APPENDIX D

Environmental Resources Section
Tables and Graphs

APPENDIX D
Tables and Graphs Referenced in the Final EIS

This appendix lists all tables and graphs for each section within this EIS. The purpose of this appendix is to streamline the EIS and gather into one location for the reader all tables and graphs not already reflected in the technical appendices. Where the EIS refers directly to a technical appendix for a table or graph please refer to that appendix; tables and graphs included in the technical appendices are not reproduced here.

CHAPTER 2, PROJECT DESCRIPTION

The following tables are referenced in Chapter 2 of the EIS.

Table 2-1
Construction Equipment and Vehicles

Equipment	Use
Air compressors	Provide compressed air for vehicles
Cranes	Lifting turbine materials for installation
Generator sets	Provide electricity and lighting
Graders	Road and pad construction
Pavers	Road construction
Paving equipment	Road construction
Pumps	Pumping water to various sites within the Project Site
Rollers	Road and pad compaction
Rough-terrain forklifts	Lifting equipment and pre-erection assembly
Track dozers	Road and pad construction
Scrapers	Road construction preparation
Tractors/loaders/backhoes	General use
Trenchers	Digging trenches for underground utilities
Welders	Assembly
Water trucks	Compaction, erosion, and dust control
Delivery trucks	Hauling road and pad material

Table 2-2
Impact Acreages of the Project Alternatives

Project Alternative	Approximate Impact (Acres)
Alternative 1: Full Build-Out Alternative, Approximately 252 MW	Campo Wind Facilities = 800 Boulder Brush Facilities = 130 Total Project 930
Alternative 2: Reduced Intensity Alternative, Approximately 202 MW	Campo Wind Facilities = 655 Boulder Brush Facilities = 200 Total Project 855
No Action Alternative	0

MW = megawatts.

Table 2-3
Comparison of Effects for Project Alternatives

Effects	Alternative 1: Approximately 252 MW	Alternative 2: Approximately 202 MW	No Action Alternative
Permanent footprint/temporary footprint	Approx. 930 acres	Approx. 855 acres	0 acres/0 acres
Turbines	60	48	0
Land resources	Not adverse	Reduced in severity – not adverse	No impact
Water resources	Not adverse	Reduced in severity – not adverse	No impact
Air quality	Not adverse[a]	Reduced in severity – not adverse [a]	No impact
Biological resources	Not adverse with implementation of recommended mitigation	Reduced in severity – not adverse with implementation of recommended mitigation	No impact
Greenhouse gas emissions and climate change	No effect	No effect	No impact
Cultural resources	Not adverse with implementation of recommended mitigation	Reduced in severity – not adverse with implementation of recommended mitigation	No impact
Socioeconomic resources	Adverse unavoidable (visual and noise)	Reduced in severity – adverse unavoidable (visual and noise)	No impact
Resource use patterns	Not adverse	Reduced in severity – not adverse.	No impact
Traffic and transportation	Not adverse with implementation of recommended mitigation.	Reduced in severity – not adverse with implementation of recommended mitigation.	No impact
Noise	Adverse unavoidable	Reduced in severity – adverse unavoidable	No impact
Visual resources	Adverse unavoidable	Reduced in severity – adverse unavoidable	No impact
Public health and safety	Not adverse with implementation of recommended mitigation.	Reduced in severity – not adverse with implementation of recommended mitigation.	No impact
Other issues discussed in this Draft EIS	Not adverse	Reduced in severity – not adverse.	No impact
Cumulative	Adverse unavoidable (visual)	Reduced in severity – adverse unavoidable	No impact

EIS = Environmental Impact Statement.

[a] Significant unavoidable air quality impacts are identified under state standards for air quality during construction.

CHAPTER 3, AFFECTED ENVIRONMENT AND AREAS NOT FURTHER DISCUSSED

3.2 Water Resources

The following tables are referenced in Section 3.2 of the EIS.

Table 3.2-1
Watershed Designations by Agency/Source

Agency/Source	Analysis Scale	HUC/Basin No.	Name	Size (Sq. Mi.)
USGS Watershed Boundary Dataset	Basin	180703	Laguna–San Diego Coastal	5,460
		181002	Salton Sea	8,220
	Sub-basin	18070305	Cottonwood–Tijuana	1,719
		18100202	Carrizo Creek	654
	Watershed	1807030511	Tecate Creek	167
		1807030509	Upper Cottonwood Creek	148
		1807030505	Arroyo Seco	199
		1810020202	Upper Carrizo Creek	238
	Subwatershed	180703051101	Miller Creek–Campo Creek	42
		180703051102	Campo Valley–Campo Creek	32
		180703050901	La Posta Creek	47
		180703050501	Santa Margarita	32
		181002020204	Tule Creek	34
		181002020205	Walker Canyon–Carrizo Creek	35
San Diego RWQCB Basin Plan	RWQCB Region	9	San Diego	3,849
		7	Colorado River	19,925
	Hydrologic Unit	911.00	Tijuana	467
		722.00	Anza-Borrego	1,501
	Hydrologic Area	911.80	Campo	108
		911.70	Cameron	47
		722.70	Jacumba	135
	Hydrologic Sub-Area	911.82	Canyon City	50
		911.83	Clover Flat	27
		911.84	Hill	12
		911.85	Hipass	10
		722.71	McCain	110

Sources: USGS 2016; San Diego RWQCB 2016; Colorado River RWQCB 2017.
Notes: HUC = hydrologic unit code; sq. mi. = square miles; USGS = U.S. Geological Survey; RWQCB = Regional Water Quality Control Board.

Table 3.2-2
Clean Water Act Section 303(d) Impairments

Name	Pollutant/ Stressor	Potential Sources	TMDL Status	Year
Cottonwood Creek	Selenium	Source unknown	Scheduled	2019
	Indicator bacteria	Source unknown	Scheduled	2029
Morena Reservoir	pH	Source unknown, unknown nonpoint source	Scheduled	2019
	Nitrogen	Source unknown	Scheduled	2023
	Ammonia as nitrogen	Agriculture–animal, natural sources, unknown nonpoint source	Scheduled	2019
	Manganese	Source unknown	Scheduled	2019
	Phosphorus	Natural sources, unknown nonpoint source, urban runoff/storm sewers	Scheduled	2021
	Color	Agriculture	Scheduled	2019
Barrett Lake	Perchlorate	Source unknown	Scheduled	2019
	pH	Source unknown	Scheduled	2019
	Total nitrogen as N	Natural sources, unknown nonpoint source, urban runoff/storm sewers	Scheduled	2019
	Phosphorus	Source unknown	Scheduled	2023
	Manganese	Source unknown	Scheduled	2019
	Color	Source unknown	Scheduled	2019
Campo Creek	Indicator bacteria	Source unknown	Scheduled	2029

Source: SWRCB 2018.
Notes: TMDL = total maximum daily load.

