

Appendix M.2

Greenhouse Gas Worksheets



Convention and Event Center

Draft EIR

Appendix M.2 GHG Worksheets March 2012

- M.2.1 Summary of GHG Emissions
- M.2.2 Project Construction Emissions
- M.2.3 Project Operation Emissions

Appendix M.2.1

- Summary of GHG Emissions
 - Existing
 - Future No Project (2017)
 - Future with Project (2017)
 - Business as Usual with State Mandates (2020)
 - Project with Project Features and State Mandates (2020)

Convention and Event Center
Operational Greenhouse Gas Emissions Inventory
March 2012

Existing	mtons/yr
	CO ₂ e
Mobile Source	12,551
Electricity Usage	7,049
Natural Gas Usage	595
Water Usage / Wastewater Generation	101
Solid Waste	377
Total	20,673

Future No Project (2017)	mtons/yr
	CO ₂ e
Mobile Source	10,963
Electricity Usage	7,049
Natural Gas Usage	595
Water Usage / Wastewater Generation	101
Solid Waste	377
Total	19,085

Future with Project (2017)	mtons/yr
	CO ₂ e
Mobile Source	
Subject to SB 292	24,078
Not Subject to SB 292	21,163
Total	45,241
Emission Offset Required by SB 292	(21,163)
Electricity Usage	8,925
Natural Gas Usage	2,719
Water Usage / Wastewater Generation	323
Solid Waste	1,780
Construction	1,833
Total	39,657

Business as Usual with State Mandates (2020)	mtons/yr
	CO ₂ e
Mobile Source	
Subject to SB 292	27,813
Not Subject to SB 292	21,534
Total	49,347
Electricity Usage	10,445
Natural Gas Usage	2,719
Water Usage / Wastewater Generation	355
Solid Waste	1,780
Construction	2,143
Total	66,788

Project with Project Features and State Mandates (2020)	mtons/yr
	CO ₂ e
Mobile Source	
Subject to SB 292	21,907
Not Subject to SB 292	19,285
Total	41,192
Emission Offset Required by SB 292	(21,907)
Electricity Usage	8,925
Natural Gas Usage	2,719
Water Usage / Wastewater Generation	323
Solid Waste	1,780
Construction	1,833
Total with GHG Reducing Features	34,864

Increase/Decrease		
	CO ₂ e	% Redcution
Mobile Source		
Subject to SB 292	(5,906)	-21%
Not Subject to SB 292	(2,249)	-10%
Total	(8,155)	-17%
Emission Offset Required by SB 292	(21,907)	-100%
Electricity Usage	(1,520)	-15%
Natural Gas Usage	0	0%
Water Usage / Wastewater Generation	(32)	-9%
Solid Waste	0	0%
Construction	(310)	-14%
Total with GHG Reducing Features	(31,924)	-48%

Appendix M.2.2

- GHG Construction Worksheets

Note: Please refer to the Air Quality Appendix-Construction Emissions for calculation of diesel sources (i.e., on-road and off-road)

Convention and Event Center
Construction Emissions
March 2012

Bond Street Parking Structure						
	Water (Dust Control)					
Construction Activity	Metric Tons CO ₂ e ³	Average Daily Acreage Disturbed	Million Gallons ⁴	MWh/Year ⁵	Metric Tons CO ₂ e ⁶	Total Metric Tons CO ₂ e
Diesel Sources (On-road and Off-Road)	1,042					1,042
Water (Dust Control)		1.0	0.1	0.9	0.6	1
Total:	1,042					1,043

Pico Hall						
	Water (Dust Control)					
Construction Activity	Metric Tons CO ₂ e ³	Average Daily Acreage Disturbed	Million Gallons ⁴	MWh/Year ⁵	Metric Tons CO ₂ e ⁶	Total Metric Tons CO ₂ e
Diesel Sources (On-road and Off-Road)	7,632					7,632
Water (Dust Control)		2.0	0.5	5.5	3.8	4
Total:	7,632					7,636

Cherry Street Parking Structure						
	Water (Dust Control)					
Construction Activity	Metric Tons CO ₂ e ³	Average Daily Acreage Disturbed	Million Gallons ⁴	MWh/Year ⁵	Metric Tons CO ₂ e ⁶	Total Metric Tons CO ₂ e
Diesel Sources (On-road and Off-Road)	3,207					3,207
Water (Dust Control)		3.0	0.7	8.3	5.6	6
Total:	3,207					3,213

Farmer's Field						
	Water (Dust Control)					
Construction Activity	Metric Tons CO ₂ e ³	Average Daily Acreage Disturbed	Million Gallons ⁴	MWh/Year ⁵	Metric Tons CO ₂ e ⁶	Total Metric Tons CO ₂ e
Diesel Sources (On-road and Off-Road)	33,001					33,001
Water (Dust Control)		5.0	5.0	55.4	37.6	38
Total:	33,001					33,039

Summary		
Construction Year	Total Metric Tons CO ₂ e per Group	Total Metric Tons CO ₂ e Amortized over 30 years
Bond Street	1,043	35
Pico Hall	7,636	255
Cherry Street	3,213	107
Farmer's Field	33,039	1,101
Construction Debris	10,055	335
Total:	54,985	1,833

Notes:

1. Consistent with the criteria pollutant analysis, CO₂ emissions from construction sources were calculated using OFFROAD2007 and EMAC2011.
2. The conversion from CO₂ to CO₂e for diesel is based on the following information: One gallon of diesel fuel burned produces 22.384 pounds of CO₂, 0.000534 pounds of CH₄, and 0.0001928 pounds N₂O (USEPA, Office of Transportation and Air Quality, Emission Facts: Average Carbon Dioxide Resulting from Gasoline and Diesel Fuel, 2005 and California Climate Action Registry General Reporting Protocol, v3.1, Table C.6 (January 2009). Based on the global warming potential of 21 for CH₄ and 310 for N₂O relative to CO₂, the total pounds of CO₂e from diesel fuel is 22.455 CO₂e/gallon, which is 99.6 percent of the total emissions. Therefore, the CO₂ estimate was multiplied by 100/99.6 to incorporate the contribution of the other greenhouse gases.
3. Gallons per year of water usage for dust control is calculated based on a minimum control efficiency of 66% (three times daily) with an application rate of 3,020 gal/acre/day (Air & Waste Management Association Air Pollution Engineering Manual (1992 Edition)) and average of 26 construction days per month.
4. CalEEMod (11,110 kWh of electricity per million gallons delivered).
5. CalEEMod (LADWP (682.48 lbs of CO₂/MWh, 0.029 lbs of CH₄/MWh, and 0.011 lbs of N₂O/MWh with a CO₂e factor of 21 for CH₄ and 310 for N₂O).

Project Construction Greenhouse Gas Emissions Without Mitigation

Time Frame	Element	Total CO ₂ e Emissions (Metric Tons)
Project Construction		
2012 - 2012	BS Demolition	44
2012 - 2012	BS Mass Excavation	61
2012 - 2012	BS Foundations	147
2012 - 2013	BS Concrete/Steel/Precast Frame	623
2013 - 2013	BS Sitework/Landscaping	42
2013 - 2013	BS Interior/Exterior	126
	BS Total	1,043
2012 - 2012	PH Demolition	378
2012 - 2013	PH Mass Excavation	342
2012 - 2013	PH Caisson Phase	818
2013 - 2013	PH Concrete/Steel/Precast Frame	1,117
2013 - 2014	PH Sitework/Landscaping	283
2013 - 2014	PH Interior/Exterior	4,703
	PH Total	7,641
2013 - 2013	CP Demolition	604
2013 - 2013	CP Mass Excavation	565
2013 - 2014	CP Foundations	382
2013 - 2014	CP Concrete/Steel/Precast Frame	1,301
2014 - 2014	CP Sitework/Landscaping	62
2014 - 2014	CP Interior/Exterior	298
	CP Total	3,211
2013 - 2014	FF Demolition	1,017
2014 - 2015	FF Mass Excavation	6,167
2014 - 2015	FF Caisson Phase	1,475
2014 - 2015	FF Shoring Phase	1,053
2014 - 2015	FF Concrete/Steel/Precast Frame	9,031
2016 - 2016	FF Sitework/Landscaping	359
2015 - 2016	FF Interior/Exterior	13,476
2016 - 2016	FF Playing Field	442
	FF Total	33,020
Total Project Construction		44,915
30-Year Amortized Project Construction Emissions		1,497

Project Construction Greenhouse Gas Emissions With Mitigation

Time Frame	Element	Total CO ₂ e Emissions (Metric Tons)
Project Construction		
2012 - 2012	BS Demolition	44
2012 - 2012	BS Mass Excavation	61
2012 - 2012	BS Foundations	147
2012 - 2013	BS Concrete/Steel/Precast Frame	622
2013 - 2013	BS Sitework/Landscaping	42
2013 - 2013	BS Interior/Exterior	126
	BS Total	1,042
2012 - 2012	PH Demolition	377
2012 - 2013	PH Mass Excavation	342
2012 - 2013	PH Caisson Phase	817
2013 - 2013	PH Concrete/Steel/Precast Frame	1,115
2013 - 2014	PH Sitework/Landscaping	283
2013 - 2014	PH Interior/Exterior	4,698
	PH Total	7,632
2013 - 2013	CP Demolition	603
2013 - 2013	CP Mass Excavation	565
2013 - 2014	CP Foundations	381
2013 - 2014	CP Concrete/Steel/Precast Frame	1,299
2014 - 2014	CP Sitework/Landscaping	62
2014 - 2014	CP Interior/Exterior	297
	CP Total	3,207
2013 - 2014	FF Demolition	1,016
2014 - 2015	FF Mass Excavation	6,164
2014 - 2015	FF Caisson Phase	1,474
2014 - 2015	FF Shoring Phase	1,052
2014 - 2015	FF Concrete/Steel/Precast Frame	9,028
2016 - 2016	FF Sitework/Landscaping	359
2015 - 2016	FF Interior/Exterior	13,468
2016 - 2016	FF Playing Field	442
	FF Total	33,001
Total Project Construction		44,883
30-Year Amortized Project Construction Emissions		1,496

Construction Debris Disposal ¹				Total Metric Tons CO ₂ e Amortized over 30 Years
Land Use		Tons ¹	Metric Tons	CO ₂ e ^{2,3}
Existing and No Project				
Total Generated				
Waste Recycle				
Net Waste to Landfills		0	0	0
Business as Usual with State Mandates				
Total Generated		91,332	82,840	
Waste Recycle/Diverted		45,666	41,420	
Net to Landfills		45,666	41,420	19,355
Project with Project Features and State Mandates⁴				
Total Generated		91,332	82,840	
Waste Recycle/Diverted		67,608	61,322	
Net to Landfills		23,724	21,518	10,055
				335

Notes:

1. Construction debris generation/diversion rates provided in Section IV.L, of the Draft EIR. Business-as-usual diversion rate was assumed to be 50% and consistent with the LA regional solid waste diversion rate (http://www.lacsd.org/info/waste_by_rail/default.asp).
2. The solid waste stream was converted to GHG emissions using default CalEEMod generation factors assuming landfill gas collection and flare system (CalEEMod Version 2011.1 User's Guide, Appendix D). http://www.aqmd.gov/cal_eemod/guide.htm
3. GWPs are consistent with IPCC Second Assessment Report (SAR) provided in CalEEMod. Available at http://www.ipcc.ch/ipccreports/sar/wg_1/ipcc_sar_wg_1_full_report.pdf.
4. During new construction, between 50 and 75 percent of the non-hazardous demolition and construction debris by weight from construction of new Project buildings

