

Construction Phase Emissions for Proposed Project, Sunrise Powerlink

Maximum Daily Emissions Imperial Valley Link	NOX (lb/day)	ROG (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO (lb/day)	SOX (lb/day)	CO2 (lb/day)
Offroad Equipment, Transmission Line	1,026.0	139.2	54.6	54.6	418.2	24.3	95,980.3
Offroad Equipment, Substation Activity	109.7	11.4	4.1	4.1	31.0	0.1	10,181.7
Onroad Vehicles	364.4	46.7	16.7	16.7	344.5	0.5	51,967.1
Fugitive Dust	---	---	2,000.9	221.3	---	---	---
<b>Total for Link</b>	<b>1,500.1</b>	<b>197.2</b>	<b>2,076.3</b>	<b>296.7</b>	<b>793.7</b>	<b>25.0</b>	<b>158,129.1</b>

Maximum Daily Emissions Anza Borrego Link	NOX (lb/day)	ROG (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO (lb/day)	SOX (lb/day)	CO2 (lb/day)
Offroad Equipment, Transmission Line	1,026.0	139.2	54.6	54.6	418.2	24.3	95,980.3
Offroad Equipment, Substation Activity	---	---	---	---	---	---	---
Onroad Vehicles	125.8	15.9	5.8	5.8	116.6	0.2	17,746.6
Fugitive Dust	---	---	699.1	81.6	---	---	---
<b>Total for Link</b>	<b>1,151.8</b>	<b>155.1</b>	<b>759.5</b>	<b>141.9</b>	<b>534.8</b>	<b>24.5</b>	<b>113,727.0</b>

Maximum Daily Emissions Central Link	NOX (lb/day)	ROG (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO (lb/day)	SOX (lb/day)	CO2 (lb/day)
Offroad Equipment, Transmission Line	975.5	134.0	52.7	52.7	403.8	24.3	91,549.7
Offroad Equipment, Substation Activity	---	---	---	---	---	---	---
Onroad Vehicles	146.7	18.8	6.7	6.7	138.3	0.2	20,894.4
Fugitive Dust	---	---	856.2	102.3	---	---	---
<b>Total for Link</b>	<b>1,122.2</b>	<b>152.8</b>	<b>915.6</b>	<b>161.6</b>	<b>542.1</b>	<b>24.5</b>	<b>112,444.1</b>

Maximum Daily Emissions Inland Valley Link	NOX (lb/day)	ROG (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO (lb/day)	SOX (lb/day)	CO2 (lb/day)
Offroad Equipment, Transmission Line	975.5	134.0	52.7	52.7	403.8	24.3	91,549.7
Offroad Equipment, Substation Activity	96.8	10.1	3.7	3.7	27.5	0.1	8,991.0
Onroad Vehicles	134.5	17.7	6.2	6.2	132.6	0.2	19,639.0
Fugitive Dust	---	---	800.0	94.5	---	---	---
<b>Total for Link</b>	<b>1,206.8</b>	<b>161.8</b>	<b>862.5</b>	<b>157.0</b>	<b>563.9</b>	<b>24.6</b>	<b>120,179.6</b>

Maximum Daily Emissions Coastal Link	NOX (lb/day)	ROG (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO (lb/day)	SOX (lb/day)	CO2 (lb/day)
Offroad Equipment, Transmission Line	975.5	134.0	52.7	52.7	403.8	24.3	91,549.7
Offroad Equipment, Substation Activity	170.1	18.9	6.8	6.8	51.6	0.2	15,647.6
Onroad Vehicles	71.5	10.3	3.3	3.3	79.8	0.1	11,220.6
Fugitive Dust	---	---	479.0	59.2	---	---	---
<b>Total for Link</b>	<b>1,217.1</b>	<b>163.2</b>	<b>541.8</b>	<b>122.0</b>	<b>535.2</b>	<b>24.5</b>	<b>118,417.9</b>

Maximum Daily Emissions Central East Substation	NOX (lb/day)	ROG (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO (lb/day)	SOX (lb/day)	CO2 (lb/day)
Offroad Equipment, Transmission Line	---	---	---	---	---	---	---
Offroad Equipment, Substation Activity	764.8	80.9	30.7	30.7	270.1	0.7	70,104.6
Onroad Vehicles	2.0	1.9	0.2	0.2	20.5	0.0	1,844.7
Fugitive Dust	---	---	627.5	80.5	---	---	---
<b>Total for Link</b>	<b>766.8</b>	<b>82.9</b>	<b>658.3</b>	<b>111.4</b>	<b>290.6</b>	<b>0.8</b>	<b>71,949.3</b>

Annual Emissions of Proposed Project Imperial County	NOX (tpy)	ROG (tpy)	PM10 (tpy)	PM2.5 (tpy)	CO (tpy)	SOX (tpy)	CO2 (tpy)
Offroad Equipment, Transmission Line	127.1	17.4	6.8	6.8	52.2	3.1	11,907.9
Offroad Equipment, Substation Activity	5.5	0.6	0.2	0.2	1.9	0.0	495.1
Onroad Vehicles	66.6	7.9	3.0	3.0	55.6	0.1	8,879.0
Fugitive Dust	---	---	335.8	38.0	---	---	---
<b>Total for Imperial County</b>	<b>199.2</b>	<b>25.8</b>	<b>345.9</b>	<b>48.1</b>	<b>109.7</b>	<b>3.2</b>	<b>21,282.0</b>

Basis: 0.39 of Total Proposed Project divided over two years.

Annual Emissions of Proposed Project San Diego County	NOX (tpy)	ROG (tpy)	PM10 (tpy)	PM2.5 (tpy)	CO (tpy)	SOX (tpy)	CO2 (tpy)
Offroad Equipment, Transmission Line	198.7	27.1	10.7	10.7	81.6	4.8	18,625.2
Offroad Equipment, Substation Activity	8.5	0.9	0.3	0.3	2.9	0.0	774.4
Onroad Vehicles	104.2	12.3	4.7	4.7	87.0	0.1	13,887.7
Fugitive Dust	---	---	525.2	59.4	---	---	---
<b>Total for San Diego County</b>	<b>311.5</b>	<b>40.4</b>	<b>540.9</b>	<b>75.2</b>	<b>171.5</b>	<b>5.0</b>	<b>33,287.3</b>

Basis: 0.61 of Total Proposed Project divided over two years.

Overall Emissions of Proposed Project Total Proposed Project	NOX (ton)	ROG (ton)	PM10 (ton)	PM2.5 (ton)	CO (ton)	SOX (ton)	CO2 (ton)
Offroad Equipment, Transmission Line	651.6	89.0	35.0	35.0	267.6	15.9	61,066.3
Offroad Equipment, Substation Activity	28.0	3.0	1.1	1.1	9.5	0.0	2,538.9
Onroad Vehicles	341.8	40.4	15.6	15.6	285.3	0.5	45,533.3
Fugitive Dust	---	---	1,721.9	194.9	---	---	---
<b>Total for Project Duration</b>	<b>1,021.4</b>	<b>132.4</b>	<b>1,773.6</b>	<b>246.5</b>	<b>562.4</b>	<b>16.4</b>	<b>109,138.6</b>

**Construction Phase Emissions for Proposed Project Alternative:**

**Mileage and Acreage of Proposed Project, by Link**

Source: Project Description, April to July 2007. Subject to change with final engineering.

Proposed Project	Milepost (MP)	Temporary plus		Factors by Link Offroad+Onroad per Mile of Link	NOX (lb/d/mi)	ROG (lb/d/mi)	PM10 (lb/d/mi)	PM2.5 (lb/d/mi)	CO (lb/d/mi)	SOX (lb/d/mi)	CO2 (lb/d/mi)	Factors by Link Fug Dust per Acre of Link	PM10 (lb/d/ac)	PM2.5 (lb/d/ac)
		Length (mi)	Permanent Disturbance (ac)											
Imperial Valley Link, Transmission Line	0 - 60.9	60.9	239.4	Imperial Valley Link, Transmission Line	22.83	3.05	1.17	1.17	12.52	0.41	2,429.35	Imperial Valley Link, Transmission Line	8.36	0.92
Anza Borrego Link, Transmission Line	60.9 - 83.5	22.6	87.0	Anza Borrego Link, Transmission Line	50.96	6.86	2.67	2.67	23.66	1.08	5,032.17	Anza Borrego Link, Transmission Line	8.03	0.94
Central Link, Transmission Line	83.5 - 110.8	27.3	250.2	Central Link, Transmission Line	41.11	5.60	2.18	2.18	19.86	0.90	4,118.83	Central Link, Transmission Line	3.42	0.41
Inland Valley Link, Transmission Line	110.8 - 136.3	25.5	106.5	Inland Valley Link, Transmission Line	43.53	5.95	2.31	2.31	21.04	0.96	4,360.34	Inland Valley Link, Transmission Line	7.51	0.89
Coastal Link, Transmission Line	136.3 - 149.9	13.6	31.2	Coastal Link, Transmission Line	76.99	10.61	4.12	4.12	35.56	1.79	7,556.64	Coastal Link, Transmission Line	15.37	1.90
Central East Substation			143.0	Central East Substation	---	---	---	---	---	---	---	Central East Substation	4.39	0.56

**Mileage and Acreage of Alternative Segments, by Alternative (gross)**

Imperial Valley Link Alternatives	Project MP (MP)	Alt Temporary plus		Emissions by Alternative (gross) Offroad+Onroad	NOX (lb/day)	ROG (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO (lb/day)	SOX (lb/day)	CO2 (lb/day)	Fugitive Dust	PM10 (lb/day)	PM2.5 (lb/day)
		Length (mi)	Permanent Disturbance (ac)											
<b>Imperial Valley Link Alternatives</b>				<b>Imperial Valley Link Alternatives</b>								<b>Imperial Valley Link Alternatives</b>		
FTHL Eastern	4.04 - 7.8	4.6	11.6 Dec.	FTHL Eastern	105.0	14.0	5.4	5.4	57.6	1.9	11,175.0	FTHL Eastern	96.9	10.7
West of Dunaway	2.9 - 8.7	6.1	27.7 Inc.	West of Dunaway	139.3	18.6	7.1	7.1	76.4	2.5	14,819.0	West of Dunaway	231.4	25.6
West Main Canal - Huff Road	10.9 - 16.2	4.9	15.4 Similar	West Main Canal - Huff Road	111.9	15.0	5.7	5.7	61.4	2.0	11,903.8	West Main Canal - Huff Road	128.7	14.2
<b>Anza-Borrego Link Alternatives</b>				<b>Anza-Borrego Link Alternatives</b>								<b>Anza-Borrego Link Alternatives</b>		
Partial Underground 230 kV ABDSP SR78 to Overhead 500 kV ABDSP w/in 100 ft ROW	58.8 - 92.7	38.1	113.9	Partial Underground 230 kV ABDSP SR78 to Overhead 500 kV ABDSP w/in 100 ft ROW	1,941.7	261.4	101.7	101.7	901.6	41.3	191,725.5	Partial Underground 230 kV ABDSP SR78 to Overhead 500 kV ABDSP w/in 100 ft ROW	915.3	106.8
<b>Central Link Alternatives</b>				<b>Central Link Alternatives</b>								<b>Central Link Alternatives</b>		
Santa Ysabel Existing ROW	100.02 - 109.4	9.0	Dec.	Santa Ysabel Existing ROW	370.0	50.4	19.6	19.6	178.7	8.1	37,069.5	Santa Ysabel Existing ROW	0.0	0.0
Santa Ysabel Partial Underground	105.4 - 109.3	5.0	3.2 Inc.	Santa Ysabel Partial Underground	205.5	28.0	10.9	10.9	99.3	4.5	20,594.2	Santa Ysabel Partial Underground	10.8	1.3
Santa Ysabel SR79 All Underground	99.9 - 109.3	5.3	4.0 (est)	Santa Ysabel SR79 All Underground	217.9	29.7	11.5	11.5	105.3	4.8	21,829.8	Santa Ysabel SR79 All Underground	13.7	1.6
Mesa Grande	101.4 - 103.5		21.8 Similar	Mesa Grande	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Mesa Grande	74.5	8.9
<b>Inland Valley Link Alternatives</b>				<b>Inland Valley Link Alternatives</b>								<b>Inland Valley Link Alternatives</b>		
CNF Existing 69 kV Route	111.2 - 112.7	1.3	5.8 Similar	CNF Existing 69 kV Route	56.6	7.7	3.0	3.0	27.3	1.2	5,668.4	CNF Existing 69 kV Route	43.3	5.1
Oak Hollow Road Underground	116.6 - 117.3	0.7	1.7 Inc.	Oak Hollow Road Underground	30.5	4.2	1.6	1.6	14.7	0.7	3,052.2	Oak Hollow Road Underground	13.1	1.5
San Vicente Road Transition	121.9 - 122.6	0.7	2.7 Similar	San Vicente Road Transition	30.5	4.2	1.6	1.6	14.7	0.7	3,052.2	San Vicente Road Transition	20.3	2.4
Chuck Wagon Road	121.7 - 125.5	3.1	11.1 Similar	Chuck Wagon Road	134.9	18.4	7.2	7.2	65.2	3.0	13,517.0	Chuck Wagon Road	83.6	9.9
<b>Coastal Link Alternatives</b>				<b>Coastal Link Alternatives</b>								<b>Coastal Link Alternatives</b>		
Pomerado Road to Miramar Area North	138.3 - 149.9	12.7	11.8	Pomerado Road to Miramar Area North	977.8	134.7	52.3	52.3	451.6	22.8	95,969.3	Pomerado Road to Miramar Area North	180.8	22.4
Los Penasquitos Canyon Preserve	140.4 - 144.3	3.7	Similar	Los Penasquitos Canyon Preserve	284.9	39.3	15.2	15.2	131.6	6.6	27,959.6	Los Penasquitos Canyon Preserve	0.0	0.0
Black Mountain to Park Village Road	143.6 - 144.3	1.1	Similar	Black Mountain to Park Village Road	84.7	11.7	4.5	4.5	39.1	2.0	8,312.3	Black Mountain to Park Village Road	0.0	0.0
Coastal Link System Upgrade Alternatives	136.3 - 149.9	---	--- Inc.	Coastal Link System Upgrade Alternatives	---	---	---	---	---	---	---	Coastal Link System Upgrade Alternatives	---	---
<b>Substation Alternatives</b>				<b>Substation Alternatives</b>								<b>Substation Alternatives</b>		
Central South	Similar to Proposed Project, Central East Substation			Central South	---	---	---	---	---	---	---	Central South	0.0	0.0
Top of the World	Similar to Proposed Project, Central East Substation			Top of the World	---	---	---	---	---	---	---	Top of the World	0.0	0.0
<b>SWPL Alternatives</b>				<b>SWPL Alternatives</b>								<b>SWPL Alternatives</b>		
I-8	0 - 131	92.7	620.5	I-8	4,724.2	636.0	247.5	247.5	2,193.6	100.5	466,481.8	I-8	4,984.6	581.5
I-8 West of Buckman Springs	53.6 - 58.5	5.6	44.7	I-8 West of Buckman Springs	285.4	38.4	15.0	15.0	132.5	6.1	28,180.1	I-8 West of Buckman Springs	359.0	41.9
BCD	39.5 - 58.04	19.6	180.6	BCD	998.9	134.5	52.3	52.3	463.8	21.2	98,630.5	BCD	1,451.1	169.3
Route D	70.2 - 92.7	17.3	420.0 (est)	Route D	881.7	118.7	46.2	46.2	409.4	18.7	87,056.5	Route D	3,374.0	393.6
Modified Route D	47.2 - 71.1	39.7	946.3	Modified Route D	2,023.2	272.4	106.0	106.0	939.4	43.0	199,777.0	Modified Route D	7,601.5	886.8
<b>System Alternatives</b>				<b>System Alternatives</b>								<b>System Alternatives</b>		
LEAPS Transmission-Only	0 - 149.9	86.6	147.5	LEAPS Transmission-Only	4,413.3	594.2	231.2	231.2	2,049.2	93.8	435,785.6	LEAPS Transmission-Only	1,184.9	138.2
LEAPS Generation and Transmission	0 - 149.9	87.8	404.4	LEAPS Generation and Transmission	4,474.5	602.4	234.4	234.4	2,077.6	95.1	441,824.2	LEAPS Generation and Transmission	3,248.7	379.0

**Mileage and Acreage of Consolidated Alternative:**

Source: Preliminary Final EIR/EIS, July 2008. Approximate four acres disturbed per mile. Subject to change with final engineering.