3.3 Air Quality

The following table is referenced in Section 3.3 of the EIS.

Table 3.3-1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	National Standards[b]	
		Concentration[c]	*Primary*[c,d]	*Secondary*[c,e]
O_3	1 hour	0.09 ppm (180 µg/m^3)	—	Same as primary standard[f]
	8 hours	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)[f]	
NO_2[g]	1 hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)	Same as primary standard
	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	
CO	1 hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	None
	8 hours	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	

Table 3.3-1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	National Standards[b]	
		Concentration[c]	*Primary*[c,d]	*Secondary*[c,e]
SO_2[h]	1 hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	—
	3 hours	—	—	0.5 ppm (1,300 µg/m^3)
	24 hours	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas)[g]	—
	Annual	—	0.030 ppm (for certain areas)[g]	—
PM_{10}[i]	24 hours	50 µg/m^3	150 µg/m^3	Same as primary standard
	Annual arithmetic mean	20 µg/m^3	—	
$PM_{2.5}$[i]	24 hours	—	35 µg/m^3	Same as primary standard
	Annual arithmetic mean	12 µg/m^3	12.0 µg/m^3	15.0 µg/m^3
Lead[j,k]	30-day average	1.5 µg/m^3	—	—
	Calendar quarter	—	1.5 µg/m^3 (for certain areas)[k]	Same as primary standard
	Rolling 3-month average	—	0.15 µg/m^3	
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m^3)	—	—
Vinyl chloride[j]	24 hours	0.01 ppm (26 µg/m^3)	—	—
Sulfates	24 hours	25 µg/m^3	—	—
Visibility-reducing particles	8 hours (10:00 a.m. to 6:00 p.m. PST)	Insufficient amount to produce an extinction coefficient of 0.23 per kilometer due to the number of particles when the relative humidity is less than 70%	—	—

Source: CARB 2016.

Notes: O_3 = ozone; ppm = parts per million by volume; µg/m^3 = micrograms per cubic meter; NO_2 = nitrogen dioxide; CO = carbon monoxide; mg/m^3= milligrams per cubic meter; SO_2 = sulfur dioxide; PM_{10} = particulate matter with an aerodynamic diameter less than or equal to 10 microns; $PM_{2.5}$ = particulate matter with an aerodynamic diameter less than or equal to 2.5 microns.

[a] California standards for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, suspended 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. CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] 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 per year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than 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 1. 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.

[c] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25° Celsius (°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.

d National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.
e National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
f On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
g To attain the national 1-hour standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (ppb). Note that the national 1-hour standard is in units of ppb. California standards are in units of 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.
h 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 national 1-hour 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 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment of the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
i On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu g/m^3$ were also retained. The form of the annual primary and secondary standards is the annual mean averaged over 3 years.
j CARB has identified lead and vinyl chloride as TACs 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.
k The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until 1 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

3.5 Biological Resources

The following tables are referenced in Section 3.5 of the EIS.

Table 3.5-1
Vegetation Communities and Land Cover Types in the Project Site

General Vegetation Community/Land Cover Category	Vegetation Type (Holland/Oberbauer Code[a])	Campo Corridor (Acres)	Boulder Brush Corridor (Acres)	Total (Acres)
Disturbed and Developed Areas (10000)	Disturbed Habitat (11300)	80.6	10.9	91.5
	Urban/Developed (12000)	19.7	0.2	19.9
	Eucalyptus Woodland (79100)	—	2.3	2.3
	Disturbed and Developed Areas Subtotal[b]	*100.3*	*13.4*	*113.7*
Scrub and Chaparral (30000)	Montane Buckwheat Scrub (32800)	131.2	44.4	175.6
	Big Sagebrush Scrub (35210)	94.4	32.2	126.6
	Disturbed Big Sagebrush Scrub (35210)	0.3	—	0.3
	Granitic Northern Mixed Chaparral (37131)	272.2	87.1	329.3
	Granitic Chamise Chaparral (37210)	1,256.9	11.5	1,268.4
	Red Shank Chaparral (37300)	116.8	46.0	162.8
	Semi-Desert Chaparral (37400)	—	43.4	43.4
	Scrub Oak Chaparral (37900)	46.6	—	46.6
	Upper Sonoran Subshrub Scrub (39000)	44.5	—	44.5
	Scrub and Chaparral Subtotal[b]	*1,932.9*	*264.6*	*2,197.5*

Table 3.5-1
Vegetation Communities and Land Cover Types in the Project Site

General Vegetation Community/Land Cover Category	Vegetation Type (Holland/Oberbauer Code[a])	Campo Corridor (Acres)	Boulder Brush Corridor (Acres)	Total (Acres)
Grasslands, Vernal Pools, Meadows, and other Herb Communities (40000)	Valley Sacaton Grassland (42120)	0.5	—	0.5
	Non-Native Grassland (42200)	60.0	—	60.0
	Non-Native Grassland Broadleaf-Dominated (42210)	3.7	—	3.7
	Wildflower field (42300)	—	14.8	14.8
	Grasslands, Vernal Pools, Meadows, and other Herb Communities Subtotal[b]	*64.2*	*14.8*	*79.0*
Bog and Marsh (50000)	Freshwater Marsh (52400)	<0.1	—	<0.1
	Emergent Wetland (52440)	3.3	3.4	6.7
	Bog and Marsh Subtotal[b]	*3.3*	*3.4*	*6.7*
Riparian and Bottomland Habitat (60000)	Southern Coast Live Oak Riparian Forest (61310)	5.3	—	5.3
	Southern Arroyo Willow Riparian Forest (61320)	—	0.9	0.9
	Mulefat Scrub (63310)	0.2	—	0.2
	Southern Willow Scrub (63320)	0.8	—	0.8
	Riparian and Bottomland Habitat Subtotal[b]	*6.3*	*0.9*	*7.2*
Woodland (70000)	Coast Live Oak Woodland (71160)	69.5	19.4	88.9
	Open Coast Live Oak Woodland (71161)	1.4	0.5	1.9
	Dense Coast Live Oak Woodland (71162)	1.3	—	1.3
	Woodland Subtotal[b]	*72.2*	*19.9*	*92.1*
Unvegetated Stream Channel	Unvegetated Stream Channel	5.5	1.1	6.6
	Unvegetated Stream Channel Subtotal[b]	*5.5*	*1.1*	*6.6*
	Total[b]	**2,184.7**	**318.1**	**2,502.8**

Source: Appendix H (BTR).
Notes:
[a] Holland (1986) as modified by Oberbauer et al. (2008).
[b] Totals may not sum due to rounding.