Appendix M.2.3

- GHG Operation Worksheets
- Electricity
- Natural Gas
- Water Usage and Wastewater Generation
- Solid Waste
- Mobile Source
 - Calculation of Mobile Source Emissions
 - EMFAC 2011 Summary Sheets
 - o Year 2011
 - o Year 2017
 - o Year 2020
 - Calculation of CO2 Emission Factors (All)
 - o Existing (Year 2011)
 - o Buildout (Year 2017) for both BAU and Project
 - o AB 32 (Year 2020) for both BAU and Project
 - Calculation of Trips and VMT
 - o Spectator (BAU)
 - o Spectator (Project)
 - o Truck (BAU and Project)
 - o Employee (BAU)
 - o Employee (Project)
 - o Transit (Project)

Convention and Event Center
Electricity Usage Emissions
March 2012

Existing			Emission Rate (mtons/year) ³			
		Emission Rate ² (lbs/Mwh) --->	CO ₂	CH ₄	NO ₂	CO ₂ e ³
Land Use	Electricity Usage (MWh/Year) ¹		682.48	0.029	0.011	
Existing On-Site Uses (Excluding STAPLES Center)			22,637			
Total Existing Emissions			7,008	0.30	0.11	7,049

Future No Project (2017)			Emission Rate (mtons/year)			
		Emission Rate ² (lbs/Mwh) --->	CO ₂	CH ₄	NO ₂	CO ₂ e ³
Land Use	Electricity Usage (MWh/Year) ¹		682.48	0.029	0.011	
Existing On-Site Uses (Excluding STAPLES Center)			22,637			
No Project (2017)			7,008	0.30	0.11	7,049

Future with Project (2017)			Emission Rate (mtons/year)			
		Emission Rate ² (lbs/Mwh) --->	CO ₂	CH ₄	NO ₂	CO ₂ e ³
Land Use	Electricity Usage (MWh/Year) ¹		682.48	0.029	0.011	
Los Angeles Convention Center						
Interior Building Lighting	2,220					
Exterior Building Lighting	444					
Central Plant	3,605					
Miscellaneous Power	2,612					
Increased Usage by Existing LACC Facilities	1,386					
Sub Total:	10,267					
Event Center						
Spectator Event Use	5,991					
Exhibition Event Use	855					
Meeting Room Use	2,483					
Non-Event Use	7,679					
Other	3,195					
Sub Total:	20,203					
Parking Garages	3,072					
Total With Project (2017)			8,872	0.38	0.14	8,925

Business as Usual with State Mandates (2020)			Emission Rate (mtons/year)			
		Emission Rate ² (lbs/Mwh) --->	CO ₂	CH ₄	NO ₂	CO ₂ e ³
Land Use	Electricity Usage (MWh/Year) ¹		682.48	0.029	0.011	
Los Angeles Convention Center						
Interior Building Lighting	2,220					
Exterior Building Lighting	444					
Central Plant	3,605					
Miscellaneous Power	2,612					
Increased Usage by Existing LACC Facilities	1,386					
Sub Total:	10,267					
Event Center						
Spectator Event Use	5,991					
Exhibition Event Use	855					
Meeting Room Use	2,483					
Non-Event Use	7,679					
Other	3,195					
Sub Total:	20,203					
Parking Garages	3,072					
Total Project with BAU (2020)			10,384	0.44	0.17	10,445

Project with Project Features and State Mandates (2020)			Emission Rate (mtons/year)			
		Emission Rate ² (lbs/Mwh) --->	CO ₂	CH ₄	NO ₂	CO ₂ e ³
Land Use	Electricity Usage with Project Features ^{1,4} (MWh/Year)		682.48	0.029	0.011	
Los Angeles Convention Center						
Interior Building Lighting	1,776					
Exterior Building Lighting	355					
Central Plant	2,884					

Miscellaneous Power	2,090				
Increased Usage by Existing LACC Facilities	1,109				
Sub Total:	8,214				
Event Center					
Spectator Event Use	5,152				
Exhibition Event Use	735				
Meeting Room Use	2,135				
Non-Event Use	6,604				
Other	2,748				
Sub Total:	17,375				
Parking Garages	3,072				
Total Project with PF (2020)	28,660	8,872	0.38	0.14	8,925

Energy Reduction Project Features (Convention Center)	20.0%
Energy Reduction Project Features (Event Center)	14%

Notes:

- Electricity usage rates are from Section IV.L.4., Electricity of the Draft EIR.
- Emission factors are consistent with LADWP electricity utility emission factors provided in CalEEMod (CalEEMod Version 2011.1 User's Guide, Appendix D). Available at <http://www.aqmd.gov/caleemod/guide.htm>.
- GWPs are consistent with IPCC Second Assessment Report (SAR) provided in CalEEMod. Available at http://www.ipcc.ch/ipccreports/sar/wg_1/ipcc_sar_wg_1_full_report.pdf.
- The Convention Center would implement additional efficiency measures to achieve a 20 percent reduction in energy consumption relative to the California Energy Efficiency Standards and would also comply with the required measures of the 2010 Los Angeles Green Building Code.
The Event Center would also implement electrical efficiency measures to achieve a 14 percent reduction against the estimated baseline. This would be achieved, in part, by optimizing energy performance through the installation of best available technology for HVAC, lighting, and all major electrical appliances and control systems; and through educating employees on energy efficiency through an Energy Management System (EMS).

Convention and Event Center
Natural Gas Usage Emissions
March 2012

Existing					Emission Rate (mtons/year)			
					CO ₂	CH ₄	NO ₂	CO ₂ e ³
Land Use	Natural Gas Usage (therms/year) ¹	Natural Gas Usage (kscf/year)	Natural Gas Usage (MMBTU/year)	Emission Rate ² (kg/MMBTU) --->	53	0.001	0.0001	
On-Site Uses (Excluding STAPLES Center)								
Convention Center Operations	33,300							
Central Plant	76,600							
Existing Mobile	109,900	10,990	11,210		595	0	0	595

Future No Project (2017)					Emission Rate (mtons/year)			
					CO ₂	CH ₄	NO ₂	CO ₂ e ³
Land Use	Natural Gas Usage (therms/year) ¹	Natural Gas Usage (kscf/year)	Natural Gas Usage (MMBTU/year)	Emission Rate ² (kg/MMBTU) --->	53	0.001	0.0001	
On-Site Uses (Excluding STAPLES Center)								
Convention Center Operations	33,300							
Central Plant	76,600							
No Project Mobile (2017)	109,900	10,990	11,210		595	0	0	595

Future with Project (2017)					Emission Rate (mtons/year)			
					CO ₂	CH ₄	NO ₂	CO ₂ e ³
Land Use	Natural Gas Usage (therms/year) ¹	Natural Gas Usage with Project Features (kscf/year)	Natural Gas Usage (MMBTU/year)	Emission Rate ² (kg/MMBTU) --->	53	0.001	0.0001	
Los Angeles Convention Center								
Convention Center Operations	50,140							
Central Plant	95,100							
Event Center								
Mechanical (Boilers)	175,090							
Plumbing (Kitchen Cooking/Water Heaters)	181,506							
Total With Project (2017)	501,836	50,184	51,187		2,716	0	0	2,719

Business as Usual with State Mandates (2020)					Emission Rate (mtons/year)			
					CO ₂	CH ₄	NO ₂	CO ₂ e ³
Land Use	Natural Gas Usage (therms/year) ¹	Natural Gas Usage (kscf/year)	Natural Gas Usage (MMBTU/year)	Emission Rate ² (kg/MMBTU) --->	53	0.001	0.0001	
Los Angeles Convention Center								
Convention Center Operations	50,140							
Central Plant	95,100							
Event Center								
Mechanical (Boilers)	175,090							
Plumbing (Kitchen Cooking/Water Heaters)	181,506							
Total Project with BAU (2020)	501,836	50,184	51,187		2,716	0	0	2,719

Project with Project Features and State Mandates (2020)					Emission Rate (mtons/year)			
					CO ₂	CH ₄	NO ₂	CO ₂ e ³
Land Use	Natural Gas Usage (therms/year) ¹	Natural Gas Usage with Project Features ⁴ (kscf/year)	Natural Gas Usage (MMBTU/year)	Emission Rate ² (kg/MMBTU) --->	53	0.001	0.0001	
Los Angeles Convention Center								
Convention Center Operations	50,140							
Central Plant	95,100							
Event Center								
Mechanical (Boilers)	175,090							
Plumbing (Kitchen Cooking/Water Heaters)	181,506							
Total Project with PF (2020)	501,836	50,184	51,187		2,716	0	0	2,719

Notes:

1. Natural gas usage rates are from Section IV.L.5, Natural Gas of the Draft EIR.
2. Emission factors for CO₂, CH₄, and N₂O were derived from the California Climate Action Registry General Reporting Protocol; Version 3.1, January 2009.(Appendix C)
3. GWPs are consistent with IPCC Second Assessment Report (SAR) provided in CalEEMod. Available at http://www.ipcc.ch/ipccreports/sar/wg_1/ipcc_sar_wg_1_full_report.pdf.
4. Although the Proposed Project would include the use of equipment and appliances that would reduce GHG emissions, this analysis conservatively did not take credit for these reductions.

Convention and Event Center
Water Usage / Wastewater Generation
March 2012

Electricity Usage from Water and Wastewater Treatment/Conveyance ¹						Emission Rate (mtons/year)			
						CO ₂	CH ₄	NO ₂	CO ₂ e ³
Land Use	AF/Year ¹	MG/Year ¹	Electricity Usage Factor (kWh/MG)	Electricity Usage (MWh/year)	Emission Rate ² (lbs/Mwh) -->	682.48	0.029	0.011	
Existing and No Project									
Water Usage									
Los Angeles Convention Center									
General Consumption	39.0	12.69							
Central Plant	25.2	8.21							
STAPLES Center									
Central Plant	3.3	1.06							
Irrigation	14.0	4.56							
Total:		26.52	11,110	294.68					
Wastewater Genreation		15.66	1,911	29.92					
Combined Water and Wastewater:				324.61		100.49	0.00	0.00	101.08
Business as Usual with State Mandates (2020)									
Water Usage									
Los Angeles Convention Center									
Patron Use	57.8	18.85							
Retail	0.4	0.12							
Bike Station	0.3	0.09							
Event Deck	0.7	0.23							
Event Center									
All Activities	166.0	54.10							
Central Plant	36.4	11.85							
Irrigation	13.1	4.27							
Total:		89.52	11,110	994.54					
Wastewater Genreation									
Los Angeles Convention Center									
Patron Use		18.85							
Retail		0.12							
Bike Station		0.095							
Event Deck		0.23							
Event Center									
All Activities		54.10							
Central Plant		2.16							
Total:		75.55	1,911	144.38					
Combined Water and Wastewater:				1138.92		352.57	0.01	0.01	354.65
Project with Project Features and State Mandates (2020)									
Water Usage ⁴		81.2	11,110	902.48		279.38	0.01	0.00	281.02
Wastewater Genreation ⁴		70.1	1,911	134.04		41.49	0.00	0.00	41.74
Combined Water and Wastewater:				1036.52		320.87	0.01	0.01	322.76

Notes:

1. Water usage and wasteater generation rates are provided in Sections IV.L.1 and 2 of the Draft EIR.
2. Emission factors are consistent with LADWP electricy utility emission factors provided in CalEEMod (CalEEMod Version 2011.1 User's Guide, Appendix D). Available at <http://www.aqmd.gov/caleemod/guide.htm>.
3. GWPs are consistent with IPCC Second Assessment Report (SAR) provided in CalEEMod. Available at http://www.ipcc.ch/ipccreports/sar/wg_1/ipcc_sar_wg_1_full_report.pdf.

