

APPENDIX P
Alternatives Documentation

P-1 Alternatives – Air Quality and Greenhouse Gas Worksheets

**APPENDIX P - Alternative 2
Air Quality and Greenhouse Gas
Worksheets**

670 Mesquit Project - Alternative 2

1. Air Quality Worksheets

Air Quality Calculation Worksheets and Model Outputs

Operations

- 1. Emissions Summaries and Miscellaneous Calculations**
- 2. Emissions Modeling Output**

**670 Mesquit
Air Quality and Greenhouse Gas Assessment**

Regional Operational Emissions Alternative 2

Maximum Unmitigated Regional Operational Emissions (pounds per day) ^a

Source	VOC	NO_x	CO	SO₂	PM₁₀	PM_{2.5}
Area (Consumer Products, Landscaping)	44	<1	40	<1	<1	<1
Energy (Natural Gas)	1	9	7	<1	<1	<1
Motor Vehicles	35	58	323	<1	100	27
Area (Charbroiler)	<1	-	-	-	<1	<1
Cooling Tower	-	-	-	-	<1	<1
Stationary (Emergency Generators)	2	37	21	<1	<1	<1
Heliport	<1	4	3	-	-	-
Total Project On-Site and Off-Site Emissions	82	110	395	1	102	29
SCAQMD Numeric Indicators	55.0	55.0	550.0	150.0	150.0	55.0
Over/(Under)	27.5	55.0	-155.2	-149.0	-48.2	-26.3
Exceeds Thresholds?	Yes	Yes	No	No	No	No

Net Regional Operations

Maximum Unmitigated Regional Operational Emissions (pounds per day) ^a

Source	VOC	NO_x	CO	SO₂	PM₁₀	PM_{2.5}
Area (Consumer Products, Landscaping)	40	<1	40	<1	<1	<1
Energy (Natural Gas)	1	9	7	<1	<1	<1
Motor Vehicles	26	-52	209	0.84	93.9	23.6
Area (Charbroiler)	<1	-	-	-	<1	<1
Cooling Tower	-	-	-	-	<1	<1
Stationary (Emergency Generator)	2	37	21	<1	<1	<1
Heliport	<1	4	3	-	-	-
Total Project On-Site and Off-Site Emissions	68	-1	280	1	96	25
SCAQMD Numeric Indicators	55	55	550	150	150.0	55.0
Over/(Under)	13	(56)	(270)	(149)	(54.2)	(29.9)
Exceeds Thresholds?	Yes	No	No	No	No	No

Estimate of Heliport AQ emissions adapted from Appendix C of Appendix IV.G.1 of the Climate Change Technical Report Wilshire Grand Development Project, <https://planning.lacity.org/eir/WilshireGrandRedevProj/DEIR/DEIR%20Appendices/Appendix%20IV.G.1.pdf>

**670 Mesquit
Air Quality and Greenhouse Gas Assessment**

Localized Operational Emissions Alternative 2

Maximum Unmitigated Localized Operational Emissions (pounds per day)^a

Source	NO_x	CO	PM₁₀	PM_{2.5}
Area (Consumer Products, Landscaping)	1	40	0.2	0.2
Energy (Natural Gas)	9	7	0.7	0.7
Area (Charbroiler)	-	-	0.7	0.4
Cooling Tower	-	-	0.1	0.0
Stationary (Emergency Generator)	37	21	0.2	0.2
Heliport	0.1	0.2	-	-
Total Project On-Site Emissions	47.7	68.7	1.9	1.5
SCAQMD Numeric Indicators	161.0	1861.0	4.0	2.0
Over/(Under)	(113)	(1792)	(2.1)	(0.5)
Exceeds Thresholds?	No	No	No	No

Localized significance threshold from SCAQMD Look-Up tables for a 5-acre site in Central Los Angeles (SRA 1) with the nearest sensitive receptor at 25 meters from the Site.

Net Localized Operational Emissions

Maximum Unmitigated Localized Operational Emissions (pounds per day)^a

Source	NO_x	CO	PM₁₀	PM_{2.5}
Area (Consumer Products, Landscaping)	1	40	0.2	0.2
Energy (Natural Gas)	9	7	0.7	0.7
Area (Charbroiler)	-	-	0.7	0.4
Cooling Tower	-	-	0.1	0.0
Stationary (Emergency Generator)	37	21	0.2	0.2
Heliport	0.1	0.2	-	-
Total Project On-Site Emissions	48	69	1.9	1.5
SCAQMD Numeric Indicators	161	1,861	4.0	2.0
Over/(Under)	(113)	(1,792)	(2.1)	(0.5)
Exceeds Thresholds?	No	No	No	No

Localized significance threshold from SCAQMD Look-Up tables for a 5-acre site in Central Los Angeles (SRA 1) with the nearest sensitive receptor at 25 meters from the Site.

*Estimate of Heliport AQ emissions adapted from Appendix C of Appendix IV.G.1 of the Climate Change Technical Report Wilshire Grand Development Project,
<https://planning.lacity.org/eir/WilshireGrandRedevProj/DEIR/DEIR%20Appendices/Appendix%20IV.G.1.pdf>*

**670 Mesquit
Air Quality and Greenhouse Gas Assessment**

Regional Operational Emissions Alternative 2 - Mitigated

Maximum Mitigated Regional Operational Emissions (pounds per day) ^a

Source	VOC	NO_x	CO	SO₂	PM₁₀	PM_{2.5}
Area (Consumer Products, Landscaping)	44	<1	40	<1	<1	<1
Energy (Natural Gas)	1	9	7	<1	<1	<1
Motor Vehicles	35	58	323	<1	99.9	27.2
Area (Charbroiler)	<1	-	-	-	<1	<1
Cooling Tower	-	-	-	-	<1	<1
Stationary (Emergency Generators)	<1	7	9	<1	<1	<1
Heliport	<1	4	3	-	-	-
Total Project On-Site and Off-Site Emissions	81	80	382	1	102	29
SCAQMD Numeric Indicators	55.0	55.0	550.0	150.0	150.0	55.0
Over/(Under)	25.7	24.9	-168.1	-149.0	-48.3	-26.4
Exceeds Thresholds?	Yes	Yes	No	No	No	No

Net Regional Operations

Maximum Mitigated Regional Operational Emissions (pounds per day) ^a

Source	VOC	NO_x	CO	SO₂	PM₁₀	PM_{2.5}
Area (Consumer Products, Landscaping)	40	<1	40	<1	<1	<1
Energy (Natural Gas)	1	9	7	<1	<1	<1
Motor Vehicles	26	-52	209	0.84	93.9	23.6
Area (Charbroiler)	<1	-	-	-	<1	<1
Cooling Tower	-	-	-	-	<1	<1
Stationary (Emergency Generator)	<1	7	9	<1	<1	<1
Heliport	<1	4	3	-	-	-
Total Project On-Site and Off-Site Emissions	67	-31	267	1	96	25
SCAQMD Numeric Indicators	55	55	550	150	150.0	55.0
Over/(Under)	12	(86)	(283)	(149)	(54.3)	(30.0)
Exceeds Thresholds?	Yes	No	No	No	No	No

Estimate of Heliport AQ emissions adapted from Appendix C of Appendix IV.G.1 of the Climate Change Technical Report Wilshire Grand Development Project, <https://planning.lacity.org/eir/WilshireGrandRedevProj/DEIR/DEIR%20Appendices/Appendix%20IV.G.1.pdf>

670 Mesquit
Air Quality and Greenhouse Gas Assessment

Localized Operational Emissions Alternative 2 - Mitigated

Maximum Mitigated Localized Operational Emissions (pounds per day)^a

Source	NO_x	CO	PM₁₀	PM_{2.5}
Area (Consumer Products, Landscaping)	1	40	0.2	0.2
Energy (Natural Gas)	9	7	0.7	0.7
Area (Charbroiler)	-	-	0.7	0.4
Cooling Tower	-	-	0.1	0.0
Stationary (Emergency Generator)	7	9	0.1	0.1
Heliport	0.1	0.2	-	-
Total Project On-Site Emissions	17.6	55.8	1.8	1.4
SCAQMD Numeric Indicators	161.0	1861.0	4.0	2.0
Over/(Under)	(143)	(1805)	(2.2)	(0.6)
Exceeds Thresholds?	No	No	No	No

Localized significance threshold from SCAQMD Look-Up tables for a 5-acre site in Central Los Angeles (SRA 1) with the nearest sensitive receptor at 25 meters from the Site.

Net Localized Operational Emissions

Maximum Mitigated Localized Operational Emissions (pounds per day)^a

Source	NO_x	CO	PM₁₀	PM_{2.5}
Area (Consumer Products, Landscaping)	1	40	0.2	0.2
Energy (Natural Gas)	9	7	0.7	0.7
Area (Charbroiler)	-	-	0.7	0.4
Cooling Tower	-	-	0.1	0.0
Stationary (Emergency Generator)	7	9	0.1	0.1
Heliport	0.1	0.2	-	-
Total Project On-Site Emissions	18	56	1.8	1.4
SCAQMD Numeric Indicators	161	1,861	4.0	2.0
Over/(Under)	(143)	(1,805)	(2.2)	(0.6)
Exceeds Thresholds?	No	No	No	No

Localized significance threshold from SCAQMD Look-Up tables for a 5-acre site in Central Los Angeles (SRA 1) with the nearest sensitive receptor at 25 meters from the Site.

*Estimate of Heliport AQ emissions adapted from Appendix C of Appendix IV.G.1 of the Climate Change Technical Report Wilshire Grand Development Project,
<https://planning.lacity.org/eir/WilshireGrandRedevProj/DEIR/DEIR%20Appendices/Appendix%20IV.G.1.pdf>*

670 Mesquit - Project VMT Calculation
Draft Environmental Impact Report
Air Quality Assessment
Alternative 2

Scenario	Year	VMT/day	ROG	NOX	CO	SOX	Criteria Pollutant Emissions (pounds/day)					
							PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total
Project	2025	128,562	35.03	58.32	323.05	0.95	84.99	14.88	99.87	20.86	6.30	27.16

Source: ESA 2020

670 Mesquit - Project VMT Calculation

Road Dust Emission Factors

Paved Road Dust Emission Factors (Assumes No Precipitation)

Formula: $EF_{Dust,P} = (k (sL)^{0.91} \times (W)^{1.02})$

Where:

$EF_{Dust,P}$ = Paved Road Dust Emission Factor (having the same units as k)

k = particle size multiplier

sL = road surface silt loading (g/m^2)

W = average fleet vehicle weight (tons) (CARB uses 2.4 tons as a fleet average vehicle weight factor)

	Emission Factor (grams per VMT)	
	PM10	PM2.5
k	0.9979	0.2449
sL	0.1	0.1
W	2.4	2.4
$EF_{Dust,P}$	3.00E-01	7.36E-02

Unpaved Road Dust Emission Factors (Assumes No Precipitation)

Formula: $EF_{Dust,U} = (k (s / 12)^1 \times (Sp / 30)^{0.5} / (M / 0.5)^{0.2}) - C$

Where:

$EF_{Dust,U}$ = Unpaved Road Dust Emission Factor (having the same units as k)

k = particle size multiplier

s = surface material silt content (%)

Sp = mean vehicle speed (mph)

M = surface material moisture content (%)

C = Emission Factor for 1980s vehicle fleet exhaust, brake wear, and tire wear

	Emission Factor (grams per VMT)	
	PM10	PM2.5
k	816.47	81.65
s	4.3%	4.3%
Sp	15	15
M	0.5%	0.5%
C	0.00047	0.00036
$EF_{Dust,U}$	5.20E+00	5.19E-01

Sources:

SCAQMD, CalEEMod, Version 2011.1.

CARB, *Entrained Dust from Paved Road Travel: Emission Estimation Methodology Background Document*, (1997).

USEPA, *AP-42*, Fifth Edition, Volume I, Chapter 13.2.1 - Paved Roads, (2011).

PCR Services Corporation, 2013.

Emissions Factors

Year	lbs/mile						
	ROG	NOx	CO	SOx	PM10	PM2_5	
2018	0.000434828	0.000893715	0.004073127	8.92839E-06	0.000123435	5.70497E-05	
2023	0.000299429	0.000486506	0.002777435	7.78677E-06	0.000115725	4.91522E-05	
2024	0.000285236	0.000470018	0.002638684	7.59983E-06	0.000115757	4.90959E-05	
2025	0.000272471	0.000453637	0.00251276	7.37578E-06	0.00011574	4.90103E-05	
2026	0.000261916	0.000440469	0.002412515	7.18307E-06	0.000115737	4.89222E-05	
2027	0.000252017	0.000428994	0.002327095	7.00819E-06	0.000115684	4.8795E-05	

**670 Mesquit
Cooling Towers - With PDFs
Air Quality Analysis**

Cooling Towers Rating (Max flow):

Annual: 44.2 million gallons
Daily: 121,176 gallons per day
Hourly: 5,049 gallons per hour

Cooling Tower Emissions

Units	PM ₁₀	PM _{2.5}	ROG
lbs/1000 gal	0.01900	0.01900	—
lbs/1000 gal (corrected)	0.00102	0.00002	—
lbs/hr	0.00516	0.00009	—
lbs/day	0.12391	0.00216	—
lbs/yr	45.22667	0.78962	—
tons/yr	0.02261	0.00039	—

Notes: Flow rate from MEP Info pdf 11-22-18 and IV.N.2 Water Supply, associated PDFs also found in IV.N.2 Water Supply.

1. USEPA, AP-42, Chapter 13.4 Wet Cooling Towers, January 1995. Correction factor obtained from Greystone Environmental Consultants, Calculating Realistic PM10 Emissions from Cooling Towers, page 5,
https://www.energy.ca.gov/sitingcases//palomar/documents/applicants_files/Data_Request_Response/Air%20Quality/Attachment%204-1.pdf.

2. The PM10 to PM2.5 ratio for cooling towers was also determined from Greystone Environmental Consultants, Calculating Realistic PM10 Emissions from Cooling Towers, page 5,
https://www.energy.ca.gov/sitingcases//palomar/documents/applicants_files/Data_Request_Response/Air%20Quality/Attachment%204-1.pdf.

Source: ESA 2018.

670 Mesquit Project

Emergency Generator Daily Maintenance AQ Emissions

Building	VOC	NO _x	CO	SO _x	PM10	PM2.5
	lb/day					
Step 1	0.79	14.97	8.57	0.00	0.06	0.06
Step 2	0.39	7.48	4.28	0.00	0.03	0.03
Step 3/4	0.79	14.97	8.57	0.00	0.06	0.06
Total	1.97	37.42	21.42	0.00	0.16	0.15

Annual GHG Emissions

Building	MTCO ₂ e/year
1	40
2	20
3&4	40
Total	99

670 Mequit Project

Emergency Generator Daily Maintenance AQ Emissions - With PDFs - With Mitigation

Building	VOC	NO _x	CO	SO _x	PM10	PM2.5
	lb/day					
Step 1	0.20	7.35	8.53	1.81E-04	0.05	0.05
Total	0.20	7.35	8.53	1.81E-04	0.05	0.05

Annual GHG Emissions

Building	MTCO ₂ e/year
1	40
Total	40

**670 Mesquit
Air Quality Assessment**

Emergency Generator Emissions

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
PM2.5 Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step1 Emergency Generator

Ratings:	1,500 kW	<i>(based on conservative engineering assumptions)</i>
	2,012 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.24	4.56	2.61	5.50E-05	0.0192	0.0187	526.17	530.91
lbs/hr	0.79	14.97	8.57	0.00	0.06	0.06	1,727.10	1,742.66
lbs/day	0.79	14.97	8.57	0.00018	0.06	0.06	1,727.10	1,742.66
lbs/yr	39.39	748.39	428.35	0.01	3.15	3.08	86,355.04	87,133.00
tons/yr	0.02	0.37	0.21	0.00	0.00	0.00	43.18	43.57
metric tons/yr	—	—	—	—	—	—	39.17	39.52

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
- Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.

5%

Source: ESA 2018.

pdf file: MEP Info (10-22-18)

**670 Mesquit Mixed Use Project EIR
Air Quality Assessment**

Emergency Generator Emissions

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
PM2.5 Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step2 Emergency Generator

Ratings:	750 kW	<i>(based on conservative engineering assumptions)</i>
	1,006 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.24	4.56	2.61	5.50E-05	0.0192	0.0187	526.17	530.91
lbs/hr	0.39	7.48	4.28	0.00	0.03	0.03	863.55	871.33
lbs/day	0.39	7.48	4.28	0.00009	0.03	0.03	863.55	871.33
lbs/yr	19.69	374.20	214.17	0.00	1.58	1.54	43,177.52	43,566.50
tons/yr	0.01	0.19	0.11	0.00	0.00	0.00	21.59	21.78
metric tons/yr	—	—	—	—	—	—	19.59	19.76

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
- Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.

Source: ESA 2018.

670 Mesquit Mixed Use Project EIR
Air Quality Assessment
670 Mesquit Mixed Use Project EIR
Emergency Generator Emissions (Step 3&4)

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
PM2.5 Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimaterestry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimaterestry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimaterestry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	IPCC AR4
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step4

Ratings:	1,500 kW	<i>(based on conservative engineering assumptions)</i>
	2,012 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.24	4.56	2.61	5.50E-05	0.0192	0.0187	526.17	530.91
lbs/hr	0.79	14.97	8.57	0.00	0.06	0.06	1727.10	1,742.66
lbs/day	0.79	14.97	8.57	0.00018	0.06	0.06	1,727.10	1,742.66
lbs/yr	39.39	748.39	428.35	0.01	3.15	3.08	86,355.04	87,133.00
tons/yr	0.02	0.37	0.21	0.00	0.00	0.00	43.18	43.57
metric tons/yr	—	—	—	—	—	—	39.17	39.52

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
- Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.

Source: ESA 2018.

**670 Mesquit
Air Quality Assessment**

Emergency Generator Emissions - with PDF

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
PM2.5 Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step1 Emergency Generator

Ratings:	1,500 kW	<i>(based on conservative engineering assumptions)</i>
	2,012 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.06	2.24	2.60	5.50E-05	0.02	0.02	526.17	530.91
lbs/hr	0.20	7.35	8.53	0.00	0.05	0.05	1727.10	1,742.66
lbs/day	0.20	7.35	8.53	0.00018	0.053	0.053	1,727.10	1,742.66
lbs/yr	9.85	367.63	426.71	0.01	2.63	2.63	86,355.04	87,133.00
tons/yr	0.00	0.18	0.21	0.00	0.00	0.00	43.18	43.57
metric tons/yr	—	—	—	—	—	—	39.17	39.52

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
- Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.
- Emissions Factors for Tier 4 Final from CalEEMOD Appendix D, Pg. D-77

Source: ESA 2018. pdf file: MEP Info (10-22-18)

**670 Mesquit Mixed Use Project EIR
Air Quality Assessment**

Emergency Generator Emissions - with PDF

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
PM2.5 Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step2 Emergency Generator

Ratings:	750 kW	<i>(based on conservative engineering assumptions)</i>
	1,006 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.06	2.24	2.60	5.50E-05	0.02	0.02	526.17	530.91
lbs/hr	0.10	3.68	4.27	0.00	0.03	0.03	863.55	871.33
lbs/day	0.10	3.68	4.27	0.00009	0.03	0.03	863.55	871.33
lbs/yr	4.92	183.82	213.36	0.00	1.31	1.31	43,177.52	43,566.50
tons/yr	0.00	0.09	0.11	0.00	0.00	0.00	21.59	21.78
metric tons/yr	—	—	—	—	—	—	19.59	19.76

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
- Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.
- Emissions Factors for Tier 4 Final from CalEEMOD Appendix D, Pg. D-77

Source: ESA 2018.

670 Mesquit Mixed Use Project EIR
Air Quality Assessment
670 Mesquit Mixed Use Project EIR
Emergency Generator Emissions (Step 3&4) - with PDF

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
PM2.5 Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimaterestry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimaterestry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimaterestry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	IPCC AR4
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step4

Ratings:	1,500 kW	<i>(based on conservative engineering assumptions)</i>
	2,012 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.06	2.24	2.60	5.50E-05	0.02	0.02	526.17	530.91
lbs/hr	0.20	7.35	8.53	0.00	0.05	0.05	1727.10	1,742.66
lbs/day	0.20	7.35	8.53	0.00018	0.05	0.05	1,727.10	1,742.66
lbs/yr	9.85	367.63	426.71	0.01	2.63	2.63	86,355.04	87,133.00
tons/yr	0.00	0.18	0.21	0.00	0.00	0.00	43.18	43.57
metric tons/yr	—	—	—	—	—	—	39.17	39.52

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
- Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
- Emissions Factors for Tier 4 Final from CalEEMOD Appendix D, Pg. D-77

Source: ESA 2018. pdf file: MEP Info (10-22-18)

670 Mesquit Charbroiling Emissions

San Joaquin Valley Unified Air Pollution Control District Emission Inventory Methodology 690 - Commercial Cooking Operations

Equipment Type	Restaurant Category				
	Ethnic	Family	Fast Food	Seafood	Steak and BBQ
Percent of restaurants with equipment					
Auto charbroilers	3.5	10.1	18.6	0.0	6.9
Underfired charbroilers	47.5	60.9	30.8	52.6	55.2
Deep-fat fryer	81.9	91.4	96.8	100.0	82.8
Glad griddles	62.7	82.9	51.9	36.8	89.7
Clamshell griddles	4.0	1.4	14.7	10.5	0.0
Average number of units per restaurant typez					
Auto charbroilers	1.62	1.71	1.07	--	--
Underfired charbroilers	1.54	1.29	1.58	1.10	1.63
Deep-fat fryer	1.63	2.34	3.10	2.47	2.42
Glad griddles	1.88	2.03	1.43	1.11	1.35
Clamshell griddles	1.80	--	2.09	1.50	--

Type of Food	Total Food Cooked per Device (lb/week)				
	Chain-Driven Charbroilers ^a	Underfired Charbroilers	Deep-Fat Fryers	Flat Griddles	Clamshell Griddles
Steak	236	180	181	166	94
Hamburger	798	270	274	362	1,314
Poultry, with skin	147	144	365	88	113
Poultry, skinless	266	179	208	111	108
Pork	58	148	59	112	118
Seafood	119	143	159	92	632
Other meat	0	42	274	58	0
Potatoes	0	0	602	0	0

670 Mesquit Charbroiling Emissions

of food venues 3
 Days/week cooking 6
 PM10 fraction of PM 0.7 Updated CEIDARS Table with PM2.5 Fractions
 PM2.5 fraction of PM 0.42 Updated CEIDARS Table with PM2.5 Fractions

Total # of equipment

Type	Total Equip
Auto charbroilers	0.3
Underfired charbroilers	1.8
Deep-fat fryer	2.7
Glad griddles	2.5
Clamshell griddles	0.0

Total lbs/day of meat

Type	Auto charbroilers	Underfired charbroil	Deep-fat fryer	Glad griddles	Clamshell griddles
Steak	11.9	54.8	82.7	68.8	0.7
Hamburger	40.3	82.2	125.2	150.0	9.2
Poultry, with skin	7.4	43.8	166.8	36.5	0.8
Poultry, skinless	13.4	54.5	95.1	46.0	0.8
Pork	2.9	45.1	27.0	46.4	0.8
Seafood	6.0	43.5	72.7	38.1	4.4
Other meat	0.0	12.8	125.2	24.0	0.0
Potatoes	0.0	0.0	275.1	0.0	0.0

Source ¹	Uncontrolled Emission Factors ² (lb/1000 lb)		Quantity ³ (lb/day)	Emissions Controls ⁴ (percent reduction)		Controlled Emissions ^{5,6} (pounds/day)		
	ROG	PM		VOC	PM	VOC	PM2.5	PM10
Project								
Charbroiler - New York Steak	0.86	17.19	66.73	86%	85%	0.01	0.07	0.12
Charbroiler - 25% fat Hamburger	3.94	32.65	122.51	86%	85%	0.07	0.25	0.42
Charbroiler - Chicken	1.82	10.48	119.21	86%	85%	0.03	0.08	0.13
Deep-fat Fryer - Shoestring fries	0.21	-	275.11	0%	0%	0.06	0.00	0.00
Deep-fat Fryer - breaded chicken patties	0.12	-	261.86	0%	0%	0.03	0.00	0.00
Deep-fat Fryer - breaded cod filet	0.14	-	72.66	0%	0%	0.01	0.00	0.00
Total Emissions						0.21	0.40	0.67

670 Mesquit Project - South Coast AQMD Air District, Summer

670 Mesquit Project
South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1,032.82	1000sqft	1.00	1,032,816.00	0
User Defined Commercial	44,069.00	User Defined Unit	0.20	44,069.00	0
Enclosed Parking with Elevator	2,000.00	Space	0.25	800,000.00	0
City Park	3.26	Acre	3.26	138,139.00	0
Health Club	52.42	1000sqft	0.25	52,424.00	0
High Turnover (Sit Down Restaurant)	29.85	1000sqft	0.51	29,850.00	0
Hotel	236.00	Room	0.50	209,560.00	0
Quality Restaurant	29.85	1000sqft	1.00	29,850.00	0
User Defined Recreational	1.70	User Defined Unit	1.70	75,000.00	0
Apartments High Rise	420.00	Dwelling Unit	0.50	420,000.00	1201
Regional Shopping Center	11.66	1000sqft	0.26	11,664.00	0
User Defined Retail	800.00	User Defined Unit	0.10	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	12			Operational Year	2025
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MW hr)	595.16	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - updated CO2 intensity factor to match expected RPS incremental targets in buildout year of 2025