Consolidated Alternatives	Project MP (MP)	Alt Temporary plus		Emissions by Alternative (gross) Offroad+Onroad	NOX (lb/day)	ROG (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	CO (lb/day)	SOX (lb/day)	CO2 (lb/day)	Fug Dust	PM10 (lb/day)	PM2.5 (lb/day)
		Length (mi)	Permanent Disturbance (ac, apx)											
<b>Consolidated Alternatives</b>				<b>Consolidated Alternatives</b>								<b>Consolidated Alternatives</b>		
Enhanced Northern	0 - 149.9	154.0	615.9	Enhanced Northern	7,847.2	1,056.4	411.2	411.2	3,643.7	166.9	774,852.9	Enhanced Northern	4,947.9	577.2
Environmentally Superior Northern	0 - 149.9	185.8	743.2	Environmentally Superior Northern	9,468.8	1,274.8	496.1	496.1	4,396.7	201.3	934,976.5	Environmentally Superior Northern	5,970.4	696.5
Environmentally Superior Southern	0 - 149.9	130.3	521.2	Environmentally Superior Southern	6,640.4	894.0	347.9	347.9	3,083.3	141.2	655,691.3	Environmentally Superior Southern	4,187.0	488.4

**Construction Phase Emissions for Proposed Project Alternatives**

**Mileage of Proposed Project, compared to Alternatives**

Source: Project Description, April to July 2007 and Preliminary Final EIR/EIS, July 2008. Subject to change with final engineering.

Total Proposed Project	Total Length (mi)	Factors by Mile Total Emissions per Mile Length	NOX (ton/mi)	ROG (ton/mi)	PM10 (ton/mi)	PM2.5 (ton/mi)	CO (ton/mi)	SOX (ton/mi)	CO2 (ton/mi)
Proposed Project	149.9	Proposed Project	6.81	0.88	11.83	1.64	3.75	0.11	728.08

**Emissions for Duration by Geographic Segment**

2 = years duration

Proposed Project	Length (mi)	Offroad+Onroad Proposed Project	NOX (ton)	ROG (ton)	PM10 (ton)	PM2.5 (ton)	CO (ton)	SOX (ton)	CO2 (ton)	Annual Average Emissions by Geographic Segment									
										NOX (ton/yr)	ROG (ton/yr)	PM10 (ton/yr)	PM2.5 (ton/yr)	CO (ton/yr)	SOX (ton/yr)	CO2 (ton/yr)			
<b>Proposed Project</b>																			
Total Proposed Project	149.9	Total Proposed Project	1,021.4	132.4	1,773.6	246.5	562.4	16.4	109,138.6	510.7	66.2	886.8	123.3	281.2	8.2	54,569.3			
Proposed Project (Imperial County Only)	58.5	Proposed Project (Imperial County Only)	398.3	51.6	691.7	96.2	219.3	6.4	42,564.0	199.2	25.8	345.9	48.1	109.7	3.2	21,282.0			
Proposed Project (San Diego County Only)	91.4	Proposed Project (San Diego County Only)	623.0	80.7	1,081.9	150.4	343.1	10.0	66,574.5	311.5	40.4	540.9	75.2	171.5	5.0	33,287.3			
Proposed Project (within 10km wilderness)	49.1	Proposed Project (within 10km wilderness)	334.6	43.4	580.9	80.8	184.2	5.4	35,748.5	167.3	21.7	290.5	40.4	92.1	2.7	17,874.3			
<b>Enhanced Northern</b>																			
Total Enhanced Northern	154.0	Total Enhanced Northern	1,049.2	136.0	1,821.9	253.3	577.7	16.8	112,109.1	524.6	68.0	910.9	126.6	288.9	8.4	56,054.6			
Enhanced Northern (Imperial County Only)	54.8	Enhanced Northern (Imperial County Only)	373.4	48.4	648.4	90.1	205.6	6.0	39,898.6	186.7	24.2	324.2	45.1	102.8	3.0	19,949.3			
Enhanced Northern (San Diego County Only)	99.1	Enhanced Northern (San Diego County Only)	675.5	87.5	1,173.0	163.1	372.0	10.8	72,181.4	337.8	43.8	586.5	81.5	186.0	5.4	36,090.7			
Enhanced Northern (within 10km wilderness)	49.8	Enhanced Northern (within 10km wilderness)	339.3	44.0	589.2	81.9	186.8	5.4	36,258.2	169.7	22.0	294.6	41.0	93.4	2.7	18,129.1			
<b>Environmentally Superior Northern</b>																			
Total Environmentally Superior Northern	185.8	Total Environmentally Superior Northern	1,266.0	164.1	2,198.4	305.6	697.1	20.3	135,276.5	633.0	82.0	1,099.2	152.8	348.6	10.1	67,638.2			
Environmentally Superior Northern (Imperial County Only)	57.7	Environmentally Superior Northern (Imperial County Only)	393.2	50.9	682.7	94.9	216.5	6.3	42,010.0	196.6	25.5	341.3	47.4	108.2	3.2	21,005.0			
Environmentally Superior Northern (San Diego County Only)	128.1	Environmentally Superior Northern (San Diego County Only)	872.9	113.1	1,515.8	210.7	480.7	14.0	93,273.8	436.5	56.6	757.9	105.4	240.3	7.0	46,636.9			
Environmentally Superior Northern (within 10km wilderness)	63.9	Environmentally Superior Northern (within 10km wilderness)	435.3	56.4	755.8	105.1	239.7	7.0	46,509.5	217.6	28.2	377.9	52.5	119.8	3.5	23,254.7			
<b>Environmentally Superior Southern</b>																			
Total Environmentally Superior Southern	130.3	Total Environmentally Superior Southern	887.8	115.1	1,541.7	214.3	488.9	14.2	94,868.3	443.9	57.5	770.8	107.2	244.4	7.1	47,434.1			
Environmentally Superior Southern (Imperial County Only)	29.6	Environmentally Superior Southern (Imperial County Only)	201.7	28.1	350.2	48.7	111.1	3.2	21,551.0	100.8	13.1	175.1	24.3	55.5	1.6	10,775.5			
Environmentally Superior Southern (San Diego County Only)	100.7	Environmentally Superior Southern (San Diego County Only)	685.9	88.9	1,191.0	165.6	377.7	11.0	73,288.1	342.9	44.4	595.5	82.8	188.8	5.5	36,644.1			
Environmentally Superior Southern (within 10km wilderness)	88.9	Environmentally Superior Southern (within 10km wilderness)	605.7	78.5	1,051.8	146.2	333.6	9.7	64,725.9	302.9	39.2	525.9	73.1	166.8	4.9	32,363.0			
<b>LEAPS Transmission Only</b>																			
Total LEAPS Transmission Only	86.6	Total LEAPS Transmission Only	590.1	76.5	1,024.6	142.4	324.9	9.5	63,051.4	295.0	38.2	512.3	71.2	162.5	4.7	31,525.7			
LEAPS Transmission Only (South Coast Basin Only)	30.8	LEAPS Transmission Only (South Coast Basin Only)	209.9	27.2	364.4	50.7	115.6	3.4	22,424.7	104.9	13.6	182.2	25.3	57.8	1.7	11,212.4			
LEAPS Transmission Only (San Diego County Only)	55.8	LEAPS Transmission Only (San Diego County Only)	380.2	49.3	660.2	91.8	209.4	6.1	40,626.6	190.1	24.6	330.1	45.9	104.7	3.0	20,313.3			
LEAPS Transmission Only (within 10km wilderness)	57.5	LEAPS Transmission Only (within 10km wilderness)	391.9	50.8	680.4	94.6	215.8	6.3	41,871.6	195.9	25.4	340.2	47.3	107.9	3.1	20,935.8			
<b>LEAPS Generation and Transmission</b>																			
Total LEAPS Generation and Transmission	87.8	Total LEAPS Generation and Transmission	598.2	77.5	1,038.8	144.4	329.4	9.6	63,925.1	299.1	38.8	519.4	72.2	164.7	4.8	31,962.5			
LEAPS Generation and Transmission (South Coast Basin)	32.0	LEAPS Generation and Transmission (South Coast Basin)	218.0	28.3	378.6	52.6	120.1	3.5	23,298.4	109.0	14.1	189.3	26.3	60.0	1.7	11,649.2			
LEAPS Generation and Transmission (San Diego County)	55.8	LEAPS Generation and Transmission (San Diego County)	380.2	49.3	660.2	91.8	209.4	6.1	40,626.6	190.1	24.6	330.1	45.9	104.7	3.0	20,313.3			
LEAPS Generation and Transmission (within 10km wilderness)	58.7	LEAPS Generation and Transmission (within 10km wilderness)	400.0	51.8	694.6	96.6	220.3	6.4	42,745.3	200.0	25.9	347.3	48.3	110.1	3.2	21,372.7			

Offroad Emissions by Link

	SubTotals of Offroad Emissions by Substation					SubTotals of Offroad Emissions for Substations						
	Maximum Daily Offroad Emissions					Overall Offroad Emissions for Substations						
	NOX (lb/day)	ROG (lb/day)	PM (lb/day)	CO (lb/day)	SOX (lb/day)	CO2 (lb/day)	NOX (ton)	ROG (ton)	PM (ton)	CO (ton)	SOX (ton)	CO2 (ton)
Imperial Valley Link	1026.0	139.2	54.6	418.2	24.3	95,980.3	230.8	31.3	12.3	94.1	5.5	21,595.6
Anza Borrego Link	1026.0	139.2	54.6	418.2	24.3	95,980.3	---	---	---	---	---	---
Central Link	975.5	134.0	52.7	403.8	24.3	91,549.7	268.3	36.9	14.5	111.1	6.7	25,176.2
Inland Valley Link	975.5	134.0	52.7	403.8	24.3	91,549.7	---	---	---	---	---	---
Coastal Link	975.5	134.0	52.7	403.8	24.3	91,549.7	146.3	20.1	7.9	60.6	3.6	13,732.5
Sycamore Canyon-Eliot Recon	247.4	28.8	12.7	75.8	4.0	22,486.5	6.2	0.7	0.3	1.9	0.1	562.2

Off-Road Equipment Use Assumptions  
Transmission Line Activity

Source: Project Description Table B-11. Subject to change with final engineering.

500 kV from Imperial Valley Substation to Central East Substation Imperial Valley + Anza Link																						
Equipment	#	Hrs/Day	Days/Wk	Months						Maximum Daily Emissions for # Equipment						Total Emissions for # Equipment						
				18	Load and Duty Adjusted Hourly Emissions per Unit					CO2	Maximum Daily Emissions for # Equipment					CO2	Total Emissions for # Equipment					
					Tot Hr	NOX (lb/hr)	ROG (lb/hr)	PM (lb/hr)	CO (lb/hr)		SOX (lb/hr)	NOX (lb/day)	ROG (lb/day)	PM (lb/day)	CO (lb/day)		SOX (lb/day)	NOX (ton)	ROG (ton)	PM (ton)	CO (ton)	SOX (ton)
boom truck	8	12	6	43,200	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	81.5	8.0	2.9	21.0	0.1	7,290.7	18.34	1.80	0.65	4.73	0.02	1,640.4
backhoe	5	12	6	27,000	0.2864	0.0476	0.0262	0.1629	0.0003	22.8	17.2	2.9	1.6	9.8	0.0	1,365.6	3.87	0.64	0.35	2.20	0.00	307.3
crane	7	12	6	37,800	0.2688	0.0347	0.0152	0.1273	0.0002	20.7	22.6	2.9	1.3	10.7	0.0	1,741.2	5.08	0.66	0.29	2.41	0.00	391.8
aerial lift trucks	8	12	6	43,200	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	81.5	8.0	2.9	21.0	0.1	7,290.7	18.34	1.80	0.65	4.73	0.02	1,640.4
pickup trucks	15	12	6	81,000	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	152.8	15.0	5.4	39.4	0.2	13,670.0	34.38	3.37	1.22	8.86	0.03	3,075.8
overhead line trucks	4	12	6	21,600	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	40.7	4.0	1.4	10.5	0.0	3,645.3	9.17	0.90	0.32	2.36	0.01	820.2
underground line trucks	2	12	6	10,800	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	20.4	2.0	0.7	5.3	0.0	1,822.7	4.58	0.45	0.16	1.18	0.00	410.1
underground cable dolly (trc	1	6	6	2,700	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	5.1	0.5	0.2	1.3	0.0	455.7	1.15	0.11	0.04	0.30	0.00	102.5
stringing rig (trailer)	2	12	6	10,800	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	20.4	2.0	0.7	5.3	0.0	1,822.7	4.58	0.45	0.16	1.18	0.00	410.1
tensioner (trailer)	2	12	6	10,800	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	20.4	2.0	0.7	5.3	0.0	1,822.7	4.58	0.45	0.16	1.18	0.00	410.1
water truck	5	6	6	13,500	0.7447	0.0729	0.0264	0.1920	0.0007	66.6	22.3	2.2	0.8	5.8	0.0	1,998.5	5.03	0.49	0.18	1.30	0.01	449.7
truck w/lowboy trailer	4	12	6	21,600	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	40.7	4.0	1.4	10.5	0.0	3,645.3	9.17	0.90	0.32	2.36	0.01	820.2
drill rig	2	12	6	10,800	0.8762	0.0633	0.0246	0.2101	0.0013	112.9	21.0	1.5	0.6	5.0	0.0	2,708.7	4.73	0.34	0.13	1.13	0.01	609.5
front end loader	2	12	6	10,800	0.2864	0.0476	0.0262	0.1629	0.0003	22.8	6.9	1.1	0.6	3.9	0.0	546.2	1.55	0.26	0.14	0.88	0.00	122.9
dump truck	4	12	6	21,600	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	40.7	4.0	1.4	10.5	0.0	3,645.3	9.17	0.90	0.32	2.36	0.01	820.2
concrete truck	6	10	6	27,000	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	50.9	5.0	1.8	13.1	0.1	4,556.7	11.46	1.12	0.41	2.95	0.01	1,025.3
crew truck	4	12	6	21,600	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	40.7	4.0	1.4	10.5	0.0	3,645.3	9.17	0.90	0.32	2.36	0.01	820.2
underground cable puller	1	8	6	3,600	0.9551	0.0935	0.0338	0.2462	0.0010	85.4	7.6	0.7	0.3	2.0	0.0	683.5	1.72	0.17	0.06	0.44	0.00	153.8
underground splicing van	1	12	6	5,400	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	10.2	1.0	0.4	2.6	0.0	911.3	2.29	0.22	0.08	0.59	0.00	205.1
sock line trailer	2	12	6	10,800	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	20.4	2.0	0.7	5.3	0.0	1,822.7	4.58	0.45	0.16	1.18	0.00	410.1
wire trailer	2	12	6	10,800	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	20.4	2.0	0.7	5.3	0.0	1,822.7	4.58	0.45	0.16	1.18	0.00	410.1
dozer	2	12	6	10,800	1.2695	0.1253	0.0480	0.4688	0.0012	121.9	30.5	3.0	1.2	11.3	0.0	2,924.5	6.86	0.68	0.26	2.53	0.01	658.0
grader	2	12	6	10,800	1.1144	0.1447	0.0631	0.5195	0.0009	81.3	26.7	3.5	1.5	12.5	0.0	1,951.0	6.02	0.78	0.34	2.81	0.00	439.0
fuel/oiler truck	3	6	6	8,100	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	15.3	1.5	0.5	3.9	0.0	1,367.0	3.44	0.34	0.12	0.89	0.00	307.6
mechanic truck	2	12	6	10,800	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	20.4	2.0	0.7	5.3	0.0	1,822.7	4.58	0.45	0.16	1.18	0.00	410.1
air compressor	4	12	6	21,600	0.0348	0.0086	0.0026	0.0217	0.0000	3.5	1.7	0.4	0.1	1.0	0.0	166.4	0.38	0.09	0.03	0.23	0.00	37.4
rock drill	2	12	6	10,800	0.8762	0.0633	0.0246	0.2101	0.0013	112.9	21.0	1.5	0.6	5.0	0.0	2,708.7	4.73	0.34	0.13	1.13	0.01	609.5
small helicopter	1	6	6	2,700	4.5200	1.0800	0.7300	2.2200	0.6260	488.4	27.1	6.5	4.4	13.3	3.8	2,930.2	6.10	1.46	0.99	3.00	0.85	659.3
heavy lift helicopter	2	6	6	5,400	11.5600	3.8400	1.4600	13.5000	1.6400	1266.3	138.7	46.1	17.5	162.0	19.7	15,196.1	31.21	10.37	3.94	36.45	4.43	3,419.1

Double-Circuit 230 kV from  
Central East Substation to  
Sycamore Canyon Substation  
Central + Inland Links