Convention and Event Center
Solid Waste
March 2012

Solid waste Disposal				
Land Use		Tons/Year ¹	Metric Tons/Year	Emission Rate ³ CO ₂ e ⁴
Existing and No Project				
Total Waste Generated		1587		
Total Waste Diverted		698		
Net Waste to Landfill		889	806	377
Business as Usual with State Mandates¹				
Los Angeles Convention Center				
Total Waste Generated		688		
Total Waste Diverted		344		
Net Waste to Landfill		344		
Event Center				
Total Waste Generated		7713		
Total Waste Diverted		3857		
Net Waste to Landfill		3857		
Total Waste Landfill		4200	3,810	1,780
Project with Project Features and State Mandates²				
Los Angeles Convention Center				
Total Waste Generated		688		
Total Waste Diverted		344		
Net Waste to Landfill		344		
Event Center				
Total Waste Generated		7713		
Total Waste Diverted		3857		
Net Waste to Landfill		3857		
Total Waste Landfill		4200	3,810	1,780

Notes:

1. Solid waste generation rates provided in Section IV.L.3, of the Draft EIR. Generation rates were reduced to account for the LA regional solid waste diversion rate of 50 percent Available at http://www.lacsd.org/info/waste_by_rail/default.asp.
2. As shown in Table IV.L-15 (2010), the Applicant achieved a diversion rate of approximately 75 percent, thereby surpassing Assembly Bill 939's requirement of the City of Los Angeles to divert from landfill disposal 50 percent of the waste generated within the City of Los Angeles in 2000. However, the analysis conservatively assumes a diversion rate of 50 percent and consistent with the LA regional rate.
3. The solid waste stream was converted to GHG emissions using default CalEEMod generation factors assuming landfill gas collection and flare system (CalEEMod Version 2011.1 User's Guide, Appendix D). Available at <http://www.aqmd.gov/caleemod/guide.htm>.
4. GWPs are consistent with IPCC Second Assessment Report (SAR) provided in CalEEMod. Available at http://www.ipcc.ch/ipccreports/sar/wg_l/ipcc_sar_wg_l_full_report.pdf.

Convention and Event Center
Mobile Source (Vehicular) Emissions
March 2012

Existing (2011)	Emission Factor for CO ₂ e						CO ₂ e
	Annual Trips ¹	Annual VMT ¹	Run (gram/mile)	Idle (gram/trip)	Start (gram/trip)	(tons/yr)	(mtons/yr)
Existing Mobile	1,822,141	23,536,741	489.1	13.1	558.9	13,837	12,551
Transit							
Total Existing							12,551

Future No Project (2017)	Emission Factor for CO ₂ e						CO ₂ e
	Annual Trips ¹	Annual VMT ¹	Run (gram/mile)	Idle (gram/trip)	Start (gram/trip)	(tons/yr)	(mtons/yr)
No Project Mobile (2017)	1,822,141	23,536,741	428.0	12.7	475.7	12,086	10,963
Transit							
Total No Project (2017)							10,963

Future With Project (2017)	Emission Factor for CO ₂ e						CO ₂ e
	Annual Trips ¹	Annual VMT ¹	Run (gram/mile)	Idle (gram/trip)	Start (gram/trip)	(tons/yr)	(mtons/yr)
Source							
Events Subject to SB292	2,300,145	53,637,406	428.0	12.7	475.7	26,546	24,078
Events not Subject to SB292	3,618,380	45,323,028	428.0	12.7	475.7	23,333	21,163
Transit							
Transit Bus		230,066		See Transit Worksheet for Calculations			35
Commuter Rail		4,294		See Transit Worksheet for Calculations			0
Urban Rail		95,904		See Transit Worksheet for Calculations			0.5
Total not subject to SB292							21,199
Total With Project (2017)	5,918,525	98,960,435	428.0	12.7	475.7	49,878	45,276

Business as Usual with State Mandates (2020)	Emission Factor for CO ₂ e						CO ₂ e
	Annual Trips ¹	Annual VMT ¹	Run (gram/mile)	Idle (gram/trip)	Start (gram/trip)	(tons/yr)	(mtons/yr)
Land Use							
Events Subject to SB292	2,260,731	67,821,939	395.2	12.2	436.0	30,664	27,813
Events not Subject to SB292	3,997,073	49,873,184	395.2	12.2	436.0	23,702	21,498
Transit							
Transit Bus		230,066		See Transit Worksheet for Calculations			35
Commuter Rail		4,294		See Transit Worksheet for Calculations			0
Urban Rail		95,904		See Transit Worksheet for Calculations			0.5
Total not subject to SB292							21,534
Total Project with BAU (2020)	6,257,804	117,695,123	395.2	12.2	436.0	54,366	49,347

Project with Project Features and State Mandates (2020) ²	Emission Factor for CO ₂ e						CO ₂ e
	Trips ¹	Annual VMT ¹	(gram/mile)	(gram/trip)	(gram/trip)	(tons/yr)	(mtons/yr)
Land Use							
Events subject to SB292	2,300,145	53,637,406	389.6	12.2	428.8	24,153	21,907
Events not subject to SB292	3,618,380	45,323,028	389.6	12.2	428.8	21,223	19,250
Transit							
Transit Bus		230,066		See Transit Worksheet for Calculations			35
Commuter Rail		4,294		See Transit Worksheet for Calculations			0
Urban Rail		95,904		See Transit Worksheet for Calculations			0.5
Total not subject to SB292							19,285
Total Project with PF (2020)	5,918,525	98,960,435	389.6	12.2	428.8	45,375	41,192

Notes:

1. Average daily trips and vehicle miles traveled are based on the traffic study (See Trip Generation Sheet).
2. Reductions in project trips were accounted for based on internal capture, transit/, and TDM program trip rate adjustments provided in the traffic study. The emission factor for CO₂ is adjusted to account for State mandates (e.g., Pavely, LCFS). Please refer to the emission factor worksheet for a detailed explanation of how State mandates were considered. Consistent with the ARB Scoping Plan, Pavely II was not considered under the BAU condition.

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Area	CalYr	Season	Veh	Fuel	MdlYr	Speed (Miles/hr)	Pop (Vehicles)	VMT (Miles/day)	Trips (Trips/day)	CO2_RUNEX(Pavley I+LCFS) (gms/mile)	CO2_IDLEX(Pavley I+LCFS) (gms/vehicle/day)	CO2_STREX(Pavley I+LCFS) (gms/vehicle/day)
Los Angele:	2011	Annual	LDA	GAS	AllMYr	AllSpeeds	3432809	1.14E+08	2.16E+07	361.0888324	0	454.904321
Los Angele:	2011	Annual	LDA	DSL	AllMYr	AllSpeeds	12305.81	345697.8	69210.91	330.5433609	0	0
Los Angele:	2011	Annual	LDT1	GAS	AllMYr	AllSpeeds	380782.8	1.27E+07	2322656	416.9208756	0	506.738594
Los Angele:	2011	Annual	LDT1	DSL	AllMYr	AllSpeeds	565.9527	16216.96	2974.678	351.3158199	0	0
Los Angele:	2011	Annual	LDT2	GAS	AllMYr	AllSpeeds	1085547	3.85E+07	6851393	496.1525271	0	620.0238738
Los Angele:	2011	Annual	LDT2	DSL	AllMYr	AllSpeeds	513.7737	15660.02	2794.997	350.0236865	0	0
Los Angele:	2011	Annual	LHD1	GAS	AllMYr	AllSpeeds	143457.3	6830917	2137299	628.2680359	116.0735471	852.6757613
Los Angele:	2011	Annual	LHD1	DSL	AllMYr	AllSpeeds	31103.07	1526992	391237.4	524.6468069	141.3990124	0
Los Angele:	2011	Annual	LHD2	GAS	AllMYr	AllSpeeds	16645.57	767065.3	247994.1	628.2680392	116.0735338	881.2353453
Los Angele:	2011	Annual	LHD2	DSL	AllMYr	AllSpeeds	12379.91	597867.8	155723.6	527.1816188	141.3990098	0
Los Angele:	2011	Annual	MCY	GAS	AllMYr	AllSpeeds	113674.2	786484.2	227325.6	140.6857666	0	100.3785053
Los Angele:	2011	Annual	MDV	GAS	AllMYr	AllSpeeds	809460.1	2.84E+07	5113562	630.9271042	0	786.2455094
Los Angele:	2011	Annual	MDV	DSL	AllMYr	AllSpeeds	898.479	30808.04	5238.498	328.6214966	0	0
Los Angele:	2011	Annual	MH	GAS	AllMYr	AllSpeeds	27883.5	310232.9	2789.465	617.5973576	0	4.747531647
Los Angele:	2011	Annual	MH	DSL	AllMYr	AllSpeeds	3644.115	42249.86	364.4115	1145.307319	0	0
Los Angele:	2011	Annual	OBUS	GAS	AllMYr	AllSpeeds	5009.51	229710.2	228775.6	617.5973705	406.3824212	1766.478151
Los Angele:	2011	Annual	OBUS	DSL	AllMYr	AllSpeeds	3550.674	295331.6	0	1439.006967	3798.206876	0
Los Angele:	2011	Annual	SBUS	GAS	AllMYr	AllSpeeds	753.1116	27009.33	3012.447	740.2646597	0	538.581699
Los Angele:	2011	Annual	SBUS	DSL	AllMYr	AllSpeeds	2382.937	91354.33	0	1286.53257	3622.343413	0
Los Angele:	2011	Annual	T6	GAS	AllMYr	AllSpeeds	14070.28	665835.5	281518.1	617.5973532	253.8443721	1406.832752
Los Angele:	2011	Annual	T6	DSL	AllMYr	AllSpeeds	41010.43	2409550	0	1138.303958	703.2857959	0
Los Angele:	2011	Annual	T7	GAS	AllMYr	AllSpeeds	995.7298	118548.6	19922.56	617.5973709	0	2111.741149
Los Angele:	2011	Annual	T7	DSL	AllMYr	AllSpeeds	36254.48	5075723	0	1749.690096	8508.703072	0
Los Angele:	2011	Annual	UBUS	GAS	AllMYr	AllSpeeds	957.7036	101936.6	3830.814	742.3265938	0	612.1867409
Los Angele:	2011	Annual	UBUS	DSL	AllMYr	AllSpeeds	5545.247	590228.4	22180.99	2627.851229	0	0

