Appendix C: Air Quality Modeling

					Max Construction Zone		Vegetation Removal Export				Class 2 AB Import				Class 2 AC Import				
Phase	**Segment**	**Miles**	**LF**	**Max SF**	**SF**	**Acres**	**SF**	**CF**	**CY**	**Trips**	**SF**	**CF**	**CY**	**Trips**	**SF**	**CF**	**CY**	**Trips**	
Phase 1	1 Path	0.66	3500	105000	490000	11.25	4	15313	567		10.5	36750	1361		8.75	30625	1134		
Phase 1	1 Ramp	0.02	100	1000	14000	0.32	4	438	16		10.5	1050	39		8.75	875	32		
Phase 1	1 Xing	0.07	345	3450	48300	1.11													
Segment 1	**Subtotal**	**0.75**	**3,945**	**109,450**	**552,300**	**13**	**9**	**15,750**	**583**		**21**	**37,800**	**1,400**		**18**	**31,500**	**1,167**		
Phase 1	2 Path	0.91	4800	144000	672000	15.43	4	21000	778		10.5	50400	1867		8.75	42000	1556		
Phase 1	2 ramp	0.02	100	1000	14000	0.32	4	438	16		10.5	1050	39		8.75	875	32		
Phase 1	2 Xing	0.09	500	5000	70000	1.61													
Segment 2	**Subtotal**	**1.02**	**5,400**	**150,000**	**756,000**	**17**		**21,438**	**794**			**51,450**	**1,906**			**42,875**	**1,588**		
Phase 1	*Subtotal*	*1.77*	*9,345*	*259,450*	*1,308,300*	*30*		*37,188*	*1,377*	*92*		*89,250*	*3,306*	*220*		*74,375*	*2,755*	*184*	
Phase 2	3 Path	1.52	8000	240000	1120000	25.71	4	35000	1296		10.5	84000	3111		8.75	70000	2593		
Segment 3	**Subtotal**	**1.52**	**8,000**	**240,000**	**1,120,000**	**26**		**35,000**	**1,296**			**84,000**	**3,111**			**70,000**	**2,593**		
Phase 2	4 Path	0.13	700	21000	98000	2.25	4	3063	113		10.5	7350	272		8.75	6125	227		
Phase 2	4 Ramp	0.01	50	500	7000	0.16	4	219	8		10.5	525	19		8.75	438	16		
Phase 2	4 Xing	0.05	270	2700	37800	0.87													
Segment 4	**Subtotal**	**0.19**	**1,020**	**24,200**	**142,800**	**3**	**9**	**3,281**	**122**			**7,875**	**292**			**6,563**	**243**		
Phase 2	*Subtotal*	*1.71*	*9,020*	*264,200*	*1,262,800*	*29*	*9*	*38,281*	*1,418*	*95*		*91,875*	*3,403*	*227*		*76,563*	*2,836*	*189*	
Phase 3	5 Path	0.55	2900	34800	406000	9.32	4	12688	470		10.5	30450	1128		8.75	25375	940		
Phase 3	5 Ramp	0.01	55	550	7700	0.18	4	241	9		10.5	578	21		8.75	481	18		
Phase 3	5 Xing	0.13	705	7050	98700	2.27													
Segment 5	**Subtotal**	**0.69**	**3,660**	**42,400**	**512,400**	**12**	**8.75**	**12928.13**	**478.82**			**31027.50**	**1149.17**			**25856.25**	**957.64**		**0.00**
Phase 3	*Subtotal*	*0.69*	*3,660*	*42,400*	*512,400*	*12*	*8.75*	*12928.13*	*478.82*	*32*		*31027.50*	*1149.17*	*77*		*25856.25*	*957.64*	*64*	*0.00*
	Total	**4.17**	**22025.00**	**566,050**	**3,083,500**	**70.79**		**88396.88**	**3273.96**			**212152.50**	**7857.50**			**176793.75**	**6547.92**		
									218	*218*	trips w/15 cy dump truck		524	524	trips w/15 cy dump truck		437	*437*	trips w/15 cy dump truck

Segments 1 and 2 or 3 and 4

Phase	Equipment	Quantity
Clearing and Grubbing	Dump Truck	3
	Front-end Load/Skip Loader	1
Install Class 2 Aggregate Base Rock	Dump Truck	3
	Front-end Load/Skip Loader	1
	Water Truck	1
Install AC Material	Paver	2
	Vibratory Roller	2
Striping	Pick Up Truck	1
	Striping Equipment	1
Fencing, Signage, Benches	Backhoe/Skid-steer w/auger	1

Segment 5

Phase	Equipment	Quantity
Clearing and Grubbing	Dump Truck	3
	Front-end Load/Skip Loader	1
Install Class 2 Aggregate Base Rock/C	Dump Truck	3
	Front-end Load/Skip Loader	1
	Cement Mixer	1
	Drill Rig	1
	Water Truck	1
Install AC Material/Trusses	Paver	2
	Cranes	2
	Vibratory Roller	2
Striping	Pick Up Truck	1
	Striping Equipment	1
Fencing, Signage, Benches	Backhoe/Skid-steer w/auger	1

BJP-Phase 2

San Luis Obispo County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Other Asphalt Surfaces	30	Acre
Parking Lot	65	Space

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**		**Utility Company**
Climate Zone	4		3.2	
		Precipitation Freq (Days)		
			44	

1.3 User Entered Comments

Project Characteristics - Simulations either Segments 1 and 2 or Segments 3 and 4.