Equipment	Months			Load and Duty Adjusted Hourly Emissions per Unit						Maximum Daily Emissions for # Equipment						Total Emissions for # Equipment						
	#	Hrs/Day	Days/Wk	Tot Hr	NOX (lb/hr)	ROG (lb/hr)	PM (lb/hr)	CO (lb/hr)	SOX (lb/hr)	CO2 (lb/hr)	NOX (lb/day)	ROG (lb/day)	PM (lb/day)	CO (lb/day)	SOX (lb/day)	CO2 (lb/day)	NOX (ton)	ROG (ton)	PM (ton)	CO (ton)	SOX (ton)	CO2 (ton)
boom truck	8	12	6	52,800	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	81.5	8.0	2.9	21.0	0.1	7,290.7	22.41	2.19	0.79	5.78	0.02	2,004.9
backhoe	5	12	6	33,000	0.2864	0.0476	0.0262	0.1629	0.0003	22.8	17.2	2.9	1.6	9.8	0.0	1,365.6	4.73	0.79	0.43	2.69	0.00	375.5
crane	5	12	6	33,000	0.2888	0.0347	0.0152	0.1273	0.0002	20.7	16.1	2.1	0.9	7.6	0.0	1,243.7	4.43	0.57	0.25	2.10	0.00	342.0
aerial lift trucks	8	12	6	52,800	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	81.5	8.0	2.9	21.0	0.1	7,290.7	22.41	2.19	0.79	5.78	0.02	2,004.9
pickup trucks	12	12	6	79,200	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	122.2	12.0	4.3	31.5	0.1	10,936.0	33.62	3.29	1.19	8.67	0.03	3,007.4
overhead line trucks	4	12	6	26,400	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	40.7	4.0	1.4	10.5	0.0	3,645.3	11.21	1.10	0.40	2.89	0.01	1,002.5
underground line trucks	2	12	6	13,200	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	20.4	2.0	0.7	5.3	0.0	1,822.7	5.60	0.55	0.20	1.44	0.01	501.2
underground cable dolly (tr)	1	6	6	3,300	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	5.1	0.5	0.2	1.3	0.0	455.7	1.40	0.14	0.05	0.36	0.00	125.3
stringing rig (trailer)	2	12	6	13,200	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	20.4	2.0	0.7	5.3	0.0	1,822.7	5.60	0.55	0.20	1.44	0.01	501.2
tensioner (trailer)	2	12	6	13,200	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	20.4	2.0	0.7	5.3	0.0	1,822.7	5.60	0.55	0.20	1.44	0.01	501.2
water truck	2	6	6	6,600	0.7447	0.0729	0.0264	0.1920	0.0007	66.6	8.9	0.9	0.3	2.3	0.0	799.4	2.46	0.24	0.09	0.63	0.00	219.8
truck w/lowboy trailer	4	12	6	26,400	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	40.7	4.0	1.4	10.5	0.0	3,645.3	11.21	1.10	0.40	2.89	0.01	1,002.5
drill rig	2	12	6	13,200	0.8762	0.0633	0.0246	0.2101	0.0013	112.9	21.0	1.5	0.6	5.0	0.0	2,708.7	5.78	0.42	0.16	1.39	0.01	744.9
front end loader	2	12	6	13,200	0.2864	0.0476	0.0262	0.1629	0.0003	22.8	6.9	1.1	0.6	3.9	0.0	546.2	1.89	0.31	0.17	1.08	0.00	150.2
dump truck	4	12	6	26,400	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	40.7	4.0	1.4	10.5	0.0	3,645.3	11.21	1.10	0.40	2.89	0.01	1,002.5
concrete truck	6	10	6	33,000	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	50.9	5.0	1.8	13.1	0.1	4,556.7	14.01	1.37	0.50	3.61	0.01	1,253.1
crew truck	4	12	6	26,400	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	40.7	4.0	1.4	10.5	0.0	3,645.3	11.21	1.10	0.40	2.89	0.01	1,002.5
underground cable puller	1	8	6	4,400	0.9551	0.0935	0.0338	0.2462	0.0010	85.4	7.6	0.7	0.3	2.0	0.0	683.5	2.10	0.21	0.07	0.54	0.00	188.0
underground splicing van	1	12	6	6,600	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	10.2	1.0	0.4	2.6	0.0	911.3	2.80	0.27	0.10	0.72	0.00	250.6
sock line trailer	2	12	6	13,200	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	20.4	2.0	0.7	5.3	0.0	1,822.7	5.60	0.55	0.20	1.44	0.01	501.2
wire trailer	2	12	6	13,200	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	20.4	2.0	0.7	5.3	0.0	1,822.7	5.60	0.55	0.20	1.44	0.01	501.2
dozer	2	12	6	13,200	1.2695	0.1253	0.0480	0.4688	0.0012	121.9	30.5	3.0	1.2	11.3	0.0	2,924.5	8.38	0.83	0.32	3.09	0.01	804.3
grader	2	12	6	13,200	1.1144	0.1447	0.0631	0.5195	0.0009	81.3	26.7	3.5	1.5	12.5	0.0	1,951.0	7.36	0.95	0.42	3.43	0.01	536.5
fuel/oiler truck	3	6	6	9,900	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	15.3	1.5	0.5	3.9	0.0	1,367.0	4.20	0.41	0.15	1.08	0.00	375.9
mechanic truck	2	12	6	13,200	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	20.4	2.0	0.7	5.3	0.0	1,822.7	5.60	0.55	0.20	1.44	0.01	501.2
air compressor	4	12	6	26,400	0.0348	0.0086	0.0026	0.0217	0.0000	3.5	1.7	0.4	0.1	1.0	0.0	166.4	0.46	0.11	0.03	0.29	0.00	45.8
rock drill	2	12	6	13,200	0.8762	0.0633	0.0246	0.2101	0.0013	112.9	21.0	1.5	0.6	5.0	0.0	2,708.7	5.78	0.42	0.16	1.39	0.01	744.9
small helicopter	1	6	6	3,300	4.5200	1.0800	0.7300	2.2200	0.6260	488.4	27.1	6.5	4.4	13.3	3.8	2,930.2	7.46	1.78	1.20	3.66	1.03	805.8
heavy lift helicopter	2	6	6	6,600	11.5600	3.8400	1.4600	13.5000	1.6400	1266.3	138.7	46.1	17.5	162.0	19.7	15,196.1	38.15	12.67	4.82	44.55	5.41	4,178.9



Offroad Emissions by Substation Modifications

	SubTotals of Offroad Emissions by Substation						SubTotals of Offroad Emissions for Substations					
	Maximum Daily Offroad Emissions						Overall Offroad Emissions for Substations					
	NOX (lb/day)	ROG (lb/day)	PM (lb/day)	CO (lb/day)	SOX (lb/day)	CO2 (lb/day)	NOX (ton)	ROG (ton)	PM (ton)	CO (ton)	SOX (ton)	CO2 (ton)
IV Sub (Imper Vall)	109.7	11.4	4.1	31.0	0.1	10,181.7	1.0	0.1	0.0	0.3	0.0	95.2
Central East Sub	764.8	80.9	30.7	270.1	0.7	70,104.6	24.5	2.6	1.0	8.5	0.0	2,222.9
SC Sub (Inland Val)	96.8	10.1	3.7	27.5	0.1	8,991.0	0.8	0.1	0.0	0.2	0.0	76.1
Pen Sub (Coastal)	72.3	7.7	2.8	21.4	0.1	6,840.2	0.8	0.1	0.0	0.2	0.0	69.0
SLuis Sub (Coastal)	57.1	6.5	2.3	17.6	0.1	5,151.8	0.7	0.1	0.0	0.2	0.0	59.0
SoBay Sub (Coastal)	40.6	4.7	1.7	12.6	0.0	3,655.7	0.2	0.0	0.0	0.1	0.0	16.7

Off-Road Equipment Use Assumptions

Substation Activity

Source: Project Description Table B-11. Subject to change with final engineering.

Equipment	Imperial Valley				Load and Duty Adjusted Hourly Emissions per Unit						Maximum Daily Emissions for # Equipment						Total Emissions for # Equipment					
	#	Hrs/Day	Days	Tot Hr	NOX (lb/hr)	ROG (lb/hr)	PM (lb/hr)	CO (lb/hr)	SOX (lb/hr)	CO2 (lb/hr)	NOX (lb/day)	ROG (lb/day)	PM (lb/day)	CO (lb/day)	SOX (lb/day)	CO2 (lb/day)	NOX (ton)	ROG (ton)	PM (ton)	CO (ton)	SOX (ton)	CO2 (ton)
<b>Below Grade</b>																						
auger	1	10	10	100	0.8762	0.0633	0.0246	0.2101	0.0013	112.9	8.8	0.6	0.2	2.1	0.0	1,128.6	0.04	0.00	0.00	0.01	0.00	5.6
backhoe	1	10	40	400	0.2864	0.0476	0.0262	0.1629	0.0003	22.8	2.9	0.5	0.3	1.6	0.0	227.6	0.06	0.01	0.01	0.03	0.00	4.6
front loader	1	10	20	200	0.7892	0.0703	0.0263	0.1959	0.0009	75.6	7.9	0.7	0.3	2.0	0.0	755.6	0.08	0.01	0.00	0.02	0.00	7.6
ditch witch	1	10	20	200	0.1840	0.0932	0.0215	0.2290	0.0002	16.9	1.8	0.9	0.2	2.3	0.0	168.9	0.02	0.01	0.00	0.02	0.00	1.7
concrete truck	5	4	20	400	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	17.0	1.7	0.6	4.4	0.0	1,518.9	0.17	0.02	0.01	0.04	0.00	15.2
water truck	1	4	40	160	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	3.4	0.3	0.1	0.9	0.0	303.8	0.07	0.01	0.00	0.02	0.00	6.1
dump truck	2	8	10	160	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	13.6	1.3	0.5	3.5	0.0	1,215.1	0.07	0.01	0.00	0.02	0.00	6.1
trailer	4	4	10	160	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	13.6	1.3	0.5	3.5	0.0	1,215.1	0.07	0.01	0.00	0.02	0.00	6.1
crew truck/car	10	0	40	onroad	---	---	---	---	---	---												
hauler	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
skid steer loader	--	--	--		0.1412	0.0387	0.0132	0.1165	0.0002	13.3												
batch plant	--	--	--		1.8111	0.1625	0.0631	0.5943	0.0017	176.4												
drill rig	--	--	--		0.8762	0.0633	0.0246	0.2101	0.0013	112.9												
truck w/trailer	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
compressor	--	--	--		0.0348	0.0086	0.0026	0.0217	0.0000	3.5												
construction fork	--	--	--		0.2337	0.0312	0.0141	0.1198	0.0002	20.2												
980 loader	--	--	--		1.5537	0.1434	0.0546	0.4748	0.0019	170.7												
vibrating roller	--	--	--		0.5199	0.0640	0.0277	0.2456	0.0005	41.9												
QA/QC truck	--	--	--		---	---	---	---	---	---												
<b>Above Grade</b>																						
crane	1	10	40	400	0.3578	0.0359	0.0138	0.1001	0.0003	28.9	3.6	0.4	0.1	1.0	0.0	289.4	0.07	0.01	0.00	0.02	0.00	5.8
bucket truck	1	10	40	400	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	8.5	0.8	0.3	2.2	0.0	759.4	0.17	0.02	0.01	0.04	0.00	15.2
boom truck	1	4	20	80	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	3.4	0.3	0.1	0.9	0.0	303.8	0.03	0.00	0.00	0.01	0.00	3.0
trailer	4	4	10	160	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	13.6	1.3	0.5	3.5	0.0	1,215.1	0.07	0.01	0.00	0.02	0.00	6.1
fork lift	1	4	40	160	0.3991	0.0343	0.0122	0.0874	0.0004	37.0	1.6	0.1	0.0	0.3	0.0	148.1	0.03	0.00	0.00	0.01	0.00	3.0
overhead line rig	1	4	20	80	0.7809	0.0733	0.0273	0.1950	0.0007	64.0	3.1	0.3	0.1	0.8	0.0	256.0	0.03	0.00	0.00	0.01	0.00	2.6
crew truck/car	10	0	40	onroad	---	---	---	---	---	---												
man lift	--	--	--		0.6993	0.0642	0.0243	0.1787	0.0007	62.9												
construction fork	--	--	--		0.2337	0.0312	0.0141	0.1198	0.0002	20.2												
overhead line	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
cable dolly (trailer)	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
stringing rig (trailer)	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
oil rig (trailer w/generator)	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
SSF6 gas cart (trailer)	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
water truck	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
trucks w/trailers	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
compressor	--	--	--		0.0348	0.0086	0.0026	0.0217	0.0000	3.5												

**Cable Pull/Wiring**

cable trailer	1	4	20	80	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	3.4	0.3	0.1	0.9	0.0	303.8	0.03	0.00	0.00	0.01	0.00	3.0
boom truck	1	4	20	80	0.9097	0.0933	0.0337	0.2989	0.0009	93.1	3.6	0.4	0.1	1.2	0.0	372.6	0.04	0.00	0.00	0.01	0.00	3.7
crew truck/car	10	0	40	onroad	---	---	---	---	---	---												
man lift	--	--	--		0.6993	0.0642	0.0243	0.1787	0.0007	62.9												
bucket truck	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
<b>Site Development</b>																						
Caterpillar (D9 or larger)	--	--	--		1.3126	0.1296	0.0496	0.4847	0.0012	126.0												
Caterpillar (D9 or larger)	--	--	--		1.3126	0.1296	0.0496	0.4847	0.0012	126.0												
140H blade	--	--	--		1.3126	0.1296	0.0496	0.4847	0.0012	126.0												
16G blade	--	--	--		1.3126	0.1296	0.0496	0.4847	0.0012	126.0												
water truck	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
compactor	--	--	--		0.2873	0.0490	0.0248	0.1441	0.0002	18.7												
scraper	--	--	--		2.4627	0.2578	0.0997	1.1609	0.0020	208.3												
992 loader	--	--	--		0.7892	0.0703	0.0263	0.1959	0.0009	75.6												
773 rock truck	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
rock drill	--	--	--		0.8762	0.0633	0.0246	0.2101	0.0013	112.9												
portable rock crusher	--	--	--		1.8111	0.1625	0.0631	0.5943	0.0017	176.4												
backhoe	--	--	--		0.2864	0.0476	0.0262	0.1629	0.0003	22.8												
ditch witch	--	--	--		0.1840	0.0932	0.0215	0.2290	0.0002	16.9												
concrete batch plant	--	--	--		1.8111	0.1625	0.0631	0.5943	0.0017	176.4												
concrete truck	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
water pump	--	--	--		0.2380	0.0985	0.0239	0.2373	0.0003	22.9												
asphalt paver	--	--	--		0.4661	0.0795	0.0403	0.2338	0.0004	30.4												
asphalt emulsion truck	--	--	--		0.7582	0.1007	0.0445	0.3934	0.0007	64.2												
vibrating roller	--	--	--		0.5199	0.0640	0.0277	0.2456	0.0005	41.9												
truck (delivery)	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
QA/QC truck	--	--	--		---	---	---	---	---	---												









