	Subtotal Development Area – SPA Plan	*0.25*
Development Area – Planned and Future Facilities		
Ephemeral Drainage	ACOE/CDFW/RWQCB	0.01
	Subtotal Development Area – Planned and Future Facilities	*0.01*
	Total Jurisdictional Area	0.26

The ephemeral drainages are largely located at the base of the western slopes of Village Three North. These drainages do not contain a predominance of hydrophytic vegetation nor hydric soils; however, they do exhibit evidence of hydrology and a clear bed and bank. These drainages are mapped on Figure 5.8-10 as line features. These unvegetated drainages are considered waters of the United States under the jurisdiction of the ACOE and waters of the State of California under the jurisdiction of the CDFW and RWQCB.

In general, the southern portions of the mesas on the project site appear to have historically supported vernal pool topography. Initial reconnaissance surveys in February 2003 located a single depression in the southwestern corner of the site (Figure 5.8-11).This feature is located within the area identified as the K17 vernal pool. Surveys indicated the presence of a circular shaped depression that supports ponded water following significant rain events. The area was revisited during spring rare plant surveys and was found to support hydrophytic vegetation, including rabbit's foot grass (*Polygonum monspeliensis*), dwarf stonecrop (*Crassula connata*), and toad rush (*Juncus bufonius*); however, no vernal pool indicator species were detected.

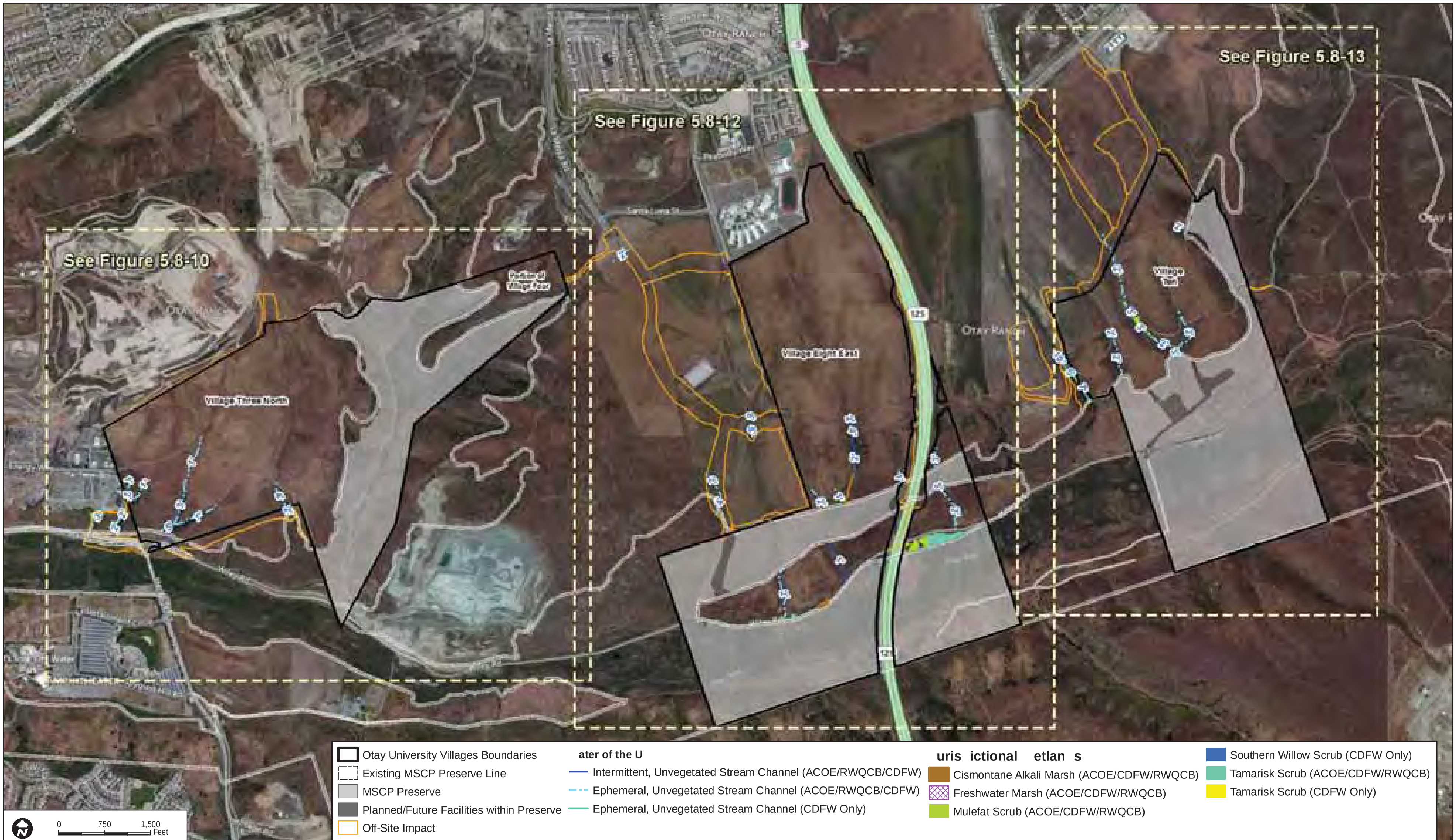

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FIGURE -

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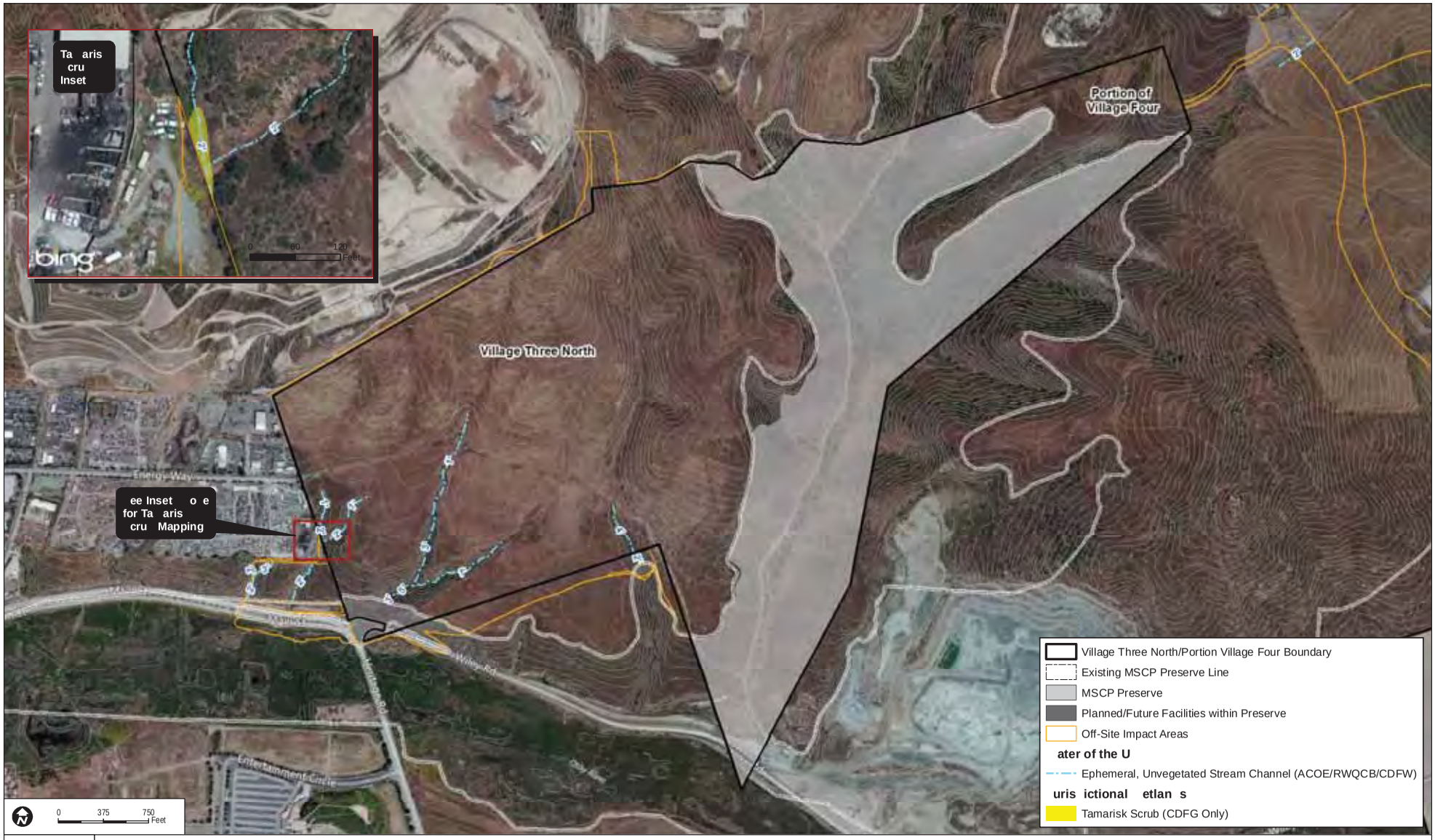

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FIGURE 5.8-10

etlan elineation Map - Village Three North Portion of Village Four

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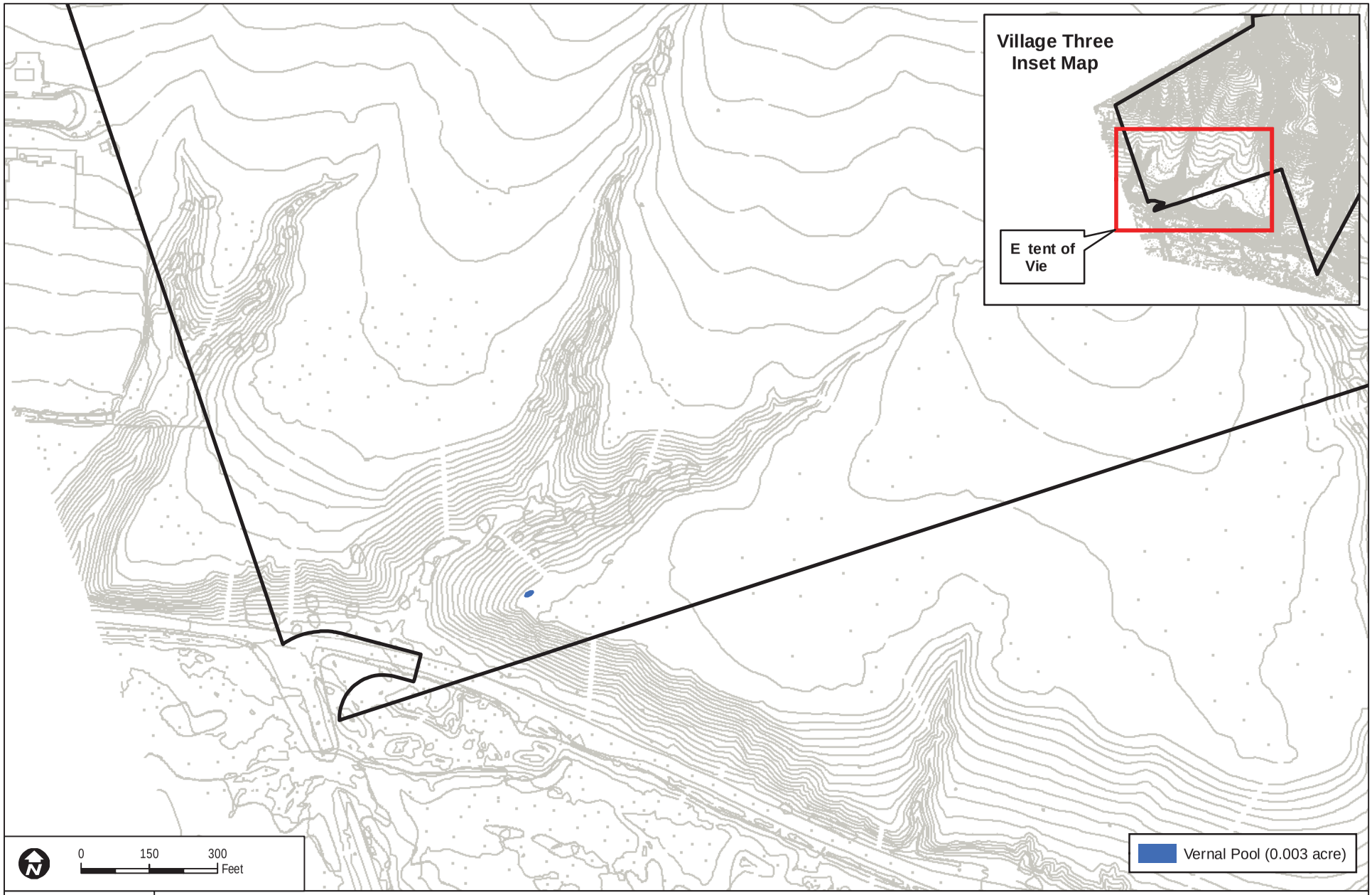

FIGURE 5.8-11

Vernal Pool - Village Three North

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FIGURE 5.8-12

etlan elineation Map - Village Eight East

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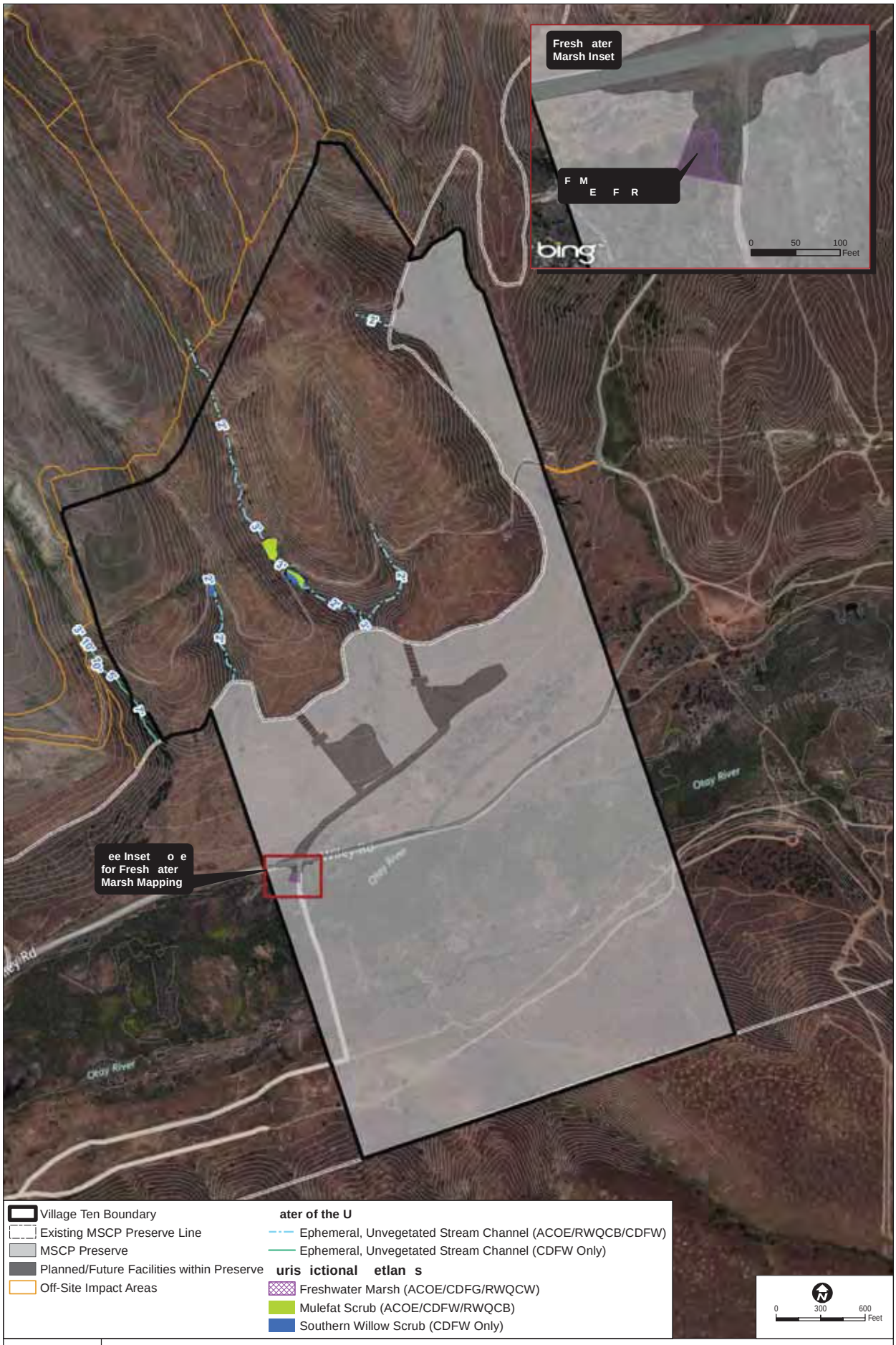

FIGURE 5.8-13

etlan elineation Map - Village Ten

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Wet season surveys of all potential vernal pools on the K17 mesa were conducted during winter 2003–2004 and winter 2004–2005 in accordance with the accepted USFWS survey protocol. An area of approximately 120 square feet was the observed ponding area for the vernal pool (Figure 5.8-11). Because of the length of time that has passed since the wet season surveys were conducted, new surveys were initiated in 2011. A dry season fairy shrimp survey was conducted in September 2011. The results confirmed the previous wet season surveys of negative results for fairy shrimp species. A wet season survey was conducted during the 2011–2012 wet season. The wet season survey results were negative for fairy shrimp species.

Based on the results of Dudek's surveys between 2003 and 2012, the vernal pool identified in the K17 pool complex exhibits characteristics identified by the ACOE as indicative of a formerly jurisdictional vernal pool. Specifically, the ACOE definition states that "vernal pools are wetlands that seasonally pond in small depressions as a result of a shallow, relatively impermeable layer that restricts downward percolation of water. The dominant water source for vernal pools is precipitation" (ACOE 1997). No vernal pool indicator species were identified within any of the pools, but because ponded water was observed in the vernal pool, this area would have been considered jurisdictional under the ACOE regulatory program. Under the ACOE guidelines, the total jurisdictional basin area is 120 square feet. Based on a jurisdictional delineation confirmation visit conducted in 2012 by the ACOE, the vernal pool is considered ACOE jurisdiction; however, ACOE has subsequently characterized it as a seasonal depression due to the lack of special-status resources or vernal pool plant species (ACOE Draft Permit SPL-2012-00181-MBS).

Village Eight East

There are approximately 3.69 acres of ACOE, RWQCB, and CDFW jurisdictional features within the Development Area of Village Eight East (Table 5.8-4). Approximately 0.30 acre of cismontane alkali marsh (including disturbed) occurs along the drainages within the canyon near the center of the site. It also occurs in a small area along the western boundary of the site, as well as along the road to the south. The cismontane alkali marsh is dominated by spiny rush, and includes San Diego marsh-elder, saltgrass, and tamarisk. Tamarisk scrub (0.13 acre) is located within the Community Park (P-2) in the Otay River Valley. The remaining tamarisk scrub and the polygons of mulefat scrub are located east of SR-125 within the Active Recreation Area (AR-11). At the location of the storm drain outfall (Future Facility) south of the Community Park (P-2), there is 0.02 acre of tamarisk scrub.

Table 5.8-4
Jurisdictional Wetlands and Waters on Village Eight East

Wetlands Vegetation Community	Jurisdiction	Acres
Development Area – SPA Plan		
Cismontane Alkali Marsh	ACOE/CDFW/RWQCB	0.12
Disturbed Cismontane Alkali Marsh	ACOE/CDFW/RWQCB	0.18
Mulefat Scrub	ACOE/CDFW/RWQCB	0.50
Disturbed Mulefat Scrub	ACOE/CDFW/RWQCB	0.55
Tamarisk Scrub	ACOE/CDFW/RWQCB	2.12
Ephemeral Drainage	ACOE/CDFW/RWQCB	0.15
Intermittent Stream Channel	ACOE/CDFW/RWQCB	0.07
	Subtotal Development Area – SPA Plan	*3.69*
Development Area – Planned and Future Facilities		
Tamarisk Scrub	ACOE/CDFW/RWQCB	0.02
	Subtotal Development Area – Planned and Future Facilities	*0.02*
	Total Jurisdictional Area	3.71

The ephemeral drainages are located both east and west of the existing dirt road in the southern portion of the site. The intermittent stream channel is within the forked canyon in the center of the site (Figure 5.8-12). With the exception of the mapped wetlands along the drainage in the canyon near the center of the site, these drainages do not contain a predominance of hydrophytic vegetation nor hydric soils; however, they do exhibit evidence of hydrology and a clear bed and bank. The drainage near the center of the site does support significant stands of vegetation considered jurisdictional wetlands, which are described below. The unvegetated drainages are considered waters of the United States under the jurisdiction of the ACOE and waters of the State of California under the jurisdiction of the CDFW and RWQCB. Wetlands and waters from the Development Area continue through the Preserve into the Community Park (P-2) where they eventually flow into the Otay River Valley.

Village Ten

There are four natural canyon drainages within the project area, each containing ephemeral drainages (Figure 5.8-13). The two drainages within the center of the village converge where the project boundary intersects the Preserve boundary and continue outside of Development Area into the Preserve. Another ephemeral channel is located along the western edge of Village Ten, and the headwaters to a larger ephemeral stream channel originate in the northeastern section of the village. According to the drainage study for Village Ten (Hunsaker & Associates 2014b), these channels drain to the Otay River and are, therefore, hydrologically connected to the navigable waters of the United States, which qualifies them as jurisdictional under ACOE, CDFW, and RWQCB regulations. The drainages alternate between sections characterized by

deeply incised channels and other sections where no flow is apparent. Along the drainage, the ordinary high water mark (OHWM) varies from approximately 0.5 feet to 3 feet. Vegetation in channels with no incisions is dominated by grasses and milk thistle (*Silybum marianum*). Southern willow scrub communities, including willows (*Salix gooddingii*), rushes (*Juncus acutus*), and mulefat, are located along the incised ephemeral stream channels.

Wetlands and waters under the jurisdiction of ACOE, RWQCB, and/or CDFW in the project area total 0.71 acre, including 0.51 acre of wetlands. Wetland vegetation communities on site include mulefat scrub, and southern willow scrub. Waters under jurisdiction of ACOE, CDFW, and RWQCB, or CDFW only total 0.20 acre within the project site. Table 5.8-5 lists the jurisdictional areas and acreages in the project area and Figure 5.8-13 shows were the location of these areas within the project site.

Table 5.8-5
Jurisdictional Wetlands and Waters on Village Ten

Wetlands Vegetation Community	Jurisdiction	Acres
Development Area – SPA Plan		
Mulefat Scrub	ACOE/CDFW/RWQCB	0.34
Ephemeral Drainage	ACOE/CDFW/RWQCB	0.18
Ephemeral Drainage	CDFW only	0.02
Southern Willow Scrub	CDFW only	0.17
	Subtotal Development Area – SPA Plan	*0.71*
Development Area – Planned and Future Facilities		
Freshwater Marsh	ACOE/CDFW/RWQCB	0.03
	Subtotal Development Area – Planned and Future Facilities	*0.03*
	Total Jurisdictional Area	0.74

ACOE, CDFW, and RWQCB jurisdictional areas on site total 0.55 acre, of which 0.34 acre is jurisdictional mulefat scrub that occurs in a couple of isolated patches along one of the tributaries. Approximately 0.03 acre of freshwater marsh is located within the Salt Creek interceptor which is a Future Facility. A total of 0.18 acre of ephemeral drainage is also jurisdictional for all three agencies.

CDFW jurisdiction extends over all areas under ACOE and RWQCB jurisdiction discussed above and includes areas that meet ACOE wetland vegetation criteria (i.e., hydrophytic) but lack wetlands hydrology and/or hydric soils indicators. CDFW-only jurisdictional areas on site total 0.17 acre of southern willow scrub and 0.02 acre of ephemeral drainage. The southern willow scrub is located in three isolated patches along two tributaries in the middle of the project site.

5.8.3.5 Wildlife Corridors and Habitat Linkages

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the immigration and emigration of animals. Wildlife corridors contribute to population viability in several ways: (1) they allow the continual exchange of genes between populations, which helps maintain genetic diversity; (2) they provide access to adjacent habitat areas, representing additional territory for foraging and mating; (3) they allow for a greater carrying capacity of wildlife populations by including "live-in" habitat; and (4) they provide routes for recolonization of habitat lands following local population extinctions or habitat recovery from ecological catastrophes (e.g., fires).

Habitat linkages are patches of native habitat that function to join two substantially larger patches of habitat. They serve as connections between distinct habitat patches and help reduce the adverse effects of habitat fragmentation. Although individual animals may not move through a habitat linkage, the linkage does represent a potential route for gene flow and long-term dispersal. Habitat linkages may serve as both habitat and avenues of gene flow for small animals, such as reptiles and amphibians. Habitat linkages may be represented by continuous patches of habitat or by nearby habitat "islands" that function as "stepping stones" for dispersal.

The Otay River provides a major wildlife corridor for not only the Otay Ranch but for the entire South Bay region. As such, the Preserve areas of Otay Ranch play a major contribution to that regional wildlife movement. Within the project site, there is first a major contribution to the Preserve within the Otay River but also to more local wildlife movement connections. South of Village Three North, within the area east of the intersection of Main Street and Heritage Road, there is also upland habitat that provides ecotonal contribution to the Preserve areas within the River. California gnatcatchers and other upland species use this preserve area as live-in habitat but are also provided a conduit for movement within the Otay River Valley, which is composed of a mosaic of riparian and upland biological resources. This southern habitat area within the Village Three North and Portion of Village Four project area continues on steep hillsides off site toward the west but is bounded by development and subject to edge effects. While the existing extension of Main Street (Wiley Road) bisects the upland habitat to the north from habitat within the Otay River; at current use levels, the road does not preclude wildlife movement (including avian and mammalian species) between the upland and riparian areas. The habitat area just south of the development portion of Village Three North functions as a wetland buffer and/or as an extension of habitat and as a linkage and live-in habitat. The wildlife corridor study prepared by Ogden (1992) concluded that Wolf Canyon, located between Villages Three North and Portion of Village Four, functions as a "local" corridor for mammal species, including mule deer, and as a "regional" connection for California gnatcatchers and cactus wrens located in Wolf Canyon. Currently, Wolf Canyon does not link two or more patches of habitat, which, by definition, is required of a corridor. According to the Ogden study, for Wolf Canyon to function even as an

avian connection, one or two of the low passes that connect Poggi Canyon with Wolf Canyon would have required revegetation. Due to the lack of connection between Poggi and Wolf from recent development, Wolf Canyon does not function as a habitat linkage or wildlife corridor. However, as the focused surveys for California gnatcatcher have documented, Wolf Canyon provides live-in habitat for coastal sage scrub species and ecotonal function due to the drainage located in the bottom of the canyon. Movement of wildlife within Wolf Canyon connects to the south to the regional corridor in the Otay River Valley. Wildlife movement continues within the Otay River Valley to connect with the Preserve areas of Village Eight East and Village Ten.

Since it is undeveloped, Village Eight East currently allows general wildlife movement across the entire site. However, habitat that provides shelter and foraging for wildlife is within the Preserve areas of the Otay River along the southern slopes of Village Eight East; and it provides a connection from the habitat just east of the quarry along this narrow slope of upland, connecting to the habitat located on Village Eight East. The habitat on this slope is fragmented by the SR-125, so wildlife must either pass under the freeway bridge or fly over it. In spite of the constraints to this strip of upland preserve area, it provides a duplicate opportunity for wildlife movement with that in the Otay River Valley and provides the function of live-in habitat for species such as California gnatcatcher and cactus wren as documented by recent surveys. The major wildlife corridor for Village Eight East is located within the Otay River Valley. This corridor is well documented in studies conducted by Ogden (1992).

Similar to Village Eight East, Village Ten provides general wildlife movement and foraging within the entire site; however, wildlife movement is focused primarily within the Otay River Valley to the south and also in Salt Creek to the east. Wildlife movement is provided along the southern slopes of Village Ten within the strip of upland shrub vegetated habitat and continues along the slopes into Salt Creek where there is a large population of both California gnatcatcher and cactus wren. Also similar to the narrow upland Preserve slope of Village Eight East, this slope of Preserve land in Village Ten functions as live in habitat for California gnatcatcher. Beyond Village Ten, there is Preserve land within and to the east of Salt Creek that allows for movement from that corridor to Lower Otay Lake, thus facilitating wildlife movement around the lake and to areas of regional conservation south of Lower Otay Lake and to the City of San Diego Cornerstone Lands that surround the Otay Lakes.

5.8.4 Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of a biological resources impact. Impacts to biological resources would be significant if the proposed project would:

A. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Wildlife Service.

B. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U. S. Fish and Wildlife Service.

C. Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

D. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

E. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

F. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

G. Be inconsistent with General Plan biological resource policies thereby resulting in a significant physical impact.

This section addresses direct, indirect, and cumulative impacts to biological resources that would result from implementation of the proposed project.

Direct impacts were quantified by overlaying the anticipated limits of grading on the biological resources map and quantifying impacts. The limits of grading are presumed to encompass all future development and use areas (i.e., “worst-case scenario”) including off-site impacted areas, lots, utilities, brush management, and trails.

Indirect Impacts result from adverse edge effects, either short-term indirect impacts related to construction, or long-term, chronic indirect impacts associated with the location of urban development in proximity to biological resources within natural open space. During construction

of the project, short-term indirect impacts may include dust and noise, which could disrupt habitat and species vitality temporarily, and construction-related soil erosion and runoff; however, all project grading is subject to established restrictions and requirements that restrict erosion and runoff, including the federal Clean Water Act and National Pollution Discharge Elimination System (NPDES), as well as preparation of a Stormwater Pollution Prevention Plan. These programs minimize project impacts to erosion/runoff. Long-term indirect impacts to adjacent open space may include intrusions by humans and domestic pets, noise, lighting, invasion by exotic plant and wildlife species, effects of toxic chemicals (e.g., fertilizers, pesticides, herbicides, and other hazardous materials), urban runoff from developed areas, soil erosion, litter, fire, and hydrological changes (e.g., groundwater level and quality). In addition, the project is subject to RMP requirements due to the adjacency with the Wolf Canyon preserve and the Otay River Valley; therefore, Edge Plan restrictions will apply and reduce or avoid potential long-term indirect impacts.

Cumulative Impacts refer to incremental individual environmental effects of two or more projects when considered together. These impacts taken individually may be minor, but collectively significant as they occur over a period of time.

The proposed project contains impact areas both inside and outside of the Preserve. Since these impacts may require varying mitigation ratios and/or different mitigation measures, they will be quantified separately. Two types of on-site impacts to biological resources will occur in association with the proposed project: on-site area outside of the preserve (SPA Plan) and on-site compatible use within the Preserve (Planned and Future Facilities). There are also proposed off-site impacts that include impacts required for infrastructure, including roads. The off-site impacted areas are further divided as: within or outside Otay Ranch and within or outside the Preserve.

Impacts to biological resources within the Preserve that are proposed to be removed from the Preserve as part of the Boundary Adjustment are addressed by the Boundary Adjustment Functional Equivalency Analysis discussed in Section 5.8.5 under subsection E and F.. The Boundary Adjustment Functional Equivalency Analysis concludes the proposed Preserve configuration provides an equal or better Preserve, consistent with the requirements of the MSCP. Therefore impacts to areas proposed to be adjusted from Preserve to Developable Area by the Boundary Adjustment are included in the Development Area totals (i.e., the analysis assumes the Boundary Adjustment is approved). However it is acknowledged that the Wildlife Agencies have not provided their concurrence at this time.

5.8.5 Impacts

A. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Wildlife Service?

Special-Status Plant Species

Direct Impacts

Implementation of the proposed project would result in the direct loss of the majority of locations and individuals of sensitive plant species identified on Figure 5.8-5 and described in the text. Implementation of the proposed project has the potential to result in direct impacts to special-status plant species through the removal or disturbance of habitats from construction activities involving clearing, grading, re-contouring of topography, earth moving activities and the construction of buildings, pipelines, and other facilities. Direct impacts to special-status plant species that would occur from implementation of the proposed project are discussed below. Table 5.8-6 provides the permanent impacts to special-status species.

Table 5.8-6
Permanent Impacts to Special-Status Plant Species

Common Name	Village Three North and Portion of Village Four	Village Eight East	Village Ten	Off-Site Improvement Area	Total Permanent Impacts
California adolphia	1	–	–	12	13
California boxthorn	22	48	–	37	107
Otay tarplant	3,902	–	100	–	4,002
Palmer's grapplinghook	20	–	–	–	20
Robinson's pepper grass	60	–	–	–	60
San Diego barrel cactus	75	136	–	79	290
San Diego County viguiera	2,796	1,943	2,628	317	7,684
Small-flowered morning glory	17	–	–	–	17
South Coast saltscale	12	3	–	–	15
Variegated dudleya	100	–	–	–	100
Singlewhorl burrobush	–	48	-	1	49
Southwestern spiny rush	–	55	20	4	79
San Diego marsh-elder	–	–	–	4	4

Impacts to small-flowered morning glory, Palmer's grapplinghook, southwestern spiny rush, California boxthorn, graceful tarplant, and San Diego County viguiera are not considered significant,

because, as CRPR 4.2 species, they are relatively common in this portion of the County and, therefore, are not considered significantly rare for the proposed loss to be significant.

Under the MSCP Subarea Plan, significant direct impacts to "covered" sensitive plant species include the following: Otay tarplant, variegated dudleya, and San Diego barrel cactus. Otay tarplant and variegated dudleya are identified in the MSCP Subarea Plan as narrow endemics. Significant impacts to non-covered species include California adolphia, south coast saltscale, San Diego marsh-elder, singlewhorl burrobush, and Robinson's pepper grass. Direct impacts to these species would be **potentially significant**.

Indirect Impacts

Of particular sensitivity is the population of Otay tarplant in Wolf Canyon adjacent to the project site to the south and east. During construction of the project, indirect effects may include dust, which could disrupt plant vitality in the short term, and construction related soil erosion and runoff. Long-term edge effects could include intrusions by humans and domestic pets and possible trampling of individual plants, invasion by exotic plant and wildlife species, exposure to urban pollutants, soil erosion, litter, fire, and hydrological changes (e.g., surface and groundwater level and quality). Dust control will be implemented per the Air Quality Technical Report (Dudek 2014) to limit impacts of fugitive dust on sensitive habitat and species. Indirect impacts to special-status plants are considered **potentially significant**.

Special-Status Wildlife Species

Direct Impacts

Figures 5.8-14 through Figure 5.8-17 show the impact areas in relation to the special-status wildlife species occurrences on site. Because avian species are mobile, the species recorded would not necessarily be directly impacted; however, the suitable habitat (113.6 acres of coastal sage scrub and maritime succulent scrub) associated with five pairs of coastal California gnatcatchers would be directly impacted by project implementation. The locations of three pairs would be impacted within Village Three North and Portion of Village Four and the locations of two pairs would be impacted within Village Ten. Habitat for the remaining pairs of gnatcatchers found on site will be preserved. Two additional locations of California gnatcatcher also will be impacted in the area outside of Otay Ranch within the Takashimi (off-site Area 1) and City of Chula Vista (off-site Area 3) properties. Impacts to sensitive animal species listed as having a moderate to high potential to occur and impacts to five pairs of coastal California gnatcatcher within the project site and two pairs in areas outside of Otay Ranch are considered significant. Implementation of the proposed project would result in the direct loss of habitat for all of the special-status wildlife discussed in Section 5.8.3.6 is considered **potentially significant**.

The Migratory Bird Treaty Act (MBTA) prohibits the Take of any migratory bird or any part, nest, or eggs of any such bird. Under the MBTA, "take" is defined as pursuing, hunting, shooting, capturing,

collecting, killing, or attempting to commit any of these acts (16 U.S.C. 703 et seq.). If any active nests or the young of nesting special-status bird species are impacted through direct grading, these impacts would be considered **potentially significant**, absent mitigation, based on the MBTA.

Although Quino checkerspot were not observed within the project boundaries, there is suitable habitat throughout all villages due to presence of host plant and suitable coastal sage scrub habitat except for the Portion of Village Four. The MSCP Subarea Plan requires that impacts to Quino checkerspot habitat in the Preserve east of SR-125 be minimized to the extent possible, whether or not it is occupied. This avoidance criteria applies only to a portion of Village Eight East (east of SR-125) and Village Ten. Development within these areas will be required to comply with avoidance and minimization measure 4.b of the MSCP Subarea Plan. The proposed project would not impact any significant Quino checkerspot habitat patches of plantain east of SR-125 that are in the Salt Creek drainage or Otay River Valley and no preserve areas would be impacted that contain such plantain patches. Impacts to Quino checkerspot would be **less than significant**.

Indirect Impacts

Indirect impact to wildlife may also occur as a result of the recreational uses of the Active Recreation areas. All recreation uses are a minimum of 100 feet from the Preserve boundary. Uses that are allowed within the 100-foot buffer adjacent to the Preserve include the access road to the park, parking, picnic areas, walking paths, and graded slopes. In addition to a noise study, a lighting study will also be conducted for the Community Park (P-2). Lighting in the active recreation will be placed so that the preserve is shielded from lighting impacts.

Preserve Edge Plans, prepared for each village will address and describe avoidance of indirect effects to special-status species that occur along the preserve/development interface. Design of the Village Eight East Community Park (P-2) and the Community Park (P-2) within the Portion of Village Four includes a minimum of 100 feet between the Preserve boundary and active park uses. Thus, the occupied habitat north of the Village Eight East Community Park (P-2) and south of the Community Park (P-2) in the Portion of Village Four is buffered from the activities and active use.

Within the Village Eight East Community Park (P-2), facilities such as soccer fields and baseball diamonds will be oriented away from occupied coastal California gnatcatcher and coastal cactus wren habitat. Uses within the 100-foot Preserve edge are limited to passive uses that are not noise generating such as water quality/retention basin, scenic overlooks, picnic areas, trail staging area, walking paths, parking, and benches. The entire edge of the Preserve adjacent to the Community Park (P-2) will be fenced per the Edge Plan. Vegetation consistent with the Village Eight East Preserve Edge Plan shall be planted along the edge adjacent to the Preserve to serve as a buffer between the active park uses and the Preserve. Therefore, the Village Eight East Community Park (P-2) has been designed to avoid siting potential noise-generating land uses in proximity to occupied habitat, and future park planning would meet Otay Ranch GDP, RMP, and MSCP siting criteria.