Table 3.5-2
ACOE Jurisdictional Resources

Vegetation Community	Jurisdiction	Acres
Emergent wetland Freshwater marsh Valley sacaton grassland	Wetland waters of the United States	3.69
Southern willow scrub	Wetland waters of the United States	0.71
Unvegetated channel – ephemeral	Waters of the United States	4.89

Table 3.5-2
ACOE Jurisdictional Resources

Vegetation Community	Jurisdiction	Acres
Unvegetated channel – intermittent	Waters of the United States	0.01
	Total jurisdictional resources	**9.30**

Source: Appendix H (BTR).

3.7 Socioeconomic Conditions

The following table is referenced in Section 3.7 of the EIS.

Table 3.7-1
U.S. Census Bureau Census Data

Subject	San Diego County		Census Tract 211		Campo Reservation	
Employment Status	*Estimate*	*Percent*	*Estimate*	*Percent*	*Estimate*	*Percent*
In labor force	2,607,875	—	6,014	—	287	—
Employed	1,495,776	57.4%	2,114	35.2%	111	38.7%
Unemployed	126,990	4.9%	452	7.5%	19	6.6%
Unemployment rate	—	7.8%	—	17.6%	—	14.6%
Income						
Median household income	66,529	—	41,250	—	23,571	—
Mean household income	90,685	—	58,117	—	39,385	—

Source: U.S. Census Bureau 2012, per USGenWeb Census Project n.d. (5-year estimates).

3.9 Traffic and Transportation

The following tables are referenced in Section 3.9 of the EIS.

Table 3.9-1
Existing Intersection Operations

No.	Intersection	LOS Method	Critical Movement	AM Peak		PM Peak	
				Delay[1]	*LOS*[2]	*Delay*[1]	*LOS*[2]
1	Crestwood Road/I-8 westbound ramps	HCM	WBL	10.2	B	10.6	B
2	Crestwood Road/I-8 eastbound ramps	HCM	EBL	9.4	A	9.8	A
3	Crestwood Road/Old Highway 80	HCM	EBL	9.4	A	9.4	A
4	Old Highway 80/Church Road–Golden Acorn Casino	HCM	EBL	11.0	B	12.6	B
5	Old Highway 80/Live Oak Trail	HCM	WBL	9.1	A	9.3	A
6	Campo Road (SR-94)/Church Rd–BIA Route 10	HCM	SBL	9.3	A	9.1	A
7	Ribbonwood Road-SR-94/I-8 westbound ramps	HCM	WBL	9.3	A	9.0	A
8	Ribbonwood Road-SR-94/I-8 eastbound ramps	HCM	EBL	9.1	A	8.9	A

Source: Appendix J (Traffic Impact Analysis).

Notes: LOS = level of service; I = Interstate; HCM = Highway Capacity Manual; WBL = westbound left; EBL = eastbound left; SR = State Route; BIA = Bureau of Indian Affairs; SBL = southbound left.

1 Delay in seconds per vehicle is reported for critical movement at unsignalized intersections

2 Level of service; for unsignalized intersections, 0.0 to 10.0 means LOS A; 10.1 to 15.0 means LOS B; 15.1 to 25.0 means LOS C; 25.1 to 35.0 means LOS D; 35.1 to 50.1 means LOS E; and greater than or equal to 50.1 means LOS F.

Table 3.9-2
Existing Daily Roadway Segment Operations

Roadway Segment	Classification	LOS E ADT	Existing Conditions		
			Existing ADT	*Existing V/C*	*Existing LOS*
Crestwood Road					
• between I-8 WB & I-8 EB ramps	2-lane undivided	16,200	2,212	0.14	B
• Old Highway 80 to Church Road	2-lane undivided	16,200	4,132	0.26	C
Old Highway 80					
• Church Road to Live Oak Trail	2-lane undivided	16,200	1,646	0.10	A
• Live Oak Trail to Campo Road (SR-94)	2-lane undivided	16,200	1,411	0.09	A
Church Road					
• Old Highway 80 to Campo Road	2-lane undivided	16,200	677	0.04	A
Ribbonwood Road					
• North of I-8	2 Lane undivided	4,500	579	0.13	<C
Campo Road (SR-94)					
• BIA Route 15 to Church Road	2-lane undivided	19,000	1,900	0.12	A

Source: Appendix J (Traffic Impact Analysis).
Notes: LOS = level of service; ADT = average daily traffic; V/C = volume to capacity ratio; I = Interstate; WB = westbound; EB = eastbound; SR = State Route; BIA = Bureau of Indian Affairs.
LOS is based on County of San Diego Public Road Standard Average Daily Vehicle Trips – Table 1.

Table 3.9-3
Existing Freeway Mainline Segment LOS

Freeway Segment	Dir.	Mainline Lanes[a]	Average Daily Traffic[b]	Peak Hour Volume[c]		V/C		Density (pc/ln/mi)		LOS	
				AM	*PM*	*AM*	*PM*	*AM*	*PM*	*AM*	*PM*
Interstate 8											
Cameron Road to Crestwood Road–Old Hwy 80	EB	2	18,000	656	1,089	0.20	0.34	6.7	11.1	A	B
	WB	2		1,177	1,247	0.37	0.39	12.0	12.7	B	B
Crestwood Road–Old Hwy 80 to Ribbonwood Road–SR-94	EB	2	17,100	656	1,089	0.20	0.34	6.7	11.1	A	B
	WB	2		1,177	1,247	0.37	0.39	12.0	12.7	B	B
Ribbonwood Road–SR-94 to Carrizo Gorge	EB	2	16,100	617	1,025	0.19	0.32	6.3	10.5	A	A
	WB	2		1,109	1,174	0.35	0.37	11.3	11.9	B	B

Notes: LOS = level of service; V/C = volume to capacity ratio; pc/ln/mi = passenger cars per lane per mile; WB = westbound; EB = eastbound; SR = State Route.
LOS based on HCM methodology, analyzed in the *Highway Capacity Software* (HCS7).