Land Use - See Alternative 2 Assumptions

Demolition -

Grading - MCC

Architectural Coating -

Vehicle Trips - mcc

Woodstoves - No fireplaces

Area Coating -

Solid Waste - see alternatives solid waste calculations

Sequestration -

Energy Mitigation -

Water Mitigation -

Waste Mitigation - study data

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	742,617.00	742,143.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	2,227,850.00	2,226,428.00
tblAreaCoating	Area_Nonresidential_Exterior	742619	742145
tblAreaCoating	Area_Nonresidential_Interior	2227856	2226434
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblEnergyUse	LightingElect	0.00	0.35
tblEnergyUse	LightingElect	0.00	3.70
tblEnergyUse	LightingElect	0.00	0.35

tblEnergyUse	LightingElect	0.00	0.35
tblEnergyUse	NT24E	0.00	4.62
tblEnergyUse	NT24NG	0.00	0.39
tblEnergyUse	T24E	258.09	252.93
tblEnergyUse	T24E	3.92	3.50
tblEnergyUse	T24E	4.60	4.11
tblEnergyUse	T24E	2.25	2.01
tblEnergyUse	T24E	8.11	7.24
tblEnergyUse	T24E	2.55	2.28
tblEnergyUse	T24E	8.11	7.24
tblEnergyUse	T24E	4.01	3.58
tblEnergyUse	T24E	0.00	4.11
tblEnergyUse	T24NG	4,697.18	4,462.32
tblEnergyUse	T24NG	10.02	9.92
tblEnergyUse	T24NG	13.65	13.51
tblEnergyUse	T24NG	42.98	42.55
tblEnergyUse	T24NG	19.92	19.72
tblEnergyUse	T24NG	42.98	42.55
tblEnergyUse	T24NG	1.15	1.14
tblEnergyUse	T24NG	0.00	9.92
tblFireplaces	FireplaceDayYear	25.00	180.00
tblFireplaces	FireplaceHourDay	3.00	12.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	357.00	5.00
tblFireplaces	NumberNoFireplace	42.00	303.00
tblFireplaces	NumberWood	21.00	0.00
tblLandUse	LandUseSquareFeet	1,032,820.00	1,032,816.00
tblLandUse	LandUseSquareFeet	0.00	44,069.00
tblLandUse	LandUseSquareFeet	142,005.60	138,139.00
tblLandUse	LandUseSquareFeet	52,420.00	52,424.00

tblLandUse	LandUseSquareFeet	342,672.00	209,560.00
tblLandUse	LandUseSquareFeet	0.00	75,000.00
tblLandUse	LandUseSquareFeet	11,660.00	11,664.00
tblLandUse	LotAcreage	23.71	1.00
tblLandUse	LotAcreage	0.00	0.20
tblLandUse	LotAcreage	18.00	0.25
tblLandUse	LotAcreage	1.20	0.25
tblLandUse	LotAcreage	0.69	0.51
tblLandUse	LotAcreage	7.87	0.50
tblLandUse	LotAcreage	0.69	1.00
tblLandUse	LotAcreage	0.00	1.70
tblLandUse	LotAcreage	6.77	0.50
tblLandUse	LotAcreage	0.27	0.26
tblLandUse	LotAcreage	0.00	0.10
tblProjectCharacteristics	CO2IntensityFactor	1227.89	595.16
tblSolidWaste	SolidWasteGenerationRate	193.20	937.43
tblSolidWaste	SolidWasteGenerationRate	0.28	0.00
tblSolidWaste	SolidWasteGenerationRate	960.52	8,882.21
tblSolidWaste	SolidWasteGenerationRate	298.79	0.00
tblSolidWaste	SolidWasteGenerationRate	355.22	0.00
tblSolidWaste	SolidWasteGenerationRate	129.21	0.00
tblSolidWaste	SolidWasteGenerationRate	27.24	0.00
tblSolidWaste	SolidWasteGenerationRate	12.24	0.00
tblWater	IndoorWaterUseRate	27,364,690.76	15,369,055.00
tblWater	IndoorWaterUseRate	183,566,969.60	135,054,421.95
tblWater	IndoorWaterUseRate	3,100,283.61	0.00
tblWater	IndoorWaterUseRate	9,060,481.32	0.00
tblWater	IndoorWaterUseRate	5,986,557.72	11,692,775.00
tblWater	IndoorWaterUseRate	9,060,481.32	0.00
tblWater	IndoorWaterUseRate	863,685.60	0.00

tblWater	OutdoorWaterUseRate	17,251,652.87	0.00
tblWater	OutdoorWaterUseRate	3,884,229.20	1,566,215.00
tblWater	OutdoorWaterUseRate	0.00	205,130.00
tblWater	OutdoorWaterUseRate	112,508,787.82	0.00
tblWater	OutdoorWaterUseRate	1,900,173.83	0.00
tblWater	OutdoorWaterUseRate	578,328.59	0.00
tblWater	OutdoorWaterUseRate	665,173.08	0.00
tblWater	OutdoorWaterUseRate	578,328.59	0.00
tblWater	OutdoorWaterUseRate	529,355.69	0.00
tblWoodstoves	NumberCatalytic	21.00	0.00
tblWoodstoves	NumberNoncatalytic	21.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Hotel	0.00	0.00	0.00		
Quality Restaurant	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
User Defined Commercial	0.00	0.00	0.00		
User Defined Recreational	0.00	0.00	0.00		
User Defined Retail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	11.60	4.70	6.90	40.00	19.00	41.00	86	11	3
City Park	13.10	6.60	5.40	0.00	0.00	0.00	0	0	0
Enclosed Parking with Elevator	13.10	6.60	5.40	0.00	0.00	0.00	0	0	0
General Office Building	13.10	6.60	5.40	33.00	48.00	19.00	77	19	4
Health Club	13.10	6.60	5.40	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down Restaurant)	13.10	6.60	5.40	8.50	72.50	19.00	37	20	43
Hotel	13.10	6.60	5.40	19.40	61.60	19.00	58	38	4
Quality Restaurant	13.10	6.60	5.40	12.00	69.00	19.00	38	18	44
Regional Shopping Center	13.10	6.60	6.90	16.30	64.70	19.00	54	35	11
User Defined Commercial	13.10	6.60	6.90	16.90	64.10	19.00	77	19	4
User Defined Recreational	13.10	6.60	6.90	16.90	64.10	19.00	52	39	9
User Defined Retail	13.10	6.60	6.90	16.30	64.70	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments High Rise	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
City Park	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Enclosed Parking with Elevator	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
General Office Building	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Health Club	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
High Turnover (Sit Down Restaurant)	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Hotel	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Quality Restaurant	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Regional Shopping Center	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
User Defined Commercial	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
User Defined Recreational	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
User Defined Retail	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.0433	9.4114	7.4334	0.0569		0.7208	0.7208		0.7208	0.7208		11,380.9715	11,380.9715	0.2181	0.2087	11,448.6029
NaturalGas Unmitigated	1.0433	9.4114	7.4334	0.0569		0.7208	0.7208		0.7208	0.7208		11,380.9715	11,380.9715	0.2181	0.2087	11,448.6029

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments High Rise	12362.2	0.1333	1.1393	0.4848	7.2700e-003		0.0921	0.0921		0.0921	0.0921		1,454.3737	1,454.3737	0.0279	0.0267	1,463.0163
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	29173.5	0.3146	2.8602	2.4025	0.0172		0.2174	0.2174		0.2174	0.2174		3,432.1782	3,432.1782	0.0658	0.0629	3,452.5740
Health Club	2579.55	0.0278	0.2529	0.2124	1.5200e-003		0.0192	0.0192		0.0192	0.0192		303.4762	303.4762	5.8200e-003	5.5600e-003	305.2797

High Turnover (Sit Down Restaurant)	18836.6	0.2031	1.8467	1.5513	0.0111		0.1404	0.1404		0.1404	0.1404		2,216.0679	2,216.0679	0.0425	0.0406	2,229.2368
Hotel	13653	0.1472	1.3385	1.1244	8.0300e-003		0.1017	0.1017		0.1017	0.1017		1,606.2327	1,606.2327	0.0308	0.0295	1,615.7777
Quality Restaurant	18836.6	0.2031	1.8467	1.5513	0.0111		0.1404	0.1404		0.1404	0.1404		2,216.0679	2,216.0679	0.0425	0.0406	2,229.2368
Regional Shopping Center	52.0885	5.6000e-004	5.1100e-003	4.2900e-003	3.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004		6.1281	6.1281	1.2000e-004	1.1000e-004	6.1645
User Defined Commercial	1244.8	0.0134	0.1220	0.1025	7.3000e-004		9.2700e-003	9.2700e-003		9.2700e-003	9.2700e-003		146.4469	146.4469	2.8100e-003	2.6800e-003	147.3171
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		1.0433	9.4114	7.4334	0.0569		0.7208	0.7208		0.7208	0.7208		11,380.9714	11,380.9714	0.2181	0.2086	11,448.6029

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments High Rise	12.3622	0.1333	1.1393	0.4848	7.2700e-003		0.0921	0.0921		0.0921	0.0921		1,454.3737	1,454.3737	0.0279	0.0267	1,463.0163
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	29.1735	0.3146	2.8602	2.4025	0.0172		0.2174	0.2174		0.2174	0.2174		3,432.1782	3,432.1782	0.0658	0.0629	3,452.5740
Health Club	2.57955	0.0278	0.2529	0.2124	1.5200e-003		0.0192	0.0192		0.0192	0.0192		303.4762	303.4762	5.8200e-003	5.5600e-003	305.2797
High Turnover (Sit Down Restaurant)	18.8366	0.2031	1.8467	1.5513	0.0111		0.1404	0.1404		0.1404	0.1404		2,216.0679	2,216.0679	0.0425	0.0406	2,229.2368
Hotel	13.653	0.1472	1.3385	1.1244	8.0300e-003		0.1017	0.1017		0.1017	0.1017		1,606.2327	1,606.2327	0.0308	0.0295	1,615.7777
Quality Restaurant	18.8366	0.2031	1.8467	1.5513	0.0111		0.1404	0.1404		0.1404	0.1404		2,216.0679	2,216.0679	0.0425	0.0406	2,229.2368
Regional Shopping Center	0.0520885	5.6000e-004	5.1100e-003	4.2900e-003	3.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004		6.1281	6.1281	1.2000e-004	1.1000e-004	6.1645
User Defined Commercial	1.2448	0.0134	0.1220	0.1025	7.3000e-004		9.2700e-003	9.2700e-003		9.2700e-003	9.2700e-003		146.4469	146.4469	2.8100e-003	2.6800e-003	147.3171
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		1.0433	9.4114	7.4334	0.0569		0.7208	0.7208		0.7208	0.7208		11,380.974	11,380.974	0.2181	0.2086	11,448.6029

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	44.0955	0.7751	39.6741	4.3200e-003		0.2364	0.2364		0.2364	0.2364	0.0000	496.4846	496.4846	0.0953	7.7600e-003	501.1820
Unmitigated	44.0955	0.7751	39.6741	4.3200e-003		0.2364	0.2364		0.2364	0.2364	0.0000	496.4846	496.4846	0.0953	7.7600e-003	501.1820

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.5507					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	38.0141					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0388	0.3318	0.1412	2.1200e-003		0.0268	0.0268		0.0268	0.0268	0.0000	423.5294	423.5294	8.1200e-003	7.7600e-003	426.0462
Landscaping	1.4920	0.4433	39.5329	2.2000e-003		0.2096	0.2096		0.2096	0.2096		72.9552	72.9552	0.0872		75.1358
Total	44.0955	0.7751	39.6741	4.3200e-003		0.2364	0.2364		0.2364	0.2364	0.0000	496.4846	496.4846	0.0953	7.7600e-003	501.1820

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.5507					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	38.0141					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0388	0.3318	0.1412	2.1200e-003		0.0268	0.0268		0.0268	0.0268	0.0000	423.5294	423.5294	8.1200e-003	7.7600e-003	426.0462
Landscaping	1.4920	0.4433	39.5329	2.2000e-003		0.2096	0.2096		0.2096	0.2096		72.9552	72.9552	0.0872		75.1358
Total	44.0955	0.7751	39.6741	4.3200e-003		0.2364	0.2364		0.2364	0.2364	0.0000	496.4846	496.4846	0.0953	7.7600e-003	501.1820

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

670 Mesquit Project - South Coast AQMD Air District, Winter

670 Mesquit Project
South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1,032.82	1000sqft	1.00	1,032,816.00	0
User Defined Commercial	44,069.00	User Defined Unit	0.20	44,069.00	0
Enclosed Parking with Elevator	2,000.00	Space	0.25	800,000.00	0
City Park	3.26	Acre	3.26	138,139.00	0
Health Club	52.42	1000sqft	0.25	52,424.00	0
High Turnover (Sit Down Restaurant)	29.85	1000sqft	0.51	29,850.00	0
Hotel	236.00	Room	0.50	209,560.00	0
Quality Restaurant	29.85	1000sqft	1.00	29,850.00	0
User Defined Recreational	1.70	User Defined Unit	1.70	75,000.00	0
Apartments High Rise	420.00	Dwelling Unit	0.50	420,000.00	1201
Regional Shopping Center	11.66	1000sqft	0.26	11,664.00	0
User Defined Retail	800.00	User Defined Unit	0.10	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	12			Operational Year	2025
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MW hr)	595.16	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - updated CO2 intensity factor to match expected RPS incremental targets in buildout year of 2025

Land Use - See Alternative 2 Assumptions

Demolition -

Grading - MCC

Architectural Coating -

Vehicle Trips - mcc

Woodstoves - No fireplaces

Area Coating -

Solid Waste - see alternatives solid waste calculations

Sequestration -

Energy Mitigation -

Water Mitigation -

Waste Mitigation - study data

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	742,617.00	742,143.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	2,227,850.00	2,226,428.00
tblAreaCoating	Area_Nonresidential_Exterior	742619	742145
tblAreaCoating	Area_Nonresidential_Interior	2227856	2226434
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblEnergyUse	LightingElect	0.00	0.35
tblEnergyUse	LightingElect	0.00	3.70
tblEnergyUse	LightingElect	0.00	0.35

tblEnergyUse	LightingElect	0.00	0.35
tblEnergyUse	NT24E	0.00	4.62
tblEnergyUse	NT24NG	0.00	0.39
tblEnergyUse	T24E	258.09	252.93
tblEnergyUse	T24E	3.92	3.50
tblEnergyUse	T24E	4.60	4.11
tblEnergyUse	T24E	2.25	2.01
tblEnergyUse	T24E	8.11	7.24
tblEnergyUse	T24E	2.55	2.28
tblEnergyUse	T24E	8.11	7.24
tblEnergyUse	T24E	4.01	3.58
tblEnergyUse	T24E	0.00	4.11
tblEnergyUse	T24NG	4,697.18	4,462.32
tblEnergyUse	T24NG	10.02	9.92
tblEnergyUse	T24NG	13.65	13.51
tblEnergyUse	T24NG	42.98	42.55
tblEnergyUse	T24NG	19.92	19.72
tblEnergyUse	T24NG	42.98	42.55
tblEnergyUse	T24NG	1.15	1.14
tblEnergyUse	T24NG	0.00	9.92
tblFireplaces	FireplaceDayYear	25.00	180.00
tblFireplaces	FireplaceHourDay	3.00	12.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	357.00	5.00
tblFireplaces	NumberNoFireplace	42.00	303.00
tblFireplaces	NumberWood	21.00	0.00
tblLandUse	LandUseSquareFeet	1,032,820.00	1,032,816.00
tblLandUse	LandUseSquareFeet	0.00	44,069.00
tblLandUse	LandUseSquareFeet	142,005.60	138,139.00
tblLandUse	LandUseSquareFeet	52,420.00	52,424.00

tblLandUse	LandUseSquareFeet	342,672.00	209,560.00
tblLandUse	LandUseSquareFeet	0.00	75,000.00
tblLandUse	LandUseSquareFeet	11,660.00	11,664.00
tblLandUse	LotAcreage	23.71	1.00
tblLandUse	LotAcreage	0.00	0.20
tblLandUse	LotAcreage	18.00	0.25
tblLandUse	LotAcreage	1.20	0.25
tblLandUse	LotAcreage	0.69	0.51
tblLandUse	LotAcreage	7.87	0.50
tblLandUse	LotAcreage	0.69	1.00
tblLandUse	LotAcreage	0.00	1.70
tblLandUse	LotAcreage	6.77	0.50
tblLandUse	LotAcreage	0.27	0.26
tblLandUse	LotAcreage	0.00	0.10
tblProjectCharacteristics	CO2IntensityFactor	1227.89	595.16
tblSolidWaste	SolidWasteGenerationRate	193.20	937.43
tblSolidWaste	SolidWasteGenerationRate	0.28	0.00
tblSolidWaste	SolidWasteGenerationRate	960.52	8,882.21
tblSolidWaste	SolidWasteGenerationRate	298.79	0.00
tblSolidWaste	SolidWasteGenerationRate	355.22	0.00
tblSolidWaste	SolidWasteGenerationRate	129.21	0.00
tblSolidWaste	SolidWasteGenerationRate	27.24	0.00
tblSolidWaste	SolidWasteGenerationRate	12.24	0.00
tblWater	IndoorWaterUseRate	27,364,690.76	15,369,055.00
tblWater	IndoorWaterUseRate	183,566,969.60	135,054,421.95
tblWater	IndoorWaterUseRate	3,100,283.61	0.00
tblWater	IndoorWaterUseRate	9,060,481.32	0.00
tblWater	IndoorWaterUseRate	5,986,557.72	11,692,775.00
tblWater	IndoorWaterUseRate	9,060,481.32	0.00
tblWater	IndoorWaterUseRate	863,685.60	0.00

tblWater	OutdoorWaterUseRate	17,251,652.87	0.00
tblWater	OutdoorWaterUseRate	3,884,229.20	1,566,215.00
tblWater	OutdoorWaterUseRate	0.00	205,130.00
tblWater	OutdoorWaterUseRate	112,508,787.82	0.00
tblWater	OutdoorWaterUseRate	1,900,173.83	0.00
tblWater	OutdoorWaterUseRate	578,328.59	0.00
tblWater	OutdoorWaterUseRate	665,173.08	0.00
tblWater	OutdoorWaterUseRate	578,328.59	0.00
tblWater	OutdoorWaterUseRate	529,355.69	0.00
tblWoodstoves	NumberCatalytic	21.00	0.00
tblWoodstoves	NumberNoncatalytic	21.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Hotel	0.00	0.00	0.00		
Quality Restaurant	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
User Defined Commercial	0.00	0.00	0.00		
User Defined Recreational	0.00	0.00	0.00		
User Defined Retail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	11.60	4.70	6.90	40.00	19.00	41.00	86	11	3
City Park	13.10	6.60	5.40	0.00	0.00	0.00	0	0	0
Enclosed Parking with Elevator	13.10	6.60	5.40	0.00	0.00	0.00	0	0	0
General Office Building	13.10	6.60	5.40	33.00	48.00	19.00	77	19	4
Health Club	13.10	6.60	5.40	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down	13.10	6.60	5.40	8.50	72.50	19.00	37	20	43

Hotel	13.10	6.60	5.40	19.40	61.60	19.00	58	38	4
Quality Restaurant	13.10	6.60	5.40	12.00	69.00	19.00	38	18	44
Regional Shopping Center	13.10	6.60	6.90	16.30	64.70	19.00	54	35	11
User Defined Commercial	13.10	6.60	6.90	16.90	64.10	19.00	77	19	4
User Defined Recreational	13.10	6.60	6.90	16.90	64.10	19.00	52	39	9
User Defined Retail	13.10	6.60	6.90	16.30	64.70	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments High Rise	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
City Park	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Enclosed Parking with Elevator	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
General Office Building	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Health Club	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
High Turnover (Sit Down Restaurant)	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Hotel	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Quality Restaurant	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Regional Shopping Center	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
User Defined Commercial	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
User Defined Recreational	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
User Defined Retail	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Natural Gas Mitigated	1.0433	9.4114	7.4334	0.0569		0.7208	0.7208		0.7208	0.7208		11,380.9715	11,380.9715	0.2181	0.2087	11,448.6029
Natural Gas Unmitigated	1.0433	9.4114	7.4334	0.0569		0.7208	0.7208		0.7208	0.7208		11,380.9715	11,380.9715	0.2181	0.2087	11,448.6029

5.2 Energy by Land Use - Natural Gas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments High Rise	12362.2	0.1333	1.1393	0.4848	7.2700e-003		0.0921	0.0921		0.0921	0.0921		1,454.3737	1,454.3737	0.0279	0.0267	1,463.0163
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	29173.5	0.3146	2.8602	2.4025	0.0172		0.2174	0.2174		0.2174	0.2174		3,432.1782	3,432.1782	0.0658	0.0629	3,452.5740
Health Club	2579.55	0.0278	0.2529	0.2124	1.5200e-003		0.0192	0.0192		0.0192	0.0192		303.4762	303.4762	5.8200e-003	5.5600e-003	305.2797
High Turnover (Sit Down Restaurant)	18836.6	0.2031	1.8467	1.5513	0.0111		0.1404	0.1404		0.1404	0.1404		2,216.0679	2,216.0679	0.0425	0.0406	2,229.2368
Hotel	13653	0.1472	1.3385	1.1244	8.0300e-003		0.1017	0.1017		0.1017	0.1017		1,606.2327	1,606.2327	0.0308	0.0295	1,615.7777
Quality Restaurant	18836.6	0.2031	1.8467	1.5513	0.0111		0.1404	0.1404		0.1404	0.1404		2,216.0679	2,216.0679	0.0425	0.0406	2,229.2368
Regional Shopping Center	52.0885	5.6000e-004	5.1100e-003	4.2900e-003	3.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004		6.1281	6.1281	1.2000e-004	1.1000e-004	6.1645
User Defined Commercial	1244.8	0.0134	0.1220	0.1025	7.3000e-004		9.2700e-003	9.2700e-003		9.2700e-003	9.2700e-003		146.4469	146.4469	2.8100e-003	2.6800e-003	147.3171
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		1.0433	9.4114	7.4334	0.0569		0.7208	0.7208		0.7208	0.7208		11,380.9714	11,380.9714	0.2181	0.2086	11,448.6029

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments High Rise	12.3622	0.1333	1.1393	0.4848	7.2700e-003		0.0921	0.0921		0.0921	0.0921		1,454.3737	1,454.3737	0.0279	0.0267	1,463.0163
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	29.1735	0.3146	2.8602	2.4025	0.0172		0.2174	0.2174		0.2174	0.2174		3,432.1782	3,432.1782	0.0658	0.0629	3,452.5740
Health Club	2.57955	0.0278	0.2529	0.2124	1.5200e-003		0.0192	0.0192		0.0192	0.0192		303.4762	303.4762	5.8200e-003	5.5600e-003	305.2797
High Turnover (Sit Down Restaurant)	18.8366	0.2031	1.8467	1.5513	0.0111		0.1404	0.1404		0.1404	0.1404		2,216.0679	2,216.0679	0.0425	0.0406	2,229.2368
Hotel	13.653	0.1472	1.3385	1.1244	8.0300e-003		0.1017	0.1017		0.1017	0.1017		1,606.2327	1,606.2327	0.0308	0.0295	1,615.7777
Quality Restaurant	18.8366	0.2031	1.8467	1.5513	0.0111		0.1404	0.1404		0.1404	0.1404		2,216.0679	2,216.0679	0.0425	0.0406	2,229.2368
Regional Shopping Center	0.0520885	5.6000e-004	5.1100e-003	4.2900e-003	3.0000e-005		3.9000e-004	3.9000e-004		3.9000e-004	3.9000e-004		6.1281	6.1281	1.2000e-004	1.1000e-004	6.1645
User Defined Commercial	1.2448	0.0134	0.1220	0.1025	7.3000e-004		9.2700e-003	9.2700e-003		9.2700e-003	9.2700e-003		146.4469	146.4469	2.8100e-003	2.6800e-003	147.3171
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		1.0433	9.4114	7.4334	0.0569		0.7208	0.7208		0.7208	0.7208		11,380.9714	11,380.9714	0.2181	0.2086	11,448.6029

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	44.0955	0.7751	39.6741	4.3200e-003		0.2364	0.2364		0.2364	0.2364	0.0000	496.4846	496.4846	0.0953	7.7600e-003	501.1820
Unmitigated	44.0955	0.7751	39.6741	4.3200e-003		0.2364	0.2364		0.2364	0.2364	0.0000	496.4846	496.4846	0.0953	7.7600e-003	501.1820

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.5507					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	38.0141					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0388	0.3318	0.1412	2.1200e-003		0.0268	0.0268		0.0268	0.0268	0.0000	423.5294	423.5294	8.1200e-003	7.7600e-003	426.0462
Landscaping	1.4920	0.4433	39.5329	2.2000e-003		0.2096	0.2096		0.2096	0.2096		72.9552	72.9552	0.0872		75.1358
Total	44.0955	0.7751	39.6741	4.3200e-003		0.2364	0.2364		0.2364	0.2364	0.0000	496.4846	496.4846	0.0953	7.7600e-003	501.1820

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.5507					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	38.0141					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0388	0.3318	0.1412	2.1200e-003		0.0268	0.0268		0.0268	0.0268	0.0000	423.5294	423.5294	8.1200e-003	7.7600e-003	426.0462
Landscaping	1.4920	0.4433	39.5329	2.2000e-003		0.2096	0.2096		0.2096	0.2096		72.9552	72.9552	0.0872		75.1358
Total	44.0955	0.7751	39.6741	4.3200e-003		0.2364	0.2364		0.2364	0.2364	0.0000	496.4846	496.4846	0.0953	7.7600e-003	501.1820

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

670 Mesquit Project - Alternative 2

2. GHG Worksheets

GHG Calculation Worksheets and Model Outputs

Operations

- 1. Emissions Summaries and Miscellaneous Calculations**
- 2. Emissions Modeling Output**

670 Mesquit - Alternative 2

Project With GHG Reduction Characteristics, Features

Greenhouse Gas Summary

Project Operations Summary WITH Deck (Full Buildout Year 2025)	
Category	MTCO ₂ e/yr
Mobile	16,873
Emergency Generator	99
Cooling Tower	164
Area	43
Electricity	6,621
Natural Gas	1,895
Water	798
Waste	1,185
Heliport ¹	162
Construction	864
Project Subtotal	28,706
Existing	4,355
Project Net Total GHG Emissions	24,351

MTCO₂e=Metric Tons Carbon Dioxide equivalents

Appendix IV.O of the Climate Change Technical Report Wilshire Grand Development Project,

**670 Mesquit
 Draft Environmental Impact Report
 Greenhouse Gas Assessment
 Alt-2**

Scenario	Year	VMT/year	GHG Emissions(metric tons/year)				CO2e
			CO2 1	CH4 25	N2O 298		
Project Source: ESA 2020	2025	46,925,130	16,590	1.1	0.9	16,873	

Emissions Factors**MT/Mile**

Year	CO2	CH4	N2O	CO2e
2018	0.000416112	3.25607E-08	2.3673E-08	0.000423981
2023	0.000367711	2.41253E-08	1.93344E-08	0.000374076
2024	0.000361301	2.33893E-08	1.8844E-08	0.000367501
2025	0.000353544	2.26996E-08	1.83454E-08	0.000359578
2026	0.000346657	2.21588E-08	1.79615E-08	0.000352564
2027	0.000340369	2.16628E-08	1.76138E-08	0.00034616

EV Charging Stations

Source	Spaces	Average Charge (kWh/day) ^{1 2 3}	Days	kWh/yr	Electricity Emission Factor (MT CO2/MWh)	Electricity Emission Factor (lbs CO2/MWh)	Total EV Charging GHG Emissions Per Year
Residential	60	4.4	365	96,360	(MT CO2/MWh)	(lbs CO2/MWh)	54.99
Commercial/Retail	60	4.4	365	96,360	0.28	626.48	
Total	120	4.4	365	192,720	(MT CH4/MWh)	(lbs CH4/MWh)	

¹ US Department of Energy. Alternative Fuels Data Center, 2016. Hybrid and Plug-In Electric Vehicle Emissions Data Sources and Assumptions.