Construction Phase - Construciton revised to reflect anticipated two year construction schedule per project description.

Off-road Equipment - Diesel-fueled construciton load factors reduced 33% to account for offroad emission over estimation (CARB, 2010).

Grading - Construction zone to be a maximum of 30 acres

Land Use - Maximum SF based on pathway width being 30-feet, and ramps and crossings being 10-feet wide.

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2012	0.24	1.35	1.05	0.00	0.66	0.11	0.77	0.00	0.11	0.11	0.00	132.14	132.14	0.02	0.00	132.52
2013	3.63	1.46	1.14	0.00	0.26	0.12	0.39	0.00	0.12	0.12	0.00	140.59	140.59	0.02	0.00	141.02
Total	**3.87**	**2.81**	**2.19**	**0.00**	**0.92**	**0.23**	**1.16**	**0.00**	**0.23**	**0.23**	**0.00**	**272.73**	**272.73**	**0.04**	**0.00**	**273.54**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2012	0.24	1.35	1.05	0.00	0.66	0.11	0.77	0.00	0.11	0.11	0.00	132.14	132.14	0.02	0.00	132.52
2013	3.63	1.46	1.14	0.00	0.26	0.12	0.39	0.00	0.12	0.12	0.00	140.59	140.59	0.02	0.00	141.02
Total	**3.87**	**2.81**	**2.19**	**0.00**	**0.92**	**0.23**	**1.16**	**0.00**	**0.23**	**0.23**	**0.00**	**272.73**	**272.73**	**0.04**	**0.00**	**273.54**

BJP-Phase 2

San Luis Obispo County APCD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Other Asphalt Surfaces	30	Acre
Parking Lot	65	Space

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**		**Utility Company**
Climate Zone	4		3.2	
		Precipitation Freq (Days)		
			44	

1.3 User Entered Comments

Project Characteristics - Simulations either Segments 1 and 2 or Segments 3 and 4.

Construction Phase - Construciton revised to reflect anticipated two year construction schedule per project description.

Off-road Equipment - Diesel-fueled construciton load factors reduced 33% to account for offroad emission over estimation (CARB, 2010).

Grading - Construction zone to be a maximum of 30 acres

Land Use - Maximum SF based on pathway width being 30-feet, and ramps and crossings being 10-feet wide.

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2012	3.82	20.85	15.13	0.02	10.05	1.74	11.79	0.01	1.74	1.75	0.00	2,108.25	0.00	0.31	0.00	2,114.72
2013	50.88	22.60	17.56	0.03	4.93	1.91	6.84	0.01	1.91	1.92	0.00	2,401.80	0.00	0.35	0.00	2,409.09
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2012	3.82	20.85	15.13	0.02	10.05	1.74	11.79	0.01	1.74	1.75	0.00	2,108.25	0.00	0.31	0.00	2,114.72
2013	50.88	22.60	17.56	0.03	4.93	1.91	6.84	0.01	1.91	1.92	0.00	2,401.80	0.00	0.35	0.00	2,409.09
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

BJP-Phase 2

San Luis Obispo County APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Other Asphalt Surfaces	30	Acre
Parking Lot	65	Space

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**		**Utility Company**
Climate Zone	4		3.2	
		Precipitation Freq (Days)		
			44	

1.3 User Entered Comments

Project Characteristics - Simulations either Segments 1 and 2 or Segments 3 and 4.

Construction Phase - Construciton revised to reflect anticipated two year construction schedule per project description.

Off-road Equipment - Diesel-fueled construciton load factors reduced 33% to account for offroad emission over estimation (CARB, 2010).

Grading - Construction zone to be a maximum of 30 acres

Land Use - Maximum SF based on pathway width being 30-feet, and ramps and crossings being 10-feet wide.

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2012	3.85	20.89	15.11	0.02	10.05	1.74	11.79	0.01	1.74	1.75	0.00	2,087.75	0.00	0.31	0.00	2,094.22
2013	50.92	22.64	17.46	0.02	4.93	1.91	6.84	0.01	1.91	1.92	0.00	2,372.73	0.00	0.35	0.00	2,380.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2012	3.85	20.89	15.11	0.02	10.05	1.74	11.79	0.01	1.74	1.75	0.00	2,087.75	0.00	0.31	0.00	2,094.22
2013	50.92	22.64	17.46	0.02	4.93	1.91	6.84	0.01	1.91	1.92	0.00	2,372.73	0.00	0.35	0.00	2,380.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

BJP-Phase 3

San Luis Obispo County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Other Asphalt Surfaces	12	Acre

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**		**Utility Company**
Climate Zone	4		3.2	
		Precipitation Freq (Days)		
			44	

1.3 User Entered Comments

Project Characteristics - Simulates Segment 5.