[a] Lane geometry taken from PeMS lane configurations at corresponding postmile.
[b] Existing ADT volumes from most recent Caltrans Traffic Census Program (2017).
[c] Peak hour volumes calculated from Caltrans Traffic Census Program Peak Hour Volume Data (2017).

3.11 Visual Resources

The following table is referenced in Section 3.11 of the Draft EIS.

Table 3.11-1
Key Observation Points (Panoramas)

KOP No.[a]	Location	Heading
1	Eastbound I-8 (Off-Reservation)	E/SE
2	SR-94 at western Reservation boundary	E
3	Church Road/BIA Road 10 (On-Reservation)	N/NW
4	Church Road/BIA Road 10 (On-Reservation)	S/SW
5	SR-94 at Live Oaks Springs Road (Off Reservation)	W/NW
6	Tierra Del Sol Road (Off-Reservation)	N/NW
7	Tierra Real Lane (Off-Reservation)	W/SW

Notes: KOP = key observation point; I = Interstate; SR = State Route; BIA = Bureau of Indian Affairs.
Photos of all KOPs listed are included in the Visual Impact Assessment (Appendix N).
[a] For further description of each KOP, refer to Appendix N.

CHAPTER 4, ENVIRONMENTAL CONSEQUENCES (EFFECTS)

Chapter 4 contains effects and mitigation summary tables, as well as other cumulative summary tables. For this reason, those tables were kept within the EIS for readability. Additional tables referenced within Chapter 4 of the EIS are presented in this section.

4.3 Air Quality

The following tables are references in Section 4.3 of the EIS.

Table 4.3-2
Estimated Annual Construction Criteria Air Pollutant Emissions – Unmitigated

Phase Description	VOC	NO_x	CO
	Tons per Year		
2019			
Campo Wind Facilities	0.42	4.71	12.19
Boulder Brush Facilities[a]	0.05	0.40	1.12
2019 Total	0.47	5.11	13.30
2020			
Campo Wind Facilities	0.79	4.62	14.48
Boulder Brush Facilities[a]	0.01	0.04	0.04
2020 Total	0.80	4.66	14.53
Maximum annual emissions	**0.80**	**5.11**	**14.53**

Table 4.3-2
Estimated Annual Construction Criteria Air Pollutant Emissions – Unmitigated

Phase Description	VOC	NO_x	CO
	Tons per Year		
Federal de minimis threshold	*100*	*100*	*100*
Threshold exceeded?	**No**	**No**	**No**

Source: Appendix B to Appendix G (Air Quality and Greenhouse Gas Emissions Analysis).
Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide.
Estimated emissions include compliance with PDF-AQ-1 through PDF-AQ-4.
[a] The Conformity Determination apply to the portions of the Project under federal control, but the emissions for Boulder Brush Facilities located on Private Land are included for disclosure.

Table 4.3-3
Estimated Maximum Annual Operational Criteria Air Pollutant Emissions

Emission Source[a]	VOC	NO_x	CO
	Tons per Year		
Area	0.02	0.00	0.00
Mobile	0.01	0.04	0.33
Stationary	0.02	0.05	0.05
Total maximum annual emissions	**0.05**	**0.09**	**0.38**
Federal de minimis threshold	*100*	*100*	*100*
Threshold exceeded?	**No**	**No**	**No**

Source: Appendix B to Appendix G (Air Quality and Greenhouse Gas Emissions Analysis).
Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide.
[a] The Conformity Determination apply to the portions of the Project under federal control. Furthermore, there are no operational emissions associated with the Boulder Brush Facilities.

4.4 Greenhouse Gas Emissions and Climate Change

The following tables are referenced in Section 4.4 of the EIS.

Table 4.4-1
Estimated Annual Construction Greenhouse Gas Emissions

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
2019				
Campo Wind Facilities	2,159.90	0.34	0.00	2,168.32
Boulder Brush Facilities	264.01	0.05	0.00	265.10
2019 total	*2,423.91*	*0.38*	*0.00*	*2,433.42*
2020				
Campo Wind Facilities	3,718.24	0.52	0.00	3,731.36
Boulder Brush Facilities	16.42	<0.01	0.00	16.44
2020 total	*3,734.66*	*0.52*	*0.00*	*3,747.80*

Table 4.4-1
Estimated Annual Construction Greenhouse Gas Emissions

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Total	**6,158.57**	**0.90**	**0.00**	**6,181.22**

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; <0.01 = values are reported as less than 0.01.
See Appendix B to Appendix G (Air Quality and Greenhouse Gas Emissions Analysis) for complete results.

Table 4.4-2
Vegetation Removal – Estimated Loss of Sequestered Carbon

Vegetation Type	CalEEMod Vegetation Land Use Category	CO_2 Emissions Factor (MT CO_2 per acre)	Net Loss (acres)	Loss of Sequestered Carbon (MT CO_2)
Campo Wind Facilities				
Forest Land	Scrub	14.3	698.99	9,995.56
Forest Land	Trees	111	22.14	2,457.54
Grassland	Grassland	4.31	24.26	104.56
Wetlands	Wetlands	0.00	0.36	0.00
Campo Wind Facilities subtotal			*745.75*	*12,557.66*
Boulder Brush Facilities				
Forest Land	Scrub	14.3	57.04	815.67
Forest Land	Trees	111	1.82	202.02
Boulder Brush Facilities subtotal			*58.86*	*1,017.69*
Total			**804.61**	**13,575.35**

Source: CAPCOA 2017.
Notes: MT CO_2 = metric tons carbon dioxide.
See Appendix B to Appendix G (Air Quality and Greenhouse Gas Emissions Analysis) for complete results.

Table 4.4-3
Estimated Annual Operational Greenhouse Gas Emissions

Emission Source	CO_2	CH_4	N_2O	CO_2e
	MT			
Area[a]	65.530.00	0.00	0.00	65.53
Energy	13.91	<0.01	<0.01	13.99
Mobile	102.85	<0.01	0.00	102.92
Stationary	8.91	<0.01	0.00	8.94
Solid waste	0.94	0.06	0.00	2.34
Water supply and wastewater	3.93	0.03	<0.01	4.88
Total	**130.54**	**0.09**	**<0.01**	**198.59**

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.
See Appendix B of Appendix G (Air Quality and Greenhouse Gas Emissions Analysis) for complete results.

4.5 Biological Resources

The following tables are referenced in Section 4.5 of the EIS.