² US Department of Energy. Smith, Margaret, 2016. Level 1 Electric Vehicle Charging Stations at the Workplace.

³ UCLA Luskin Center for Innovation. Williams, Brett and JR deShazo, 2013. Pricing Workplace Charging: Financial Viability and Fueling Costs.

1.32E-05	0.029
(MT N2O/MWh)	(lbs N2O/MWh)
2.80E-06	0.00617

**670 Mesquit
Cooling Towers - with PDF
Greenhouse Gas Analysis**

24 hr/day
121,176 gal/day
44,229,240 gal/year
44.2292 mgal/year

CalEEMod Water Electricity Factors	Electricity Intensity Factor To Supply (kWh/Mgal)	Electricity Intensity Factor To Treat (kWh/Mgal)	Electricity Intensity Factor To Distribute (kWh/Mgal)	Electricity Intensity Factor For Wastewater Treatment (kWh/Mgal)
		9727	111	1272

Source	Electricity Demand from Water Demand (million kWh)	GHG Emissions (lbs/yr)				MTCO2e (MT/yr)
		CO2	CH4	N2O	CO2e	
Cooling Tower	0.5759	360,795	16.70	3.46	362,243	164.3

GHG	Intensity factor (lbs/MWh)
CO2	626.48
CH4	0.029
N2O	0.006

Notes: Flow rate from MEP Info pdf 11-22-18 and IV.N.2 Water Supply

670 Mesquit Project

Emergency Generator Daily Maintenance AQ Emissions

Building	VOC	NO _x	CO	SO _x	PM10	PM2.5
	lb/day					
Step 1	0.79	14.97	8.57	0.00	0.06	0.06
Step 2	0.39	7.48	4.28	0.00	0.03	0.03
Step 3/4	0.79	14.97	8.57	0.00	0.06	0.06
Total	1.97	37.42	21.42	0.00	0.16	0.15

Annual GHG Emissions

Building	MTCO ₂ e/year
1	40
2	20
3&4	40
Total	99

670 Mequit Project

Emergency Generator Daily Maintenance AQ Emissions - With PDFs - With Mitigation

Building	VOC	NO _x	CO	SO _x	PM10	PM2.5
	lb/day					
Step 1	0.20	7.35	8.53	1.81E-04	0.05	0.05
Total	0.20	7.35	8.53	1.81E-04	0.05	0.05

Annual GHG Emissions

Building	MTCO ₂ e/year
1	40
Total	40

**670 Mesquit
Air Quality Assessment**

Emergency Generator Emissions

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
PM2.5 Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step1 Emergency Generator

Ratings:	1,500 kW	<i>(based on conservative engineering assumptions)</i>
	2,012 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.24	4.56	2.61	5.50E-05	0.0192	0.0187	526.17	530.91
lbs/hr	0.79	14.97	8.57	0.00	0.06	0.06	1,727.10	1,742.66
lbs/day	0.79	14.97	8.57	0.00018	0.06	0.06	1,727.10	1,742.66
lbs/yr	39.39	748.39	428.35	0.01	3.15	3.08	86,355.04	87,133.00
tons/yr	0.02	0.37	0.21	0.00	0.00	0.00	43.18	43.57
metric tons/yr	—	—	—	—	—	—	39.17	39.52

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
- Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.

5%

Source: ESA 2018.

pdf file: MEP Info (10-22-18)

**670 Mesquit Mixed Use Project EIR
Air Quality Assessment**

Emergency Generator Emissions

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
PM2.5 Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step2 Emergency Generator

Ratings:	750 kW	<i>(based on conservative engineering assumptions)</i>
	1,006 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.24	4.56	2.61	5.50E-05	0.0192	0.0187	526.17	530.91
lbs/hr	0.39	7.48	4.28	0.00	0.03	0.03	863.55	871.33
lbs/day	0.39	7.48	4.28	0.00009	0.03	0.03	863.55	871.33
lbs/yr	19.69	374.20	214.17	0.00	1.58	1.54	43,177.52	43,566.50
tons/yr	0.01	0.19	0.11	0.00	0.00	0.00	21.59	21.78
metric tons/yr	—	—	—	—	—	—	19.59	19.76

Notes:

1. Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
2. Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
3. Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
4. Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.

Source: ESA 2018.

670 Mesquit Mixed Use Project EIR
Air Quality Assessment
670 Mesquit Mixed Use Project EIR
Emergency Generator Emissions (Step 3&4)

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
PM2.5 Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	IPCC AR4
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step4

Ratings:	1,500 kW	<i>(based on conservative engineering assumptions)</i>
	2,012 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.24	4.56	2.61	5.50E-05	0.0192	0.0187	526.17	530.91
lbs/hr	0.79	14.97	8.57	0.00	0.06	0.06	1727.10	1,742.66
lbs/day	0.79	14.97	8.57	0.00018	0.06	0.06	1,727.10	1,742.66
lbs/yr	39.39	748.39	428.35	0.01	3.15	3.08	86,355.04	87,133.00
tons/yr	0.02	0.37	0.21	0.00	0.00	0.00	43.18	43.57
metric tons/yr	—	—	—	—	—	—	39.17	39.52

Notes:

1. Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
2. Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
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4. Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.

Source: ESA 2018.

**670 Mesquit
Air Quality Assessment**

Emergency Generator Emissions - with PDF

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
PM2.5 Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step1 Emergency Generator

Ratings:	1,500 kW	<i>(based on conservative engineering assumptions)</i>
	2,012 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.06	2.24	2.60	5.50E-05	0.02	0.02	526.17	530.91
lbs/hr	0.20	7.35	8.53	0.00	0.05	0.05	1727.10	1,742.66
lbs/day	0.20	7.35	8.53	0.00018	0.053	0.053	1,727.10	1,742.66
lbs/yr	9.85	367.63	426.71	0.01	2.63	2.63	86,355.04	87,133.00
tons/yr	0.00	0.18	0.21	0.00	0.00	0.00	43.18	43.57
metric tons/yr	—	—	—	—	—	—	39.17	39.52

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
- Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.
- Emissions Factors for Tier 4 Final from CalEEMOD Appendix D, Pg. D-77

Source: ESA 2018. pdf file: MEP Info (10-22-18)

**670 Mesquit Mixed Use Project EIR
Air Quality Assessment**

Emergency Generator Emissions - with PDF

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
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CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step2 Emergency Generator

Ratings:	750 kW	<i>(based on conservative engineering assumptions)</i>
	1,006 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.06	2.24	2.60	5.50E-05	0.02	0.02	526.17	530.91
lbs/hr	0.10	3.68	4.27	0.00	0.03	0.03	863.55	871.33
lbs/day	0.10	3.68	4.27	0.00009	0.03	0.03	863.55	871.33
lbs/yr	4.92	183.82	213.36	0.00	1.31	1.31	43,177.52	43,566.50
tons/yr	0.00	0.09	0.11	0.00	0.00	0.00	21.59	21.78
metric tons/yr	—	—	—	—	—	—	19.59	19.76

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
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Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.
- Emissions Factors for Tier 4 Final from CalEEMOD Appendix D, Pg. D-77

Source: ESA 2018.

670 Mesquit Mixed Use Project EIR
Air Quality Assessment
670 Mesquit Mixed Use Project EIR
Emergency Generator Emissions (Step 3&4) - with PDF

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
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CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimaterestry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimaterestry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	IPCC AR4
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step4

Ratings:	1,500 kW	<i>(based on conservative engineering assumptions)</i>
	2,012 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.06	2.24	2.60	5.50E-05	0.02	0.02	526.17	530.91
lbs/hr	0.20	7.35	8.53	0.00	0.05	0.05	1727.10	1,742.66
lbs/day	0.20	7.35	8.53	0.00018	0.05	0.05	1,727.10	1,742.66
lbs/yr	9.85	367.63	426.71	0.01	2.63	2.63	86,355.04	87,133.00
tons/yr	0.00	0.18	0.21	0.00	0.00	0.00	43.18	43.57
metric tons/yr	—	—	—	—	—	—	39.17	39.52

Notes:

- Emission factors for VOC and NOX: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factor for SO2: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO2 is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO2.
- Emission factor for CO2: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
- Emissions Factors for Tier 4 Final from CalEEMOD Appendix D, Pg. D-77

Source: ESA 2018. pdf file: MEP Info (10-22-18)

670 Mesquit Project - South Coast AQMD Air District, Annual

670 Mesquit Project
South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1,032.82	1000sqft	1.00	1,032,816.00	0
User Defined Commercial	44,069.00	User Defined Unit	0.20	44,069.00	0
Enclosed Parking with Elevator	2,000.00	Space	0.25	800,000.00	0
City Park	3.26	Acre	3.26	138,139.00	0
Health Club	52.42	1000sqft	0.25	52,424.00	0
High Turnover (Sit Down Restaurant)	29.85	1000sqft	0.51	29,850.00	0
Hotel	236.00	Room	0.50	209,560.00	0
Quality Restaurant	29.85	1000sqft	1.00	29,850.00	0
User Defined Recreational	1.70	User Defined Unit	1.70	75,000.00	0
Apartments High Rise	420.00	Dwelling Unit	0.50	420,000.00	1201
Regional Shopping Center	11.66	1000sqft	0.26	11,664.00	0
User Defined Retail	800.00	User Defined Unit	0.10	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	12			Operational Year	2025
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MW hr)	595.16	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - updated CO2 intensity factor to match expected RPS incremental targets in buildout year of 2025

Land Use - See Alternative 2 Assumptions

Demolition -

Grading - MCC

Architectural Coating -

Vehicle Trips - mcc

Woodstoves - No fireplaces

Area Coating -

Solid Waste - see alternatives solid waste calculations

Sequestration -

Energy Mitigation -

Water Mitigation -

Waste Mitigation - study data

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	742,617.00	742,143.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	2,227,850.00	2,226,428.00
tblAreaCoating	Area_Nonresidential_Exterior	742619	742145
tblAreaCoating	Area_Nonresidential_Interior	2227856	2226434
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblEnergyUse	LightingElect	0.00	0.35
tblEnergyUse	LightingElect	0.00	3.70
tblEnergyUse	LightingElect	0.00	0.35

tblEnergyUse	LightingElect	0.00	0.35
tblEnergyUse	NT24E	0.00	4.62
tblEnergyUse	NT24NG	0.00	0.39
tblEnergyUse	T24E	258.09	252.93
tblEnergyUse	T24E	3.92	3.50
tblEnergyUse	T24E	4.60	4.11
tblEnergyUse	T24E	2.25	2.01
tblEnergyUse	T24E	8.11	7.24
tblEnergyUse	T24E	2.55	2.28
tblEnergyUse	T24E	8.11	7.24
tblEnergyUse	T24E	4.01	3.58
tblEnergyUse	T24E	0.00	4.11
tblEnergyUse	T24NG	4,697.18	4,462.32
tblEnergyUse	T24NG	10.02	9.92
tblEnergyUse	T24NG	13.65	13.51
tblEnergyUse	T24NG	42.98	42.55
tblEnergyUse	T24NG	19.92	19.72
tblEnergyUse	T24NG	42.98	42.55
tblEnergyUse	T24NG	1.15	1.14
tblEnergyUse	T24NG	0.00	9.92
tblFireplaces	FireplaceDayYear	25.00	180.00
tblFireplaces	FireplaceHourDay	3.00	12.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	357.00	5.00
tblFireplaces	NumberNoFireplace	42.00	303.00
tblFireplaces	NumberWood	21.00	0.00
tblLandUse	LandUseSquareFeet	1,032,820.00	1,032,816.00
tblLandUse	LandUseSquareFeet	0.00	44,069.00
tblLandUse	LandUseSquareFeet	142,005.60	138,139.00
tblLandUse	LandUseSquareFeet	52,420.00	52,424.00

tblLandUse	LandUseSquareFeet	342,672.00	209,560.00
tblLandUse	LandUseSquareFeet	0.00	75,000.00
tblLandUse	LandUseSquareFeet	11,660.00	11,664.00
tblLandUse	LotAcreage	23.71	1.00
tblLandUse	LotAcreage	0.00	0.20
tblLandUse	LotAcreage	18.00	0.25
tblLandUse	LotAcreage	1.20	0.25
tblLandUse	LotAcreage	0.69	0.51
tblLandUse	LotAcreage	7.87	0.50
tblLandUse	LotAcreage	0.69	1.00
tblLandUse	LotAcreage	0.00	1.70
tblLandUse	LotAcreage	6.77	0.50
tblLandUse	LotAcreage	0.27	0.26
tblLandUse	LotAcreage	0.00	0.10
tblProjectCharacteristics	CO2IntensityFactor	1227.89	595.16
tblSolidWaste	SolidWasteGenerationRate	193.20	937.43
tblSolidWaste	SolidWasteGenerationRate	0.28	0.00
tblSolidWaste	SolidWasteGenerationRate	960.52	8,882.21
tblSolidWaste	SolidWasteGenerationRate	298.79	0.00
tblSolidWaste	SolidWasteGenerationRate	355.22	0.00
tblSolidWaste	SolidWasteGenerationRate	129.21	0.00
tblSolidWaste	SolidWasteGenerationRate	27.24	0.00
tblSolidWaste	SolidWasteGenerationRate	12.24	0.00
tblWater	IndoorWaterUseRate	27,364,690.76	15,369,055.00
tblWater	IndoorWaterUseRate	183,566,969.60	135,054,421.95
tblWater	IndoorWaterUseRate	3,100,283.61	0.00
tblWater	IndoorWaterUseRate	9,060,481.32	0.00
tblWater	IndoorWaterUseRate	5,986,557.72	11,692,775.00
tblWater	IndoorWaterUseRate	9,060,481.32	0.00
tblWater	IndoorWaterUseRate	863,685.60	0.00

tblWater	OutdoorWaterUseRate	17,251,652.87	0.00
tblWater	OutdoorWaterUseRate	3,884,229.20	1,566,215.00
tblWater	OutdoorWaterUseRate	0.00	205,130.00
tblWater	OutdoorWaterUseRate	112,508,787.82	0.00
tblWater	OutdoorWaterUseRate	1,900,173.83	0.00
tblWater	OutdoorWaterUseRate	578,328.59	0.00
tblWater	OutdoorWaterUseRate	665,173.08	0.00
tblWater	OutdoorWaterUseRate	578,328.59	0.00
tblWater	OutdoorWaterUseRate	529,355.69	0.00
tblWoodstoves	NumberCatalytic	21.00	0.00
tblWoodstoves	NumberNoncatalytic	21.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	7.9581	0.0853	4.9543	4.7000e-004		0.0286	0.0286		0.0286	0.0286	0.0000	42.8527	42.8527	0.0106	6.3000e-004	43.3055
Energy	0.1904	1.7176	1.3566	0.0104		0.1316	0.1316		0.1316	0.1316	0.0000	8,477.1600	8,477.1600	0.3574	0.1010	8,516.1950
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	1,993.2982	0.0000	1,993.2982	117.8006	0.0000	4,938.3119
Water						0.0000	0.0000		0.0000	0.0000	51.4320	575.1756	626.6076	5.3106	0.1305	798.2706
Total	8.1484	1.8029	6.3109	0.0109	0.0000	0.1602	0.1602	0.0000	0.1602	0.1602	2,044.7302	9,095.1883	11,139.9185	123.4791	0.2322	14,296.0830

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Hotel	0.00	0.00	0.00		
Quality Restaurant	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
User Defined Commercial	0.00	0.00	0.00		
User Defined Recreational	0.00	0.00	0.00		
User Defined Retail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	11.60	4.70	6.90	40.00	19.00	41.00	86	11	3
City Park	13.10	6.60	5.40	0.00	0.00	0.00	0	0	0
Enclosed Parking with Elevator	13.10	6.60	5.40	0.00	0.00	0.00	0	0	0
General Office Building	13.10	6.60	5.40	33.00	48.00	19.00	77	19	4
Health Club	13.10	6.60	5.40	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down Restaurant)	13.10	6.60	5.40	8.50	72.50	19.00	37	20	43
Hotel	13.10	6.60	5.40	19.40	61.60	19.00	58	38	4
Quality Restaurant	13.10	6.60	5.40	12.00	69.00	19.00	38	18	44
Regional Shopping Center	13.10	6.60	6.90	16.30	64.70	19.00	54	35	11
User Defined Commercial	13.10	6.60	6.90	16.90	64.10	19.00	77	19	4
User Defined Recreational	13.10	6.60	6.90	16.90	64.10	19.00	52	39	9
User Defined Retail	13.10	6.60	6.90	16.30	64.70	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments High Rise	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
City Park	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Enclosed Parking with Elevator	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
General Office Building	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Health Club	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
High Turnover (Sit Down Restaurant)	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Hotel	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Quality Restaurant	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Regional Shopping Center	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
User Defined Commercial	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
User Defined Recreational	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
User Defined Retail	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6,592.9125	6,592.9125	0.3213	0.0665	6,620.7504
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6,592.9125	6,592.9125	0.3213	0.0665	6,620.7504
NaturalGas Mitigated	0.1904	1.7176	1.3566	0.0104		0.1316	0.1316		0.1316	0.1316	0.0000	1,884.2475	1,884.2475	0.0361	0.0345	1,895.4446
NaturalGas Unmitigated	0.1904	1.7176	1.3566	0.0104		0.1316	0.1316		0.1316	0.1316	0.0000	1,884.2475	1,884.2475	0.0361	0.0345	1,895.4446

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments High Rise	4.51219e+006	0.0243	0.2079	0.0885	1.3300e-003		0.0168	0.0168		0.0168	0.0168	0.0000	240.7879	240.7879	4.6200e-003	4.4100e-003	242.2188
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	1.06483e+007	0.0574	0.5220	0.4385	3.1300e-003		0.0397	0.0397		0.0397	0.0397	0.0000	568.2356	568.2356	0.0109	0.0104	571.6123
Health Club	941535	5.0800e-003	0.0462	0.0388	2.8000e-004		3.5100e-003	3.5100e-003		3.5100e-003	3.5100e-003	0.0000	50.2439	50.2439	9.6000e-004	9.2000e-004	50.5425
High Turnover (Sit Down Restaurant)	6.87535e+006	0.0371	0.3370	0.2831	2.0200e-003		0.0256	0.0256		0.0256	0.0256	0.0000	366.8949	366.8949	7.0300e-003	6.7300e-003	369.0752
Hotel	4.98334e+006	0.0269	0.2443	0.2052	1.4700e-003		0.0186	0.0186		0.0186	0.0186	0.0000	265.9298	265.9298	5.1000e-003	4.8800e-003	267.5101

Quality Restaurant	6.87535e+006	0.0371	0.3370	0.2831	2.0200e-003		0.0256	0.0256		0.0256	0.0256	0.0000	366.8949	366.8949	7.0300e-003	6.7300e-003	369.0752
Regional Shopping Center	19012.3	1.0000e-004	9.3000e-004	7.8000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	1.0146	1.0146	2.0000e-005	2.0000e-005	1.0206
User Defined Commercial	454351	2.4500e-003	0.0223	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.2459	24.2459	4.6000e-004	4.4000e-004	24.3900
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.1904	1.7176	1.3566	0.0104		0.1315	0.1315		0.1315	0.1315	0.0000	1,884.2475	1,884.2475	0.0361	0.0346	1,895.4446

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments High Rise	4.51219e+006	0.0243	0.2079	0.0885	1.3300e-003		0.0168	0.0168		0.0168	0.0168	0.0000	240.7879	240.7879	4.6200e-003	4.4100e-003	242.2188
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	1.06483e+007	0.0574	0.5220	0.4385	3.1300e-003		0.0397	0.0397		0.0397	0.0397	0.0000	568.2356	568.2356	0.0109	0.0104	571.6123
Health Club	941535	5.0800e-003	0.0462	0.0388	2.8000e-004		3.5100e-003	3.5100e-003		3.5100e-003	3.5100e-003	0.0000	50.2439	50.2439	9.6000e-004	9.2000e-004	50.5425
High Turnover (Sit Down Restaurant)	6.87535e+006	0.0371	0.3370	0.2831	2.0200e-003		0.0256	0.0256		0.0256	0.0256	0.0000	366.8949	366.8949	7.0300e-003	6.7300e-003	369.0752
Hotel	4.98334e+006	0.0269	0.2443	0.2052	1.4700e-003		0.0186	0.0186		0.0186	0.0186	0.0000	265.9298	265.9298	5.1000e-003	4.8800e-003	267.5101
Quality Restaurant	6.87535e+006	0.0371	0.3370	0.2831	2.0200e-003		0.0256	0.0256		0.0256	0.0256	0.0000	366.8949	366.8949	7.0300e-003	6.7300e-003	369.0752
Regional Shopping Center	19012.3	1.0000e-004	9.3000e-004	7.8000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	1.0146	1.0146	2.0000e-005	2.0000e-005	1.0206
User Defined Commercial	454351	2.4500e-003	0.0223	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.2459	24.2459	4.6000e-004	4.4000e-004	24.3900
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.1904	1.7176	1.3566	0.0104		0.1315	0.1315		0.1315	0.1315	0.0000	1,884.2475	1,884.2475	0.0361	0.0346	1,895.4446

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	1.70036e+006	459.0285	0.0224	4.6300e-003	460.9667
City Park	48348.6	13.0522	6.4000e-004	1.3000e-004	13.1073
Enclosed Parking with Elevator	4.352e+006	1,174.8661	0.0573	0.0118	1,179.8268
General Office Building	1.29102e+007	3,485.2380	0.1698	0.0351	3,499.9541
Health Club	569325	153.6949	7.4900e-003	1.5500e-003	154.3439
High Turnover (Sit Down Restaurant)	1.29161e+006	348.6830	0.0170	3.5200e-003	350.1552
Hotel	1.53188e+006	413.5474	0.0202	4.1700e-003	415.2935
Quality Restaurant	1.29161e+006	348.6830	0.0170	3.5200e-003	350.1552
Regional Shopping Center	152448	41.1550	2.0100e-003	4.1000e-004	41.3288
User Defined Commercial	547778	147.8781	7.2100e-003	1.4900e-003	148.5025
User Defined Recreational	26250	7.0865	3.5000e-004	7.0000e-005	7.1164
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		6,592.9125	0.3213	0.0665	6,620.7504

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	1.70036e+006	459.0285	0.0224	4.6300e-003	460.9667
City Park	48348.6	13.0522	6.4000e-004	1.3000e-004	13.1073
Enclosed Parking with Elevator	4.352e+006	1,174.8661	0.0573	0.0118	1,179.8268
General Office Building	1.29102e+007	3,485.2380	0.1698	0.0351	3,499.9541
Health Club	569325	153.6949	7.4900e-003	1.5500e-003	154.3439
High Turnover (Sit Down Restaurant)	1.29161e+006	348.6830	0.0170	3.5200e-003	350.1552
Hotel	1.53188e+006	413.5474	0.0202	4.1700e-003	415.2935
Quality Restaurant	1.29161e+006	348.6830	0.0170	3.5200e-003	350.1552
Regional Shopping Center	152448	41.1550	2.0100e-003	4.1000e-004	41.3288
User Defined Commercial	547778	147.8781	7.2100e-003	1.4900e-003	148.5025
User Defined Recreational	26250	7.0865	3.5000e-004	7.0000e-005	7.1164
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		6,592.9125	0.3213	0.0665	6,620.7504

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	7.9581	0.0853	4.9543	4.7000e-004		0.0286	0.0286		0.0286	0.0286	0.0000	42.8527	42.8527	0.0106	6.3000e-004	43.3055
Unmitigated	7.9581	0.0853	4.9543	4.7000e-004		0.0286	0.0286		0.0286	0.0286	0.0000	42.8527	42.8527	0.0106	6.3000e-004	43.3055