Equipment	San Luis Rey Substation			Load and Duty Adjusted Hourly Emissions per Unit							Maximum Daily Emissions for # Equipment					Total Emissions for # Equipment							
	#	Hrs/Day	Days	Tot Hr	NOX	ROG	PM	CO	SOX	CO2	NOX	ROG	PM	CO	SOX	CO2	NOX	ROG	PM	CO	SOX	CO2	
					(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(ton)	(ton)	(ton)	(ton)	(ton)	(ton)	
auger	--	--	--		0.8762	0.0633	0.0246	0.2101	0.0013	112.9													
backhoe	1	10	40	400	0.2864	0.0476	0.0262	0.1629	0.0003	22.8	2.9	0.5	0.3	1.6	0.0	227.6	0.06	0.01	0.01	0.03	0.00	4.6	
front loader	1	10	20	200	0.7892	0.0703	0.0263	0.1959	0.0009	75.6	7.9	0.7	0.3	2.0	0.0	755.6	0.08	0.01	0.00	0.02	0.00	7.6	
ditch witch	1	10	20	200	0.1840	0.0932	0.0215	0.2290	0.0002	16.9	1.8	0.9	0.2	2.3	0.0	168.9	0.02	0.01	0.00	0.02	0.00	1.7	
concrete truck	1	4	20	80	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	3.4	0.3	0.1	0.9	0.0	303.8	0.03	0.00	0.00	0.01	0.00	3.0	
water truck	1	4	40	160	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	3.4	0.3	0.1	0.9	0.0	303.8	0.07	0.01	0.00	0.02	0.00	6.1	
dump truck	1	8	10	80	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	6.8	0.7	0.2	1.8	0.0	607.6	0.03	0.00	0.00	0.01	0.00	3.0	
trailer	1	4	10	40	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	3.4	0.3	0.1	0.9	0.0	303.8	0.02	0.00	0.00	0.00	0.00	1.5	
crew truck/car	5	0	40	onroad																			
hauler	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9													
skid steer loader	--	--	--		0.1412	0.0387	0.0132	0.1165	0.0002	13.3													
batch plant	--	--	--		1.8111	0.1625	0.0631	0.5943	0.0017	176.4													
drill rig	--	--	--		0.8762	0.0633	0.0246	0.2101	0.0013	112.9													
truck w/trailer	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9													
compressor	--	--	--		0.0348	0.0086	0.0026	0.0217	0.0000	3.5													
construction fork	--	--	--		0.2337	0.0312	0.0141	0.1198	0.0002	20.2													
990 loader	--	--	--		1.5537	0.1434	0.0546	0.4748	0.0019	170.7													
vibrating roller	--	--	--		0.5199	0.0640	0.0277	0.2456	0.0005	41.9													
QA/QC truck	--	--	--		---	---	---	---	---	---													
<b>Above Grade</b>																							
crane	1	10	40	400	0.3578	0.0359	0.0138	0.1001	0.0003	28.9	3.6	0.4	0.1	1.0	0.0	289.4	0.07	0.01	0.00	0.02	0.00	5.8	
bucket truck	1	10	40	400	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	8.5	0.8	0.3	2.2	0.0	759.4	0.17	0.02	0.01	0.04	0.00	15.2	
boom truck	1	4	5	20	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	3.4	0.3	0.1	0.9	0.0	303.8	0.01	0.00	0.00	0.00	0.00	0.8	
trailer	1	4	10	40	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	3.4	0.3	0.1	0.9	0.0	303.8	0.02	0.00	0.00	0.00	0.00	1.5	
fork lift	1	4	20	80	0.3991	0.0343	0.0122	0.0874	0.0004	37.0	1.6	0.1	0.0	0.3	0.0	148.1	0.02	0.00	0.00	0.00	0.00	1.5	
overhead line rig	--	--	--		0.7809	0.0733	0.0273	0.1950	0.0007	64.0													
crew truck/car	5	0	40	onroad																			
man lift	--	--	--		0.6993	0.0642	0.0243	0.1787	0.0007	62.9													
construction fork	--	--	--		0.2337	0.0312	0.0141	0.1198	0.0002	20.2													
overhead line	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9													
cable dolly (trailer)	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9													
stringing rig (trailer)	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9													
oil rig (trailer w/generator)	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9													
SSF6 gas cart (trailer)	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9													
water truck	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9													
trucks w/trailers	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9													
compressor	--	--	--		0.0348	0.0086	0.0026	0.0217	0.0000	3.5													
<b>Cable Pull/Wiring</b>																							
cable trailer	1	4	20	80	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	3.4	0.3	0.1	0.9	0.0	303.8	0.03	0.00	0.00	0.01	0.00	3.0	
boom truck	1	4	20	80	0.9097	0.0933	0.0337	0.2989	0.0009	93.1	3.6	0.4	0.1	1.2	0.0	372.6	0.04	0.00	0.00	0.01	0.00	3.7	
crew truck/car	5	0	40	onroad																			
man lift	--	--	--		0.6993	0.0642	0.0243	0.1787	0.0007	62.9													
bucket truck	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9													
<b>Site Development</b>																							
Caterpillar (D9 or larger)	--	--	--		1.3126	0.1296	0.0496	0.4847	0.0012	126.0													
Caterpillar (D9 or larger)	--	--	--		1.3126	0.1296	0.0496	0.4847	0.0012	126.0													
140H blade	--	--	--		1.3126	0.1296	0.0496	0.4847	0.0012	126.0													
16G blade	--	--	--		1.3126	0.1296	0.0496	0.4847	0.0012	126.0													
water truck	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9													
compactor	--	--	--		0.2873	0.0490	0.0248	0.1441	0.0002	18.7													
scraper	--	--	--		2.4627	0.2578	0.0997	1.1609	0.0020	208.3													
992 loader	--	--	--		0.7892	0.0703	0.0263	0.1959	0.0009	75.6													
773 rock truck	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9													
rock drill	--	--	--		0.8762	0.0633	0.0246	0.2101	0.0013	112.9													
portable rock crusher	--	--	--		1.8111	0.1625	0.0631	0.5943	0.0017	176.4													
backhoe	--	--	--		0.2864	0.0476	0.0262	0.1629	0.0003	22.8													
ditch witch	--	--	--		0.1840	0.0932	0.0215	0.2290	0.0002	16.9													
concrete batch plant	--	--	--		1.8111	0.1625	0.0631	0.5943	0.0017	176.4													
concrete truck	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9													
water pump	--	--	--		0.2380	0.0985	0.0239	0.2373	0.0003	22.9													
asphalt paver	--	--	--		0.4661	0.0795	0.0403	0.2338	0.0004	30.4													
asphalt emulsion truck	--	--	--		0.7582	0.1007	0.0445	0.3934	0.0007	64.2													
vibrating roller	--	--	--		0.5199	0.0640	0.0277	0.2456	0.0005	41.9													
truck (delivery)	--	--	--		0.8489	0.0831	0.0301	0.2188	0.0009	75.9													
QA/QC truck	--	--	--		---	---	---	---	---	---													

Equipment	South Bay Substation			Load and Duty Adjusted Hourly Emissions per Unit							Maximum Daily Emissions for # Equipment					Total Emissions for # Equipment						
	#	Hrs/Day	Days	Tot Hr	NOX	ROG	PM	CO	SOX	CO2	NOX	ROG	PM	CO	SOX	CO2	NOX	ROG	PM	CO	SOX	CO2
					(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(ton)	(ton)	(ton)	(ton)	(ton)	(ton)	
<b>Below Grade</b>																						
auger	-	-	-		0.8762	0.0633	0.0246	0.2101	0.0013	112.9												
backhoe	1	8	5	40	0.2864	0.0476	0.0262	0.1629	0.0003	22.8	2.3	0.4	0.2	1.3	0.0	182.1	0.01	0.00	0.00	0.00	0.00	0.5
front loader	1	8	10	80	0.7892	0.0703	0.0263	0.1959	0.0009	75.6	6.3	0.6	0.2	1.6	0.0	604.5	0.03	0.00	0.00	0.01	0.00	3.0
ditch witch	1	8	5	40	0.1840	0.0932	0.0215	0.2290	0.0002	16.9	1.5	0.7	0.2	1.8	0.0	135.1	0.00	0.00	0.00	0.00	0.00	0.3
concrete truck	1	4	5	20	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	3.4	0.3	0.1	0.9	0.0	303.8	0.01	0.00	0.00	0.00	0.00	0.8
water truck	1	4	5	20	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	3.4	0.3	0.1	0.9	0.0	303.8	0.01	0.00	0.00	0.00	0.00	0.8
dump truck	1	8	5	40	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	6.8	0.7	0.2	1.8	0.0	607.6	0.02	0.00	0.00	0.00	0.00	1.5
trailer	-	-	-		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
crew truck/car	3	0	20	onroad	---	---	---	---	---	---												
hauler	-	-	-		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
skid steer loader	-	-	-		0.1412	0.0387	0.0132	0.1165	0.0002	13.3												
batch plant	-	-	-		1.8111	0.1625	0.0631	0.5943	0.0017	176.4												
drill rig	-	-	-		0.8762	0.0633	0.0246	0.2101	0.0013	112.9												
truck w/trailer	-	-	-		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
compressor	-	-	-		0.0348	0.0086	0.0026	0.0217	0.0000	3.5												
construction fork	-	-	-		0.2337	0.0312	0.0141	0.1198	0.0002	20.2												
990 loader	-	-	-		1.5537	0.1434	0.0546	0.4748	0.0019	170.7												
vibrating roller	-	-	-		0.5199	0.0640	0.0277	0.2456	0.0005	41.9												
QA/QC truck	-	-	-		---	---	---	---	---	---												
<b>Above Grade</b>																						
crane	-	-	-		0.3578	0.0359	0.0138	0.1001	0.0003	28.9												
bucket truck	1	8	20	160	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	6.8	0.7	0.2	1.8	0.0	607.6	0.07	0.01	0.00	0.02	0.00	6.1
boom truck	1	4	10	40	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	3.4	0.3	0.1	0.9	0.0	303.8	0.02	0.00	0.00	0.00	0.00	1.5
trailer	1	4	10	40	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	3.4	0.3	0.1	0.9	0.0	303.8	0.02	0.00	0.00	0.00	0.00	1.5
fork lift	-	-	-		0.3991	0.0343	0.0122	0.0874	0.0004	37.0												
overhead line rig	-	-	-		0.7809	0.0733	0.0273	0.1950	0.0007	64.0												
crew truck/car	3	0	20	onroad	---	---	---	---	---	---												
man lift	-	-	-		0.6993	0.0642	0.0243	0.1787	0.0007	62.9												
construction fork	-	-	-		0.2337	0.0312	0.0141	0.1198	0.0002	20.2												
overhead line	-	-	-		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
cable dolly (trailer)	-	-	-		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
stringing rig (trailer)	-	-	-		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
oil rig (trailer w/generator)	-	-	-		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
SSF6 gas cart (trailer)	-	-	-		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
water truck	-	-	-		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
trucks w/trailers	-	-	-		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
compressor	-	-	-		0.0348	0.0086	0.0026	0.0217	0.0000	3.5												
<b>Cable Pull/Wiring</b>																						
cable trailer	1	4	5	20	0.8489	0.0831	0.0301	0.2188	0.0009	75.9	3.4	0.3	0.1	0.9	0.0	303.8	0.01	0.00	0.00	0.00	0.00	0.8
boom truck	-	-	-		0.9097	0.0933	0.0337	0.2989	0.0009	93.1												
crew truck/car	2	0	20	onroad	---	---	---	---	---	---												
man lift	-	-	-		0.6993	0.0642	0.0243	0.1787	0.0007	62.9												
bucket truck	-	-	-		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
<b>Site Development</b>																						
Caterpillar (D9 or larger)	-	-	-		1.3126	0.1296	0.0496	0.4847	0.0012	126.0												
Caterpillar (D9 or larger)	-	-	-		1.3126	0.1296	0.0496	0.4847	0.0012	126.0												
140H blade	-	-	-		1.3126	0.1296	0.0496	0.4847	0.0012	126.0												
16G blade	-	-	-		1.3126	0.1296	0.0496	0.4847	0.0012	126.0												
water truck	-	-	-		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
compactor	-	-	-		0.2873	0.0490	0.0248	0.1441	0.0002	18.7												
scraper	-	-	-		2.4627	0.2578	0.0997	1.1609	0.0020	208.3												
992 loader	-	-	-		0.7892	0.0703	0.0263	0.1959	0.0009	75.6												
773 rock truck	-	-	-		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
rock drill	-	-	-		0.8762	0.0633	0.0246	0.2101	0.0013	112.9												
portable rock crusher	-	-	-		1.8111	0.1625	0.0631	0.5943	0.0017	176.4												
backhoe	-	-	-		0.2864	0.0476	0.0262	0.1629	0.0003	22.8												
ditch witch	-	-	-		0.1840	0.0932	0.0215	0.2290	0.0002	16.9												
concrete batch plant	-	-	-		1.8111	0.1625	0.0631	0.5943	0.0017	176.4												
concrete truck	-	-	-		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
water pump	-	-	-		0.2380	0.0985	0.0239	0.2373	0.0003	22.9												
asphalt paver	-	-	-		0.4661	0.0795	0.0403	0.2338	0.0004	30.4												
asphalt emulsion truck	-	-	-		0.7582	0.1007	0.0445	0.3934	0.0007	64.2												
vibrating roller	-	-	-		0.5199	0.0640	0.0277	0.2456	0.0005	41.9												
truck (delivery)	-	-	-		0.8489	0.0831	0.0301	0.2188	0.0009	75.9												
QA/QC truck	-	-	-		---	---	---	---	---	---												

**Onroad Emissions by Activity and Link**

	SubTotals of Onroad Emissions by Link						SubTotals of Onroad Emissions					
	Maximum Daily Onroad Emissions						Overall Onroad Emissions					
	NOX (lb/day)	ROG (lb/day)	PM (lb/day)	CO (lb/day)	SOX (lb/day)	CO2 (lb/day)	NOX (ton)	ROG (ton)	PM (ton)	CO (ton)	SOX (ton)	CO2 (ton)
Imperial Valley Link	364.4	46.7	16.7	344.5	0.5	51,967.1	341.8	40.4	15.6	285.3	0.5	45,533.3
Anza Borrego Link	125.8	15.9	5.8	116.6	0.2	17,746.6						
Central Link	146.7	18.8	6.7	138.3	0.2	20,894.4						
Inland Valley Link	134.5	17.7	6.2	132.6	0.2	19,639.0						
Coastal Link	71.5	10.3	3.3	79.8	0.1	11,220.6						
Central East Substation	2.0	1.9	0.2	20.5	0.0	1,844.7						

**On-Road Vehicle Use Assumptions**

Source: Project Description, April to July 2007. Subject to change with final engineering.

Light Duty Autos and Trucks							Composite Emissions for Fleet of Vehicles						Maximum Daily Emissions for Vehicles						Total Emissions for Vehicles							
Overall Personnel to Work Sites							NOX	ROG	PM	CO	SOX	CO2	NOX	ROG	PM	CO	SOX	CO2	NOX	ROG	PM	CO	SOX	CO2		
workers	months	veh/day	RT (mi)	mi/day	TOT (mi)		(lb/1000mi)	(lb/1000mi)	(lb/1000mi)	(lb/1000mi)	(lb/1000mi)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(lb/day)	(ton)	(ton)	(ton)	(ton)	(ton)	(ton)				
<b>Worker Commute Trips</b>																										
Maximum Labor Force	800	12	615	60	36,923	9,747,692	1.067	1.014	0.086	10.698	0.009	960.8	39.4	37.4	3.2	395.0	0.3									
Typical Labor Force	580	10	446	60	26,769	5,889,231	1.067	1.014	0.086	10.698	0.009	960.8	28.6	27.1	2.3	286.4	0.2									
rideshare factor (estimated)	1.3				SubTot Personnel (mi)	15,636,923	1.067	1.014	0.086	10.698	0.009	960.8						8.34	7.93	0.67	83.64	0.07	7,512.0			
overall links (mi)	158.1																									
<b>Daily SubTotal by Link</b>																										
Imperial Valley	60.9	0.39	237.0	60	14,223		1.067	1.014	0.086	10.698	0.009	960.8	15.2	14.4	1.2	152.2	0.1						13,665.3			
Anza-Borrego	22.6	0.14	88.0	60	5,278		1.067	1.014	0.086	10.698	0.009	960.8	5.6	5.4	0.5	56.5	0.0							5,071.2		
Central	27.3	0.17	106.3	60	6,376		1.067	1.014	0.086	10.698	0.009	960.8	6.8	6.5	0.5	68.2	0.1							6,125.8		
Inland Valley	25.5	0.16	99.3	60	5,955		1.067	1.014	0.086	10.698	0.009	960.8	6.4	6.0	0.5	63.7	0.1							5,721.9		
Coastal	13.6	0.09	52.9	60	3,176		1.067	1.014	0.086	10.698	0.009	960.8	3.4	3.2	0.3	34.0	0.0							3,051.7		
Sycamore Canyon-Eliot Reco	8.2	0.05	31.9	60	1,915		1.067	1.014	0.086	10.698	0.009	960.8	2.0	1.9	0.2	20.5	0.0							1,840.0		
<b>Crew and QA/QC Mobilize</b>																										
<b>Substations</b>																										
Imperial Valley	40	30	60	1,800	1,584,000		1.067	1.014	0.086	10.698	0.009	960.8	1.9	1.8	0.2	19.3	0.0							1,729.4		
Central East (Grade)	120	22	60	1,320	3,484,800		1.067	1.014	0.086	10.698	0.009	960.8	1.4	1.3	0.1	14.1	0.0							1,268.3		
Central East (Cable)	60	8	60	480	633,600		1.067	1.014	0.086	10.698	0.009	960.8	0.5	0.5	0.0	5.1	0.0							461.2		
Central East (Site Dev)	160	2	60	120	422,400		1.067	1.014	0.086	10.698	0.009	960.8	0.1	0.1	0.0	1.3	0.0							115.3		
Sycamore Canyon (Grade)	40	10	30	300	264,000		1.067	1.014	0.086	10.698	0.009	960.8	0.3	0.3	0.0	3.2	0.0							288.2		
Sycamore Canyon (Cable)	60	5	30	150	198,000		1.067	1.014	0.086	10.698	0.009	960.8	0.2	0.2	0.0	1.6	0.0							144.1		
Penasquitos (Grade)	40	10	30	300	264,000		1.067	1.014	0.086	10.698	0.009	960.8	0.3	0.3	0.0	3.2	0.0							288.2		
Penasquitos (Cable)	60	5	30	150	198,000		1.067	1.014	0.086	10.698	0.009	960.8	0.2	0.2	0.0	1.6	0.0							144.1		
San Luis Rey	40	15	30	450	396,000		1.067	1.014	0.086	10.698	0.009	960.8	0.5	0.5	0.0	4.8	0.0							432.4		
South Bay	20	8	30	240	105,600		1.067	1.014	0.086	10.698	0.009	960.8	0.3	0.2	0.0	2.6	0.0							230.6		
					SubTot Crew and QA/QC Mobilize (mi)	7,550,400	1.067	1.014	0.086	10.698	0.009	960.8						4.03	3.83	0.32	40.39	0.03	3,627.2			
Basis: total labor force divided by link and substation activity from Project Description.																										
Typical Light Duty Autos and Trucks (vmt/day)							27,300																			
<b>TOTAL Light Duty Autos and Trucks (vmt)</b>							<b>23,187,323</b>																			