Table 4.5-1a
Impacts on Vegetation Communities and Land Cover Types – Alternative 1

General Vegetation Community/ Land Cover Category	Vegetation Type (Holland/Oberbauer Code)	Campo Wind Facilities	Boulder Brush Facilities		Total (Acres)
		Permanent Impacts (Acres)	*Temporary Impacts (Acres)*	*Permanent Impacts (Acres)*	
Bog and Marsh (50000)	Emergent wetland	0.32	0.20 [a]	0	0.52
	Freshwater marsh	0	0	0	0
Bog and Marsh (50000) Subtotal		*0.32*	*0.20*	*0*	*0.52*
Disturbed and Developed Areas (10000)	Developed	3.56	0.01	0.09	3.66
	Disturbed habitat	45.24	2.44	5.53	53.21
	Eucalyptus woodland	0	0.02	0	0.02
Disturbed and Developed Areas (10000) Subtotal		*48.80*	*2.46*	*5.62*	*56.88*
Grasslands, Vernal Pools, Meadows, and other Herb Communities (40000)	Wildflower field	0	3.11	0.60	3.71
	Non-native grassland	21.23	0	0	21.23
	Non-native grassland broadleaf-dominated	0.20	0	0	0.20
	Valley sacaton grassland	0.22	0	0	0.22
Grasslands, Vernal Pools, Meadows, and other Herb Communities (40000) Subtotal		*21.65*	*3.11*	*0.60*	*25.36*
Riparian and Bottomland Habitat (60000)	Mulefat scrub	0.05	0	0	0.05
	Southern coast live oak riparian forest	0.85	0	0	0.85
	Southern willow scrub	0.18	0	0	0.18
	Southern arroyo willow riparian forest	0	0.20	0.15	0.35
Riparian and Bottomland Habitat (60000) Subtotal		*1.08*	*0.20*	*0.15*	*1.43*
Scrub and Chaparral (30000)	Big sagebrush scrub	30.42	6.44	2.72	39.58
	Disturbed big sagebrush scrub	0	0	0	0
	Granitic chamise chaparral	458.44	2.45	1.08	461.99
	Granitic northern mixed chaparral	92.97	23.90	9.63	126.51
	Montane buckwheat scrub	47.19	11.30	5.71	64.20
	Red shank chaparral	39.51	11.49	6.92	57.92
	Semi-desert chaparral	0	20.73	10.39	31.12

Table 4.5-1a
Impacts on Vegetation Communities and Land Cover Types – Alternative 1

General Vegetation Community/ Land Cover Category	Vegetation Type (Holland/Oberbauer Code)	Campo Wind Facilities	Boulder Brush Facilities		Total (Acres)
		Permanent Impacts (Acres)	*Temporary Impacts (Acres)*	*Permanent Impacts (Acres)*	
	Scrub oak chaparral	15.48	0	0	15.48
	Upper Sonoran subshrub scrub	10.59	0	0	10.59
	Scrub and Chaparral (30000) Subtotal	*694.59*	*76.33*	*36.47*	*807.39*
Woodland (70000)	Coast live oak woodland	18.79	4.54	0.90	24.23
	Open coast live oak woodland	1.41	0.10	0.04	1.55
	Dense coast live oak woodland	1.35	0	0	1.35
	Woodland (70000) Subtotal	*22.55*	*4.64*	*0.94*	*28.13*
Unvegetated stream channel	Unvegetated stream channel	1.25	0.30 [a]	0.13	1.68
	Unvegetated Stream Channel Subtotal	*1.25*	*0.30 [a]*	*0.13*	*1.68*
	Total	**789.25**	**87.25**	**43.91**	**920.40**

Source: Appendix H (BTR).

[a] Impacts to approximately 0.20 acres of emergent wetland and 0.12 acres of unvegetated channel are from a construction-related, temporarily cleared road that will be revegetated and/or recontoured once construction is complete. This temporary impact is a result of a 12-foot-wide construction access road that crosses Tule Creek. This road will be used only during construction to drive a pull truck across it to string cables, and will not be a permanent access road. Vegetation in this area will be trimmed or disked and no gravel or pavement will be placed within the creek. Following Boulder Brush Facilities construction, the area will be recontoured and replanted to restore Tule Creek to pre-Project conditions.

Table 4.5-1b
Impacts on Vegetation Communities and Land Cover Types – Alternative 2

General Vegetation Community/ Land Cover Category	Vegetation Type (Holland/Oberbauer Code)	Campo Wind Facilities	Boulder Brush Facilities		Total (Acres)
		Permanent Impacts (Acres)	*Temporary Impacts (Acres)*	*Permanent Impacts (Acres)*	
Bog and Marsh (50000)	Emergent wetland	0.35	0.21[a]	0	0.56
	Freshwater marsh	0.01	0	0	0.01
Bog and Marsh (50000) Subtotal		*0.36*	*0.21*	*0*	*0.57*
Disturbed and Developed Areas (10000)	Developed	3.22	0	0.01	3.23
	Disturbed habitat	38.30	1.70	9.45	49.45
Disturbed and Developed Areas (10000) Subtotal		*41.52*	*1.70*	*9.46*	*52.68*
Grasslands, Vernal Pools, Meadows, and other Herb Communities (40000)	Wildflower field	0	5.62	0.49	6.11
	Non-native grassland	21.07	0	0	21.07
	Non-native grassland broadleaf-dominated	2.97	0	0	2.97
	Valley sacaton grassland	0.22	0	0	0.22
Grasslands, Vernal Pools, Meadows, and other Herb Communities (40000) Subtotal		*24.26*	*5.62*	*0.49*	*30.37*
Riparian and Bottomland Habitat (60000)	Mulefat scrub	0.05	0	0	0.05
	Southern willow scrub	0.18	0	0	0.18
	Southern arroyo willow riparian forest	0	0.06	0.05	0.11
Riparian and Bottomland Habitat (60000) Subtotal		*0.23*	*0.06*	*0.05*	*0.34*
Scrub and Chaparral (30000)	Big sagebrush scrub	32.66	10.01	2.39	45.46
	Disturbed big sagebrush scrub	0	0	0	0
	Granitic chamise chaparral	393.54	2.51	1.03	397.08
	Granitic northern mixed chaparral	48.21	41.24	21.56	111.01
	Montane buckwheat scrub	37.33	14.12	6.61	58.06
	Red shank chaparral	35.26	19.48	13.00	67.74
	Semi-desert chaparral	0	19.95	12.45	32.40
	Scrub oak chaparral	18.57	0	0	18.57
	Upper Sonoran subshrub scrub	8.76	0	0	8.76