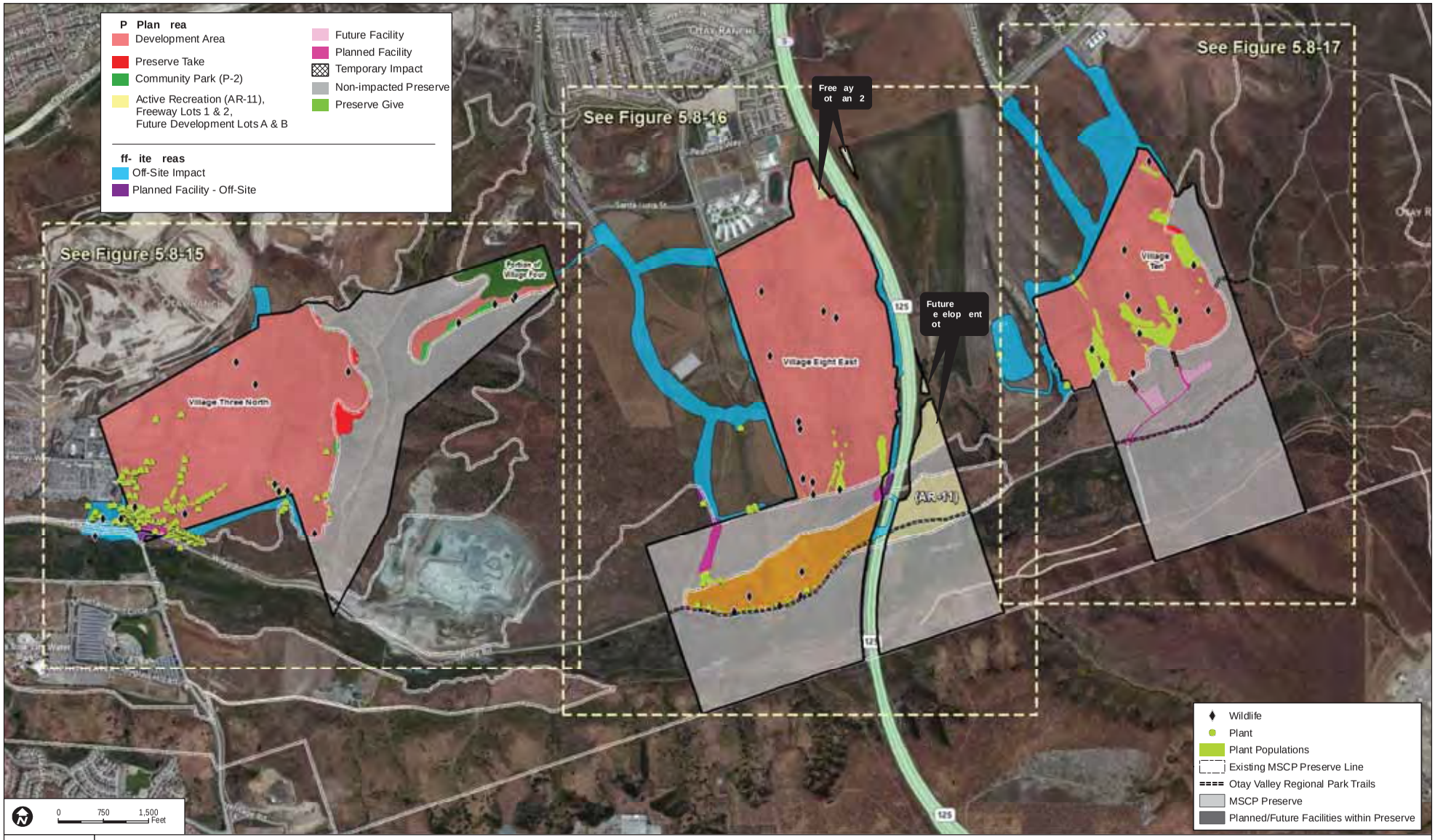

FIGURE - 4

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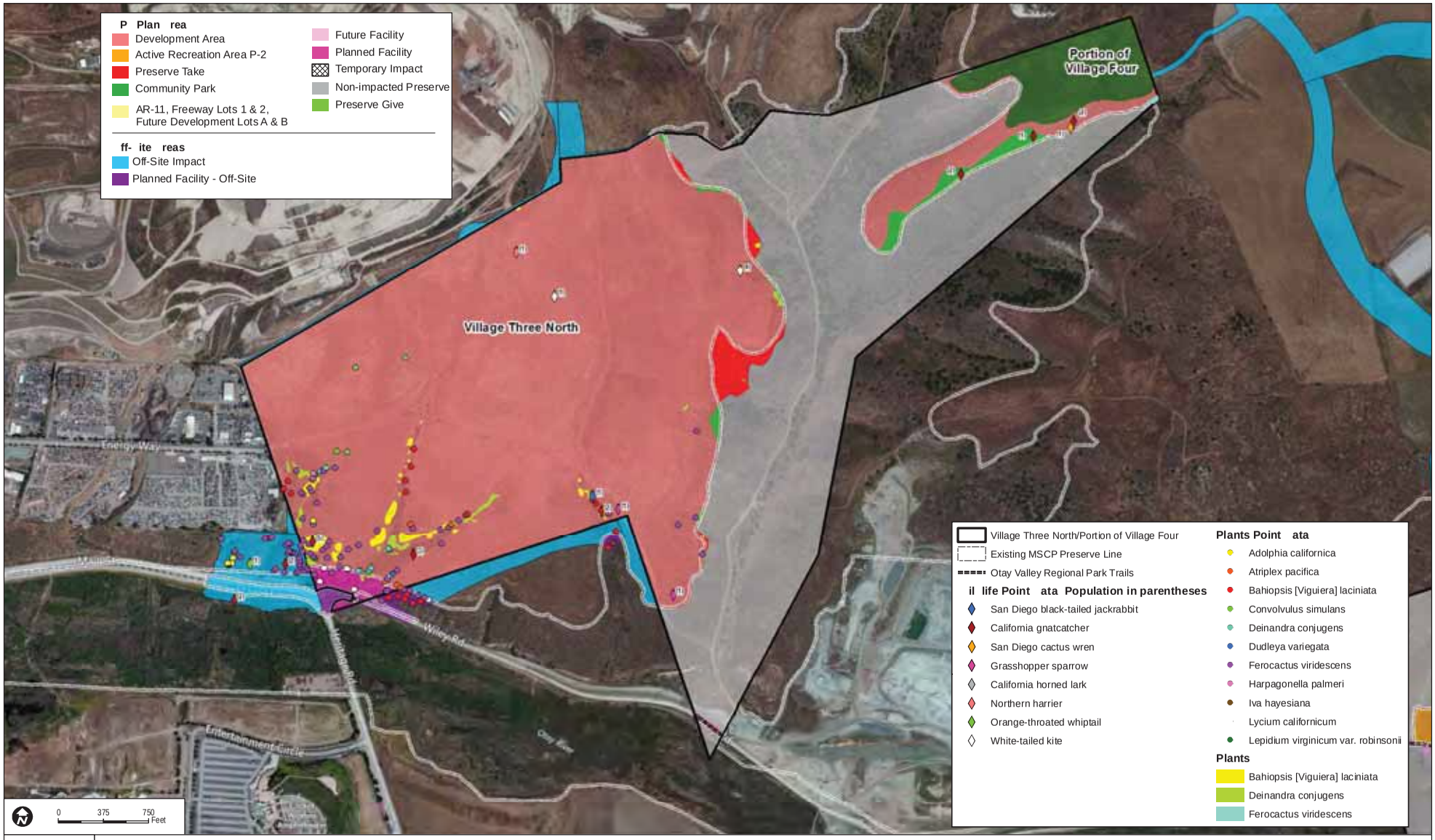

FIGURE .8-15

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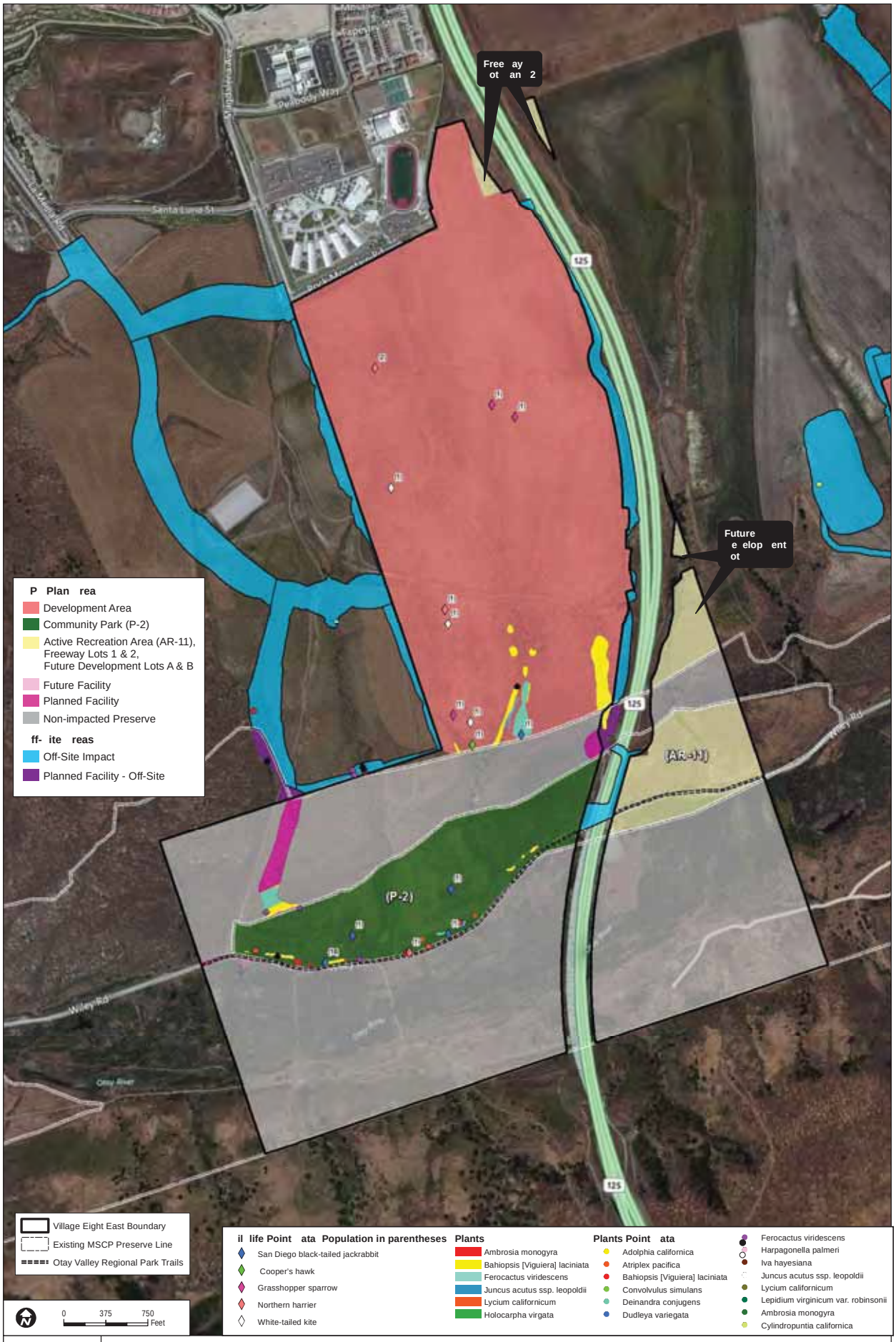

FIGURE 5.8-16

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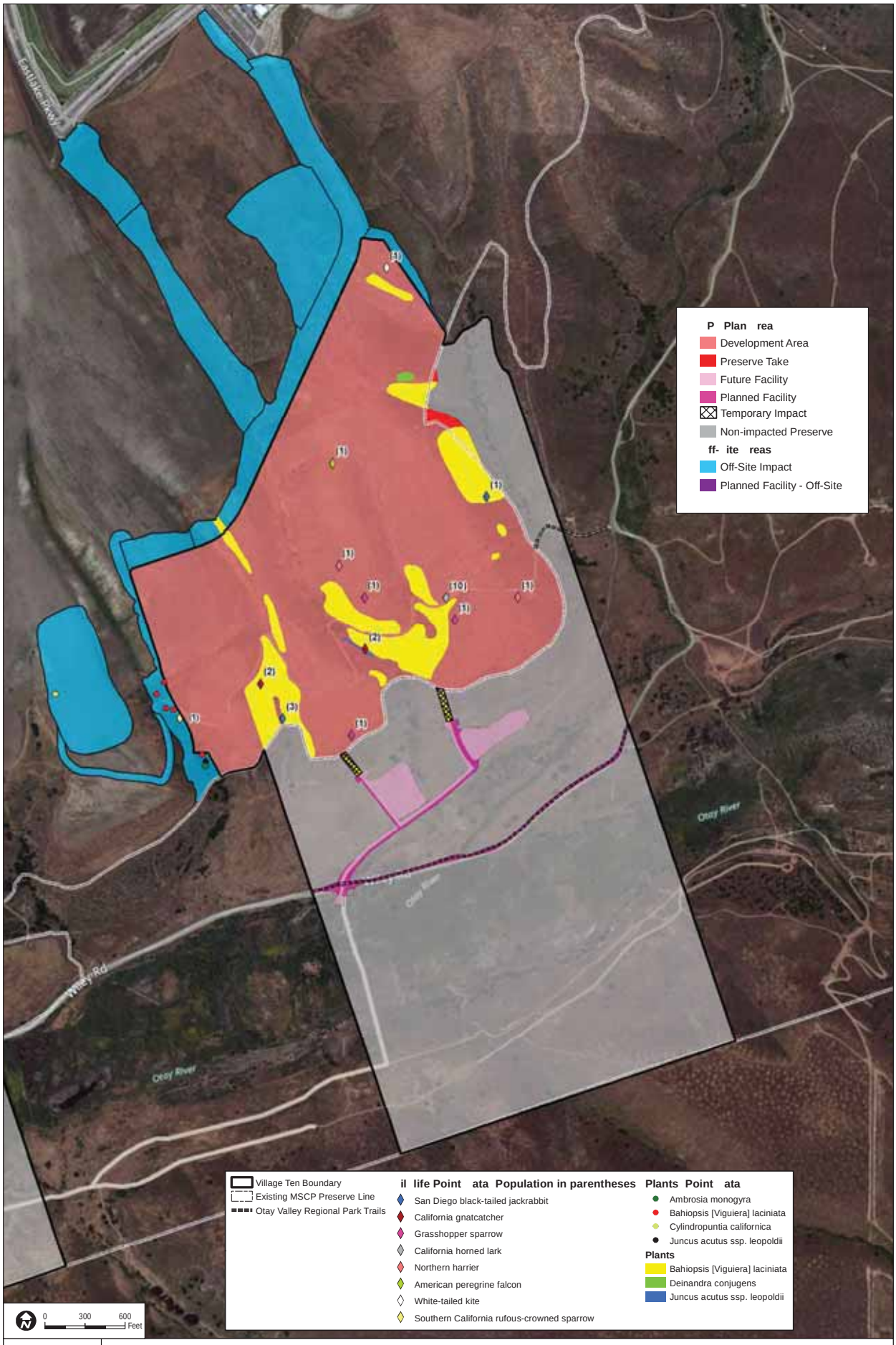

FIGURE .8-17

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The Community Park (P-2) in the Portion of Village Four is part of a larger proposed Community Park. The design of this park, similar to that of the Village Eight East Active Community Park (P-2) will be subject to the Adjacency Management Guidelines. The park design will include specific measures to address noise issues with respect to the Preserve and the special status species that are located within habitat adjacent to the Community Park (P-2). The Portion of Village Four that extends into the Preserve area is designated as non-Preserve open space, and as such has no uses planned. There are no park facilities within this area. The boundary between this non-Preserve open space area and the Community Park (P-2) will be fenced as shown in the Edge Plan to prevent human intrusion into this area that is adjacent to the Preserve.

Short-term indirect impacts to special-status nesting bird species include construction noise impacts. Species potentially affected by such activities include, but are not limited to, California gnatcatcher, cactus wren, Southern California rufous-crowned sparrow, and nesting raptors. While Quino checkerspot butterfly has not been recorded on site in the recent survey, it is known to be present nearby within the ~~Salt Creek~~Otay Ranch Preserve. Dust may result in indirect impacts to a number of special status wildlife species. Indirect impacts to special-status bird species may occur if construction is conducted during the breeding season for California gnatcatcher (February 15–August 15) and raptors (January 15–August 31). Dust control will be implemented per the Air Quality Technical Report (Dudek 2014) to limit impacts of fugitive dust on sensitive habitat and species. Long-term indirect impacts to special-status wildlife species would also occur as a result of the proposed project. Impacts would consist of lighting, human activity in the Preserve, noise, and domestic animal predation. Indirect impacts to special-status wildlife species are considered **potentially significant**.

B. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U. S. Fish and Wildlife Service.

Direct Impacts

Sensitive vegetation communities to be permanently impacted include non-native grassland, freshwater marsh, cismontane alkali marsh, disturbed cismontane alkali marsh, coastal sage scrub, disturbed coastal sage scrub, broom baccharis scrub, maritime succulent scrub, disturbed maritime succulent scrub, mulefat scrub, southern mixed chaparral, tamarisk scrub, and southern willow scrub. A complete breakdown of vegetation impacts by Village is presented in Table 5.8-7 and illustrated in Figures 5.8-18 through 5.8-21. Losses would occur as the result of grading and infrastructure installation.

Table 5.8-7
Direct Impacts to Sensitive Vegetation Communities

Vegetation Communities	Village Three North and Portion of Village Four	Village Eight East	Village Ten	Total Permanent Impacts
Non-Sensitive Vegetation Communities				
Agriculture	25.3	264.0	8.1	297.4
Developed	0.3	8.2	1.5	10.0
Disturbed Land	1.2	4.7	3.0	8.9
Subtotal	*26.8*	*276.9*	*12.6*	*316.3*
Sensitive Vegetation Communities				
Broom Baccharis Scrub (disturbed)	–	0.4	<0.1 (0)	0.5
Cismontane Alkali Marsh	–	0.1	–	0.1
Cismontane Alkali Marsh (disturbed)	–	0.2	–	0.2
Coastal Sage Scrub	19.6	8.5	46.5	74.7
Coastal Sage Scrub (disturbed)	6.7	4.4	21.8	32.9
Freshwater Marsh	–	–	<0.1 (0)	<0.1 (0)
Maritime Succulent Scrub	4.6	1.3	2.8	8.6
Maritime Succulent Scrub (disturbed)	0.6	–	–	0.6
Mulefat Scrub	–	–	0.3	0.3
Non-native Grassland	222.7	2.8	75.5	301.0
Southern Mixed Chaparral	–	–	<0.1 (.1)	<0.1 (.1)
Southern Willow Scrub	–	–	0.2	0.2
Tamarisk Scrub	<0.1 (0)	0.2	–	0.3
Subtotal	*254.2*	*17.9*	*147.2*	*419.3*
Total	281.0	294.8	159.8	735.6

Impacts to sensitive vegetation communities (as noted in Table 5.8-7) are considered **potentially significan**t.

Indirect Impacts

During construction of the proposed project, edge effects may include dust, which could disrupt plant vitality in the short term, and construction-related soil erosion and runoff. Long-term indirect impacts on vegetation communities would most likely occur as a result of trampling of vegetation by humans and domestic pets, invasion by exotic species, alteration of the natural fire regime, and exposure to urban pollutants (e.g., fertilizers, pesticides, herbicides, and other hazardous materials). Dust control will be implemented per the Air Quality Technical Report (Dudek 2014) to limit impacts of fugitive dust on sensitive habitat and species. Indirect impacts to vegetation communities are considered **potentially significant**.

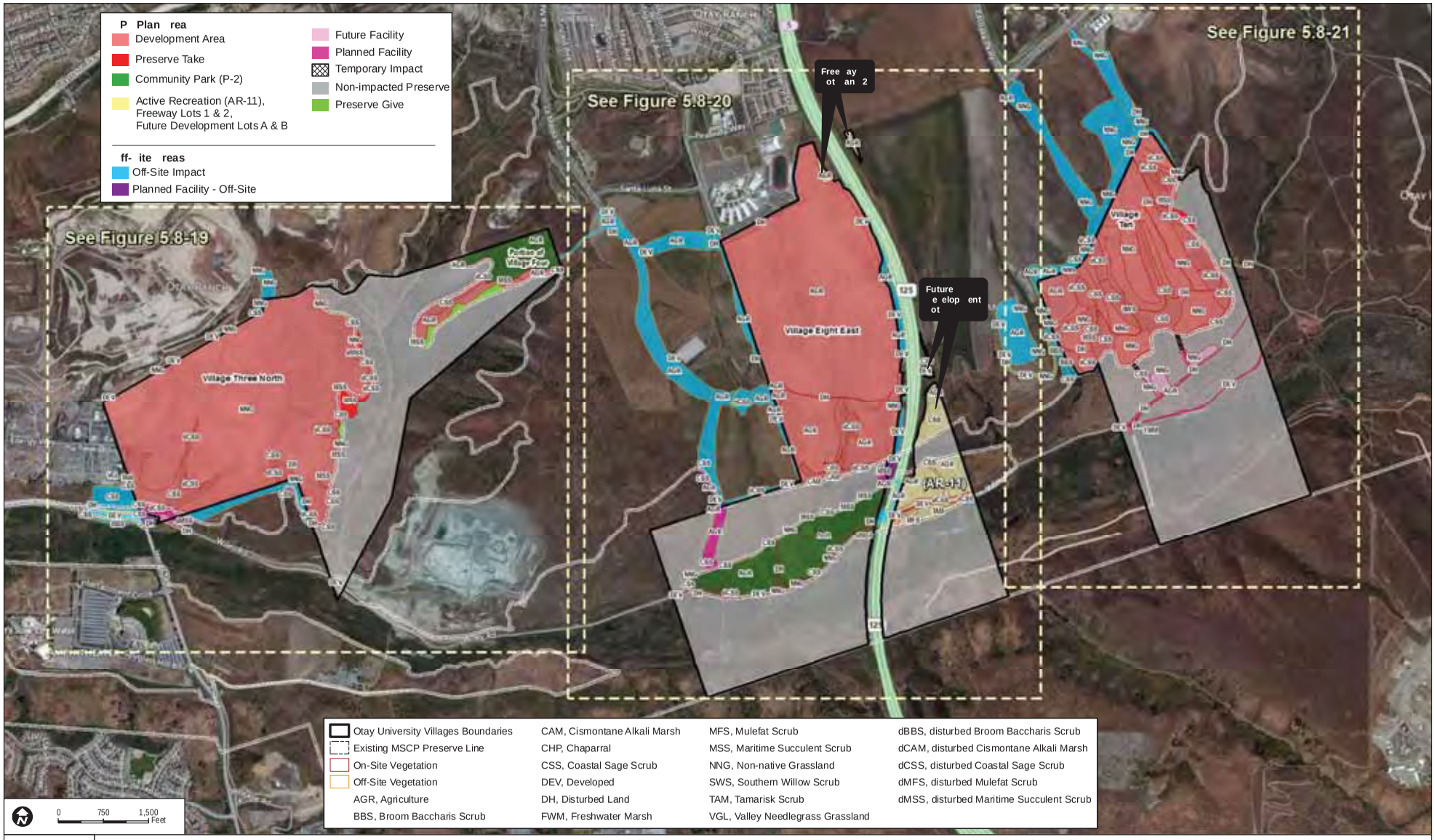

FIGURE -

Vegetation I pacts In e Map

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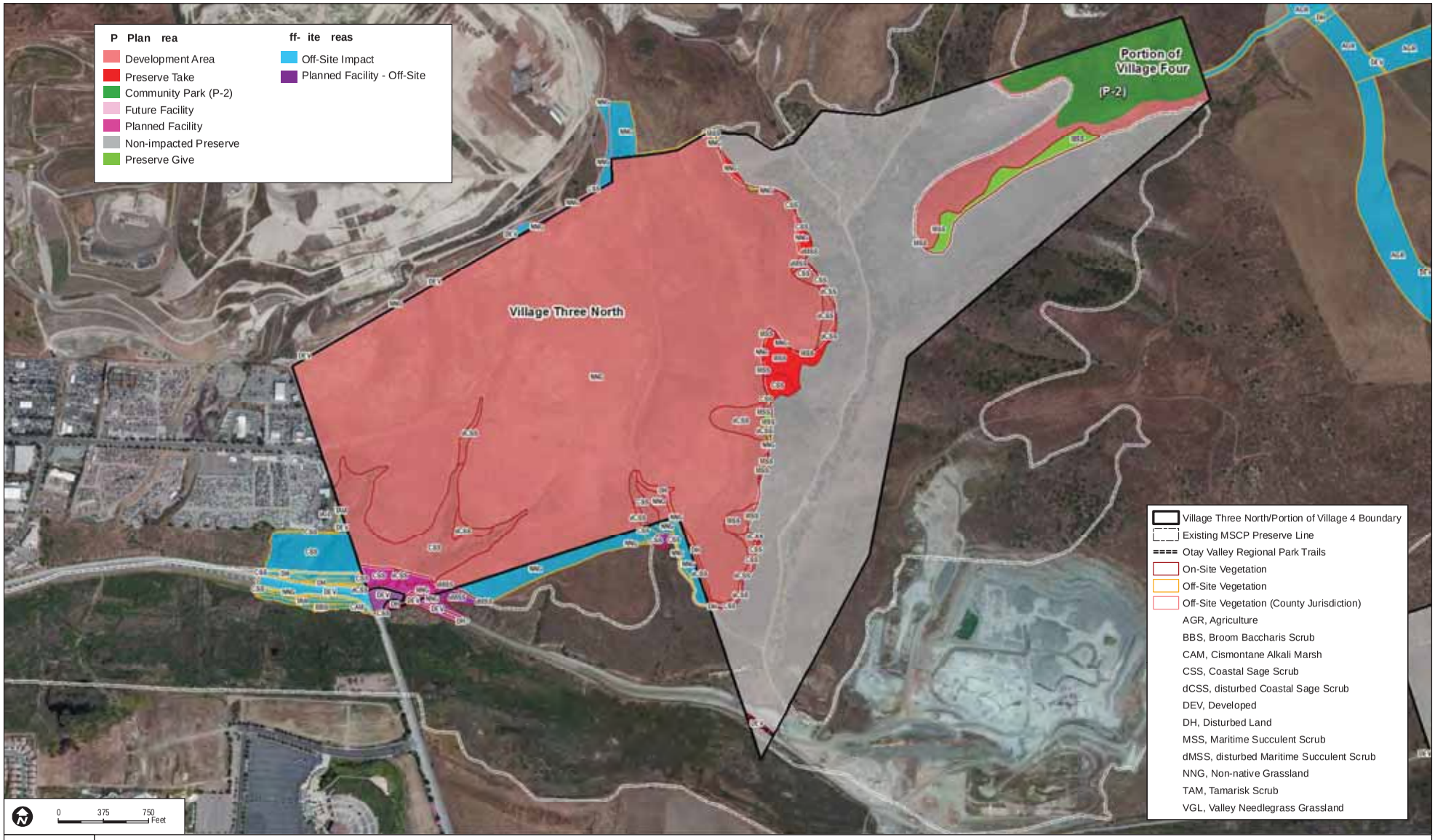

FIGURE .8-19

Vegetation I pacts Map - Village Three North Portion of Village Four

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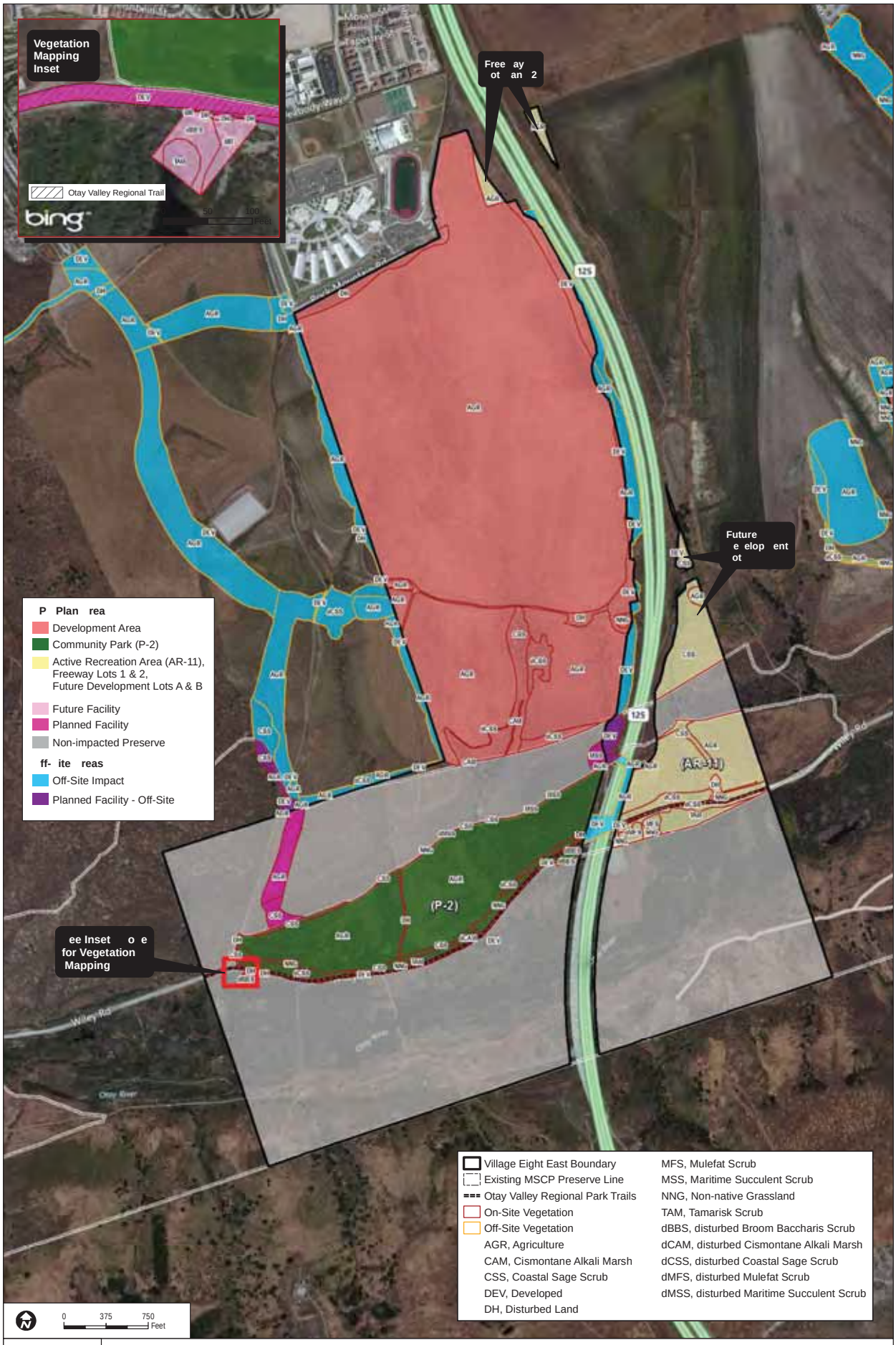

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FIGURE 5.8-20

Vegetation I pacts Map - Village Eight East

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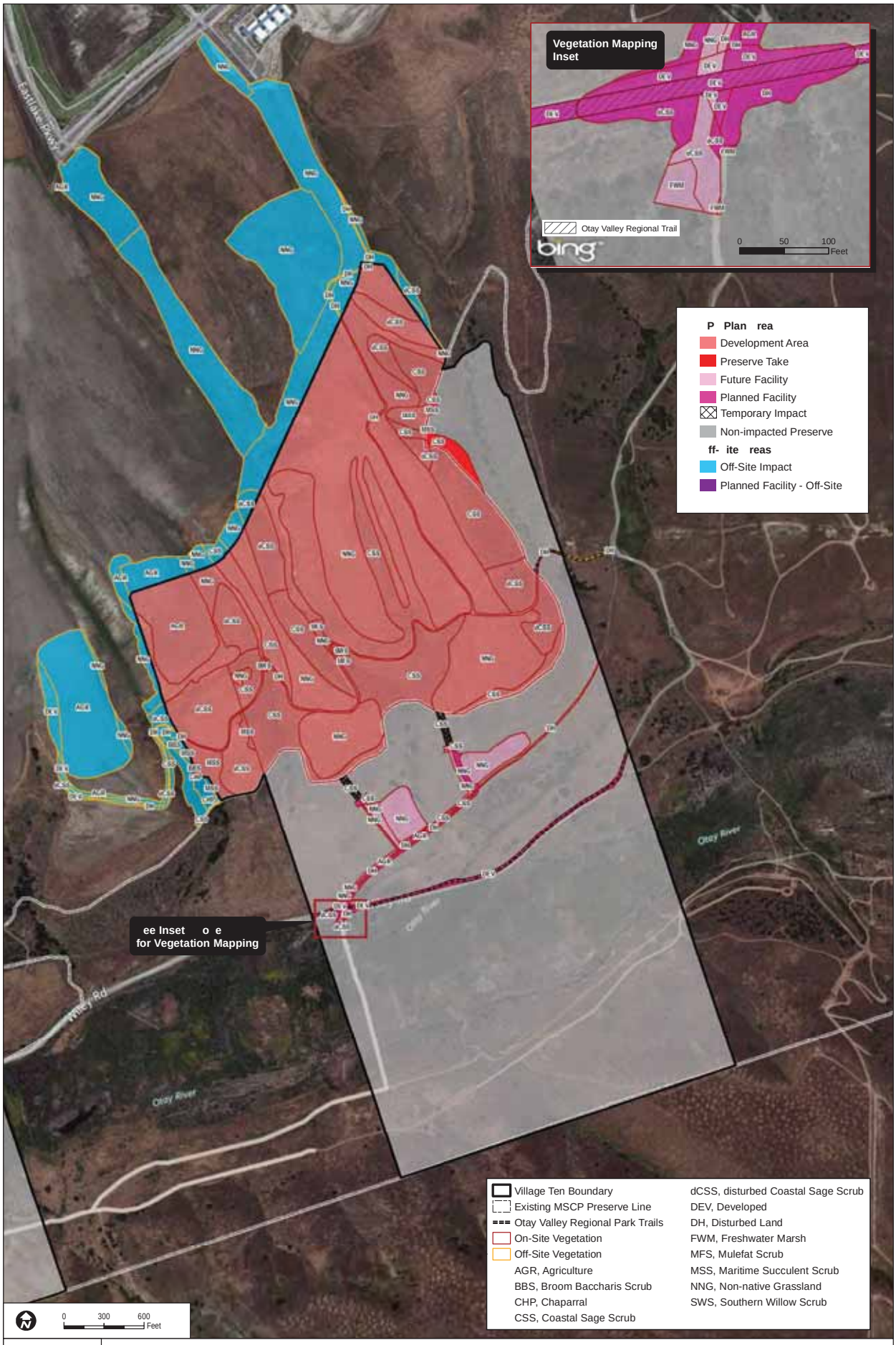

FIGURE 5.8-21

Vegetation I pacts Map - Village Ten

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C. Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Direct Impacts

On-Site Impacts

Impacts to jurisdictional waters and wetlands would occur as a result of the proposed project as shown on Figures 5.8-22 through 5.8-25. Impacts to jurisdictional waters total 0.56 acre and are all permanent. Impacts to jurisdictional wetlands total 1.03 acres, 0.05 acre of which includes a compatible use while the remaining acres are permanently impacted. A total of 1.35 acres of jurisdictional areas under the ACOE, RWQCB, and CDFW would be impacted. Impacts to jurisdictional areas under CDFW only are 0.23 acre (Table 5.8-8).

Table 5.8-8
Impacts to On-Site Jurisdictional Wetlands and Waters

Wetlands Vegetation Community/Water Feature	Jurisdiction	Impact Type (Acres)		
		Development Area	*Future Facilities**	*Total Impacts*
Village Three North/Portion of Village Four				
Tamarisk Scrub	CDFW only	0.04	–	0.04
Ephemeral Drainage	ACOE/CDFW/RWQCB	0.20	0.01	0.21
Total Jurisdictional Impacts on Village Three North		*0.24*	*0.01*	***0.25***
Village Eight East				
Cismontane Alkali Marsh	ACOE/CDFW/ RWQCB	0.12	–	0.12
Disturbed Cismontane Alkali Marsh	ACOE/CDFW/ RWQCB	0.18	–	0.18
Tamarisk Scrub	ACOE/CDFW/ RWQCB	0.13	0.02	0.15
Ephemeral Drainage	ACOE/CDFW/ RWQCB	0.07	–	0.07
Intermittent Stream Channel	ACOE/CDFW/ RWQCB	0.07	–	0.07
Total Jurisdictional Impacts on Village Eight East		*0.57*	*0.02*	***0.59***
Village Ten				
Freshwater Marsh	ACOE/CDFG/RWQCB	–	0.03	0.03
Mulefat Scrub	ACOE/CDFW/ RWQCB	0.34	–	0.34
Southern Willow Scrub	CDFW only	0.17	–	0.17
Ephemeral Drainage	ACOE/CDFW/ RWQCB	0.18	–	0.18
Ephemeral Drainage	CDFW only	0.02	–	0.02
Total Jurisdictional Impacts on Village Ten		*0.71*	*0.03*	***0.74***
Total Project Jurisdictional Impacts		1.52	0.06	1.58

* Note that there are no impacts associated with Planned Facilities within the boundaries of the Otay Ranch Boundary

Development projects are required to demonstrate that impacts to wetlands have been avoided or minimized to the greatest extent practicable. The major drainage within Wolf Canyon, as well as all of the Otay River Valley, are included in the Preserve; therefore, these drainages will not be subject to grading and thus no impacts will occur. Impacts to ephemeral drainages and wetlands within the villages have been avoided and minimized to the extent feasible. Indirect impacts to wetlands and waters of the U.S. within the Preserve areas are avoided as described below. Project drainage impacts will be minimized in compliance with the San Diego RWQCB Permit CAS0109266 by Order No. R9-2013-0001. Bioretention basins and on-site Low Impact Development measures are proposed to mitigate sediment and pollutants of concern associated with the proposed development in compliance with the current permit. Outlet structures with energy dissipaters are proposed to reduce flows to non-erosive velocities at the Otay River outfalls to avoid direct impacts from development runoff. Direct impacts to ephemeral and intermittent unvegetated waters and jurisdictional wetlands are considered **potentially significant**.

Off-Site Impacts

Off-site facilities (i.e., outside of the SPA Plan Area but not outside of the Otay Ranch boundary), would impact 0.30 acre of waters (Table 5.8-9). Of the 0.30 acres of waters to be impacted, 0.16 acre is ephemeral waters under regulation of ACOE, RWQCB, and CDFW. The remaining waters, 0.14 acre, are under the sole jurisdiction of CDFW.

Table 5.8-9
Impacts to Off-Site Jurisdictional Wetlands and Waters

Off-Site Area	Wetlands Vegetation Community/Water Feature		
	Ephemeral Stream Channel		*Total*
	ACOE/CDFW/RWQCB	*CDFW*	
4	0.01	–	0.01
7	0.01	–	0.01
9	0.13	–	0.13
14	–	0.14	0.14
15	<0.01	–	<0.01
18	0.01	–	0.01
Total Project Jurisdictional Impacts	0.16	0.14	0.30

Impacts to off-site jurisdictional wetlands and waters due to project implementation would be **potentially significant**.