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.8305					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.9376					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.4900e-003	0.0299	0.0127	1.9000e-004		2.4100e-003	2.4100e-003		2.4100e-003	2.4100e-003	0.0000	34.5798	34.5798	6.6000e-004	6.3000e-004	34.7852
Landscaping	0.1865	0.0554	4.9416	2.7000e-004		0.0262	0.0262		0.0262	0.0262	0.0000	8.2730	8.2730	9.8900e-003	0.0000	8.5203
Total	7.9580	0.0853	4.9543	4.6000e-004		0.0286	0.0286		0.0286	0.0286	0.0000	42.8527	42.8527	0.0106	6.3000e-004	43.3055

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.8305					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.9376					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.4900e-003	0.0299	0.0127	1.9000e-004		2.4100e-003	2.4100e-003		2.4100e-003	2.4100e-003	0.0000	34.5798	34.5798	6.6000e-004	6.3000e-004	34.7852
Landscaping	0.1865	0.0554	4.9416	2.7000e-004		0.0262	0.0262		0.0262	0.0262	0.0000	8.2730	8.2730	9.8900e-003	0.0000	8.5203
Total	7.9580	0.0853	4.9543	4.6000e-004		0.0286	0.0286		0.0286	0.0286	0.0000	42.8527	42.8527	0.0106	6.3000e-004	43.3055

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	626.6076	5.3106	0.1305	798.2706
Unmitigated	626.6076	5.3106	0.1305	798.2706

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	15.3691 / 0	58.9004	0.5034	0.0124	75.1724
City Park	0 / 1.56621	4.6975	2.3000e-004	5.0000e-005	4.7173
Enclosed Parking with Elevator	0 / 0.20513	0.6152	3.0000e-005	1.0000e-005	0.6178
General Office Building	135.054 / 0	517.5830	4.4239	0.1087	660.5719
Health Club	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Hotel	11.6928 / 0	44.8114	0.3830	9.4100e-003	57.1912
Quality Restaurant	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		626.6076	5.3106	0.1305	798.2706

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	15.3691 / 0	58.9004	0.5034	0.0124	75.1724
City Park	0 / 1.56621	4.6975	2.3000e-004	5.0000e-005	4.7173
Enclosed Parking with Elevator	0 / 0.20513	0.6152	3.0000e-005	1.0000e-005	0.6178
General Office Building	135.054 / 0	517.5830	4.4239	0.1087	660.5719
Health Club	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Hotel	11.6928 / 0	44.8114	0.3830	9.4100e-003	57.1912
Quality Restaurant	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		626.6076	5.3106	0.1305	798.2706

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	478.3916	28.2721	0.0000	1,185.1949
Unmitigated	1,993.2982	117.8006	0.0000	4,938.3119

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	937.43	190.2898	11.2458	0.0000	471.4350
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	8882.21	1,803.0084	106.5547	0.0000	4,466.8769
Health Club	0	0.0000	0.0000	0.0000	0.0000

High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000
Hotel	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		1,993.2982	117.8006	0.0000	4,938.3119

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	224.983	45.6696	2.6990	0.0000	113.1444
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	2131.73	432.7220	25.5731	0.0000	1,072.0505
Health Club	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000
Hotel	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000

User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		478.3916	28.2721	0.0000	1,185.1949

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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**APPENDIX P - Alternative 3
Air Quality and Greenhouse Gas
Worksheets**

670 Mesquit Project - Alternative 3

1. Air Quality Worksheets

Air Quality Calculation Worksheets and Model Outputs

Operations

- 1. Emissions Summaries and Miscellaneous Calculations**
- 2. Emissions Modeling Output**

**670 Mesquit
Air Quality and Greenhouse Gas Assessment**

Regional Operational Emissions - Alternative 3

Maximum Unmitigated Regional Operational Emissions (pounds per day) ^a

Source	VOC	NO_x	CO	SO₂	PM₁₀	PM_{2.5}
Area (Consumer Products, Landscaping)	44	<1	35	<1	<1	<1
Energy (Natural Gas)	1	10	8	<1	<1	<1
Motor Vehicles	37	62	344	1	107	30
Area (Charbroiler)	<1	-	-	-	<1	<1
Cooling Tower	-	-	-	-	<1	<1
Stationary (Emergency Generators)	2	37	21	<1	<1	<1
Heliport	<1	4	3	-	-	-
Total Project On-Site and Off-Site Emissions	84	114	412	1	109	31
SCAQMD Numeric Indicators	55.0	55.0	550.0	150.0	150.0	55.0
Over/(Under)	29.4	59.1	-138.3	-148.9	-40.7	-23.6
Exceeds Thresholds?	Yes	Yes	No	No	No	No

Net Regional Operations

Maximum Unmitigated Regional Operational Emissions (pounds per day) ^a

Source	VOC	NO_x	CO	SO₂	PM₁₀	PM_{2.5}
Area (Consumer Products, Landscaping)	39	<1	35	<1	<1	<1
Energy (Natural Gas)	1	10	8	<1	<1	<1
Motor Vehicles	28	-49	230	0.91	101.4	26.4
Area (Charbroiler)	<1	-	-	-	<1	<1
Cooling Tower	-	-	-	-	<1	<1
Stationary (Emergency Generator)	2	37	21	<1	<1	<1
Heliport	<1	4	3	-	-	-
Total Project On-Site and Off-Site Emissions	70	3	297	1	103	28
SCAQMD Numeric Indicators	55	55	550	150	150.0	55.0
Over/(Under)	15	(52)	(253)	(149)	(46.7)	(27.1)
Exceeds Thresholds?	Yes	No	No	No	No	No

Estimate of Heliport AQ emissions adapted from Appendix C of Appendix IV.G.1 of the Climate Change Technical Report Wilshire Grand Development Project, <https://planning.lacity.org/eir/WilshireGrandRedevProj/DEIR/DEIR%20Appendices/Appendix%20IV.G.1.pdf>

**670 Mesquit
Air Quality and Greenhouse Gas Assessment**

Localized Operational Emissions - Alternative 3

Maximum Unmitigated Localized Operational Emissions (pounds per day)^a

Source	NO_x	CO	PM₁₀	PM_{2.5}
Area (Consumer Products, Landscaping)	1	35	0.2	0.2
Energy (Natural Gas)	10	8	0.7	0.7
Area (Charbroiler)	-	-	0.7	0.4
Cooling Tower	-	-	0.1	0.0
Stationary (Emergency Generator)	37	21	0.2	0.2
Heliport	0.1	0.2	-	-
Total Project On-Site Emissions	48.0	64.5	1.9	1.5
SCAQMD Numeric Indicators	161.0	1861.0	4.0	2.0
Over/(Under)	(113)	(1796)	(2.1)	(0.5)
Exceeds Thresholds?	No	No	No	No

Localized significance threshold from SCAQMD Look-Up tables for a 5-acre site in Central Los Angeles (SRA 1) with the nearest sensitive receptor at 25 meters from the Site.

Net Localized Operational Emissions

Maximum Unmitigated Localized Operational Emissions (pounds per day)^a

Source	NO_x	CO	PM₁₀	PM_{2.5}
Area (Consumer Products, Landscaping)	1	35	0.2	0.2
Energy (Natural Gas)	10	8	0.7	0.7
Area (Charbroiler)	-	-	0.7	0.4
Cooling Tower	-	-	0.1	0.0
Stationary (Emergency Generator)	37	21	0.2	0.2
Heliport	0.1	0.2	-	-
Total Project On-Site Emissions	48	64	1.9	1.5
SCAQMD Numeric Indicators	161	1,861	4.0	2.0
Over/(Under)	(113)	(1,797)	(2.1)	(0.5)
Exceeds Thresholds?	No	No	No	No

Localized significance threshold from SCAQMD Look-Up tables for a 5-acre site in Central Los Angeles (SRA 1) with the nearest sensitive receptor at 25 meters from the Site.

*Estimate of Heliport AQ emissions adapted from Appendix C of Appendix IV.G.1 of the Climate Change Technical Report Wilshire Grand Development Project,
<https://planning.lacity.org/eir/WilshireGrandRedevProj/DEIR/DEIR%20Appendices/Appendix%20IV.G.1.pdf>*

**670 Mesquit
Air Quality and Greenhouse Gas Assessment**

Regional Operational Emissions - Alternative 3 Mitigated

Maximum Mitigated Regional Operational Emissions (pounds per day) ^a

Source	VOC	NO_x	CO	SO₂	PM₁₀	PM_{2.5}
Area (Consumer Products, Landscaping)	44	<1	35	<1	<1	<1
Energy (Natural Gas)	1	10	8	<1	<1	<1
Motor Vehicles (excluding TRAF-MM-1)	34	56	309	<1	95.5	26.0
Area (Charbroiler)	<1	-	-	-	<1	<1
Cooling Tower	-	-	-	-	<1	<1
Stationary (Emergency Generators)	<1	7	9	<1	<1	<1
Heliport	<1	4	3	-	-	-
Total Project On-Site and Off-Site Emissions	79	78	364	1	97	27
SCAQMD Numeric Indicators	55.0	55.0	550.0	150.0	150.0	55.0
Over/(Under)	23.8	22.7	-186.3	-149.0	-52.6	-27.6
Exceeds Thresholds?	Yes	Yes	No	No	No	No

Net Regional Operations

Maximum Mitigated Regional Operational Emissions (pounds per day) ^a

Source	VOC	NO_x	CO	SO₂	PM₁₀	PM_{2.5}
Area (Consumer Products, Landscaping)	39	<1	35	<1	<1	<1
Energy (Natural Gas)	1	10	8	<1	<1	<1
Motor Vehicles	24	-55	195	0.80	89.6	22.5
Area (Charbroiler)	<1	-	-	-	<1	<1
Cooling Tower	-	-	-	-	<1	<1
Stationary (Emergency Generator)	<1	7	9	<1	<1	<1
Heliport	<1	4	3	-	-	-
Total Project On-Site and Off-Site Emissions	65	-33	249	1	91	24
SCAQMD Numeric Indicators	55	55	550	150	150.0	55.0
Over/(Under)	10	(88)	(301)	(149)	(58.6)	(31.1)
Exceeds Thresholds?	Yes	No	No	No	No	No

Estimate of Heliport AQ emissions adapted from Appendix C of Appendix IV.G.1 of the Climate Change Technical Report Wilshire Grand Development Project, <https://planning.lacity.org/eir/WilshireGrandRedevProj/DEIR/DEIR%20Appendices/Appendix%20IV.G.1.pdf>

670 Mesquit
Air Quality and Greenhouse Gas Assessment

Localized Operational Emissions - Alternative 3 Mitigated

Maximum Mitigated Localized Operational Emissions (pounds per day)^a

Source	NO_x	CO	PM₁₀	PM_{2.5}
Area (Consumer Products, Landscaping)	1	35	0.2	0.2
Energy (Natural Gas)	10	8	0.7	0.7
Area (Charbroiler)	-	-	0.7	0.4
Cooling Tower	-	-	0.1	0.0
Stationary (Emergency Generator)	7	9	0.1	0.1
Heliport	0.1	0.2	-	-
Total Project On-Site Emissions	17.9	51.6	1.8	1.4
SCAQMD Numeric Indicators	161.0	1861.0	4.0	2.0
Over/(Under)	(143)	(1809)	(2.2)	(0.6)
Exceeds Thresholds?	No	No	No	No

Localized significance threshold from SCAQMD Look-Up tables for a 5-acre site in Central Los Angeles (SRA 1) with the nearest sensitive receptor at 25 meters from the Site.

Net Localized Operational Emissions

Maximum Mitigated Localized Operational Emissions (pounds per day)^a

Source	NO_x	CO	PM₁₀	PM_{2.5}
Area (Consumer Products, Landscaping)	1	35	0.2	0.2
Energy (Natural Gas)	10	8	0.7	0.7
Area (Charbroiler)	-	-	0.7	0.4
Cooling Tower	-	-	0.1	0.0
Stationary (Emergency Generator)	7	9	0.1	0.1
Heliport	0.1	0.2	-	-
Total Project On-Site Emissions	18	52	1.8	1.4
SCAQMD Numeric Indicators	161	1,861	4.0	2.0
Over/(Under)	(143)	(1,809)	(2.2)	(0.6)
Exceeds Thresholds?	No	No	No	No

Localized significance threshold from SCAQMD Look-Up tables for a 5-acre site in Central Los Angeles (SRA 1) with the nearest sensitive receptor at 25 meters from the Site.

Estimate of Heliport AQ emissions adapted from Appendix C of Appendix IV.G.1 of the Climate Change Technical Report Wilshire Grand Development Project,
<https://planning.lacity.org/eir/WilshireGrandRedevProj/DEIR/DEIR%20Appendices/Appendix%20IV.G.1.pdf>

670 Mesquit - Project VMT Calculation
Draft Environmental Impact Report
Air Quality Assessment
Alternative 3 - Umitigated

Scenario	Year	VMT/day	ROG	NOX	CO	SOX	- Alternative 3 Mitigated			PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total
							PM10 Dust	PM10 Exhaust	PM10 Total			
Project	2025	136,954	37.32	62.13	344.13	1.01	90.53	15.85	106.39	22.22	6.71	28.93

Source: ESA 2020

670 Mesquit - Project VMT Calculation

Road Dust Emission Factors

Paved Road Dust Emission Factors (Assumes No Precipitation)

Formula: $EF_{Dust,P} = (k (sL)^{0.91} \times (W)^{1.02})$

Where:

- EF_{Dust,P} = Paved Road Dust Emission Factor (having the same units as k)
- k = particle size multiplier
- sL = road surface silt loading (g/m²)
- W = average fleet vehicle weight (tons) (CARB uses 2.4 tons as a fleet average vehicle weight factor)

	Emission Factor (grams per VMT)	
	PM10	PM2.5
k	0.9979	0.2449
sL	0.1	0.1
W	2.4	2.4
EF _{Dust,P}	3.00E-01	7.36E-02

Unpaved Road Dust Emission Factors (Assumes No Precipitation)

Formula: $EF_{Dust,U} = (k (s / 12)^1 \times (Sp / 30)^{0.5} / (M / 0.5)^{0.2}) - C$

Where:

- EF_{Dust,U} = Unpaved Road Dust Emission Factor (having the same units as k)
- k = particle size multiplier
- s = surface material silt content (%)
- Sp = mean vehicle speed (mph)
- M = surface material moisture content (%)
- C = Emission Factor for 1980s vehicle fleet exhaust, brake wear, and tire wear

	Emission Factor (grams per VMT)	
	PM10	PM2.5
k	816.47	81.65
s	4.3%	4.3%
Sp	15	15
M	0.5%	0.5%
C	0.00047	0.00036
EF _{Dust,U}	5.20E+00	5.19E-01

Sources:

SCAQMD, CalEEMod, Version 2011.1.

CARB, *Entrained Dust from Paved Road Travel: Emission Estimation Methodology Background Document*, (1997).

USEPA, *AP-42*, Fifth Edition, Volume I, Chapter 13.2.1 - Paved Roads, (2011).

PCR Services Corporation, 2013.

Emissions Factors

Year	lbs/mile						
	ROG	NOx	CO	SOx	PM10	PM2_5	
2018	0.000434828	0.000893715	0.004073127	8.92839E-06	0.000123435	5.70497E-05	
2023	0.000299429	0.000486506	0.002777435	7.78677E-06	0.000115725	4.91522E-05	
2024	0.000285236	0.000470018	0.002638684	7.59983E-06	0.000115757	4.90959E-05	
2025	0.000272471	0.000453637	0.00251276	7.37578E-06	0.00011574	4.90103E-05	
2026	0.000261916	0.000440469	0.002412515	7.18307E-06	0.000115737	4.89222E-05	
2027	0.000252017	0.000428994	0.002327095	7.00819E-06	0.000115684	4.8795E-05	

670 Mesquit - Project VMT Calculation
Draft Environmental Impact Report
Air Quality Assessment
Alternative 3 - Mitigated

Scenario	Year	VMT/day	ROG	NOX	CO	SOX	Criteria Pollutant Emissions (pounds/day)					
							PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total
Project	2025	122,997	33.51	55.80	309.06	0.91	81.31	14.24	95.54	19.96	6.03	25.99

Source: ESA 2020

670 Mesquit - Project VMT Calculation

Road Dust Emission Factors

Paved Road Dust Emission Factors (Assumes No Precipitation)

Formula: $EF_{Dust,P} = (k (sL)^{0.91} \times (W)^{1.02})$

Where:

- EF_{Dust,P} = Paved Road Dust Emission Factor (having the same units as k)
- k = particle size multiplier
- sL = road surface silt loading (g/m²)
- W = average fleet vehicle weight (tons) (CARB uses 2.4 tons as a fleet average vehicle weight factor)

	Emission Factor (grams per VMT)	
	PM10	PM2.5
k	0.9979	0.2449
sL	0.1	0.1
W	2.4	2.4
EF _{Dust,P}	3.00E-01	7.36E-02

Unpaved Road Dust Emission Factors (Assumes No Precipitation)

Formula: $EF_{Dust,U} = (k (s / 12)^1 \times (Sp / 30)^{0.5} / (M / 0.5)^{0.2}) - C$

Where:

- EF_{Dust,U} = Unpaved Road Dust Emission Factor (having the same units as k)
- k = particle size multiplier
- s = surface material silt content (%)
- Sp = mean vehicle speed (mph)
- M = surface material moisture content (%)
- C = Emission Factor for 1980s vehicle fleet exhaust, brake wear, and tire wear

	Emission Factor (grams per VMT)	
	PM10	PM2.5
k	816.47	81.65
s	4.3%	4.3%
Sp	15	15
M	0.5%	0.5%
C	0.00047	0.00036
EF _{Dust,U}	5.20E+00	5.19E-01

Sources:

SCAQMD, CalEEMod, Version 2011.1.

CARB, *Entrained Dust from Paved Road Travel: Emission Estimation Methodology Background Document*, (1997).

USEPA, *AP-42*, Fifth Edition, Volume I, Chapter 13.2.1 - Paved Roads, (2011).

PCR Services Corporation, 2013.

Emissions Factors

Year	lbs/mile						
	ROG	NOx	CO	SOx	PM10	PM2_5	
2018	0.000434828	0.000893715	0.004073127	8.92839E-06	0.000123435	5.70497E-05	
2023	0.000299429	0.000486506	0.002777435	7.78677E-06	0.000115725	4.91522E-05	
2024	0.000285236	0.000470018	0.002638684	7.59983E-06	0.000115757	4.90959E-05	
2025	0.000272471	0.000453637	0.00251276	7.37578E-06	0.00011574	4.90103E-05	
2026	0.000261916	0.000440469	0.002412515	7.18307E-06	0.000115737	4.89222E-05	
2027	0.000252017	0.000428994	0.002327095	7.00819E-06	0.000115684	4.8795E-05	

**670 Mesquit
Cooling Towers - With PDFs
Air Quality Analysis**

Cooling Towers Rating (Max flow):

Annual: 44.2 million gallons
Daily: 121,176 gallons per day
Hourly: 5,049 gallons per hour

Cooling Tower Emissions

Units	PM ₁₀	PM _{2.5}	ROG
lbs/1000 gal	0.01900	0.01900	—
lbs/1000 gal (corrected)	0.00102	0.00002	—
lbs/hr	0.00516	0.00009	—
lbs/day	0.12391	0.00216	—
lbs/yr	45.22667	0.78962	—
tons/yr	0.02261	0.00039	—

Notes: Flow rate from MEP Info pdf 11-22-18 and IV.N.2 Water Supply, associated PDFs also found in IV.N.2 Water Supply.

1. USEPA, AP-42, Chapter 13.4 Wet Cooling Towers, January 1995. Correction factor obtained from Greystone Environmental Consultants, Calculating Realistic PM10 Emissions from Cooling Towers, page 5,
https://www.energy.ca.gov/sitingcases//palomar/documents/applicants_files/Data_Request_Response/Air%20Quality/Attachment%204-1.pdf.
2. The PM10 to PM2.5 ratio for cooling towers was also determined from Greystone Environmental Consultants, Calculating Realistic PM10 Emissions from Cooling Towers, page 5,
https://www.energy.ca.gov/sitingcases//palomar/documents/applicants_files/Data_Request_Response/Air%20Quality/Attachment%204-1.pdf.

Source: ESA 2018.

670 Mesquit Project

Emergency Generator Daily Maintenance AQ Emissions

Building	VOC	NO _x	CO	SO _x	PM10	PM2.5
	lb/day					
Step 1	0.79	14.97	8.57	0.00	0.06	0.06
Step 2	0.39	7.48	4.28	0.00	0.03	0.03
Step 3/4	0.79	14.97	8.57	0.00	0.06	0.06
Total	1.97	37.42	21.42	0.00	0.16	0.15

Annual GHG Emissions

Building	MTCO ₂ e/year
1	40
2	20
3&4	40
Total	99

670 Mequit Project

Emergency Generator Daily Maintenance AQ Emissions - With PDFs - With Mitigation

Building	VOC	NO _x	CO	SO _x	PM10	PM2.5
	lb/day					
Step 1	0.20	7.35	8.53	1.81E-04	0.05	0.05
Total	0.20	7.35	8.53	1.81E-04	0.05	0.05

Annual GHG Emissions

Building	MTCO ₂ e/year
1	40
Total	40

**670 Mesquit
Air Quality Assessment**

Emergency Generator Emissions

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
PM2.5 Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step1 Emergency Generator

Ratings:	1,500 kW	<i>(based on conservative engineering assumptions)</i>
	2,012 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.24	4.56	2.61	5.50E-05	0.0192	0.0187	526.17	530.91
lbs/hr	0.79	14.97	8.57	0.00	0.06	0.06	1,727.10	1,742.66
lbs/day	0.79	14.97	8.57	0.00018	0.06	0.06	1,727.10	1,742.66
lbs/yr	39.39	748.39	428.35	0.01	3.15	3.08	86,355.04	87,133.00
tons/yr	0.02	0.37	0.21	0.00	0.00	0.00	43.18	43.57
metric tons/yr	—	—	—	—	—	—	39.17	39.52

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
- Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.

5%

Source: ESA 2018.

pdf file: MEP Info (10-22-18)

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Air Quality Assessment**

Emergency Generator Emissions

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
PM2.5 Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step2 Emergency Generator

Ratings:	750 kW	<i>(based on conservative engineering assumptions)</i>
	1,006 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.24	4.56	2.61	5.50E-05	0.0192	0.0187	526.17	530.91
lbs/hr	0.39	7.48	4.28	0.00	0.03	0.03	863.55	871.33
lbs/day	0.39	7.48	4.28	0.00009	0.03	0.03	863.55	871.33
lbs/yr	19.69	374.20	214.17	0.00	1.58	1.54	43,177.52	43,566.50
tons/yr	0.01	0.19	0.11	0.00	0.00	0.00	21.59	21.78
metric tons/yr	—	—	—	—	—	—	19.59	19.76

Notes:

1. Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
2. Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
3. Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
4. Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.

Source: ESA 2018.

670 Mesquit Mixed Use Project EIR
Air Quality Assessment
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Emergency Generator Emissions (Step 3&4)

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
PM2.5 Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
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N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	IPCC AR4
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step4

Ratings:	1,500 kW	<i>(based on conservative engineering assumptions)</i>
	2,012 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.24	4.56	2.61	5.50E-05	0.0192	0.0187	526.17	530.91
lbs/hr	0.79	14.97	8.57	0.00	0.06	0.06	1727.10	1,742.66
lbs/day	0.79	14.97	8.57	0.00018	0.06	0.06	1,727.10	1,742.66
lbs/yr	39.39	748.39	428.35	0.01	3.15	3.08	86,355.04	87,133.00
tons/yr	0.02	0.37	0.21	0.00	0.00	0.00	43.18	43.57
metric tons/yr	—	—	—	—	—	—	39.17	39.52

Notes:

1. Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
2. Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
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Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
4. Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.

Source: ESA 2018.

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Air Quality Assessment**

Emergency Generator Emissions - with PDF

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
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CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step1 Emergency Generator

Ratings:	1,500 kW	<i>(based on conservative engineering assumptions)</i>
	2,012 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.06	2.24	2.60	5.50E-05	0.02	0.02	526.17	530.91
lbs/hr	0.20	7.35	8.53	0.00	0.05	0.05	1727.10	1,742.66
lbs/day	0.20	7.35	8.53	0.00018	0.053	0.053	1,727.10	1,742.66
lbs/yr	9.85	367.63	426.71	0.01	2.63	2.63	86,355.04	87,133.00
tons/yr	0.00	0.18	0.21	0.00	0.00	0.00	43.18	43.57
metric tons/yr	—	—	—	—	—	—	39.17	39.52

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
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- Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.
- Emissions Factors for Tier 4 Final from CalEEMOD Appendix D, Pg. D-77

Source: ESA 2018. pdf file: MEP Info (10-22-18)

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Air Quality Assessment**

Emergency Generator Emissions - with PDF

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
PM2.5 Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
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CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step2 Emergency Generator

Ratings:	750 kW	<i>(based on conservative engineering assumptions)</i>
	1,006 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.06	2.24	2.60	5.50E-05	0.02	0.02	526.17	530.91
lbs/hr	0.10	3.68	4.27	0.00	0.03	0.03	863.55	871.33
lbs/day	0.10	3.68	4.27	0.00009	0.03	0.03	863.55	871.33
lbs/yr	4.92	183.82	213.36	0.00	1.31	1.31	43,177.52	43,566.50
tons/yr	0.00	0.09	0.11	0.00	0.00	0.00	21.59	21.78
metric tons/yr	—	—	—	—	—	—	19.59	19.76

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
- Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.
- Emissions Factors for Tier 4 Final from CalEEMOD Appendix D, Pg. D-77

Source: ESA 2018.