Medium to Heavy Duty Trucks	Composite Emissions for Fleet of Vehicles										Maximum Daily Emissions for Vehicles					Total Emissions for Vehicles								
	months	veh/day	RT (mi)	mi/day	TOT (mi)	NOX (lb/1000mi)	ROG (lb/1000mi)	PM (lb/1000mi)	CO (lb/1000mi)	SOX (lb/1000mi)	CO2 (lb/1000mi)	NOX (lb/day)	ROG (lb/day)	PM (lb/day)	CO (lb/day)	SOX (lb/day)	CO2 (lb/day)	NOX (ton)	ROG (ton)	PM (ton)	CO (ton)	SOX (ton)	CO2 (ton)	
<b>Miscellaneous Deliveries</b>																								
Medium duty deliveries	22	31	60	1,860	900,240	4.281	1.400	0.154	14.665	0.017	1,705.2	8.0	2.6	0.3	27.3	0.0	3,171.7	1.93	0.63	0.07	6.60	0.01	767.6	
<b>Daily SubTotal by Link</b>	fraction	veh/day	RT (mi)	mi/day																				
Imperial Valley	0.39	11.9	60	716		4.281	1.400	0.154	14.665	0.017	1,705.2	3.1	1.0	0.1	10.5	0.0	1,221.7							
Anza-Borrego	0.14	4.4	60	266		4.281	1.400	0.154	14.665	0.017	1,705.2	1.1	0.4	0.0	3.9	0.0	453.4							
Central	0.17	5.4	60	321		4.281	1.400	0.154	14.665	0.017	1,705.2	1.4	0.4	0.0	4.7	0.0	547.7							
Inland Valley	0.16	5.0	60	300		4.281	1.400	0.154	14.665	0.017	1,705.2	1.3	0.4	0.0	4.4	0.0	511.6							
Coastal	0.09	2.7	60	160		4.281	1.400	0.154	14.665	0.017	1,705.2	0.7	0.2	0.0	2.3	0.0	272.8							
Sycamore Canyon-Eliot Recond	0.05	1.6	60	96		4.281	1.400	0.154	14.665	0.017	1,705.2	0.4	0.1	0.0	1.4	0.0	164.5							
Basis: Estimate as 5 percent of max labor force (derived from Data Request TRANS-1).																								
<b>Heavy-Heavy Duty Trucks</b>	Composite Emissions for Fleet of Vehicles										Maximum Daily Emissions for Vehicles					Total Emissions for Vehicles								
	months	veh/day	RT (mi)	mi/day	TOT (mi)	NOX (lb/1000mi)	ROG (lb/1000mi)	PM (lb/1000mi)	CO (lb/1000mi)	SOX (lb/1000mi)	CO2 (lb/1000mi)	NOX (lb/day)	ROG (lb/day)	PM (lb/day)	CO (lb/day)	SOX (lb/day)	CO2 (lb/day)	NOX (ton)	ROG (ton)	PM (ton)	CO (ton)	SOX (ton)	CO2 (ton)	
<b>Material Delivery / Waste Removal</b>																								
Steel, conductor, concrete, spoils	22	246	60	14,760	7,143,840	39.974	3.416	1.769	18.876	0.044	4,104.6	590.0	50.4	26.1	278.6	0.6	60,583.5	142.78	12.20	6.32	67.42	0.16	14,661.2	
Basis: Estimate as 40 percent of max labor force (derived from Data Request TRANS-1).																								
<b>Equipment Delivery/Removal/Shuttling</b>																								
Equipment Delivery/Removal/Shuttling	22	62	60	3,720	1,800,480	39.974	3.416	1.769	18.876	0.044	4,104.6	148.7	12.7	6.6	70.2	0.2	15,269.0	35.99	3.08	1.59	16.99	0.04	3,695.1	
Basis: Estimate as 10 percent of max labor force traffic (derived from Data Request TRANS-1).																								
<b>Daily SubTotal by Link</b>	fraction	veh/day	RT (mi)	mi/day																				
Imperial Valley	0.39	118.6	60	7,118		39.974	3.416	1.769	18.876	0.044	4,104.6	284.6	24.3	12.6	134.4	0.3	29,218.3							
Anza-Borrego	0.14	44.0	60	2,642		39.974	3.416	1.769	18.876	0.044	4,104.6	105.6	9.0	4.7	49.9	0.1	10,842.9							
Central	0.17	53.2	60	3,191		39.974	3.416	1.769	18.876	0.044	4,104.6	127.6	10.9	5.6	60.2	0.1	13,097.9							
Inland Valley	0.16	49.7	60	2,981		39.974	3.416	1.769	18.876	0.044	4,104.6	119.1	10.2	5.3	56.3	0.1	12,234.3							
Coastal	0.09	26.5	60	1,590		39.974	3.416	1.769	18.876	0.044	4,104.6	63.5	5.4	2.8	30.0	0.1	6,525.0							
Sycamore Canyon-Eliot Recond	0.05	16.0	60	958		39.974	3.416	1.769	18.876	0.044	4,104.6	38.3	3.3	1.7	18.1	0.0	3,934.2							
Basis: Estimate as 5 percent of max labor force (derived from Data Request TRANS-1).																								
<b>Fuel Transportation</b>																								
Imperial Valley	240	5.6	60	336	1,774,080	39.974	3.416	1.769	18.876	0.044	4,104.6	13.4	1.1	0.6	6.3	0.0	1,379.1	35.46	3.03	1.57	16.74	0.04	3,640.9	
Anza-Borrego	120	0.8	70	56	147,840	39.974	3.416	1.769	18.876	0.044	4,104.6	2.2	0.2	0.1	1.1	0.0	229.9	2.95	0.25	0.13	1.40	0.00	303.4	
Central	120	1.2	38	46	120,354	39.974	3.416	1.769	18.876	0.044	4,104.6	1.8	0.2	0.1	0.9	0.0	187.2	2.41	0.21	0.11	1.14	0.00	247.1	
Inland Valley	160	0.6	50	30	105,600	39.974	3.416	1.769	18.876	0.044	4,104.6	1.2	0.1	0.1	0.6	0.0	123.1	2.11	0.18	0.09	1.00	0.00	216.7	
Coastal	220	0.4	28	11	54,208	39.974	3.416	1.769	18.876	0.044	4,104.6	0.4	0.0	0.0	0.2	0.0	46.0	1.08	0.09	0.05	0.51	0.00	111.3	
Sycamore Canyon-Eliot Recond	60	0.4	13	5	6,864	39.974	3.416	1.769	18.876	0.044	4,104.6	0.2	0.0	0.0	0.1	0.0	21.3	0.14	0.01	0.01	0.06	0.00	14.1	
Basis: Estimate as 20 percent of water transportation.																								
<b>Water Transportation</b>																								
Imperial Valley (ROW near IV)	120	9	40	360	950,400	39.974	3.416	1.769	18.876	0.044	4,104.6	14.4	1.2	0.6	6.8	0.0	1,477.6	19.00	1.62	0.84	8.97	0.02	1,950.5	
Imperial Valley (ROW)	120	9	22	198	522,720	39.974	3.416	1.769	18.876	0.044	4,104.6	7.9	0.7	0.4	3.7	0.0	812.7	10.45	0.89	0.46	4.93	0.01	1,072.8	
Imperial Valley (ROW and Batch)	120	10	60	600	1,584,000	39.974	3.416	1.769	18.876	0.044	4,104.6	24.0	2.0	1.1	11.3	0.0	2,462.7	31.66	2.71	1.40	14.95	0.03	3,250.8	
Anza-Borrego	120	4	70	280	739,200	39.974	3.416	1.769	18.876	0.044	4,104.6	11.2	1.0	0.5	5.3	0.0	1,149.3	14.77	1.26	0.65	6.98	0.02	1,517.1	
Central	120	6	38	228	601,920	39.974	3.416	1.769	18.876	0.044	4,104.6	9.1	0.8	0.4	4.3	0.0	935.8	12.03	1.03	0.53	5.68	0.01	1,235.3	
Inland Valley	160	3	50	150	528,000	39.974	3.416	1.769	18.876	0.044	4,104.6	6.0	0.5	0.3	2.8	0.0	615.7	10.55	0.90	0.47	4.98	0.01	1,083.6	
Coastal	220	2	28	56	271,040	39.974	3.416	1.769	18.876	0.044	4,104.6	2.2	0.2	0.1	1.1	0.0	229.9	5.42	0.46	0.24	2.56	0.01	556.3	
Sycamore Canyon-Eliot Recond	60	2	13	26	34,320	39.974	3.416	1.769	18.876	0.044	4,104.6	1.0	0.1	0.0	0.5	0.0	106.7	0.69	0.06	0.03	0.32	0.00	70.4	
Basis: Project Description July 2007 (Data Request PD-23).																								
<b>Typical Heavy-Heavy Duty Trucks (vmt/day) 18,798</b>																								
<b>TOTAL Heavy-Heavy Duty Trucks (vmt) 16,384,896</b>																								

**Fugitive Dust Generating Activity Estimates**

**Activity Assumptions for Fugitive Dust Sources**

Source: Project Description, April to July 2007. Subject to change with final engineering.

**Proposed Activity Sites and Areas**

(Activity Areas)

Source: Project Description Table B-3, B-7, B-9.

	Imperial Valley (acres)	Anza Borrego (acres)	Central (acres)	Inland Valley (acres)	Coastal (acres)	Sycam-Elliot (acres)
<b>Access Roads</b>						
Proposed Transmission Line Access Roads	119.7	19.4	182.3	24.7	1.2	0.0
Existing Transmission Line Access Roads	74.1	76.2	31.0	133.0	142.9	29.8
<b>Central East Substation</b>						
Proposed Central East Substation			106.0			
<b>Construction Staging Areas and Fly Yards</b>						
Drew Road at I-8 in Imperial Valley	5.0					
Westmorland near the IID 161 kV line and SR-86	5.0					
Ocotillo Air Strip, north of SR-78 in Ocotillo Wells	15.0					
SDG&E property adjacent to Borrego Substation		5.0				
Central East Substation (batch plant and fly yard)			15.0			
Warners Substation at intersection of SR-79 and S-2			4.0			
SDG&E property at existing Santa Ysabel Substation			4.0			
Gunn Stage Road at entrance to Mount Gower Preserve				2.0		
SDG&E parcel at Ashley Road and Creelman Lane				5.0		
East of existing Chicarita Substation					5.0	
<b>Total Activity Sites and Areas (acres)</b>	218.8	100.6	342.3	164.7	149.1	29.8
<b>Duration of Activity (months)</b>	18	18	22	22	12	2
<b>Total Acre-Months</b>	3,938	1,811	7,531	3,623	1,789	60

Assume: Sycamore Canyon-Elliot activity occurs over existing 30 ft access road over 8.2 miles = 29.8 acres (more detail due after July 2007).

**Proposed Access Roads**

(Grading)

Source: Project Description Table B-3.

	Imperial Valley (mi)	Anza Borrego (mi)	Central (mi)	Inland Valley (mi)	Coastal (mi)	Sycam-Elliot (mi)
Proposed Transmission Line Access Roads	49.4	8	36.4	8	0.4	0

**Proposed Towers and Poles**

(Excavation, Material Unloading)

Source: Project Description Table B-1, B-6, B-16.

	Average Excavation (cu.yd per #)	Imperial Valley #	Anza Borrego #	Central #	Inland Valley #	Coastal #	Sycam-Elliot #	All Links (cu.yd)
<b>500 kV Structures</b>								
Tangent lattice	35	132	102	37				9,485
Dead-end lattice	79	5						395
Larger angle lattice	50	24						1,200
Tangent H-frame	75		38					2,850
Tangent tubular steel poles	75	47	4					3,825
<b>230 kV Structures</b>								
Tangent lattice	35							0
Dead-end lattice	79							0
Larger angle lattice	50							0
Tangent tubular steel poles	50			117	120	48		14,250
Dead-end tubular steel poles	95			2	4	2		760
Larger angle tubular steel poles	63							0
<b>69 kV Structures</b>								
Tubular steel poles	32			139				4,448
Wood poles	3						11	33
<b>Avg Rate of Excavation - Total per Link</b>	<b>(cu.yd/day)</b>	<b>(cu.yd)</b>	<b>(cu.yd)</b>	<b>(cu.yd)</b>	<b>(cu.yd)</b>	<b>(cu.yd)</b>	<b>(cu.yd)</b>	<b>(cu.yd)</b>
Tower and Pole Foundations	250	9,740	6,720	11,783	6,380	2,590	33	37,246

**Trenching for Underground Transmission Line**

(Grading, Excavation, Material Unloading)

Source: Project Description Section B.4.1.2.

	Excavation Cross-Sect (sq.ft)	Imperial Valley (mi)	Anza Borrego (mi)	Central (mi)	Inland Valley (mi)	Coastal (mi)	Sycam-Elliot (mi)	All Links (cu.yd)
<b>Underground Duct Bank</b>								
69/92 kV	36		6.6					
230 kV Single Circuit	42					4.3		
230 kV Vertical - Double Circuit	84				4.7			
<b>Total Trenching (miles)</b>		0	6.6	0	4.7	4.3		
<b>Avg Rate of Excavation - Total per Link</b>	<b>(cu.yd/day)</b>	<b>(cu.yd)</b>	<b>(cu.yd)</b>	<b>(cu.yd)</b>	<b>(cu.yd)</b>	<b>(cu.yd)</b>	<b>(cu.yd)</b>	<b>(cu.yd)</b>
Underground Duct Bank	400	0	46,464	0	77,205	35,317	0	158,987



**Fugitive Dust Emissions by Activity**

Source: Emission factors from USEPA AP-42 and South Coast Air Quality Management District, where noted.

**SubTotals of Fugitive Dust Emissions by Link  
Maximum Daily Fugitive Dust Emissions**

	PM10 (lb/day)	PM2.5 (lb/day)
Imperial Valley Link	2,000.9	221.3
Anza Borrego Link	699.1	81.6
Central Link	856.2	102.3
Inland Valley Link	800.0	94.5
Coastal Link	479.0	59.2
Central East Substation	627.5	80.5

**SubTotals of Fugitive Dust Emissions  
Overall Fugitive Dust Emissions**

	PM10 (ton)	PM2.5 (ton)
Overall Proposed Proj.	1,721.9	194.9

**Activity Sites and Areas**

Source: "Improvement of Specific Emission Factors (BACM Project No. 1), Final Report", prepared for South Coast AQMD by Midwest Research Institute, March 1996

	0.011	tonPM10/acre-month	22 = activity days/mo	PM10 (lb/day)	PM2.5 (lb/day)	Overall PM10 (ton)	Overall PM2.5 (ton)
E = Level 2 Factor = tonPM10/ac-month	0.011	tonPM10/acre-month	22 = activity days/mo	PM10	PM2.5	Overall PM10	Overall PM2.5
f = 0.21 for PM2.5	0.21	PM2.5 fraction (SCAQMD Methodology for PM 2.5, October 2006)	Activity Areas	(lb/day)	(lb/day)	(ton)	(ton)
Control Effectiveness (watering) =	75.0%	<u>Emission Factors</u>	(acre-mo)	(ac-day)	(lb/day)	(ton)	(ton)
		5.5000 lbPM10 (per acre activity-per mo)	18,752	852	213.09	51.6	---
		1.1550 lbPM2.5 (per acre activity-per mo)	18,752	852	---	44.75	10.8

	(acre-mo)	(ac-day)	(lb/day)	(lb/day)	Activity Areas (acre-mo)	Overall PM10 (ton)	Overall PM2.5 (ton)
IV	3,938	179	44.75	9.40			
AB	1,811	82	20.58	4.32			
C	5,199	236	59.08	12.41			
IN	3,623	165	41.18	8.65			
CO	1,789	81	20.33	4.27			
CES	2,332	106	26.50	5.57			

**Grading (Proposed Access Roads and Trench Restoration)**

Source: USEPA AP-42, Table 11.9-1, 10/98

	0.069	lbPM10 (per VMT grader)	4 = passes	PM10 (lb/day)	PM2.5 (lb/day)	Grading (miles)	Grading (vmt grader)	Overall PM10 (ton)	Overall PM2.5 (ton)
E = 0.60 * (0.051)(S^2.0) = lbPM10/VMT	0.069	lbPM10 (per VMT grader)	4 = passes	PM10	PM2.5	Grading	Grading	Overall PM10	Overall PM2.5
E = 0.031 * (0.040)(S^2.5) = lbPM2.5/VMT	0.005	lbPM2.5 (per VMT grader)	(mi/12hr)	(lb/day)	(lb/day)	(miles)	(vmt grader)	(ton)	(ton)
S = mean vehicle speed =	3.0	mph (estimate for grader)	36	36	2.479	117.8	471.2	0.016	---
Control Effectiveness (watering) =	75.0%		36	36	---	0.174	117.8	471.2	0.001