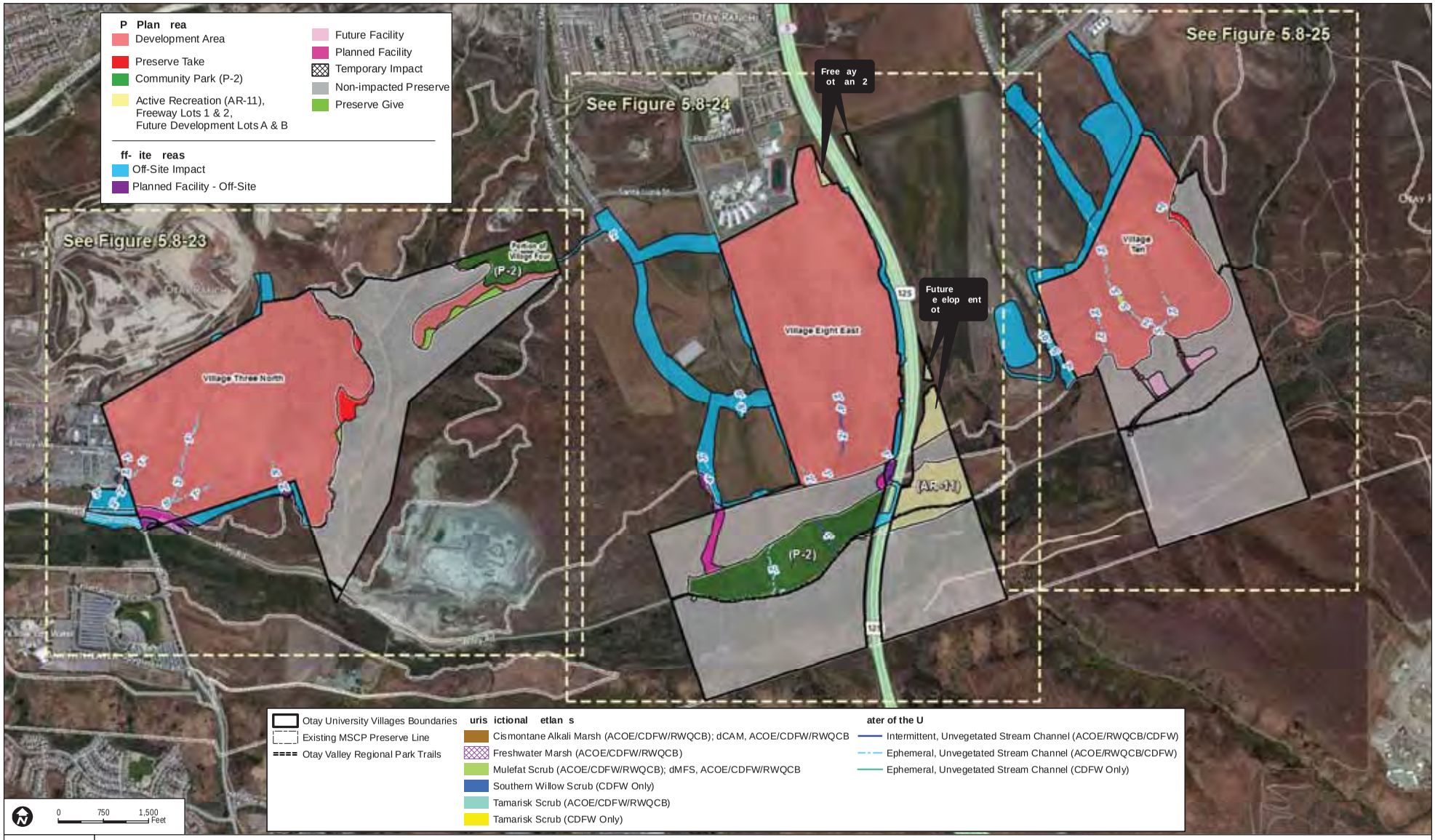

FIGURE -22

etlan elineation I pacts er ie Map

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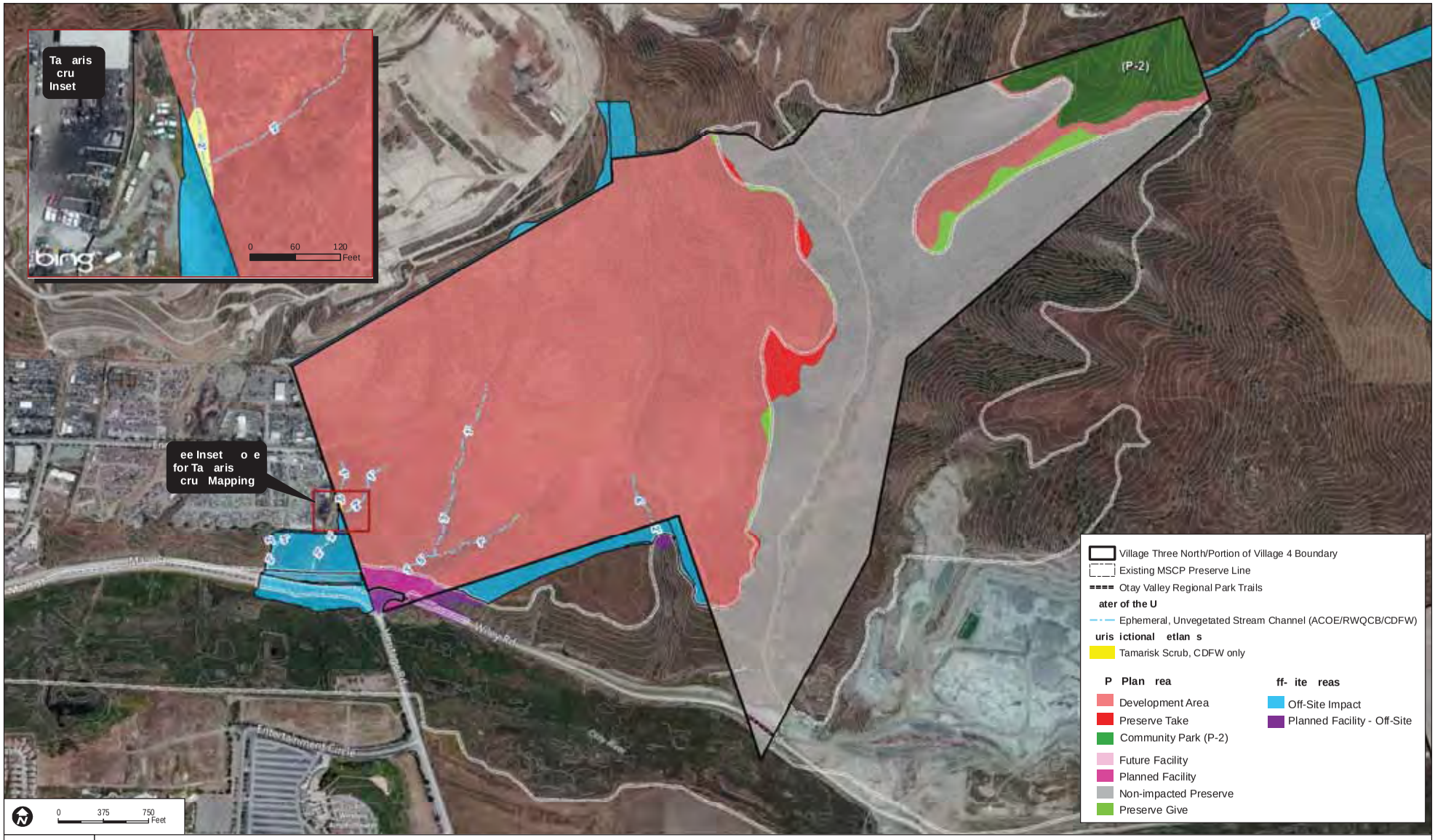

FIGURE .8-23

etlan elineation I pacts Map - Village Three North Portion of Village Four

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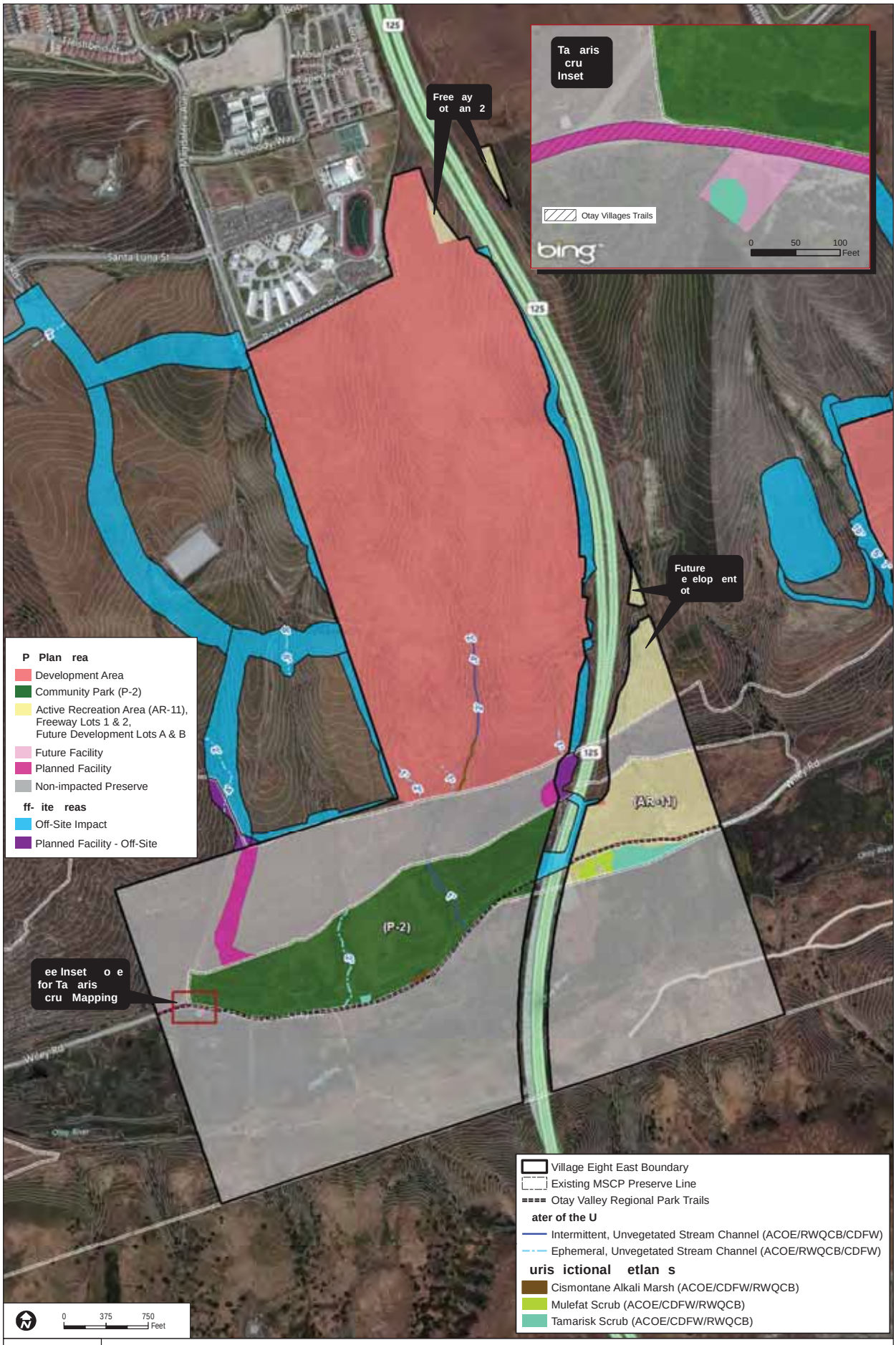

FIGURE .8-24

etlan elineation I pacts Map - Village Eight East

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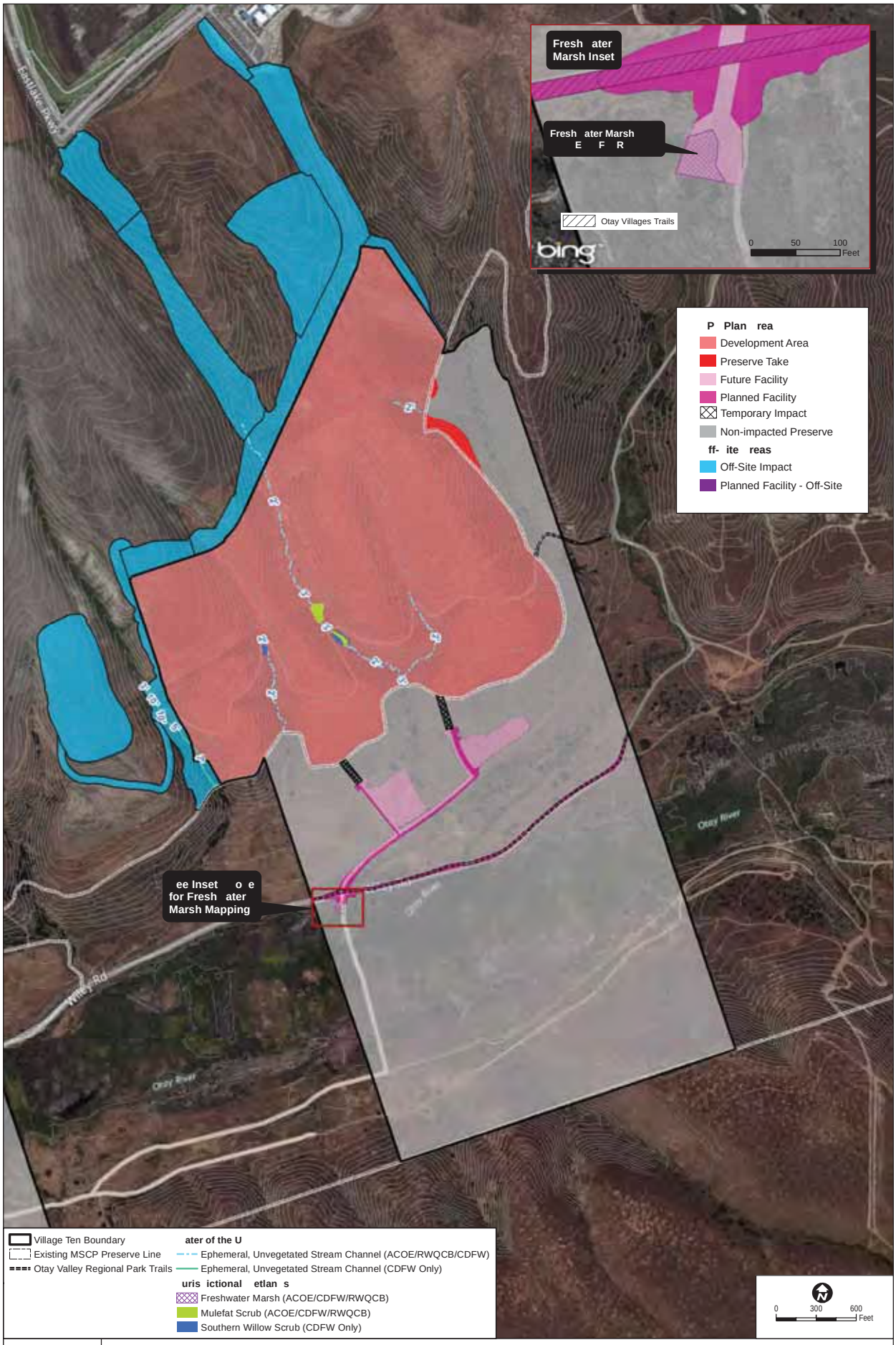

FIGURE .8-25

etlan elineation I pacts Map - Village Ten

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Vernal Pool Impacts

Within Village Three North, there is one vernal pool within the K17 complex that would be impacted that is under ACOE jurisdiction, but characterized by the ACOE as a seasonal depression for permitting purposes. The total surface area proposed to be impacted is 120 square feet. It has not been established whether the vernal pool is considered jurisdictional by the RWQCB. Mitigation for impacts to these pool complexes is identified in Section 5.3.5 of the Otay Ranch Villages Two and Three EIR. The preferred mitigation option outlined in the Conceptual Vernal Pool Mitigation Plan (Dudek 2008) consists of restoration within existing vernal pool complexes to be preserved within Village Thirteen. In addition, optional mitigation is provided in consideration of restoration within the J23, J24, or J25 pools on Otay Mesa. Impacts to the vernal pool are considered **potentially significant** under CEQA.

Indirect Impacts

Indirect, adverse edge effects to jurisdictional waters and wetlands include potential runoff, sedimentation, erosion, exotics introduction, and habitat type conversion in the short and long-term, particularly within the Wolf Canyon drainage.

The Preserve Edge Plans prepared for University Villages (Otay Ranch Company 2013a, 2013b, 2013c) provide the description of and analysis for the subdrains that are proposed at the perimeter of the project Site. These subdrains are designed to allow subsurface drainage and to avoid resulting in impacts to wetlands and waters of the U.S. The subdrain outlets are comprised of a concrete headwall, flow channel and 10 foot wide percolation area. The outlet pipe is a minimum of 20 feet from the Preserve Boundary and each system is a minimum of three feet from the Preserve Boundary.

The Drainage Study for Village Ten shows that due to the impacts of the Savage Dam and Lower Otay Reservoir, project impacts to the peak flows in the Otay River are negligible. Since flows in the Otay River are impacted by the Savage Dam upstream, the Otay River Valley is exempt from Hydromodification criteria under the County of San Diego Hydromodification Management Plan. The Otay River Watershed Management Plan (Aspen Environmental Group 2006) also indicates that increased frequency and volumes of flows would be beneficial to the Otay River Valley.

Indirect impacts to jurisdictional waters, without mitigation, are considered **potentially significant**.

D. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Direct Impacts

In the western portion of Otay Ranch (west of Lower Otay Lake), significant areas of wildlife habitat occur in the Otay River Valley, Wolf Canyon, Poggi Canyon, and Salt Creek Canyon (Ogden 1992).

Wolf Canyon, Salt Creek, and the Otay River Valley are within the boundaries of the Preserve areas of the University Villages or within the Boundary Adjustment areas (Figure 5.8-26).

Village Three North and Portion of Village Four

The Wolf Canyon portion of the Preserve of Village Three North and Portion of Village Four is outside of the project site but is within the boundary of these villages. Wolf Canyon does not function as a regional habitat linkage or wildlife corridor, but is identified as a local corridor for focused mammal and bird species. The northern portion of Wolf Canyon functions as a corridor for California gnatcatcher and cactus wren (Ogden 1992). Although the proposed project would remove 0.8 acres from a portion of the Preserve in Wolf Canyon, the impact is concentrated along the edges of the preserve (Figures 5.8-26 through 5.8-30) and the project continues to maintain a wide corridor for wildlife movement within Wolf Canyon (Figure 5.8-28). In addition, the proposed Boundary Adjustment reduces the total linear length of edge by smoothing the boundary. The dimensions of the corridor would remain very similar to the original as noted above and illustrated in Figure 5.8-28 and, therefore, would maintain the movement within Wolf Canyon and the connection with the Otay River Valley. The Otay Ranch Village Three North and a Portion of Village Four Preserve Edge Plan (2013) provides the required buffer between the Preserve and the proposed development. As shown in that Plan, there are no facilities proposed to be located within the Wolf Canyon Preserve or within the edge with the exception of compatible allowed uses including brush management, residential streets, private park open space and Community Park (P-2). The Community Park (P-2) within Portion of Village Four has a minimum of 100 feet between the preserve and park uses in order to provide protection of California gnatcatcher/cactus wren occupied habitat, which is located along the southern edge of the village. Park uses within the 100-foot Preserve edge are limited to passive uses that are not noise generating such as picnic areas, walking paths, parking, and benches. The entire edge of the Preserve adjacent to the Community Park (P-2) will be fenced per the Edge Plan. The Portion of Village Four that extends into the preserve is not planned for inclusion in the Community Park (P-2). This area is designated as non-Preserve open space and as such has no uses planned, there are no allowed uses and there will be no park facilities within this area. The boundary between this non-Preserve open space area and the Community Park (P-2) will be fenced as shown in the Edge Plan to prevent human intrusion into this area that is adjacent to the Preserve. The development within Village Three North and Portion of Village Four would not interfere with the movement of wildlife species or impede the use of native wildlife nursery sites within Wolf Canyon. Connection of the mouth of Wolf Canyon to the Otay River Valley would be unaffected by the proposed project since it is not located at that point. However, impacts to wildlife corridors in Village Three North and Portion of Village Four would be **potentially significant** prior to mitigation.

FIGURE 5.8-26

tay Ranch Uni ersity Villages Gi e Ta e nalysis

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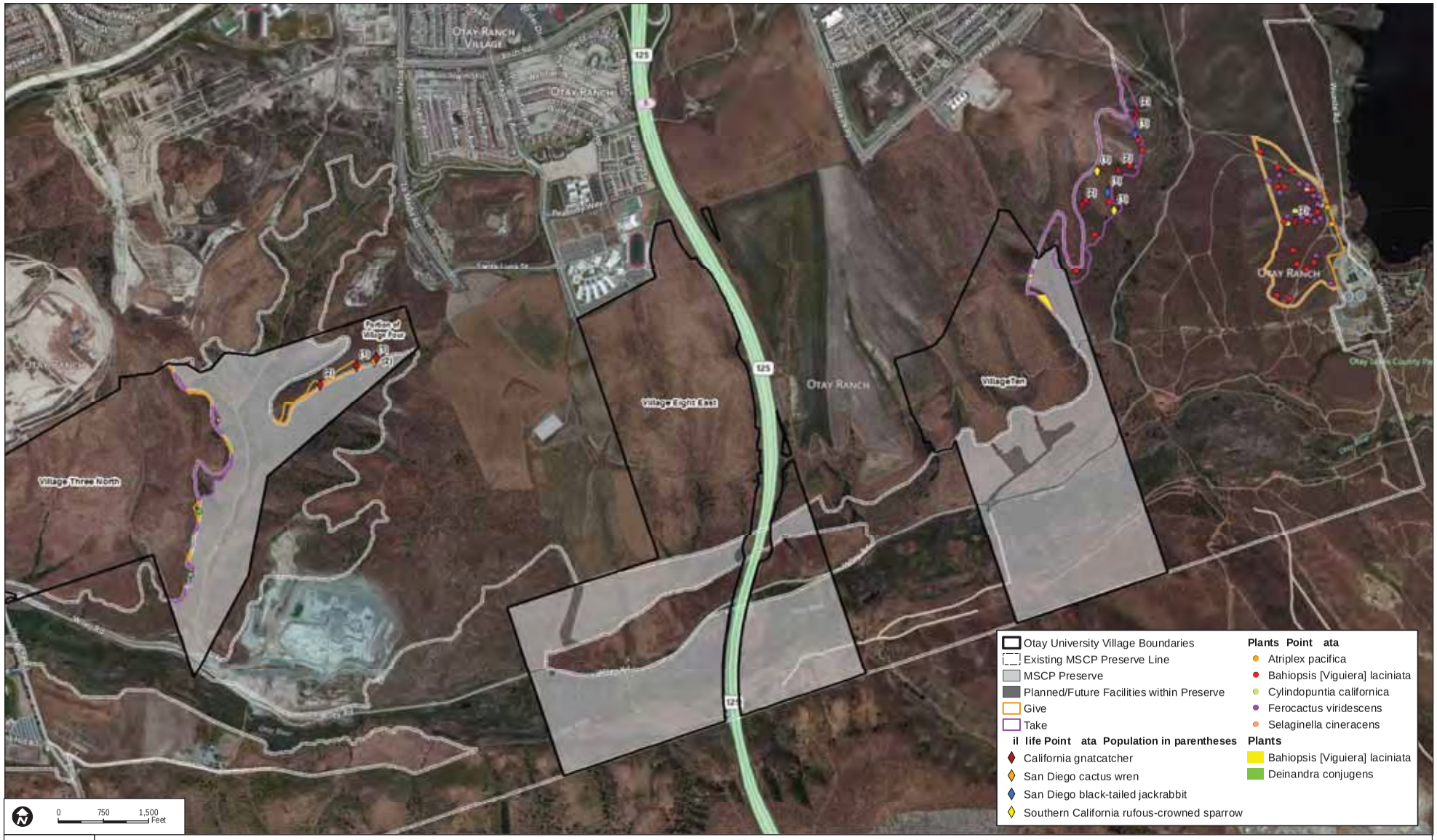

FIGURE 5.8-27

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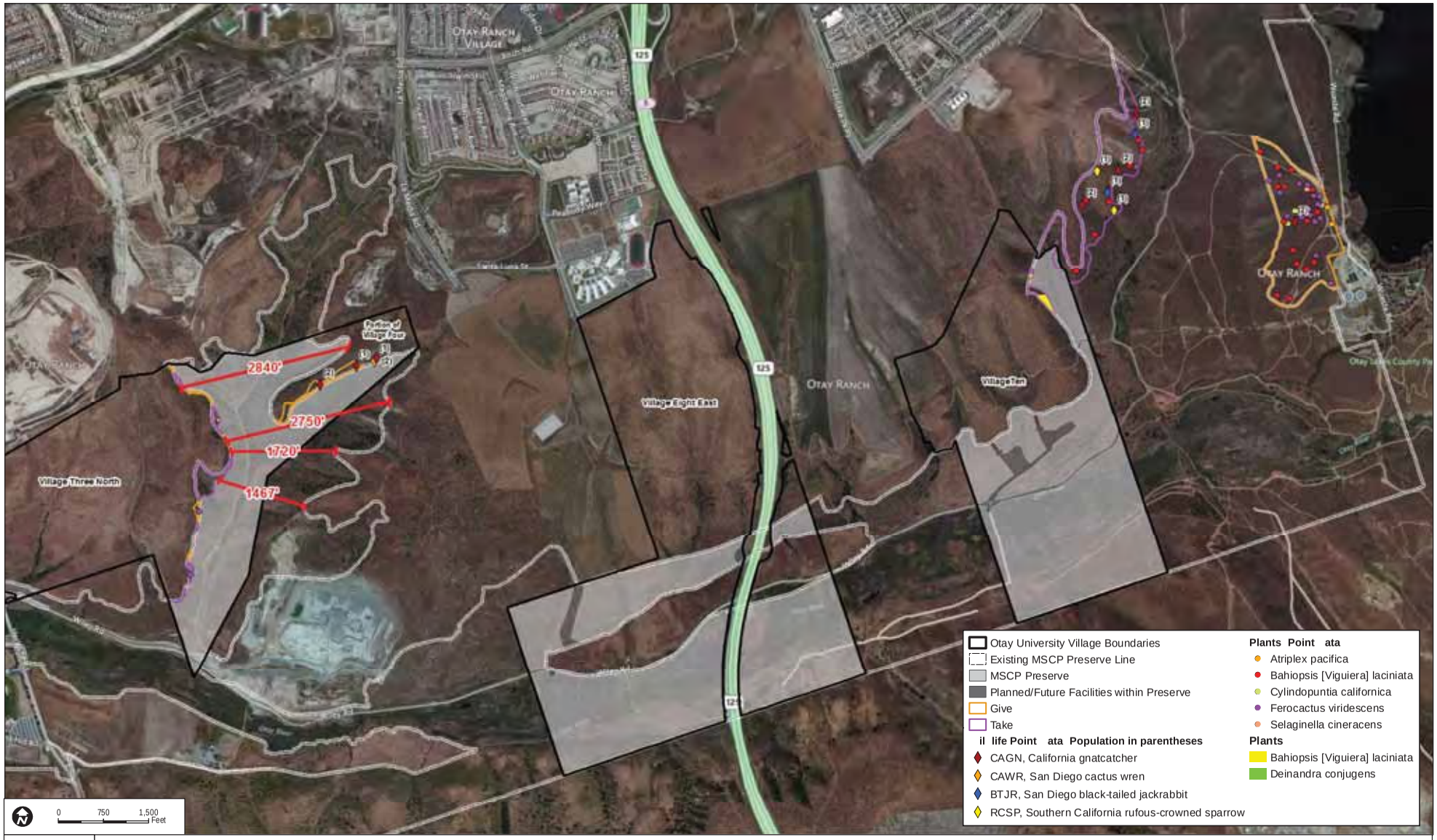

FIGURE 5.8-28

tay Ranch Uni ersity Villages Gi e Ta e nalysis - pecies orri or Map ithin Gi e Ta e reas

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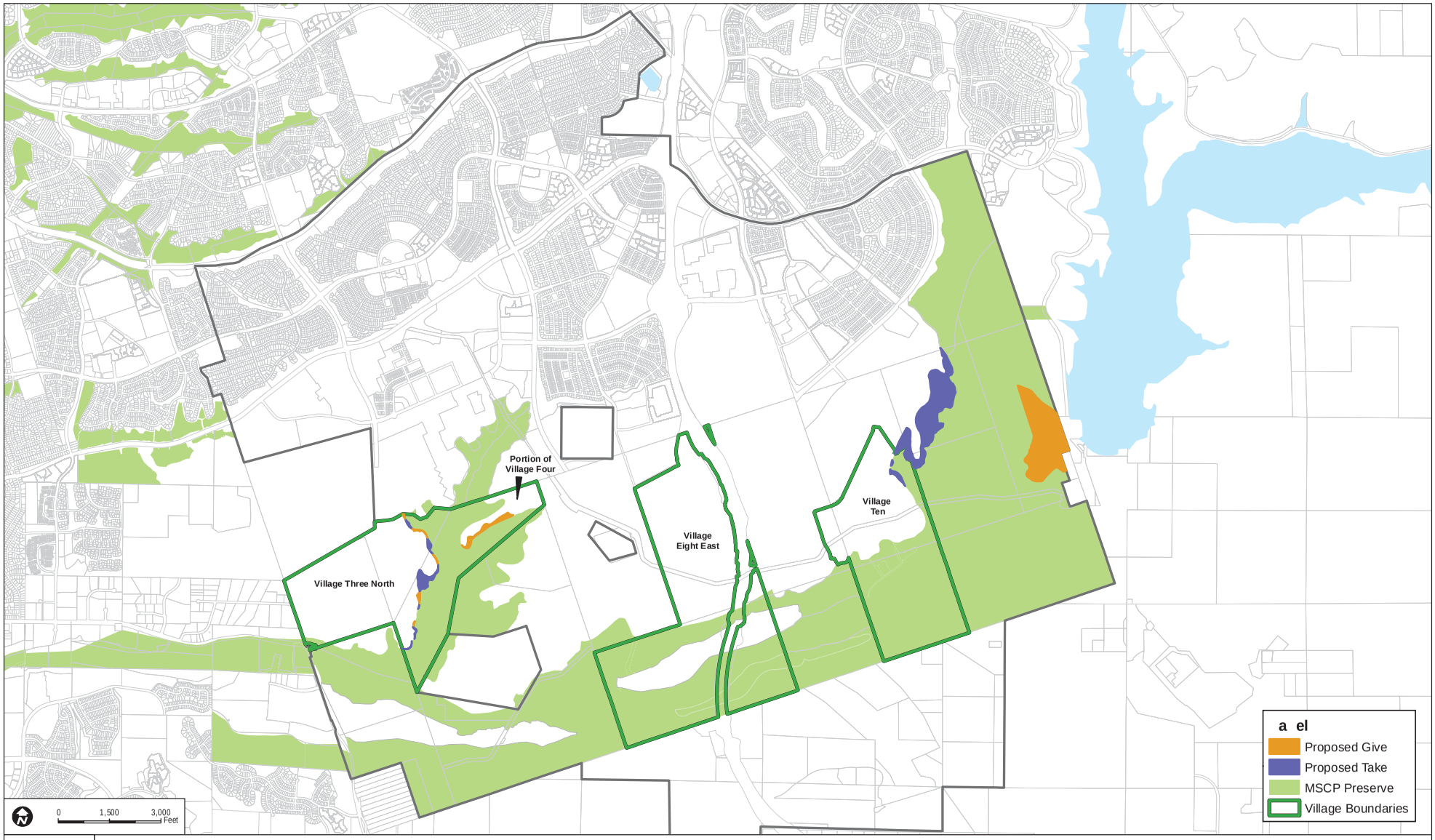

FIGURE 5.8-29

tay Ranch Uni ersity Villages Gi e Ta e nalysis Propose hange in Preser e

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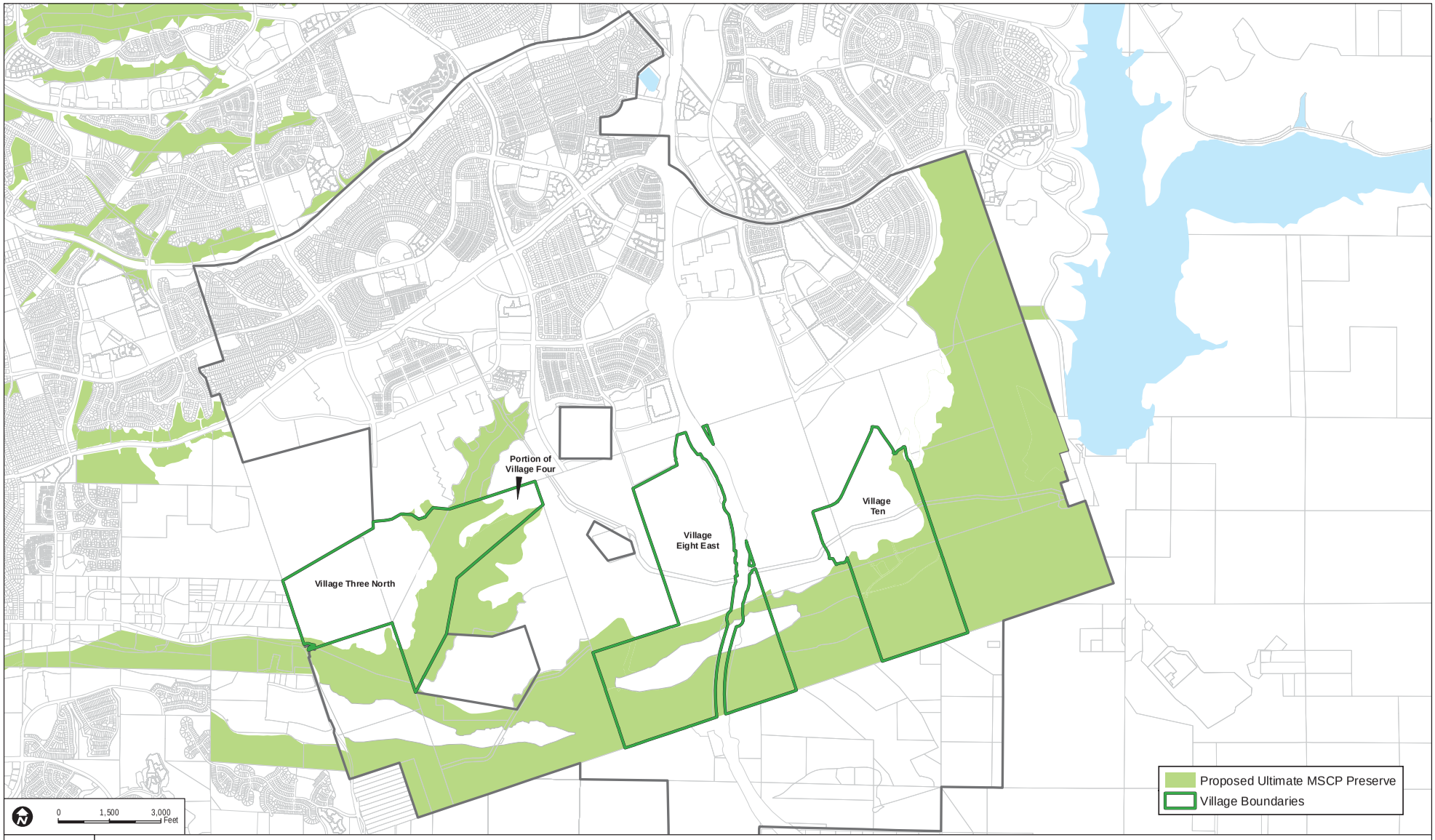

FIGURE - 0

tay Ranch uni ersity Villages Gi e Ta e nalysis Ulti ate Preser e oun ary

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Village Eight East

The Otay River Valley is located immediately south and outside of the project site. The Otay River Valley provides regional wildlife movement and habitat connectivity functions for both mammal and bird species. The Otay River Valley will not be directly impacted by development of Village Eight East since there is no proposed change to the Preserve boundary along the Otay River Valley edge, and it will not adversely affect the habitat connectivity or wildlife movement functions of the Otay River Valley. The Community Park (P-2) is located immediately adjacent to the Otay River Valley Preserve area. The conceptual park design provides a minimum distance of at least 100 feet from active park uses, such as ball fields and basketball courts, which can be a source of noise and lighting, and the preserve boundary. Park uses within the 100-foot Preserve edge are limited to passive uses that are not noise generating such as water quality/retention basin, scenic overlooks, picnic areas, trail staging area, walking paths, parking, and benches. The entire edge of the Preserve adjacent to the Community Park (P-2) will be fenced per the Edge Plan. The Active Recreation Area (AR-11) east of SR-125 is not part of the proposed project but is not precluded from future active recreation uses.

Within the upland habitat along the slopes of Village Eight East between the proposed residential development and the proposed Community Park (P-2), there is a corridor designated for California gnatcatcher and cactus wren (Ogden 1992). This area is vegetated with a mix of coastal sage scrub and maritime succulent scrub. One access road and an emergency access route to the active recreation area extend south from the developed portion of Village Eight East through the Preserve. These access roads have been designed to the minimum widths feasible to reduce impacts to the Preserve by removal of sidewalks on one side and reduction of landscaping in order to narrow the roadway impact. The reduced road width combined with no parking along these roads will maintain direct line of sight between suitable habitat patches both at locations along the slope where there is native habitat and on the flatter mesa top north of the slope within the Preserve. The movement of species is not compromised through the Preserve between the two roads because avian species, which are the focus of this particular corridor, can still move through the habitat patch over these roads. In addition, the only other option for providing access to the Community Park (P-2) would be to fully improve Wiley Road from Heritage Road east through the Preserve over approximately 2 miles. This would result in impacts of approximately 12 acres, creating greater edge effects and a longer potential barrier to wildlife movement. Therefore, impacts to wildlife movement as a result of development in Village Eight East would be **potentially significant** prior to mitigation.

Village Ten

Development to the north of Salt Creek Canyon has restricted wildlife movement between the San Miguel Mountains and the Otay River Valley along this corridor. Salt Creek Canyon is

described as "a habitat cul-de-sac which includes a regional corridor for gnatcatcher and cactus wren" (Ogden 1992). The mouth of Salt Creek is considered an integral corridor that allows for movement of these two bird species to the Otay River Valley (Ogden 1992). Although the proposed project (Take B of the Boundary Adjustment) extends the future University site farther east into the Salt Creek area, Salt Creek remains intact as an area for avian movement as designated in the corridor study (Ogden 1992) and for live-in habitat. In addition, the Boundary Adjustment retains a connection from Salt Creek to Otay Lakes because the acreage in the proposed Boundary Adjustment Give B area would preserve the wildlife connection between Otay River Valley, Salt Creek, Lower Otay Lake and ultimately Sweetwater. The addition of the proposed Give Area in the ~~Salt Creek~~Otay Ranch Preserve area would essentially provide a complete Preserve area from the Preserve boundary east of Village Ten to the edge of Lower Otay Lake. The connection north of this Give area is unaffected and maintains the connection to the archipelago of coastal sage scrub south of the Olympic Training Center as described in the University Redesign (Chula Vista 2003). The proposed Give Area adds additional connection along the boundary of Otay Ranch with the City of San Diego Cornerstone lands. This contribution to the Preserve provides a total of 1,125 linear feet of connection along the eastern edge of the Give B to the coastal sage scrub habitat around the southern portion of Lower Otay Lake not including that portion adjacent to the Otay Water Treatment Plant. Thus, the proposed project does not result in significant impacts to habitat linkages or wildlife movement corridors. The proposed project maintains the integrity of the corridor that was established with the MSCP and especially includes patch of maritime succulent scrub which are critical for the cactus wren. However, impacts to wildlife movement as a result of development in Village Ten would be **potentially significant** prior to mitigation.