Land Use - This segment would be 12-feet wide at grade, 10-feet wide at approach ramps and overcrossing.

Construction Phase - moved start date to January 2015. Divided construction phases to be completed in four quarters to more closely match estimate two year construction schedule.

Off-road Equipment - Diesel-fueled construction load factors reduced 33% to account for off-road emission over estimation (CARB, 2010).

Off-road Equipment - . Cement mixer for cassion piers.

Off-road Equipment - . Cranes for installing truss spans.

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.06	0.37	0.45	0.00	0.46	0.03	0.48	0.00	0.03	0.03	0.00	63.77	63.77	0.01	0.00	63.88
2016	0.67	0.97	0.82	0.00	0.26	0.08	0.34	0.00	0.08	0.08	0.00	110.56	110.56	0.01	0.00	110.83
Total	**0.73**	**1.34**	**1.27**	**0.00**	**0.72**	**0.11**	**0.82**	**0.00**	**0.11**	**0.11**	**0.00**	**174.33**	**174.33**	**0.02**	**0.00**	**174.71**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	0.06	0.37	0.45	0.00	0.46	0.03	0.48	0.00	0.03	0.03	0.00	63.77	63.77	0.01	0.00	63.88
2016	0.67	0.97	0.82	0.00	0.26	0.08	0.34	0.00	0.08	0.08	0.00	110.56	110.56	0.01	0.00	110.83
Total	**0.73**	**1.34**	**1.27**	**0.00**	**0.72**	**0.11**	**0.82**	**0.00**	**0.11**	**0.11**	**0.00**	**174.33**	**174.33**	**0.02**	**0.00**	**174.71**

BJP-Phase 3

San Luis Obispo County APCD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Other Asphalt Surfaces	12	Acre

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**		**Utility Company**
Climate Zone	4		3.2	
		Precipitation Freq (Days)		
			44	

1.3 User Entered Comments

Project Characteristics - Simulates Segment 5.

Land Use - This segment would be 12-feet wide at grade, 10-feet wide at approach ramps and overcrossing.

Construction Phase - moved start date to January 2015. Divided construction phases to be completed in four quarters to more closely match estimate two year construction schedule.

Off-road Equipment - Diesel-fueled construction load factors reduced 33% to account for off-road emission over estimation (CARB, 2010).

Off-road Equipment - . Cement mixer for cassion piers.

Off-road Equipment - . Cranes for installing truss spans.

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	2.71	14.78	11.67	0.02	5.57	1.20	5.92	0.01	1.20	1.21	0.00	1,716.87	0.00	0.22	0.00	1,721.49
2016	7.75	13.80	11.41	0.02	4.72	1.11	5.83	0.01	1.11	1.12	0.00	1,712.11	0.00	0.21	0.00	1,716.44
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	2.71	14.78	11.67	0.02	5.57	1.20	5.92	0.01	1.20	1.21	0.00	1,716.87	0.00	0.22	0.00	1,721.49
2016	7.75	13.80	11.41	0.02	4.72	1.11	5.83	0.01	1.11	1.12	0.00	1,712.11	0.00	0.21	0.00	1,716.44
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

BJP-Phase 3

San Luis Obispo County APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Other Asphalt Surfaces	12	Acre

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**		**Utility Company**
Climate Zone	4		3.2	
		Precipitation Freq (Days)		
			44	

1.3 User Entered Comments

Project Characteristics - Simulates Segment 5.

Land Use - This segment would be 12-feet wide at grade, 10-feet wide at approach ramps and overcrossing.

Construction Phase - moved start date to January 2015. Divided construction phases to be completed in four quarters to more closely match estimate two year construction schedule.
Off-road Equipment - Diesel-fueled construction load factors reduced 33% to account for off-road emission over estimation (CARB, 2010).

Off-road Equipment - . Cement mixer for cassion piers.

Off-road Equipment - . Cranes for installing truss spans.

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	2.73	14.80	11.64	0.02	5.57	1.20	5.92	0.01	1.20	1.21	0.00	1,700.02	0.00	0.22	0.00	1,704.63
2016	7.75	13.82	11.39	0.02	4.72	1.11	5.83	0.01	1.11	1.12	0.00	1,695.59	0.00	0.21	0.00	1,699.91
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	2.73	14.80	11.64	0.02	5.57	1.20	5.92	0.01	1.20	1.21	0.00	1,700.02	0.00	0.22	0.00	1,704.63
2016	7.75	13.82	11.39	0.02	4.72	1.11	5.83	0.01	1.11	1.12	0.00	1,695.59	0.00	0.21	0.00	1,699.91
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**