	(mi/12hr)	(vmt/day)	(lb/day)	(lb/day)	Grading (miles)	Grading (vmt grader)	Overall PM10 (ton)	Overall PM2.5 (ton)
IV	36	36	2.479	---	117.8	471.2	0.016	---
AB	36	36	---	0.174	117.8	471.2	---	0.001

**Grading (Bulldozing of Overburden)**

Source: USEPA AP-42, Table 11.9-1, 10/98

	0.573	lbPM10 (per hr bulldozer or grader)	24	PM10 (lb/day)	PM2.5 (lb/day)	Doz/Grad/Scrap (hr)	Overall PM10 (ton)	Overall PM2.5 (ton)
E = 0.75 * (s^1.5) / (M^1.4) = lbPM10/hr	0.573	lbPM10 (per hr bulldozer or grader)	24	PM10	PM2.5	Doz/Grad/Scrap	Overall PM10	Overall PM2.5
E = 0.105 * 5.7 * (s^1.2) / (M^1.3) = lbPM2.5/hr	0.309	lbPM2.5 (per hr bulldozer or grader)	24	(lb/day)	(lb/day)	(hr)	(ton)	(ton)
s = silt content =	8.50	percent (average for construction sites, USEPA AP-42 Table 13.2.2-1)	24	---	7.41	70,200	20.1	---
M = moisture content =	12.00	percent (SCAQMD CEQA Handbook Table A9-9-G-1, with watering)	(hr/day)	(lb/day)	(lb/day)		---	10.8

	(hr/day)	(lb/day)	(lb/day)	Doz/Grad/Scrap (hr)	Overall PM10 (ton)	Overall PM2.5 (ton)
IV	24	13.76	7.41			
AB	24	13.76	7.41			
C	24	13.76	7.41			
IN	24	13.76	7.41			
CO	24	13.76	7.41			
CES	50	28.66	15.43			

**Excavation / Trenching (Removal of Overburden)**

Source: USEPA AP-42, Table 11.9-2 (dragline operations), 10/98  
 E =  $0.75 * 0.0021 (d^{*0.7}) / (M^{*0.3})$  = lbPM10/yd3  
 E =  $0.017 * 0.0021 (d^{*1.1}) / (M^{*0.3})$  = lbPM2.5/yd3  
 d = drop height = 5 ft (estimate)  
 M = moisture content = 12.00 percent (SCAQMD CEQA Handbook Table A9-9-G-1, with watering)

Emission Factors

0.0023 lbPM10 (per yd3 excavated)  
 0.0001 lbPM2.5 (per yd3 excavated)

Excavation (yd3/day)	PM10 (lb/day)	PM2.5 (lb/day)	Excavation (cu.yd)	Overall PM10 (ton)	Overall PM2.5 (ton)
650	1.50	---	196,233	0.226	---
650	---	0.06	196,233	---	0.010

**Material Unloading/Loading**

Source: USEPA AP-42, p. 13.2.4-3, 11/06  
 E =  $(k)(0.0032)[(U/5)^{1.3} / [(M/2)^{1.4}]$  = lb/ton  
 U = average wind speed = 15.00 mph (upper bound wind, p.13.2.4-4)  
 M = moisture content = 12.00 percent (SCAQMD CEQA Handbook Table A9-9-G-1, with watering)  
 lb of material / yd3 = 2600.00 for moist soil

Emission Factors

0.00049 lbPM10 (per yd3 unloaded)  
 0.00007 lbPM2.5 (per yd3 unloaded)

Excavation (yd3/day)	Unloading (yd3/day)	PM10 (lb/day)	PM2.5 (lb/day)	Excavation (cu.yd)	Unloading (cu.yd)	Overall PM10 (ton)	Overall PM2.5 (ton)
650	2600	1.29	---	196,233	784,931	0.194	---
650	2600	---	0.19	196,233	784,931	---	0.029

**Equipment on Unpaved/Industrial Roads**

Source: USEPA AP-42, Section 13.2.2, 11/06  
 E =  $k (s/12)^{0.9} (W/3)^{0.45}$  = lb/vmt  
 s = silt content = 8.50 percent (average for construction sites, USEPA AP-42 Table 13.2.2-1)  
 Control Effectiveness (watering) = 75.0%

15.0% = Unpaved VMT of Total

k (lb/vmt)	W (ton)	<u>Emission Factors</u> (lb/vmt)	VMT Class (VMT/day)	VMT Unpave (VMT/day)	PM10 (lb/day)	PM2.5 (lb/day)	VMT Class (vmt)	VMT Unpave (vmt)	Overall PM10 (ton)	Overall PM2.5 (ton)
1.5	2	0.2291 lbPM10 (per LDA vmt unpaved)	27,300	4,095	938.13	---	23,187,323	3,478,098	398.4	---
1.5	13	0.5319 lbPM10 (per MDT vmt unpaved)	1,860	279	148.40	---	900,240	135,036	35.9	---
1.5	30	0.7749 lbPM10 (per HHDT vmt unpaved)	18,798	2,820	2184.97	---	16,384,896	2,457,734	952.2	---
0.15	2	0.0229 lbPM2.5 (per LDA vmt unpaved)	27,300	4,095	---	93.81	23,187,323	3,478,098	---	39.8
0.15	13	0.0532 lbPM2.5 (per MDT vmt unpaved)	1,860	279	---	14.84	900,240	135,036	---	3.6
0.15	30	0.0775 lbPM2.5 (per HHDT vmt unpaved)	18,798	2,820	---	218.50	16,384,896	2,457,734	---	95.2
			(VMT/day)	(VMT/day)	(lb/day)	(lb/day)				
			IV(L)	16,023	2,403	550.59				
			IV(M)	716	107	57.16				
			IV(H)	8,612	1,292	1001.07				
			AB(L)	5,278	792	181.37				
			AB(M)	266	40	21.21				
			AB(H)	2,978	447	346.11				
			C(L)	6,376	956	219.09				
			C(M)	321	48	25.62				
			C(H)	3,465	520	402.71				
			IN(L)	6,405	961	220.11				
			IN(M)	300	45	23.93				
			IN(H)	3,161	474	367.38				
			CO(L)	4,316	647	148.32				
			CO(M)	160	24	12.77				
			CO(H)	1,657	249	192.59				
			CES(L)	1,920	288	65.98				
			CES(M)	321	48	25.62				
			CES(H)	3,465	520	402.71				

**Equipment on Paved Roads**

Source: USEPA AP-42, Section 13.2.1, 11/06.

$E = k (sL/2)^{0.65} (W/3)^{1.5} - C = \text{lb/vmt}$

sL = road surface silt loading (grams per square meter) (g/m<sup>2</sup>) = 0.06 g/m<sup>2</sup>, medium ADT roads (USEPA AP-42 Table 13.2.1-3)

C = correction factor to remove exhaust

W = fleet average weight of the heavy vehicles = 13,580 ton (fleet average weight)

	W (ton)	VMT All (vmt)
Light Duty Vehicles (PM10)	2	23,187,323
Medium to Heavy Duty Trucks (PM10)	13	900,240
Heavy-Heavy Duty Trucks (PM10)	30	16,384,896

	k (lb/vmt)	C Emission Factors (lb/vmt) (lb/vmt)		VMT All	VMT Paved	PM10	PM2.5	VMT All	VMT Paved	Overall	Overall
				(VMT/day)	(VMT/day)	(lb/day)	(lb/day)	(vmt)	(vmt)	PM10	PM2.5
Fleet Average (PM10)	0.016	0.00047	0.015303 lbPM10 (per vmt on paved road)	47,958	40,764	623.84	---	40,472,459	34,401,590	263.2	---
Fleet Average (PM2.5)	0.0024	0.00036	0.002006 lbPM2.5 (per vmt on paved road)	47,958	40,764	---	81.77	40,472,459	34,401,590	---	34.5
				(VMT/day)	(VMT/day)	(lb/day)	(lb/day)				
				IV	25,352	21,549	329.77	43.23			
				AB	8,522	7,243	110.85	14.53			
				C	10,162	8,637	132.18	17.33			
				IN	9,866	8,386	128.34	16.82			
				CO	6,133	5,213	79.78	10.46			
				CES	5,706	4,850	74.22	9.73			

**Offroad Equipment Specifications and Emission Factors Compiled**

Source: Inventory of equipment, duty, and hp ratings from SDG&E 2006, PEA Appendix F, Construction Vehicle Activity.

**Offroad Equipment for Transmission Line and Substation Construction**

Source: Diesel equipment hourly emission factors from South Coast Air Basin fleet averages (SCAQMD, December 2006).

Base hourly emissions are consistent with OFFROAD2007. These are multiplied by typical load factor from URBEMIS2007 v.9.2 for each category of equipment.

Transmission Line Activity Equipment	hp	Load	Duty	Base Hourly Emissions per Unit							Load and Duty Adjusted Hourly Emissions per Unit							
				Diesel (gal/hr)	Diesel (MMBtu/hr)	Catg MaxHP	NOX (lb/hr)	ROG (lb/hr)	PM (lb/hr)	CO (lb/hr)	SOX (lb/hr)	CO2 (lb/hr)	NOX (lb/hr)	ROG (lb/hr)	PM (lb/hr)	CO (lb/hr)	SOX (lb/hr)	CO2 (lb/hr)
boom truck	210	0.57	0.8	3	0.333	250	1.8617	0.1822	0.0659	0.4799	0.0019	166.5	0.8489	0.0831	0.0301	0.2188	0.0009	75.9
backhoe	84	0.55	0.8	1	0.111	120	0.6510	0.1083	0.0595	0.3703	0.0006	51.7	0.2864	0.0476	0.0262	0.1629	0.0003	22.8
crane	185	0.43	0.6	5	0.416	175	1.0417	0.1345	0.0589	0.4936	0.0009	80.3	0.2688	0.0347	0.0152	0.1273	0.0002	20.7
aerial lift trucks	210	0.57	0.8	3	0.333	250	1.8617	0.1822	0.0659	0.4799	0.0019	166.5	0.8489	0.0831	0.0301	0.2188	0.0009	75.9
pickup trucks	210	0.57	0.8	3	0.333	250	1.8617	0.1822	0.0659	0.4799	0.0019	166.5	0.8489	0.0831	0.0301	0.2188	0.0009	75.9
overhead line trucks	210	0.57	0.8	3	0.333	250	1.8617	0.1822	0.0659	0.4799	0.0019	166.5	0.8489	0.0831	0.0301	0.2188	0.0009	75.9
underground line trucks	210	0.57	0.8	3	0.333	250	1.8617	0.1822	0.0659	0.4799	0.0019	166.5	0.8489	0.0831	0.0301	0.2188	0.0009	75.9
underground cable dolly (trailer)	210	0.57	0.8	3	0.333	250	1.8617	0.1822	0.0659	0.4799	0.0019	166.5	0.8489	0.0831	0.0301	0.2188	0.0009	75.9
stringing rig (trailer)	210	0.57	0.8	3	0.333	250	1.8617	0.1822	0.0659	0.4799	0.0019	166.5	0.8489	0.0831	0.0301	0.2188	0.0009	75.9
tensioner (trailer)	210	0.57	0.8	3	0.333	250	1.8617	0.1822	0.0659	0.4799	0.0019	166.5	0.8489	0.0831	0.0301	0.2188	0.0009	75.9
water truck	210	0.5	0.8	3	0.333	250	1.8617	0.1822	0.0659	0.4799	0.0019	166.5	0.7447	0.0729	0.0264	0.1920	0.0007	66.6
truck w/lowboy trailer	210	0.57	0.8	3	0.333	250	1.8617	0.1822	0.0659	0.4799	0.0019	166.5	0.8489	0.0831	0.0301	0.2188	0.0009	75.9
drill rig	210	0.75	0.8	3	0.333	250	1.4604	0.1055	0.0409	0.3502	0.0021	188.1	0.8762	0.0633	0.0246	0.2101	0.0013	112.9
front end loader	84	0.55	0.8	1	0.111	120	0.6510	0.1083	0.0595	0.3703	0.0006	51.7	0.2864	0.0476	0.0262	0.1629	0.0003	22.8
dump truck	210	0.57	0.8	3	0.333	250	1.8617	0.1822	0.0659	0.4799	0.0019	166.5	0.8489	0.0831	0.0301	0.2188	0.0009	75.9
concrete truck	210	0.57	0.8	3	0.333	250	1.8617	0.1822	0.0659	0.4799	0.0019	166.5	0.8489	0.0831	0.0301	0.2188	0.0009	75.9
crew truck	210	0.57	0.8	3	0.333	250	1.8617	0.1822	0.0659	0.4799	0.0019	166.5	0.8489	0.0831	0.0301	0.2188	0.0009	75.9
underground cable puller	300	0.57	0.9	9	1.123	250	1.8617	0.1822	0.0659	0.4799	0.0019	166.5	0.9551	0.0935	0.0338	0.2462	0.0010	85.4
underground splicing van	210	0.57	0.8	3	0.333	250	1.8617	0.1822	0.0659	0.4799	0.0019	166.5	0.8489	0.0831	0.0301	0.2188	0.0009	75.9
sock line trailer	210	0.57	0.8	3	0.333	250	1.8617	0.1822	0.0659	0.4799	0.0019	166.5	0.8489	0.0831	0.0301	0.2188	0.0009	75.9
wire trailer	210	0.57	0.8	3	0.333	250	1.8617	0.1822	0.0659	0.4799	0.0019	166.5	0.8489	0.0831	0.0301	0.2188	0.0009	75.9
dozer	338	0.59	0.9	8	0.999	500	2.3908	0.2360	0.0904	0.8828	0.0023	229.5	1.2695	0.1253	0.0480	0.4688	0.0012	121.9
grader	185	0.61	0.9	5	0.624	175	2.0299	0.2636	0.1150	0.9463	0.0017	148.1	1.1144	0.1447	0.0631	0.5195	0.0009	81.3
fuel/oiler truck	210	0.57	0.8	3	0.333	250	1.8617	0.1822	0.0659	0.4799	0.0019	166.5	0.8489	0.0831	0.0301	0.2188	0.0009	75.9
mechanic truck	210	0.57	0.8	3	0.333	250	1.8617	0.1822	0.0659	0.4799	0.0019	166.5	0.8489	0.0831	0.0301	0.2188	0.0009	75.9
air compressor	20	0.48	0.5	0.2	0.014	25	0.1448	0.0359	0.0108	0.0905	0.0002	14.4	0.0348	0.0086	0.0026	0.0217	0.0000	3.5
rock drill	210	0.75	0.8	3	0.333	250	1.4604	0.1055	0.0409	0.3502	0.0021	188.1	0.8762	0.0633	0.0246	0.2101	0.0013	112.9
small helicopter	aircraft	see below		jet fuel	see below	4.5200	1.0800	0.7300	2.2200	0.6260	488.4	4.5200	1.0800	0.7300	2.2200	0.6260	488.4	488.4
heavy lift helicopter	aircraft	see below		jet fuel	see below	11.5600	3.8400	1.4600	13.5000	1.6400	1266.3	11.5600	3.8400	1.4600	13.5000	1.6400	1266.3	1266.3



Notes:

Onroad sources: see separate page for motor vehicles

**Aircraft for Transmission Line Construction**

Source: Hourly emission factors from U.S. EPA AP-42, Table II-1-8, 1980. CO2 emission factors based on CEC methodology (e.g., 13.5 lb C/MMBtu for jet fuel at 127,500 MMBtu/gal)

Equipment	hp	Load	Duty	Jet Fuel (lb/hr)	Jet Fuel (MMBtu/hr)	NOX (lb/hr)	ROG (lb/hr)	PM (lb/hr)	CO (lb/hr)	SOX (lb/hr)	CO2 (lb/hr)
Typical T53-L-11D (1100 hp)	1100	Idle	0.1	142	2.263	0.2000	9.0000	0.1000	4.2000	0.1400	110.9
Typical T53-L-11D (1100 hp)	1100	App/Climb	0.9	679	10.822	5.0000	0.2000	0.8000	2.0000	0.6800	530.3
				small helicopter (composite)		4.5200	1.0800	0.7300	2.2200	0.6260	488.4
Typical T58-GE-5 (2 x 750 hp)	1500	Idle	0.1	266	4.239	0.4000	25.8000	0.2000	45.0000	0.2000	207.8
Typical T58-GE-5 (2 x 750 hp)	1500	App/Climb	0.9	1772	28.241	12.8000	1.4000	1.6000	10.0000	1.8000	1384.0
				heavy lift helicopter (compo)		11.5600	3.8400	1.4600	13.5000	1.6400	1266.3

## Off-Road Equipment Emission Factors

Source: South Coast AQMD, December 2006. <http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html>