Indirect Impacts

According to the Wildlife Corridor studies conducted by Ogden (1992), the University Villages project area does not support any existing wildlife corridors, but does serve as a local corridor for target mammal species. Potential indirect impacts to wildlife utilizing this local corridor are identified under Threshold A. These impacts are considered **potentially significant** and mitigation measures are required. The discussion above under direct impacts analysis is provided of special status wildlife, and both their use and movement within the preserve and non-preserve areas of all three Villages.

Preserve Edge Plans, as described below, prepared for each village will address and describe avoidance of indirect effects to special-status species that occur along the preserve/development interface. Design of the Community Park (P-2) in Village Eight East has included a minimum of 100 feet between the Preserve boundary and park uses. Thus, the occupied habitat north of the Community Park (P-2) is buffered from the activities and active uses within the park.

E. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

F. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

Consistency with City of Chula Vista MSCP Subarea Plan and Otay Ranch RMP

The proposed project design is consistent with the MSCP Subarea Plan and the Otay Ranch RMP through specific adherence to conditions of coverage and mitigation/conveyance requirements for Covered Projects as defined in the Chula Vista MSCP Subarea Plan, Section 7.6, and the Otay Ranch RMP. The Planned and Future Facilities located within the Preserve were designed to minimize impacts to covered habitats and species by following the MSCP Siting Criteria.

The Otay Ranch RMP and the Otay Ranch Preserve were the primary basis for CEQA mitigation of biological impacts identified in the Otay Ranch GDP Program EIR. The RMP includes conveyance procedures for dedicating parcels of land to the Otay Ranch Preserve. The conveyance ratio for all development is 1.188 acres for each acre of project area that does not include "common uses," which are identified as schools, parks, and arterial roadways. These common areas are excluded from the required mitigation/conveyance. The proposed project would have significant impacts related to biological resources unless the Otay Ranch Preserve is assembled proportionally and concurrently with development in accordance with provisions of the City's MSCP Subarea Plan and Otay Ranch RMP.

A number of land uses and activities are considered compatible with the MSCP and allowed within the Preserve. While trails are permitted, they must be consistent with Section 6.3.3.1 of the MSCP Subarea Plan, thus trails are discussed in this section as a compatible use as well as below under Planned and Future Facilities. Access points, new trails and facilities and control of public access must be consistent with the City Planning Component Framework Management Plan or the Otay Ranch RMP and future area-specific management directives. The MSCP Subarea Plan requires that trails should be located in the least sensitive areas of the Preserve. Trails should be located along the edges of urban land uses adjacent to the Preserve or at the boundary between land uses and should follow existing dirt roads as much as possible unless occupied by quino checkerspot butterfly. Locations of trails should avoid being between two different habitat types. Trails should not be paved and they should be monitored for degradation and off trail use. Width of trails should be minimized in order to reduce impacts and new trails should not be wider than four feet in core Preserve areas. Trail fences of other barriers may be required at strategic locations where there are sensitive resources. The extent and location of equestrian trails should be limited to the less sensitive areas of the Preserve.

In addition, all trails within the proposed project will be consistent with the guidelines and design criteria provided in the City of Chula Vista Greenbelt Master Plan (Chapin 2003) and OVRP and Trail Guidelines (County of San Diego 2003). All Greenbelt trail segments will be multi-use trails which provide a variety of uses including, hiking, biking and equestrian use, where identified. The trail requirements and the analysis that documents that the existing trail alignments accommodate the requirements are provided below.

The City Greenbelt Master Plan (2003) provides standards for trail construction materials. The materials for the trail surface may be asphalt, concrete, decomposed granite, a soil-stabilized surface, or native soil. The Greenbelt trail segments through Villages Three North, Eight East, and Ten are a proposed Type A trail per the OVRP trail guidelines. It is associated with a regional trail system and is multi-use. The OVRP requires that a Type A trail is 6 to 8 feet wide, is no more than 3% grade, has a surface of decomposed granite or native soil, has a horizontal clearance of 2 feet beyond the tread edge, and has a 12 foot vertical clearance. For the Greenbelt trail, the surface is Processed Miscellaneous Base (PMB) which consists of broken or crushed asphalt, concrete, Portland cement concrete, railroad ballast, glass, crushed porcelain material, crushed rock, rock dust, or natural material. This material within the Greenbelt trail is consistent with the requirements for the trail materials. The existing alignment is virtually flat with almost less than 1% slope. The existing width is a 30 foot wide easement; thus, there is a wide enough tread plus adequate horizontal clearance for the proposed 16-foot wide trail (10 feet trail, 2 feet clear on either side plus 2 feet for fencing/signage). There are no overhead obstacles or trees, thus the vertical clearance is adequate. In summary, no changes to the surface treatment, slope, or width of the existing Greenbelt trail are necessary.

All areas of the proposed trails were reviewed for presence of sensitive resources including sensitive habitats, vernal pools, and special status species. For trails located outside of Village Ten, baseline biological mapping including thorough surveys and review for special status species and habitats were reviewed as part of County and Otay Ranch POM tasks. Site reconnaissance also confirmed these off-site trail conditions.

Village Three North and Portion of Village Four

Within Village Three North and Portion of Village Four, there is a portion of one existing trail within the Preserve (Figure 5.8-31). This trail segment is a small portion of the trail located within the existing Wiley Road. Only a portion of it is located within the boundary of Village Three North and includes a small segment (75 linear feet) at the southwestern corner of the village and a second segment (263 linear feet) at the southeastern corner. Access to this trail is provided from Main Street, which intersects into Wiley Road at Heritage Road. The trail segment is identified in the Chula Vista Greenbelt Master Plan and OVRP Concept Plan.

FIGURE 5.8-31

Uni ersity Villages Trails yste

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The trail segment is currently an existing dirt road or gravel that also functions as a trail and would continue to function as a trail in the future. There would be no improvements required for the trail, the trail would not be paved, and no impacts would occur as a result of the trail. No vegetation would be removed and no species would be impacted. While there is sensitive habitat within the preserve adjacent to where the trail is located, the trail is wide and in well surfaced condition. No new trails are proposed. Due to the proximity of the trail to the river and habitat, the trail would be identified with post and rail fencing and signs in order to avoid intrusion impacts from users of the trail system. However, impacts to species or habitat could potentially occur as a result of the trail system, and impacts would be **potentially significant** prior to mitigation.

Village Eight East

Within Village Eight East, there is one trail proposed within the Preserve, approximately 3,188 linear feet. It is located within the existing Salt Creek sewer maintenance road and is a continuation of the trail in Village Three North. The trail segment is identified in the Chula Vista Greenbelt Master Plan and OVRP Concept Plan. The segment is currently the existing Salt Creek sewer maintenance road. There will be no improvements required for the trail and the trail will not be paved. While there is sensitive habitat within the preserve adjacent to where the trail is located, the trail is wide and in well surfaced condition. No new trails are proposed. The trail will be identified with post and rail fencing and signs in order to avoid intrusion impacts from users of the trail system. The proximity of the higher use of the Community Park (P-2) and the riparian habitat within the river warrants the placement of lodgepole fencing between the trail and the river. Fencing is not required on the northern side of the trail since the Community Park (P-2) is a development use at that location. No impacts to habitat or species will occur as a result of the trail system. This portion of the OVRP Trail will be accessed by the planned park access road and park fire/emergency response road from Village Eight East. However, impacts would be **potentially significant** prior to mitigation.

Village Ten

Within Village Ten, there are two trail segments proposed. The first is the continuation of the trail from Village Three North and Village Eight East that is located within Salt Creek sewer maintenance road. This segment is a total of 2,700 linear feet. The trail segment is identified in the Chula Vista Greenbelt Master Plan and OVRP Concept Plan. Similar to the portion of the trail segment in Village Eight East, there will be no improvements required for this trail and the trail will not be paved. While there is sensitive habitat within the preserve adjacent to where the trail is located, the trail is wide and in well surfaced condition.

A second trail segment, a Greenbelt connector, is located north of the Wiley Road segment and provides a connection to the Salt Creek Sewer Easement ~~Interceptor road~~ east from Village Ten

and will provide a connection to proposed trails within Village Ten (Figure 5.8-31). The trail segment for this eastern trail is approximately 225 linear feet within the preserve within the Village Ten project boundary and approximately 410 linear feet off-site, within the ~~Salt Creek~~Otay Ranch Preserve (outside the Village Ten project boundary). The Connector Trail will have limited use including hiking and biking, but no equestrian use because it connects through a residential neighborhood.

Per the Greenbelt Master Plan, this would be a rural trail that functions as a Connector Trail. This type of trail has the following guidelines:10 feet wide with varying widths of 4-5 feet in preserve area, if necessary; vertical grades of 5-20% over 500 feet, 10-15% over 250 feet and 15-20% for short distances less than 100 feet; surface material should be decomposed granite or native soil and contained within redwood header strips or some similar material; and a horizontal clearance of 14 feet. However, since it would be constructed in rural areas and may be subject to steeper slopes, it may not accommodate all types of user abilities or type of users. In some area, the trail may also be designed with a reduced width when adjacent to sensitive resources.

For the Connector Trail from the east side of Village Ten, the existing material is decomposed granite or native soil and is also consistent with the requirements for the trail materials. The existing alignment for the Connector Trail is 8 to 11 feet wide and is generally 1 to 6% grade with two sections that are 12 to 15%. No portion of the Connector Trail exceeds 15% grade. There is a greater than 1 foot clearance beyond the tread edge and there are no overhead trees or obstacles so the vertical clearance is greater than 12 feet. Thus this connector segment complies with the requirements of the trail system and no changes to the surface treatment, slope, or width within the proposed trail segments are necessary. There may be occasional trail grooming as a maintenance activity as an expected occurrence. Such grooming will remain within the established trail.

Due to the proximity of the trail segments, including both the Greenbelt trail and the Connector Trail, to the river or to other sensitive habitat, the trails would be identified with post and rail fencing and signs to avoid intrusion impacts from users of the trail system. Along the Connector Trail out of the eastern side of Village Ten, post and rail fencing and signage also would be placed to alert the user to the sensitive nature of the habitat. No new trails are proposed to be constructed, no improvements are necessary because existing trails already meet the applicable trail standards, and fencing would provide protection; therefore, no impacts would occur as a result of the trail system. Quino checkerspot butterfly are known to be present within this area east of SR 125 and especially within the ~~Salt Creek~~Otay Ranch Preserve. Recent surveys recorded Quino checkerspot approximately 1,400 feet to the east southeast of the trail but these recent surveys did not include the trail location (RECON 2013). Previous surveys that included all areas of Salt Creek, including the trail location except that area covered by the 2013 survey included observations of Quino checkerspot approximately 1,500 feet to the northeast of the Connector Trail (Dudek 2009). No

Quino checkerspot have been reported along the trail and no impacts are anticipated to occur to the species, to its habitat or to its host plant or nectar plant species since no vegetation would be removed. Regardless, the trail would be fenced and signed to prevent impacts to species or habitat within the Preserve. However, impacts would be **potentially significant** prior to mitigation.

a. Planned and Future/Siting Criteria Located within the Preserve

The development of the proposed project would be within the area designated for development under the Otay Ranch RMP and the MSCP Subarea Plan, with the exception of a limited number of facilities that would be located in designated Preserve areas. Section 6.0 of the City's MSCP Subarea Plan identifies permitted uses within the Preserve. The proposed project includes permanent impacts to the Preserve resulting from the following infrastructure uses: detention basins south of Village Ten, associated storm-drain lines and access roads for detention basins, sewer laterals connecting to the Salt Creek Interceptor, and access and emergency/fire roads to the Community Park (P-2) south of Village Eight East. Trails within the Preserve area are either located in existing dirt roads or are co-located with other planned facilities (i.e., sewer line roads). These uses are considered facilities within the Preserve as described in Section 6.3.3 of the MSCP Subarea Plan.

Section 6.3.3 of the MSCP Subarea Plan differentiates between "Planned Facilities" and "Future Facilities." Planned Facilities are major roads and infrastructure which were planned for development through existing plans and/or project approvals (i.e., General Plan and Otay Ranch GDP) and allowed to be constructed, operated, and maintained within the Preserve at the writing of the MSCP Subarea Plan. These Planned Facilities are identified in Table 6-1 of the MSCP Subarea Plan and no mitigation is required for these facilities. Consistent with Table 6-1, associated ancillary sewer facilities for the Salt Creek Interceptor, including connections and maintenance access roads are Planned Facilities, as are trails designated in the OVRP Concept Plan which are also discussed above under compatible uses within the Preserve since these are existing trails and not new trails. In addition, the proposed project would impact both on-site and off-site areas within the Preserve associated with Main Street widening.

Future Facilities are those facilities necessary to support planned development that were not identified at the time of the MSCP Subarea Plan but were anticipated to be required. Table 6-2 of the MSCP Subarea Plan identifies Future Facilities and Implementation Criteria. These facilities include detention facilities/basins, fire access roads, maintenance and operations roads, and new trails.

Both Planned and Future facilities located within the Preserve are subject to the Facilities Siting Criteria contained in Section 6.3.3.4 of the City's MSCP Subarea Plan. Compliance with the Facilities Siting Criteria ensures that the facilities located within the Preserve have been sited

within the least environmentally sensitive areas and that impacts to the Preserve have been avoided, minimized to the maximum extent practical, or mitigated per the City's MSCP requirements.

The following is a summary of the Facilities Siting Criteria (Section 6.3.3.4 and Table 6-1 of the MSCP Subarea Plan) as required for the project's Planned and Future Facilities:

1. *Such facilities will be located in the least environmentally sensitive location feasible, and use existing roads, trails and other disturbed areas, including use of the active recreation areas in the Otay River Valley, as much as possible (except where such areas are occupied by the QCB [Quino checkerspot]). Facilities should be routed through developed or developing areas where possible. If no other routing is feasible, alignments should follow previously existing roads, easements, rights of way, and disturbed areas, minimizing habitat fragmentation.*
2. *Such facilities shall avoid, to the maximum extent practicable, impacts to Covered Species and Wetlands, and will be subject to the provisions, limits, and mitigation requirements for Narrow Endemic Species and Wetlands pursuant to Section 5.2.3 and 5.2.4 of the MSCP Subarea Plan.*
3. *Where roads cross the Preserve, they should provide for wildlife movement in areas that are graphically depicted on and listed in the MSCP Subregional Plan Generalized Core Biological Resource Areas and Linkages map as a core biological area or a regional linkage between core biological areas. All roads crossing the Preserve should be designed to result in the least impact feasible to Covered Species and Wetlands. Where possible at wildlife crossings, road bridges for vehicular traffic rather than tunnels for wildlife use will be employed. Culverts will only be used when they can achieve the wildlife crossing/movement goals for a specific location. To the extent feasible, crossings will be designed as follows: the substrate will be left in a natural condition or revegetated if soils engineering requirements force subsurface excavation and vegetated with native vegetation if possible; a line-of-sight to the other end will be provided; and if necessary, low-level illumination will be installed in the tunnel.*
4. *To minimize habitat disruption, habitat fragmentation, impediments to wildlife movement and impact to breeding areas, road and/or right-of-way width shall be narrowed from existing City design and engineering standards, to the maximum extent practicable. In addition, roads shall be located in lower quality habitat or disturbed areas to the maximum extent practicable.*
5. *Impacts to Covered Species and habitats within the Preserve resulting from construction of Future Facilities will be evaluated by the City during project review and permitting. The City may authorize Take for impacts to Covered Species and habitats resulting from*

construction of Future Facilities located outside the Preserve, pursuant to the MSCP Subarea Plan and consistent with the Facility Siting Criteria in this Section.

6. *The City may authorize "Take" for impacts to Covered Species resulting from construction of Future Facilities located within the Preserve, subject to a limitation of 2 acres of impact for individual projects and a cumulative total of 50 acres for all Future Facilities. Wildlife Agency concurrence will be required for authorization of Take for any impacts to Covered Species and habitat within the Preserve that exceed 2 acres that may result from construction of any individual Future Facility. Wildlife Agency concurrence will be required for authorization of Take for impacts to Covered Species and habitat within the Preserve that exceed 50 acres that may result from all Future Facilities combined.*
7. *Planned and Future Facilities must avoid impacts to covered Narrow Endemic Species and the QCB [Quino checkerspot] to the maximum extent practicable. When such impacts cannot be avoided, Planned and Future facilities located within the Preserve are subject to the provisions of Section 5.2.3.6 of the MSCP Subarea Plan. Impacts to QCB that will result from construction of Planned and Future Facilities within the Preserve are subject to the provisions of Section 5.2.8 of the MSCP Subarea Plan.*

This section outlines the "Planned Facilities" and "Future Facilities" associated with the proposed project and how they adhere to the Facilities Siting Criteria. The facilities necessary to support the proposed project were sited in primarily disturbed, developed, and agricultural lands. In general, the process for designing and locating the Planned and Future Facilities followed an iterative process with the project civil engineer. The facilities were analyzed by overlaying potential Planned and Future Facility locations with biological resources including vegetation communities, species locations, and jurisdictional wetlands and waters. Adjustments were made to reduce impacts to sensitive resources to the greatest extent possible without compromising the integrity and purpose of each facility. In addition, facilities such as roads, sewer and water lines were co-located to reduce impacts. In some cases there are impacts to sensitive resources; however the options of shifting facilities were more impactful.

Village Three North and Portion of Village Four

All Future Facilities proposed for Village Three North and Portion of Village Four can be accommodated within the planned Main Street right-of-way (ROW), which is a Planned Facility. Planned Facilities within Village Three North include: Main Street, including sewer connection and storm drain improvements, the Quarry access road, and OVRP trails. There are no Planned Facilities located within the boundary of the Portion of Village Four.

Main Street, Sewer and Storm Drains – Planned and Future Facilities

Main Street will be located in the southwest corner of Village Three and will continue along the southern edge of Village Three North. Most of the alignment is not within the Preserve and therefore not subject to the siting criteria. The Main Street sewer connection and storm drain improvements have been co-located within the road right-of-way to minimize and avoid additional impacts. Thus the two 20-foot wide easements that would have been required for these two facilities have been co-located within the road to result in no impacts to the MSCP Preserve. These facilities, including the OVRP pedestrian trail, are all clustered within a single construction ROW to minimize habitat and sensitive species impact and habitat fragmentation. Table 5.8-10 provides a summary of these facilities as they relate to the siting criteria.

Table 5.8-10
Summary of Facilities Siting Criteria
Village Three North - Main Street and Associated Utilities

Facilities Siting Criteria	Main Street, Sewer Line and Storm Drain
Least environmentally sensitive location	The street has been shifted further north into the development footprint and will limit impacts to the Preserve and habitat by reducing the amount of fill necessary to construct the road. Main Street will be located immediately adjacent to development and will not cause fragmentation of habitat. If the alignment had remained in the original more southern location, impacts to the preserve would have been greater. All facilities are located within a single ROW and include the Main Street alignment, the sewer and storm drain as well as the OVRP pedestrian trail. The Quarry access road also uses the Main Street ROW until it exits from the ROW to reconnect with the existing Quarry road. Cross sections of Main Street are provided on the Tentative Map submittal. Any manufactured slopes (within the Preserve) created in conjunction with Planned and Future Facilities will be replanted/landscape with native species consistent with the Preserve Edge Plan.
Avoid wetlands and covered species and address Narrow Endemics	Lower reaches of two unvegetated stream channels will be impacted. However, the upper reaches of the channels are within the development footprint and impacts to these channels are currently being permitted by the resource agencies. A total of 4 San Diego barrel cactus will be impacted. Two populations of Otay tarplant will be impacted by development of the road (total population impacted is 41 plants). Moving the alignment farther north to avoid the Otay tarplant would have been infeasible since the current alignment needs to be matched. In addition walls are proposed to reduce the grading impacts that would otherwise extend farther south and potentially impact more coastal sage scrub covered species and habitat for covered species. Impacts to special-status plants and wetlands are addressed in Mitigation Measures BIO5, BIO6, BIO8, BIO9, BIO10, and BIO12. Potential impacts to nesting bird species will be mitigated through the implementation of Mitigation Measure BIO13.
Provide for wildlife movement	The road is located immediately adjacent to the proposed development and will not preclude wildlife from using the OVRP to the south. Main Street will not impede a major regional linkage and culverts will not be required within the Preserve. In addition, the post and rail fence associated with Greenbelt trail will be designed and constructed to allow for continued wildlife movement through this area (BIO-16 and BIO-17). By co-locating the facilities within a minimal width construction ROW these linear facilities would not impede wildlife movement.

Table 5.8-10 (Continued)
Summary of Facilities Siting Criteria
Village Three North - Main Street and Associated Utilities

Facilities Siting Criteria	Main Street, Sewer Line and Storm Drain
Road widths are narrowed and in lower quality habitat	Walls are included north of Main Street to reduce grading impacts, and an approximate 20 feet wide grading impact is avoided by use of the walls. By shifting Main Street slightly north by 20 feet, impacts to the MSCP Preserve and coastal sage scrub habitat within the canyon at the eastern edge of Village Three are reduced by 0.10 acre. Other shifts are not feasible because of the need to meet the existing Main Street alignment. The quarry access road will branch off from Main Street to avoid a separate access road that would result in impacts to the riparian habitat within the Otay River. The pedestrian trail will be located within the paved access road of Main Street and will result in no habitat impacts.
Impacts for future facilities will be evaluated by the City	All facilities/utilities have been co-located with the planned alignment of Main Street.
Future facilities are limited to 2 acres or cumulative total of 50 acres	N/A
Avoid impacts to covered Narrow Endemic Species and QCB	Construction of Main Street, and associated facilities, will not impact any QCB populations. Two populations of Otay tarplant, totaling 41 plants, will be impacted by development of the road. Within University Villages, the population of Otay tarplant is 4,772 plants. The impact to Otay tarplant is 0.9% of the total population within the University Villages. Thus this impact meets the Narrow Endemic requirements of the Chula Vista MSCP Subarea Plan of no more than 5% impact of the total population within the project area. Dust control will be implemented per the Air Quality Technical Report (Dudek 2014) to prevent impacts of fugitive dust on sensitive habitat and species (BIO-6).

OVRP Trails – Planned Facility

A portion of the trail associated with Village Three North is located within the Preserve. This trail segment is a small portion of the trail located within the existing Wiley Road. Only a portion of it is located within the boundary of Village Three North and includes a small segment (75 linear feet) at the southwestern corner of the village and a second segment (263 linear feet) at the southeastern corner. The trail segment is currently an existing dirt or gravel road (Salt Creek ~~Interceptor road~~Sewer Easement) that also functions as a trail and will continue to function as a trail in the future. Table 5.8-11 provides a summary of these facilities as they relate to the siting criteria.

Table 5.8-11
Summary of Facilities Sting Criteria
OVRP Trails (Villages Three North, Eight East and Ten)

Facilities Siting Criteria	OVRP Trails (Villages Three North, Eight East and Ten)
Least environmentally sensitive location	No vegetation will be impacted. Trails south of the project site are co-located on the existing Salt Creek ~~Interceptor Road~~Sewer Easement, consistent with the alignment of a trail in the OVRP Concept Plan on the north side of the Otay River Valley.
Avoid wetlands and covered species and address Narrow Endemics	Since no new trails are planned, no wetlands or narrow endemics will be directly impacted. In addition, no covered species will be directly impacted. Due to the proximity or location of the trail with respect to the MSCP Preserve which is immediately adjacent in Village Eight East and is within the Preserve in Village Three North and Village Ten, the trail will be identified with post and rail fencing and signs in order to avoid intrusion impacts from users of the trail system (BIO16 and BIO17).
Provide for wildlife movement	No vegetation is removed, and no structures will be placed, therefore wildlife will continue to move freely within the Preserve. In addition, the post and rail fence associated with the Greenbelt trail will be designed and constructed to allow for continued wildlife movement through this area (BIO16 and BIO17).
Road widths are narrowed and in lower quality habitat	Trail is proposed to be 16 feet wide within the existing 30 foot road easement. No additional new impacts caused by trail.
Impacts for future facilities will be evaluated by the City	N/A
Future facilities are limited to 2 acres or cumulative total of 50 acres	N/A
Avoid impacts to covered Narrow Endemic Species and QCB	Trails will be fenced to preclude impacts to narrow endemics and QCB.

Village Eight East

Main Access Road to Community Park P-2, and Associated Utilities – Planned and Future Facilities

The main access road connecting residences to the active recreation area will be located within the same alignment as La Media, as shown in the MSCP Subarea Plan. Within the access road, water, reclaimed water, sewer lines and a storm drain have been co-located. These facilities continue through the Community Park (P-2) and the storm drain and sewer lines connect to an outfall located just southwest of the active recreation area. The access road, a small portion of the sewer and storm drain connections, as well the outfall are all located within the preserve. The associated facilities (water, reclaimed water, sewer lines and storm drain) are future facilities and the road is a planned facility. Because extent of the planned facility (road) is greater (46 feet) than the future facilities (40 feet), the impact acreage is quantified based on the road. The outfall and associated connections are not within the road and therefore they will result in additional impacts. Table 5.8-12 provides a summary of these facilities as they relate to the siting criteria.

Table 5.8-12
Summary Facilities Siting Criteria Village Eight East - Main Access Road to Community Park (P-2) and Associated Facilities

Facilities Siting Criteria	Main Access Road to Community Park (P-2), Water, Reclaimed Water, and Sewer lines, Storm Drain and Outfall Structure
Least environmentally sensitive location	The road was reduced from a 55-foot right-of-way to a 46-foot right-of-way. The original design included both a paved sidewalk and a trail along site the road, however the paved sidewalk is no longer a part of the right-of-way. The majority of the road is located within non-native grasslands and agricultural lands with some impacts to coastal sage scrub. Shifting the road to a different location would impact more native habitat and special-status species. Shifting the road to the west would have resulted in impacts to wetlands. Because it is as narrow as possible, fragmentation is reduced. Cross section of the road is provided in the Preserve Edge Plan (Otay Ranch 2013b). In order to preclude impacts to sensitive habitat, the outfall connections have been placed to the southern edge of the active recreation area, within an existing road. The storm drain outfall will impact a small quantity of tamarisk scrub and disturbed broom baccharis scrub. Shifting the outfall to any other location would result in greater impacts to wetland habitat. Impacts to sensitive habitat will be mitigated through the implementation of Mitigation Measures BIO1, BIO4, and BIO5. In addition, any manufactured slopes (within the Preserve) created in conjunction with Planned and Future Facilities will be replanted/landscape with native species consistent with the Preserve Edge Plan.
Avoid wetlands and covered species and address Narrow Endemics	The access road will not impact any wetlands or waters nor will it impact any narrow endemic species. Some habitat for coastal sage scrub covered species will be impacted. This impacted is reduced by narrowing of the road and placement slightly east of the existing dirt road which avoids impacts to the drainage. Impacts have also been reduced by co-locating associated facilities within the limits of grading for the road. The connections to the outfall will not impact any wetlands or narrow endemic species. The outfall will impact a small quantity of tamarisk scrub but no narrow endemics or covered species will be impacted. Potential impacts to nesting bird species will be mitigated through the implementation of Mitigation Measure BIO-13.
Provide for wildlife movement	The road right-of-way has been reduced from 55 feet to 46 feet. Landscaping on either side of the road has been eliminated to allow wildlife (avian species for which this Preserve segment is focused) to cross the road. Wildlife will have direct line of site between habitat patches on either side of the road. Including landscaping along the road would result in increased impacts. Including a wildlife crossing in this location also would increase the impacts since there is no topography to allow for the construction of a wildlife culvert. Construction of the connections to the outfall will not preclude wildlife from using the area as this facility is underground. Nor will construction of the outfall.
Road widths are narrowed and in lower quality habitat	The road was reduced from a 55-foot right-of-way to a 46-foot right-of-way ROW.
Impacts for future facilities will be evaluated by the City	The outfall must be reviewed by City.
Future facilities are limited to 2 acres or cumulative total of 50 acres	Total impact to covered habitat from construction of the outfall is 0.05 acre of disturbed broom baccharis scrub.

Table 5.8-12 (Continued)
Summary Facilities Siting Criteria Village Eight East - Main Access Road to Community Park (P-2) and Associated Facilities

Facilities Siting Criteria	Main Access Road to Community Park (P-2), Water, Reclaimed Water, and Sewer lines, Storm Drain and Outfall Structure
Avoid impacts to covered Narrow Endemic Species and QCB	Construction of the access road and associated facilities will not impact any QCB habitat or narrow endemics. Dust control will be implemented per the Air Quality Technical Report (Dudek 2014) to prevent impacts of fugitive dust on sensitive habitat and species.

Sewer Line/Fire Access Roads and Associated Utilities – Planned and Future Facilities

The sewer line and storm drains are co-located within the eastern sewer line/fire access road between Village Eight East and the active recreation area. The storm drain and fire access roads are future facilities and the sewer road and sewer line are planned facilities. Because the extent of both the future and planned facilities are the same, the impact is based on the planned facilities. The easement for the facilities, including the road, is 30 feet. All facilities/utilities have been co-located with the planned easement of the access road. Table 5.8-13 provides a summary of these facilities as they relate to the siting criteria.

Table 5.8-13
Summary Facilities Siting Criteria
Village Eight East - Sewer Line/Fire Access Roads and Associated Utilities

Facilities Siting Criteria	Sewer Line/Fire Access Roads, Storm Drain, and Sewer Line
Least environmentally sensitive location	The sewer line and storm drain has been co-located within the access road to reduce impacts to native habitat, especially maritime succulent scrub. The access roads are required but fragmentation is avoided by having these uses co-located and by locating adjacent to the SR 125 ROW. Impacts to sensitive habitat resulting from the future facilities will be mitigated through the implementation of Mitigation Measures BIO1, BIO2, BIO4, and BIO5. In order to preclude impacts to sensitive habitat, the outfall connection has been placed to the southern edge of the active recreation area, adjacent to an existing road. The storm drain outfall will impact a small quantity of disturbed broom baccharis scrub. Shifting the outfall to any other location would result in greater impacts to wetland habitat. Impacts to sensitive habitat will be mitigated through the implementation of Mitigation Measures BIO1, BIO4, and BIO5. In addition, any manufactured slopes (within the Preserve) created in conjunction with Planned and Future Facilities will be replanted/landscape with native species consistent with the Preserve Edge Plan.
Avoid wetlands and covered species and address Narrow Endemics	This component will not impact any wetlands or narrow endemic species. Some habitat for covered species will be impacted. This impacted is reduced by the co-location of facilities. Impact to covered species habitat would be to those species that occur within coastal sage scrub. Potential impacts to nesting bird species will be mitigated through the implementation of Mitigation Measure BIO13.

Table 5.8-13 (Continued)
Summary Facilities Siting Criteria
Village Eight East - Sewer Line/Fire Access Roads and Associated Utilities

Facilities Siting Criteria	Sewer Line/Fire Access Roads, Storm Drain, and Sewer Line
Provide for wildlife movement	Construction of this component will not preclude wildlife from using the area. Wildlife (avian species which is the focus for this Preserve segment) will traverse the road and the road is not expected to receive much traffic. In addition, this road has been moved to be located near SR-125 and is not a primary location for wildlife movement.
Road widths are narrowed and in lower quality habitat	The road was designed to be as narrow as possible: 20 feet.
Impacts for future facilities will be evaluated by the City	The outfall must be reviewed by City.
Future facilities are limited to 2 acres or cumulative total of 50 acres	All facilities/utilities have been co-located with the planned alignment of the access road. Total impact to covered habitat from construction of the outfall is 0.08 acre of disturbed broom baccharis scrub.
Avoid impacts to covered Narrow Endemic Species and QCB	Construction of this facility will not impact any QCB habitat or narrow endemics. Dust control will be implemented per the Air Quality Technical Report (Dudek 2014) to prevent impacts of fugitive dust on sensitive habitat and species (BIO6).

OVRP Trails – Planned Facility

The trail segment associated with Village Eight East is located within the Salt Creek ~~Interceptor road~~Sewer Easement, of which the majority is located within the Community Park (P-2). A small portion to the trail, approximately 315 feet, continues west from the active recreation area, through the preserve, and outside of the Village Eight East limits.

Village Ten

Detention Basins, Access Roads, and Associated Utilities– Planned and Future Facilities

The two detention basins south of Village Ten are located in an area previously identified as a potential active recreation site. The area is disturbed by former agricultural activities and is currently covered by non-native grassland. Each detention basin would have an access road parallel to the west of the basin, which would be connected to a main access road stemming from Wiley Road. The main access road would be located primarily within an existing dirt road. Storm drain and sewer lines extending south from Village Ten development would be in line with the location of the detention basin access roads. These facilities are co-located with the access roads and would connect to the Salt Creek interceptor located south of Wiley Road. Table 5.8-14 provides a summary of these facilities as they relate to the siting criteria.

Table 5.8-14
Summary Facilities Siting Criteria
Village Ten - Detention Basins and Associated Utilities

Facilities Siting Criteria	Detention Basins, Access Roads, Strom Drain and Sewer Lines, Sewer Line Connection to Salt Creek Interceptor and Storm Drain Outfall
Least environmentally sensitive location	Currently, two basins are associated with Village Ten. Originally 3 larger basins were proposed, however, to reduce impacts to the Preserve, one basin was removed and acreages of the remaining basins were reduced. This was accomplished by deepening the basins. Basins also are consolidated to serve multiple areas, including the University site, rather than just Village Ten. The basins are located within annual grasslands and do not impact the coastal sage scrub located to the north. Two basins are proposed in order to avoid impacts to wetlands and waters of the U.S. Fragmentation is avoided by locating the basins adjacent to existing road and within lower quality habitat. The majority of the access roads are located within annual grasslands, agricultural or developed areas. A small portion of the main access road will impact the edge of a coastal sage scrub polygon. Shifting the road north in that area would result in impacts to the ephemeral channel. Storm and sewer lines were co-located to reduce the need for two locations. The width of impacts was reduced from 40 feet to 30 feet, most of which will be located within the access roads. Some coastal sage scrub will be impacted by the installation of these two facilities. The storm drain outfall will impact a small quantity of freshwater marsh, disturbed coastal sage scrub and developed land. Shifting the outfall to any other location would result in greater impacts to wetland habitat within the Otay River. The design follows an existing disturbed area within the River, however it must outfall to the appropriate location. Impacts to sensitive habitat will be mitigated through the implementation of Mitigation Measures BIO1, BIO3, BIO4, BIO5, BIO6, BIO8, BIO9, and BIO10). In addition, any manufactured slopes (within the Preserve) created in conjunction with Planned and Future Facilities will be replanted/landscape with native species consistent with the Preserve Edge Plan.
Avoid wetlands and covered species and address Narrow Endemics	The two basins were originally proposed to be one basin but were split in order to avoid impacts to an ephemeral drainage. The basins will not impact wetlands or narrow endemic species. There are other covered species that potentially occur within the basin impact area including burrowing owl, orange-throated whiptail, San Diego horned lizard, raptor foraging habitat including northern harrier and other raptors that are not on the Covered Species list. The basins have been reduced in size by deepening their construction, reduced in number from 3 to 2, placed next to an existing road to reduce fragmentation, and provide detention basin function to more projects than just Village Ten thus reducing impacts of other future facilities. The access roads will not impact any wetlands or waters, nor will they impact any narrow endemic species or covered species. The outfall will impact a small quantity of freshwater marsh (0.03 acre), however it will not impact any narrow endemics or covered species. Impacts to jurisdictional resources will be mitigated through the implementation of Mitigation Measures BIO8, BIO9, and BIO10. The storm drain and sewer lines will not impact wetlands or waters, nor will they impact any narrow endemic species. There will be small impacts to covered species habitat for California gnatcatcher, and other coastal sage scrub species. The number of impact areas has been reduced from 3 to 2 and include co-location to reduce impacts. Impacts to potentially nesting special-status birds will be mitigated through the implementation of Mitigation Measure BIO13.

Table 5.8-14 (Continued)
Summary Facilities Siting Criteria
Village Ten - Detention Basins and Associated Utilities

Facilities Siting Criteria	Detention Basins, Access Roads, Strom Drain and Sewer Lines, Sewer Line Connection to Salt Creek Interceptor and Storm Drain Outfall
Provide for wildlife movement	Construction of the basins and associated the outfall will not preclude wildlife from using the area. The outfall is located on the edge of the Otay River and has been located as close to the existing road as possible. The access roads are not expected to preclude wildlife from using the area as wildlife will traverse the road. In addition, the road is not expected to receive much traffic. Construction of the storm and sewer facilities will not preclude wildlife from using the area as these facilities are underground. These storm and sewer lines are considered to be permanent impacts even though there will be no above ground structures. This is to preclude large shrubs from being planted as part of a restoration program. The area will be revegetated with native upland herbaceous species so as to not preclude movement of wildlife through the area and also to provide foraging opportunities (Mitigation Measure BIO3).
Road widths are narrowed and in lower quality habitat	The roads were designed to be as narrow as possible (30 feet) while still accommodating the co-location of sewer and storm drains.
Impacts for future facilities will be evaluated by the City	All of the facilities must be evaluated by the City.
Future facilities are limited to 2 acres or cumulative total of 50 acres	See Table 5.8-15 below for the analysis of the cumulative total. The total impact is 4.0 acres of non-native grassland for the two detention basins. The roads, storm drains and the outfall total approximately 0.15 acre of impacts with 0.08 acre impact to disturbed coastal sage scrub, 0.03 acre to freshwater marsh, and 0.6 acre to non-native grassland. See below for the analysis of the cumulative total. Total impact to covered habitat is 0.03 acre of freshwater marsh and 0.08 acre of disturbed coastal sage scrub.
Avoid impacts to covered Narrow Endemic Species and QCB	Construction of the detention basins, roads, and outfall will not impact any QCB habitat or narrow endemics. Construction of the utilities will impact a location of sparse plantago, however this area is not considered prime suitable habitat. Dust control will be implemented per the Air Quality Technical Report (Dudek 2014) to prevent impacts of fugitive dust on sensitive habitat and species (BIO-6).

OVRP and Non-OVRP Trails – Planned and Future Facilities

Within Village Ten, there are two trail segments proposed. The first is the continuation of the trail from Village Three North and Village Eight East that is located within Wiley Road. This segment is a total of 2,700 linear feet. See Table 5.8-11 for the summary of OVRP trails as they relate to the facilities siting criteria. A second trail segment, a Greenbelt connector, is located north of the Wiley Road segment and provides a connection to Salt Creek ~~Interceptor road~~Sewer Easement east from the development area of Village Ten and would provide a connection to proposed trails within Village Ten. The trail segment for this eastern trail is approximately 225 linear feet within the preserve on site in Village Ten and approximately 410 linear feet within the

~~Salt Creek~~Otay Ranch Preserve. Since this trail is a non-ORVP trail, it is evaluated as a Future Facility Table 5.8-15.