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Area	CalYr	Season	Veh	Fuel	MdlYr	Speed (Miles/hr)	Pop (Vehicles)	VMT (Miles/day)	Trips (Trips/day)	CO2_RUNEX(Pavley I+LCFS) (gms/mile)	CO2_IDLEX(Pavley I+LCFS) (gms/vehicle/day)	CO2_STREX(Pavley I+LCFS) (gms/vehicle/day)
Los Angele:	2017	Annual	LDA	GAS	AllMYr	AllSpeeds	3535573	1.18E+08	2.23E+07	294.1630171	0	380.8466889
Los Angele:	2017	Annual	LDA	DSL	AllMYr	AllSpeeds	12674.19	403728.5	76065.87	253.6591764	0	0
Los Angele:	2017	Annual	LDT1	GAS	AllMYr	AllSpeeds	385693.4	1.29E+07	2333186	356.0833767	0	432.4107279
Los Angele:	2017	Annual	LDT1	DSL	AllMYr	AllSpeeds	573.2511	18878.33	3154.363	266.3429845	0	0
Los Angele:	2017	Annual	LDT2	GAS	AllMYr	AllSpeeds	1113421	3.95E+07	7000797	428.1217381	0	541.3689177
Los Angele:	2017	Annual	LDT2	DSL	AllMYr	AllSpeeds	526.9663	19083.51	3195.949	267.5218393	0	0
Los Angele:	2017	Annual	LHD1	GAS	AllMYr	AllSpeeds	153497.6	7083569	2286886	601.9363926	110.5462326	826.1419858
Los Angele:	2017	Annual	LHD1	DSL	AllMYr	AllSpeeds	33279.93	1545031	418619.6	496.5467453	134.6657416	0
Los Angele:	2017	Annual	LHD2	GAS	AllMYr	AllSpeeds	17490.81	800071.8	260587.1	601.9363877	110.5462217	830.8661179
Los Angele:	2017	Annual	LHD2	DSL	AllMYr	AllSpeeds	13008.55	590122.7	163631.2	497.7024553	134.6657424	0
Los Angele:	2017	Annual	MCY	GAS	AllMYr	AllSpeeds	115954.7	816776.2	231886.3	146.8204423	0	84.74741917
Los Angele:	2017	Annual	MDV	GAS	AllMYr	AllSpeeds	836448.1	2.77E+07	5184890	563.6887292	0	701.0423773
Los Angele:	2017	Annual	MDV	DSL	AllMYr	AllSpeeds	928.4353	31786.31	5527.718	278.2444852	0	0
Los Angele:	2017	Annual	MH	GAS	AllMYr	AllSpeeds	28630.93	327001	2864.238	591.1627406	0	3.589638801
Los Angele:	2017	Annual	MH	DSL	AllMYr	AllSpeeds	3741.797	41521.72	374.1797	1094.073141	0	0
Los Angele:	2017	Annual	OBUS	GAS	AllMYr	AllSpeeds	4905.589	190922.6	224029.7	591.1627229	387.0309003	1596.290467
Los Angele:	2017	Annual	OBUS	DSL	AllMYr	AllSpeeds	4551.09	358277.3	0	1371.309144	3677.273154	0
Los Angele:	2017	Annual	SBUS	GAS	AllMYr	AllSpeeds	767.4294	27522.82	3069.717	705.0139517	0	500.1645352
Los Angele:	2017	Annual	SBUS	DSL	AllMYr	AllSpeeds	2541.135	93104.24	0	1232.914727	3567.576995	0
Los Angele:	2017	Annual	T6	GAS	AllMYr	AllSpeeds	14893.23	746613.1	297983.7	591.1627372	241.7565405	1097.318959
Los Angele:	2017	Annual	T6	DSL	AllMYr	AllSpeeds	50685.95	2967887	0	1076.389792	701.4494563	0
Los Angele:	2017	Annual	T7	GAS	AllMYr	AllSpeeds	1041.634	159664.5	20841.01	591.1627722	0	1100.938229
Los Angele:	2017	Annual	T7	DSL	AllMYr	AllSpeeds	48345.2	7003835	0	1662.725537	11489.6455	0
Los Angele:	2017	Annual	UBUS	GAS	AllMYr	AllSpeeds	967.0506	102931.6	3868.203	706.9777185	0	573.4169787
Los Angele:	2017	Annual	UBUS	DSL	AllMYr	AllSpeeds	5599.369	595989.3	22397.48	2430.715831	0	0

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Area	CalYr	Season	Veh	Fuel	MdlYr	Speed (Miles/hr)	Pop (Vehicles)	VMT (Miles/day)	Trips (Trips/day)	CO2_RUNEX(Pavley I+LCFS) (gms/mile)	CO2_IDLEX(Pavley I+LCFS) (gms/vehicle/day)	CO2_STREX(Pavley I+LCFS) (gms/vehicle/day)
Los Angele:	2020	Annual	LDA	GAS	AllMYr	AllSpeeds	3584481	1.19E+08	2.26E+07	258.0646915	0	335.6217583
Los Angele:	2020	Annual	LDA	DSL	AllMYr	AllSpeeds	12849.52	405604.2	78652.14	225.9366409	0	0
Los Angele:	2020	Annual	LDT1	GAS	AllMYr	AllSpeeds	389260.4	1.30E+07	2344831	318.8926771	0	387.8111245
Los Angele:	2020	Annual	LDT1	DSL	AllMYr	AllSpeeds	578.5528	19518.18	3317.336	232.2560628	0	0
Los Angele:	2020	Annual	LDT2	GAS	AllMYr	AllSpeeds	1133031	4.03E+07	7120727	384.1769875	0	488.4399284
Los Angele:	2020	Annual	LDT2	DSL	AllMYr	AllSpeeds	536.2474	18848.25	3308.688	243.6887543	0	0
Los Angele:	2020	Annual	LHD1	GAS	AllMYr	AllSpeeds	157817	7251416	2351239	564.4348806	104.7280105	787.2531435
Los Angele:	2020	Annual	LHD1	DSL	AllMYr	AllSpeeds	34216.42	1578959	430399.5	469.3186731	127.5780696	0
Los Angele:	2020	Annual	LHD2	GAS	AllMYr	AllSpeeds	17958.24	822053	267551.1	564.4348587	104.728006	790.4966535
Los Angele:	2020	Annual	LHD2	DSL	AllMYr	AllSpeeds	13356.19	602174.3	168004.1	470.1071613	127.5780558	0
Los Angele:	2020	Annual	MCY	GAS	AllMYr	AllSpeeds	118081.4	832261.6	236139.2	141.5088003	0	77.23617551
Los Angele:	2020	Annual	MDV	GAS	AllMYr	AllSpeeds	851129.1	2.81E+07	5242486	511.1273701	0	638.1810302
Los Angele:	2020	Annual	MDV	DSL	AllMYr	AllSpeeds	944.7307	31538.74	5676.563	254.1001048	0	0
Los Angele:	2020	Annual	MH	GAS	AllMYr	AllSpeeds	29430.18	337368.4	2944.196	554.65178	0	3.292928311
Los Angele:	2020	Annual	MH	DSL	AllMYr	AllSpeeds	3846.252	42466.94	384.6252	1033.374082	0	0
Los Angele:	2020	Annual	OBUS	GAS	AllMYr	AllSpeeds	5006.295	187959.6	228628.8	554.6517609	366.6608361	1496.761708
Los Angele:	2020	Annual	OBUS	DSL	AllMYr	AllSpeeds	4704.943	377417.9	0	1284.792915	3515.708575	0
Los Angele:	2020	Annual	SBUS	GAS	AllMYr	AllSpeeds	784.7872	28145.34	3139.149	667.9079698	0	462.6157398
Los Angele:	2020	Annual	SBUS	DSL	AllMYr	AllSpeeds	2531.408	91547.98	0	1162.089374	3477.557995	0
Los Angele:	2020	Annual	T6	GAS	AllMYr	AllSpeeds	15266.25	763739.2	305447.1	554.6517593	229.0325162	991.9451153
Los Angele:	2020	Annual	T6	DSL	AllMYr	AllSpeeds	51641.24	3079422	0	1011.302972	670.1834347	0
Los Angele:	2020	Annual	T7	GAS	AllMYr	AllSpeeds	1059.442	149685.1	21197.31	554.6517829	0	998.0870579
Los Angele:	2020	Annual	T7	DSL	AllMYr	AllSpeeds	51178.95	7613323	0	1563.314756	11719.99807	0
Los Angele:	2020	Annual	UBUS	GAS	AllMYr	AllSpeeds	981.707	104491.5	3926.828	669.7683596	0	536.5183486
Los Angele:	2020	Annual	UBUS	DSL	AllMYr	AllSpeeds	5684.232	605021.8	22736.93	2252.188394	0	0

South Coast AQMD

South Coast AQMD			% of Total										Combined N2C CO2e_RUNEX(Pavley I+LCFS)			CO2_IDLEX(Pavley I+LCFS)		CO2_STREX(Pavley I+LCFS)	
Veh	Fuel	MdYr	Speed (Miles/hr)	Pop (Vehicles)	VMT (Miles/day)	Trips (Trips/day)	Pop	VMT	Trips	N2O g/mi	CH4 g/mi	g/mi	(gms/mile)	gms/vehicle/day	gms/vehicle/day	gms/vehicle/day			
LDA	GAS	AllMYr	AllSpeeds	3432809.297	1.14E+08	2.16E+07	55.53%	53.21%	54.42%	0.0079	0.0147	2.7577	363.8465324	0		454.904321			
LDA	DSL	AllMYr	AllSpeeds	12305.80843	345697.8411	69210.91386	0.20%	0.16%	0.17%	0.001	0.0005	0.3205	330.8638609	0		0			
LDA	TOT			3445115.105	114622695.3	21666544.35	55.73%	53.37%	54.59%				363.7470579	0		453.4511892			
LDT1	GAS	AllMYr	AllSpeeds	380782.8435	1.27E+07	2322656.398	6.16%	5.93%	5.85%	0.0101	0.0157	3.4607	420.3815756	0		506.738594			
LDT1	DSL	AllMYr	AllSpeeds	565.952667	16216.95978	2974.67764	0.01%	0.01%	0.01%	0.0015	0.001	0.486	351.8018199	0		0			
LDT1	TOT			381348.7962	12749771.39	2325631.076	6.17%	5.94%	5.86%				420.2943461	0		506.0904327			
LDT2	GAS	AllMYr	AllSpeeds	1085546.666	3.85E+07	6851393.337	17.56%	17.93%	17.26%	0.0101	0.0157	3.4607	499.6132271	0		620.0238738			
LDT2	DSL	AllMYr	AllSpeeds	513.7736679	15660.02235	2794.997089	0.01%	0.01%	0.01%	0.0015	0.001	0.486	350.5096865	0		0			
LDT2	TOT			1086060.439	38531545.91	6854188.334	17.57%	17.94%	17.27%				499.5526283	0		619.7710408			
LHD1	GAS	AllMYr	AllSpeeds	143457.2511	6830916.639	2137299.28	2.32%	3.18%	5.39%	0.0101	0.0157	3.4607	631.7287359	116.0735471		852.6757613			
LHD1	DSL	AllMYr	AllSpeeds	31103.06708	1526992.492	391237.4267	0.50%	0.71%	0.99%	0.0015	0.001	0.486	525.1328069	141.3990124		0			
LHD1	TOT			174560.3182	8357909.131	2528536.706	2.82%	3.89%	6.37%				612.2536278	119.9921257		720.7422719			
LHD2	GAS	AllMYr	AllSpeeds	16645.5667	767065.3041	247994.1198	0.27%	0.36%	0.62%	0.0101	0.0157	3.4607	631.7287392	116.0735338		881.2353453			
LHD2	DSL	AllMYr	AllSpeeds	12379.90635	597867.8335	155723.6446	0.20%	0.28%	0.39%	0.0015	0.001	0.486	527.6676188	141.3990098		0			
LHD2	TOT			29025.47306	1364933.138	403717.7644	0.47%	0.64%	1.02%				586.1479009	125.8421786		541.3216931			
MCY	GAS	AllMYr	AllSpeeds	113674.1811	786484.1558	227325.6316	1.84%	0.37%	0.57%	0.0079	0.0147	2.7577	143.4434666	0		100.3785053			
MCY	TOT			113674.1811	786484.1558	227325.6316	1.84%	0.37%	0.57%				143.4434666	0		100.3785053			
MDV	GAS	AllMYr	AllSpeeds	809460.0535	2.84E+07	5113561.701	13.09%	13.20%	12.88%	0.0101	0.0157	3.4607	634.3878042	0		786.2455094			
MDV	DSL	AllMYr	AllSpeeds	898.479009	30808.03921	5238.49754	0.01%	0.01%	0.01%	0.0015	0.001	0.486	329.1074966	0		0			
MDV	TOT			810358.5325	28387090.14	5118800.198	13.11%	13.22%	12.90%				634.0564885	0		785.4408784			
MH	GAS	AllMYr	AllSpeeds	27883.49964	310232.9246	2789.465331	0.94%	0.14%	0.01%	0.0101	0.0157	3.4607	621.0580576	0		4.747531647			
MH	DSL	AllMYr	AllSpeeds	3644.115161	42249.86306	364.4115385	0.06%	0.02%	0.00%	0.0015	0.001	0.486	1145.793319	0		0			
MH	TOT			31527.6148	352482.7876	3153.87687	0.51%	0.16%	0.01%				683.9547258	0		4.198982866			
OBUS	GAS	AllMYr	AllSpeeds	5009.50968	229710.1696	228775.5927	0.09%	0.11%	0.58%	0.0101	0.0157	3.4607	621.0580705	406.3824212		1766.478151			
OBUS	DSL	AllMYr	AllSpeeds	3550.674251	295331.6355	0	0.06%	0.14%	0.00%	0.0015	0.001	0.486	1439.492967	3798.206876		0			
OBUS	TOT			8560.183931	525041.8051	228775.5927	0.14%	0.24%	0.58%				1081.420873	406.3824212		1766.478151			
SBUS	GAS	AllMYr	AllSpeeds	753.111633	27009.33005	3012.446682	0.01%	0.01%	0.01%	0.0101	0.0157	3.4607	743.7253597	0		538.581699			
SBUS	DSL	AllMYr	AllSpeeds	2382.937086	91354.33344	0	0.04%	0.04%	0.00%	0.0015	0.001	0.486	1287.01857	3622.343413		0			
SBUS	TOT			3136.048719	118363.6635	3012.446682	0.05%	0.06%	0.01%				1163.044834	0		538.581699			
T6	GAS	AllMYr	AllSpeeds	14070.27768	665835.5048	281518.095	0.23%	0.31%	0.71%	0.0177	0.0326	6.1716	623.7689532	253.8443721		1406.832752			
T6	DSL	AllMYr	AllSpeeds	41010.42666	2409550.377	0	0.66%	1.12%	0.00%	0.0048	0.0051	1.5951	1139.899058	703.2857959		0			
T6	TOT			55080.70434	3075385.882	281518.095	0.89%	1.43%	0.71%				1028.154463	253.8443721		1406.832752			
T7	GAS	AllMYr	AllSpeeds	995.729819	118548.5912	19922.56153	0.02%	0.06%	0.05%	0.0177	0.0326	6.1716	623.7689709	0		2111.741149			
T7	DSL	AllMYr	AllSpeeds	36254.48065	5075722.607	0	0.59%	2.36%	0.00%	0.0048	0.0051	1.5951	1751.285196	8508.703072		0			
T7	TOT			37250.21047	5194271.198	19922.56153	0.60%	2.42%	0.05%				1725.55195	0		2111.741149			
UBUS	GAS	AllMYr	AllSpeeds	957.7035595	101936.6404	3830.81415	0.02%	0.05%	0.05%	0.0101	0.0157	3.4607	745.7872938	0		612.1867409			
UBUS	DSL	AllMYr	AllSpeeds	5545.24724	590228.4418	22180.98859	0.09%	0.27%	0.06%	0.0015	0.001	0.486	2628.337229	0		0			
UBUS	TOT			6502.950799	692165.0822	26011.80274	0.11%	0.32%	0.07%				2351.090051	0		90.15805837			
ALL	TOT			6182200.559	214758139.6	39687138.44													