Table 4.5-1b
Impacts on Vegetation Communities and Land Cover Types – Alternative 2

General Vegetation Community/ Land Cover Category	Vegetation Type (Holland/Oberbauer Code)	Campo Wind Facilities	Boulder Brush Facilities		Total (Acres)
		Permanent Impacts (Acres)	*Temporary Impacts (Acres)*	*Permanent Impacts (Acres)*	
	Scrub and Chaparral (30000) Subtotal	*574.33*	*107.29*	*57.05*	*738.67*
Woodland (70000)	Coast live oak woodland	17.84	11.39	1.78	31.01
	Woodland (70000) Subtotal	*17.84*	*11.39*	*1.78*	*31.01*
Unvegetated stream channel	Unvegetated stream channel	1.29	0.27 [a]	0.12	1.68
	Unvegetated Stream Channel Subtotal	*1.29*	*0.27* [a]	*0.12*	*1.68*
	Total	**659.82**	**126.54**	**68.94**	**855.30**

Source: Appendix H (BTR).

Table 4.5-2a
Impacts on Jurisdictional Wetlands and Waters

Vegetation Communities and Cover Types	Campo Wind Facilities Impacts Acres[a]		Boulder Brush Facilities Impacts Acres				Total Acres	Total Linear Feet
	Permanent[b]		*Permanent*		*Temporary*			
	Acres[a]	*Linear Feet*	*Acres*[a]	*Linear Feet*	*Acres*[a]	*Linear Feet*		
Non-Wetland Waters								
Unvegetated channel – ephemeral	1.13	8,839	0.11	1,612	0.21	2,277	1.45	12,728
Unvegetated channel – intermittent	0	0	0.01	24	0.09	141	0.10	166
Subtotal non-wetland	*1.13*	*8,839*	*0.12*	*1,636*	*0.30*	*2,418*	*1.55*	*12,894*
Riparian Habitat								
Emergent wetland, freshwater marsh, and valley Sacaton grassland	0.54	N/A	0	—	0	—	0.54	N/A
Southern willow scrub	0.13	N/A	0	—	0	—	0.13	N/A
Southern riparian forest	0	—	0	—	0	—	0	—
Subtotal riparian	*0.67*	—	*0*	—	*0*	—	*0.67*	—
Total	**1.81**	**8,839**	**0.12**	**1,636**	**0.30**	**2,418**	***2.22***	***12,894***

Source: Appendix H (BTR).

a Acreage values rounded to the nearest tenth after summation (which may account for minor rounding error).

b All On-Reservation disturbances have been addressed as permanent.

Table 4.5-2b
Impacts on Waters of the United States – Alternative 2 – Approximately 202 MW

Feature Type	Type of Habitat (Oberbauer et al. 2008)	Type of Habitat (Cowardin et al. 1979)	Campo Wind Facilities	Boulder Brush Facilities		Total: Acres (Linear Feet)
			Permanent Impacts: Acres (Linear Feet)	*Temporary Impacts: Acres (Linear Feet)*	*Permanent Impacts: Acres (Linear Feet)*	
Non-wetland waters	Waters of the U.S./ unvegetated channel – ephemeral	Riverine; unconsolidated Bottom, sand, ephemerally flooded, fresh	1.21 ac (7,574 ft)	0.21 ac (3,967 ft)	0.11 ac (1,908 ft)	1.53 ac (13,449 ft)
Non-wetland waters	Waters of the U.S./ unvegetated channel – intermittent	Riverine; unconsolidated bottom, sand, intermittently flooded, fresh	<0.01 (203 lf)	0.06 ac (305 ft)	0.01 ac (24 ft)	0.07 ac (329 ft)

Table 4.5-2b
Impacts on Waters of the United States – Alternative 2 – Approximately 202 MW

Feature Type	Type of Habitat (Oberbauer et al. 2008)	Type of Habitat (Cowardin et al. 1979)	Campo Wind Facilities	Boulder Brush Facilities		Total: Acres (Linear Feet)
			Permanent Impacts: Acres (Linear Feet)	*Temporary Impacts: Acres (Linear Feet)*	*Permanent Impacts: Acres (Linear Feet)*	
Wetland	Emergent wetland Freshwater marsh Valley sacaton grassland	Riparian; emergent, lentic, riparian	0.55 ac	0	0	0.55 ac
Wetland	Southern willow scrub	Riparian; scrub-shrub, lentic, riparian	0.13 ac	0	0	0.13 ac
Total potential impacts on jurisdictional waters			**1.90 ac (7,777 ft)**	**0.27 ac (4,272 ft)**	**0.12 ac (1,932 ft)**	**2.29 ac (13,981 ft)**

4.9 Traffic and Transportation

The following tables are referenced in Section 4.9 of the EIS.

Table 4.9-1
Peak Project Trip Generation for Alternative 1: Approximately 252 MW

Vehicle Type	Daily Quantity	Daily Trips	AM Peak Hour			PM Peak Hour		
			In	*Out*	*Total*	*In*	*Out*	*Total*
Trip Generation								
Workers	561 workers	1,122	281	0	281	0	561	561
Vendor trucks	29 trucks	58	3	3	6	3	3	6
Haul trucks	29 trucks	58	3	3	6	3	3	6
Total		**1,238**	**287**	**6**	**293**	**6**	**567**	**573**
Trip Generation w/PCE								
Workers (1.0 PCE)[a]	561 workers	1,122	281	0	281	0	561	561
Vendor trucks (2.5 PCE)[b]	29 trucks	145	8	7	15	7	8	15
Haul trucks (2.5 PCE)[b]	29 trucks	145	8	7	15	7	8	15
Total (w/PCE)		**1,412**	**297**	**14**	**311**	**14**	**577**	**591**

Source: Appendix J (Traffic Impact Analysis).
Notes: MW = megawatt; PCE = passenger car equivalent.
[a] A PCE factor of 1 was used for worker passenger cars.
[b] A PCE factor of 2.5 was used for vendor and haul trucks.