670 Mesquit Mixed Use Project EIR
Air Quality Assessment
670 Mesquit Mixed Use Project EIR
Emergency Generator Emissions (Step 3&4) - with PDF

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
PM2.5 Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimaterestry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimaterestry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimaterestry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	IPCC AR4
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step4

Ratings:	1,500 kW	<i>(based on conservative engineering assumptions)</i>
	2,012 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.06	2.24	2.60	5.50E-05	0.02	0.02	526.17	530.91
lbs/hr	0.20	7.35	8.53	0.00	0.05	0.05	1727.10	1,742.66
lbs/day	0.20	7.35	8.53	0.00018	0.05	0.05	1,727.10	1,742.66
lbs/yr	9.85	367.63	426.71	0.01	2.63	2.63	86,355.04	87,133.00
tons/yr	0.00	0.18	0.21	0.00	0.00	0.00	43.18	43.57
metric tons/yr	—	—	—	—	—	—	39.17	39.52

Notes:

1. Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
2. Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
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Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
4. Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
5. Emissions Factors for Tier 4 Final from CalEEMOD Appendix D, Pg. D-77

Source: ESA 2018. pdf file: MEP Info (10-22-18)

670 Mesquit Charbroiling Emissions

San Joaquin Valley Unified Air Pollution Control District Emission Inventory Methodology 690 - Commercial Cooking Operations

Equipment Type	Restaurant Category				
	Ethnic	Family	Fast Food	Seafood	Steak and BBQ
Percent of restaurants with equipment					
Auto charbroilers	3.5	10.1	18.6	0.0	6.9
Underfired charbroilers	47.5	60.9	30.8	52.6	55.2
Deep-fat fryer	81.9	91.4	96.8	100.0	82.8
Glad griddles	62.7	82.9	51.9	36.8	89.7
Clamshell griddles	4.0	1.4	14.7	10.5	0.0
Average number of units per restaurant typez					
Auto charbroilers	1.62	1.71	1.07	--	--
Underfired charbroilers	1.54	1.29	1.58	1.10	1.63
Deep-fat fryer	1.63	2.34	3.10	2.47	2.42
Glad griddles	1.88	2.03	1.43	1.11	1.35
Clamshell griddles	1.80	--	2.09	1.50	--

Type of Food	Total Food Cooked per Device (lb/week)				
	Chain-Driven Charbroilers ^a	Underfired Charbroilers	Deep-Fat Fryers	Flat Griddles	Clamshell Griddles
Steak	236	180	181	166	94
Hamburger	798	270	274	362	1,314
Poultry, with skin	147	144	365	88	113
Poultry, skinless	266	179	208	111	108
Pork	58	148	59	112	118
Seafood	119	143	159	92	632
Other meat	0	42	274	58	0
Potatoes	0	0	602	0	0

670 Mesquit Charbroiling Emissions

of food venues 3
 Days/week cooking 6
 PM10 fraction of PM 0.7 Updated CEIDARS Table with PM2.5 Fractions
 PM2.5 fraction of PM 0.42 Updated CEIDARS Table with PM2.5 Fractions

Total # of equipment

Type	Total Equip
Auto charbroilers	0.3
Underfired charbroilers	1.8
Deep-fat fryer	2.7
Glad griddles	2.5
Clamshell griddles	0.0

Total lbs/day of meat

Type	Auto charbroilers	Underfired charbroil	Deep-fat fryer	Glad griddles	Clamshell griddles
Steak	11.9	54.8	82.7	68.8	0.7
Hamburger	40.3	82.2	125.2	150.0	9.2
Poultry, with skin	7.4	43.8	166.8	36.5	0.8
Poultry, skinless	13.4	54.5	95.1	46.0	0.8
Pork	2.9	45.1	27.0	46.4	0.8
Seafood	6.0	43.5	72.7	38.1	4.4
Other meat	0.0	12.8	125.2	24.0	0.0
Potatoes	0.0	0.0	275.1	0.0	0.0

Source ¹	Uncontrolled Emission Factors ² (lb/1000 lb)		Quantity ³ (lb/day)	Emissions Controls ⁴ (percent reduction)		Controlled Emissions ^{5,6} (pounds/day)		
	ROG	PM		VOC	PM	VOC	PM2.5	PM10
Project								
Charbroiler - New York Steak	0.86	17.19	66.73	86%	85%	0.01	0.07	0.12
Charbroiler - 25% fat Hamburger	3.94	32.65	122.51	86%	85%	0.07	0.25	0.42
Charbroiler - Chicken	1.82	10.48	119.21	86%	85%	0.03	0.08	0.13
Deep-fat Fryer - Shoestring fries	0.21	-	275.11	0%	0%	0.06	0.00	0.00
Deep-fat Fryer - breaded chicken patties	0.12	-	261.86	0%	0%	0.03	0.00	0.00
Deep-fat Fryer - breaded cod filet	0.14	-	72.66	0%	0%	0.01	0.00	0.00
Total Emissions						0.21	0.40	0.67

670 Mesquit Project - South Coast AQMD Air District, Summer

670 Mesquit Project
South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	973.15	1000sqft	1.00	973,153.00	0
User Defined Commercial	60.10	User Defined Unit	0.50	60,100.00	0
Enclosed Parking with Elevator	2,000.00	Space	0.25	800,000.00	0
City Park	3.26	Acre	3.26	139,414.00	0
Health Club	68.10	1000sqft	1.56	68,102.00	0
High Turnover (Sit Down Restaurant)	33.00	1000sqft	0.76	33,000.00	0
Hotel	236.00	Room	0.50	228,670.00	0
Quality Restaurant	33.00	1000sqft	0.76	33,000.00	0
User Defined Recreational	1.70	User Defined Unit	1.70	75,000.00	0
Apartments High Rise	420.00	Dwelling Unit	0.50	420,000.00	1201
Regional Shopping Center	14.21	1000sqft	0.33	14,208.00	0
User Defined Retail	800.00	User Defined Unit	0.10	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	12			Operational Year	2025
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MW hr)	595.16	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - updated CO2 intensity factor to match expected RPS incremental targets in buildout year of 2025

Land Use - See alternatives assumptions

Demolition -

Grading - MCC

Architectural Coating -

Vehicle Trips - mcc

Woodstoves - No fireplaces

Area Coating -

Solid Waste - see alternatives assumptions

Sequestration -

Energy Mitigation -

Water Mitigation -

Waste Mitigation - study data

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	742,617.00	742,643.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	2,227,850.00	2,227,928.00
tblAreaCoating	Area_Nonresidential_Exterior	742617	742643
tblAreaCoating	Area_Nonresidential_Interior	2227850	2227928
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	300.00	0.00
tblConstructionPhase	NumDays	300.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	30.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblFireplaces	FireplaceDayYear	25.00	180.00
tblFireplaces	FireplaceHourDay	3.00	12.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00

tblFireplaces	NumberGas	357.00	5.00
tblFireplaces	NumberNoFireplace	42.00	303.00
tblFireplaces	NumberWood	21.00	0.00
tblGrading	AcresOfGrading	0.00	75.00
tblLandUse	LandUseSquareFeet	973,150.00	973,153.00
tblLandUse	LandUseSquareFeet	0.00	60,100.00
tblLandUse	LandUseSquareFeet	142,005.60	139,414.00
tblLandUse	LandUseSquareFeet	68,100.00	68,102.00
tblLandUse	LandUseSquareFeet	342,672.00	228,670.00
tblLandUse	LandUseSquareFeet	0.00	75,000.00
tblLandUse	LandUseSquareFeet	14,210.00	14,208.00
tblLandUse	LotAcreage	22.34	1.00
tblLandUse	LotAcreage	0.00	0.50
tblLandUse	LotAcreage	18.00	0.25
tblLandUse	LotAcreage	7.87	0.50
tblLandUse	LotAcreage	0.00	1.70
tblLandUse	LotAcreage	6.77	0.50
tblLandUse	LotAcreage	0.00	0.10
tblProjectCharacteristics	CO2IntensityFactor	1227.89	595.16
tblSolidWaste	SolidWasteGenerationRate	193.20	937.43
tblSolidWaste	SolidWasteGenerationRate	0.28	0.00
tblSolidWaste	SolidWasteGenerationRate	905.03	8,547.83
tblSolidWaste	SolidWasteGenerationRate	388.17	0.00
tblSolidWaste	SolidWasteGenerationRate	392.70	0.00
tblSolidWaste	SolidWasteGenerationRate	129.21	0.00
tblSolidWaste	SolidWasteGenerationRate	30.11	0.00
tblSolidWaste	SolidWasteGenerationRate	14.92	0.00
tblWater	IndoorWaterUseRate	27,364,690.76	15,369,055.00
tblWater	IndoorWaterUseRate	172,961,596.86	141,006,681.00
tblWater	IndoorWaterUseRate	4,027,648.11	0.00

tblWater	IndoorWaterUseRate	10,016,612.51	0.00
tblWater	IndoorWaterUseRate	5,986,557.72	11,692,775.00
tblWater	IndoorWaterUseRate	10,016,612.51	0.00
tblWater	IndoorWaterUseRate	1,052,570.53	0.00
tblWater	OutdoorWaterUseRate	17,251,652.87	0.00
tblWater	OutdoorWaterUseRate	3,884,229.20	1,566,215.00
tblWater	OutdoorWaterUseRate	0.00	205,130.00
tblWater	OutdoorWaterUseRate	106,008,720.66	0.00
tblWater	OutdoorWaterUseRate	2,468,558.52	0.00
tblWater	OutdoorWaterUseRate	639,358.25	0.00
tblWater	OutdoorWaterUseRate	665,173.08	0.00
tblWater	OutdoorWaterUseRate	639,358.25	0.00
tblWater	OutdoorWaterUseRate	645,123.87	0.00
tblWoodstoves	NumberCatalytic	21.00	0.00
tblWoodstoves	NumberNoncatalytic	21.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Hotel	0.00	0.00	0.00		
Quality Restaurant	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
User Defined Commercial	0.00	0.00	0.00		
User Defined Recreational	0.00	0.00	0.00		
User Defined Retail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Health Club	16.60	8.40	6.90	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down Restaurant)	16.60	8.40	6.90	8.50	72.50	19.00	37	20	43
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4

Quality Restaurant	16.60	8.40	6.90	12.00	69.00	19.00	38	18	44
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11
User Defined Commercial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
User Defined Recreational	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
User Defined Retail	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments High Rise	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
City Park	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Enclosed Parking with Elevator	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
General Office Building	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Health Club	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
High Turnover (Sit Down Restaurant)	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Hotel	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Quality Restaurant	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Regional Shopping Center	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
User Defined Commercial	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
User Defined Recreational	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
User Defined Retail	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.0847	9.7863	7.7380	0.0592		0.7494	0.7494		0.7494	0.7494		11,832.7066	11,832.7066	0.2268	0.2169	11,903.0225
NaturalGas Unmitigated	1.0847	9.7863	7.7380	0.0592		0.7494	0.7494		0.7494	0.7494		11,832.7066	11,832.7066	0.2268	0.2169	11,903.0225

5.2 Energy by Land Use - Natural Gas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments High Rise	12632.4	0.1362	1.1642	0.4954	7.4300e-003		0.0941	0.0941		0.0941	0.0941		1,486.1678	1,486.1678	0.0285	0.0273	1,494.9994
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	27754.9	0.2993	2.7211	2.2857	0.0163		0.2068	0.2068		0.2068	0.2068		3,265.2773	3,265.2773	0.0626	0.0599	3,284.6812
Health Club	3377.11	0.0364	0.3311	0.2781	1.9900e-003		0.0252	0.0252		0.0252	0.0252		397.3074	397.3074	7.6200e-003	7.2800e-003	399.6684
High Turnover (Sit Down Restaurant)	20863.2	0.2250	2.0454	1.7182	0.0123		0.1555	0.1555		0.1555	0.1555		2,454.4980	2,454.4980	0.0470	0.0450	2,469.0838
Hotel	15023.3	0.1620	1.4729	1.2372	8.8400e-003		0.1119	0.1119		0.1119	0.1119		1,767.4477	1,767.4477	0.0339	0.0324	1,777.9508
Quality Restaurant	20863.2	0.2250	2.0454	1.7182	0.0123		0.1555	0.1555		0.1555	0.1555		2,454.4980	2,454.4980	0.0470	0.0450	2,469.0838
Regional Shopping Center	63.8387	6.9000e-004	6.2600e-003	5.2600e-003	4.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		7.5104	7.5104	1.4000e-004	1.4000e-004	7.5551
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		1.0847	9.7863	7.7380	0.0592		0.7494	0.7494		0.7494	0.7494		11,832.7066	11,832.7066	0.2268	0.2169	11,903.0225

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments High Rise	12.6324	0.1362	1.1642	0.4954	7.4300e-003		0.0941	0.0941		0.0941	0.0941		1,486.1678	1,486.1678	0.0285	0.0273	1,494.9994

City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	27.7549	0.2993	2.7211	2.2857	0.0163		0.2068	0.2068		0.2068	0.2068		3,265.2773	3,265.2773	0.0626	0.0599	3,284.6812
Health Club	3.37711	0.0364	0.3311	0.2781	1.9900e-003		0.0252	0.0252		0.0252	0.0252		397.3074	397.3074	7.6200e-003	7.2800e-003	399.6684
High Turnover (Sit Down Restaurant)	20.8632	0.2250	2.0454	1.7182	0.0123		0.1555	0.1555		0.1555	0.1555		2,454.4980	2,454.4980	0.0470	0.0450	2,469.0838
Hotel	15.0233	0.1620	1.4729	1.2372	8.8400e-003		0.1119	0.1119		0.1119	0.1119		1,767.4477	1,767.4477	0.0339	0.0324	1,777.9508
Quality Restaurant	20.8632	0.2250	2.0454	1.7182	0.0123		0.1555	0.1555		0.1555	0.1555		2,454.4980	2,454.4980	0.0470	0.0450	2,469.0838
Regional Shopping Center	0.0638387	6.9000e-004	6.2600e-003	5.2600e-003	4.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		7.5104	7.5104	1.4000e-004	1.4000e-004	7.5551
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		1.0847	9.7863	7.7380	0.0592		0.7494	0.7494		0.7494	0.7494		11,832.7066	11,832.7066	0.2268	0.2169	11,903.0225

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	43.6851	0.7344	35.1889	3.9800e-003		0.2204	0.2204		0.2204	0.2204	0.0000	486.8455	486.8455	0.0703	7.7600e-003	490.9161
Unmitigated	43.6851	0.7344	35.1889	3.9800e-003		0.2204	0.2204		0.2204	0.2204	0.0000	486.8455	486.8455	0.0703	7.7600e-003	490.9161

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.5532					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	38.0142					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0388	0.3318	0.1412	2.1200e-003		0.0268	0.0268		0.0268	0.0268	0.0000	423.5294	423.5294	8.1200e-003	7.7600e-003	426.0462
Landscaping	1.0790	0.4027	35.0477	1.8600e-003		0.1936	0.1936		0.1936	0.1936		63.3161	63.3161	0.0622		64.8699
Total	43.6851	0.7344	35.1889	3.9800e-003		0.2204	0.2204		0.2204	0.2204	0.0000	486.8455	486.8455	0.0703	7.7600e-003	490.9161

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.5532					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	38.0142					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0388	0.3318	0.1412	2.1200e-003		0.0268	0.0268		0.0268	0.0268	0.0000	423.5294	423.5294	8.1200e-003	7.7600e-003	426.0462
Landscaping	1.0790	0.4027	35.0477	1.8600e-003		0.1936	0.1936		0.1936	0.1936		63.3161	63.3161	0.0622		64.8699
Total	43.6851	0.7344	35.1889	3.9800e-003		0.2204	0.2204		0.2204	0.2204	0.0000	486.8455	486.8455	0.0703	7.7600e-003	490.9161

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

670 Mesquit Project - South Coast AQMD Air District, Winter

670 Mesquit Project
South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	973.15	1000sqft	1.00	973,153.00	0
User Defined Commercial	60.10	User Defined Unit	0.50	60,100.00	0
Enclosed Parking with Elevator	2,000.00	Space	0.25	800,000.00	0
City Park	3.26	Acre	3.26	139,414.00	0
Health Club	68.10	1000sqft	1.56	68,102.00	0
High Turnover (Sit Down Restaurant)	33.00	1000sqft	0.76	33,000.00	0
Hotel	236.00	Room	0.50	228,670.00	0
Quality Restaurant	33.00	1000sqft	0.76	33,000.00	0
User Defined Recreational	1.70	User Defined Unit	1.70	75,000.00	0
Apartments High Rise	420.00	Dwelling Unit	0.50	420,000.00	1201
Regional Shopping Center	14.21	1000sqft	0.33	14,208.00	0
User Defined Retail	800.00	User Defined Unit	0.10	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	12			Operational Year	2025
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MW hr)	595.16	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - updated CO2 intensity factor to match expected RPS incremental targets in buildout year of 2025

Land Use - See alternatives assumptions

Demolition -

Grading - MCC

Architectural Coating -

Vehicle Trips - mcc

Woodstoves - No fireplaces

Area Coating -

Solid Waste - see alternatives assumptions

Sequestration -

Energy Mitigation -

Water Mitigation -

Waste Mitigation - study data

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	742,617.00	742,643.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	2,227,850.00	2,227,928.00
tblAreaCoating	Area_Nonresidential_Exterior	742617	742643
tblAreaCoating	Area_Nonresidential_Interior	2227850	2227928
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	300.00	0.00
tblConstructionPhase	NumDays	300.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	30.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblFireplaces	FireplaceDayYear	25.00	180.00
tblFireplaces	FireplaceHourDay	3.00	12.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00

tblFireplaces	NumberGas	357.00	5.00
tblFireplaces	NumberNoFireplace	42.00	303.00
tblFireplaces	NumberWood	21.00	0.00
tblGrading	AcresOfGrading	0.00	75.00
tblLandUse	LandUseSquareFeet	973,150.00	973,153.00
tblLandUse	LandUseSquareFeet	0.00	60,100.00
tblLandUse	LandUseSquareFeet	142,005.60	139,414.00
tblLandUse	LandUseSquareFeet	68,100.00	68,102.00
tblLandUse	LandUseSquareFeet	342,672.00	228,670.00
tblLandUse	LandUseSquareFeet	0.00	75,000.00
tblLandUse	LandUseSquareFeet	14,210.00	14,208.00
tblLandUse	LotAcreage	22.34	1.00
tblLandUse	LotAcreage	0.00	0.50
tblLandUse	LotAcreage	18.00	0.25
tblLandUse	LotAcreage	7.87	0.50
tblLandUse	LotAcreage	0.00	1.70
tblLandUse	LotAcreage	6.77	0.50
tblLandUse	LotAcreage	0.00	0.10
tblProjectCharacteristics	CO2IntensityFactor	1227.89	595.16
tblSequestration	NumberOfNewTrees	0.00	180.00
tblSolidWaste	SolidWasteGenerationRate	193.20	937.43
tblSolidWaste	SolidWasteGenerationRate	0.28	0.00
tblSolidWaste	SolidWasteGenerationRate	905.03	8,547.83
tblSolidWaste	SolidWasteGenerationRate	388.17	0.00
tblSolidWaste	SolidWasteGenerationRate	392.70	0.00
tblSolidWaste	SolidWasteGenerationRate	129.21	0.00
tblSolidWaste	SolidWasteGenerationRate	30.11	0.00
tblSolidWaste	SolidWasteGenerationRate	14.92	0.00
tblWater	IndoorWaterUseRate	27,364,690.76	15,369,055.00
tblWater	IndoorWaterUseRate	172,961,596.86	141,006,681.00

tblWater	IndoorWaterUseRate	4,027,648.11	0.00
tblWater	IndoorWaterUseRate	10,016,612.51	0.00
tblWater	IndoorWaterUseRate	5,986,557.72	11,692,775.00
tblWater	IndoorWaterUseRate	10,016,612.51	0.00
tblWater	IndoorWaterUseRate	1,052,570.53	0.00
tblWater	OutdoorWaterUseRate	17,251,652.87	0.00
tblWater	OutdoorWaterUseRate	3,884,229.20	1,566,215.00
tblWater	OutdoorWaterUseRate	0.00	205,130.00
tblWater	OutdoorWaterUseRate	106,008,720.66	0.00
tblWater	OutdoorWaterUseRate	2,468,558.52	0.00
tblWater	OutdoorWaterUseRate	639,358.25	0.00
tblWater	OutdoorWaterUseRate	665,173.08	0.00
tblWater	OutdoorWaterUseRate	639,358.25	0.00
tblWater	OutdoorWaterUseRate	645,123.87	0.00
tblWoodstoves	NumberCatalytic	21.00	0.00
tblWoodstoves	NumberNoncatalytic	21.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Hotel	0.00	0.00	0.00		
Quality Restaurant	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
User Defined Commercial	0.00	0.00	0.00		
User Defined Recreational	0.00	0.00	0.00		
User Defined Retail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Health Club	16.60	8.40	6.90	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down Restaurant)	16.60	8.40	6.90	8.50	72.50	19.00	37	20	43
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4

Quality Restaurant	16.60	8.40	6.90	12.00	69.00	19.00	38	18	44
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11
User Defined Commercial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
User Defined Recreational	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
User Defined Retail	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments High Rise	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
City Park	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Enclosed Parking with Elevator	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
General Office Building	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Health Club	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
High Turnover (Sit Down Restaurant)	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Hotel	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Quality Restaurant	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Regional Shopping Center	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
User Defined Commercial	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
User Defined Recreational	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
User Defined Retail	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.0847	9.7863	7.7380	0.0592		0.7494	0.7494		0.7494	0.7494		11,832.7066	11,832.7066	0.2268	0.2169	11,903.0225
NaturalGas Unmitigated	1.0847	9.7863	7.7380	0.0592		0.7494	0.7494		0.7494	0.7494		11,832.7066	11,832.7066	0.2268	0.2169	11,903.0225

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments High Rise	12632.4	0.1362	1.1642	0.4954	7.4300e-003		0.0941	0.0941		0.0941	0.0941		1,486.1678	1,486.1678	0.0285	0.0273	1,494.9994
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	27754.9	0.2993	2.7211	2.2857	0.0163		0.2068	0.2068		0.2068	0.2068		3,265.2773	3,265.2773	0.0626	0.0599	3,284.6812
Health Club	3377.11	0.0364	0.3311	0.2781	1.9900e-003		0.0252	0.0252		0.0252	0.0252		397.3074	397.3074	7.6200e-003	7.2800e-003	399.6684
High Turnover (Sit Down Restaurant)	20863.2	0.2250	2.0454	1.7182	0.0123		0.1555	0.1555		0.1555	0.1555		2,454.4980	2,454.4980	0.0470	0.0450	2,469.0838
Hotel	15023.3	0.1620	1.4729	1.2372	8.8400e-003		0.1119	0.1119		0.1119	0.1119		1,767.4477	1,767.4477	0.0339	0.0324	1,777.9508
Quality Restaurant	20863.2	0.2250	2.0454	1.7182	0.0123		0.1555	0.1555		0.1555	0.1555		2,454.4980	2,454.4980	0.0470	0.0450	2,469.0838
Regional Shopping Center	63.8387	6.9000e-004	6.2600e-003	5.2600e-003	4.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		7.5104	7.5104	1.4000e-004	1.4000e-004	7.5551
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		1.0847	9.7863	7.7380	0.0592		0.7494	0.7494		0.7494	0.7494		11,832.7066	11,832.7066	0.2268	0.2169	11,903.0225

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments High Rise	12.6324	0.1362	1.1642	0.4954	7.4300e-003		0.0941	0.0941		0.0941	0.0941		1,486.1678	1,486.1678	0.0285	0.0273	1,494.9994
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	27.7549	0.2993	2.7211	2.2857	0.0163		0.2068	0.2068		0.2068	0.2068		3,265.2773	3,265.2773	0.0626	0.0599	3,284.6812
Health Club	3.37711	0.0364	0.3311	0.2781	1.9900e-003		0.0252	0.0252		0.0252	0.0252		397.3074	397.3074	7.6200e-003	7.2800e-003	399.6684
High Turnover (Sit Down Restaurant)	20.8632	0.2250	2.0454	1.7182	0.0123		0.1555	0.1555		0.1555	0.1555		2,454.4980	2,454.4980	0.0470	0.0450	2,469.0838
Hotel	15.0233	0.1620	1.4729	1.2372	8.8400e-003		0.1119	0.1119		0.1119	0.1119		1,767.4477	1,767.4477	0.0339	0.0324	1,777.9508
Quality Restaurant	20.8632	0.2250	2.0454	1.7182	0.0123		0.1555	0.1555		0.1555	0.1555		2,454.4980	2,454.4980	0.0470	0.0450	2,469.0838
Regional Shopping Center	0.0638387	6.9000e-004	6.2600e-003	5.2600e-003	4.0000e-005		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004		7.5104	7.5104	1.4000e-004	1.4000e-004	7.5551
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		1.0847	9.7863	7.7380	0.0592		0.7494	0.7494		0.7494	0.7494		11,832.7066	11,832.7066	0.2268	0.2169	11,903.0225

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	43.6851	0.7344	35.1889	3.9800e-003		0.2204	0.2204		0.2204	0.2204	0.0000	486.8455	486.8455	0.0703	7.7600e-003	490.9161
Unmitigated	43.6851	0.7344	35.1889	3.9800e-003		0.2204	0.2204		0.2204	0.2204	0.0000	486.8455	486.8455	0.0703	7.7600e-003	490.9161

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.5532					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	38.0142					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0388	0.3318	0.1412	2.1200e-003		0.0268	0.0268		0.0268	0.0268	0.0000	423.5294	423.5294	8.1200e-003	7.7600e-003	426.0462
Landscaping	1.0790	0.4027	35.0477	1.8600e-003		0.1936	0.1936		0.1936	0.1936		63.3161	63.3161	0.0622		64.8699
Total	43.6851	0.7344	35.1889	3.9800e-003		0.2204	0.2204		0.2204	0.2204	0.0000	486.8455	486.8455	0.0703	7.7600e-003	490.9161