South Coast AQMD

South Coast AQMD			% of Total												
Veh	Fuel	MdlYr	Speed	Pop	VMT	Trips	Pop	VMT	Trips	N2O	CH4	Combined N2O	CO2e_RUNEX(Pavley I+LCFS)	CO2_IDLEX(Pavley I+LCFS)	CO2_STREX(Pavley I+LCFS)
			(Miles/hr)	(Vehicles)	(Miles/day)	(Trips/day)				g/mi	g/mi	g/mi	(gms/mile)	(gms/vehicle/day)	(gms/vehicle/day)
LDA	GAS	AlIMYr	AllSpeeds	3535572.866	1.18E+08	2.23E+07	55.37%	53.07%	54.60%	0.0079	0.0147	2.7217	296.8847171	0	380.8466889
LDA	DSL	AlIMYr	AllSpeeds	12674.19132	403728.496	76065.87044	0.20%	0.18%	0.19%	0.001	0.0005	0.3105	253.9696764	0	0
LDA	TOT			3548247.057	118027012.4	22374982.02	55.57%	53.26%	54.78%				296.73792	0	379.5519645
LDT1	GAS	AlIMYr	AllSpeeds	385693.4081	1.29E+07	2333186.486	6.04%	5.82%	5.71%	0.0101	0.0157	3.4023	359.4856767	0	432.4107279
LDT1	DSL	AlIMYr	AllSpeeds	573.251066	18878.33086	3154.36268	0.01%	0.01%	0.01%	0.0015	0.001	0.472	266.8149845	0	0
LDT1	TOT			386266.6592	12907791.66	2336340.849	6.05%	5.82%	5.72%				359.3501408	0	431.8269175
LDT2	GAS	AlIMYr	AllSpeeds	1113421.344	3.95E+07	7000796.585	17.44%	17.81%	17.14%	0.0101	0.0157	3.4023	431.5240381	0	541.3689177
LDT2	DSL	AlIMYr	AllSpeeds	526.9663398	19083.51195	3195.94924	0.01%	0.01%	0.01%	0.0015	0.001	0.472	267.9938393	0	0
LDT2	TOT			1113948.31	39499516.46	7003992.534	17.44%	17.82%	17.15%				431.4450313	0	541.121889
LHD1	GAS	AlIMYr	AllSpeeds	153497.6355	7083568.764	2286885.933	2.40%	3.20%	5.60%	0.0101	0.0157	3.4023	605.3386926	110.5462326	826.1419858
LHD1	DSL	AlIMYr	AllSpeeds	33279.92995	1545031.193	418619.6446	0.52%	0.70%	1.02%	0.0015	0.001	0.472	497.0187453	134.6657416	0
LHD1	TOT			186777.5654	8628599.957	2705505.577	2.92%	3.89%	6.62%				585.9429971	114.2782154	698.3140236
LHD2	GAS	AlIMYr	AllSpeeds	17490.8145	800071.788	260587.0518	0.27%	0.36%	0.64%	0.0101	0.0157	3.4023	605.3386877	110.5462217	830.8661179
LHD2	DSL	AlIMYr	AllSpeeds	13008.5479	590122.6924	163631.184	0.20%	0.27%	0.40%	0.0015	0.001	0.472	498.1744553	134.6657424	0
LHD2	TOT			30499.3624	1390194.48	424218.2358	0.48%	0.63%	1.04%				559.8486169	119.8497013	510.3810582
MCY	GAS	AlIMYr	AllSpeeds	115954.745	816776.2051	231886.2912	1.82%	0.37%	0.57%	0.0079	0.0147	2.7217	149.5421423	0	84.74741917
MCY	TOT			115954.745	816776.2051	231886.2912	1.82%	0.37%	0.57%				149.5421423	0	84.74741917
MDV	GAS	AlIMYr	AllSpeeds	836448.081	2.77E+07	5184890.179	13.10%	12.50%	12.69%	0.0101	0.0157	3.4023	567.0910292	0	701.0423773
MDV	DSL	AlIMYr	AllSpeeds	928.435251	31786.31428	5527.71806	0.01%	0.01%	0.01%	0.0015	0.001	0.472	278.7164852	0	0
MDV	TOT			837376.5163	27737066.28	5190417.897	13.11%	12.52%	12.71%				566.7605558	0	700.2957775
MH	GAS	AlIMYr	AllSpeeds	28630.92706	327001.0435	2864.23777	0.45%	0.15%	0.01%	0.0101	0.0157	3.4023	594.5650406	0	3.589638801
MH	DSL	AlIMYr	AllSpeeds	3741.796553	41521.72396	374.1796713	0.06%	0.02%	0.00%	0.0015	0.001	0.472	1094.545141	0	0
MH	TOT			32372.72361	368522.7675	3238.417441	0.51%	0.17%	0.01%				650.8981563	0	3.174877613
OBUS	GAS	AlIMYr	AllSpeeds	4905.588827	190922.6164	224029.7125	0.08%	0.09%	0.55%	0.0101	0.0157	3.4023	594.5650229	387.0309003	1596.290467
OBUS	DSL	AlIMYr	AllSpeeds	4551.090179	358277.2808	0	0.07%	0.16%	0.00%	0.0015	0.001	0.472	1371.781144	3677.273154	0
OBUS	TOT			9456.679006	549199.8972	224029.7125	0.15%	0.25%	0.55%				1101.59148	387.0309003	1596.290467
SBUS	GAS	AlIMYr	AllSpeeds	767.429356	27522.81745	3069.717361	0.01%	0.01%	0.01%	0.0101	0.0157	3.4023	708.4162517	0	500.1645352
SBUS	DSL	AlIMYr	AllSpeeds	2541.134849	93104.23886	0	0.04%	0.04%	0.00%	0.0015	0.001	0.472	1233.386727	3567.576995	0
SBUS	TOT			3308.564205	120627.0563	3069.717361	0.05%	0.05%	0.01%				1113.607078	0	500.1645352
T6	GAS	AlIMYr	AllSpeeds	14893.23024	746613.0698	297983.7465	0.23%	0.34%	0.73%	0.0177	0.0326	6.0896	597.2523372	241.7565405	1097.318959
T6	DSL	AlIMYr	AllSpeeds	50685.95401	2967887.478	0	0.79%	1.34%	0.00%	0.0048	0.0051	1.5579	1077.947692	701.4494563	0
T6	TOT			65579.18425	3714500.548	297983.7465	1.03%	1.68%	0.73%				981.3281252	241.7565405	1097.318959
T7	GAS	AlIMYr	AllSpeeds	1041.634095	159664.4812	20841.01452	0.02%	0.07%	0.05%	0.0177	0.0326	6.0896	597.2523722	0	1100.938229
T7	DSL	AlIMYr	AllSpeeds	48345.20394	7003834.56	0	0.76%	3.16%	0.00%	0.0048	0.0051	1.5579	1664.283437	11489.6455	0
T7	TOT			49386.83804	7163499.042	20841.01452	0.77%	3.23%	0.05%				1640.500791	0	1100.938229
UBUS	GAS	AlIMYr	AllSpeeds	967.0506185	102931.5504	3868.202609	0.02%	0.05%	0.01%	0.0101	0.0157	3.4023	710.3800185	0	573.4169787
UBUS	DSL	AlIMYr	AllSpeeds	5599.368999	595989.2694	22397.47744	0.09%	0.27%	0.05%	0.0015	0.001	0.472	2431.187831	0	0
UBUS	TOT			6566.419617	698920.8199	26265.68005	0.10%	0.32%	0.06%				2177.760817	0	84.44833901
ALL	TOT			6385740.625	221622227.6	40842771.69									