Table 4.9-2
Existing plus Project Peak Hour Intersection Level of Service

No.	Intersection	LOS Method	Critical Movement	Existing				Existing plus Project				Change in Delay (Sec/Veh)		Significant Impact?	
				AM Peak		*PM Peak*		*AM Peak*		*PM Peak*					
				Delay[a]	*LOS*	*Delay*[a]	*LOS*	*Delay*[a]	*LOS*	*Delay*[a]	*LOS*	*AM*	*PM*	*AM*	*PM*
1	Crestwood Road/I-8 westbound ramps	HCM	WBL	10.2	B	10.6	B	10.6	B	21.8	C	0.4	**11.2**	No	**No**
2	Crestwood Road/I-8 eastbound ramps	HCM	EBL	9.4	A	9.8	A	9.6	A	12.0	B	0.2	2.2	No	No
3	Crestwood Road/Old Highway 80	HCM	EBL	9.4	A	9.4	A	10.1	B	9.9	B	0.7	0.5	No	No
4	Old Highway 80/Church Road–Golden Acorn Casino Driveway	HCM	EBL	11.0	B	12.6	B	12.3	B	20.6	C	1.3	8.0	No	No
5	Old Highway 80/Live Oak Trail	HCM	WBL	9.1	A	9.3	A	9.3	A	9.5	A	0.2	0.2	No	No
6	Campo Road (SR-94)/Church Road–BIA Route 10	HCM	SBL	9.3	A	9.1	A	12.3	B	12.1	B	3.0	3.0	No	No
7	Ribbonwood Road-SR-94/I-8 westbound ramps	HCM	WBL	9.3	A	9.0	A	9.9	A	9.9	A	0.6	0.9	No	No
8	Ribbonwood Road-SR-94/I-8 eastbound ramps	HCM	EBL	9.1	A	8.9	A	9.5	A	9.3	A	0.4	0.4	No	No

Source: Appendix J (Traffic Impact Analysis).
Notes: LOS = level of service; sec/veh = seconds per vehicle; I = Interstate; HCM = Highway Capacity Manual; WBL = westbound left; EBL = eastbound left; SR = State Route; BIA = Bureau of Indian Affairs; SBL = southbound left.
[a] Delay in seconds per vehicle reported for critical movement at unsignalized intersections.
BOLD value indicates unsatisfactory LOS.

Table 4.9-3
Existing plus Project Roadway Segment Level of Service

Roadway Segment	Classification	LOS E ADT	*Existing*			*Existing plus Project*				*Change in V/C*
			ADT	*V/C*	*LOS*	*Project Traffic*	*ADT*	*V/C*	*LOS*	
Crestwood Road										
• Between I-8 WB & I-8 EB ramps	2-lane undivided	16,200	2,212	0.14	B	313	2,525	0.16	B	0.02
• Old Highway 80 to Church Road	2-lane undivided	16,200	4,132	0.26	C	512	4,644	0.29	C	0.04
Old Highway 80										
• Church Road to Live Oak Trail	2-lane undivided	16,200	1,646	0.10	A	68	1,714	0.11	A	0.00
• Live Oak Trail to Campo Road (SR-94)	2-lane undivided	16,200	1,411	0.09	A	46	1,457	0.09	A	0.00
Church Road										
• Old Highway 80 to Campo Road	2-lane undivided	16,200	677	0.04	A	444	1,121	0.07	A	0.06
Ribbonwood Road										
• North of I-8	2-lane undivided	4,500	579	0.13	<C	330	909	0.20	<C	0.07
Campo Road (SR-94)										
• BIA Route 15 to Church Road	2-lane undivided	19,200	1,900	0.10	A	330	2,230	0.12	A	0.02

Source: Appendix J (Traffic Impact Analysis).
Notes: LOS = level of service; ADT = average daily traffic; V/C = volume to capacity ratio; I = Interstate; WB = westbound; EB = eastbound; SR = State Route; BIA = Bureau of Indian Affairs.

Table 4.9-4
Existing plus Project Freeway Segment Operations

Freeway Segment	Dir.	Mainline Lanes[a]	Existing								Existing plus Project								Δ V/C[c]		Sig?
			Volume[b]		V/C		Density (pc/ln/mi)		LOS		Volume[b]		V/C		Density (pc/ln/mi)		LOS				
			AM	*PM*	*AM*	*PM*	*AM*	*PM*	*AM*	*PM*	*AM*	*PM*	*AM*	*PM*	*AM*	*PM*	*AM*	*PM*	*AM*	*PM*	
Interstate 8																					
Cameron Road to Crestwood Road–Old Hwy 80	EB	2	656	1,089	0.20	0.34	6.7	11.1	A	B	813	1,092	0.25	0.34	8.3	11.1	A	B	0.05	0.00	No
	WB	2	1,177	1,247	0.37	0.39	12.0	12.7	B	B	1,180	1,557	0.37	0.49	12.0	15.8	B	B	0.00	0.10	No
Crestwood Rd/Old Highway 80 to Ribbonwood Rd/SR-94	EB	2	656	1,089	0.20	0.34	6.7	11.1	A	B	700	1091	0.22	0.34	7.1	11.1	A	B	0.02	0.00	No
	WB	2	1,177	1,247	0.37	0.39	12.0	12.7	B	B	1,179	1,333	0.37	0.42	12.0	13.6	B	B	0.00	0.03	No
Ribbonwood Rd/SR-94 to Carrizo Gorge	EB	2	617	1,025	0.19	0.32	6.3	10.5	A	A	619	1027	0.19	0.32	6.3	10.5	A	A	0.00	0.00	No
	WB	2	1,109	1,174	0.35	0.37	11.3	11.9	B	B	1,111	1,176	0.35	0.37	11.4	12.0	B	B	0.00	0.00	No

Source: Appendix J (Traffic Impact Analysis).
Notes: Dir. = direction; V/C = volume-to-capacity ratio; pc/ln/mi = passenger cars per lane per mile; LOS = level of service; Sig? = significant impact, yes or no; EB = eastbound; WB = westbound; SR = State Route.
LOS based on HCM methodology, analyzed in the Highway Capacity Software (HCS7).
[a] Lane geometry taken from PeMS lane configurations at corresponding postmile.
[b] Peak hour volumes calculated from Caltrans Traffic Census Program Peak Hour Volume Data (2017).
[c] "Δ" denotes the Project-induced increase in V/C. Per SANTEC/ITE Guidelines, a significant impact occurs when the V/C is increased by greater than 0.01 for LOS E or LOS F.

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4.14 Cumulative

Tables 4.14-1 and 4.14-2 are referenced in Section 4.14 of the EIS.