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	4.5532					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	38.0142					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0388	0.3318	0.1412	2.1200e-003		0.0268	0.0268		0.0268	0.0268	0.0000	423.5294	423.5294	8.1200e-003	7.7600e-003	426.0462
Landscaping	1.0790	0.4027	35.0477	1.8600e-003		0.1936	0.1936		0.1936	0.1936		63.3161	63.3161	0.0622		64.8699
Total	43.6851	0.7344	35.1889	3.9800e-003		0.2204	0.2204		0.2204	0.2204	0.0000	486.8455	486.8455	0.0703	7.7600e-003	490.9161

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

670 Mesquit Project - Alternative 3

2. GHG Worksheets

GHG Calculation Worksheets and Model Outputs

Operations

- 1. Emissions Summaries and Miscellaneous Calculations**
- 2. Emissions Modeling Output**

670 Mesquit - Alternative 3 Unmitigated

Project With GHG Reduction Characteristics, Features

Greenhouse Gas Summary

Project Operations Summary WITH Deck (Full Buildout Year 2025)	
Category	MTCO ₂ e/yr
Mobile	17,975
Emergency Generator	99
Cooling Tower	164
Area	42
Electricity	6,731
Natural Gas	1,971
Water	827
Waste	1,145
Heliport ¹	162
Construction	864
Project Subtotal	29,980
Existing	4,355
Project Net Total GHG Emissions	25,626

MTCO₂e=Metric Tons Carbon Dioxide equivalents

Appendix IV.O of the Climate Change Technical Report Wilshire Grand Development Project,

670 Mesquit - Alternative 3 Mitigated

Project With GHG Reduction Characteristics, Features

Greenhouse Gas Summary

Project Operations Summary WITH Deck (Full Buildout Year 2025)	
Category	MTCO ₂ e/yr
Mobile	16,143
Emergency Generator	99
Cooling Tower	164
Area	42
Electricity	6,731
Natural Gas	1,971
Water	827
Waste	1,145
Heliport ¹	162
Construction	864
Project Subtotal	28,149
Existing	4,355
Project Net Total GHG Emissions	23,794

MTCO₂e=Metric Tons Carbon Dioxide equivalents

Appendix IV.O of the Climate Change Technical Report Wilshire Grand Development Project,

**670 Mesquit
 Draft Environmental Impact Report
 Greenhouse Gas Assessment
 Alternative 3 Unmitigated**

Scenario	Year	VMT/year	GHG Emissions (metric tons/year)			
			CO2 1	CH4 25	N2O 298	CO2e
Project Source: ESA 2020	2025	49,988,210	17,673	1.1	0.9	17,975

Emissions Factors**MT/Mile**

Year	CO2	CH4	N2O	CO2e
2018	0.000416112	3.25607E-08	2.3673E-08	0.000423981
2023	0.000367711	2.41253E-08	1.93344E-08	0.000374076
2024	0.000361301	2.33893E-08	1.8844E-08	0.000367501
2025	0.000353544	2.26996E-08	1.83454E-08	0.000359578
2026	0.000346657	2.21588E-08	1.79615E-08	0.000352564
2027	0.000340369	2.16628E-08	1.76138E-08	0.00034616

**670 Mesquit
Draft Environmental Impact Report
Greenhouse Gas Assessment
Alternative 3 Mitigated**

Scenario	Year	VMT/year	GHG Emissions (metric tons/year)			
			CO2 1	CH4 25	N2O 298	CO2e
Project Source: ESA 2020	2025	44,893,905	15,872	1.0	0.8	16,143

Emissions Factors**MT/Mile**

Year	CO2	CH4	N2O	CO2e
2018	0.000416112	3.25607E-08	2.3673E-08	0.000423981
2023	0.000367711	2.41253E-08	1.93344E-08	0.000374076
2024	0.000361301	2.33893E-08	1.8844E-08	0.000367501
2025	0.000353544	2.26996E-08	1.83454E-08	0.000359578
2026	0.000346657	2.21588E-08	1.79615E-08	0.000352564
2027	0.000340369	2.16628E-08	1.76138E-08	0.00034616

EV Charging Stations

Source	Spaces	Average Charge (kWh/day) ^{1 2 3}	Days	kWh/yr	Electricity Emission Factor (MT CO2/MWh)	Electricity Emission Factor (lbs CO2/MWh)	Total EV Charging GHG Emissions Per Year
Residential	60	4.4	365	96,360	(MT CO2/MWh)	(lbs CO2/MWh)	54.99
Commercial/Retail	60	4.4	365	96,360	0.28	626.48	
Total	120	4.4	365	192,720	(MT CH4/MWh)	(lbs CH4/MWh)	

¹ US Department of Energy. Alternative Fuels Data Center, 2016. Hybrid and Plug-In Electric Vehicle Emissions Data Sources and Assumptions.

² US Department of Energy. Smith, Margaret, 2016. Level 1 Electric Vehicle Charging Stations at the Workplace.

³ UCLA Luskin Center for Innovation. Williams, Brett and JR deShazo, 2013. Pricing Workplace Charging: Financial Viability and Fueling Costs.

1.32E-05	0.029
(MT N2O/MWh)	(lbs N2O/MWh)
2.80E-06	0.00617

**670 Mesquit
Cooling Towers - with PDF
Greenhouse Gas Analysis**

24 hr/day
121,176 gal/day
44,229,240 gal/year
44.2292 mgal/year

CalEEMod Water Electricity Factors	Electricity Intensity Factor To Supply (kWh/Mgal)	Electricity Intensity Factor To Treat (kWh/Mgal)	Electricity Intensity Factor To Distribute (kWh/Mgal)	Electricity Intensity Factor For Wastewater Treatment (kWh/Mgal)
		9727	111	1272

Source	Electricity Demand from Water Demand (million kWh)	GHG Emissions (lbs/yr)				MTCO2e (MT/yr)
		CO2	CH4	N2O	CO2e	
Cooling Tower	0.5759	360,795	16.70	3.46	362,243	164.3

GHG	Intensity factor (lbs/MWh)
CO2	626.48
CH4	0.029
N2O	0.006

Notes: Flow rate from MEP Info pdf 11-22-18 and IV.N.2 Water Supply

670 Mesquit Project

Emergency Generator Daily Maintenance AQ Emissions

Building	VOC	NO _x	CO	SO _x	PM10	PM2.5
	lb/day					
Step 1	0.79	14.97	8.57	0.00	0.06	0.06
Step 2	0.39	7.48	4.28	0.00	0.03	0.03
Step 3/4	0.79	14.97	8.57	0.00	0.06	0.06
Total	1.97	37.42	21.42	0.00	0.16	0.15

Annual GHG Emissions

Building	MTCO ₂ e/year
1	40
2	20
3&4	40
Total	99

670 Mequit Project

Emergency Generator Daily Maintenance AQ Emissions - With PDFs - With Mitigation

Building	VOC	NO _x	CO	SO _x	PM10	PM2.5
	lb/day					
Step 1	0.20	7.35	8.53	1.81E-04	0.05	0.05
Total	0.20	7.35	8.53	1.81E-04	0.05	0.05

Annual GHG Emissions

Building	MTCO ₂ e/year
1	40
Total	40

**670 Mesquit
Air Quality Assessment**

Emergency Generator Emissions

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
PM2.5 Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step1 Emergency Generator

Ratings:	1,500 kW	<i>(based on conservative engineering assumptions)</i>
	2,012 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.24	4.56	2.61	5.50E-05	0.0192	0.0187	526.17	530.91
lbs/hr	0.79	14.97	8.57	0.00	0.06	0.06	1,727.10	1,742.66
lbs/day	0.79	14.97	8.57	0.00018	0.06	0.06	1,727.10	1,742.66
lbs/yr	39.39	748.39	428.35	0.01	3.15	3.08	86,355.04	87,133.00
tons/yr	0.02	0.37	0.21	0.00	0.00	0.00	43.18	43.57
metric tons/yr	—	—	—	—	—	—	39.17	39.52

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
- Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.

5%

Source: ESA 2018.

pdf file: MEP Info (10-22-18)

**670 Mesquit Mixed Use Project EIR
Air Quality Assessment**

Emergency Generator Emissions

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
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CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step2 Emergency Generator

Ratings:	750 kW	<i>(based on conservative engineering assumptions)</i>
	1,006 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.24	4.56	2.61	5.50E-05	0.0192	0.0187	526.17	530.91
lbs/hr	0.39	7.48	4.28	0.00	0.03	0.03	863.55	871.33
lbs/day	0.39	7.48	4.28	0.00009	0.03	0.03	863.55	871.33
lbs/yr	19.69	374.20	214.17	0.00	1.58	1.54	43,177.52	43,566.50
tons/yr	0.01	0.19	0.11	0.00	0.00	0.00	21.59	21.78
metric tons/yr	—	—	—	—	—	—	19.59	19.76

Notes:

1. Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
2. Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
3. Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
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4. Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.

Source: ESA 2018.

670 Mesquit Mixed Use Project EIR
Air Quality Assessment
670 Mesquit Mixed Use Project EIR
Emergency Generator Emissions (Step 3&4)

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
PM2.5 Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
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CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	IPCC AR4
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step4

Ratings:	1,500 kW	<i>(based on conservative engineering assumptions)</i>
	2,012 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.24	4.56	2.61	5.50E-05	0.0192	0.0187	526.17	530.91
lbs/hr	0.79	14.97	8.57	0.00	0.06	0.06	1727.10	1,742.66
lbs/day	0.79	14.97	8.57	0.00018	0.06	0.06	1,727.10	1,742.66
lbs/yr	39.39	748.39	428.35	0.01	3.15	3.08	86,355.04	87,133.00
tons/yr	0.02	0.37	0.21	0.00	0.00	0.00	43.18	43.57
metric tons/yr	—	—	—	—	—	—	39.17	39.52

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
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- Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.

Source: ESA 2018.

**670 Mesquit
Air Quality Assessment**

Emergency Generator Emissions - with PDF

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
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CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step1 Emergency Generator

Ratings:	1,500 kW	<i>(based on conservative engineering assumptions)</i>
	2,012 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.06	2.24	2.60	5.50E-05	0.02	0.02	526.17	530.91
lbs/hr	0.20	7.35	8.53	0.00	0.05	0.05	1727.10	1,742.66
lbs/day	0.20	7.35	8.53	0.00018	0.053	0.053	1,727.10	1,742.66
lbs/yr	9.85	367.63	426.71	0.01	2.63	2.63	86,355.04	87,133.00
tons/yr	0.00	0.18	0.21	0.00	0.00	0.00	43.18	43.57
metric tons/yr	—	—	—	—	—	—	39.17	39.52

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
- Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.
- Emissions Factors for Tier 4 Final from CalEEMOD Appendix D, Pg. D-77

Source: ESA 2018. pdf file: MEP Info (10-22-18)

**670 Mesquit Mixed Use Project EIR
Air Quality Assessment**

Emergency Generator Emissions - with PDF

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
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CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step2 Emergency Generator

Ratings:	750 kW	<i>(based on conservative engineering assumptions)</i>
	1,006 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.06	2.24	2.60	5.50E-05	0.02	0.02	526.17	530.91
lbs/hr	0.10	3.68	4.27	0.00	0.03	0.03	863.55	871.33
lbs/day	0.10	3.68	4.27	0.00009	0.03	0.03	863.55	871.33
lbs/yr	4.92	183.82	213.36	0.00	1.31	1.31	43,177.52	43,566.50
tons/yr	0.00	0.09	0.11	0.00	0.00	0.00	21.59	21.78
metric tons/yr	—	—	—	—	—	—	19.59	19.76

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
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Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
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Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.
- Emissions Factors for Tier 4 Final from CalEEMOD Appendix D, Pg. D-77

Source: ESA 2018.

670 Mesquit Mixed Use Project EIR
Air Quality Assessment
670 Mesquit Mixed Use Project EIR
Emergency Generator Emissions (Step 3&4) - with PDF

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
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N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimaterestry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	IPCC AR4
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step4

Ratings:	1,500 kW	<i>(based on conservative engineering assumptions)</i>
	2,012 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.06	2.24	2.60	5.50E-05	0.02	0.02	526.17	530.91
lbs/hr	0.20	7.35	8.53	0.00	0.05	0.05	1727.10	1,742.66
lbs/day	0.20	7.35	8.53	0.00018	0.05	0.05	1,727.10	1,742.66
lbs/yr	9.85	367.63	426.71	0.01	2.63	2.63	86,355.04	87,133.00
tons/yr	0.00	0.18	0.21	0.00	0.00	0.00	43.18	43.57
metric tons/yr	—	—	—	—	—	—	39.17	39.52

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
- Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
- Emissions Factors for Tier 4 Final from CalEEMOD Appendix D, Pg. D-77

Source: ESA 2018. pdf file: MEP Info (10-22-18)

670 Mesquit Project - South Coast AQMD Air District, Annual

670 Mesquit Project
South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	973.15	1000sqft	1.00	973,153.00	0
User Defined Commercial	60.10	User Defined Unit	0.50	60,100.00	0
Enclosed Parking with Elevator	2,000.00	Space	0.25	800,000.00	0
City Park	3.26	Acre	3.26	139,414.00	0
Health Club	68.10	1000sqft	1.56	68,102.00	0
High Turnover (Sit Down Restaurant)	33.00	1000sqft	0.76	33,000.00	0
Hotel	236.00	Room	0.50	228,670.00	0
Quality Restaurant	33.00	1000sqft	0.76	33,000.00	0
User Defined Recreational	1.70	User Defined Unit	1.70	75,000.00	0
Apartments High Rise	420.00	Dwelling Unit	0.50	420,000.00	1201
Regional Shopping Center	14.21	1000sqft	0.33	14,208.00	0
User Defined Retail	800.00	User Defined Unit	0.10	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	12			Operational Year	2025
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MW hr)	595.16	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - updated CO2 intensity factor to match expected RPS incremental targets in buildout year of 2025

Land Use - See alternatives assumptions

Demolition -

Grading - MCC

Architectural Coating -

Vehicle Trips - mcc

Woodstoves - No fireplaces

Area Coating -

Solid Waste - see alternatives assumptions

Sequestration -

Energy Mitigation -

Water Mitigation -

Waste Mitigation - study data

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	742,617.00	742,643.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	2,227,850.00	2,227,928.00
tblAreaCoating	Area_Nonresidential_Exterior	742617	742643
tblAreaCoating	Area_Nonresidential_Interior	2227850	2227928
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	300.00	0.00
tblConstructionPhase	NumDays	300.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	30.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblFireplaces	FireplaceDayYear	25.00	180.00
tblFireplaces	FireplaceHourDay	3.00	12.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00

tblFireplaces	NumberGas	357.00	5.00
tblFireplaces	NumberNoFireplace	42.00	303.00
tblFireplaces	NumberWood	21.00	0.00
tblGrading	AcresOfGrading	0.00	75.00
tblLandUse	LandUseSquareFeet	973,150.00	973,153.00
tblLandUse	LandUseSquareFeet	0.00	60,100.00
tblLandUse	LandUseSquareFeet	142,005.60	139,414.00
tblLandUse	LandUseSquareFeet	68,100.00	68,102.00
tblLandUse	LandUseSquareFeet	342,672.00	228,670.00
tblLandUse	LandUseSquareFeet	0.00	75,000.00
tblLandUse	LandUseSquareFeet	14,210.00	14,208.00
tblLandUse	LotAcreage	22.34	1.00
tblLandUse	LotAcreage	0.00	0.50
tblLandUse	LotAcreage	18.00	0.25
tblLandUse	LotAcreage	7.87	0.50
tblLandUse	LotAcreage	0.00	1.70
tblLandUse	LotAcreage	6.77	0.50
tblLandUse	LotAcreage	0.00	0.10
tblProjectCharacteristics	CO2IntensityFactor	1227.89	595.16
tblSolidWaste	SolidWasteGenerationRate	193.20	937.43
tblSolidWaste	SolidWasteGenerationRate	0.28	0.00
tblSolidWaste	SolidWasteGenerationRate	905.03	8,547.83
tblSolidWaste	SolidWasteGenerationRate	388.17	0.00
tblSolidWaste	SolidWasteGenerationRate	392.70	0.00
tblSolidWaste	SolidWasteGenerationRate	129.21	0.00
tblSolidWaste	SolidWasteGenerationRate	30.11	0.00
tblSolidWaste	SolidWasteGenerationRate	14.92	0.00
tblWater	IndoorWaterUseRate	27,364,690.76	15,369,055.00
tblWater	IndoorWaterUseRate	172,961,596.86	141,006,681.00
tblWater	IndoorWaterUseRate	4,027,648.11	0.00

tblWater	IndoorWaterUseRate	10,016,612.51	0.00
tblWater	IndoorWaterUseRate	5,986,557.72	11,692,775.00
tblWater	IndoorWaterUseRate	10,016,612.51	0.00
tblWater	IndoorWaterUseRate	1,052,570.53	0.00
tblWater	OutdoorWaterUseRate	17,251,652.87	0.00
tblWater	OutdoorWaterUseRate	3,884,229.20	1,566,215.00
tblWater	OutdoorWaterUseRate	0.00	205,130.00
tblWater	OutdoorWaterUseRate	106,008,720.66	0.00
tblWater	OutdoorWaterUseRate	2,468,558.52	0.00
tblWater	OutdoorWaterUseRate	639,358.25	0.00
tblWater	OutdoorWaterUseRate	665,173.08	0.00
tblWater	OutdoorWaterUseRate	639,358.25	0.00
tblWater	OutdoorWaterUseRate	645,123.87	0.00
tblWoodstoves	NumberCatalytic	21.00	0.00
tblWoodstoves	NumberNoncatalytic	21.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	7.9069	0.0802	4.3937	4.2000e-004		0.0266	0.0266		0.0266	0.0266	0.0000	41.7597	41.7597	7.7100e-003	6.3000e-004	42.1414
Energy	0.1980	1.7860	1.4122	0.0108		0.1368	0.1368		0.1368	0.1368	0.0000	8,607.0949	8,607.0949	0.3615	0.1029	8,646.8072
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	1,925.4221	0.0000	1,925.4221	113.7892	0.0000	4,770.1517
Water						0.0000	0.0000		0.0000	0.0000	53.3204	596.0987	649.4191	5.5056	0.1353	827.3840
Total	8.1049	1.8662	5.8059	0.0112	0.0000	0.1634	0.1634	0.0000	0.1634	0.1634	1,978.7424	9,244.9533	11,223.6957	119.6639	0.2389	14,286.4842

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	7.9069	0.0802	4.3937	4.2000e-004		0.0266	0.0266		0.0266	0.0266	0.0000	41.7597	41.7597	7.7100e-003	6.3000e-004	42.1414
Energy	0.1980	1.7860	1.4122	0.0108		0.1368	0.1368		0.1368	0.1368	0.0000	8,607.0949	8,607.0949	0.3615	0.1029	8,646.8072
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	462.1013	0.0000	462.1013	27.3094	0.0000	1,144.8364
Water						0.0000	0.0000		0.0000	0.0000	53.3204	596.0987	649.4191	5.5056	0.1353	827.3840
Total	8.1049	1.8662	5.8059	0.0112	0.0000	0.1634	0.1634	0.0000	0.1634	0.1634	515.4217	9,244.9533	9,760.3750	33.1842	0.2389	10,661.1690

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73.95	0.00	13.04	72.27	0.00	25.38

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Hotel	0.00	0.00	0.00		
Quality Restaurant	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
User Defined Commercial	0.00	0.00	0.00		
User Defined Recreational	0.00	0.00	0.00		
User Defined Retail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Health Club	16.60	8.40	6.90	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down Restaurant)	16.60	8.40	6.90	8.50	72.50	19.00	37	20	43
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Quality Restaurant	16.60	8.40	6.90	12.00	69.00	19.00	38	18	44
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11
User Defined Commercial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
User Defined Recreational	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
User Defined Retail	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments High Rise	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
City Park	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Enclosed Parking with Elevator	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
General Office Building	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Health Club	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
High Turnover (Sit Down Restaurant)	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Hotel	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Quality Restaurant	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Regional Shopping Center	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
User Defined Commercial	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
User Defined Recreational	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
User Defined Retail	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6,648.0577	6,648.0577	0.3239	0.0670	6,676.1284
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6,648.0577	6,648.0577	0.3239	0.0670	6,676.1284
NaturalGas Mitigated	0.1980	1.7860	1.4122	0.0108		0.1368	0.1368		0.1368	0.1368	0.0000	1,959.0373	1,959.0373	0.0376	0.0359	1,970.6789
NaturalGas Unmitigated	0.1980	1.7860	1.4122	0.0108		0.1368	0.1368		0.1368	0.1368	0.0000	1,959.0373	1,959.0373	0.0376	0.0359	1,970.6789

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments High Rise	4.61084e+006	0.0249	0.2125	0.0904	1.3600e-003		0.0172	0.0172		0.0172	0.0172	0.0000	246.0518	246.0518	4.7200e-003	4.5100e-003	247.5139
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	1.01305e+007	0.0546	0.4966	0.4171	2.9800e-003		0.0377	0.0377		0.0377	0.0377	0.0000	540.6033	540.6033	0.0104	9.9100e-003	543.8158
Health Club	1.23265e+006	6.6500e-003	0.0604	0.0508	3.6000e-004		4.5900e-003	4.5900e-003		4.5900e-003	4.5900e-003	0.0000	65.7787	65.7787	1.2600e-003	1.2100e-003	66.1696
High Turnover (Sit Down Restaurant)	7.61508e+006	0.0411	0.3733	0.3136	2.2400e-003		0.0284	0.0284		0.0284	0.0284	0.0000	406.3697	406.3697	7.7900e-003	7.4500e-003	408.7845
Hotel	5.48351e+006	0.0296	0.2688	0.2258	1.6100e-003		0.0204	0.0204		0.0204	0.0204	0.0000	292.6208	292.6208	5.6100e-003	5.3600e-003	294.3597
Quality Restaurant	7.61508e+006	0.0411	0.3733	0.3136	2.2400e-003		0.0284	0.0284		0.0284	0.0284	0.0000	406.3697	406.3697	7.7900e-003	7.4500e-003	408.7845

Regional Shopping Center	23301.1	1.3000e-004	1.1400e-003	9.6000e-004	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.2434	1.2434	2.0000e-005	2.0000e-005	1.2508
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.1980	1.7860	1.4122	0.0108		0.1368	0.1368		0.1368	0.1368	0.0000	1,959.0373	1,959.0373	0.0376	0.0359	1,970.6789

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments High Rise	4.61084e+006	0.0249	0.2125	0.0904	1.3600e-003		0.0172	0.0172		0.0172	0.0172	0.0000	246.0518	246.0518	4.7200e-003	4.5100e-003	247.5139
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	1.01305e+007	0.0546	0.4966	0.4171	2.9800e-003		0.0377	0.0377		0.0377	0.0377	0.0000	540.6033	540.6033	0.0104	9.9100e-003	543.8158
Health Club	1.23265e+006	6.6500e-003	0.0604	0.0508	3.6000e-004		4.5900e-003	4.5900e-003		4.5900e-003	4.5900e-003	0.0000	65.7787	65.7787	1.2600e-003	1.2100e-003	66.1696
High Turnover (Sit Down Restaurant)	7.61508e+006	0.0411	0.3733	0.3136	2.2400e-003		0.0284	0.0284		0.0284	0.0284	0.0000	406.3697	406.3697	7.7900e-003	7.4500e-003	408.7845
Hotel	5.48351e+006	0.0296	0.2688	0.2258	1.6100e-003		0.0204	0.0204		0.0204	0.0204	0.0000	292.6208	292.6208	5.6100e-003	5.3600e-003	294.3597
Quality Restaurant	7.61508e+006	0.0411	0.3733	0.3136	2.2400e-003		0.0284	0.0284		0.0284	0.0284	0.0000	406.3697	406.3697	7.7900e-003	7.4500e-003	408.7845
Regional Shopping Center	23301.1	1.3000e-004	1.1400e-003	9.6000e-004	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.2434	1.2434	2.0000e-005	2.0000e-005	1.2508
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.1980	1.7860	1.4122	0.0108		0.1368	0.1368		0.1368	0.1368	0.0000	1,959.0373	1,959.0373	0.0376	0.0359	1,970.6789

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	1.70252e+006	459.6136	0.0224	4.6300e-003	461.5543
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	4.688e+006	1,265.5726	0.0617	0.0128	1,270.9164
General Office Building	1.26413e+007	3,412.6343	0.1663	0.0344	3,427.0438
Health Club	755932	204.0715	9.9400e-003	2.0600e-003	204.9332
High Turnover (Sit Down Restaurant)	1.45662e+006	393.2292	0.0192	3.9600e-003	394.8896
Hotel	1.73332e+006	467.9268	0.0228	4.7200e-003	469.9025
Quality Restaurant	1.45662e+006	393.2292	0.0192	3.9600e-003	394.8896
Regional Shopping Center	191808	51.7805	2.5200e-003	5.2000e-004	51.9991
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		6,648.0577	0.3239	0.0670	6,676.1284

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	1.70252e+006	459.6136	0.0224	4.6300e-003	461.5543
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	4.688e+006	1,265.5726	0.0617	0.0128	1,270.9164
General Office Building	1.26413e+007	3,412.6343	0.1663	0.0344	3,427.0438
Health Club	755932	204.0715	9.9400e-003	2.0600e-003	204.9332
High Turnover (Sit Down Restaurant)	1.45662e+006	393.2292	0.0192	3.9600e-003	394.8896
Hotel	1.73332e+006	467.9268	0.0228	4.7200e-003	469.9025
Quality Restaurant	1.45662e+006	393.2292	0.0192	3.9600e-003	394.8896
Regional Shopping Center	191808	51.7805	2.5200e-003	5.2000e-004	51.9991
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		6,648.0577	0.3239	0.0670	6,676.1284