South Coast AQMD

South Coast AQMD							% of Total								
Veh	Fuel	MdlYr	Speed	Pop	VMT	Trips	Pop	VMT	Trips	N2O	CH4	Combined N2O	CO2e_RUNEX(Pavley I+LCFS)	CO2_IDLEX(Pavley I+LCFS)	CO2_STREX(Pavley I+LCFS)
			(Miles/hr)	(Vehicles)	(Miles/day)	(Trips/day)				g/mi	g/mi	g/mi	(gms/mile)	(gms/vehicle/day)	(gms/vehicle/day)
LDA	GAS	AlIMYr	AllSpeeds	3584481.251	119063351.3	22604313.62	55.26%	52.83%	54.54%	0.0079	0.0147	2.7217	260.7863915	0	335.6217583
LDA	DSL	AlIMYr	AllSpeeds	12849.51645	405604.2468	78652.14439	0.20%	0.18%	0.19%	0.001	0.0005	0.3105	226.2471409	0	0
LDA	TOT			3597330.767	119468955.6	22682965.76	55.46%	53.01%	54.73%				260.6691287	0	334.4580053
LDT1	GAS	AlIMYr	AllSpeeds	389260.4246	12976290.54	2344831.01	6.00%	5.76%	5.66%	0.0101	0.0157	3.4023	322.2949771	0	387.8111245
LDT1	DSL	AlIMYr	AllSpeeds	578.55275	19518.17747	3317.336232	0.01%	0.01%	0.01%	0.0015	0.001	0.472	232.7280628	0	0
LDT1	TOT			389838.9773	12995808.72	2348148.347	6.01%	5.77%	5.67%				322.1604581	0	387.263246
LDT2	GAS	AlIMYr	AllSpeeds	1133031.152	40285777.55	7120726.724	17.47%	17.88%	17.18%	0.0101	0.0157	3.4023	387.5792875	0	488.4399284
LDT2	DSL	AlIMYr	AllSpeeds	536.2474014	18848.25215	3308.687775	0.01%	0.01%	0.01%	0.0015	0.001	0.472	244.1607543	0	0
LDT2	TOT			1133567.399	40304625.8	7124035.411	17.48%	17.88%	17.19%				387.5122185	0	488.2130773
LHD1	GAS	AlIMYr	AllSpeeds	157817.0324	7251416.437	2351238.555	2.43%	3.22%	5.67%	0.0101	0.0157	3.4023	567.8371806	104.7280105	787.2531435
LHD1	DSL	AlIMYr	AllSpeeds	34216.42081	1578958.567	430399.4917	0.53%	0.70%	1.04%	0.0015	0.001	0.472	469.7906731	127.5780696	0
LHD1	TOT			192033.4532	8830375.005	2781638.047	2.96%	3.92%	6.71%				550.3054933	108.2635725	665.4424164
LHD2	GAS	AlIMYr	AllSpeeds	17958.24285	822052.9946	267551.0587	0.28%	0.36%	0.65%	0.0101	0.0157	3.4023	567.8371587	104.728006	790.4966535
LHD2	DSL	AlIMYr	AllSpeeds	13356.1929	602174.2853	168004.1047	0.21%	0.27%	0.41%	0.0015	0.001	0.472	470.5791613	127.5780558	0
LHD2	TOT			31314.43575	1424227.28	435555.1634	0.48%	0.63%	1.05%				526.7157268	113.5418199	485.5830773
MCY	GAS	AlIMYr	AllSpeeds	118081.4156	832261.5645	236139.2261	1.82%	0.37%	0.57%	0.0079	0.0147	2.7217	144.2305003	0	77.23617551
MCY	TOT			118081.4156	832261.5645	236139.2261	1.82%	0.37%	0.57%				144.2305003	0	77.23617551
MDV	GAS	AlIMYr	AllSpeeds	851129.1135	28104760.46	5242485.947	13.12%	12.47%	12.65%	0.0101	0.0157	3.4023	514.5296701	0	638.1810302
MDV	DSL	AlIMYr	AllSpeeds	944.730721	31538.7371	5676.563241	0.01%	0.01%	0.01%	0.0015	0.001	0.472	254.5721048	0	0
MDV	TOT			852073.8442	28136299.2	5248162.51	13.14%	12.48%	12.66%				514.2382767	0	637.4907553
MH	GAS	AlIMYr	AllSpeeds	29430.184	337368.4436	2944.195534	0.45%	0.15%	0.01%	0.0101	0.0157	3.4023	558.05408	0	3.292928311
MH	DSL	AlIMYr	AllSpeeds	3846.25244	42466.93696	384.625217	0.06%	0.02%	0.00%	0.0015	0.001	0.472	1033.846082	0	0
MH	TOT			33276.43644	379835.3805	3328.820751	0.51%	0.17%	0.01%				611.2493062	0	2.912450249
OBUS	GAS	AlIMYr	AllSpeeds	5006.295021	187959.58	228628.8036	0.08%	0.08%	0.55%	0.0101	0.0157	3.4023	558.054069	366.6608361	1496.761708
OBUS	DSL	AlIMYr	AllSpeeds	4704.942575	377417.9254	0	0.07%	0.17%	0.00%	0.0015	0.001	0.472	1285.264915	3515.708575	0
OBUS	TOT			9711.237596	565377.5054	228628.8036	0.15%	0.25%	0.55%				1043.503887	366.6608361	1496.761708
SBUS	GAS	AlIMYr	AllSpeeds	784.787212	28145.33632	3139.149064	0.01%	0.01%	0.01%	0.0101	0.0157	3.4023	671.3102698	0	462.6157398
SBUS	DSL	AlIMYr	AllSpeeds	2531.408059	91547.98219	0	0.04%	0.04%	0.00%	0.0015	0.001	0.472	1162.561374	3477.557995	0
SBUS	TOT			3316.195271	119693.3185	3139.149064	0.05%	0.05%	0.01%				1047.045924	0	462.6157398
T6	GAS	AlIMYr	AllSpeeds	15266.24707	763739.2132	305447.0678	0.24%	0.34%	0.74%	0.0177	0.0326	6.0896	560.7413593	229.0325162	991.9451153
T6	DSL	AlIMYr	AllSpeeds	51641.23833	3079422.158	0	0.80%	1.37%	0.00%	0.0048	0.0051	1.5579	1012.860872	670.1834347	0
T6	TOT			66907.4854	3843161.371	305447.0678	1.03%	1.71%	0.74%				923.0126021	229.0325162	991.9451153
T7	GAS	AlIMYr	AllSpeeds	1059.441832	149685.067	21197.313	0.02%	0.07%	0.05%	0.0177	0.0326	6.0896	560.7413829	0	998.0870579
T7	DSL	AlIMYr	AllSpeeds	51178.95038	7613323.366	0	0.79%	3.38%	0.00%	0.0048	0.0051	1.5579	1564.872656	11719.99807	0
T7	TOT			52238.39221	7763008.433	21197.313	0.81%	3.44%	0.05%				1545.51116	0	998.0870579
UBUS	GAS	AlIMYr	AllSpeeds	981.7070315	104491.5327	3926.828081	0.02%	0.05%	0.01%	0.0101	0.0157	3.4023	673.170659	0	536.5183486
UBUS	DSL	AlIMYr	AllSpeeds	5684.23192	605021.758	22736.92735	0.09%	0.27%	0.05%	0.0015	0.001	0.472	2252.660394	0	0
UBUS	TOT			6665.938951	709513.2907	26663.75543	0.10%	0.31%	0.06%				2020.045578	0	79.01420047
ALL	TOT			6486355.978	225373142.4	41445049.37									

Mitigation Measures / Rulemaking Reductions

Vehicle Class	Emission Reduction Percentages					Total
	Misc 1	Misc 2	Misc 3	Misc 4	Misc 5	
Light Duty Auto	2.5%	0.0%	0.0%	0.0%	0.0%	2.5%
Light Duty Truck 1	2.5%	0.0%	0.0%	0.0%	0.0%	2.5%
Light Duty Truck 2	2.5%	0.0%	0.0%	0.0%	0.0%	2.5%
Medium Duty Truck	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Light Heavy Duty Truck 1	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Light Heavy Duty Truck 2	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium Heavy Duty Truck	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Heavy-Heavy Duty Truck	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Bus	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
School Bus	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Urban Bus	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Motor Home	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Motorcycle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Reduction Sources:

Misc 1: Pavley II light-duty vehicle standards (4.1 MMTCO₂e or 2.49%).

Misc 2:

Misc 3:

Misc 4

Misc 5

Emission Factor for Existing Year

EMFAC Summary - Totals by Vehicle Class[a]

Vehicle Class	Fleet Mix		BAU Scenario		
	VMT	Trips	Weighted CO ₂ e		
			Run (g/mi)	Idle (g/trip)	Start (g/trip)
Light Duty Auto	53.37%	54.59%	194	0	248
Light Duty Truck 1	5.94%	5.86%	25	0	30
Light Duty Truck 2	17.94%	17.27%	90	0	107
Medium Duty Truck	13.22%	12.90%	84	0	101
Light Heavy Duty Truck 1	3.89%	6.37%	24	8	46
Light Heavy Duty Truck 2	0.64%	1.02%	4	1	6
Medium Heavy Duty Truck	1.43%	0.71%	15	2	10
Heavy-Heavy Duty Truck	2.42%	0.05%	42	0	1
Other Bus	0.24%	0.58%	3	2	10
School Bus	0.06%	0.01%	1	0	0
Urban Bus	0.32%	0.07%	8	0	0
Motor Home	0.16%	0.01%	1	0	0
Motorcycle	0.37%	0.57%	1	0	1
All	100%	100%	489	13	559

[a] CO₂ emission factors gathered from EMFAC2011, Los Angeles County, Year 2011. CH₄ and N₂O emission factors gathered from California Climate Action Registry General Reporting Protocol v3.1 (January 2009).

Mitigation Measures / Rulemaking Reductions

Vehicle Class	Emission Reduction Percentages					Total
	Misc 1	Misc 2	Misc 3	Misc 4	Misc 5	
Light Duty Auto	2.5%	0.0%	0.0%	0.0%	0.0%	2.5%
Light Duty Truck 1	2.5%	0.0%	0.0%	0.0%	0.0%	2.5%
Light Duty Truck 2	2.5%	0.0%	0.0%	0.0%	0.0%	2.5%
Medium Duty Truck	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Light Heavy Duty Truck 1	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Light Heavy Duty Truck 2	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium Heavy Duty Truck	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Heavy-Heavy Duty Truck	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Bus	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
School Bus	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Urban Bus	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Motor Home	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Motorcycle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Reduction Sources:

Misc 1: Pavley II light-duty vehicle standards (4.1 MMTCO₂e or 2.49%) not fully implemented in 2017.

Misc 2:

Misc 3:

Misc 4

Misc 5

Emission Factor for Buildout Year

EMFAC Summary - Totals by Vehicle Class[a]

BAU Scenario

Vehicle Class	Fleet Mix		Weighted CO ₂ e		
	VMT	Trips	Run (g/mi)	Idle (g/trip)	Start (g/trip)
Light Duty Auto	53.26%	54.78%	158	0	208
Light Duty Truck 1	5.82%	5.72%	21	0	25
Light Duty Truck 2	17.82%	17.15%	77	0	93
Medium Duty Truck	12.52%	12.71%	71	0	89
Light Heavy Duty Truck 1	3.89%	6.62%	23	8	46
Light Heavy Duty Truck 2	0.63%	1.04%	4	1	5
Medium Heavy Duty Truck	1.68%	0.73%	16	2	8
Heavy-Heavy Duty Truck	3.23%	0.05%	53	0	1
Other Bus	0.25%	0.55%	3	2	9
School Bus	0.05%	0.01%	1	0	0
Urban Bus	0.32%	0.06%	7	0	0
Motor Home	0.17%	0.01%	1	0	0
Motorcycle	0.37%	0.57%	1	0	0
All	100%	100%	434	13	484

EMFAC Summary - Totals by Vehicle Class

Mitigated Scenario

Vehicle Class	Fleet Mix		Weighted CO ₂ e		
	VMT	Trips	Run (g/mi)	Idle (g/trip)	Start (g/trip)
Light Duty Auto	53.26%	54.78%	154	0	203
Light Duty Truck 1	5.82%	5.72%	20	0	24
Light Duty Truck 2	17.82%	17.15%	75	0	90
Medium Duty Truck	12.52%	12.71%	71	0	89
Light Heavy Duty Truck 1	3.89%	6.62%	23	8	46
Light Heavy Duty Truck 2	0.63%	1.04%	4	1	5
Medium Heavy Duty Truck	1.68%	0.73%	16	2	8
Heavy-Heavy Duty Truck	3.23%	0.05%	53	0	1
Other Bus	0.25%	0.55%	3	2	9
School Bus	0.05%	0.01%	1	0	0
Urban Bus	0.32%	0.06%	7	0	0
Motor Home	0.17%	0.01%	1	0	0
Motorcycle	0.37%	0.57%	1	0	0
All	100%	100%	428	13	476

[a] CO₂ emission factors gathered from EMFAC2011, Los Angeles County, Year 2017. CH₄ and N₂O emission factors gathered from California Climate Action Registry General Reporting Protocol v3.1 (January 2009).

Mitigation Measures / Rulemaking Reductions

Vehicle Class	Emission Reduction Percentages					Total
	Misc 1	Misc 2	Misc 3	Misc 4	Misc 5	
Light Duty Auto	2.5%	0.0%	0.0%	0.0%	0.0%	2.5%
Light Duty Truck 1	2.5%	0.0%	0.0%	0.0%	0.0%	2.5%
Light Duty Truck 2	2.5%	0.0%	0.0%	0.0%	0.0%	2.5%
Medium Duty Truck	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Light Heavy Duty Truck 1	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Light Heavy Duty Truck 2	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Medium Heavy Duty Truck	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Heavy-Heavy Duty Truck	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Bus	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
School Bus	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Urban Bus	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Motor Home	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Motorcycle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Reduction Sources:

Misc 1: Pavley II light-duty vehicle standards (4.1 MMTCO₂e or 2.49%).