Table 5.8-15
Summary of Planned Facilities Siting Criteria
Non-OVRP Trails

Facilities Siting Criteria	Non-OVRP Trails (Village Ten)
Least environmentally sensitive location	Since the trail is located within and existing dirt road, no vegetation will be impacted.
Avoid wetlands and covered species and address Narrow Endemics	Since no new trails are planned, no wetlands or narrow endemics will be directly impacted. In addition, no covered species will be directly impacted. Due to surrounding sensitive habitat, the trail will be identified with post and rail fencing and signs in order to avoid intrusion impacts from users of the trail system (BIO-16 and BIO-17).
Provide for wildlife movement	No vegetation is removed, and no structures will be placed, therefore wildlife will continue to move freely within the Preserve. In addition, the post and rail fence associated with the trail segment will be designed and constructed to allow for continued wildlife movement through this area (BIO16 and BIO17). The fence design is open and low enough to allow wildlife movement through or over it but will serve to discourage human access to the Preserve.
Road widths are narrowed and in lower quality habitat	Trail is proposed to be 8 feet wide and will remain within the existing dirt road.
Impacts for future facilities will be evaluated by the City	This trail location must be reviewed by the City.
Future facilities are limited to 2 acres or cumulative total of 50 acres	The trail is 225 lineal feet.
Avoid impacts to covered Narrow Endemic Species and QCB	Trails are fenced to preclude impacts to narrow endemics and QCB (BIO-16 and BIO-17).

Permanent Impacts to Covered Habitats

Permanent impacts to covered habitats associated with the development of Future Facilities are discussed in Tables 5.8-10 through 5.8-15. Pursuant to the City's MSCP Subarea Plan, no single facility may permanently impact more than 2 acres of covered habitat. In addition, permanent impacts to covered habitats in the Preserve resulting from Future Facilities may not exceed a cumulative total of 50 acres. Temporary impacts associated with Future Facilities are not subject to the limitations for permanent impacts to covered habitat; however, all areas of temporary impacts must be revegetated (Mitigation Measure BIO3). These future facilities include the storm drain and sewer lines from Village Ten to the detention basins located within the preserve south of the Village Ten development area. Shrubs plantings would not be included since the storm drain and sewer lines might need access or repair in the future (Mitigation Measure BIO3).

Future Facilities associated with impacts to covered habitat include: the storm drain outlet for Village Eight (0.05 acre Broom baccharis scrub), detention basins for Village Ten (2 acres of non-native

grassland for each basin for a total of 4.0 acres) and associated utilities (0.08 acre disturbed coastal sage scrub, 0.6 non-native grassland, 0.03 acre freshwater marsh). Development of these facilities would permanently impact 5.0 acres and temporarily impact 0.2 acre of covered habitat, which is less than the 2-acre single facility limitation since each of the facilities impact 2 acres or less. Cumulative impacts to covered habitat associated with future facilities are estimated at 6.2 acres (Table 5.8-16).

Table 5.8-16
Proposed and Cumulative Impacts to Covered Habitat from Future Facilities within Otay Ranch

Project	Permanent Impacts to Covered Habitat (acres)
Village Eleven	0.5
Village Two	0.1
Village Eight West	0.1
Village Nine	0.2
Village Three (proposed)	–
Village Eight East (proposed)	0.1
Village Ten (proposed)	5.1
Off Site	<0.1
Total	6.2

b. Adjacent Land Uses and Setback Criteria

All development located adjacent to the Preserve is required to prepare an Edge Plan (Section 7.2 of the RMP). The Preserve edge is a strip of land 100 feet wide that surrounds the perimeter of the Preserve; however, it is not part of the Preserve. Preserve Edge Plans have been prepared for each SPA Plan in consultation with a qualified biologist. These plans detail the uses allowed within the 100-foot Preserve edge, provide a list of plant species that are appropriate adjacent to the Preserve, and overlap with the proposed 100-foot fuel modification zone. These Preserve Edge Plans also analyze how each village complies with the Preserve adjacency guidelines from Section 7.5.2 of the Chula Vista MSCP Subarea Plan.

In addition, the RMP outlines eight specific setback criteria in the guidelines for Policy 9.8, which all boundary modifications must adhere by. The setback criteria is designed to provide a buffer between the development and special-status species and resources, including coastal sage scrub, California gnatcatcher, perennial (native) grassland, vernal pools, mulefat scrub, riparian woodlands, oak woodlands, and southern interior cypress forest. The Give/Take for the proposed Boundary Adjustment includes the following applicable resources: coastal sage scrub and chaparral, California gnatcatcher and cactus wren, and mulefat scrub. The guidelines for each of these resources are as follows:

1. Coastal sage scrub and chaparral shall be provided a 100-foot setback where interfacing with residences and a minimum of 50 feet where interfacing with commercial and industrial development, active park uses, and schools.
2. Coastal sage scrub habitat occupied by gnatcatcher and/or cactus wren shall be provided a setback no less than 100 feet determined in consideration of topography or other factors through additional study at the SPA level.
3. Mulefat scrub should be provided with a setback that is a minimum of 50 feet and a maximum of 100 feet wide, depending upon the quality of the habitat and its function within the matrix of the surrounding vegetation (e.g., corridor and foraging habitat) and the specific type of adjacent development.

The proposed project and associated Boundary Adjustment adhere to the setback criteria through compliance with RMP Policy 7.2 which requires a minimum 100-foot setback between development and the Preserve. The 100-foot Preserve Edge is not strictly an open space area but includes a number of facilities including a recreational community facilities (plantable retaining wall, village trail including fencing, interpretive and trail signage, landscaped lawn and planter areas, and benches), residential streets, canyon subdrains. Fencing prevents impacts resulting from the recreation uses and residential streets that are included within the 100-foot Preserve Edge. Lighting that may be located along the residential streets will be equipped with shields to prevent light from shining in the Preserve. The canyon subdrains are comprised of a concrete headwall, flow channel, and percolation area. The subdrains are designed to allow percolation of drainage runoff to present erosion impacts to the preserve. Because the proposed project provides a buffer of 100 feet between development and the Preserve edge, the setbacks prescribed by RMP Policy 9.8 are achieved (Mitigation Measures BIO11 and BIO16). Please refer to the village-specific Preserve Edge Plans for more detailed information regarding uses within the 100-foot Preserve buffer (Otay Ranch Company 2013a through 2013c).

c. HLIT Ordinance

A portion of the proposed project is located outside of the Otay Ranch boundary and is subject to the City of Chula Vista's HLIT Ordinance. These outside of Otay Ranch areas are all affiliated with Village Three North (Areas 1, 2 and 3). The outside of Otay Ranch impact area, as proposed, is consistent with City Planning Guidelines and does not conflict with the goals or standards of the City's MSCP Subarea Plan since most of the impacts are within the development area of the Outside of Otay Ranch areas and the balance are for the road improvements required for the extension of Main Street; however, compliance with the City's HLIT Ordinance will require conformance with several standard measures to address habitat loss.

Impacts to native upland vegetation communities and wetland habitats are considered significant under the City's HLIT Ordinance and require mitigation (MSCP Subarea Plan Tables 5-3 and 5-

6) (City of Chula Vista 2003). Vegetation communities considered sensitive under the City MSCP Subarea Plan are those listed as Tier I through Tier III, rare to common uplands, respectively, as well as wetlands. Significant impacts include non-native grassland (Tier III), coastal sage scrub (Tier II), broom baccharis scrub (Tier II), tamarisk scrub (Wetlands), cismontane alkali marsh (Wetlands), southern willow scrub (Wetlands) and disturbed southern willow scrub (Wetlands). Impacts to vegetation communities that are not considered significant include impacts to Tier IV habitats (other uplands) consisting of disturbed habitat and developed land on site. Impacts to areas subject to HLIT are summarized below in Table 5.8-17 and mitigated as described below. Findings are required for the impacts within these off-site areas as provided in Appendix E.

Table 5.8-17
Impacts to Off-Site Vegetation Communities and Land Cover Types

Out-side of Otay Ranch Area	Vegetation Community/Land Cover									Total Acres Acreage*
	Non-Sensitive Vegetation Communities/Land Covers		*Sensitive Vegetation Communities*							
	Developed	*Disturbed Habitat*	*Tamarisk Scrub*	*Broom Baccharis*	*Cismontane Alkali Marsh*	*Coastal Sage*	*Coastal Sage (disturbed)*	*Non-Native Grassland*	*Valley Needlegrass Grassland*	
1	–	0.8	–	–	–	0.8	–	–	–	1.6
1	–	–	–	–	–	5.3	–	–	–	5.3
2	0.1	–	–	–	–	0.3	–	–	0.1	0.4
3	2.1	0.1	0.8	0.2	0.2	0.7	<0.1	0.3	–	4.4
Total	2.2	0.9	0.8	0.2	0.2	7.1	<0.1	0.3	0.1	11.7

Impacts to jurisdictional wetlands and waters within the off-site Areas 1, 2, and 3 are subject to the HLIT Ordinance and MSCP siting criteria. These impacts are summarized in Table 5.8-18. Wetlands protection must be provided throughout the Subarea and an evaluation of wetlands avoidance and minimization is required. No net loss of wetlands must be achieved through compensatory mitigation. Impacts to the wetlands south of the existing alignment of Main Street are unavoidable because the project component is the widening of the road. Thus the impacts to the 0.98 acre of wetlands have been minimized as much as possible by keeping the road improvement within the existing footprint and adding on the minimal amount necessary to achieve the requirements of the roadway. For the impact to waters north of the existing Main Street, the waters impact cannot be avoided because the basin located in this property treats flows from Village Three North as well as surface runoff from Heritage Road and Main Street. A

basin must be located at this southwestern corner by Village Three North in order to receive runoff from the site. Placing a detention basin within the Takashimi property eliminated the need for an additional outfall to the Otay River at the mouth of Wolf Canyon which also would require a longer pipe to reach the river and would result in greater impacts. Thus the placement of the detention basin in this location serves multiple uses including Village Three North, Heritage Road and Main Street.

Table 5.8-18
Impacts to Jurisdictional Wetlands and Waters within Off-Site Areas

Outside of Otay Ranch Area	Wetlands Vegetation Community/Water Feature			
	Ephemeral Stream Channel	*Cismontane Alkali Marsh*	*Tamarisk Scrub*	
	ACOE/CDFW/RWQCB	*ACOE/CDFW/RWQCB*	*ACOE/CDFW/RWQCB*	Total
1	0.05	–	–	0.05
2	<0.01	–	–	<0.01
3		0.18	0.80	0.98
Total Project Jurisdictional Impacts	0.06	0.18	0.80	1.04

Impacts to special status plant species located in the off-site Areas 1, 2, and 3 are summarized in Table 5.8-19. For wildlife species, two locations of California gnatcatcher and one location of Belding's orange-throated whiptail will be impacted. There are no narrow endemic species located within the off-site Areas 1 or 3.

Table 5.8-19
Impacts to Special-Status Plant Species Located Off-Site

Outside of Otay Ranch Area	Location with respect to the Preserve	Common Name (Scientific Name)	Status	Impacts (estimated number of individuals)
1	Outside	California adolphia	CRPR 2.1	12
1	Outside	San Diego barrel cactus	CRPR 2.1, MSCP Covered	36
1	Outside	Orange-throated whiptail	None/CSC/MSCP	1
1	Outside	Coastal California gnatcatcher	FT, USBC/CSC/MSCP Covered	1
3	Inside	Coastal California gnatcatcher	FT, USBC/CSC/MSCP Covered	1

In addition to the species documented as being present within the impact area (Table 5.8-19), additional species are potentially present within the Auto Dismantler's area (Area 2) for which surveys could not be conducted. These potential species include: Otay tarplant, variegated dudleya, San Diego County viguiera, Palmer's grapplinghook, small-flowered morning glory, South Coast saltscale, and California boxthorn. Of these species, Otay tarplant and variegated Dudley are narrow endemic species.

Impacts to the wetlands south of the existing alignment of Main Street are unavoidable because the project component is the widening of the road; however, impacts have been minimized by keeping the road improvement within the existing footprint and adding on the minimal amount necessary to achieve the requirements of the roadway. Potential impacts to waters north of the existing Main Street, due to the location of a detention basin, are less significant than the alternative location on the Takashimi property. Potential impacts to special status plant species located in the off-site Areas 1, 2, and 3 could also occur. The proposed project would apply the HLIT Ordinance to those areas located outside of Otay Ranch, which specifically is Areas 1, 2, and 3. The proposed project will coordinate with the County for those areas located outside of Otay Ranch and within the County's jurisdiction. However, since impacts to native upland vegetation communities and wetland habitats are considered significant under the City's HLIT Ordinance, impacts would be **potentially significant** and mitigation would be required.

MSCP Preserve Boundary Adjustment

Pursuant to the Chula Vista MSCP Subarea Plan, the standard of review for the proposed Boundary Adjustment is one of "biological equivalency." As defined in Section 1.3 of the Chula Vista MSCP Subarea Plan:

> Biological Functional Equivalency – A modification to a Preserve boundary which results in a Preserve configuration with a biological value that is equal to or higher than the original Preserve configuration. The comparison of biological value is based on the "like or equivalent" exchange concept for biological factors identified in Section 5.4.2 of the MSCP Subregional Plan.

The following is a discussion and comparison of biological value of the proposed Boundary Adjustment, pursuant to the provisions of Section 5.4.2 of the MSCP Subregional Plan.

1. **Conserved Habitats.** Effects on significantly and sufficiently conserved habitats (i.e., the exchange maintains or improves the conservation, configuration, or status of significantly or sufficiently conserved habitats as defined in Section 4.2.4).

The exchange maintains or improves the conservation of conserved habitat. Overall, there is a net gain of Preserve acreage. There is a net take for the following vegetation communities/

land covers: non-native grassland, coastal sage scrub, and disturbed maritime succulent scrub. These losses are offset by a net gain for the following vegetation communities/land covers: disturbed coastal sage scrub, maritime succulent scrub, and disturbed land. The increase in preservation of maritime succulent scrub is especially important due to the overall rarity of the vegetation community and the use of this habitat by special-status species such as coastal cactus wren. Overall, there is a 4.1-acre gain of upland communities and a 3.6-acre gain in disturbed land covers. The net loss of 3.8 acres of coastal sage scrub and 0.2 acre of disturbed maritime succulent scrub is offset by the net gain of 1.6 acres of maritime succulent scrub and 8.8 acres of disturbed coastal sage scrub. Although the coastal sage scrub is lower in shrub cover and has non-native grass as a component, it is occupied by special-status species; therefore, increasing the amount of coastal sage scrub in the Preserve improves the conservation of covered species. Table 5.8-20 shows the acreage of each vegetation community or land cover type for each village affected by the proposed Boundary Adjustment, as well as the University Site and Lake Property.

Table 5.8-20
Otay Ranch University Villages
Proposed MSCP Preserve Boundary Adjustment–Give/Take Analysis

Vegetation Community/ Land Cover	Give/Take of MSCP Preserve for Boundary Adjustment				
	Village Three North/ Portion of Village Four (acres)	*Village Ten (acres)*	*University Site (acres)*	*Lake Property (acres)*	*Total (acres)*
Upland Scrub Vegetation Communities					
Coastal sage scrub	−1.0	−1.2	−34.7	+33.1	−3.8
Coastal sage scrub (disturbed)	−0.2	0.0	−2.5	+11.5	+8.8
Maritime succulent scrub	+1.1	−0.1	−<0.01	+0.6	+1.6
Maritime succulent scrub (disturbed)	−0.2	—	—	—	−0.2
Upland Scrub Subtotal	-0.3	-1.3	-37.2	+45.2	+6.4
Upland Grassland Vegetation Communities					
Non-native grassland	−0.5	—	−3.4	+1.6	−2.3
Disturbed or Developed Land Covers					
Disturbed land	−<0.01	—	−0.3	+3.9	+3.6
Total Give/Take	+4.2/-5.0	−1.3	−40.9	+50.7	+54.9/−47.2
Net acreage change	−0.8	−1.3	−40.9	+50.7	+7.7

Note: For Give/Take of MSCP Preserve, "+" denotes Give to the Preserve and "−" denotes Take from the Preserve.

The proposed Boundary Adjustment would result in the loss of undisturbed coastal sage scrub, disturbed maritime succulent scrub, and non-native grassland but will increase the amount of disturbed coastal sage scrub and maritime succulent scrub in the Preserve. The result of the Boundary Adjustment will be an overall gain of 7.7 acres to the Preserve, 6.4 acres of which consists of native scrub habitat.

Configuration. The configuration of the conserved habitat is equivalent or improved with the proposed Preserve Boundary Adjustment because the proposed Give Area A associated with Portion of Village Four increases the amount of habitat in Wolf Canyon and widens the Preserve at that location. In addition, Give Area B removes a large block of habitat from development and adds to the Preserve. This Give Area also provides a connectivity configuration of the habitat in the Preserve to other regional Preserve areas. Although Take Area B removes coastal sage scrub habitat from the Preserve, it eliminates the peninsula of development that juts into the Preserve, thus creating a lesser edge effect.

Status of significantly or sufficiently conserved habitat. The status of the proposed Give habitat includes conservation of Tier I habitat (i.e., maritime succulent scrub) and Tier II habitat (i.e., disturbed coastal sage scrub). Hence, the status of the conserved habitats is improved by providing equal or greater acreage of the sensitive habitats preserved under the MSCP.

2. **Covered Species.** Effects to covered species (i.e., the exchange maintains or increases the conservation of covered species).

The Give and Take of covered species is summarized in Figure 4-2 and Table 5.8-21. The occurrence of special-status plants is represented by surveys conducted over the past 2 years within Village Three North/Portion of Village Four and Village Ten and recorded in 2009 within the Lake Property (Give Area B). The data is represented by point records where the occurrence is of a single individual and as polygons when a population was recorded using GPS. For the special-status wildlife, surveys within Village Three North/Portion of Village Four and Village Ten were recorded during the past 2 years. The focused surveys for coastal California gnatcatcher were conducted in the Lake Property in 2008 and confirmed anecdotally in 2011. Figure 4-2 provides detailed records of the species surveys conducted for the University Villages.

Table 5.8-21
Summary of Give/Take for Covered Species for the University Villages

Give and Take within Boundary Adjustment Areas: Polygons and Points						
	Population (Polygons)			Population (Points)		
Species[a]	*Give*	*Take*	*Net*	*Give*	*Take*	*Net*
Plant Species						
Otay tarplant	+806	−107	+699	–	–	+699
San Diego barrel cactus	—	—	—	+65	−2	+63
Snake cholla	—	—	—	+20	–	+20

Table 5.8-21 (Continued)
Summary of Give/Take for Covered Species for the University Villages

Give and Take within Boundary Adjustment Areas: Polygons and Points						
	Population (Polygons)			Population (Points)		
Species[a]	*Give*	*Take*	*Net*	*Give*	*Take*	*Net*
Wildlife Species						
Coastal California gnatcatcher	—	—	—	+ Habitat occupied by 4 locations[b] Adds 10.4 acres of suitable habitat	− Habitat occupied by 3 locations[b] Removes 4.0 acres of suitable habitat	+ Net increase of 1 location Adds a net of 6.4 acres of suitable habitat
Coastal cactus wren	—	—	—	+ Habitat occupied by 1 location[b] Adds 1.6 acres of suitable habitat	No take of locations Removes 0.2 acre of suitable habitat	+ Habitat occupied by 1 location[b] Adds a net of 1.4 acres of suitable habitat
Southern California rufous-crowned sparrow	—	—	—	No addition of locations Adds 10.4 acres of suitable habitat	− Habitat occupied by 2 locations[b] Removes 4.0 acres of suitable habitat	− Habitat occupied by 2 locations[b] Adds a net of 6.4 acres of suitable habitat

[a] Wide-ranging species are not presented in this table (e.g., raptors, medium-sized mammals).
[b] Bird species are mobile and although these species were observed within specific boundaries, they utilize habitat in and around the Give/Take Areas where they were observed. For this reason, populations are represented as occupied habitat and territory locations and not specific points. In addition, although the focused survey may have only detected one individual, it is likely to be occupied by a pair. To account for this, the discussion is based on "locations" of special-status species and not pairs or individuals.

Otay Tarplant. Give Area A and Take Area A both contain populations of Otay tarplant (806 and 107 plants, respectively). Therefore, implementation of the Preserve Boundary Adjustment will result in a net addition of approximately 699 individuals of Otay tarplant to the Preserve. The proposed Preserve Boundary Adjustment provides for suitable habitat for this species and the species is documented within the proposed Give Areas.

San Diego Barrel Cactus. One barrel cactus was recorded within Give Area A and 65 individuals were observed within Give Area B. Two barrel cactus individuals were recorded within the Take Areas, one in Take Area A and one in Take Area B. The Preserve Boundary Adjustment will result in a net increase of 63 San Diego barrel cactus individuals within the Preserve. In addition, suitable habitat for this species will be included within the Preserve.

Snake Cholla. Twenty snake cholla (*Cylindropuntia californica* var. *californica*) were recorded within Give Area A. No snake cholla were recorded within the Take Areas; therefore, 20 snake cholla individuals will be preserved under the proposed Boundary Adjustment. In addition, suitable habitat for this species will be included within the Preserve.

Coastal California Gnatcatcher. Analysis of the species is based on suitable habitat and observed locations rather than on observation of pairs or individuals, which can vary from year to year. A total of three coastal California gnatcatcher locations were observed within Give Area A and one location was observed within Give Area B. The habitat within Give Area A does not include the full territory of all three locations of coastal California gnatcatcher; however, it does provide portions of the territory, and during the focused surveys, these birds were consistently observed at the locations shown. An additional four pairs of gnatcatcher were recorded within close proximity to Give Area B and would be expected to use the coastal sage scrub habitat within the Lake Property. Three coastal California gnatcatcher locations were observed within Take Area B and similar to the discussion above, these locations represent portions of territories for these pairs. Although habitat for three locations will be lost as a part of the Boundary Adjustment, habitat for four locations will be preserved. As such, the potential occupied habitat has a net increase by 6.4 acres. It is likely that this species utilizes the coastal sage scrub in and around the Take/Preserve boundary and although the Boundary Adjustment in Take Area B will result in reduced habitat for this species, the slopes of the Preserve contain additional habitat for this species. In addition, although the gain of coastal sage scrub vegetation associated with Give Area B is considered disturbed, this is still a net increase of habitat for gnatcatchers and the gnatcatchers within Give Area B were observed using the disturbed coastal sage scrub.

Coastal Cactus Wren. One coastal cactus wren location was detected within Give Area A and no locations were observed within any of the Take Areas. Therefore, the proposed Boundary Adjustment would result in a net increase of suitable habitat by 1.4 acres and area used by coastal cactus wren.

Southern California Rufous-Crowned Sparrow. Two Southern California rufous-crowned sparrow locations were observed within Take Area B. It is likely that this species utilizes the coastal sage scrub in and around the Take/Preserve boundary and although the Boundary Adjustment in this area will result in reduced habitat for this species, the slopes of the Preserve contain additional habitat for this species. There is a net increase in suitable habitat for this species.

Summary of MSCP Equivalency Finding "Effects on Covered Species." Because wildlife are mobile, the species recorded would not necessarily be preserved or taken, but this analysis demonstrates that the average net effect of the proposed Boundary Adjustment would be to preserve a roughly equivalent number and variety of plant and wildlife species to the number and variety of species that would be taken. The proposed Preserve Boundary Adjustment would remove some coastal sage scrub and non-native grassland vegetation and add disturbed coastal sage scrub and disturbed lands to the Preserve. The result of the Boundary Adjustment

is a net increase of 7.7 acres: 6.4 acres of native scrub communities and a net 1.3 acres of disturbed and non-native land covers.

From a covered species habitat use perspective, the proposed adjustment would result in an increase of suitable habitat for covered species in the form of disturbed coastal sage scrub. The areas mapped as disturbed coastal sage scrub have a higher content of non-native grass species and generally lower shrub cover; however, they still function as suitable habitat for special-status species and coastal California gnatcatcher was observed within the disturbed coastal sage scrub. Quino checkerspot butterfly was observed basking on the disturbed land as represented by dirt roads. While this is not their suitable nectar or host plant habitat, they will use the open areas in territory defense. The proposed Boundary Adjustment will also result in the increase of coastal cactus wren territories. In addition, the proposed adjustment will ensure that populations of special-status plant species are included within the Preserve.

The proposed project will adhere to the MSCP Subarea Plan's requirement of a soil salvage plan, which states: "As a means of reducing impacts to sensitive species and habitats from development allowed by the Subarea Plan, the City will continue its practice of requiring soil, seed and plant salvage on a project-by-project basis. Project review and CEQA analysis will identify appropriate salvage opportunities. Mitigation measures and conditions of project approval would specify the soils, seed and plant material to be salvaged, identify the procedures for salvage, and specify locations and time frames for use of material, as appropriate" (City of Chula Vista 2003; BIO12). This requirement will be a benefit for the covered species for which it is required including Otay tarplant.

In summary, the proposed Boundary Adjustment results in equal or improved conservation of covered species, an increase in habitat for covered species, and an increase in conservation of a Narrow Endemic Species (Otay tarplant and snake cholla).

3. **Habitat Linkages and Function of Preserve Areas.** Effects on habitat linkages and function or preserve areas (i.e., the exchange maintains or improves a habitat linkage or wildlife corridor).

Wolf Canyon, Salt Creek, and the Otay River Valley are geographically depicted on the City MSCP Subregional Plan Generalized Core Biological Resource Areas and Linkages Map (City of Chula Vista 2003, Figures 1-1 through 3-2); however, they are not identified as a regional linkage between core biological areas. These corridors are dominated by wetlands and riparian habitat with associated upland buffer areas.

In Wolf Canyon, Give Area A is along the eastern and western edges of Wolf Canyon, adjacent to Village Three North/Portion of Village Four. Take Area A would smooth out the existing MSCP boundary, which results in fewer linear feet of Preserve interface and reduced potential

edge effects, which improves the function of Preserve areas. Edge effects are especially important to species such as birds, which often suffer from predation from homeowners' pets. Edge effects can also be detrimental to special-status plant species, which can be outcompeted by invasive plants from developed areas. Improving the edge-to-area ratio of a Preserve improves the protection for the special-status species occurring within the Preserve. The proposed Boundary Adjustment results in little change to the width of Wolf Canyon; it is still maintained at a width varying from 1,440 to 2,850 feet of native habitat (Figure 4-3).

The Otay River Valley and the sensitive resources and important wildlife movement function of the River Valley are not impacted by the proposed Boundary Adjustment. The closest location of the Boundary Adjustment area is approximately 800 feet from the Otay River in the Village Three North site and over 2,000 feet away in the Village Ten site.

Salt Creek Canyon, where Take Area B is located, once served as a wildlife connection between the San Miguel Mountains and the Otay River Valley (Ogden 1992). However, development to the north of Salt Creek Canyon has restricted wildlife movement between the San Miguel Mountains and the Otay River Valley along this corridor. Instead, this canyon is described as "a habitat cul-de-sac which includes a regional corridor for gnatcatcher and cactus wren" (Ogden 1992). The mouth of Salt Creek is considered an integral corridor that allows for movement of these two bird species to the Otay River Valley (Ogden 1992). Although Take Area B will remove habitat along the upper slopes of the Preserve, the Salt ~~Creek Preserve~~Otay Ranch, which is the primary movement corridor in this area, will not be impacted. Wildlife species that currently utilize the slopes within Take Area B are expected to continue to utilize the open space on the slopes within the ~~Salt Creek~~Otay Ranch Preserve (approximately 500 feet in width). Take Area B will remove a strip of habitat varying from 75 to approximately 300 feet. But this is replaced by habitat within Give Area B that is up to 450 feet in width. The Give Area B will provide equivalent habitat within this portion of the Preserve and the corridor width will be maintained at a minimum of 900 feet and exceeding 1,500 feet. Therefore, the movement linkage for bird species within the ~~Salt Creek~~Otay Ranch Preserve will be preserved.

In addition, the acreage in Give Area B will preserve the wildlife connection between Otay River Valley, Salt Creek, Lower Otay Lake, and ultimately Sweetwater. The addition of Give Area B will essentially provide a complete Preserve area from the Preserve boundary east of Village Ten to the edge of Lower Otay Lake. The connection north of Give Area B is unaffected and it maintains the connection to the archipelago of coastal sage scrub south of the Olympic Training Center, as described in the University Redesign (City of Chula Vista 2003). Give Area B then adds an additional connection along the boundary of Otay Ranch with the City of San Diego Cornerstone Lands. Give Area B provides a connection from the

eastern slope of Salt Creek to the coastal sage scrub habitat around the southern portion of Lower Otay Lake (Figure 4-3).

The proposed Boundary Adjustment would result in minor changes to the Wolf Canyon wildlife corridor and would maintain the connectivity for special-status and focal wildlife species between Salt Creek, the Otay River Valley, Lower Otay Lake, and surrounding open space; thus, Give Area B makes a substantial contribution to habitat connectivity.

4. **Preserve Configuration and Management.** Effects on preserve configuration and management (i.e., the exchange results in similar or improved management efficiency and/or protection for biological resources).

Similar or Improved Management Efficiency. As part of the Otay Ranch RMP, Preserve lands are required to be dedicated to the Otay Ranch Preserve Owner/Manager. Ongoing funding for Preserve management is assured through an existing Community Facilities District within Otay Ranch. This Preserve management funding and maintenance program is not altered by the Boundary Adjustment.

The result of the proposed Boundary Adjustment is an overall reduced edge effect, especially near the Lower Otay Lake (Give Area B), where a large area of developable land will be added to the Preserve. The total reduction in edge, as measured by length of boundary between the Preserve and development, is 3,889 linear feet. That reduction in edge means there is less Preserve adjacent to Development Areas, which reduces edge effects, such as invasive plants, trash, human intrusion, and access to homeowners' dogs and cats, which prey on wildlife. Reducing the potential for edge effects would in turn reduce management challenges and expenses for implementing edge effect control measures. Adjusting the boundary along Salt Creek Canyon (Take Areas B and C) eliminates the peninsula of development that juts into the Preserve, thus creating a lesser edge effect. No wetlands or waters were mapped within Take Area B; therefore, converting this area to developable land will not directly impact any downstream features.

Although the proposed Boundary Adjustment in Wolf Canyon will remove 0.8 acre from a portion of the Preserve, the Take is concentrated along the interface of the Preserve and development boundary. The adjustment lessens the edge effects by smoothing out the boundary in this area, and the Give increases the native habitat within the southern part of Portion of Village Four. The combination of Give and Take along Wolf Canyon reduces the edge by 205 linear feet. The Give along the Portion of Village Four, while it does increase the edge, contributes a very valuable habitat type composed of maritime succulent scrub.

Protection for Biological Resources. The proposed Boundary Adjustment adds additional acreage to the area near Lower Otay Lake (Give B) that is composed of high-quality habitat.

Although Give B contains disturbed land, the disturbed land is composed of dirt roads, which will not need to be treated or maintained as a part of the Preserve. The majority of Give B contains coastal sage scrub habitat, and although a portion is disturbed, it stills functions as important wildlife habitat and is occupied by coastal California gnatcatcher. No restoration is required for the habitat to function for wildlife use because it is currently used by coastal California gnatcatcher. Overall, the proposed Boundary Adjustment reduces coastal sage scrub within the Preserve by 3.8 acres, but increases the amount of disturbed coastal sage scrub by 8.8 acres. While the reconfigured Preserve in Village Ten and the University Site (Take Areas B and C) would result in development pushing east into the Preserve, wildlife movement will still be able to take place within the regional movement corridor in the Otay River Valley and the Salt Creek drainage. A movement linkage will be retained on the undisturbed slopes south of Village Ten to promote movement of upland species. The movement linkage for avian species along the upland slopes and within Salt Creek will also be preserved. This slope is approximately 500 feet wide from the edge of Take Area C to the bottom of the drainage. In addition, the acreage in Give Area B will preserve the wildlife connection between Otay River Valley, Salt Creek, and Lower Otay Lake.

As described in Chapter 2.0, Effects to Covered Species, covered species preservation is improved with the proposed Preserve Boundary Adjustment. There is an addition of coastal cactus wren occupied habitat and an addition of documented mapped occurrences of Otay tarplant, San Diego barrel cactus, and snake cholla. This provides additional and improved protection of biological resources.

5. **Ecotones or Other Conditions Affecting Species Diversity.** Effects on preserve configuration and management (i.e., the exchange results in similar or improved management efficiency and/or protection for biological resources)

The proposed Boundary Adjustment results in similar topographic and structural diversity as the existing Preserve. The general consideration for this issue is that the components of the Boundary Adjustment are all within a confined geographical area, with variation in ecotone elements and habitat diversity throughout. The Take in Village Three North is along slopes adjacent to Wolf Canyon, and the Give in Village Three North/Portion of Village Four is also along slopes adjacent to Wolf Canyon. Likewise, Take Areas B and C are along the edges of Salt Creek, as is Give Area B. All of the habitat types included in the Give and Take Areas are upland communities and hence there is little ecotonal condition involved. Therefore, the proposed Boundary Adjustment would not result in a significant overall difference in ecotone considerations.

6. **Species of Concern not on the Covered Species List.** Effects to species of concern not on the covered species list (i.e., the exchange does not significantly increase the

likelihood that an uncovered species will meet the criteria for listing under either the federal or state Endangered Species Acts).

Based on biological surveys, three species of concern not on the covered Species List were identified within the proposed Preserve Boundary Adjustment area: San Diego County viguiera, south coast saltscale, and San Diego black-tailed jackrabbit. In Give Area B, there is a population of San Diego County viguiera, as well as a few individuals of south coast saltscale. Nine San Diego County viguiera are located within Take Area B. Two black-tailed jackrabbits were identified during 2011 focused surveys in Take Area B. The Give and Take of special-status species that are not covered under the MSCP Subarea Plan is summarized in Table 5.8-22 and shown along with the covered species on Figure 4-2 in the MSCP Subarea Plan.

Table 5.8-22
Summary of Give/Take for Non-Covered Special-Status Species for the University Villages

Give and Take within Boundary Adjustment Areas: Polygons and Points						
	Polygons (Acres)			*Points*		
*Species**	*Give*	*Take*	*Net*	*Give*	*Take*	*Net*
Plant Species						
San Diego County viguiera	—	−166	−166	+40	−9	−135
South coast saltscale	—	—	—	+7	–	+7
Wildlife Species						
San Diego black-tailed jackrabbit	—	—	—	—	−2	−2

* Wide-ranging species are not presented in this table (e.g., raptors, medium-sized mammals).

San Diego County Viguiera. Although the proposed Preserve Boundary Adjustment would result in a loss of approximately 135 individuals, this loss does not significantly increase the likelihood that this species will meet the criteria for listing under either the federal or state Endangered Species Acts. San Diego County viguiera has a California Rare Plant Ranking (CRPR) of 4.2, which means that this species is of limited distribution, but is not considered rare, and is only fairly threatened. Additionally, there are thousands of individuals and acres of San Diego County viguiera-dominated habitat within the Village Three North/Portion of Village Four, Village Eight East, and Village Ten Preserve areas. There are also many individuals of the plant species located within Give Area B, and this area provides suitable habitat for the species; therefore, the removal of 135 individuals from the Preserve will not substantially affect long-term survival of the species.

South Coast Saltscale. The proposed Boundary Adjustment will increase the amount of south coast saltscale within the Preserve by seven individuals. In addition, the proposed Boundary Adjustment will result in the preservation of suitable habitat for this species.

San Diego Black-Tailed Jackrabbit. Because wildlife are mobile, the black-tailed jackrabbits recorded would not necessarily be preserved or taken, but this analysis demonstrates that the average net effect of the proposed Boundary Adjustment would be a reduction in the locations recorded for this species in Take Area B. Both occurrences of black-tailed jackrabbits are located along the Take/Preserve boundary interface and therefore it is likely that this species utilizes habitat in and around the Take/Preserve boundary. Although the proposed Boundary Adjustment in this area will result in reduced habitat for this species in this area, the adjacent slopes of the Preserve contain additional habitat for this species. In addition, Give Area B will result in the preservation of suitable habitat for this species, and the species has been documented within the ~~Salt Creek~~Otay Ranch Preserve area. Therefore, the proposed Boundary Adjustment will not increase the likelihood that this species will meet the criteria for listing under either the federal or state Endangered Species Acts.

Summary of Boundary Adjustment. The proposed Preserve boundary adjustment results in equal, or improved conservation of covered species, an increase in habitat for covered species, and an increase in conservation of a narrow endemic species. The proposed Boundary Adjustment would result in an increase of Preserve acreage (7.7 acres), and improve Preserve design by resulting in less edge and, hence, fewer edge effects. The proposed adjustment does not propose to affect Preserve management or wildlife movement: wildlife will continue to be able to move within the Otay River Valley, the slopes of upland habitat north of the River Valley, Salt Creek, and the regional area by movement east to additional Preserve area east of Lower Otay Lake. The proposed Preserve boundary adjustment meets the requirements of the MSCP Subregional Plan for adjustments to the boundary of the Preserve under the "like or equivalent" exchange concept and the direct and permanent impacts to the Preserve would be **less than significant**.

G. Be inconsistent with General Plan biological resource policies thereby resulting in a significant physical impact.

City of Chula Vista General Plan

Appendix B evaluates the consistency of the proposed project with applicable General Plan policies associated with biological resources. Goal E 1 and policy E 1.1 are in place to conserve the City of Chula Vista's sensitive biological resources and implement the Chula Vista MSCP Subarea Plan. The proposed project would conserve sensitive biological resources to the extent feasible, as well as implement minimization and avoidance measures included in the Chula Vista MSCP Subarea Plan. As shown in Appendix B, the proposed project would be consistent with the General Plan policies that are associated with biological resources and impacts would be **less than significant**.

Otay Ranch General Development Plan

Appendix B provides a comparison of the proposed project with the applicable Otay Ranch GDP biological resources policies. Consistent with the Otay Ranch GDP, prior to recordation of each Final Map, land shall be conveyed within the Otay Ranch Preserve to the Otay Ranch Preserve Owner Manager or its designee at a ratio of 1.188 acres for each acre of development area, as defined in the Otay Ranch RMP. Also Consistent with the Otay Ranch GDP, the portion of the proposed project designated Open Space Preserve and conveyed into the Preserve would be retained as open space and maintained to protect environmentally sensitive land in accordance with the RMP and MSCP. As demonstrated in Appendix B, the proposed project is consistent with the applicable Otay Ranch GDP policies related to biological resources and impacts would be **less than significant**.

5.8.6 Cumulative Impacts

Implementation of the proposed project would contribute to the cumulative loss of biological resources within Otay Ranch and City of Chula Vista Subarea. Compliance with the MSCP Subarea Plan conditions for coverage, the Otay Ranch RMP, and conveyance of compensatory mitigation lands to the Preserve Owner Manager (POM) and compensatory wetland mitigation required by state and federal wetlands permitting agencies will ensure long-term sustainability of covered Species and their associated habitats.