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	7.9069	0.0802	4.3937	4.2000e-004		0.0266	0.0266		0.0266	0.0266	0.0000	41.7597	41.7597	7.7100e-003	6.3000e-004	42.1414
Unmitigated	7.9069	0.0802	4.3937	4.2000e-004		0.0266	0.0266		0.0266	0.0266	0.0000	41.7597	41.7597	7.7100e-003	6.3000e-004	42.1414

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.8310					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.9376					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.4900e-003	0.0299	0.0127	1.9000e-004		2.4100e-003	2.4100e-003		2.4100e-003	2.4100e-003	0.0000	34.5798	34.5798	6.6000e-004	6.3000e-004	34.7852
Landscaping	0.1349	0.0503	4.3810	2.3000e-004		0.0242	0.0242		0.0242	0.0242	0.0000	7.1799	7.1799	7.0500e-003	0.0000	7.3561
Total	7.9069	0.0802	4.3937	4.2000e-004		0.0266	0.0266		0.0266	0.0266	0.0000	41.7597	41.7597	7.7100e-003	6.3000e-004	42.1414

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.8310					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.9376					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.4900e-003	0.0299	0.0127	1.9000e-004		2.4100e-003	2.4100e-003		2.4100e-003	2.4100e-003	0.0000	34.5798	34.5798	6.6000e-004	6.3000e-004	34.7852
Landscaping	0.1349	0.0503	4.3810	2.3000e-004		0.0242	0.0242		0.0242	0.0242	0.0000	7.1799	7.1799	7.0500e-003	0.0000	7.3561
Total	7.9069	0.0802	4.3937	4.2000e-004		0.0266	0.0266		0.0266	0.0266	0.0000	41.7597	41.7597	7.7100e-003	6.3000e-004	42.1414

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	649.4191	5.5056	0.1353	827.3840
Unmitigated	649.4191	5.5056	0.1353	827.3840

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	15.3691 / 0	58.9004	0.5034	0.0124	75.1724
City Park	0 / 1.56621	4.6975	2.3000e-004	5.0000e-005	4.7173
Enclosed Parking with Elevator	0 / 0.20513	0.6152	3.0000e-005	1.0000e-005	0.6178
General Office Building	141.007 / 0	540.3945	4.6189	0.1135	689.6853
Health Club	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Hotel	11.6928 / 0	44.8114	0.3830	9.4100e-003	57.1912
Quality Restaurant	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		649.4191	5.5056	0.1353	827.3840

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	15.3691 / 0	58.9004	0.5034	0.0124	75.1724
City Park	0 / 1.56621	4.6975	2.3000e-004	5.0000e-005	4.7173
Enclosed Parking with Elevator	0 / 0.20513	0.6152	3.0000e-005	1.0000e-005	0.6178
General Office Building	141.007 / 0	540.3945	4.6189	0.1135	689.6853
Health Club	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Hotel	11.6928 / 0	44.8114	0.3830	9.4100e-003	57.1912
Quality Restaurant	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		649.4191	5.5056	0.1353	827.3840

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	462.1013	27.3094	0.0000	1,144.8364
Unmitigated	1,925.4221	113.7892	0.0000	4,770.1517

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	937.43	190.2898	11.2458	0.0000	471.4350
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	8547.83	1,735.1322	102.5434	0.0000	4,298.7167
Health Club	0	0.0000	0.0000	0.0000	0.0000

High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000
Hotel	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		1,925.4221	113.7892	0.0000	4,770.1517

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	224.983	45.6696	2.6990	0.0000	113.1444
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	2051.48	416.4317	24.6104	0.0000	1,031.6920
Health Club	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000
Hotel	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000

User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		462.1013	27.3094	0.0000	1,144.8364

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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**APPENDIX P - Alternative 4
Air Quality and Greenhouse Gas
Worksheets**

670 Mesquit Project - Alternative 4

1. Air Quality Worksheets

Air Quality Calculation Worksheets and Model Outputs

Operations

- 1. Emissions Summaries and Miscellaneous Calculations**
- 2. Emissions Modeling Output**

**670 Mesquit
Air Quality and Greenhouse Gas Assessment**

Regional Operational Emissions - Alternative 4

Maximum Unmitigated Regional Operational Emissions (pounds per day) ^a

Source	VOC	NO_x	CO	SO₂	PM₁₀	PM_{2.5}
Area (Consumer Products, Landscaping)	26	<1	<1	<1	<1	<1
Energy (Natural Gas)	<1	5	5	<1	<1	<1
Motor Vehicles	28	46	255	<1	79	21
Area (Charbroiler)	<1	-	-	-	<1	<1
Cooling Tower	-	-	-	-	<1	<1
Stationary (Emergency Generators)	2	37	21	<1	<1	<1
Heliport	<1	4	3	-	-	-
Total Project On-Site and Off-Site Emissions	57	93	285	1	80	22
SCAQMD Numeric Indicators	55.0	55.0	550.0	150.0	150.0	55.0
Over/(Under)	1.6	38.0	-265.3	-149.2	-69.8	-32.6
Exceeds Thresholds?	Yes	Yes	No	No	No	No

Net Regional Operations

Maximum Unmitigated Regional Operational Emissions (pounds per day) ^a

Source	VOC	NO_x	CO	SO₂	PM₁₀	PM_{2.5}
Area (Consumer Products, Landscaping)	21	<1	<1	<1	<1	<1
Energy (Natural Gas)	<1	5	5	<1	<1	<1
Motor Vehicles	18	-65	141	0.64	72.9	17.9
Area (Charbroiler)	<1	-	-	-	<1	<1
Cooling Tower	-	-	-	-	<1	<1
Stationary (Emergency Generator)	2	37	21	<1	<1	<1
Heliport	<1	4	3	-	-	-
Total Project On-Site and Off-Site Emissions	43	-18	170	1	74	19
SCAQMD Numeric Indicators	55	55	550	150	150.0	55.0
Over/(Under)	(12)	(73)	(380)	(149)	(75.8)	(36.1)
Exceeds Thresholds?	No	No	No	No	No	No

Estimate of Heliport AQ emissions adapted from Appendix C of Appendix IV.G.1 of the Climate Change Technical Report Wilshire Grand Development Project, <https://planning.lacity.org/eir/WilshireGrandRedevProj/DEIR/DEIR%20Appendices/Appendix%20IV.G.1.pdf>

**670 Mesquit
Air Quality and Greenhouse Gas Assessment**

Localized Operational Emissions - Alternative 4

Maximum Unmitigated Localized Operational Emissions (pounds per day)^a

Source	NO_x	CO	PM₁₀	PM_{2.5}
Area (Consumer Products, Landscaping)	0	0	0.0	0.0
Energy (Natural Gas)	5	5	0.4	0.4
Area (Charbroiler)	-	-	0.7	0.4
Cooling Tower	-	-	0.1	0.0
Stationary (Emergency Generator)	37	21	0.2	0.2
Heliport	0.1	0.2	-	-
Total Project On-Site Emissions	42.9	26.5	1.4	1.0
SCAQMD Numeric Indicators	161.0	1861.0	4.0	2.0
Over/(Under)	(118)	(1834)	(2.6)	(1.0)
Exceeds Thresholds?	No	No	No	No

Localized significance threshold from SCAQMD Look-Up tables for a 5-acre site in Central Los Angeles (SRA 1) with the nearest sensitive receptor at 25 meters from the Site.

Net Localized Operational Emissions

Maximum Unmitigated Localized Operational Emissions (pounds per day)^a

Source	NO_x	CO	PM₁₀	PM_{2.5}
Area (Consumer Products, Landscaping)	0	0	0.0	0.0
Energy (Natural Gas)	5	5	0.4	0.4
Area (Charbroiler)	-	-	0.7	0.4
Cooling Tower	-	-	0.1	0.0
Stationary (Emergency Generator)	37	21	0.2	0.2
Heliport	0.1	0.2	-	-
Total Project On-Site Emissions	43	26	1.4	1.0
SCAQMD Numeric Indicators	161	1,861	4.0	2.0
Over/(Under)	(118)	(1,835)	(2.6)	(1.0)
Exceeds Thresholds?	No	No	No	No

Localized significance threshold from SCAQMD Look-Up tables for a 5-acre site in Central Los Angeles (SRA 1) with the nearest sensitive receptor at 25 meters from the Site.

*Estimate of Heliport AQ emissions adapted from Appendix C of Appendix IV.G.1 of the Climate Change Technical Report Wilshire Grand Development Project,
<https://planning.lacity.org/eir/WilshireGrandRedevProj/DEIR/DEIR%20Appendices/Appendix%20IV.G.1.pdf>*

**670 Mesquit
Air Quality and Greenhouse Gas Assessment**

Regional Operational Emissions - Alternative 4 Mitigated

Maximum Mitigated Regional Operational Emissions (pounds per day) ^a

Source	VOC	NO_x	CO	SO₂	PM₁₀	PM_{2.5}
Area (Consumer Products, Landscaping)	26	<1	<1	<1	<1	<1
Energy (Natural Gas)	<1	5	5	<1	<1	<1
Motor Vehicles	28	46	255	<1	78.9	21.4
Area (Charbroiler)	<1	-	-	-	<1	<1
Cooling Tower	-	-	-	-	<1	<1
Stationary (Emergency Generators)	<1	7	9	<1	<1	<1
Heliport	<1	4	3	-	-	-
Total Project On-Site and Off-Site Emissions	55	63	272	1	80	22
SCAQMD Numeric Indicators	55.0	55.0	550.0	150.0	150.0	55.0
Over/(Under)	-0.1	7.9	-278.2	-149.2	-69.9	-32.7
Exceeds Thresholds?	No	Yes	No	No	No	No

Net Regional Operations

Maximum Mitigated Regional Operational Emissions (pounds per day) ^a

Source	VOC	NO_x	CO	SO₂	PM₁₀	PM_{2.5}
Area (Consumer Products, Landscaping)	21	<1	<1	<1	<1	<1
Energy (Natural Gas)	<1	5	5	<1	<1	<1
Motor Vehicles	18	-65	141	0.64	72.9	17.9
Area (Charbroiler)	<1	-	-	-	<1	<1
Cooling Tower	-	-	-	-	<1	<1
Stationary (Emergency Generator)	<1	7	9	<1	<1	<1
Heliport	<1	4	3	-	-	-
Total Project On-Site and Off-Site Emissions	41	-48	157	1	74	19
SCAQMD Numeric Indicators	55	55	550	150	150.0	55.0
Over/(Under)	(14)	(103)	(393)	(149)	(75.9)	(36.2)
Exceeds Thresholds?	No	No	No	No	No	No

Estimate of Heliport AQ emissions adapted from Appendix C of Appendix IV.G.1 of the Climate Change Technical Report Wilshire Grand Development Project, <https://planning.lacity.org/eir/WilshireGrandRedevProj/DEIR/DEIR%20Appendices/Appendix%20IV.G.1.pdf>

670 Mesquit
Air Quality and Greenhouse Gas Assessment

Localized Operational Emissions - Alternative 4 Mitigated

Maximum Mitigated Localized Operational Emissions (pounds per day)^a

Source	NO_x	CO	PM₁₀	PM_{2.5}
Area (Consumer Products, Landscaping)	0.0	0.4	0.0	0.0
Energy (Natural Gas)	5	5	0.4	0.4
Area (Charbroiler)	-	-	0.7	0.4
Cooling Tower	-	-	0.1	0.0
Stationary (Emergency Generator)	7	9	0.1	0.1
Heliport	0.1	0.2	-	-
Total Project On-Site Emissions	12.8	13.7	1.3	0.9
SCAQMD Numeric Indicators	161.0	1861.0	4.0	2.0
Over/(Under)	(148)	(1847)	(2.7)	(1.1)
Exceeds Thresholds?	No	No	No	No

Localized significance threshold from SCAQMD Look-Up tables for a 5-acre site in Central Los Angeles (SRA 1) with the nearest sensitive receptor at 25 meters from the Site.

Net Localized Operational Emissions

Maximum Mitigated Localized Operational Emissions (pounds per day)^a

Source	NO_x	CO	PM₁₀	PM_{2.5}
Area (Consumer Products, Landscaping)	0	0	0.0	0.0
Energy (Natural Gas)	5	5	0.4	0.4
Area (Charbroiler)	-	-	0.7	0.4
Cooling Tower	-	-	0.1	0.0
Stationary (Emergency Generator)	7	9	0.1	0.1
Heliport	0.1	0.2	-	-
Total Project On-Site Emissions	13	14	1.3	0.9
SCAQMD Numeric Indicators	161	1,861	4.0	2.0
Over/(Under)	(148)	(1,847)	(2.7)	(1.1)
Exceeds Thresholds?	No	No	No	No

Localized significance threshold from SCAQMD Look-Up tables for a 5-acre site in Central Los Angeles (SRA 1) with the nearest sensitive receptor at 25 meters from the Site.

*Estimate of Heliport AQ emissions adapted from Appendix C of Appendix IV.G.1 of the Climate Change Technical Report Wilshire Grand Development Project,
<https://planning.lacity.org/eir/WilshireGrandRedevProj/DEIR/DEIR%20Appendices/Appendix%20IV.G.1.pdf>*

670 Mesquit - Project VMT Calculation
Draft Environmental Impact Report
Air Quality Assessment
Alternative 4

Scenario	Year	VMT/day	ROG	NOX	CO	SOX	Criteria Pollutant Emissions (pounds/day)					
							PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total
Project	2025	101,518	27.66	46.05	255.09	0.75	67.11	11.75	78.86	16.47	4.98	21.45

Source: ESA 2020

670 Mesquit - Project VMT Calculation

Road Dust Emission Factors

Paved Road Dust Emission Factors (Assumes No Precipitation)

Formula: $EF_{Dust,P} = (k (sL)^{0.91} \times (W)^{1.02})$

Where:

- EF_{Dust,P} = Paved Road Dust Emission Factor (having the same units as k)
- k = particle size multiplier
- sL = road surface silt loading (g/m²)
- W = average fleet vehicle weight (tons) (CARB uses 2.4 tons as a fleet average vehicle weight factor)

	Emission Factor (grams per VMT)	
	PM10	PM2.5
k	0.9979	0.2449
sL	0.1	0.1
W	2.4	2.4
EF _{Dust,P}	3.00E-01	7.36E-02

Unpaved Road Dust Emission Factors (Assumes No Precipitation)

Formula: $EF_{Dust,U} = (k (s / 12)^1 \times (Sp / 30)^{0.5} / (M / 0.5)^{0.2}) - C$

Where:

- EF_{Dust,U} = Unpaved Road Dust Emission Factor (having the same units as k)
- k = particle size multiplier
- s = surface material silt content (%)
- Sp = mean vehicle speed (mph)
- M = surface material moisture content (%)
- C = Emission Factor for 1980s vehicle fleet exhaust, brake wear, and tire wear

	Emission Factor (grams per VMT)	
	PM10	PM2.5
k	816.47	81.65
s	4.3%	4.3%
Sp	15	15
M	0.5%	0.5%
C	0.00047	0.00036
EF _{Dust,U}	5.20E+00	5.19E-01

Sources:

SCAQMD, CalEEMod, Version 2011.1.

CARB, *Entrained Dust from Paved Road Travel: Emission Estimation Methodology Background Document*, (1997).

USEPA, *AP-42*, Fifth Edition, Volume I, Chapter 13.2.1 - Paved Roads, (2011).

PCR Services Corporation, 2013.

Emissions Factors

Year	ROG	lbs/mile					PM2_5
		NOx	CO	SOx	PM10		
2018	0.000434828	0.000893715	0.004073127	8.92839E-06	0.000123435	5.70497E-05	
2023	0.000299429	0.000486506	0.002777435	7.78677E-06	0.000115725	4.91522E-05	
2024	0.000285236	0.000470018	0.002638684	7.59983E-06	0.000115757	4.90959E-05	
2025	0.000272471	0.000453637	0.00251276	7.37578E-06	0.00011574	4.90103E-05	
2026	0.000261916	0.000440469	0.002412515	7.18307E-06	0.000115737	4.89222E-05	
2027	0.000252017	0.000428994	0.002327095	7.00819E-06	0.000115684	4.8795E-05	

**670 Mesquit
Cooling Towers - With PDFs
Air Quality Analysis**

Cooling Towers Rating (Max flow):

Annual: 44.2 million gallons
Daily: 121,176 gallons per day
Hourly: 5,049 gallons per hour

Cooling Tower Emissions

Units	PM ₁₀	PM _{2.5}	ROG
lbs/1000 gal	0.01900	0.01900	—
lbs/1000 gal (corrected)	0.00102	0.00002	—
lbs/hr	0.00516	0.00009	—
lbs/day	0.12391	0.00216	—
lbs/yr	45.22667	0.78962	—
tons/yr	0.02261	0.00039	—

Notes: Flow rate from MEP Info pdf 11-22-18 and IV.N.2 Water Supply, associated PDFs also found in IV.N.2 Water Supply.

1. USEPA, AP-42, Chapter 13.4 Wet Cooling Towers, January 1995. Correction factor obtained from Greystone Environmental Consultants, Calculating Realistic PM10 Emissions from Cooling Towers, page 5,
https://www.energy.ca.gov/sitingcases//palomar/documents/applicants_files/Data_Request_Response/Air%20Quality/Attachment%204-1.pdf.

2. The PM10 to PM2.5 ratio for cooling towers was also determined from Greystone Environmental Consultants, Calculating Realistic PM10 Emissions from Cooling Towers, page 5,
https://www.energy.ca.gov/sitingcases//palomar/documents/applicants_files/Data_Request_Response/Air%20Quality/Attachment%204-1.pdf.

Source: ESA 2018.

670 Mesquit Project

Emergency Generator Daily Maintenance AQ Emissions

Building	VOC	NO _x	CO	SO _x	PM10	PM2.5
	lb/day					
Step 1	0.79	14.97	8.57	0.00	0.06	0.06
Step 2	0.39	7.48	4.28	0.00	0.03	0.03
Step 3/4	0.79	14.97	8.57	0.00	0.06	0.06
Total	1.97	37.42	21.42	0.00	0.16	0.15

Annual GHG Emissions

Building	MTCO ₂ e/year
1	40
2	20
3&4	40
Total	99

670 Mequit Project

Emergency Generator Daily Maintenance AQ Emissions - With PDFs - With Mitigation

Building	VOC	NO _x	CO	SO _x	PM10	PM2.5
	lb/day					
Step 1	0.20	7.35	8.53	1.81E-04	0.05	0.05
Total	0.20	7.35	8.53	1.81E-04	0.05	0.05

Annual GHG Emissions

Building	MTCO ₂ e/year
1	40
Total	40

**670 Mesquit
Air Quality Assessment**

Emergency Generator Emissions

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
PM2.5 Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step1 Emergency Generator

Ratings:	1,500 kW	<i>(based on conservative engineering assumptions)</i>
	2,012 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.24	4.56	2.61	5.50E-05	0.0192	0.0187	526.17	530.91
lbs/hr	0.79	14.97	8.57	0.00	0.06	0.06	1,727.10	1,742.66
lbs/day	0.79	14.97	8.57	0.00018	0.06	0.06	1,727.10	1,742.66
lbs/yr	39.39	748.39	428.35	0.01	3.15	3.08	86,355.04	87,133.00
tons/yr	0.02	0.37	0.21	0.00	0.00	0.00	43.18	43.57
metric tons/yr	—	—	—	—	—	—	39.17	39.52

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
- Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.

5%

Source: ESA 2018.

pdf file: MEP Info (10-22-18)

**670 Mesquit Mixed Use Project EIR
Air Quality Assessment**

Emergency Generator Emissions

Conversion Factors

HP/kW	1.3410	
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N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step2 Emergency Generator

Ratings:	750 kW	<i>(based on conservative engineering assumptions)</i>
	1,006 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.24	4.56	2.61	5.50E-05	0.0192	0.0187	526.17	530.91
lbs/hr	0.39	7.48	4.28	0.00	0.03	0.03	863.55	871.33
lbs/day	0.39	7.48	4.28	0.00009	0.03	0.03	863.55	871.33
lbs/yr	19.69	374.20	214.17	0.00	1.58	1.54	43,177.52	43,566.50
tons/yr	0.01	0.19	0.11	0.00	0.00	0.00	21.59	21.78
metric tons/yr	—	—	—	—	—	—	19.59	19.76

Notes:

1. Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
2. Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
3. Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
4. Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.

Source: ESA 2018.

670 Mesquit Mixed Use Project EIR
Air Quality Assessment
670 Mesquit Mixed Use Project EIR
Emergency Generator Emissions (Step 3&4)

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
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CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	IPCC AR4
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step4

Ratings:	1,500 kW	<i>(based on conservative engineering assumptions)</i>
	2,012 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.24	4.56	2.61	5.50E-05	0.0192	0.0187	526.17	530.91
lbs/hr	0.79	14.97	8.57	0.00	0.06	0.06	1727.10	1,742.66
lbs/day	0.79	14.97	8.57	0.00018	0.06	0.06	1,727.10	1,742.66
lbs/yr	39.39	748.39	428.35	0.01	3.15	3.08	86,355.04	87,133.00
tons/yr	0.02	0.37	0.21	0.00	0.00	0.00	43.18	43.57
metric tons/yr	—	—	—	—	—	—	39.17	39.52

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
- Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.

Source: ESA 2018.

**670 Mesquit
Air Quality Assessment**

Emergency Generator Emissions - with PDF

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
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CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step1 Emergency Generator

Ratings:	1,500 kW	<i>(based on conservative engineering assumptions)</i>
	2,012 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.06	2.24	2.60	5.50E-05	0.02	0.02	526.17	530.91
lbs/hr	0.20	7.35	8.53	0.00	0.05	0.05	1727.10	1,742.66
lbs/day	0.20	7.35	8.53	0.00018	0.053	0.053	1,727.10	1,742.66
lbs/yr	9.85	367.63	426.71	0.01	2.63	2.63	86,355.04	87,133.00
tons/yr	0.00	0.18	0.21	0.00	0.00	0.00	43.18	43.57
metric tons/yr	—	—	—	—	—	—	39.17	39.52

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
- Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.
- Emissions Factors for Tier 4 Final from CalEEMOD Appendix D, Pg. D-77

Source: ESA 2018. pdf file: MEP Info (10-22-18)

**670 Mesquit Mixed Use Project EIR
Air Quality Assessment**

Emergency Generator Emissions - with PDF

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
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CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step2 Emergency Generator

Ratings:	750 kW	<i>(based on conservative engineering assumptions)</i>
	1,006 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.06	2.24	2.60	5.50E-05	0.02	0.02	526.17	530.91
lbs/hr	0.10	3.68	4.27	0.00	0.03	0.03	863.55	871.33
lbs/day	0.10	3.68	4.27	0.00009	0.03	0.03	863.55	871.33
lbs/yr	4.92	183.82	213.36	0.00	1.31	1.31	43,177.52	43,566.50
tons/yr	0.00	0.09	0.11	0.00	0.00	0.00	21.59	21.78
metric tons/yr	—	—	—	—	—	—	19.59	19.76

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
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Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
- Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.
- Emissions Factors for Tier 4 Final from CalEEMOD Appendix D, Pg. D-77

Source: ESA 2018.