Misc 2:

Misc 3:

Misc 4

Misc 5

Emission Factor for AB32 Year

EMFAC Summary - Totals by Vehicle Class[a]

BAU Scenario

Vehicle Class	Fleet Mix		Weighted CO ₂ e		
	VMT	Trips	Run (g/mi)	Idle (g/trip)	Start (g/trip)
Light Duty Auto	53.01%	54.73%	138	0	183
Light Duty Truck 1	5.77%	5.67%	19	0	22
Light Duty Truck 2	17.88%	17.19%	69	0	84
Medium Duty Truck	12.48%	12.66%	64	0	81
Light Heavy Duty Truck 1	3.92%	6.71%	22	7	45
Light Heavy Duty Truck 2	0.63%	1.05%	3	1	5
Medium Heavy Duty Truck	1.71%	0.74%	16	2	7
Heavy-Heavy Duty Truck	3.44%	0.05%	53	0	1
Other Bus	0.25%	0.55%	3	2	8
School Bus	0.05%	0.01%	1	0	0
Urban Bus	0.31%	0.06%	6	0	0
Motor Home	0.17%	0.01%	1	0	0
Motorcycle	0.37%	0.57%	1	0	0
All	100%	100%	395	12	436

EMFAC Summary - Totals by Vehicle Class

Mitigated Scenario

Vehicle Class	Fleet Mix		Weighted CO ₂ e		
	VMT	Trips	Run (g/mi)	Idle (g/trip)	Start (g/trip)
Light Duty Auto	53.01%	54.73%	135	0	178
Light Duty Truck 1	5.77%	5.67%	18	0	21
Light Duty Truck 2	17.88%	17.19%	68	0	82
Medium Duty Truck	12.48%	12.66%	64	0	81
Light Heavy Duty Truck 1	3.92%	6.71%	22	7	45
Light Heavy Duty Truck 2	0.63%	1.05%	3	1	5
Medium Heavy Duty Truck	1.71%	0.74%	16	2	7
Heavy-Heavy Duty Truck	3.44%	0.05%	53	0	1
Other Bus	0.25%	0.55%	3	2	8
School Bus	0.05%	0.01%	1	0	0
Urban Bus	0.31%	0.06%	6	0	0
Motor Home	0.17%	0.01%	1	0	0
Motorcycle	0.37%	0.57%	1	0	0
All	100%	100%	390	12	429

[a] CO₂ emission factors gathered from EMFAC2011, Los Angeles County, Year 2020. CH₄ and N₂O emission factors gathered from California Climate Action Registry General Reporting Protocol v3.1 (January 2009).

Convention and Event Center
Spectator Annual Trips and VMT (BAU)
March 2012

Event Type	Event Parameters				Annual Person Trips										Annual Trips & VMT		
	Event Attendance	Total Person	Days Per Event	Events Per Year	Person Trips Per Year	% by Transit	% by Charter	% by Auto	Person Trips by Transit	Person Trips by Walk	Person Trips by Auto	Check Total Person Trips	Persons Per Auto	Auto Trips/Event Day	Annual Auto Trips	Ave. Trip Length (miles)	Annual VMT
	Per Day	Trips/Day															
EVENT CENTER																	
Spectator Events																	
Level 1	72,230	144,460	1.00	37	5,345,020	5.0%	10.0%	85.0%	267,251	534,502	4,543,267	5,345,020	3.10	39,610	1,465,570	30.00	43,967,100
Level 2	55,000	110,000	2.00	10	2,200,000	5.0%	10.0%	85.0%	110,000	220,000	1,870,000	2,200,000	3.10	30,161	603,226	30.00	18,096,774
Level 3	35,000	70,000	2.00	5	700,000	5.0%	10.0%	85.0%	35,000	70,000	595,000	700,000	3.10	19,194	191,935	30.00	5,758,065
Total				52	8,245,020				412,251	824,502	7,008,267	8,245,020		88,965	2,260,731		67,821,939
Exhibition Events																	
Level 1	0	0															
Level 2	50,000	100,000	3.00	2	600,000	5.0%	10.0%	85.0%	30,000	60,000	510,000	600,000	3.10	27,419	164,516	12.00	1,974,194
Level 3	40,000	80,000	3.00	12	2,880,000	5.0%	10.0%	85.0%	144,000	288,000	2,448,000	2,880,000	3.10	21,935	789,677	12.00	9,476,129
Total				14	3,480,000				174,000	348,000	2,958,000	3,480,000		49,355	954,194		11,450,323
Meeting Rooms																	
Level 1	6,946	13,892	1.00	15	208,380	0.0%	0.0%	100.0%	0	0	208,380	208,380	1.25	11,114	166,704	15.00	2,500,560
Level 2	2,720	5,440	1.00	30	163,200	0.0%	0.0%	100.0%	0	0	163,200	163,200	1.25	4,352	130,560	10.00	1,305,600
Level 3	1,530	3,060	1.00	30	91,800	0.0%	0.0%	100.0%	0	0	91,800	91,800	1.25	2,448	73,440	10.00	734,400
Total				75	463,380				0	0	463,380	463,380		17,914	370,704		4,540,560
Total - Event Center				141	12,188,400				586,251	1,172,502	10,429,647	12,188,400		156,233	3,585,629		83,812,821
CONVENTION CENTER																	
Conventions	10,643	21,286	4.08	38	3,300,181	60.0%	20.0%	20.0%	1,980,109	660,036	660,036	3,300,181	1.20	3,548	550,030	8.00	4,400,242
Trade Shows	2,992	5,984	2.60	47	731,245	40.0%	20.0%	40.0%	292,498	146,249	292,498	731,245	1.50	1,596	194,999	12.00	2,339,983
Consumer Shows	5,653	11,306	2.62	53	1,569,951	0.0%	0.0%	100.0%	0	0	1,569,951	1,569,951	2.00	5,653	784,976	15.00	11,774,634
Meeting Rooms	224	448	1.77	207	164,143	0.0%	0.0%	100.0%	0	0	164,143	164,143	1.25	358	131,314	10.00	1,313,142
Banquets	943	1,886	1.52	27	77,401	0.0%	0.0%	100.0%	0	0	77,401	77,401	2.50	754	30,961	12.00	371,527
Assemblies	4,575	9,150	1.30	84	999,180	0.0%	0.0%	100.0%	0	0	999,180	999,180	3.00	3,050	333,060	15.00	4,995,900
Total - Convention Center				456	6,842,102				2,272,607	806,285	3,763,210	6,842,102		14,959	2,025,339		25,195,428
GRAND TOTAL - EVENT CENTER AND CONVENTION CENTER					19,030,502				2,858,858	1,978,787	14,192,857	19,030,502		171,192	5,610,968		109,008,249

Convention and Event Center
Spectator Annual Trips and VMT (Project)
March 2012

Event Parameters					Annual Person Trips								Annual Trips & VMT				
Event Type	Event Attendance Per Day	Total Person Trips/Day	Days Per Event	Events Per Year	Person Trips Per Year	% by Transit	% by Walk	% by Auto	Person Trips by Transit	Person Trips by Walk	Person Trips by Auto	Check Total Person Trips	Persons Per Auto	Auto Trips/ Event Day	Annual Auto Trips	Ave. Trip Length (miles)	Annual VMT
CONVENTION CENTER (Existing/No Project)																	
Conventions	10,643	21,286	4.08	24	2,084,325	60.0%	20.0%	20.0%	1,250,595	416,865	416,865	2,084,325	1.20	3,548	347,388	8.00	2,779,100
Trade Shows	2,992	5,984	2.60	27	420,077	40.0%	20.0%	40.0%	168,031	84,015	168,031	420,077	1.50	1,596	112,020	12.00	1,344,246
Consumer Shows	5,653	11,306	2.62	48	1,421,843	0.0%	0.0%	100.0%	0	0	1,421,843	1,421,843	2.00	5,653	710,921	15.00	10,663,819
Meeting Rooms	224	448	1.77	189	149,869	0.0%	0.0%	100.0%	0	0	149,869	149,869	1.25	358	119,896	10.00	1,198,956
Banquets	943	1,886	1.52	9	25,800	0.0%	0.0%	100.0%	0	0	25,800	25,800	2.50	754	10,320	12.00	123,842
Assemblies	4,575	9,150	1.30	66	785,070	0.0%	0.0%	100.0%	0	0	785,070	785,070	3.00	3,050	261,690	15.00	3,925,350
Total - Convention Center				363	4,886,984				1,418,626	500,880	2,967,478	4,886,984		14,959	1,562,235		20,035,313
Future with Project EVENT CENTER																	
Spectator Events																	
Level 1	72,230	144,460	1.00	37	5,345,020	16.0%	4.2%	79.8%	855,203	224,491	4,265,326	5,345,020	2.94	39,211	1,450,791	26.00	37,720,570
Level 2	55,000	110,000	2.00	10	2,200,000	12.0%	3.1%	84.9%	264,000	68,200	1,867,800	2,200,000	2.94	31,765	635,306	20.00	12,706,122
Level 3	35,000	70,000	2.00	5	700,000	8.0%	2.1%	89.9%	56,000	14,700	629,300	700,000	2.94	21,405	214,048	15.00	3,210,714
Total				52	8,245,020				1,175,203	307,391	6,762,426	8,245,020		92,381	2,300,145		53,637,406
Exhibition Events																	
Level 1	0	0															
Level 2	50,000	100,000	3.00	2	600,000	60.0%	20.0%	20.0%	360,000	120,000	120,000	600,000	1.20	16,667	100,000	12.00	1,200,000
Level 3	40,000	80,000	3.00	12	2,880,000	60.0%	20.0%	20.0%	1,728,000	576,000	576,000	2,880,000	1.20	13,333	480,000	12.00	5,760,000
Total				14	3,480,000				2,088,000	696,000	696,000	3,480,000		30,000	580,000		6,960,000
Meeting Rooms																	
Level 1	6,946	13,892	1.00	15	208,380	0.0%	0.0%	100.0%	0	0	208,380	208,380	1.25	11,114	166,704	15.00	2,500,560
Level 2	2,720	5,440	1.00	30	163,200	0.0%	0.0%	100.0%	0	0	163,200	163,200	1.25	4,352	130,560	10.00	1,305,600
Level 3	1,530	3,060	1.00	30	91,800	0.0%	0.0%	100.0%	0	0	91,800	91,800	1.25	2,448	73,440	10.00	734,400
Total				75	463,380				0	0	463,380	463,380		17,914	370,704		4,540,560
Total - Event Center				141	12,188,400				3,263,203	1,003,391	7,921,806	12,188,400		140,294	3,250,849		65,137,966
CONVENTION CENTER																	
Conventions	10,643	21,286	4.08	38	3,300,181	60.0%	20.0%	20.0%	1,980,109	660,036	660,036	3,300,181	1.20	3,548	550,030	8.00	4,400,242
Trade Shows	2,992	5,984	2.60	47	731,245	40.0%	20.0%	40.0%	292,498	146,249	292,498	731,245	1.50	1,596	194,999	12.00	2,339,983
Consumer Shows	5,653	11,306	2.62	53	1,569,951	0.0%	0.0%	100.0%	0	0	1,569,951	1,569,951	2.00	5,653	784,976	15.00	11,774,634
Meeting Rooms	224	448	1.77	207	164,143	0.0%	0.0%	100.0%	0	0	164,143	164,143	1.25	358	131,314	10.00	1,313,142
Banquets	943	1,886	1.52	27	77,401	0.0%	0.0%	100.0%	0	0	77,401	77,401	2.50	754	30,961	12.00	371,527
Assemblies	4,575	9,150	1.30	84	999,180	0.0%	0.0%	100.0%	0	0	999,180	999,180	3.00	3,050	333,060	15.00	4,995,900
Total - Convention Center				456	6,842,102				2,272,607	806,285	3,763,210	6,842,102		14,959	2,025,339		25,195,428
GRAND TOTAL - EVENT CENTER AND CONVENTION CENTER					19,030,502				5,535,810	1,809,676	11,685,015	19,030,502		155,253	5,276,188		90,333,394