Both the RMP and the City of Chula Vista MSCP Subarea Plan provide consideration for and mitigation of cumulative impacts to biological resources. Although portions of the project would designate open space that is in addition to existing planned Preserves, encroachment into both the RMP and MSCP Subarea Plan Preserves requires a demonstration that the modified Preserve would provide for an equal or higher biological value. As noted in Section 5.8.5, the proposed reconfiguration of the Preserve provides for an equivalent biological value to the original Preserve, and therefore, significant cumulative impacts related to losses to habitats and species would be **less than significant** through the project's implementation of the Boundary Modification to the RMP and Boundary Adjustment to the MSCP Subarea Plan.

5.8.7 Level of Significance Prior to Mitigation

Prior to mitigation implementation of the proposed project would result in significant direct and indirect impacts to "covered" sensitive plant species include the following: Otay tarplant, variegated dudleya, and San Diego barrel cactus. Otay tarplant and variegated dudleya are identified in the MSCP Subarea Plan as narrow endemics. Significant impacts to non-covered species include California adolphia, south coast saltscale, San Diego marsh-elder, singlewhorl burrobush, and Robinson's pepper grass. Implementation of the proposed project would result

in the direct loss of habitat for all of the special-status animals and is considered **potentially significant** prior to mitigation.

Long-term indirect impacts to special-status wildlife species would also occur as a result of the proposed project. Impacts would consist of lighting, human activity in the Preserve, noise, and domestic animal predation. Indirect impacts to special-status wildlife species are considered **potentially significant** prior to mitigation.

Prior to mitigation, sensitive vegetation communities to be permanently impacted include non-native grassland, freshwater marsh, cismontane alkali marsh, disturbed cismontane alkali marsh, coastal sage scrub, disturbed coastal sage scrub, broom baccharis scrub, maritime succulent scrub, disturbed maritime succulent scrub, mulefat scrub, southern mixed chaparral, tamarisk scrub, and southern willow scrub. Impacts to sensitive vegetation communities would be **potentially significant** prior to mitigation.

Impacts to jurisdictional waters and wetlands would occur as a result of the proposed project. Impacts to jurisdictional waters total 0.56 acre and are all permanent. Impacts to jurisdictional wetlands total 1.03 acres, 0.05 acre of which includes a compatible use while the remaining acres are permanently impacted. A total of 1.35 acres of jurisdictional areas under the ACOE, RWQCB, and CDFW would be impacted. Impacts to jurisdictional areas under CDFW only are 0.23 acre. Impacts to ephemeral and intermittent unvegetated waters and jurisdictional wetlands are considered **potentially significant** prior to mitigation.

Table 5.8-23 summarizes the proposed projects total impacts to vegetation communities/land covers, special-status plant species, special-status wildlife species, and jurisdictional waters.

Table 5.8-23
Summary of Total Impacts

Resource Impacted	Development Area Impacts			
	SPA Plan Development Area	*Future Facilities Within the Preserve*	*Planned Facilities Within the Preserve*	*Total Impacts*
Vegetation Communities/Land Covers (acres)	*717.5*	*6.1*	*12.0*	*735.6*
Agriculture	294.0	0.10	3.3	296.6
Broom baccharis scrub	<0.10 (0)	0.00	0.0	<0.10 (0)
Broom baccharis scrub (disturbed)	0.40	<.1 (0)	0.0	0.4
Cismontane alkali marsh	0.10	0.00	0.0	0.10
Cismontane alkali marsh (disturbed)	0.20	0.00	0.0	0.20
Coastal sage scrub	71.80	0.30	2.5	74.60
Coastal sage scrub (disturbed)	32.30	0.10	0.5	32.90
Developed	7.1	0.00	2.9	10.00
Disturbed land	7.70	0.4	0.8	8.9

Table 5.8-23 (Continued)
Summary of Total Impacts

Resource Impacted	Development Area Impacts			
	SPA Plan Development Area	*Future Facilities Within the Preserve*	*Planned Facilities Within the Preserve*	*Total Impacts*
Freshwater marsh	0.00	<0.1 (0)	0.0	<0.1 (0)
Maritime succulent scrub	8.10	0.00	0.6	8.70
Maritime succulent scrub (disturbed)	0.40	0.00	0.2	0.60
Mulefat scrub	0.30	0.00	0.0	0.30
Non-native grassland	294.70	5.10	1.2	301.00
Southern mixed chaparral	<0.1 (.1)			<0.1 (.1)
Southern willow scrub	0.20	0.00	0.00	0.20
Tamarisk scrub	0.1	<0.1 (.1)	0.00	0.20
Special-Status Plant Species (individuals)	*11,547*	*0*	*439*	*11,986*
California adolphia *(Adolphia californica)*	1	0	0	1
California box-thorn *(Lycium californicum)*	57	0	13	70
Otay tarplant *(Deinandra conjugens)*	3,961	0	41	4,002
Palmer's grapplinghook *(Harpagonella palmeri)*	20	0	0	20
Robinson's pepper grass *(Lepidium virginicum* var. *robinsonii)*	50	0	10	60
San Diego barrel cactus *(Ferocactus viridescens)*	146	0	65	211
San Diego County viguiera *(Bahiopsis (=Viguiera) laciniata)*	7,057	0	310	7,367
Singlewhorl burrobrush *(Ambrosia monogyra)*	48	0	0	48
Small-flowered morning glory *(Convolvulus simulans)*	17	0	0	17
South coast saltscale *(Atriplex pacifica)*	15	0	0	15
Southwestern spiny rush *(Juncus acutus* ssp. *leopoldii)*	75	0	0	75
Variegated dudleya *(Dudleya variegata)*	100	0	0	100
Special-Status Wildlife Species (individuals)	*68*	*0*	*0*	*68*
California Horned Lark *(Eremophila alpestris actia)*	10	0	0	10
Coastal Cactus Wren *(Campylorhynchus brunneicapillus sandiegensis)*	1	0	0	1
Coastal California Gnatcatcher *(Polioptila californica californica)*	16	0	0	16
Cooper's Hawk *(Accipiter cooperii)*	1	0	0	1
Grasshopper Sparrow *(Ammodramus savannarum)*	8	0	0	8
Loggerhead Shrike *(Lanius ludovicianus)*	0	0	0	0
Northern Harrier *(Circus cyaneus)*	6	0	0	6
Orange-Throated Whiptail *(Aspidoscelis hyperythra)*	0	0	0	0
Peregrine Falcon *(Falco peregrinus anatum)*	1	0	0	1
San Diego Black-Tailed Jackrabbit *(Lepus californicus bennettii)*	11	0	0	11
Southern California Rufous-Crowned Sparrow *(Aimophila ruficeps canescens)*	0	0	0	0

Table 5.8-23 (Continued)
Summary of Total Impacts

Resource Impacted	Development Area Impacts			
	SPA Plan Development Area	*Future Facilities Within the Preserve*	*Planned Facilities Within the Preserve*	*Total Impacts*
White-Tailed Kite *(Elanus leucurus)*	14	0	0	14
Jurisdictional Wetlands and Waters (acres)	*1.52*	*0.06*	*0.00*	*1.58*
Cismontane alkali marsh	0.12	0.00	0.00	0.12
Disturbed cismontane alkali marsh	0.18	0.00	0.00	0.18
Ephemeral drainage	0.47	0.01	0.00	0.48
Freshwater marsh	0.00	0.03	0.00	0.03
Intermittent stream channel	0.07	0.00	0.00	0.07
Mulefat scrub	0.34	0.00	0.00	0.34
Southern willow scrub	0.17	0.00	0.00	0.17
Tamarisk scrub	0.17	0.02	0.00	0.19

5.8.8 Mitigation Measures

The following mitigation measures address the proposed project's significant effects on special-status species, special-status vegetation, and jurisdictional resources. With implementation of the proposed mitigation, the identified impacts will be reduced to less than significant. Impacts for biological resources inside the Preserve are addressed through the MSCP Boundary Adjustment, discussed in Section 4.

Special-Status Vegetation

MM BIO-1 Prior to the approval of the first Final Map for the project, the Project Applicant shall coordinate with the City of Chula Vista (City) Engineer and annex the project area within the Otay Ranch Preserve Community Facilities District No. 97-2.

Prior to the recordation of each Final Map, the Applicant shall convey land within the Otay Ranch Preserve to the Otay Ranch Preserve Owner/Manager (POM) or its designee at a ratio of 1.188 acres for each acre of "Developable Area" as defined by the RMP. Access for maintenance purposes shall also be conveyed to the satisfaction of the POM. Each tentative map shall be subject to a condition that the Applicant shall execute a maintenance agreement with the POM stating that it is the responsibility of the Applicant to maintain the conveyed parcel until the Preserve CFD has generated sufficient revenues to enable the POM to assume maintenance responsibilities. The Applicant shall maintain and manage the offered conveyance property consistent with the RMP Phase 2 until the Preserve

CFD has generated sufficient revenues to enable the POM to assume maintenance and management responsibilities.

Prior to the POM's formal acceptance of the conveyed land in fee title, the Project Applicant shall prepare, to the satisfaction of the POM, Area Specific Management Directives (ASMDs) for the associated conveyance areas. The ASMDs shall incorporate the guidelines and specific requirements of the Otay Ranch RMP plans and programs, management requirements of Table 3-5 of the MSCP Subregional Plan, and information and recommendations from any relevant special studies. Guidelines and requirements from these documents shall be evaluated in relationship to the Preserve configuration and specific habitats and species found within the associated conveyance areas and incorporated into the ASMDs to the satisfaction of the POM.

MM BIO-2 Prior to the issuance of any land development permits that impact maritime succulent scrub, including clearing and grubbing or grading permits, the Project Applicant shall prepare a restoration plan to restore impacts to maritime succulent scrub at a 1:1 ratio pursuant to the Otay Ranch RMP. A total of 5.5 acres will require restoration. The maritime succulent scrub restoration shall be prepared by a City-approved biologist and to the satisfaction of the Development Services Director (or their designee) pursuant to the Otay Ranch RMP restoration requirements. The restoration plan shall include, at a minimum, an implementation strategy; species salvage and relocation; appropriate seed mixtures and planting method; irrigation; quantitative and qualitative success criteria; maintenance, monitoring, and reporting program; estimated completion time; and contingency measures. The Project Applicant shall also be required to implement the revegetation plan subject to the oversight and approval of the Development Services Director (or their designee).

MM BIO-3 Prior to issuance of land development permits, including clearing, grubbing, grading and construction permits for the Future and Planned Facilities associated with Village Ten, the Project Applicant shall provide a revegetation plan for temporary impacts to 0.3 acres of coastal sage scrub habitat. The revegetation plan must be prepared by a qualified City-approved biologist familiar with the City's MSCP Subarea Plan and must include, but not be limited to, an implementation plan; appropriate seed mixtures and planting method; irrigation method; quantitative and qualitative success criteria; maintenance, monitoring, and reporting program; estimated completion time; and contingency measures. The Project Applicant shall be required to prepare and implement the revegetation plan subject to the oversight and approval of the Development Services Director (or their designee).

MM BIO-4 Prior to issuance of land development permits, including clearing, grubbing, grading, and/or construction permits for any areas adjacent to the preserve and the off-site facilities located within the preserve, the Project Applicant shall provide written confirmation that a City-approved biological monitor has been retained and shall be on site during clearing, grubbing, and/or grading activities. The biological monitor shall attend all pre-construction meetings and be present during the removal of any vegetation to ensure that the approved limits of disturbance are not exceeded and provide periodic monitoring of the impact area including, but not limited to, trenches, stockpiles, storage areas and protective fencing. The biological monitor shall be authorized to halt all associated project activities that may be in violation of the City's MSCP Subarea Plan and/or permits issued by any other agencies having jurisdictional authority over the project.

Before construction activities occur in areas containing sensitive biological resources within the off-site facilities area, all workers shall be educated by a City-approved biologist to recognize and avoid those areas that have been marked as sensitive biological resources.

MM BIO-5 Prior to issuance of grading permits in portions of the SPA Plan areas that are adjacent to the Preserve, the Project Applicant shall install fencing. Prior to issuance of land development permits, including clearing, grubbing, grading and/or construction permits, the Project Applicant shall install fencing in accordance with Chula Vista Municipal Code (CVMC) 17.35.030. Prominently colored, well-installed fencing and signage shall be in place wherever the limits of grading are adjacent to sensitive vegetation communities or other biological resources, as identified by the qualified monitoring biologist. Fencing shall remain in place during all construction activities. All temporary fencing shall be shown on grading plans for areas adjacent to the preserve and for all off-site facilities constructed within the preserve. Prior to release of grading and/or improvement bonds, a qualified biologist shall provide evidence that work was conducted as authorized under the approved land development permit and associated plans.

MM BIO-6 Prior to issuance of land development permits, including clearing, grubbing, grading, and construction permits, the following notes shall be included on the applicable construction plans to the satisfaction of the Development Services Director (or their designee):

- A qualified biologist shall be on site to monitor all vegetation clearing and periodically thereafter to ensure implementation of appropriate resource protection measures.

- Dewatering shall be conducted in accordance with standard regulations of the RWQCB. A permit to discharge water from dewatering activities will be required. This will minimize erosion, siltation, and pollution within sensitive communities.
- During construction, material stockpiles shall be placed such that they cause minimal interference with on-site drainage patterns. This will protect sensitive vegetation from being inundated with sediment-laden runoff.
- Material stockpiles shall be covered when not in use. This will prevent fly-off that could damage nearby sensitive vegetation communities.
- Graded area shall be periodically watered to minimize dust that may affect adjacent vegetation.

MM BIO-7 Prior to issuance of any land development permits, including clearing or grubbing and grading and/or construction permits, the project will be required to obtain a HILT Permit pursuant to Section 17.35 of the Chula Vista Municipal Code for impacts to Chula Vista MSCP Tier I, II, and II vegetation communities as shown below in Tables 5.8-24 and 5.8-25 and in accordance with Table 5-3 of the City of Chula Vista MSCP Subarea Plan. These impacts are due to the proposed development and are not associated with Planned or Future Facilities. Mitigation for off-site impacts outside of Otay Ranch will be in accordance with the City of Chula Vista MSCP Subarea Plan and the City's Habitat Loss and Incident Take (HLIT) Ordinance and as provided in the HLIT Findings. Mitigation for impacts associated with the landfill (off-site Area 5) is not required.

Prior to issuance of any land development permits, the Applicant shall mitigate for direct impacts pursuant to Section 5.2.2 of the City's MSCP Subarea Plan. In compliance with the City's MSCP Subarea Plan, the Applicant shall secure mitigation credits within a City/Wildlife Agency-approved Conservation Bank or other approved location offering such credits consistent with the ratios specified in Tables 5.8-24 and 5.8-25.

The Applicant shall be required to provide verification of purchase to the City, prior to issuance of any land development permits.

In the event that a Project Applicant is unable to secure mitigation through an established mitigation bank approved by the City and Wildlife Agencies, the Project Applicant shall secure the required mitigation through the conservation of an area containing in-kind habitat within the City's MSCP Subarea Plan or MSCP

Planning Area in accordance with the mitigation ratios contained in Table 5-3 of the City's MSCP Subarea Plan and subject to Wildlife Agency concurrence.

Table 5.8-24
Mitigation for Permanent Impacts to Upland Vegetation Outside of Otay Ranch (HLIT)

Off-Site Area	Ownership	Vegetation Community	Tier	Permanent Impacts (acres)	Location of Impact	Mitigation Ratio	Mitigation Required (acres)
1	Takashima	Coastal Sage Scrub	II	0.8	Inside Preserve	1.5:1	1.2
		Coastal Sage Scrub	II	5.3	Outside Preserve	1:1	5.3
2	Auto Dismantler[1]	Coastal Sage Scrub	II	0.3	Outside Preserve	1:1	0.3
		Valley Needlegrass grassland	I	0.1	Outside Preserve	1:1	0.1
3	City of Chula Vista	Broom Baccharis Scrub	II	0.2	Inside Preserve	1.5:1	0.3
		Cismontane Alkali Marsh	I	0.2	Inside Preserve	1.5:1	0.3
		Coastal Sage Scrub	II	0.7	Inside Preserve	1.5:1	1.1
		Disturbed Coastal Sage Scrub	II	0.1	Inside Preserve	1.5:1	0.2
		Non-Native Grassland	III	0.3	Inside Preserve	1:1	0.3

[1] Mapping was unable to be conducted on this property. Impacts and mitigation will be based on updated information determined within one year of construction as stated in Section 5.1.2.

Note: Tiers and Mitigation Ratios are in accordance with the City of Chula Vista MSCP Subarea Plan's HLIT Upland Habitat Mitigation Ratios. No mitigation is required for Tier IV habitat types (i.e., non-sensitive vegetation communities and land covers including disturbed land, ornamental, or developed land). It is assumed that mitigation will be located inside the Preserve. Mitigation outside of the Preserve (i.e., Chula Vista MSCP Subarea Plan or Planning Area boundary) will require increased mitigation per Table 5-3.

Table 5.8-25
Mitigation for Impacts to Wetlands Outside of Otay Ranch (HILT)

Outside of Otay Ranch Area	Wetlands Vegetation Community/Water Feature			Mitigation Ratio	Mitigation Required
	Ephemeral Channel	*Cismontane Alkali Marsh*	*Tamarisk Scrub*		
1	0.05			1:1 to 2:1	0.05 to 0.10
2	<0.01			1:1 to 2:1	<0.01 to 0.01
3		*0.18*	*0.80*	*1:1 to 2:1*	***0.98 to 1.96***

Prior to issuance of any land development permit, and to the satisfaction and oversight of the City's Development Services Director (or their designee), the Applicant shall secure the parcel(s) that will be permanently preserved for in-kind habitat impact mitigation, prepare a long-term Management and Monitoring Plan (MMP) for the mitigation area, secure an appropriate management entity to ensure

long-term biological resource management and monitoring of the mitigation area is implemented in perpetuity, and establish a long-term funding mechanism for the management and monitoring of the mitigation area in perpetuity.

The long-term MMP shall provide management measures to be implemented to sustain the viability of the preserved habitat and identify timing for implementing the measures prescribed in the MMP. The mitigation parcel shall be restricted from future development and permanently preserved through the recordation of a conservation easement or other mechanism approved by the Wildlife Agencies as being sufficient to insure that the lands are protected in perpetuity. The conservation easement or other mechanism approved by the Wildlife Agencies shall be recorded prior to issuance of any land development permits.

The Project Applicant shall be responsible for maintaining the biological integrity of the mitigation area and shall abide by all management and monitoring measures identified in the MMP until such time as the established long-term funding mechanism has generated sufficient revenues to enable a City-approved management entity to assume the long-term maintenance and management responsibilities.

General

MM BIO-8 Prior to issuance of grading permits in portions of the SPA Plan areas that are adjacent to the Preserve, the Project Applicant shall develop a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall be developed, approved, and implemented during construction to control storm water runoff such that erosion, sedimentation, pollution, and other adverse effects are minimized. The following performance measures contained in the Edge Plans shall be implemented to avoid the release of toxic substances associated with urban runoff:

- Sediment shall be retained on-site by a system of sediment basins, traps, or other appropriate measures.
- Where deemed necessary, storm drains shall be equipped with silt and oil traps to remove oils, debris, and other pollutants. Storm drain inlets shall be labeled "No Dumping–Drains to Ocean." Storm drains shall be regularly maintained to ensure their effectiveness.
- The parking lots shall be designed to allow storm water runoff to be directed to vegetative filter strips and/or oil-water separators to control sediment, oil, and other contaminants.
- Permanent energy dissipaters shall be included for drainage outlets.

- The BMPs contained in the SWPPP shall include, but are not limited to, silt fences, fiber rolls, gravel bags, and soil stabilization measures such as erosion control mats and hydro-seeding.
- The project area drainage basins will be designed to provide effective water quality control measures, as outlined in the Water Quality Technical Report. Design and operational features of the drainage basins will include design features to provide maximum infiltration, maximum detention time for settling of fine particles; maximize the distance between basin inlets and outlets to reduce velocities; and establish maintenance schedules for periodic removal of sedimentation, excessive vegetation and debris.

Jurisdictional Resources

MM BIO-9 The City requires that impacts to wetlands be avoided to the maximum extent possible and where impacts are unavoidable, compensatory mitigation within the Chula Vista Subarea or Chula Vista Planning Area shall be required resulting in no overall net loss of wetlands. A total of up to 1.03 acres of wetland and 0.56 acre of waters of the U.S./State within the project may be impacted within the Development Area. Off-site areas may impact a total of up to 0.98 acre of wetlands and 0.38 acre of waters (0.24 acre of waters of the U.S. and 0.14 acre of water of the State). Prior to issuance of land development permits, including clearing, grubbing, and grading permits that impact jurisdictional waters, the Project Applicant shall prepare a Wetlands Mitigation and Monitoring Plan to the satisfaction of the City, ACOE, and CDFW. This plan shall include, at a minimum, an implementation plan, maintenance and monitoring program, estimated completion time, and any relevant contingency measures. Areas under the jurisdictional authority of ACOE and CDFW shall be delineated on all grading plans. Mitigation areas shall occur within the Otay River watershed in accordance with the Wetlands Mitigation and Monitoring Plan to the satisfaction of the City, ACOE, and CDFW. The Project Applicant shall also be required to implement the Wetlands Mitigation and Monitoring Plan subject to the oversight of the City, ACOE, and CDFW.

MM BIO-10 Prior to issuance of land development permits, including clearing, grubbing, and grading permits for areas that impact jurisdictional waters, the Project Applicant shall provide evidence that all required regulatory permits, such as those required under Section 404 of the federal Clean Water Act, Section 1600 of the California Fish and Game Code, and the Porter Cologne Water Quality Act have been obtained.

MM BIO-11 The Project Applicant shall implement one of the following prior to the issuance of grading permits for areas impacting vernal pools within Village Three North:

1. The Project Applicant shall restore 240 square feet of vernal pools within the Village Thirteen (resort) planning area. The restoration would involve reconfiguration and reconstruction of the mima mounds and basins, removal of weedy vegetation, revegetation of the mounds with upland sage scrub species and inoculation of the pools with vernal pool species. The property owner has prepared a Conceptual Vernal Pool Mitigation Plan (Dudek 2008). The Plan includes, but is not limited to an implementation plan, maintenance and monitoring program, estimated completion time, and relevant contingency measures.
2. The Project Applicant shall restore 240 square feet of vernal pools somewhere other than the Village Thirteen (resort) planning area. The restoration would still involve reconfiguration and reconstruction of the mima mounds and basins, removal of weedy vegetation, revegetation of the mounds with upland sage scrub species and inoculation of the pools with vernal pool species.
3. The Project Applicant shall buy into a mitigation bank in an amount that would mitigate for impacts to 120 square feet of vernal pool.

Special-Status Plant Species

MM BIO-12 Prior to the issuance of land development permits, including clearing or grubbing and grading permits, for areas with salvageable sensitive biological resources, including Otay tarplant, variegated dudleya, San Diego barrel cactus, San Diego bur-sage, singlewhorl burrobush, south coast saltscale, San Diego marsh-elder, and Robinson's pepper grass (including plant materials and soils/seed bank), the Project Applicant shall prepare a Resource Salvage Plan. The Resource Salvage Plan shall be prepared by a City-approved biologist to the satisfaction of the Development Services Director (or their designee).

The Resource Salvage Plan shall, at a minimum, evaluate options for plant salvage and relocation, including individual cactus salvage, native plant mulching, selective soil salvaging, application of plant materials on manufactured slopes, and application/relocation of resources within the Preserve. The Resource Salvage Plan shall include incorporation of relocation efforts for non-covered species, including singlewhorl burrobush, south coast saltscale, San Diego marsh-elder, and Robinson's pepper grass, species that are all considered special-status by the CEQA and that would be impacted with project implementation. Relocation efforts may include seed collection and/or transplantation to a suitable receptor

site and will be based on the most reliable methods of successful relocation. The program shall also contain a recommendation for method of salvage and relocation/application based on feasibility of implementation and likelihood of success. The program shall include, at a minimum, an implementation plan, maintenance and monitoring program, estimated completion time, and any relevant contingency measures. The program shall also be subject to the oversight of the Development Services Director (or their designee).

Special-Status Wildlife Species

MM BIO-13 To avoid any direct impacts to raptors and/or any migratory birds protected under the MBTA, removal of habitat that supports active nests on the proposed area of disturbance should occur outside of the breeding season for these species. The breeding season is defined as February 15 to August 15 for coastal California gnatcatcher and other non-raptor birds and January 15 to August 31 for raptor species. If removal of habitat on the proposed area of disturbance must occur during the breeding season, the Project Applicant shall retain a City-approved biologist to conduct a pre-construction survey to determine the presence or absence of nesting birds on the proposed area of disturbance. The pre-construction survey must be conducted within 10 calendar days prior to the start of construction, and the results must be submitted to the City for review and approval prior to initiating any construction activities. If nesting birds are detected, a letter report or mitigation plan, as deemed appropriate by the City, shall be prepared and include proposed measures to be implemented to ensure that disturbance of breeding activities are avoided. The report or mitigation plan shall be submitted to the City for review and approval and implemented to the satisfaction of the City. The City's Mitigation Monitor shall verify and approve that all measures identified in the report or mitigation plan are in place prior to and/or during construction.

MM BIO-14 Prior to issuance of any land development permits, including clearing, grubbing, and grading permits, the Project Applicant shall retain a City-approved biologist to conduct focused surveys for northern harrier to determine the presence or absence of this species within 900-feet of the construction area. The pre-construction survey must be conducted within 10 calendar days prior to the start of construction. The results of the survey must be submitted to the City for review and approval. If active nests are detected by the City-approved biologist, a bio-monitor shall be on site during construction to minimize construction impacts and ensure that no nests are removed or disturbed until all young have fledged.

MM BIO-15 Prior to issuance of any land development permits (including clearing, grubbing, and grading permits), the Project Applicant shall retain a City-approved biologist to conduct focused pre-construction surveys for burrowing owls. The surveys shall be performed no earlier than 30 days prior to the commencement of any clearing, grubbing, or grading activities. If occupied burrows are detected, the City-approved biologist shall prepare a passive relocation mitigation plan subject to the review and approval by the Wildlife agencies and City, including any subsequent burrowing owl relocation plans to avoid impacts from construction-related activities.

Preserve

MM BIO-16 Prior to issuance of grading permits, the Project Applicant shall submit evidence to the satisfaction of the Development Services Director (or their designee), showing that the following features of the Preserve Edge Plans (Otay Ranch Company 2013a through 2013c) have been incorporated into grading and landscaping plans:

- Provide post and fencing and signage for sensitive habitat adjacent to trails. Prior to the issuance of land development permits, including clearing or grubbing and grading and/or construction permits, for the project, the project owner shall submit wall and fence plans depicting appropriate barriers to prevent unauthorized access to the Preserve. The wall and fence plans shall, at a minimum, illustrate the locations and cross-sections of proposed walls, fences, informational and directional signage, access controls, and/or boundary markers along the Preserve boundary and off-site pedestrian trails as conceptually described in the Edge Plans. The required wall and fence plan shall be subject to the approval of the Development Services Director (or their designee).
- Install canyon subdrains to prevent erosion of drainage and wetlands within the Preserve.
- Prevent release of toxins, chemicals, petroleum products, exotic plant materials and other elements that might degrade or harm the natural environment or ecosystem within the Preserve.
- Implement all necessary requirements for water quality as specified by the State and local agencies
- Phase out agricultural uses adjacent to the Preserve to remove pollutants from the project site.
- No invasive non-native plant species shall be introduced into areas immediately adjacent to, or within, the Preserve. All slopes immediately

adjacent, or within, to the Preserve shall be planted with native species that reflect the adjacent native habitat, per the Edge Plan. Prior to the issuance of land development permits, including clearing or grubbing and grading and/or construction permits, for 1) areas within the 100-foot Preserve edge, and 2) infrastructure (e.g., roads, trails, utilities, etc.) sited within the Preserve, the Project Applicant shall prepare and submit to the satisfaction of the Development Services Director (or their designee) landscape plans to ensure that the proposed plant palette is consistent with the plant list contained in the Preserve Edge Plans for each village. The landscape plan shall also incorporate a manual weeding program for areas adjacent to the Preserve. The manual weeding program shall describe, at a minimum, the entity responsible for controlling invasive species, the maintenance activities and methods required to control invasive species, and a maintenance/monitoring schedule.

- All fuel modification shall be incorporated into development plans and shall not include any areas within the Preserve.

MM BIO-17 In accordance with the City's Adjacency Management Guidelines, the following mitigation measures shall be implemented to further reduce indirect impacts (from lighting, noise, invasive species, toxic substances, and public access) to sensitive biological resources located in the adjacent Preserve areas:

- **Lighting.** In compliance with the Chula Vista MSCP Subarea Plan, all lighting shall be shielded and directed away from the Preserve. Concurrent with design review and prior to issuance of a building permit for any development located adjacent to the Preserve, the Applicant shall prepare a lighting plan and photometric analysis to the satisfaction of the Development Services Director (or their designee), for review and approval. The lighting plan shall illustrate the location of the proposed lighting standards and type of shielding measures. Low-pressure sodium lighting shall be used, if feasible, and shall be subject to the approval of the Development Services Director (or their designee).
- **Noise.** Noise impacts adjacent to the Preserve lands shall be minimized. Berms or walls shall be constructed adjacent to commercial areas and any other use that may introduce noises that could impact or interfere with wildlife utilization of the Preserve. A 100-foot buffer around community park areas, specifically Community Parks (P-2) south of Village Eight East and in Portion of Village Four, should be installed in sections adjacent to Preserve habitat occupied by sensitive species such as the coastal cactus wren. Potential noise generating uses, such as baseball diamonds and soccer fields, should be oriented away from sensitive species habitat in these areas. Construction

activities shall include noise reduction measures or be conducted outside the breeding season of sensitive bird species.

- **Noise, California Gnatcatcher.** For any work proposed between February 15 and August 15, prior to issuance of any land development permits, including clearing, grubbing, grading, and construction permits, associated with the off-site facilities located within the Preserve, the Project Applicant shall retain a City-approved biologist to conduct a pre-construction survey for the coastal California gnatcatcher to reaffirm the presence and extent of occupied habitat. The pre-construction survey area for the coastal California gnatcatcher shall encompass all habitats within the project work zone, as well as within a 300-foot buffer. The survey shall be performed to the satisfaction of the Development Services Director (or their designee) by a qualified biologist familiar with the City's MSCP Subarea Plan. The results of the pre-construction survey must be submitted in a report to the Development Services Director (or their designee) for review and approval prior to the issuance of any land development permits and prior to initiating any construction activities. If the coastal California gnatcatcher is detected, a minimum 300-foot buffer delineated by orange biological fencing shall be established around the detected species to ensure that no work shall occur within the occupied habitat from February 15 through August 15 and on-site noise reduction techniques shall be implemented to ensure that construction noise levels do not exceed 60 dB(A) Leq-h at the location of any occupied sensitive habitat areas. The Development Services Director (or their designee) shall have the discretion to modify the buffer width depending on-site-specific conditions. If the results of the pre-construction survey determine that the survey area is unoccupied, the work may commence at the discretion of the Development Services Director (or their designee) following the review and approval of the pre-construction report.
- **Invasive Species.** Prior to issuance of land development permits, including clearing or grubbing and grading and/or construction permits for 1) areas within the 100-foot Preserve edge, and 2) infrastructure (e.g., roads, trails, utilities, etc.) sited within the Preserve, the Project Applicant shall prepare and submit to the satisfaction of the Development Services Director (or their designee), landscape plans to ensure that the proposed plant palette is consistent with the plant list contained in the Preserve Edge Plan. The landscape plan shall also incorporate a manual weeding program for areas adjacent to the preserve. The manual weeding program that shall describe at a minimum, the entity responsible for controlling invasive species, the maintenance activities and methods required to control invasives, and a maintenance/monitoring schedule.
- **Toxic Substances.** See MMs BIO-4, BIO-6, BIO-8, BIO-16

- **Public Access.** Prior to issuance of grading permits, the Project Applicant shall submit wall and fence plans depicting appropriate barriers to prevent unauthorized access into the Preserve. The wall and fence plans shall illustrate the locations and cross-sections of proposed walls and fences along the Preserve boundary, subject to the approval the City's Development Services Director (or their designee).

MM BIO-18 In accordance with the City's Adjacency Management Guidelines, the following mitigation measures shall be implemented to further reduce indirect impacts from noise to sensitive biological resources located in the adjacent Preserve areas emanating from the community parks:

Concurrent with the preparation of site-specific plan(s), and prior to the approval of a precise grading plan, the Project Applicant shall prepare, or in the case of the City being the lead on the preparation of the site specific plan, the Project Applicant shall fund the preparation of an acoustical analysis to ensure that noise impacts to surrounding Preserve areas have been minimized. The park design shall include measures to minimize noise impacts adjacent to the Preserve. Features that may be included in the park design may include, but are not limited to:

- berms or walls;
- inclusion of a minimum of 100 feet between the Preserve boundary and park uses where adjacent to habitat occupied by sensitive species such as coastal California gnatcatcher and coastal cactus wren;
- allow uses within the 100-foot buffer adjacent to the Preserve that may include access roads, parking, picnic areas, walking paths, and graded slopes;
- orient potential noise generating uses such as soccer fields and baseball diamonds away from occupied coastal California gnatcatcher and coastal cactus wren habitat.

5.8.9 Level of Significance After Mitigation

With implementation of MMs BIO-1 through BIO-18 identified above; MMs AQ-1 through AQ-3 in Section 5.4, Air Quality; and MMs HYD-1 through HYD-5 in Section 5.11, Hydrology and Water Quality, sensitive species, riparian habitat and other sensitive natural communities, federally protected wetlands, and wildlife corridor impacts related to the implementation of the SPA Plans would be reduced to a **less than significant** level.

Furthermore, with implementation of mitigation measures listed above, biological resources impacts related to compliance with local polices, ordinances, HCPs and NCCPs would be reduced to a level of **less than significant**.

5.9 AGRICULTURE AND FORESTRY RESOURCES

This section of the EIR tiers from the 1993 Otay Ranch GDP Program EIR, because potential impacts to agricultural resources due to development in the entire Otay Ranch area was analyzed as part of the 1993 Otay Ranch GDP, including the project site. The 1993 Otay Ranch GDP Program EIR determined that impacts to agricultural resources would be significant and unmitigable; however, the Chula Vista City Council determined that the significant impacts identified in that EIR were acceptable because of specific overriding considerations.

This section of the EIR also tiers from the 2005 GPU/GDPA Program EIR, because potential impacts to agricultural resources due to development in the entire Otay Ranch area were also analyzed as part of the 2005 GPU/GDPA. The 2005 GPU/GDPA Program EIR determined that there were no prime farmlands or farmlands of statewide importance in the city that would be converted as a result of the proposed land use changes. No mitigation measures were identified and impacts to agricultural resources were determined to be less than significant.

This section of the EIR analyzes potential impacts to agricultural resources resulting from the proposed project. The agricultural analysis characterizes the existing project setting as it pertains to agricultural resources, including any historical farming practices on the property and the project site's farmland suitability based on the categories established by the California Department of Conservation. The analysis is focused on consistency with the goals established in the Chula Vista General Plan and the Otay Ranch General Development Plan.

5.9.1 Existing Conditions

5.9.1.1 Regulatory Framework

State Level

Department of Conservation Farmland Mapping and Monitoring Program

In response to a critical need for assessing the location, quality, and quantity of agricultural lands and conversion of these lands over time, the Department of Conservation established the Farmland Mapping and Monitoring Program (FMMP) in 1982. The goal of the FMMP is to provide consistent and impartial data to decision makers for use in assessing the suitability of agricultural lands in the State of California. The FMMP classifies land into five mapping categories based on soil and climatic conditions: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land. In addition, the FMMP identifies nonagricultural lands as either Urban and Built-Up Land or Other Land. Important Farmland Maps are updated every 2 years.

The FMMP identifies farmlands as follows:

- **Prime Farmland.** Prime Farmland has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agriculture production at some time during the 4 years prior to the mapping date.
- **Farmland of Statewide Importance.** Farmland of Statewide Importance is similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
- **Unique Farmland.** Unique Farmland consists of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but it may include nonirrigated orchards or vineyards, as found in some climatic zones in California. Land must have been cropped at some time during the 4 years prior to the mapping date.
- **Farmland of Local Importance.** Land of importance to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee. The following lands are to be included in the Farmland of Local Importance category:
    - All farmable lands within San Diego County that do not meet the definitions of Prime, Statewide, or Unique but are currently irrigated pasture or nonirrigated crops
    - Nonirrigated land with the soils qualifying for Prime Farmland or Farmland of Statewide Importance
    - Lands that would have Prime or Statewide designation and have been improved for irrigation but are now idle
    - Lands with a General Plan Land Use designation for agricultural purposes
    - Lands that are legislated to be used only for agricultural (farmland) purposes.
- **Grazing Land.** Land on which the existing vegetation is suited to the grazing of livestock. The minimum mapping unit for Grazing Land is 40 acres.

According to the City's General Plan, the FMMP does not necessarily reflect local General Plan actions, urban needs, changing economic conditions, proximity to market, and other factors that may be taken into consideration when government considers agricultural land use policies.

Williamson Act

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments that are much lower than normal because they are based upon farming and open space uses as opposed to full market value. The goal of the Williamson Act Program is to encourage the preservation of California's agricultural land and to prevent its premature conversion to urban uses. Currently, there are no active Williamson Act contracts or properties, which are established agricultural preserves, within the General Plan area, including the project area (City of Chula Vista 2005a).

California Public Resources Code

The California Public Resources Code (PRC) defines "forest land" and "timberland" as follows:

"Forest land" is land that can support 10% native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits (California Public Resources Code, Section 12200 (g)).

> Timberland" means land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species shall be determined by the board on a district basis after consultation with the district committees and others (California Public Resources Code, Section 4526).

California Government Code

The California Government Code defines "timberland" zoned "timberland production" as follows:

> Timberland production zone" or "TPZ" means an area which has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h). With respect to the general plans of cities and counties, "timberland preserve zone" means "timberland production zone" (California Government Code, Section 51100 et seq.)

Local Level

City of Chula Vista General Plan

The City of Chula Vista General Plan indicates that the most recent large-scale farming and agricultural operations in the City were located primarily in eastern Chula Vista. Limited irrigation-related water supplies and the high costs associated with agricultural irrigation have restricted crop production, animal raising and other agricultural operations in the area. The City's General Plan does not explicitly designate any land areas for agricultural use; however certain portions of the City may be used for agricultural purposes in the future.

Although the City of Chula Vista General Plan does not provide agricultural land use designations, several parcels within the General Plan area are zoned for agricultural use. These parcels are pending development proposals in conformance with applicable land use plans and are not considered long-term, regional agricultural uses of value.

Otay Ranch General Development Plan

The Otay Ranch General Development Plan (GDP) establishes goals, objectives, and policies related to the protection of agricultural resources. While these are general in nature, they are intended to be applicable to the entire Otay Ranch GDP area, including the proposed project area. The Otay Ranch GDP Program EIR concluded that the loss of agricultural lands is a significant and unmitigable impact, even with implementation of mitigation that requires an Agricultural Plan to be prepared by each Project Applicant prior to approval of a Sectional Planning Area (SPA) Plan affecting on-site agricultural resources.