### SCAB Fleet Average Emission Factors (Diesel)

2008

Air Basin SC

Equipment	MaxHP	(lb/hr) ROG	(lb/hr) CO	(lb/hr) NOX	(lb/hr) SOX	(lb/hr) PM	(lb/hr) CO2
Aerial Lifts	15	0.0113	0.0534	0.0736	0.0001	0.0048	8.7
	25	0.0249	0.0644	0.1073	0.0001	0.0077	11.0
	50	0.0833	0.2011	0.2037	0.0003	0.0203	19.6
	120	0.0781	0.2542	0.4910	0.0004	0.0386	38.1
	500	0.1719	0.6822	2.1178	0.0021	0.0668	212.9
	750	0.3198	1.2331	3.9213	0.0039	0.1223	384.8
Aerial Lifts Composite		0.0746	0.2200	0.3885	0.0004	0.0269	34.7
Air Compressors	15	0.0157	0.0530	0.0899	0.0001	0.0068	7.2
	25	0.0359	0.0905	0.1448	0.0002	0.0108	14.4
	50	0.1265	0.2903	0.2442	0.0003	0.0283	22.3
	120	0.1112	0.3395	0.6505	0.0006	0.0578	47.0
	175	0.1383	0.5136	1.1024	0.0010	0.0600	88.5
	250	0.1381	0.3847	1.5340	0.0015	0.0525	131.2
	500	0.2172	0.8107	2.4338	0.0023	0.0844	231.7
	750	0.3420	1.2529	3.8533	0.0036	0.1321	358.1
Air Compressors Composite		0.1232	0.3782	0.7980	0.0007	0.0563	63.6
Bore/Drill Rigs	15	0.0122	0.0632	0.0767	0.0002	0.0047	10.3
	25	0.0210	0.0674	0.1343	0.0002	0.0080	16.0
	50	0.0813	0.2734	0.2898	0.0004	0.0253	31.0
	120	0.1021	0.4934	0.7562	0.0009	0.0597	77.1
	175	0.1203	0.7541	1.1469	0.0016	0.0585	141.1
	250	0.1055	0.3502	1.4604	0.0021	0.0409	188.1
	500	0.1566	0.5631	2.0226	0.0031	0.0640	311.3
	750	0.3207	1.1127	4.1945	0.0062	0.1297	615.1
Bore/Drill Rigs Composite		0.1295	0.5281	1.3416	0.0017	0.0591	164.9
Cement and Mortar M	15	0.0087	0.0394	0.0562	0.0001	0.0037	6.3
	25	0.0402	0.1038	0.1722	0.0002	0.0125	17.6
Cement and Mortar Mixers Composit		0.0113	0.0447	0.0658	0.0001	0.0044	7.2
Concrete/Industrial Sa	25	0.0206	0.0681	0.1344	0.0002	0.0079	16.5
	50	0.1418	0.3412	0.3179	0.0004	0.0335	30.2
	120	0.1545	0.5088	0.9632	0.0009	0.0792	74.1
	175	0.2192	0.8877	1.8557	0.0018	0.0944	160.2
Concrete/Industrial Saws Composite		0.1460	0.4411	0.7263	0.0007	0.0610	58.5
Cranes	50	0.1466	0.3359	0.2624	0.0003	0.0320	23.2
	120	0.1261	0.3807	0.7275	0.0006	0.0664	50.1
	175	0.1345	0.4936	1.0417	0.0009	0.0589	80.3
	250	0.1392	0.3881	1.3867	0.0013	0.0535	112.2
	500	0.2012	0.7762	1.9878	0.0018	0.0771	180.1
	750	0.3409	1.3011	3.4224	0.0030	0.1310	303.0
	9999	1.2096	4.8072	13.0905	0.0098	0.4143	970.6
Cranes Composite		0.1778	0.6011	1.6100	0.0014	0.0715	128.7
Crawler Tractors	50	0.1635	0.3714	0.2856	0.0003	0.0352	24.9
	120	0.1743	0.5147	1.0019	0.0008	0.0901	65.8
	175	0.2146	0.7734	1.6473	0.0014	0.0937	121.2
	250	0.2263	0.6360	2.1648	0.0019	0.0880	166.1
	500	0.3175	1.4049	3.0311	0.0025	0.1222	259.2
	750	0.5713	2.5044	5.5421	0.0047	0.2205	464.7
Crawler Tractors Composite		0.2068	0.6843	1.5395	0.0013	0.0943	114.0
Crushing/Proc. Equipr	50	0.2519	0.5828	0.4821	0.0006	0.0563	44.0
	120	0.1955	0.6048	1.1410	0.0010	0.1031	83.1
	175	0.2596	0.9790	2.0557	0.0019	0.1141	167.3
	250	0.2529	0.7004	2.8190	0.0028	0.0959	244.5
	500	0.3442	1.2591	3.8371	0.0037	0.1336	373.6
	750	0.5502	1.9179	6.2394	0.0059	0.2117	588.8
	9999	1.5285	5.5592	17.0748	0.0131	0.5223	1307.8

Crushing/Proc. Equipment Composite		0.2385	0.7620	1.5831	0.0015	0.1012	132.3
Dumpers/Tenders	25	0.0121	0.0356	0.0681	0.0001	0.0043	7.6
Dumpers/Tenders Composite		0.0121	0.0356	0.0681	0.0001	0.0043	7.6
Excavators	25	0.0201	0.0677	0.1291	0.0002	0.0077	16.4
	50	0.1381	0.3393	0.2727	0.0003	0.0319	25.0
	120	0.1649	0.5437	0.9632	0.0009	0.0902	73.6
	175	0.1674	0.6735	1.2913	0.0013	0.0748	112.2
	250	0.1620	0.4374	1.7260	0.0018	0.0596	158.7
	500	0.2175	0.7092	2.2162	0.0023	0.0803	233.7
	750	0.3637	1.1724	3.7953	0.0039	0.1352	387.4
Excavators Composite		0.1695	0.5828	1.3249	0.0013	0.0727	119.6
Forklifts	50	0.0846	0.2020	0.1603	0.0002	0.0192	14.7
	120	0.0724	0.2304	0.4055	0.0004	0.0402	31.2
	175	0.0867	0.3326	0.6493	0.0006	0.0391	56.1
	250	0.0716	0.1822	0.8315	0.0009	0.0254	77.1
	500	0.0937	0.2573	1.0380	0.0011	0.0340	111.0
Forklifts Composite		0.0799	0.2422	0.5982	0.0006	0.0324	54.4
Generator Sets	15	0.0189	0.0749	0.1237	0.0002	0.0077	10.2
	25	0.0332	0.1105	0.1767	0.0002	0.0118	17.6
	50	0.1238	0.3024	0.3155	0.0004	0.0307	30.6
	120	0.1558	0.5141	0.9918	0.0009	0.0767	77.9
	175	0.1854	0.7531	1.6223	0.0016	0.0771	142.0
	250	0.1859	0.5644	2.2800	0.0024	0.0697	212.5
	500	0.2648	1.0375	3.3136	0.0033	0.1028	336.9
	750	0.4404	1.6748	5.4793	0.0055	0.1680	543.8
	9999	1.1329	4.1271	12.8919	0.0105	0.3964	1048.6
Generator Sets Composite		0.1075	0.3461	0.6980	0.0007	0.0430	61.0
Graders	50	0.1622	0.3813	0.3051	0.0004	0.0362	27.5
	120	0.1780	0.5585	1.0405	0.0009	0.0948	75.0
	175	0.1956	0.7486	1.5300	0.0014	0.0864	123.9
	250	0.1966	0.5482	2.0220	0.0019	0.0751	172.1
	500	0.2360	0.8828	2.3908	0.0023	0.0904	229.5
	750	0.5040	1.8609	5.1931	0.0049	0.1935	485.7
Graders Composite		0.1936	0.6561	1.6191	0.0015	0.0840	132.7
Off-Highway Tractors	120	0.2703	0.7625	1.5479	0.0011	0.1355	93.7
	175	0.2532	0.8741	1.9339	0.0015	0.1094	130.4
	250	0.2053	0.5852	1.8670	0.0015	0.0812	130.4
	750	0.8003	4.0719	7.4850	0.0057	0.3122	568.1
	1000	1.2211	6.3076	12.1964	0.0082	0.4364	814.3
Off-Highway Tractors Composite		0.2578	0.8959	2.1767	0.0017	0.1061	151.5
Off-Highway Trucks	175	0.1962	0.7669	1.4779	0.0014	0.0867	125.1
	250	0.1822	0.4799	1.8617	0.0019	0.0659	166.5
	500	0.2727	0.8739	2.6600	0.0027	0.0984	272.3
	750	0.4454	1.4136	4.4516	0.0044	0.1621	441.7
	1000	0.7106	2.4058	7.9819	0.0063	0.2445	624.7
Off-Highway Trucks Composite		0.2730	0.8499	2.7256	0.0027	0.0989	260.1
Other Construction Equipment	15	0.0119	0.0617	0.0750	0.0002	0.0046	10.1
	25	0.0174	0.0557	0.1110	0.0002	0.0066	13.2
	50	0.1244	0.3144	0.2884	0.0004	0.0303	28.0
	120	0.1570	0.5538	0.9885	0.0009	0.0842	80.9
	175	0.1356	0.5932	1.1451	0.0012	0.0606	106.5
	500	0.1944	0.7066	2.2771	0.0025	0.0770	254.2
Other Construction Equipment Composite		0.1215	0.4504	1.1575	0.0013	0.0503	122.8
Other General Industrial Equipment	15	0.0066	0.0391	0.0466	0.0001	0.0026	6.4
	25	0.0188	0.0632	0.1207	0.0002	0.0072	15.3
	50	0.1421	0.3211	0.2473	0.0003	0.0308	21.7
	120	0.1605	0.4723	0.8979	0.0007	0.0854	62.0
	175	0.1647	0.5860	1.2490	0.0011	0.0726	95.9
	250	0.1553	0.4131	1.6545	0.0015	0.0579	135.6
	500	0.2735	0.9583	2.8780	0.0026	0.1032	265.4
	750	0.4552	1.5794	4.8663	0.0044	0.1724	437.4
	1000	0.6979	2.5724	7.5922	0.0056	0.2387	559.6
Other General Industrial Equipment Composite		0.2025	0.6617	1.8248	0.0016	0.0815	152.2
Other Material Handling Equipment	50	0.1961	0.4431	0.3438	0.0004	0.0426	30.3
	120	0.1558	0.4596	0.8749	0.0007	0.0827	60.7
	175	0.2078	0.7420	1.5840	0.0014	0.0915	122.1
	250	0.1646	0.4403	1.7636	0.0016	0.0616	145.0
	500	0.1952	0.6904	2.0733	0.0019	0.0741	191.6
	9999	0.9197	3.4021	10.0283	0.0073	0.3143	741.3
Other Material Handling Equipment Composite		0.1952	0.6041	1.7655	0.0015	0.0786	141.2



Pavers	25	0.0329	0.0930	0.1706	0.0002	0.0112	18.7
	50	0.1797	0.4041	0.3191	0.0004	0.0386	28.0
	120	0.1823	0.5356	1.0659	0.0008	0.0924	69.2
	175	0.2253	0.8121	1.7679	0.0014	0.0977	128.3
	250	0.2693	0.7767	2.5756	0.0022	0.1066	194.4
	500	0.2880	1.3755	2.7966	0.0023	0.1134	233.2
Pavers Composite		0.1963	0.5874	1.0796	0.0009	0.0769	77.9
Paving Equipment	25	0.0166	0.0532	0.1061	0.0002	0.0063	12.6
	50	0.1525	0.3426	0.2722	0.0003	0.0328	23.9
	120	0.1425	0.4189	0.8352	0.0006	0.0721	54.5
	175	0.1757	0.6336	1.3860	0.0011	0.0760	101.0
	250	0.1678	0.4852	1.6129	0.0014	0.0665	122.3
Paving Equipment Composite		0.1479	0.4616	0.9857	0.0008	0.0681	69.0
Plate Compactors	15	0.0052	0.0263	0.0328	0.0001	0.0021	4.3
Plate Compactors Composite		0.0052	0.0263	0.0328	0.0001	0.0021	4.3
Pressure Washers	15	0.0091	0.0359	0.0592	0.0001	0.0037	4.9
	25	0.0135	0.0448	0.0717	0.0001	0.0048	7.1
	50	0.0466	0.1197	0.1429	0.0002	0.0126	14.3
	120	0.0438	0.1514	0.2928	0.0003	0.0209	24.1
Pressure Washers Composite		0.0223	0.0692	0.1049	0.0001	0.0077	9.4
Pumps	15	0.0161	0.0545	0.0924	0.0001	0.0070	7.4
	25	0.0485	0.1221	0.1954	0.0002	0.0146	19.5
	50	0.1479	0.3563	0.3574	0.0004	0.0359	34.3
	120	0.1605	0.5221	1.0065	0.0009	0.0798	77.9
	175	0.1888	0.7547	1.6251	0.0016	0.0792	140.1
	250	0.1823	0.5452	2.1931	0.0023	0.0688	201.4
	500	0.2801	1.1093	3.4347	0.0034	0.1090	345.2
	750	0.4762	1.8340	5.8162	0.0057	0.1825	570.7
	9999	1.4880	5.5294	16.8363	0.0136	0.5197	1354.8
Pumps Composite		0.1040	0.3194	0.5999	0.0006	0.0424	49.6
Rollers	15	0.0074	0.0386	0.0469	0.0001	0.0029	6.3
	25	0.0175	0.0562	0.1121	0.0002	0.0067	13.3
	50	0.1438	0.3348	0.2839	0.0003	0.0323	26.0
	120	0.1363	0.4271	0.8203	0.0007	0.0703	59.0
	175	0.1653	0.6345	1.3433	0.0012	0.0717	108.1
	250	0.1750	0.5082	1.8153	0.0017	0.0684	153.1
500	0.2235	0.9142	2.3380	0.0022	0.0880	219.1	
Rollers Composite		0.1328	0.4341	0.8607	0.0008	0.0601	67.1
Rough Terrain Forklift	50	0.1873	0.4479	0.3678	0.0004	0.0427	33.9
	120	0.1404	0.4543	0.8292	0.0007	0.0757	62.4
	175	0.1859	0.7353	1.4705	0.0014	0.0829	124.9
	250	0.1745	0.4855	1.9002	0.0019	0.0661	170.8
	500	0.2357	0.8189	2.5155	0.0025	0.0905	256.6
Rough Terrain Forklifts Composite		0.1469	0.4869	0.9051	0.0008	0.0759	70.3
Rubber Tired Dozers	175	0.2603	0.8866	1.9566	0.0015	0.1120	129.5
	250	0.3011	0.8463	2.6790	0.0021	0.1179	183.5