Convention and Event Center
Truck Annual Trips and VMT
March 2012

		Event Parameters						Annual Trips				Trip Lengths		Annual VMT				
Facility	Notes	No Project Truck Trips per Average Event Day	Project Truck Trips per Average Event Day	No Project Truck Trips per Average Non-Event Day	Project Truck Trips per Average Non- Event Day	Number of Non-Event Days		Annual No Project Truck Trips per Average Event Day	Annual Project Truck Trips per Average Event Day	Annual No Project Truck Trips per Average Non-Event Day	Annual Project Truck Trips per Average Non-Event Day	Average Trip Length - Event Day (miles) ⁴	Average Trip Length - Non- Event Days (miles) ⁴	Annual No Project Truck VMT - Event Day	Annual Project Truck VMT - Event Day	Annual No Project Truck VMT - Non- Event Day	Annual Truck VMT - Non- Event Day	Annual added Truck VMT - All Days
Event Center	1,2	0	15	67	0	6	298	0	2,010	0	3,576	15	15	0	30,150	0	53,640	83,790
Convention Center	3	36	60	365	NA	NA	NA	26,280	43,800	NA	NA	15	15	394,200	657,000	0	0	262,800
Totals								26,280	45,810	0	3,576			394,200	687,150	0	53,640	346,590

- Notes
1. Event Center truck data for spectator events only. Exhibition events assumed to be included in Convention Center numbers. Truck trips assumed to be one-way.
 2. Event Center no. of non-event days obtained by subtraction.
 3. Convention Center truck data for average day. Truck trips assumed to be one-way.
 4. Trip lengths conservatively assumed to be 10% more than CalEEMod default value.

Convention and Event Center
Employee Annual Trips and VMT (BAU)
March 2012

Event Type	Event Parameters				Annual Person Trips										Annual Trips & VMT		
	Event Employees	Total Person	Days Per Event	Events Per Year	Person Trips Per Year	% by Transit	% by Walk	% by Auto	Person Trips by Transit	Person Trips by Walk	Person Trips by Auto	Check Total Person Trips	Persons Per Auto	Auto Trips/Event Day	Annual Auto Trips	Ave. Trip Length (miles)	Annual VMT
	Per Day	Trips/Day															
EVENT CENTER																	
<i>Spectator Events</i>																	
Level 1	3,612	7,224	1.00	37	267,288	5.0%	0.0%	95.0%	13,364	0	253,924	267,288	2.00	3,431	126,962	13.30	1,688,592
Level 2	2,750	5,500	2.00	10	110,000	5.0%	0.0%	95.0%	5,500	0	104,500	110,000	2.00	2,613	52,250	13.30	694,925
Level 3	1,750	3,500	2.00	5	35,000	5.0%	0.0%	95.0%	1,750	0	33,250	35,000	2.00	1,663	16,625	13.30	221,113
Total				52	412,288				20,614	0	391,674	412,288		7,706	195,837		2,604,629
<i>Exhibition Events</i>																	
Level 1	0	0															
Level 2	1,650	3,300	3.00	2	19,800	5.0%	0.0%	95.0%	990	0	18,810	19,800	2.00	1,568	9,405	13.30	125,087
Level 3	1,320	2,640	3.00	12	95,040	5.0%	0.0%	95.0%	4,752	0	90,288	95,040	2.00	1,254	45,144	13.30	600,415
Total				14	114,840				5,742	0	109,098	114,840		2,822	54,549		725,502
<i>Meeting Rooms</i>																	
Level 1	144	288	1.00	15	4,320	5.0%	0.0%	95.0%	216	0	4,104	4,320	2.00	137	2,052	13.30	27,292
Level 2	90	180	1.00	30	5,400	5.0%	0.0%	95.0%	270	0	5,130	5,400	2.00	86	2,565	13.30	34,115
Level 3	50	100	1.00	30	3,000	5.0%	0.0%	95.0%	150	0	2,850	3,000	2.00	48	1,425	13.30	18,953
Total				75	12,720				636	0	12,084	12,720		270	6,042		80,359
Total - Event Center				141	539,848				26,992	0	512,856	539,848		10,798	256,428		3,410,490
CONVENTION CENTER																	
Conventions	1,368	2,736	4.08	38	424,189	25.0%	5.0%	70.0%	106,047	21,209	296,933	424,189	1.50	1,277	197,955	13.30	2,632,802
Trade Shows	456	912	2.60	47	111,446	25.0%	5.0%	70.0%	27,862	5,572	78,012	111,446	1.50	426	52,008	13.30	691,711
Consumer Shows	494	988	2.62	53	137,194	25.0%	5.0%	70.0%	34,298	6,860	96,036	137,194	1.50	461	64,024	13.30	851,515
Meeting Rooms	8	16	1.77	207	5,862	25.0%	5.0%	70.0%	1,466	293	4,104	5,862	1.50	7	2,736	13.30	36,385
Banquets	49	98	1.52	27	4,022	25.0%	5.0%	70.0%	1,005	201	2,815	4,022	1.50	46	1,877	13.30	24,963
Assemblies	220	440	1.30	84	48,048	25.0%	5.0%	70.0%	12,012	2,402	33,634	48,048	1.50	205	22,422	13.30	298,218
Total - Convention Center				456	730,762				182,690	36,538	511,533	730,762		2,422	341,022		4,535,594
GRAND TOTAL - EVENT CENTER AND CONVENTION CENTER					1,270,610				209,683	36,538	1,024,389	1,270,610		13,220	597,450		7,946,084

Convention and Event Center

Employee Annual Trips and VMT (Project)

March 2012

Event Type	Event Parameters				Annual Person Trips								Persons		Annual Trips & VMT		
	Event Employees Per Day	Total Person Trips/Day	Days Per Event	Events Per Year	Person Trips Per Year	% by Transit	% by Walk	% by Auto	Person Trips by Transit	Person Trips by Walk	Person Trips by Auto	Check Total Person Trips	Persons Per Auto	Auto Trips/ Event Day	Annual Auto Trips	Ave. Trip Length (miles)	Annual VMT
CONVENTION CENTER (Existing/No Project)																	
Conventions	1,368	2,736	4.08	24	267,909	25.0%	5.0%	70.0%	66,977	13,395	187,536	267,909	1.50	1,277	125,024	13.30	1,662,823
Trade Shows	456	912	2.60	27	64,022	25.0%	5.0%	70.0%	16,006	3,201	44,816	64,022	1.50	426	29,877	13.30	397,366
Consumer Shows	494	988	2.62	48	124,251	25.0%	5.0%	70.0%	31,063	6,213	86,976	124,251	1.50	461	57,984	13.30	771,184
Meeting Rooms	8	16	1.77	189	5,352	25.0%	5.0%	70.0%	1,338	268	3,747	5,352	1.50	7	2,498	13.30	33,221
Banquets	49	98	1.52	9	1,341	25.0%	5.0%	70.0%	335	67	938	1,341	1.50	46	626	13.30	8,321
Assemblies	220	440	1.30	66	37,752	25.0%	5.0%	70.0%	9,438	1,888	26,426	37,752	1.50	205	17,618	13.30	234,314
Total - Convention Center				363	500,628				125,157	25,031	350,439	500,628		2,422	233,626		3,107,228
Future with Project																	
EVENT CENTER																	
Spectator Events																	
Level 1	3,612	7,224	1.00	37	267,288	25.0%	5.0%	70.0%	66,822	13,364	187,102	267,288	1.50	3,371	124,734	13.30	1,658,968
Level 2	2,750	5,500	2.00	10	110,000	25.0%	5.0%	70.0%	27,500	5,500	77,000	110,000	1.50	2,567	51,333	13.30	682,733
Level 3	1,750	3,500	2.00	5	35,000	25.0%	5.0%	70.0%	8,750	1,750	24,500	35,000	1.50	1,633	16,333	13.30	217,233
Total				52	412,288				103,072	20,614	288,602	412,288		7,571	192,401		2,558,934
Exhibition Events																	
Level 1	0	0															
Level 2	1,650	3,300	3.00	2	19,800	25.0%	5.0%	70.0%	4,950	990	13,860	19,800	1.50	1,540	9,240	13.30	122,892
Level 3	1,320	2,640	3.00	12	95,040	25.0%	5.0%	70.0%	23,760	4,752	66,528	95,040	1.50	1,232	44,352	13.30	589,882
Total				14	114,840				28,710	5,742	80,388	114,840		2,772	53,592		712,774
Meeting Rooms																	
Level 1	144	288	1.00	15	4,320	25.0%	5.0%	70.0%	1,080	216	3,024	4,320	1.50	134	2,016	13.30	26,813
Level 2	90	180	1.00	30	5,400	25.0%	5.0%	70.0%	1,350	270	3,780	5,400	1.50	84	2,520	13.30	33,516
Level 3	50	100	1.00	30	3,000	25.0%	5.0%	70.0%	750	150	2,100	3,000	1.50	47	1,400	13.30	18,620
Total				75	12,720				3,180	636	8,904	12,720		265	5,936		78,949
Total - Event Center				141	539,848				134,962	26,992	377,894	539,848		10,608	251,929		3,350,657
CONVENTION CENTER																	
Conventions	1,368	2,736	4.08	38	424,189	25.0%	5.0%	70.0%	106,047	21,209	296,933	424,189	1.50	1,277	197,955	13.30	2,632,802
Trade Shows	456	912	2.60	47	111,446	25.0%	5.0%	70.0%	27,862	5,572	78,012	111,446	1.50	426	52,008	13.30	691,711
Consumer Shows	494	988	2.62	53	137,194	25.0%	5.0%	70.0%	34,298	6,860	96,036	137,194	1.50	461	64,024	13.30	851,515
Meeting Rooms	8	16	1.77	207	5,862	25.0%	5.0%	70.0%	1,466	293	4,104	5,862	1.50	7	2,736	13.30	36,385
Banquets	49	98	1.52	27	4,022	25.0%	5.0%	70.0%	1,005	201	2,815	4,022	1.50	46	1,877	13.30	24,963
Assemblies	220	440	1.30	84	48,048	25.0%	5.0%	70.0%	12,012	2,402	33,634	48,048	1.50	205	22,422	13.30	298,218
Total - Convention Center				456	730,762				182,690	36,538	511,533	730,762		2,422	341,022		4,535,594
GRAND TOTAL - EVENT CENTER AND CONVENTION CENTER					1,270,610				317,652	63,530	889,427	1,270,610		13,030	592,951		7,886,251

Convention and Event Center

Transit Emissions

March 2012

	Annual Vehicle Miles Traveled		Total Energy Used (BTU)	Total Energy Used by Type		Emission Factors (g/unit energy)		Project Increment Emissions (mton/year)
	Project Only	BTU/VMT	Project Only	Energy Type	Project Only	EF Unit	CO ₂ e	CO ₂ e
Transit Bus	13690	39,147	5.36E+08	cu ft CNG	5.95E+05	g/mi	2552.25	34.94
Commuter Rail	0	91,994	0.00E+00	gal of Diesel	0.00E+00	g/gal	484.81	-
Urban Rail	37902.8	61,654	2.34E+09	MWh	6.85E+02	g/MWh	727.27	0.50
								35.44

Note: Metro buses currently run on Compressed Natural Gas (CNG), however emission factors for CNG buses are currently unavailable. As such, emission factors from EMFAC2011 vehicle category Diesel Urban Bus were used for "Transit Bus". It has been shown that emissions from CNG