As stated in the Otay Ranch GDP Final EIR, an Agricultural Plan must include the following:

1. Indication of the type of agricultural activity allowed as an interim use; buffering guidelines to prevent land use interface impacts shall be prepared. Buffering measures shall include:
    a. A 200-foot distance between property boundaries and agricultural operations.
    b. If permitted, interim agricultural uses require the use of pesticide, then limits shall be set as to the time of day and the type of pesticide application that may occur.
    c. Use of vegetation along the field edges adjacent to development that can be used for shielding.
    d. Notification of adjacent property owners of potential pesticide applications.
    e. Use of fencing.

2. Landscaping and buffering guidelines shall be developed for the areas planned adjacent to continuing agricultural uses (off-site).
3. In the Otay Valley Parcel near the proposed composting facilities and Bird Ranch where prime soils are located, a demonstration agricultural area shall be set aside. Schools within the Otay Ranch property shall be allowed to promote educational activities in regard to agriculture through the use of the agricultural demonstration area.
4. Agricultural activity and the keeping of animals shall be allowed within the large, low density lots planned along the northern edge of the Proctor Valley Parcel as allowed within the Jamul/Dulzura Subregional Plan. Development plans for this area shall contain landscaping and buffering guidelines to prevent nuisance impacts related to noise and odor from occurring between adjacent internal residential uses.

Otay Ranch Resource Management Plan

The Otay Ranch Resource Management Plan (RMP) contains several objectives and policies related to agriculture. The single unifying goal of the RMP is the establishment of an open space system that will become a permanent preserve dedicated to the protection and enhancement of environmental resources. Establishment of the preserve will provide opportunities for creation of demonstration agricultural uses. Demonstration agricultural uses must be compatible with RMP policies and standards for resource protection and enhancement. In conformance with the RMP, a range management plan for Otay Ranch was subsequently prepared. In general, the range management plan recommendations and implementing actions provide for ongoing managed grazing activities on conveyed lands if the activity is shown not to negatively affect biological resources. The area in the vicinity of Bird Ranch has been identified as an area suitable for demonstration agriculture.

Otay Ranch Grazing Ordinance

Chapter 17.30 of the Chula Vista Municipal Code, the Otay Ranch Grazing Ordinance, aids in the implementation of the preserve management goals and recommendations for the Otay Valley Regional Park (OVRP) Management Area of the Range Management Plan under the Chula Vista Multiple Species Conservation Program (MSCP) Subarea Plan. The ordinance states that no grazing activities shall be conducted on land designated as Otay Ranch Preserve by the Otay Ranch GDP or as 100 Percent Conservation Area in the Chula Vista MSCP Subarea Plan, except as provided by the ordinance (City of Chula Vista 2005b). Although grazing has historically been conducted within the project areas, grazing no longer occurs within any portions of the project area.

5.9.1.2 Existing Setting

The Department of Conservation has designated approximately 476 acres of the project area as Farmland of Local Importance, as shown in Figure 5.9-1 (DOC 2010). Historically, the project area has been used for dry farming, as well as cattle and sheep grazing. Crop production was limited to "dry farming" of hay and grains due to limited water availability. Although cultivation and cattle grazing activities are currently permitted, these activities are no longer occurring within the project area. Land utilized for agricultural activities in areas surrounding the project area has decreased over the years. Factors that have led to the decrease in agricultural use include the conversion of farmland to urban uses as a result of land value, particularly given that property taxes often exceed income from agricultural production. The high cost of importing water for irrigation has also resulted in many agricultural activities becoming cost prohibitive. These factors have contributed to the fact that large-scale agricultural activities on the project site ceased in 1999. Since that time, only periodic and limited dry farming activities have continued in some areas.

5.9.2 Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), will determine the significance of an agricultural or forestry impact. Impacts to agricultural and/or forestry resources would be significant if the proposed project would:

A. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program (FMMP) of the California Resources Agency, to non-agricultural use.

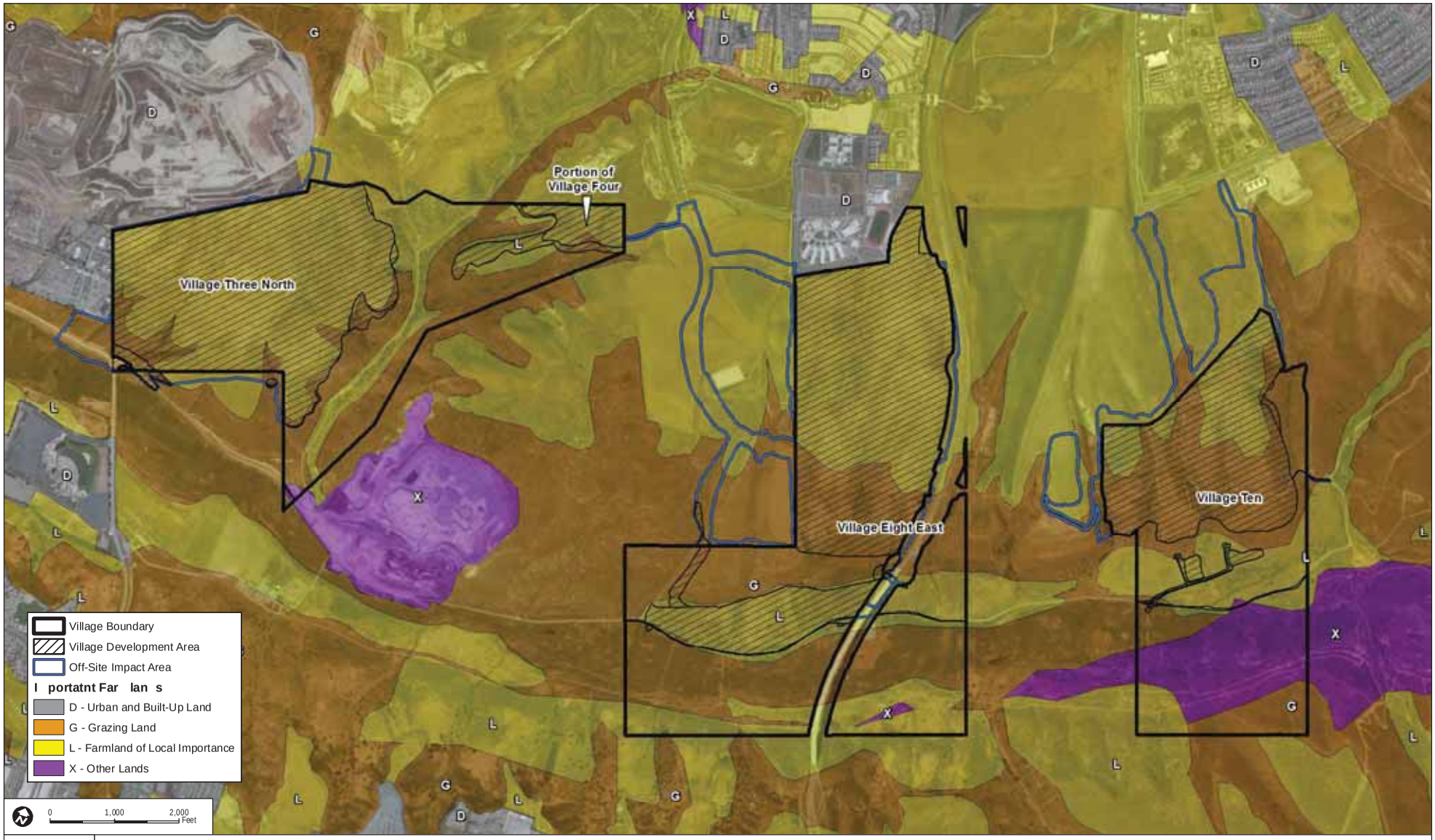
B. Conflict with existing zoning for agricultural use or a Williamson Act contract.

C. Be inconsistent with General Plan agricultural resource policies thereby resulting in a significant physical impact.

D. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)).

E. Result in the loss of forest land or conversion of forest land to non-forest use.

F. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.



SOURCE: CA Dept of Conservation, 2008; Bing Maps

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5.9.3 Impacts

A. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program (FMMP) of the California Resources Agency, to non-agricultural use.

The proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural use, as shown on the maps prepared pursuant to the FMMP by the Department of Conservation. However, the proposed project would convert approximately 476 acres designated as Farmland of Local Importance to residential and village land uses. Although the project area is no longer used for crops because of the lack of reliable and affordable water, the loss would contribute to an incremental loss of Farmland of Local Importance.

Once fully developed, the proposed project would eliminate all agricultural activity on site; however, there is potential for interim agricultural activity to occur within the project area, which could potentially result in land use conflicts with adjacent ownership areas. The Otay Ranch GDP Program EIR identified the potential for land use incompatibility as a short-term impact due to noise, odor, rodents, and chemical applications associated with agricultural activities adjacent to developed areas in the vicinity of the project area. The preparation of an Agricultural Plan was identified as mitigation to reduce the potential short-term impacts to below a level of significance.

An Agricultural Plan has been prepared as part of the SPA Plans for Village Three North and a Portion of Village Four, Village Eight East, and Village Ten, in accordance with the mitigation identified in the Otay Ranch GDP Program EIR. The plans would allow for interim agricultural activity within the project area and adjacent ownership area, and prevent potential land use impacts between developed land and ongoing agricultural activities by providing separation between urban uses and adjacent agricultural uses.

Consistent with the findings in the Otay Ranch GDP Program EIR, the incremental loss of Farmland of Local Importance as a result of the proposed project would be a **potentially significant** impact.

B. Conflict with existing zoning for agricultural use or a Williamson Act contract.

There are no Williamson Act contracts within the proposed project area. The designated zoning within the project area is Planned Community (P-C). Off-site improvement area 5 is located within an area zoned Agriculture (A); however, the improvement will be limited to grading and would not conflict with the existing zoning for agricultural use (City of Chula Vista 2012).

Therefore, the proposed project would not affect Williamson Act contract land or conflict with existing on-site zoning for an agricultural use, and there would be **no impact**.

C. Be inconsistent with General Plan agricultural resource policies thereby resulting in a significant physical impact.

The City's General Plan Objective E-4 and Policies E 4.1, E 4.2, and E 4.3 relate to agricultural resources. Appendix B analyzes the proposed project's consistency with the General Plan's objectives and policies regarding agricultural uses. Appendix B analyzes the proposed project's consistency with objectives and policies found in the Otay Ranch GDP associated with agricultural resources.

As described under Threshold (A), the proposed project includes an Agricultural Plan for each village, which is consistent with General Plan Objective E 4 and Policies E 4.1 and E 4.2. The Agricultural Plans would maintain the opportunity for limited agricultural and related uses to occur as an interim land use within the project area. Consistent with Policy E 4.3, the SPA Plans for Village Three North and a Portion of Village Four, Village Eight East, and Village Ten include provisions for community gardens and identify potential locations for these gardens within each village. For the reasons described above, the proposed project is consistent with the applicable General Plan and Otay Ranch GDP objectives and policies related to agricultural resources. Therefore, the proposed project would result in **no impact** due to inconsistency with General Plan agricultural resources policies.

D. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)).

The project area does not contain any forest land, land suitable for timber production, or any parcels of real property zoned for timberland production pursuant to the California Timberland Productivity Act of 1982 (Chapter 6.7 (commencing with Government Code Section 51100) of Part 1 of Division 1 of Title 5). Therefore, the proposed project would not affect such lands, and there would be **no impact**.

E. Result in the loss of forest land or conversion of forest land to non-forest use.

The project area does not include any forest land. Therefore, the proposed project would not result in the loss of forest land or the conversion of forest land to non-forest use and there would be **no impact**.

F. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

As described under Threshold (A), although the proposed project would convert Farmland of Local Importance to nonagricultural use, the project includes Agricultural Plans for each village within the project area. The Agricultural Plans which would allow for limited agricultural and related to uses to occur on an interim basis within the project area.

Since there is no forest land within the project area, there would be **no impact** associated with the conversion of forest land to non-forest use.

5.9.4 Level of Significance Prior to Mitigation

The proposed project would result in a **potentially significant** impact to agricultural resources due to the loss of approximately 476 acres of Farmland of Local Importance. The proposed project would not result in any significant impacts in relation to Williamson Act contract lands, conflicts with existing zoning for agricultural uses, or loss of forest lands or timberlands.

5.9.5 Mitigation Measures

There are no feasible mitigation measures to reduce the proposed project's impact on Farmland of Local Importance to below a level of significance. Placing agricultural easements or restrictions on new parcels is possible, but would not feasibly result in the economical use or operation of other agricultural lands due to high land costs, high water and labor costs, restrictive water use regulations, restrictive environmental regulations related to air quality and use of pesticides, agricultural competition from other parts of the State and from foreign countries, and the likelihood of incompatibility with other existing and planned land uses due to growing urbanization within the Otay Ranch area. Also, restriction of other properties to agricultural or farmland uses would not facilitate the achievement of City objectives to provide sufficient housing units to meet identified housing needs and obligations, to improve the existing jobs/housing balance, to increase property values and related property-based municipal revenues, and to preserve biological habitat and open space. Further, there are no fee-based programs in the City that would facilitate the purchase of economically viable farmland resources based on the cost and regulatory factors discussed above.

5.9.6 Level of Significance After Mitigation

Since no mitigation measures are available to reduce the proposed project's impact on Farmland of Local Importance, this impact would remain **significant and unavoidable**.

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5.10 WATER QUALITY AND HYDROLOGY

This section tiers from the 1993 Otay Ranch GDP Program EIR (Section 3.9, Water Resources and Water Quality). The 1993 Otay Ranch GDP Program EIR analyzed the potential impacts and identified mitigation measures related to hydrology and drainage for the entire Otay Ranch GDP area, including the proposed project area. The Otay Ranch GDP concluded that implementation of the Otay Ranch GDP land plan would result in significant and mitigable environmental impacts upon regional hydrology and drainage. This section also tiers from the 2005 GPU/GDPA Program EIR, which analyzed the existing conditions related to water quality and hydrology for the entire Otay Ranch area, including the proposed project area.

This section describes the hydrologic setting within the project area and evaluates the potential for changes in drainage, runoff, and water quality resulting from implementation of the proposed project. The analysis and discussion of hydrology contained in the Otay Ranch GDP Program EIR are incorporated by reference. The discussion found in this section is also based on the *Drainage Studies and Water Quality Technical Reports for Village Three North and a Portion of Village Four, Village Eight East, and Village Ten* that were prepared by Hunsaker and Associates (March 2014). The complete reports are contained in Appendix K of this EIR.

5.10.1 Existing Conditions

5.10.1.1 Regulatory Framework

Federal Level

Clean Water Act

The U.S. Environmental Protection Agency (EPA) regulates water quality under the Clean Water Act (CWA) (also known as the Federal Water Pollution Control Act). Enacted in 1972 and significantly amended in subsequent years, the Clean Water Act is designed to restore and maintain the chemical, physical, and biological integrity of waters of the United States. The Clean Water Act provides the legal framework for several water quality regulations, including the National Pollutant Discharge Elimination System (NPDES). The NPDES program characterizes receiving water, identifies harmful constituents, targets potential sources of pollutants and implements a comprehensive stormwater management program. Construction and industrial activities are typically regulated under statewide general permits that are issued by the State Water Resources Control Board (SWRCB). The Regional Water Quality Control Board (RWQCB) also issues waste discharge requirements that serve as NPDES permits under the authority delegated to the RWQCBs under the CWA.

The Clean Water Act requires NPDES permits for the discharge of pollutants to waters of the United States from any point source. In 1987, the Clean Water Act was amended to require that the EPA establish regulations for permitting of municipal and industrial stormwater discharges under the NPDES permit program. In November 1990, under Phase I of the urban runoff management strategy, the EPA published NPDES permit applicant requirements for municipal, industrial and construction stormwater discharges. These requirements are implemented through permits issued by the SWRCB or the local RWQCB in which the project is located (California RWQCB San Diego Region, herein San Diego RWQCB) and/or the governing municipality where the project is located (City of Chula Vista).

The EPA delegated its responsibility for administration of portions of the Clean Water Act to state and regional agencies. The Clean Water Act requires states to adopt water quality standards for receiving water bodies and to have those standards approved by the EPA. Water quality standards consist of designated beneficial uses for a particular receiving water body (e.g., wildlife habitat, agricultural supply, fishing), along with water quality criteria necessary to support those uses. Water quality criteria are prescribed concentrations or levels of constituents, such as lead, suspended sediment, and fecal coliform bacteria, or narrative statements that represent the quality of water that supports a particular use.

National and State Safe Drinking Water Acts

The federal Safe Drinking Water Act, established in 1974, is administered by the EPA and sets drinking water standards throughout the country. The drinking water standards established in the act, as set forth in the Code of Federal Regulations (CFR), are referred to as the National Primary Drinking Water Regulations (Primary Standards; 40 CFR 141), and the National Secondary Drinking Water Regulations (Secondary Standards; 40 CFR 143). According to the EPA, the Primary Standards are legally enforceable standards that apply to public water systems. The Secondary Standards are non-enforceable guidelines regulating contaminants that may cause cosmetic or aesthetic effects in drinking water. The EPA recommends the Secondary Standards for water systems but does not require systems to comply. California passed its own Safe Drinking Water Act in 1986 that authorizes the state's Department of Health Services to protect the public from contaminants in drinking water by establishing maximum contaminant levels (as set forth in the California Code of Regulations (CCR), Title 22, Division 4, Chapter 15) that are at least as stringent as those developed by the EPA, as required by the federal Safe Drinking Water Act.

Federal Antidegradation Policy

The federal Antidegradation Policy (40 CFR 131.12) requires states to develop statewide antidegradation policies and identify methods for implementing them. Pursuant to this policy,

state antidegradation policies and implementation methods shall, at a minimum, protect and maintain (1) existing in-stream water uses; (2) existing water quality where the quality of the waters exceeds levels necessary to support existing beneficial uses, unless the state finds that allowing lower water quality is necessary to accommodate economic and social development in the area; and (3) water quality in waters considered an outstanding national resource. State permitting actions must be consistent with the federal Antidegradation Policy.

State Level

California Toxics Rule

Because of gaps in California's regulations, the EPA promulgated the California Toxics Rule (40 CFR 131.38), which established numeric water quality criteria for certain toxic substances in California surface waters. The California Toxics Rule establishes acute (i.e., short-term) and chronic (i.e., long-term) standards for water bodies that are designated by the Santa Ana Regional Water Quality Control Board (RWQCB) as having beneficial uses protective of aquatic life or human health. The California Toxics Rule criteria are applicable to the receiving waters from the project site (RWCQB 2011).

Section 402(p) – Construction General Permit (CGP)

Pursuant to the Porter-Cologne Act, Section 402(p), requiring regulations for permitting of stormwater runoff from construction activity that results in soil disturbances of at least one acre of total land area (and projects that meet other specific criteria), the SWRCB has issued a statewide general NPDES permit and waste discharge requirements for stormwater discharges from construction sites (NPDES No. CAS000002 *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (CGP)*, effective July 1, 2010).

These regulations prohibit discharges of polluted stormwater from construction projects that disturb one or more acres of soil unless the discharge complies with the general NPDES permit requirements. The San Diego RWQCB oversees permits in the project area. It is the responsibility of the landowner to obtain coverage under the CGP prior to commencement of construction activities. Coverage under the CGP is attained by completing and filing a Notice of Intent with the SWRCB. Each Applicant under the CGP must ensure that a stormwater pollution prevention plan (SWPPP) is prepared prior to grading and implemented during construction. The primary objective of the SWPPP is to identify, construct, implement, and maintain best management practices (BMPs) to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the construction site during construction. The CGP requires the control of pollutants to meet Best Available Technology Economically Achievable and Best Conventional Pollutant Control Technology standards. Compliance with the

requirements of the CGP is used as one method to evaluate project construction-related impacts on surface water quality. To ensure that the preparation and implementation of the SWPPP is sufficient for effective pollution prevention, it must be created and implemented by a Qualified SWPPP Developer (QSD) and Qualified SWPPP Practitioner (QSP) that have attended a SWRCB sponsored or approved QSD and/or QSP training course. Typical BMPs include the following:

- **Minimizing disturbed areas.** Clearing of land is limited to that which will be actively under construction in the near term, new land disturbance during the rainy season is minimized, and disturbance to sensitive areas or areas that would not be affected by construction is minimized.
- **Stabilizing disturbed areas.** Temporary stabilization of disturbed soils is provided whenever active construction is not occurring on a portion of the site, and permanent stabilization is provided by finish grading and permanent landscaping.
- **Protecting slopes and channels.** Outside of the approved grading plan area, disturbance of natural channels is avoided, slopes and crossings are stabilized and increases in runoff velocity caused by the project is managed to avoid erosion to slopes and channels.
- **Controlling the site perimeter.** Upstream runoff is diverted around or safely conveyed through the project and is kept free of excessive sediment and other constituents.
- **Controlling internal erosion.** Sediment-laden waters from disturbed, active areas within the site are detained.

It is assumed that the CGP adopted by the SWRCB on September 2, 2009, effective on July 1, 2010 would be in effect during construction of the project (SWRCB 2009). Provisions of the CGP that are pertinent to the project include:

- **Technology-Based Numeric Action Levels** for pH and turbidity.
- **Technology-Based Numeric Effluent Limitations** (NELs) for pH during any construction phase where there is a high risk of pH discharge, and turbidity for all discharges.
- **Risk-Based Permitting Approach**, which establishes three levels of risk calculation: Risk Levels 1, 2, or 3 will be assigned to correspond with perceived low, medium, or high water quality risk.

The risk level is determined by the SWRCB based on two factors: (1) the project sediment risk, which is based on an estimate of project-related bare-ground soil loss determined by the Revised Universal Soil Loss Equation, and (2) the receiving water risk, which is based on whether there are established impairments or total maximum daily loads (TMDLs) for sediment or whether the receiving water is designated with beneficial uses for cold water, spawning, or migratory habitats.

Risk is officially determined prior to grading of a site along with the SWPPP. Based on the project location and receiving waters, the project is likely to have a low sediment risk and low receiving water risk. Consequently, it is likely that the project will fall into the low Risk Level 1 category, but could potentially fall into the Risk Level 2 category. A Risk Level 1 classification for the project would limit NELs and monitoring requirements. A Risk Level 2 designation would trigger some NELs and monitoring:

- **Minimum Requirements Specified.** Specifies more minimum BMPs and requirements that were previously only required as elements of the SWPPP or were suggested by guidance.
- **Effluent Monitoring and Reporting.** Requires effluent monitoring and reporting for pH and turbidity in stormwater discharges, depending on the risk level. Effluent monitoring would not be required by the project if it is classified at Risk Level 1.
- **Receiving Water Monitoring and Reporting.** Requires some Risk Level 3 discharges to monitor receiving waters. This requirement would not likely apply to the project. The proposed project outlets into the Otay River, which has low receiving water risk for sediment/siltation, and therefore does not require receiving water monitoring and reporting. However, the proposed project will require inspection and reporting necessary of Risk Level 1 or 2 projects as defined in the General Permit for Stormwater Discharges.
- **Rain Event Action Plan (REAP).** Requires certain sites to develop and implement a REAP that must be designed to protect all exposed portions of the site within 48 hours prior to any likely precipitation event.
- **Annual Reporting.** Requires all projects that are enrolled for more than one continuous 3-month period to submit information and annually certify that their site is in compliance with these requirements.
- **Certification/Training Requirements for Key Project Personnel.** Requires that key personnel (e.g., SWPPP preparers, inspectors) have specific training or certifications to ensure that their level of knowledge and skills are adequate to design and evaluate project specifications that will comply with permit requirements.

Local Level

Development Storm Water Manual

New development and redevelopment projects in the City are subject to the requirements of the *City of Chula Vista Development Storm Water Manual* (January 2011). The Storm Water Manual is updated every 5 years concurrent with the reissuance of the NPDES for San Diego County. The Storm Water Manual meets the hydromodification control requirements of the

NPDES Municipal Permit issued to Chula Vista by the San Diego RWQCB. New development and redevelopment projects are required to minimize impacts on receiving water quality and habitat by incorporating construction and post-construction BMPs in their project design. Construction BMPs typically include erosion control, sediment control, non-stormwater management and material management practices. The Applicant is required to prepare a SWPPP which identifies all applicable construction BMPs. Post-construction BMPs include low impact development site design, source control, treatment control and hydromodification control practices. The manual provides guidance and established standards and criteria to meet those requirements. The underlying authority for requirements included in the Storm Water Manual are derived from the NPDES Municipal Permit, Order No. R9-2007-0001, the City of Chula Vista Storm Water Mitigation Plan (SUSMP), and CVMC, Chapter 14.20. The Storm Water Manual also provides Construction Storm Water Performance Standards (Development Storm Water Manual, Section 7), which includes site management requirements, site-specific performance standards, seasonal requirements, limitation of grading, and advanced treatment (City of Chula Vista 2011).

City of Chula Vista Storm Water Management Standards and Chula Vista Development Storm Water Manual

For the purposes of post-construction stormwater quality management, the proposed project would follow the guidelines and requirements set forth in the following documents:

- *Development Storm Water Manual* (DSWM), adopted by the City of Chula Vista in 2011, applies to all projects requiring any permit approvals on or after March 24, 2010. All other development or redevelopment projects that have obtained their Grading or Building Permits prior to March 24, 2010, are required to comply with the requirements of the NPDES Municipal Permit, Order No. R9-2007-0001 and the DSWM dated January 2011 which also contains the City of Chula Vista's Standard Urban Storm Water Mitigation Plan (SUSMP) requirements (City of Chula Vista 2011).
- SDRWQCB Order No. R9-2007-0001, a renewal of NPDES Permit No. CAS0108758, Waste Discharge Requirements for Discharges of Urban Runoff from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds of the County of San Diego, the Incorporated Cities of San Diego County, the San Diego Unified Port District, and the San Diego County Regional Airport Authority (Order No. R9-2007-0001, or Municipal Storm Water Permit), adopted by the SDRWQCB on January 24, 2007.

The DSWM provides guidance for new development, redevelopment and public projects to achieve compliance with the City of Chula Vista's SUSMP. On January 24, 2007, the SDRWQCB adopted Order No. R9-2007-0001, renewing the Municipal Storm Water Permit. Order No. R9-2007-0001, which supersedes Order No. 2001-01, includes several changes to

requirements for post-construction stormwater management and would result in SUSMPs being modified and changes to standards for post-construction stormwater management practices. Specific changes that would directly affect the design of the proposed project include:

- **Low Impact Development (LID) BMP Requirements.** Project Applicants with Priority Development Projects (projects subject to SUSMP requirements) would be required to implement LID BMPs which would collectively minimize directly connected impervious areas and promote infiltration. The LID BMP requirements are described in Section D.1.d.(4) of Order No. R9-2007-0001.
- **Hydromodification.** Limitations on Increases of Runoff Discharge Rates and Durations: Under Section D.1.g of Order No. R9-2007-0001, the Co-permittees would be required to prepare a Hydromodification Management Plan (HMP) and incorporate its requirements into their SUSMPs. Hydromodification refers to changes in a watershed's runoff characteristics resulting from development, together with associated morphological changes to channels receiving the runoff, such as changes in sediment transport characteristics and the hydraulic geometry (width, depth, slope) of channels. These changes result in streambank erosion and sedimentation, leading to habitat degradation due to loss of overhead cover and loss of instream habitat structures.

Upon ultimate development, the proposed project would fall into five pollutant categories, including: (1) Detached Residential Development, (2) Attached Residential Development, (3) Hillside Development greater than 5,000 square feet, (4) Parking lots 5,000 square feet or more or with 15 or more parking spaces and potentially exposed to urban runoff, and (5) Streets, roads, highways, and freeways. At this time, retail gasoline outlets (RGOs), which are also a Priority Development Project Category included in Section D.1.d.(2) of Order No. R9-2007-0001, are not anticipated. Upon final design, the land uses within the project area may differ.

Enough information is provided in Order No. R9-2007-0001 such that the Master Design of the proposed project can incorporate design elements, while still meeting the requirements of the City of Chula Vista's existing Storm Water Standards Manual. All development within the proposed project would be subject to the City of Chula Vista's SUSMP at the time of grading permit issuance.

Chula Vista Municipal Code Section 14.20, Storm Water Management and Discharge Control

The purpose of this ordinance is to promote the health, safety and general welfare of the citizens of Chula Vista by prohibiting non-stormwater discharges to the stormwater conveyance system, preventing discharges to the stormwater conveyance system from disposal of materials other than stormwater, reducing pollutants in stormwater discharges to the maximum extent practicable, and reducing pollutants in stormwater discharges in order to achieve applicable water quality

objectives for surface waters in San Diego County. This ordinance states that it is unlawful for any person to cause either individually or jointly, any discharge into or from the stormwater conveyance system that results in or contributes to a violation of any NPDES permit. Any person engaged in activities that may result in pollutants entering the stormwater conveyance system shall, to the maximum extent practical, undertake all measures to reduce the risk of illegal discharges. The following requirements apply:

- **Best Management Practices Implementation.** It is unlawful for any person not to comply with the BMPs and pollution control requirements established by the city or other responsible agency to eliminate or reduce pollutants entering the city stormwater conveyance system. BMPs shall be complied with throughout the life of the activity.
- **Stormwater Pollution Prevention Plan.** When the enforcement official determines that a business or business-related activity causes or may cause an illegal discharge to the stormwater conveyance system then the enforcement official may require the business to develop and implement a SWPPP. Businesses which may be required to prepare and implement a SWPPP include, but are not limited to, those which perform maintenance, storage, manufacturing, assembly, equipment operations, vehicle loading and/or cleanup activities partially or wholly out of doors.
- **Coordination with Hazardous Materials Response Plans and Inventory.** Any activity subject to the hazardous materials inventory and response program, pursuant to Chapter 6.95 of the California Health and Safety Code, shall include provisions for compliance with this chapter in its hazardous materials response plan, including prohibitions of unlawful non-stormwater discharges and illegal discharges and provisions requiring the use of BMPs to reduce the discharge of pollutants in stormwater.
- **Impervious Surfaces**. Persons owning or operating a parking lot or an impervious surface (including, but not limited to, service station pavements or paved private streets and roads) used for automobile-related or similar purposes shall clean those surfaces as frequently and as thoroughly as is necessary, in accordance with BMPs, to prevent the discharge of pollutants to the city stormwater conveyance system. Sweepings or cleaning residue from parking lots or impervious surfaces shall not be swept or otherwise made or allowed to go into any stormwater conveyance, gutter or roadway, but must be disposed of in accordance with regional solid waste procedures and practices.
- **Compliance with NPDES Permit for Storm Water Discharges**. Each discharger subject to any NPDES permit for stormwater discharges shall comply with all requirements of such permit.

The DSWM is incorporated into this ordinance by reference. The ordinance states that no landowner or development project proponent in Chula Vista shall receive any city permit or

approval for land development activity or significant redevelopment activity unless the project meets or will meet the requirements of the manual.

City of Chula Vista General Plan

The Public Facilities and Services and Environmental Elements of the City of Chula Vista General Plan address reliable drainage facilities and the protection of water quality. The Public Facilities and Services Element includes objectives to increase efficiencies in handling stormwater runoff through use of alternative technologies (Objective PFS 2). Objective E 2 in the Environmental Element is to protect and improve water quality within surface water bodies and groundwater resources within and downstream of Chula Vista.

Zoning Code and Growth Management Ordinance

In accordance with CVMC Section 19.80.030, development is not permitted in the City of Chula Vista that would degrade stormwater collection systems below acceptable standards. Similarly, Section 19.09 (Growth Management) provides policies and programs that tie the pace of development to the provision of public facilities and improvements. Section 19.09 H specifically requires that (1) Stormwater flows and volumes shall not exceed City engineering standards as set forth in the subdivision manual and (2) the GMOC shall annually review the performance of the City's storm drain system to determine its ability to meet the goals and objectives of the subdivision manual. Section 19.09 also requires a Public Facilities Financing Plan (PFFP) and the demonstration that public services, such as police services, meet the GMOC quality of life threshold standards. The analysis of storm drain systems provided in this section, along with the PFFP to ensure funding for any needed expansion of services, confirm that storm drain systems would be provided commensurate with development and demand.

5.10.1.2 Existing Setting

Hydrological Setting

The project area is located in the southwestern portion of the San Diego Hydrological Basin. The San Diego basin is divided into 11 hydrographic units and 54 hydrographic subunits, which are based primarily on the surface water drainage basins. The proposed project area and the Otay River are located within the Otay Valley Hydrologic Sub-Area of the Otay Hydrologic Unit (basin number 910.20), which encompasses the Otay River Watershed. The Otay River watershed encompasses approximately 160 square miles in southwest San Diego County and is one of the three hydrologic units that discharge to San Diego Bay. The watershed consists largely of unincorporated areas in the County of San Diego, but also includes portions of the cities of Chula Vista, Imperial Beach, Coronado, National City and San Diego. The major hydrologic features, Upper and Lower Otay Lakes, are two water supply reservoirs that also provide

important habitat and recreational opportunities. The proposed project is located downstream of the Otay Lakes. San Diego Bay, located west of the proposed project and the Otay River, located south of the proposed project, are the other major water bodies in the watershed. Approximately 36 square miles of the watershed are within the City of Chula Vista Multiple Species Conservation Plan conservation areas (Project Clean Water 2013).

The beneficial uses for the Otay Hydrographic Subunit, as defined in the Water Quality Plan for the San Diego Basin, include agricultural supply, potential industrial process supply, potential contact water recreation, non-contact water recreation, warm freshwater habitat, wildlife habitat and rare, threatened or endangered species. Currently, no surface water on the project area is used for any of these beneficial uses, as surface water within the project area originates from precipitation and is short-lived. Furthermore, no permanent lakes or ponds exist within the project area.

Village Three North and a Portion of Village Four

The topography of the existing Village Three North and a Portion of Village Four project area is characterized by farmland, rolling hills, vegetation consisting mainly of grassland and brush with incised canyons that partition the site into six defined watersheds (five in Village Three North, one in Village Four), as listed in Table 5.10-1 and illustrated in Figure 5.10-1. The watershed boundary along the northern portion of the site is defined by the grading which has occurred for the Otay Landfill and by the proposed Otay Ranch Village Two (South) development at the northeast corner of the site. The existing commercial businesses (consisting mostly of vehicle salvage yards and auto parts stores) establish the western watershed boundary.

Except for Watersheds 5 and 6, which are located along the eastern edge of Village Three North and western edge of Village Four, respectively, all the existing watersheds currently drain south toward the Otay River and ultimately the San Diego Bay. Watershed 5 is 19.0 acres and drains to the southeast via a natural steep sloping canyon towards Wolf Canyon. Runoff from this area confluences with runoff from the proposed Otay Ranch Village Two South development located approximately one-half mile upstream. Runoff from Watershed 6 drains to the southwest through one of the two canyons tributary to Wolf Canyon and also confluence with runoff from Village Two South, at Wolf Canyon. This runoff then flows south within Wolf Canyon toward the Otay River. The Otay River flows from east to west accumulating runoff from each of the aforementioned watersheds (1-4) along the way. It should be noted that Watershed 6 runoff is directed towards the western boundary where it will outlet at the same location as the proposed Village Eight West western outlet into Wolf Canyon. This combination has been coordinated with the current owner of Village Eight West.

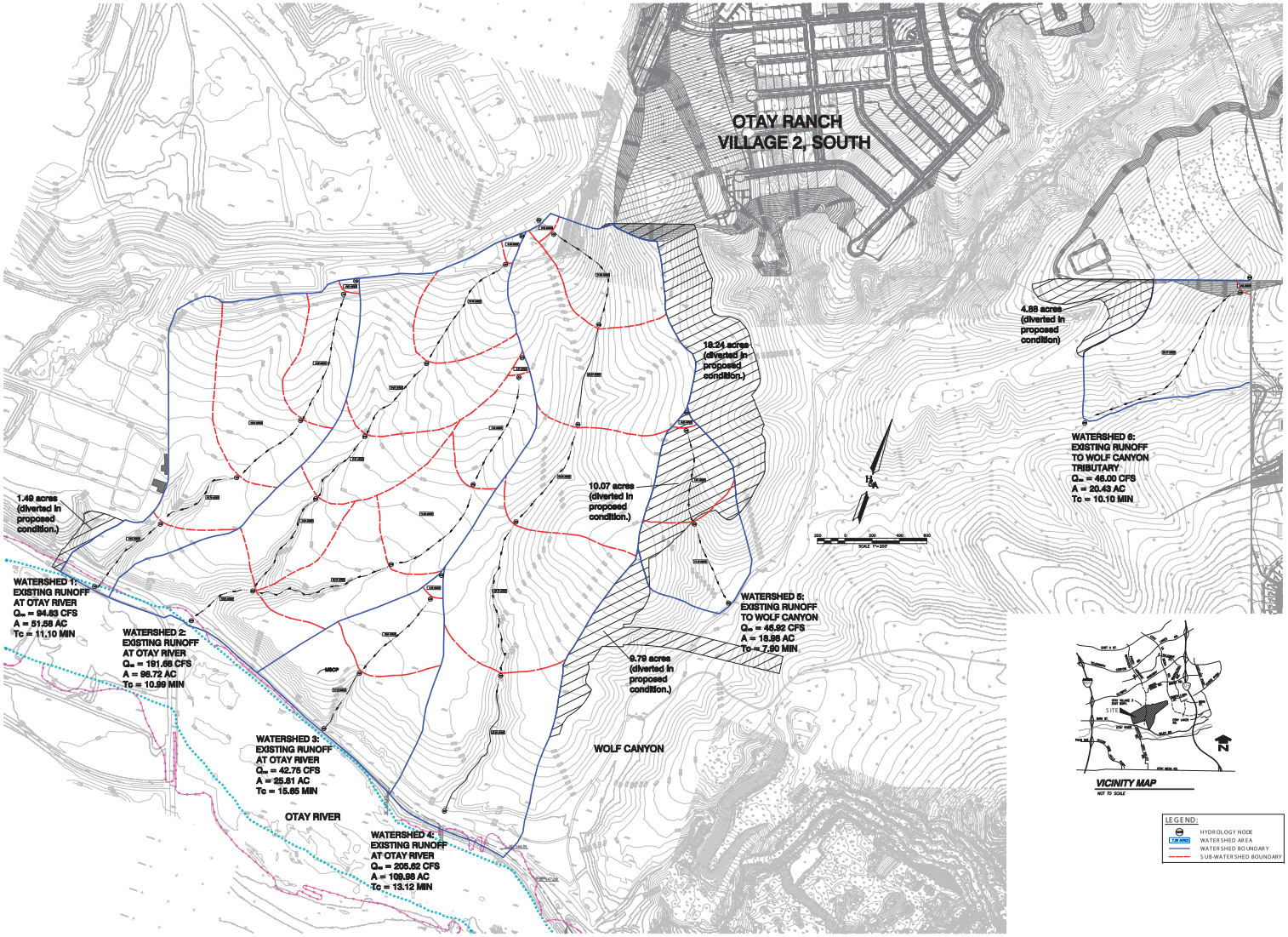

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FIGURE 0-

Village Three North an a Portion of Village Four E isting y rology Map

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Table 5.10-1 summarizes the 100-year pre-development peak flows to each of the delineated watersheds. A runoff coefficient of 0.35 and 0.50 was assumed for the existing tributary area per the City of Chula Vista Subdivision Manual. These coefficients correspond to farm land and vegetated rolling slopes.