	500	0.3895	1.9869	3.5050	0.0026	0.1495	264.9
	750	0.5869	2.9735	5.3538	0.0040	0.2260	398.8
	1000	0.9153	4.7521	9.0204	0.0060	0.3279	591.9
Rubber Tired Dozers Composite		0.3644	1.5961	3.2672	0.0025	0.1409	239.1
Rubber Tired Loaders	25	0.0212	0.0699	0.1381	0.0002	0.0082	16.9
	50	0.1812	0.4267	0.3437	0.0004	0.0406	31.1
	120	0.1384	0.4364	0.8116	0.0007	0.0737	58.9
	175	0.1659	0.6383	1.3029	0.0012	0.0733	106.3
	250	0.1674	0.4680	1.7361	0.0017	0.0640	149.0
	500	0.2394	0.8884	2.4484	0.0023	0.0919	237.0
	750	0.4955	1.8130	5.1493	0.0049	0.1905	485.5
	1000	0.6887	2.5960	7.7048	0.0060	0.2364	593.9
Rubber Tired Loaders Composite		0.1626	0.5369	1.3014	0.0012	0.0728	108.6
Scrapers	120	0.2502	0.7352	1.4405	0.0011	0.1289	93.9
	175	0.2636	0.9463	2.0299	0.0017	0.1150	148.1
	250	0.2889	0.8161	2.7553	0.0024	0.1128	209.5
	500	0.3979	1.7915	3.8005	0.0032	0.1538	321.4
	750	0.6903	3.0788	6.6918	0.0056	0.2675	555.3
Scrapers Composite		0.3505	1.4220	3.2269	0.0027	0.1391	262.5
Signal Boards	15	0.0072	0.0377	0.0450	0.0001	0.0025	6.2
	50	0.1661	0.3989	0.3791	0.0005	0.0396	36.2
	120	0.1679	0.5473	1.0392	0.0009	0.0854	80.2
	175	0.2118	0.8499	1.7913	0.0017	0.0908	154.5
	250	0.2346	0.6902	2.7794	0.0029	0.0895	255.3
Signal Boards Composite		0.0244	0.0965	0.1739	0.0002	0.0104	16.7
Skid Steer Loaders	25	0.0292	0.0774	0.1321	0.0002	0.0093	13.8
	50	0.1007	0.2724	0.2552	0.0003	0.0259	25.5
	120	0.0756	0.2886	0.4848	0.0005	0.0421	42.8
Skid Steer Loaders Composite		0.0879	0.2647	0.3209	0.0004	0.0300	30.3
Surfacing Equipment	50	0.0668	0.1602	0.1495	0.0002	0.0157	14.1
	120	0.1362	0.4436	0.8544	0.0007	0.0686	63.8
	175	0.1207	0.4852	1.0245	0.0010	0.0516	85.8
	250	0.1424	0.4314	1.5397	0.0015	0.0555	134.9
	500	0.2091	0.9084	2.2929	0.0022	0.0826	221.2
	750	0.3341	1.4189	3.6763	0.0035	0.1305	347.0
Surfacing Equipment Composite		0.1751	0.7086	1.7497	0.0017	0.0674	166.0
Sweepers/Scrubbers	15	0.0124	0.0729	0.0870	0.0002	0.0049	11.9
	25	0.0245	0.0811	0.1604	0.0002	0.0095	19.6
	50	0.1831	0.4265	0.3449	0.0004	0.0410	31.6
	120	0.1758	0.5472	0.9960	0.0009	0.0956	75.0
	175	0.2154	0.8121	1.6539	0.0016	0.0964	139.0
	250	0.1512	0.3965	1.7857	0.0018	0.0552	162.0
Sweepers/Scrubbers Composite		0.1830	0.5575	0.9678	0.0009	0.0778	78.5
Tractors/Loaders/Backhoes	25	0.0237	0.0716	0.1396	0.0002	0.0086	15.9
	50	0.1537	0.3831	0.3222	0.0004	0.0362	30.3
	120	0.1083	0.3703	0.6510	0.0006	0.0595	51.7
	175	0.1405	0.5903	1.1212	0.0011	0.0634	101.4
	250	0.1598	0.4453	1.7937	0.0019	0.0598	171.7
	500	0.2897	0.9592	3.1387	0.0039	0.1102	344.9
	750	0.4409	1.4353	4.8706	0.0058	0.1681	517.3
Tractors/Loaders/Backhoes Composite		0.1204	0.4063	0.7746	0.0008	0.0599	66.8
Trenchers	15	0.0099	0.0517	0.0617	0.0001	0.0034	8.5
	25	0.0412	0.1360	0.2685	0.0004	0.0159	32.9
	50	0.2019	0.4556	0.3714	0.0004	0.0438	32.9
	120	0.1678	0.4963	0.9961	0.0008	0.0837	64.9
	175	0.2480	0.9026	1.9770	0.0016	0.1068	143.9
	250	0.3077	0.9009	2.9500	0.0025	0.1227	222.9
	500	0.3821	1.9131	3.7466	0.0031	0.1515	311.3
	750	0.7263	3.5858	7.1748	0.0059	0.2867	586.9
Trenchers Composite		0.1851	0.5080	0.8237	0.0007	0.0688	58.7
Welders	15	0.0135	0.0456	0.0772	0.0001	0.0058	6.2
	25	0.0281	0.0707	0.1131	0.0001	0.0085	11.3
	50	0.1344	0.3128	0.2792	0.0003	0.0308	26.0
	120	0.0891	0.2778	0.5338	0.0005	0.0456	39.5
	175	0.1456	0.5548	1.1927	0.0011	0.0625	98.2
	250	0.1192	0.3403	1.3579	0.0013	0.0454	119.1
	500	0.1495	0.5771	1.7272	0.0016	0.0583	167.6
Welders Composite		0.0882	0.2309	0.3102	0.0003	0.0288	25.6

Emission factors sent by ARB on December 7, 2006 in grams per hour. EF converted by SCAQMD to pounds per hour.

**Fleet Average Load Factors**

Source: URBEMIS2007 v.9.2 typical load factors.

<b>Equipment Type</b>	<b>Load Factor</b>
Aerial Lifts	0.46
Air Compressors	0.48
Bore/Drill Rigs	0.75
Cement and Mortar Mixers	0.56
Concrete/Industrial Saws	0.73
Cranes	0.43
Crawler Tractors	0.64
Crushing/Processing Equip	0.78
Dumpers/Tenders	0.38
Excavators	0.57
Forklifts	0.3
Generator Sets	0.74
Graders	0.61
Off Highway Tractors	0.65
Off Highway Trucks	0.57
Other Equipment	0.62
Other General Industrial Equi	0.51
Other Material Handling Equi	0.59
Pavers	0.62
Paving Equipment	0.53
Plate Compactors	0.43
Pressure Washers	0.6
Pumps	0.74
Rollers	0.56
Rough Terrain Forklifts	0.6
Rubber Tired Dozers	0.59
Rubber Tired Loaders	0.54
Scrapers	0.72
Signal Boards	0.78
Skid Steer Loaders	0.55
Surfacing Equipment	0.45
Sweepers/Scrubbers	0.68
Tractors/Loaders/Backhoes	0.55
Trenchers	0.75
Water Trucks	0.5
Welders	0.45

**Onroad Vehicle Specifications and Emission Factors Compiled**

Source: EMFAC2007 v.2.3, burden report of 2008 for San Diego County and Imperial County.

2008 Fleet County-Wide													
Imperial County-Wide	2008 Fleet	NOX	ROG	PM	CO	SOX	CO2	NOX	ROG	PM	CO	SOX	CO2
Vehicle Class	(VMT/1000)	(ton/day)	(ton/day)	(ton/day)	(ton/day)	(ton/day)	(ton/day)	(lb/1000mi)	(lb/1000mi)	(lb/1000mi)	(lb/1000mi)	(lb/1000mi)	(lb/1000mi)
LDA-TOT	2,155	1.76	2.04	0.08	19.38	0.01	900	1.633	1.893	0.074	17.986	0.0093	835.3
LDT1-TOT	722	0.77	0.89	0.03	8.60	0.00	360	2.133	2.465	0.083	23.823	0.0000	997.2
LDT2-TOT	978	0.93	0.72	0.05	7.69	0.00	500	1.902	1.472	0.102	15.726	0.0000	1,022.5
MDV-TOT	476	0.31	0.19	0.02	2.34	0.00	330	1.303	0.798	0.084	9.832	0.0000	1,386.6
LHDT1-TOT	78	0.23	0.08	0.00	0.53	0.00	70	5.897	2.051	0.000	13.590	0.0000	1,794.9
LHDT2-TOT	35	0.16	0.10	0.00	0.56	0.00	30	9.143	5.714	0.000	32.000	0.0000	1,714.3
MHDT-TOT	65	0.73	0.23	0.02	1.69	0.00	100	22.462	7.077	0.615	52.000	0.0000	3,076.9
HHDT-TOT	753	15.30	1.20	0.67	5.78	0.02	1,580	40.637	3.187	1.780	15.352	0.0531	4,196.5
2008 Fleet County-Wide													
San Diego County-Wide	2008 Fleet	NOX	ROG	PM	CO	SOX	CO2	NOX	ROG	PM	CO	SOX	CO2
Vehicle Class	(VMT/1000)	(ton/day)	(ton/day)	(ton/day)	(ton/day)	(ton/day)	(ton/day)	(lb/1000mi)	(lb/1000mi)	(lb/1000mi)	(lb/1000mi)	(lb/1000mi)	(lb/1000mi)
LDA-TOT	42,190	18.18	20.91	1.59	209.83	0.18	18,590	0.862	0.991	0.075	9.947	0.0085	881.3
LDT1-TOT	7,684	4.11	4.17	0.31	45.14	0.04	4,120	1.070	1.085	0.081	11.749	0.0104	1,072.4
LDT2-TOT	21,562	14.43	9.45	1.18	112.08	0.11	11,700	1.338	0.877	0.109	10.396	0.0102	1,085.2
MDV-TOT	9,042	7.32	4.20	0.48	55.09	0.07	6,700	1.619	0.929	0.106	12.185	0.0155	1,482.0
LHDT1-TOT	1,872	5.70	2.71	0.10	21.42	0.02	1,820	6.090	2.895	0.107	22.885	0.0214	1,944.4
LHDT2-TOT	486	2.12	0.55	0.04	3.91	0.00	410	8.724	2.263	0.165	16.091	0.0000	1,687.2
MHDT-TOT	1,176	11.75	1.20	0.36	11.47	0.02	1,820	19.983	2.041	0.612	19.507	0.0340	3,095.2
HHDT-TOT	1,542	30.57	2.72	1.36	15.88	0.03	3,130	39.650	3.528	1.764	20.597	0.0389	4,059.7
2008 Fleet for Imperial / San Diego Composite													
Imperial / San Diego Composite	2008 Fleet	NOX	ROG	PM	CO	SOX	CO2	NOX	ROG	PM	CO	SOX	CO2
Vehicle Class	(VMT/1000)	(ton/day)	(ton/day)	(ton/day)	(ton/day)	(ton/day)	(ton/day)	(lb/1000mi)	(lb/1000mi)	(lb/1000mi)	(lb/1000mi)	(lb/1000mi)	(lb/1000mi)
Light Duty Autos and Trucks Composite	75,291	40.18	38.18	3.24	402.72	0.34	36,170	1.067	1.014	0.086	10.698	0.0090	960.8
Medium to Heavy Trucks Composite	13,230	28.32	9.26	1.02	97.01	0.11	11,280	4.281	1.400	0.154	14.665	0.0166	1,705.2
Heavy-Heavy Duty Trucks Composite	2,295	45.87	3.92	2.03	21.66	0.05	4,710	39.974	3.416	1.769	18.876	0.0436	4,104.6

**On-Road Vehicle Emission Factors**

Source: EMFAC2007 v.2.3, burden report of 2008 for San Diego County and Imperial County.

Title : Passenger Vehs; MD Trucks; HD Trucks  
 Version : Emfac2007 V2.3 Nov 1 2006  
 Run Date : 2007/07/11 13:59:50  
 Scen Year: 2008 -- All model years in the range 1965 to 2008 selected  
 Season : Annual  
 Area : Imperial County APCD Average  
 I/M Stat : COO Basic (2005) -- Using I/M schedule for area 63 Imperial (SS)  
 Emissions: Tons Per Day

	LDA-TOT	LDT1-TOT	LDT2-TOT	MDV-TOT	LHDT1-TOT	LHDT2-TOT	MHDT-TOT	HHDT-TOT
Vehicles	58962	20590	25072	11697	1711	944	1530	5180
VMT/1000	2155	722	978	476	78	35	65	753
Trips	366484	125661	157233	74961	44673	22936	52175	30389
Reactive Organic Gas Emissions								
Run Exh	0.68	0.27	0.22	0.06	0.03	0.03	0.04	1
Idle Exh	0	0	0	0	0	0	0	0.14
Start Ex	0.47	0.14	0.14	0.05	0.02	0.02	0.11	0.04
Total Ex	1.16	0.42	0.36	0.11	0.05	0.05	0.15	1.18
Diurnal	0.17	0.08	0.06	0.01	0	0	0	0
Hot Soak	0.17	0.07	0.06	0.01	0	0	0.01	0
Running	0.44	0.28	0.21	0.05	0.03	0.04	0.07	0.01
Resting	0.1	0.04	0.03	0.01	0	0	0	0
Total	2.04	0.89	0.72	0.19	0.08	0.1	0.23	1.2
Carbon Monoxide Emissions								
Run Exh	14.49	6.87	6.03	1.8	0.28	0.31	0.59	4.62
Idle Exh	0	0	0	0	0.01	0.01	0.01	0.48
Start Ex	4.88	1.73	1.66	0.54	0.24	0.24	1.09	0.68
Total Ex	19.38	8.6	7.69	2.34	0.53	0.56	1.69	5.78
Oxides of Nitrogen Emissions								
Run Exh	1.5	0.67	0.76	0.25	0.16	0.12	0.64	14.28
Idle Exh	0	0	0	0	0	0	0.01	0.98
Start Ex	0.26	0.1	0.17	0.06	0.07	0.04	0.08	0.04
Total Ex	1.76	0.77	0.93	0.31	0.23	0.16	0.73	15.3
Carbon Dioxide Emissions (000)								
Run Exh	0.87	0.35	0.49	0.32	0.07	0.03	0.1	1.51
Idle Exh	0	0	0	0	0	0	0	0.06
Start Ex	0.03	0.01	0.02	0.01	0	0	0	0
Total Ex	0.9	0.36	0.5	0.33	0.07	0.03	0.1	1.58
PM10 Emissions								
Run Exh	0.02	0.01	0.02	0.01	0	0	0.02	0.59
Idle Exh	0	0	0	0	0	0	0	0.02
Start Ex	0	0	0	0	0	0	0	0
Total Ex	0.03	0.01	0.03	0.01	0	0	0.02	0.61
TireWear	0.02	0.01	0.01	0	0	0	0	0.03
BrakeWr	0.03	0.01	0.01	0.01	0	0	0	0.02
Total	0.08	0.03	0.05	0.02	0	0	0.02	0.67
Lead	0	0	0	0	0	0	0	0
SOx	0.01	0	0	0	0	0	0	0.02
Fuel Consumption (000 gallons)								
Gasoline	95.88	37.29	52.53	34.56	5.99	2.33	1.62	0.73
Diesel	0.17	1.28	0.13	0.06	1.37	0.83	7.74	141.4

Title : Passenger Vehs; MD Trucks; HD Trucks  
 Version : Emfac2007 V2.3 Nov 1 2006  
 Run Date : 2007/07/11 14:04:09  
 Scen Year: 2008 -- All model years in the range 1965 to 2008 selected  
 Season : Annual  
 Area : San Diego County APCD Average  
 I/M Stat : Enhanced Interim (2005) -- Using I/M schedule for area 38 San Diego (SD)  
 Emissions: Tons Per Day

	LDA-TOT	LDT1-TOT	LDT2-TOT	MDV-TOT	LHDT1-TOT	LHDT2-TOT	MHDT-TOT	HHDT-TOT	
Vehicles	1152660	197163	536340	210118	39676	11237	18332	9055	
VMT/1000	42190	7684	21562	9042	1872	486	1176	1542	
Trips	7228600	1232540	3391930	1333700	1123210	253060	581618	72618	
Reactive Organic Gas Emissions									
Run Exh	6.38	1.57	2.61	1.59	1.01	0.22	0.43	2.26	
Idle Exh	0	0	0	0	0.04	0.01	0.01	0.22	
Start Ex	5.25	0.77	2.42	1.22	0.79	0.15	0.51	0.19	
Total Ex	11.63	2.34	5.03	2.81	1.84	0.38	0.96	2.67	
Diurnal	1.06	0.16	0.41	0.14	0	0	0	0	
Hot Soak	1.62	0.28	0.61	0.2	0.07	0.01	0.02	0	
Running	5.84	1.26	3.1	0.95	0.8	0.16	0.22	0.04	
Resting	0.75	0.13	0.3	0.11	0	0	0	0	
Total	20.91	4.17	9.45	4.2	2.71	0.55	1.2	2.72	
Carbon Monoxide Emissions									
Run Exh	153.7	35.8	82.83	41.85	11.34	2.17	5.44	12.2	
Idle Exh	0	0	0	0	0.27	0.05	0.09	0.79	
Start Ex	56.12	9.34	29.24	13.24	9.81	1.69	5.93	2.89	
Total Ex	209.83	45.14	112.08	55.09	21.42	3.91	11.47	15.88	
Oxides of Nitrogen Emissions									
Run Exh	14.48	3.52	11.55	6.03	3.66	1.75	11.08	28.65	
Idle Exh	0	0	0	0	0.03	0.02	0.12	1.65	
Start Ex	3.71	0.59	2.89	1.3	2.01	0.35	0.55	0.26	
Total Ex	18.18	4.11	14.43	7.32	5.7	2.12	11.75	30.57	
Carbon Dioxide Emissions (000)									
Run Exh	18	4	11.37	6.52	1.76	0.4	1.8	3.02	
Idle Exh	0	0	0	0	0.01	0	0.01	0.1	
Start Ex	0.59	0.12	0.34	0.18	0.04	0.01	0.01	0	
Total Ex	18.59	4.12	11.7	6.7	1.82	0.41	1.82	3.13	
PM10 Emissions									
Run Exh	0.58	0.13	0.64	0.25	0.05	0.02	0.32	1.22	
Idle Exh	0	0	0	0	0	0	0	0.04	
Start Ex	0.06	0.01	0.06	0.02	0	0	0	0	
Total Ex	0.64	0.14	0.69	0.27	0.05	0.03	0.32	1.26	
TireWear	0.37	0.07	0.19	0.08	0.02	0.01	0.02	0.06	
BrakeWr	0.58	0.11	0.3	0.13	0.03	0.01	0.02	0.05	
Total	1.59	0.31	1.18	0.48	0.1	0.04	0.36	1.36	
Lead	0	0	0	0	0	0	0	0	
SOx	0.18	0.04	0.11	0.07	0.02	0	0.02	0.03	
Fuel Consumption (000 gallons)									
Gasoline	1935.76	414.97	1216.49	694.6	161.73	27.28	16.1	5.78	
Diesel	4.57	13.16	1.37	1.31	24.85	13.42	151.01	277.48	