Table 4.14-1
Existing plus Project plus Cumulative Projects Peak Hour Intersection Level of Service

No.	Intersection	Critical Movement	Existing				Existing plus Project				Existing plus Project plus Cumulative				Change in Delay		Significant Impact?	
			AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak					
			Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	AM	PM	AM	PM
1	Crestwood Road/ I-8 westbound ramps	WBL	10.2	B	10.6	B	10.6	B	21.8	D	10.6	B	22.1	C	0.4	**11.5**	No	**No**
2	Crestwood Road/I-8 eastbound ramps	EBL	9.4	A	9.8	A	9.6	A	12.0	B	9.6	A	12.1	B	0.2	2.3	No	No
3	Crestwood Road/ Old Highway 80	EBL	9.4	A	9.4	A	10.1	B	9.9	B	10.2	B	10.0	B	0.8	0.6	No	No
4	Old Highway 80/Church Road–Golden Acorn Casino Driveway	EBL	11.0	B	12.6	B	12.3	B	20.6	C	12.4	B	21.1	C	1.4	8.5	No	No
5	Old Highway 80/Live Oak Trail	WBL	9.1	A	9.3	A	9.3	A	9.5	A	9.3	A	9.5	A	0.2	0.2	No	No

Table 4.14-1
Existing plus Project plus Cumulative Projects Peak Hour Intersection Level of Service

No.	Intersection	Critical Movement	Existing				Existing plus Project				Existing plus Project plus Cumulative				Change in Delay		Significant Impact?	
			AM Peak		PM Peak		AM Peak		PM Peak		AM Peak		PM Peak					
			Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	Delay[a]	LOS	AM	PM	AM	PM
6	Campo Road (SR-94)/ Church Road–BIA Route 10	SBL	9.3	A	9.1	A	12.3	B	12.1	B	12.3	B	12.1	B	3.0	3.0	No	No
7	Ribbonwood Road-SR-94/I-8 westbound ramps	WBL	9.3	A	9.0	A	9.9	A	9.9	A	14.2	B	13.2	B	4.9	4.2	No	No
8	Ribbonwood Road-SR-94/I-8 eastbound ramps	EBL	9.1	A	8.9	A	9.5	A	9.3	A	16.1	C	11.3	B	7.0	2.4	No	No

Source: Appendix J (Traffic Impact Analysis).
Notes: LOS = level of service; I = Interstate; WBL = westbound left; EBL = eastbound left; SR = State Route; BIA = Bureau of Indian Affairs; SBL = southbound left.
[a] Delay in seconds per vehicle reported for critical movement at unsignalized intersections.
BOLD value indicates unsatisfactory LOS.

Table 4.14-2
Existing plus Project plus Cumulative Projects Roadway Segment Level of Service

Roadway Segment	Classification	LOS E ADT	Existing			Project Traffic	Existing plus Project			Existing plus Project plus Cumulative Projects			Change in V/C
			ADT	*V/C*	*LOS*		*ADT*	*V/C*	*LOS*	*ADT*	*V/C*	*LOS*	
Crestwood Road													
• Between I-8 WB & I-8 EB ramps	2 LU	16,200	2,212	0.14	B	313	2,525	0.16	B	2,663	0.16	B	0.02
• Old Highway 80 to Church Road	2 LU	16,200	4,132	0.26	C	512	4,644	0.29	C	4,812	0.30	C	0.04
Old Highway 80													
• Church Road to Live Oak Trail	2 LU	16,200	1,646	0.10	A	68	1,714	0.11	A	1,748	0.11	A	0.01
• Live Oak Trail to Campo Road (SR-94)	2 LU	16,200	1,411	0.09	A	46	1,457	0.09	A	1,486	0.09	A	0.00
Church Road													
• Old Highway 80 to Campo Road	2 LU	16,200	677	0.04	A	444	1,121	0.07	A	1,134	0.07	A	0.03
Ribbonwood Road	2 LU	4,500	579	0.13	<C	30	609	0.14	<C	1,607	0.36	<C	0.23
• North of I-8													
Campo Road (SR-94)													
• BIA Route 15 to Church Road	2 LU	19,200	1,900	0.10	A	330	2,230	0.12	A	2,330	0.12	A	0.02

Source: Appendix J (Traffic Impact Analysis).
Notes: LOS = level of service; ADT = average daily traffic; V/C = volume to capacity ratio; I = Interstate; WB = westbound; EB = eastbound; 2 LU = two-lane undivided; SR = State Route; BIA = Bureau of Indian Affairs.

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Table 4.14-3
Existing plus Project plus Cumulative Freeway Segment Operations

Freeway Segment	Dir.	Mainline Lanes[1]	Existing plus Project								Existing plus Project plus Cumulative								Δ V/C[c]		Sig?
			Volume[2]		V/C		Density (pc/ln/mi)		LOS		Volume[b]		V/C		Density (pc/ln/mi)		LOS				
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	
Interstate 8																					
Cameron Road to Crestwood Road–Old Hwy 80	EB	2	813	1,092	0.25	0.34	8.3	11.1	A	B	878	1,201	0.27	0.38	8.9	12.2	A	B	0.02	0.04	No
	WB	2	1,180	1,557	0.37	0.49	12.0	15.4	B	B	1,298	1,682	0.41	0.53	13.2	17.2	B	B	0.04	0.04	No
Crestwood Rd/Old Highway 80 to Ribbonwood Rd/SR-94	EB	2	700	1091	0.21	0.34	7.1	11.1	A	B	727	1,200	0.24	0.37	7.8	12.2	A	B	0.02	0.03	No
	WB	2	1,179	1,333	0.37	0.42	12.0	12.7	B	B	1,297	1,374	0.41	0.43	13.2	14.0	B	B	0.04	0.04	No
Ribbonwood Rd/SR-94 to Carrizo Gorge	EB	2	617	1,025	0.19	0.32	6.3	10.5	A	A	679	1,128	0.21	0.35	6.9	11.5	A	B	0.02	0.03	No
	WB	2	1,109	1,174	0.35	0.37	11.3	12.0	B	B	1,219	1,292	0.38	0.41	12.5	13.2	B	B	0.03	0.04	No

Source: Appendix J (Traffic Impact Analysis).
Notes: Dir. = direction; V/C = volume-to-capacity ratio; pc/ln/mi = passenger cars per lane per mile; LOS = level of service; Sig? = significant impact, yes or no; EB = eastbound; WB = westbound; SR = State Route.
LOS based on HCM methodology, analyzed in the Highway Capacity Software (HCS 7).
[a] Lane geometry taken from PeMS lane configurations at corresponding postmile.
[b] Peak hour volumes calculated from Caltrans Traffic Census Program Peak Hour Volume Data (2017).
[c] "Δ" denotes the Project-induced increase in V/C. Per SANTEC/ITE Guidelines, a significant impact occurs when the V/C is increased by greater than 0.01 for LOS E or LOS F.

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