Table 5.10-1
Village Three North and a Portion of Village Four
Summary of Pre-Developed Flows to the Otay River

Discharge Location	Drainage Area (acres)	100-Year Peak Flow (cfs)
Watershed 1	51.6	94.8
Watershed 2	96.7	191.7
Watershed 3	25.8	42.8
Watershed 4	110.0	205.6
Watershed 5	19.0	46.9
Subtotal	*303.1*	*581.8*
Watershed 6 (Village Four Portion)	20.4	46.0
Total	**323.5**	**627.8**

cfs = cubic feet per second
Source: Hunsaker and Associates 2014.

Village Eight East

The topography for the existing Village Eight East project area is characterized by farmland, rolling hills, vegetation consisting mainly of brush and incised canyons that partition the site into several defined watersheds, as listed in Table 5.10-2 and illustrated in Figure 5.10-2.

Approximately 51.5 acres along the eastern project boundary drains east towards SR-125. This area is designated as the Northeast Watershed in the table below. Runoff along the upper portion of the eastern boundary is conveyed via trapezoidal channel and storm drain. A storm drain directs this runoff to the east side of SR-125. The southern portion is channeled south along the eastern project boundary en route to the Otay River.

The northern half of Main Street currently extends approximately 1,130 feet east of the Magdalena Avenue – Main Street intersection. This constructed street portion allows access to Olympian High School located on its north side. Approximately 6.13 acres of undeveloped land within the northeast portion of the site currently drains towards the existing storm drain located at the current eastern terminus of Main Street. A headwall and storm drain direct the runoff west along Main Street within the existing storm drain which would tie in to the Village Eight West storm drain. The future Village Eight West storm drain will outlet into the Otay River downstream.

The remaining areas within the Village Eight East boundary currently drain via the incised canyons located throughout the site. These canyons flow south and empty directly into the Otay River. The Otay River flows from east to west accumulating runoff from each tributary canyon along the way. The Otay River empties into the San Diego Bay approximately 8.5 miles downstream.

Table 5.10-2 below summarizes the 100-year pre-development peak flows to each of the delineated watersheds. A runoff coefficient of 0.35 and 0.50 was assumed for the existing tributary area per the City of Chula Vista Subdivision Manual. These coefficients correspond to farmland and vegetated rolling slopes.

Table 5.10-2
Village Eight East
Summary of Pre-Developed Flows to the Otay River

Discharge Location	Drainage Area (acres)	100-Year Peak Flow (cfs)
North Watershed	9.9	19.6
Northwest Watershed	10.2	21.4
West Watershed	14.3	26.5
Northeast Watershed	51.5	73.9
Southwest Watershed	214.5	406.5
South Watershed	26.4	50.5
East-Central Watershed	178.6	203.9
East Watershed	20.0	44.5
Southeast Watershed	13.3	25.5
Total	538.6	872.2

cfs = cubic feet per second
Source: Hunsaker and Associates 2014.

Village Ten

The existing topography for the Village Ten project area is characterized by farmland, rolling hills, vegetation consisting mainly of grassland and brush with incised canyons that partition the site into six defined watersheds, as listed in Table 5.10-3 and illustrated in Figure 5.10-3. All the existing watersheds currently drain directly south towards the Otay River and have been modeled to have their downstream boundary adjacent to the river. The Otay River at this location flows from east to west. The 'East Watershed' is 163 acres and consists mostly of off-site areas which include the High Tech High School site. The 'Southeast Watershed' is the largest sub-watershed and includes 53 acres from the Otay Ranch Village Eleven, Phase 3 development which currently empties its runoff into the Village Ten project area.

All the existing watersheds within Village Ten drain to the south via natural steep sloping canyons. Runoff from these canyons confluence with runoff in the Otay River which ultimately empties into the San Diego Bay located approximately 10 miles downstream of Village Ten.

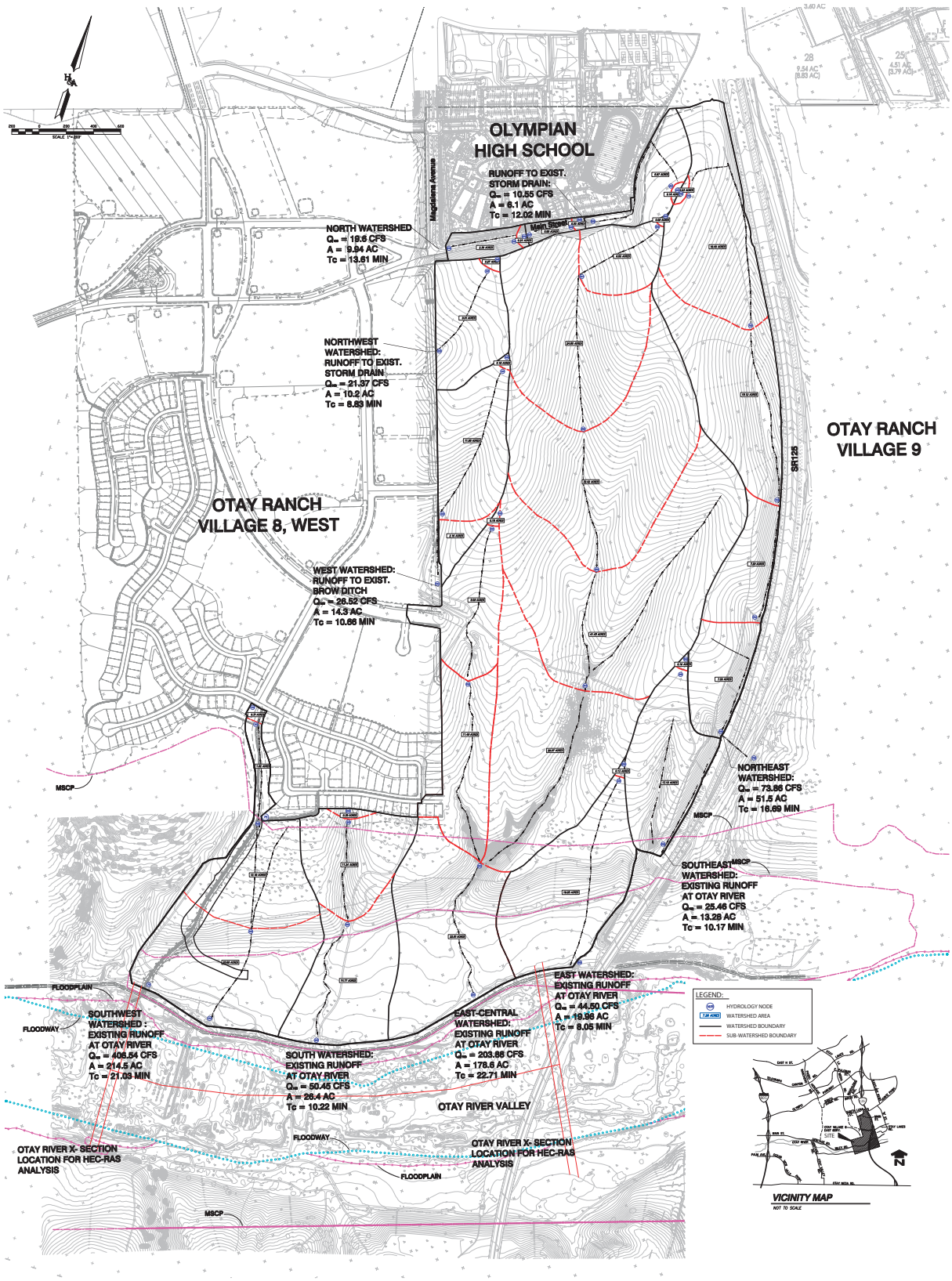

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FIGURE 0-2

Village Eight East E isting y rology Map

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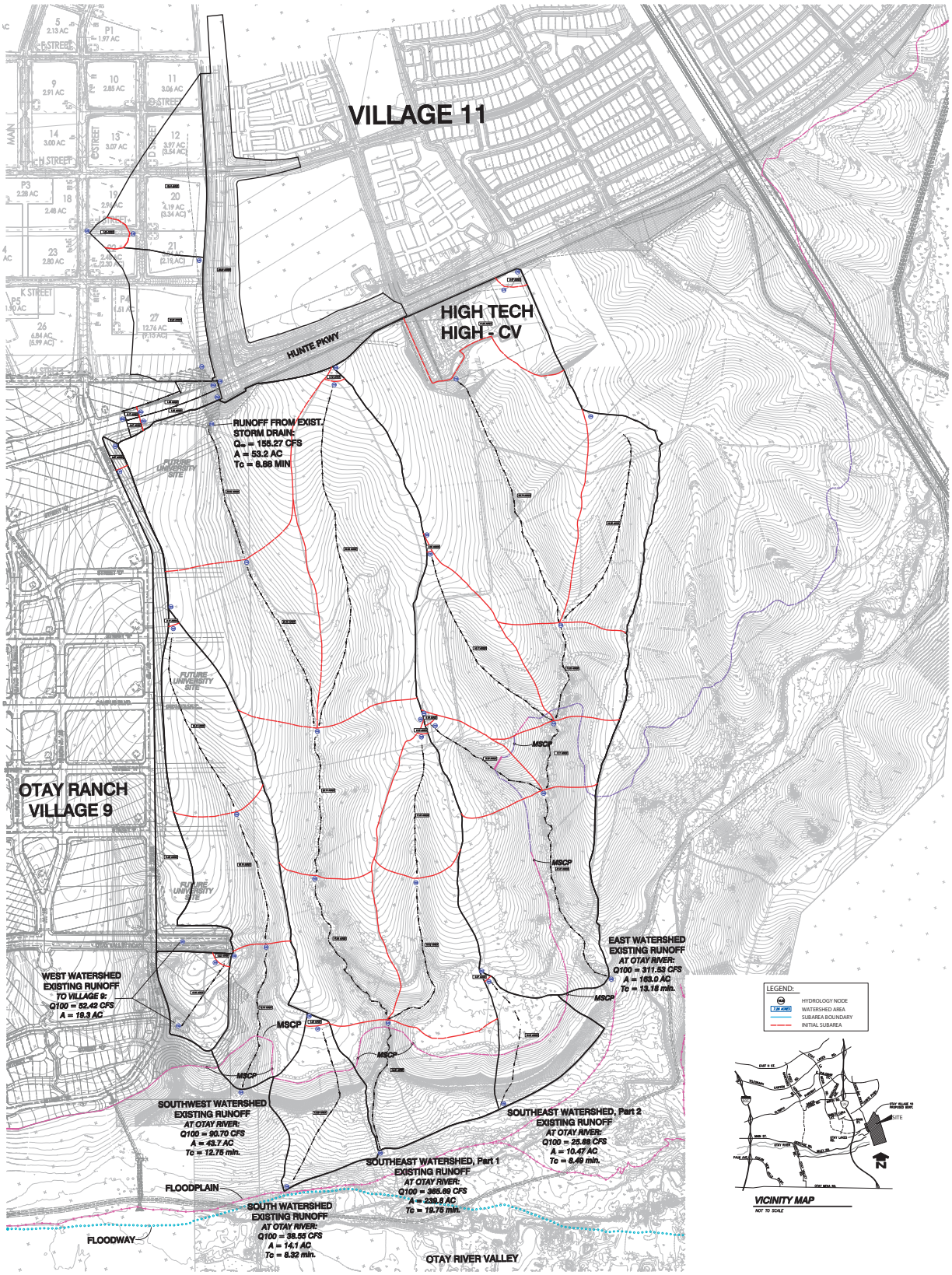

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FIGURE 0-

Village Ten E isting y rology Map

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Table 5.10-3 below summarizes the 100-year pre-development peak flows to each of the delineated watersheds in Village Ten. A runoff coefficient of 0.35 and 0.50 was assumed for the existing tributary area per the City of Chula Vista Subdivision Manual. These coefficients correspond to farmland and vegetated rolling slopes.

Table 5.10-3
Village Ten Summary of Pre-Developed Flows to the Otay River

Discharge Location	Drainage Area (acres)	100-Year Peak Flow (cfs)
West Watershed	19.3	52.4
Southwest Watershed	43.7	90.7
South Watershed	14.1	38.6
Southeast Watershed, Pt 1	239.8	365.7
Southeast Watershed, Pt 2	10.5	25.9
East Watershed	163.0	311.5
Total	**490.4**	**884.8**

cfs = cubic feet per second
Source: Hunsaker and Associates 2014

Water Quality

Surface Water Quality

The Porter-Cologne Act establishes a comprehensive program for the protection of beneficial uses of the waters of the state. California Water Code Section 13050(f) describes the beneficial uses of surface and ground waters that may be designated by the state or regional board for protection as follows: "Beneficial uses of the waters of the state that may be protected against quality degradation include, but are not necessarily limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves." Twenty-three beneficial uses are now defined statewide and are designated within the San Diego Region. The complete list of the beneficial uses and their definitions for Otay River, Wolf Canyon and San Diego Bay are provided in the water quality report, Appendix K. On October 30, 2006, the SWRCB approved the Section 303(d) list. Subsequently on November 30, 2006, the EPA approved the SWRCB's inclusion of all waters and pollutants identified for the San Diego region in its 2006 list of Water Quality Limited Segments. Within the Otay Hydrologic Unit, the San Diego Bay is impaired for pollution from organic compounds. Wolf Canyon and the Otay River are not on the 303(d) list.

The project location and watersheds have been compared to the current published 303(d) List of Water Quality Limited Segment. Within the Otay Hydrologic Unit, the San Diego Bay is

impaired for pollution from organic compounds. Wolf Canyon and the Otay River are not on the 303(d) list.

Hydromodification Analysis

The March 2011 Final Hydromodification Management Plan (HMP), which was prepared for the County of San Diego, exempts the Otay River from hydromodification criteria (County of San Diego 2011). The combination of low gradients, significant peak attenuation, and wide floodplain areas, similar to those found in the Otay River, translate to a low potential for channel erosion. Proposed outlets into the Otay River are, therefore, exempt from hydromodification requirements. Proposed outlets into Wolf Canyon, however, are not exempt.

Groundwater

Groundwater in the Otay Valley hydrologic area has been identified for following beneficial uses: municipal and domestic water supply, agricultural water supply and industrial service water supply. The Otay Hydrographic Unit contains groundwater that is rated poor to very poor due to high levels of total dissolved solids. According to PEIR 90-01, the groundwater in the project area contains sodium-calcium chloride, and samples from Poggi Canyon to the north and Otay Valley to the south exceed federal secondary drinking water standards. This situation is caused, in part, from the high salt concentration in imported water used for irrigation. Water containing dissolved salts entrapped at the time the sedimentary rocks were deposited also contributes to the groundwater composition and quality.

No groundwater was encountered during a previous site field testing conducted as part of a Geotechnical Investigation in 2013. Groundwater table is expected to occur deeper than 100 feet below the lowest existing grades at the site. However, it is not uncommon for seepage conditions to develop where none previously existed due to the permeability characteristics of the geologic units encountered. During the rainy season, perched water conditions are likely to develop within the drainage areas that may require special consideration during grading operations. Groundwater elevations are dependent on seasonal precipitation, irrigation, and land use, among other factors, and vary as a result.

Flooding

Per the Flood Insurance Rate Map (FIRM) Nos. 06073C2159F and 06073C2178F, the Village Three and a Portion of Village Four development areas are located outside the FEMA floodplain boundary; however, the active recreation area, including Community Park P-2, is within the dam inundation zone. FIRM Nos. 06073C2178 and 06073C2179, show that the Village Eight East development area lies outside the FEMA floodplain boundary. And per FIRM No. 06073C2177F, the Village Ten development area lies outside the FEMA floodplain boundary (FEMA 2013a).

5.10.2 Thresholds of Significance

The following significance criteria, included in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), would determine the significance of a water quality and hydrology impact. Impacts to water quality and hydrology would be significant if the proposed project would:

A. Violate any water quality standards or waste discharge requirements, including City of Chula Vista Engineering Standards for storm water flows and volumes.

B. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

C. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site.

D. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

E. Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

F. Otherwise, substantially degrade water quality.

G. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

H. Place structures within a 100-year flood hazard area which would impede or redirect flood flows.

I. Be inconsistent with General Plan, Otay Ranch GDP or other objectives and policies regarding water quality thereby resulting in a significant physical impact.

J. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

K. Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow.

L. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

5.10.3 Impacts

A. Violate any water quality standards or waste discharge requirements, including City of Chula Vista Engineering Standards for storm water flows and volumes.

Construction Impacts

Construction of the proposed project would involve grading and site preparation activities within each of the villages and the off-site improvements areas. The proposed project would result in sources of polluted runoff during construction which would have short-term impacts on surface water and groundwater quality through activities such as demolition, clearing and grading, excavation of undocumented fill materials, stockpiling of soils and materials, concrete pouring, painting and asphalt surfacing. Construction activities would involve various types of equipment such as bulldozers, scrapers, graders, loaders, compactors, dump trucks, cranes, water trucks and concrete mixers. Additionally, soils and construction materials are typically stockpiled outdoors.

Pollutants associated with construction would degrade water quality if they were washed by stormwater or non-stormwater into surface waters. Sediment is often the most common pollutant associated with construction sites because of the associated earth-moving activities and areas of exposed soil. Sediment that is washed off site can result in turbidity in surface waters, which can impact aquatic species. In addition, when sediment is deposited into receiving water, it can smother species, alter the substrate and habitat and alter the drainage course. Hydrocarbons such as fuels, asphalt materials, oils and hazardous materials such as paints and concrete slurries discharged from construction sites could also impact aquatic plants and animals downstream. Debris and trash could be washed into existing storm channels to downstream surface waters and could impact aquatic wildlife, wetland or riparian habitat and aesthetic value. Construction activities would potentially result in a significant change in local receiving water if BMPs are not put in place to prevent polluted runoff from entering Wolf Canyon or the OVRP.

All construction activities would comply with Chapter 29 of the California Building Code (CBC), which regulates excavation activities and the construction of foundations and retaining walls, and Chapter 70 of the CBC, which regulates grading activities, including drainage and erosion control. In addition, prior to grading plan approval by the City Engineer, all grading would be subject to the requirements of the CVMC, Title 15.04, Storm Water Management and Discharge Control Ordinance No 2854, the City of Chula Vista Subdivision Manual, Design and Construction Standards of the City of Chula Vista, San Diego Area Regional Standard Drawings, and Standard Specifications for Public Works Construction.

Prior to project-related construction, a site-specific SWPPP would be prepared in accordance with the SWRCB Order No. 99-08-DWQ NPDES General Permit No. CAS00002 (General Construction Permit) and the modifications to the General Construction Permit Order No. 2001-

046, adopted by the SWRCB. For coverage by the General Construction Permit, the Project Applicant is required to submit to the SWRCB a Notice of Intent and develop a SWPPP describing BMPs to be used during and after construction to prevent discharge of sediment and other pollutants in stormwater runoff from the project site. The BMPs would provide erosion and sedimentation control through measures such as silt fences, fiber rolls, gravel bags, temporary desilting basins, velocity check dams, temporary ditches or swales, stormwater inlet protection, soil stabilization measures such as erosion control mats, tackifier, hydroseeding, etc. Prior to the issuance of grading permits, the SWPPP would be required to be prepared to the satisfaction of the City Engineer and the Director of Public Works.

The Storm Water Manual limits grading to an area that can be cleared or graded and left exposed at one time. This applies to the amount of acreage that the owner/contractor can adequately protect prior to a predicted rainstorm. Under the Storm Water Manual, at no time shall disturbed soil be more than 100 acres for an individual grading permit or combination of grading permits. Due to the size of the project area (approximately 1,372 acres), grading has the potential to require the concurrent grading of more than 100 acres. Although this has the potential to exceed the grading provided under the Storm Water Manual, the Manual does provide that the Director of Public Works may approve, on a case-by-case basis, extensions of the disturbed soil area limit. Soil stabilization and sediment control materials shall be maintained on site that are sufficient to protect the disturbed soil areas. Under the Limitation of Grading requirements, grading is expected to be phased at larger sites. Also, according to the Storm Water Manual, it may be necessary to deploy erosion and sediment control BMPs in areas that are not actively being worked before additional grading is done. In addition to requiring compliance with a project-specific SWPPP and GCP, the manual requires proper inspection, monitoring and maintenance of construction BMPs during dry and wet weather conditions. A qualified person who is trained and competent in the use of BMPs shall be on site daily, although not necessarily full time, to evaluate the conditions of the site with respect to stormwater pollution prevention.

Runoff generated by any interim mass graded pad would drain to temporary desilt basins to be sized and located for each respective pad. For mass graded pads, the only potential pollutant of concern that would be generated by these pads is sediment. Desilt basins would target this sole pollutant prior to discharging flows to the receiving storm drain system. Applicable erosion control measures for permanent stabilization would comply with California Stormwater Quality Association Handbook measures and as indicated by each area's SWPPP. Future development of each mass graded pad would be the responsibility of the future builder, ensuring that all future developed runoff would be treated in accordance with the governing water quality requirements at the time of construction, prior to discharging to the receiving storm drain system. If new technology that increases treatment capacity is available at the time of construction, it would be utilized.

Therefore, although construction of the proposed project has the potential to violate water quality standards, compliance with the CBC, the Chula Vista Storm Water Management and Discharge Control Ordinance No 2854, the City of Chula Vista Subdivision Manual, Design and Construction Standards of the City of Chula Vista, San Diego Area Regional Standard Drawings, and Standard Specifications for Public Works Construction, as well as the preparation of site-specific SWPPPs, impacts would help reduce potential impacts. However, the proposed project could still result in **potentially significant** impacts and mitigation would be required.

Operational Impacts (Post Construction)

The proposed project area currently consists of farmland, rolling hills, vegetation consisting mainly of brush, and incised canyons that partition the villages into several defined watersheds. The project area currently flows south into the Otay River in the pre-developed condition. The following provides a discussion of the effects of the proposed development in each village, as well as the applicable regulatory requirements and project design features to reduce potential impacts to surface water quality.

Equipment and hazardous materials associated with construction activities would be removed from the project site after build-out is complete, which would reduce the potential for pollutants to be discharged. However, there are multiple pollutants associated with operation of the proposed land uses within the project area. The pollutants of concern for the project are listed in Table 5.10-4 and are described below.

Table 5.10-4
Anticipated Pollutants from Project Site

Priority Project Categories	General Pollutant Categories(1)								
	Sediments	*Nutrients*	*Heavy Metals*	*Organic Compounds*	*Trash and Debris*	*Oxygen Demanding Substances*	*Oil and Grease*	*Bacteria and Viruses*	*Pesticides*
Detached Residential	X	X			X	X	X	X	X
Attached Residential	X	X			X	P(1)	P(2)	P	X
Commercial (> 100,000 ft2)	P(1)	P(1)		P(2)	X	P(5)	X	P(3)	P(5)
Automotive Repair Shops			X	X(4)(5)	X		X		
Restaurants					X	X	X	X	
Hillside Development (>5,000 S.F.)	X	X			X	X	X		X
Parking Lots	P(1)	P(1)	X		X	P(1)	X		P(1)
Streets	X	P(1)	X	X(4)	X	P(5)	X		

(1) X = Anticipated Pollutants, P = Potential Pollutants
(2) A potential pollutant if landscaping exists on site
(3) A potential pollutant if the project includes uncovered parking areas
(4) A potential pollutant if land use involved food or animal waste products
(5) Including petroleum hydrocarbons
(6) Including solvents
Source: Hunsaker and Associates 2014

Sediments. Soils or other surface materials eroded and then transported or deposited by the action of wind, water, ice, or gravity. Sediments can increase turbidity, clog fish gills, reduce spawning habitat, smother bottom dwelling organisms, and suppress aquatic vegetative growth.

Nutrients. Inorganic substances, such as nitrogen and phosphorous, that commonly exist in the form of mineral salts that are either dissolved or suspended in water. Primary sources of nutrients in urban runoff are fertilizers and eroded soils. Excessive discharge of nutrients to water bodies and streams can cause excessive aquatic algae and plant growth. Such excessive production, referred to as cultural eutrophication, may lead to excessive decay of organic matter in the water body, loss of oxygen in the water, release of toxins in sediment, and the eventual death of aquatic organisms.

Heavy Metals. Metals are raw material components in non-metal products such as fuels, adhesives, paints and other coatings. Primary sources of metal pollution in stormwater are typically commercially available metals and metal products. Metals of concern include cadmium, chromium, copper, lead, mercury and zinc. Lead and chromium have been used as corrosion inhibitors in primer coatings and cooler tower systems. At low concentrations naturally occurring in soil, metals are not toxic. However, at higher concentrations, certain metals can be toxic to aquatic life. Humans can be impacted from contaminated groundwater resources, and bioaccumulation of metals in fish and shellfish. Environmental concerns, regarding the potential for release of metals to the environment, have already led to restricted metal usage in certain applications.

Organic Compounds. Organic compounds are carbon-based. Commercially available or naturally occurring organic compounds are found in pesticides, solvents and hydrocarbons. Organic compounds can, at certain concentrations, indirectly or directly constitute a hazard to life or health. When rinsing off objects, toxic levels of solvents and cleaning compounds can be discharged to storm drains. Dirt, grease and grime retained in the cleaning fluid or rinse water may also adsorb level of organic compounds that are harmful or hazardous to aquatic life.

Trash and Debris. Examples include paper, plastic, leaves, grass cuttings, and food waste, which may have a significant impact on the recreational value of a water body and aquatic habitat. Excess organic matter can create a high biochemical oxygen demand in a stream and thereby lower its water quality. In areas where stagnant water is present, the presence of excess organic matter can promote septic conditions resulting in the growth of undesirable organisms and the release of odorous and hazardous compounds such as hydrogen sulfide.

Oxygen Demanding Substances. Biodegradable organic material as well as chemicals that react with dissolved oxygen in water to form other compounds. Compounds such as ammonia and hydrogen sulfide are examples of oxygen-demanding compounds. The oxygen demand of a substance can lead to depletion of dissolved oxygen in a water body and possibly the development of septic conditions.

Oil and Grease. Characterized as high high-molecular weight organic compounds. Primary sources of oil and grease are petroleum hydrocarbon products, motor products from leaking vehicles, oils, waxes, and high-molecular weight fatty acids. Elevated oil and grease content can decrease the aesthetic value of the water body, as well as the water quality.

Bacteria and Viruses. Bacteria and viruses are ubiquitous micro-organisms that thrive under certain environmental conditions. Their proliferation is typically caused by the transport of animals or human fecal wastes from the watershed. Water, containing excessive bacteria and viruses can alter the aquatic habitat and create a harmful environment for humans and aquatic life. Also, the decomposition of excess organic waste causes increased growth of undesirable organisms in the water.

Pesticides. Pesticides (including herbicides) are chemical compounds commonly used to control nuisance growth or prevalence of organisms. Excessive application of a pesticide may result in runoff containing toxic levels of its active component.

Generally, these constituents are referred to as non-point source pollutants. As stated in the Development Storm Water Manual, any anticipated pollutants potentially generated by the proposed project that are on the 303(d) list are considered pollutants of concern. The San Diego Bay is impaired for organic compounds. Therefore, organic compounds are a pollutant of concern associated with the proposed project. Increased runoff from the development of future land uses as designated in the contribution of non-point source pollution, including organic compounds into Wolf Canyon and the Otay River, and ultimately San Diego Bay that would degrade water quality.

All runoff conveyed in the proposed storm drain systems would be treated in compliance with RWQCB regulations and NPDES criteria prior to discharging to natural watercourses. California RWQCB Order No. R9-2007-0001, sets the waste discharge requirements for discharges of urban runoff from municipal storm separate drainage systems draining the watersheds of San Diego County. Per the RWQCB Order, post-development runoff from a site shall not contain pollutant loads which cause or contribute to an exceedance of receiving water quality objectives or which have not been reduced to the maximum extent practicable. The following operational BMPs will ensure that water quality standards and waste discharge requirements are met during post-development activity:

Operational Best Management Practices

As required by the Development Storm Water Manual, implementation of the proposed project would minimize impacts on receiving water quality by incorporating post-construction BMPs into project design, including low impact development site design, source control, and treatment control BMPs. The following BMPs are specific to the development proposed for the Village

Three North and a Portion of Village Four, Village Eight East, and Village Ten project sites (Figure 5.10-4, 5.10-5, 5.10-6, respectively), which include the construction of servicing roads, sidewalks, utilities and the mass grading of industrial pads for future development.

Treatment Control BMPs

The Village Three North and a Portion of Village Four site design includes a bioretention basin in the northwest corner of the Heritage Road-Main Street intersection.

A bioretention basin is proposed in the southeast corner of the site along Main Street to treat the majority of the Village Eight East development consisting of the various neighborhood areas, school site, community purpose facilities, parks, and streets. The downstream end of the storm drain systems which collects runoff from these areas will have a clean out with a weir set at a height which will divert the 'water quality' flows towards the basin and allow peak flows to continue to be routed to the Otay River. The bioretention basins will be designed as dictated by the City of Chula Vista SUSMP.

Two bioretention basins are proposed to treat the Village Ten development consisting of the various neighborhood areas, school site, community purpose facilities, parks, and streets, as well as runoff from the university site and the portion of Village Eleven which drains its runoff through the Village Ten site. The on-site residential areas and streets will convey their runoff within one of two different storm drains. The downstream end of these two storm drain systems will include a clean out with a weir set at a height which will divert the water quality flows towards their respective basin and allow peak flows to continue to be routed to the Otay River. The two storm drain systems will ultimately confluence downstream of the water quality basins prior to outletting into the Otay River. The bioretention basins will be designed as dictated by the City of Chula Vista SUSMP.

Source Control BMPs

Design Outdoor Material Storage Areas to Reduce Pollution

- Storage areas shall include structural features that prevent pollutants from entering storm drains. Where appropriate, comply with the requirements of local Hazardous Materials Programs.
- Grade and berm outdoor storage areas to prevent run-on or runoff from area.
- Storage of hazardous materials and wastes shall be in compliance with federal, state, and local laws, ordinances, and regulations.

Design Trash Storage Areas to Reduce Pollution Introduction

All outdoor trash storage areas shall meet the following requirements per Design Concept SC-3 in the Chula Vista Development Storm Water Manual dated March 2010 (limited exclusion: detached residential homes):

- Paved with an impervious surface, designed not to allow run-on from adjoining areas, screened or walled to prevent off-site transport of trash; and
- Covered with a roof, awning or trash lid to minimize direct precipitation.
- Designed in accordance with Chula Vista Municipal Code Section 19.58.340.

Integrated Pest Management (IPM) Principles

Integrated pest management (IPM) is an ecosystem-based pollution prevention strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitation manipulation, modification of cultural practices, and use of resistant plant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment. More information may be obtained at the UC Davis website (http://www.ipn.ucdavis.edu/WATER/U/index.html).

- Eliminate and/or reduce the need for pesticide use in the project design by:
    - Plant pest-resistant or well-adapted plant varieties such as native plants
    - Discourage pests by modifying the site and landscaping design.

  In order to achieve this source control BMP objective, native vegetation will be used throughout the project site in accordance with the landscape plans.
- Distribute IPM educational materials to future site residents/tenants.

  Minimally, educational materials must address the following topics:
    - Keeping pests out of buildings and landscaping using barriers, screens, and caulking;
    - Physical pest elimination techniques, such as, weeding, squashing, trapping, washing, or pruning out pests;
    - Relying on natural enemies to eat pests;
    - Proper use of pesticides as a last line of defense.

  The homeowners will be made aware of the aforementioned RWQCB regulations through a homeowners' education program.

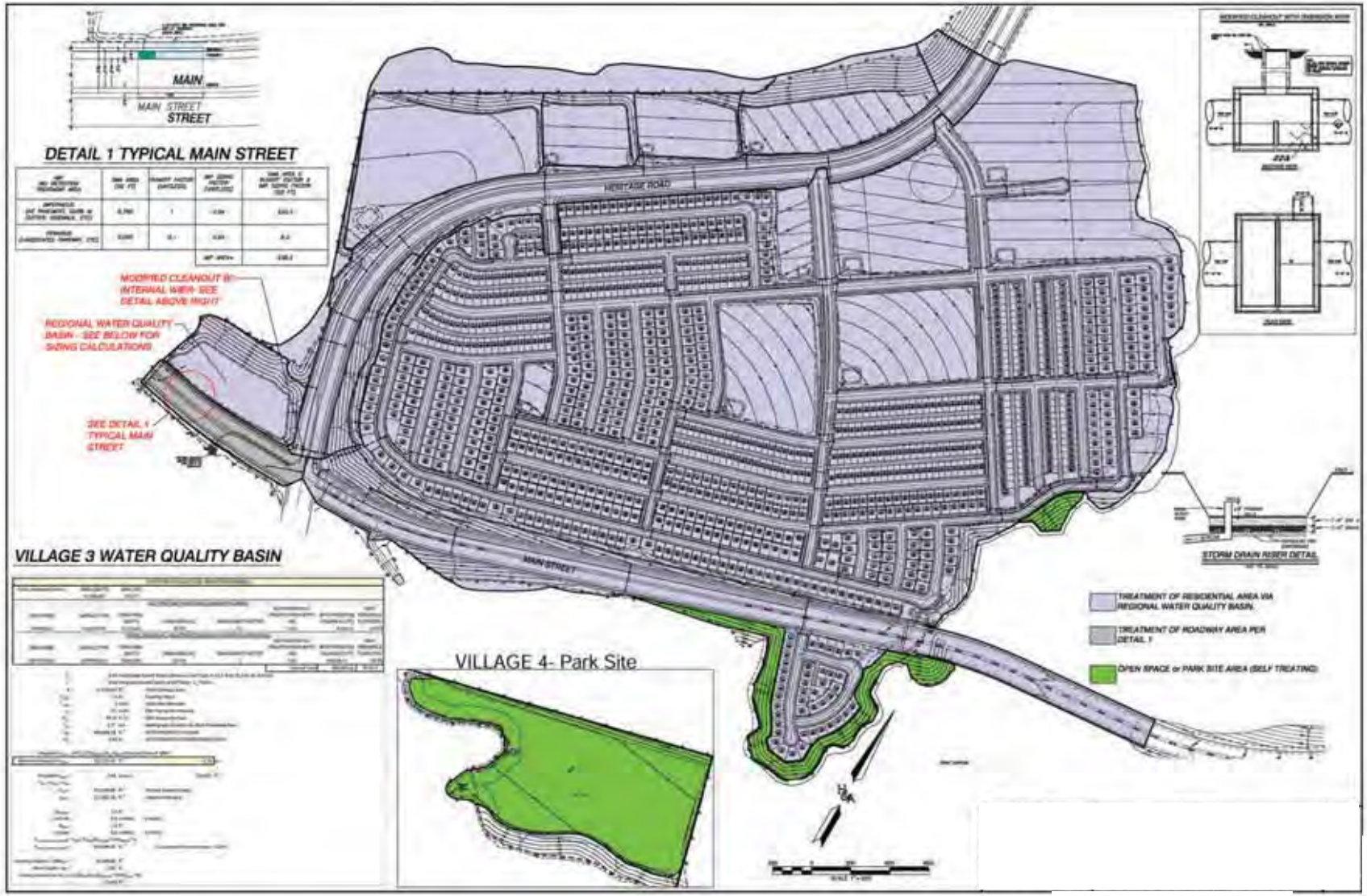

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FIGURE 0-4

Village Three North an a Portion of Village Four MP ocation Map

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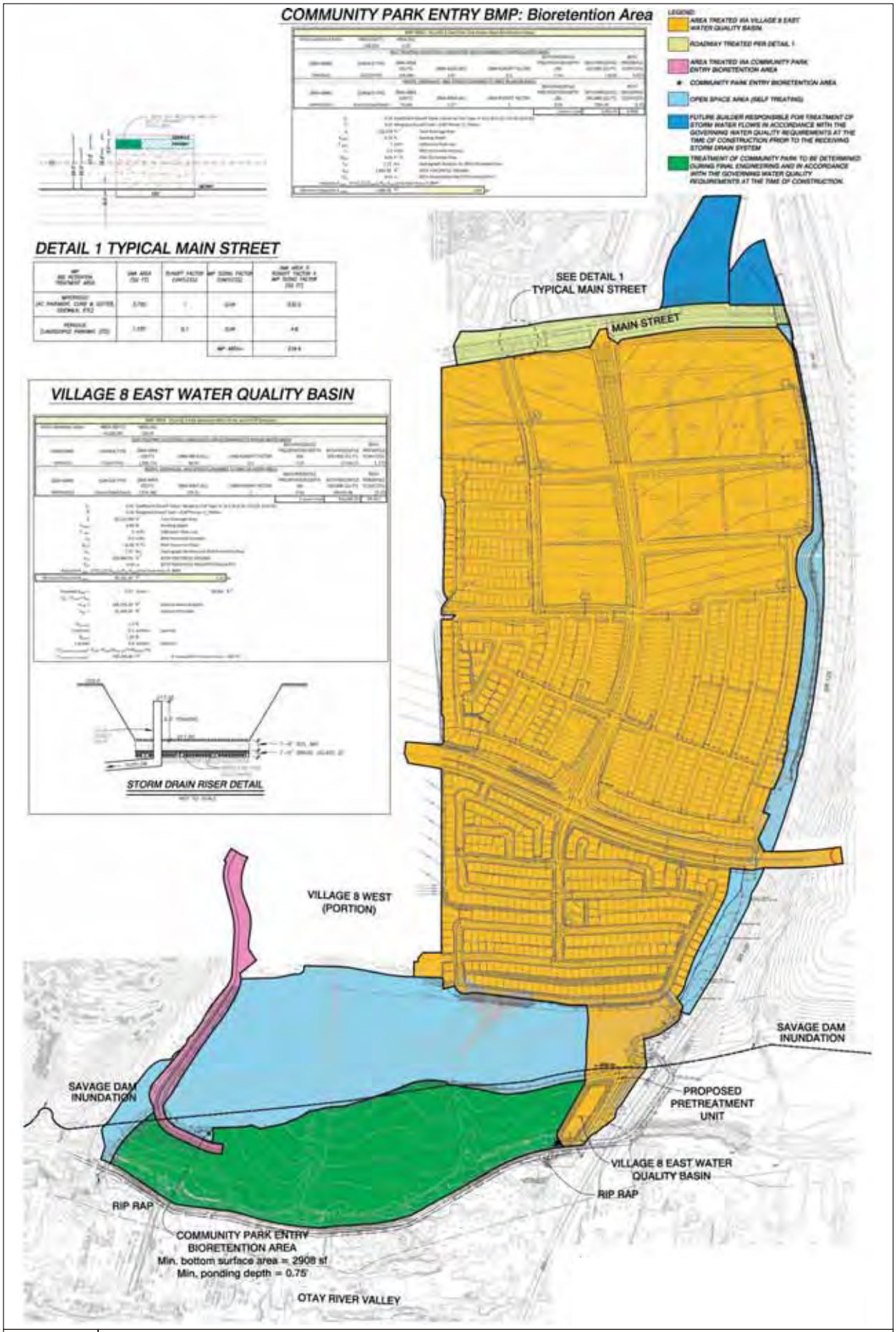

SOURCE: HUNSAKER & ASSOCIATES 2014

FIGURE 5.10-5
Village Eight East BMP Location Map

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