670 Mesquit Mixed Use Project EIR
Air Quality Assessment
670 Mesquit Mixed Use Project EIR
Emergency Generator Emissions (Step 3&4) - with PDF

Conversion Factors

HP/kW	1.3410	
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N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimaterestry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	IPCC AR4
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step4

Ratings:	1,500 kW	<i>(based on conservative engineering assumptions)</i>
	2,012 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.06	2.24	2.60	5.50E-05	0.02	0.02	526.17	530.91
lbs/hr	0.20	7.35	8.53	0.00	0.05	0.05	1727.10	1,742.66
lbs/day	0.20	7.35	8.53	0.00018	0.05	0.05	1,727.10	1,742.66
lbs/yr	9.85	367.63	426.71	0.01	2.63	2.63	86,355.04	87,133.00
tons/yr	0.00	0.18	0.21	0.00	0.00	0.00	43.18	43.57
metric tons/yr	—	—	—	—	—	—	39.17	39.52

Notes:

1. Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
2. Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
3. Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
4. Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
5. Emissions Factors for Tier 4 Final from CalEEMOD Appendix D, Pg. D-77

Source: ESA 2018. pdf file: MEP Info (10-22-18)

670 Mesquit Charbroiling Emissions

San Joaquin Valley Unified Air Pollution Control District Emission Inventory Methodology 690 - Commercial Cooking Operations

Equipment Type	Restaurant Category				
	Ethnic	Family	Fast Food	Seafood	Steak and BBQ
Percent of restaurants with equipment					
Auto charbroilers	3.5	10.1	18.6	0.0	6.9
Underfired charbroilers	47.5	60.9	30.8	52.6	55.2
Deep-fat fryer	81.9	91.4	96.8	100.0	82.8
Glad griddles	62.7	82.9	51.9	36.8	89.7
Clamshell griddles	4.0	1.4	14.7	10.5	0.0
Average number of units per restaurant typez					
Auto charbroilers	1.62	1.71	1.07	--	--
Underfired charbroilers	1.54	1.29	1.58	1.10	1.63
Deep-fat fryer	1.63	2.34	3.10	2.47	2.42
Glad griddles	1.88	2.03	1.43	1.11	1.35
Clamshell griddles	1.80	--	2.09	1.50	--

Type of Food	Total Food Cooked per Device (lb/week)				
	Chain-Driven Charbroilers ^a	Underfired Charbroilers	Deep-Fat Fryers	Flat Griddles	Clamshell Griddles
Steak	236	180	181	166	94
Hamburger	798	270	274	362	1,314
Poultry, with skin	147	144	365	88	113
Poultry, skinless	266	179	208	111	108
Pork	58	148	59	112	118
Seafood	119	143	159	92	632
Other meat	0	42	274	58	0
Potatoes	0	0	602	0	0

670 Mesquit Charbroiling Emissions

# of food venues	3
Days/week cooking	6
PM10 fraction of PM	0.7 Updated CEIDARS Table with PM2.5 Fractions
PM2.5 fraction of PM	0.42 Updated CEIDARS Table with PM2.5 Fractions

Total # of equipment

Type	Total Equip
Auto charbroilers	0.3
Underfired charbroilers	1.8
Deep-fat fryer	2.7
Glad griddles	2.5
Clamshell griddles	0.0

Total lbs/day of meat

Type	Auto charbroilers	Underfired charbroil	Deep-fat fryer	Glad griddles	Clamshell griddles
Steak	11.9	54.8	82.7	68.8	0.7
Hamburger	40.3	82.2	125.2	150.0	9.2
Poultry, with skin	7.4	43.8	166.8	36.5	0.8
Poultry, skinless	13.4	54.5	95.1	46.0	0.8
Pork	2.9	45.1	27.0	46.4	0.8
Seafood	6.0	43.5	72.7	38.1	4.4
Other meat	0.0	12.8	125.2	24.0	0.0
Potatoes	0.0	0.0	275.1	0.0	0.0

Source ¹	Uncontrolled Emission Factors ² (lb/1000 lb)		Quantity ³ (lb/day)	Emissions Controls ⁴ (percent reduction)		Controlled Emissions ^{5,6} (pounds/day)		
	ROG	PM		VOC	PM	VOC	PM2.5	PM10
Project								
Charbroiler - New York Steak	0.86	17.19	66.73	86%	85%	0.01	0.07	0.12
Charbroiler - 25% fat Hamburger	3.94	32.65	122.51	86%	85%	0.07	0.25	0.42
Charbroiler - Chicken	1.82	10.48	119.21	86%	85%	0.03	0.08	0.13
Deep-fat Fryer - Shoestring fries	0.21	-	275.11	0%	0%	0.06	0.00	0.00
Deep-fat Fryer - breaded chicken patties	0.12	-	261.86	0%	0%	0.03	0.00	0.00
Deep-fat Fryer - breaded cod filet	0.14	-	72.66	0%	0%	0.01	0.00	0.00
Total Emissions						0.21	0.40	0.67

670 Mesquit Project - South Coast AQMD Air District, Summer

670 Mesquit Project
South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	944.05	1000sqft	1.00	944,055.00	0
User Defined Commercial	93.62	User Defined Unit	0.50	93,617.00	0
Enclosed Parking with Elevator	2,000.00	Space	0.25	800,000.00	0
City Park	3.26	Acre	3.26	131,353.00	0
Health Club	62.15	1000sqft	1.43	62,148.00	0
High Turnover (Sit Down Restaurant)	20.00	1000sqft	0.46	20,000.00	0
Quality Restaurant	20.00	1000sqft	0.46	20,000.00	0
Regional Shopping Center	10.00	1000sqft	0.23	10,000.00	0
User Defined Retail	800.00	User Defined Unit	0.10	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	12			Operational Year	2025
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MW hr)	595.16	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - updated CO2 intensity factor to match expected RPS incremental targets in buildout year of 2025

Demolition -
 Grading - MCC
 Architectural Coating -
 Vehicle Trips - mcc
 Woodstoves - No fireplaces
 Area Coating -
 Sequestration -
 Energy Mitigation -
 Water Mitigation -
 Waste Mitigation - study data
 Solid Waste - see alternatives assumptions

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblGrading	AcresOfGrading	0.00	10.00
tblLandUse	LandUseSquareFeet	944,050.00	944,055.00
tblLandUse	LandUseSquareFeet	0.00	93,617.00
tblLandUse	LandUseSquareFeet	142,005.60	131,353.00
tblLandUse	LandUseSquareFeet	62,150.00	62,148.00
tblLandUse	LotAcreage	21.67	1.00
tblLandUse	LotAcreage	0.00	0.50
tblLandUse	LotAcreage	18.00	0.25
tblLandUse	LotAcreage	0.00	0.10
tblProjectCharacteristics	CO2IntensityFactor	1227.89	595.16
tblSolidWaste	SolidWasteGenerationRate	0.28	0.00

tblSolidWaste	SolidWasteGenerationRate	877.97	7,125.42
tblSolidWaste	SolidWasteGenerationRate	354.25	0.00
tblSolidWaste	SolidWasteGenerationRate	238.00	0.00
tblSolidWaste	SolidWasteGenerationRate	18.25	0.00
tblSolidWaste	SolidWasteGenerationRate	10.50	0.00
tblWater	IndoorWaterUseRate	167,789,544.79	124,401,125.00
tblWater	IndoorWaterUseRate	3,675,746.40	0.00
tblWater	IndoorWaterUseRate	6,070,674.25	0.00
tblWater	IndoorWaterUseRate	6,070,674.25	0.00
tblWater	IndoorWaterUseRate	740,725.21	0.00
tblWater	OutdoorWaterUseRate	3,884,229.20	1,566,215.00
tblWater	OutdoorWaterUseRate	0.00	205,130.00
tblWater	OutdoorWaterUseRate	102,838,753.26	0.00
tblWater	OutdoorWaterUseRate	2,252,876.83	0.00
tblWater	OutdoorWaterUseRate	387,489.85	0.00
tblWater	OutdoorWaterUseRate	387,489.85	0.00
tblWater	OutdoorWaterUseRate	453,992.87	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Area	26.0748	3.6500e-003	0.4026	3.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003		0.8651	0.8651	2.2500e-003			0.9214
Energy	0.5968	5.4255	4.5575	0.0326		0.4123	0.4123		0.4123	0.4123		6,510.6499	6,510.6499	0.1248	0.1194		6,549.3395

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Area	26.0748	3.6500e-003	0.4026	3.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003		0.8651	0.8651	2.2500e-003			0.9214
Energy	0.5968	5.4255	4.5575	0.0326		0.4123	0.4123		0.4123	0.4123		6,510.6499	6,510.6499	0.1248	0.1194		6,549.3395

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.5968	5.4255	4.5575	0.0326		0.4123	0.4123		0.4123	0.4123		6,510.6499	6,510.6499	0.1248	0.1194	6,549.3395
NaturalGas Unmitigated	0.5968	5.4255	4.5575	0.0326		0.4123	0.4123		0.4123	0.4123		6,510.6499	6,510.6499	0.1248	0.1194	6,549.3395

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	26925	0.2904	2.6397	2.2174	0.0158		0.2006	0.2006		0.2006	0.2006		3,167.6431	3,167.6431	0.0607	0.0581	3,186.4668
Health Club	3081.86	0.0332	0.3021	0.2538	1.8100e-003		0.0230	0.0230		0.0230	0.0230		362.5717	362.5717	6.9500e-003	6.6500e-003	364.7263
High Turnover (Sit Down Restaurant)	12644.4	0.1364	1.2397	1.0413	7.4400e-003		0.0942	0.0942		0.0942	0.0942		1,487.5745	1,487.5745	0.0285	0.0273	1,496.4145
Quality Restaurant	12644.4	0.1364	1.2397	1.0413	7.4400e-003		0.0942	0.0942		0.0942	0.0942		1,487.5745	1,487.5745	0.0285	0.0273	1,496.4145
Regional Shopping Center	44.9315	4.8000e-004	4.4100e-003	3.7000e-003	3.0000e-005		3.3000e-004	3.3000e-004		3.3000e-004	3.3000e-004		5.2861	5.2861	1.0000e-004	1.0000e-004	5.3175
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.5968	5.4256	4.5575	0.0326		0.4123	0.4123		0.4123	0.4123		6,510.6499	6,510.6499	0.1248	0.1194	6,549.3394

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	26.925	0.2904	2.6397	2.2174	0.0158		0.2006	0.2006		0.2006	0.2006		3,167.6431	3,167.6431	0.0607	0.0581	3,186.4668
Health Club	3.08186	0.0332	0.3021	0.2538	1.8100e-003		0.0230	0.0230		0.0230	0.0230		362.5717	362.5717	6.9500e-003	6.6500e-003	364.7263
High Turnover (Sit Down Restaurant)	12.6444	0.1364	1.2397	1.0413	7.4400e-003		0.0942	0.0942		0.0942	0.0942		1,487.5745	1,487.5745	0.0285	0.0273	1,496.4145
Quality Restaurant	12.6444	0.1364	1.2397	1.0413	7.4400e-003		0.0942	0.0942		0.0942	0.0942		1,487.5745	1,487.5745	0.0285	0.0273	1,496.4145
Regional Shopping Center	0.0449315	4.8000e-004	4.4100e-003	3.7000e-003	3.0000e-005		3.3000e-004	3.3000e-004		3.3000e-004	3.3000e-004		5.2861	5.2861	1.0000e-004	1.0000e-004	5.3175
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.5968	5.4256	4.5575	0.0326		0.4123	0.4123		0.4123	0.4123		6,510.6499	6,510.6499	0.1248	0.1194	6,549.3394

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	26.0748	3.6500e-003	0.4026	3.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003		0.8651	0.8651	2.2500e-003		0.9214
Unmitigated	26.0748	3.6500e-003	0.4026	3.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003		0.8651	0.8651	2.2500e-003		0.9214

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.9812					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	23.0566					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0371	3.6500e-003	0.4026	3.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003		0.8651	0.8651	2.2500e-003		0.9214
Total	26.0748	3.6500e-003	0.4026	3.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003		0.8651	0.8651	2.2500e-003		0.9214

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.9812					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	23.0566					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0371	3.6500e-003	0.4026	3.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003		0.8651	0.8651	2.2500e-003		0.9214
Total	26.0748	3.6500e-003	0.4026	3.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003		0.8651	0.8651	2.2500e-003		0.9214

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

670 Mesquit Project - South Coast AQMD Air District, Winter

670 Mesquit Project
South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	944.05	1000sqft	1.00	944,055.00	0
User Defined Commercial	93.62	User Defined Unit	0.50	93,617.00	0
Enclosed Parking with Elevator	2,000.00	Space	0.25	800,000.00	0
City Park	3.26	Acre	3.26	131,353.00	0
Health Club	62.15	1000sqft	1.43	62,148.00	0
High Turnover (Sit Down Restaurant)	20.00	1000sqft	0.46	20,000.00	0
Quality Restaurant	20.00	1000sqft	0.46	20,000.00	0
Regional Shopping Center	10.00	1000sqft	0.23	10,000.00	0
User Defined Retail	800.00	User Defined Unit	0.10	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	12			Operational Year	2025
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MW hr)	595.16	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - updated CO2 intensity factor to match expected RPS incremental targets in buildout year of 2025

Demolition -
 Grading - MCC
 Architectural Coating -
 Vehicle Trips - mcc
 Woodstoves - No fireplaces
 Area Coating -
 Solid Waste - see alternatives assumptions
 Sequestration -
 Energy Mitigation -
 Water Mitigation -
 Waste Mitigation - study data

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblGrading	AcresOfGrading	0.00	10.00
tblLandUse	LandUseSquareFeet	944,050.00	944,055.00
tblLandUse	LandUseSquareFeet	0.00	93,617.00
tblLandUse	LandUseSquareFeet	142,005.60	131,353.00
tblLandUse	LandUseSquareFeet	62,150.00	62,148.00
tblLandUse	LotAcreage	21.67	1.00
tblLandUse	LotAcreage	0.00	0.50
tblLandUse	LotAcreage	18.00	0.25
tblLandUse	LotAcreage	0.00	0.10
tblProjectCharacteristics	CO2IntensityFactor	1227.89	595.16
tblSolidWaste	SolidWasteGenerationRate	0.28	0.00

tblSolidWaste	SolidWasteGenerationRate	877.97	7,125.42
tblSolidWaste	SolidWasteGenerationRate	354.25	0.00
tblSolidWaste	SolidWasteGenerationRate	238.00	0.00
tblSolidWaste	SolidWasteGenerationRate	18.25	0.00
tblSolidWaste	SolidWasteGenerationRate	10.50	0.00
tblWater	IndoorWaterUseRate	167,789,544.79	124,401,125.00
tblWater	IndoorWaterUseRate	3,675,746.40	0.00
tblWater	IndoorWaterUseRate	6,070,674.25	0.00
tblWater	IndoorWaterUseRate	6,070,674.25	0.00
tblWater	IndoorWaterUseRate	740,725.21	0.00
tblWater	OutdoorWaterUseRate	3,884,229.20	1,566,215.00
tblWater	OutdoorWaterUseRate	0.00	205,130.00
tblWater	OutdoorWaterUseRate	102,838,753.26	0.00
tblWater	OutdoorWaterUseRate	2,252,876.83	0.00
tblWater	OutdoorWaterUseRate	387,489.85	0.00
tblWater	OutdoorWaterUseRate	387,489.85	0.00
tblWater	OutdoorWaterUseRate	453,992.87	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Area	26.0748	3.6500e-003	0.4026	3.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003		0.8651	0.8651	2.2500e-003			0.9214
Energy	0.5968	5.4255	4.5575	0.0326		0.4123	0.4123		0.4123	0.4123		6,510.6499	6,510.6499	0.1248	0.1194		6,549.3395

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Area	26.0748	3.6500e-003	0.4026	3.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003		0.8651	0.8651	2.2500e-003			0.9214
Energy	0.5968	5.4255	4.5575	0.0326		0.4123	0.4123		0.4123	0.4123		6,510.6499	6,510.6499	0.1248	0.1194		6,549.3395

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.5968	5.4255	4.5575	0.0326		0.4123	0.4123		0.4123	0.4123		6,510.6499	6,510.6499	0.1248	0.1194	6,549.3395
NaturalGas Unmitigated	0.5968	5.4255	4.5575	0.0326		0.4123	0.4123		0.4123	0.4123		6,510.6499	6,510.6499	0.1248	0.1194	6,549.3395

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	26925	0.2904	2.6397	2.2174	0.0158		0.2006	0.2006		0.2006	0.2006		3,167.6431	3,167.6431	0.0607	0.0581	3,186.4668
Health Club	3081.86	0.0332	0.3021	0.2538	1.8100e-003		0.0230	0.0230		0.0230	0.0230		362.5717	362.5717	6.9500e-003	6.6500e-003	364.7263
High Turnover (Sit Down Restaurant)	12644.4	0.1364	1.2397	1.0413	7.4400e-003		0.0942	0.0942		0.0942	0.0942		1,487.5745	1,487.5745	0.0285	0.0273	1,496.4145
Quality Restaurant	12644.4	0.1364	1.2397	1.0413	7.4400e-003		0.0942	0.0942		0.0942	0.0942		1,487.5745	1,487.5745	0.0285	0.0273	1,496.4145
Regional Shopping Center	44.9315	4.8000e-004	4.4100e-003	3.7000e-003	3.0000e-005		3.3000e-004	3.3000e-004		3.3000e-004	3.3000e-004		5.2861	5.2861	1.0000e-004	1.0000e-004	5.3175
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.5968	5.4256	4.5575	0.0326		0.4123	0.4123		0.4123	0.4123		6,510.6499	6,510.6499	0.1248	0.1194	6,549.3394

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	26.925	0.2904	2.6397	2.2174	0.0158		0.2006	0.2006		0.2006	0.2006		3,167.6431	3,167.6431	0.0607	0.0581	3,186.4668
Health Club	3.08186	0.0332	0.3021	0.2538	1.8100e-003		0.0230	0.0230		0.0230	0.0230		362.5717	362.5717	6.9500e-003	6.6500e-003	364.7263
High Turnover (Sit Down Restaurant)	12.6444	0.1364	1.2397	1.0413	7.4400e-003		0.0942	0.0942		0.0942	0.0942		1,487.5745	1,487.5745	0.0285	0.0273	1,496.4145
Quality Restaurant	12.6444	0.1364	1.2397	1.0413	7.4400e-003		0.0942	0.0942		0.0942	0.0942		1,487.5745	1,487.5745	0.0285	0.0273	1,496.4145
Regional Shopping Center	0.0449315	4.8000e-004	4.4100e-003	3.7000e-003	3.0000e-005		3.3000e-004	3.3000e-004		3.3000e-004	3.3000e-004		5.2861	5.2861	1.0000e-004	1.0000e-004	5.3175
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.5968	5.4256	4.5575	0.0326		0.4123	0.4123		0.4123	0.4123		6,510.6499	6,510.6499	0.1248	0.1194	6,549.3394

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	26.0748	3.6500e-003	0.4026	3.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003		0.8651	0.8651	2.2500e-003		0.9214
Unmitigated	26.0748	3.6500e-003	0.4026	3.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003		0.8651	0.8651	2.2500e-003		0.9214

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.9812					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	23.0566					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0371	3.6500e-003	0.4026	3.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003		0.8651	0.8651	2.2500e-003		0.9214
Total	26.0748	3.6500e-003	0.4026	3.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003		0.8651	0.8651	2.2500e-003		0.9214

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.9812					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	23.0566					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0371	3.6500e-003	0.4026	3.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003		0.8651	0.8651	2.2500e-003		0.9214
Total	26.0748	3.6500e-003	0.4026	3.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003		0.8651	0.8651	2.2500e-003		0.9214

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

670 Mesquit Project - Alternative 4

2. GHG Worksheets

GHG Calculation Worksheets and Model Outputs

Operations

- 1. Emissions Summaries and Miscellaneous Calculations**
- 2. Emissions Modeling Output**

670 Mesquit - Alternative 4

Project With GHG Reduction Characteristics, Features

Greenhouse Gas Summary

Project Operations Summary WITH Deck (Full Buildout Year 2025)	
Category	MTCO ₂ e/yr
Mobile	13,324
Emergency Generator	99
Cooling Tower	164
Area	0
Electricity	5,353
Natural Gas	1,084
Water	614
Waste	860
Heliport ¹	162
Construction	864
Project Subtotal	22,524
Existing	4,355
Project Net Total GHG Emissions	18,170

MTCO₂e=Metric Tons Carbon Dioxide equivalents

Appendix IV.O of the Climate Change Technical Report Wilshire Grand Development Project,

**670 Mesquit
 Draft Environmental Impact Report
 Greenhouse Gas Assessment
 Alternative 4**

Scenario	Year	VMT/year	GHG Emissions (metric tons/year)			
			CO2 1	CH4 25	N2O 298	CO2e
Project Source: ESA 2020	2025	37,054,070	13,100	0.8	0.7	13,324

Emissions Factors**MT/Mile**

Year	CO2	CH4	N2O	CO2e
2018	0.000416112	3.25607E-08	2.3673E-08	0.000423981
2023	0.000367711	2.41253E-08	1.93344E-08	0.000374076
2024	0.000361301	2.33893E-08	1.8844E-08	0.000367501
2025	0.000353544	2.26996E-08	1.83454E-08	0.000359578
2026	0.000346657	2.21588E-08	1.79615E-08	0.000352564
2027	0.000340369	2.16628E-08	1.76138E-08	0.00034616

EV Charging Stations

Source	Spaces	Average Charge (kWh/day) ^{1 2 3}	Days	kWh/yr	Electricity Emission Factor (MT CO2/MWh)	Electricity Emission Factor (lbs CO2/MWh)	Total EV Charging GHG Emissions Per Year
Residential	60	4.4	365	96,360			54.99
Commercial/Retail	60	4.4	365	96,360	0.28	626.48	
Total	120	4.4	365	192,720	(MT CH4/MWh)	(lbs CH4/MWh)	

¹ US Department of Energy. Alternative Fuels Data Center, 2016. Hybrid and Plug-In Electric Vehicle Emissions Data Sources and Assumptions.

² US Department of Energy. Smith, Margaret, 2016. Level 1 Electric Vehicle Charging Stations at the Workplace.

³ UCLA Luskin Center for Innovation. Williams, Brett and JR deShazo, 2013. Pricing Workplace Charging: Financial Viability and Fueling Costs.

1.32E-05	0.029
(MT N2O/MWh)	(lbs N2O/MWh)
2.80E-06	0.00617

**670 Mesquit
Cooling Towers - with PDF
Greenhouse Gas Analysis**

24 hr/day
121,176 gal/day
44,229,240 gal/year
44.2292 mgal/year

CalEEMod Water Electricity Factors	Electricity Intensity Factor To Supply (kWh/Mgal)	Electricity Intensity Factor To Treat (kWh/Mgal)	Electricity Intensity Factor To Distribute (kWh/Mgal)	Electricity Intensity Factor For Wastewater Treatment (kWh/Mgal)
		9727	111	1272

Source	Electricity Demand from Water Demand (million kWh)	GHG Emissions (lbs/yr)				MTCO2e (MT/yr)
		CO2	CH4	N2O	CO2e	
Cooling Tower	0.5759	360,795	16.70	3.46	362,243	164.3

GHG	Intensity factor (lbs/MWh)
CO2	626.48
CH4	0.029
N2O	0.006

Notes: Flow rate from MEP Info pdf 11-22-18 and IV.N.2 Water Supply

670 Mesquit Project

Emergency Generator Daily Maintenance AQ Emissions

Building	VOC	NO _x	CO	SO _x	PM10	PM2.5
	lb/day					
Step 1	0.79	14.97	8.57	0.00	0.06	0.06
Step 2	0.39	7.48	4.28	0.00	0.03	0.03
Step 3/4	0.79	14.97	8.57	0.00	0.06	0.06
Total	1.97	37.42	21.42	0.00	0.16	0.15

Annual GHG Emissions

Building	MTCO ₂ e/year
1	40
2	20
3&4	40
Total	99

670 Mequit Project

Emergency Generator Daily Maintenance AQ Emissions - With PDFs - With Mitigation

Building	VOC	NO _x	CO	SO _x	PM10	PM2.5
	lb/day					
Step 1	0.20	7.35	8.53	1.81E-04	0.05	0.05
Total	0.20	7.35	8.53	1.81E-04	0.05	0.05

Annual GHG Emissions

Building	MTCO ₂ e/year
1	40
Total	40

**670 Mesquit
Air Quality Assessment**

Emergency Generator Emissions

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
PM2.5 Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step1 Emergency Generator

Ratings:	1,500 kW	<i>(based on conservative engineering assumptions)</i>
	2,012 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.24	4.56	2.61	5.50E-05	0.0192	0.0187	526.17	530.91
lbs/hr	0.79	14.97	8.57	0.00	0.06	0.06	1,727.10	1,742.66
lbs/day	0.79	14.97	8.57	0.00018	0.06	0.06	1,727.10	1,742.66
lbs/yr	39.39	748.39	428.35	0.01	3.15	3.08	86,355.04	87,133.00
tons/yr	0.02	0.37	0.21	0.00	0.00	0.00	43.18	43.57
metric tons/yr	—	—	—	—	—	—	39.17	39.52

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
- Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.

5%

Source: ESA 2018.

pdf file: MEP Info (10-22-18)

**670 Mesquit Mixed Use Project EIR
Air Quality Assessment**

Emergency Generator Emissions

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
PM2.5 Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step2 Emergency Generator

Ratings:	750 kW	<i>(based on conservative engineering assumptions)</i>
	1,006 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.24	4.56	2.61	5.50E-05	0.0192	0.0187	526.17	530.91
lbs/hr	0.39	7.48	4.28	0.00	0.03	0.03	863.55	871.33
lbs/day	0.39	7.48	4.28	0.00009	0.03	0.03	863.55	871.33
lbs/yr	19.69	374.20	214.17	0.00	1.58	1.54	43,177.52	43,566.50
tons/yr	0.01	0.19	0.11	0.00	0.00	0.00	21.59	21.78
metric tons/yr	—	—	—	—	—	—	19.59	19.76

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
- Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.

Source: ESA 2018.

670 Mesquit Mixed Use Project EIR
Air Quality Assessment
670 Mesquit Mixed Use Project EIR
Emergency Generator Emissions (Step 3&4)

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
PM2.5 Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	IPCC AR4
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step4

Ratings:	1,500 kW	<i>(based on conservative engineering assumptions)</i>
	2,012 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.24	4.56	2.61	5.50E-05	0.0192	0.0187	526.17	530.91
lbs/hr	0.79	14.97	8.57	0.00	0.06	0.06	1727.10	1,742.66
lbs/day	0.79	14.97	8.57	0.00018	0.06	0.06	1,727.10	1,742.66
lbs/yr	39.39	748.39	428.35	0.01	3.15	3.08	86,355.04	87,133.00
tons/yr	0.02	0.37	0.21	0.00	0.00	0.00	43.18	43.57
metric tons/yr	—	—	—	—	—	—	39.17	39.52

Notes:

1. Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
2. Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
3. Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
4. Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.

Source: ESA 2018.

**670 Mesquit
Air Quality Assessment**

Emergency Generator Emissions - with PDF

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
PM2.5 Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step1 Emergency Generator

Ratings:	1,500 kW	<i>(based on conservative engineering assumptions)</i>
	2,012 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.06	2.24	2.60	5.50E-05	0.02	0.02	526.17	530.91
lbs/hr	0.20	7.35	8.53	0.00	0.05	0.05	1727.10	1,742.66
lbs/day	0.20	7.35	8.53	0.00018	0.053	0.053	1,727.10	1,742.66
lbs/yr	9.85	367.63	426.71	0.01	2.63	2.63	86,355.04	87,133.00
tons/yr	0.00	0.18	0.21	0.00	0.00	0.00	43.18	43.57
metric tons/yr	—	—	—	—	—	—	39.17	39.52

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
- Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.
- Emissions Factors for Tier 4 Final from CalEEMOD Appendix D, Pg. D-77

Source: ESA 2018. pdf file: MEP Info (10-22-18)

**670 Mesquit Mixed Use Project EIR
Air Quality Assessment**

Emergency Generator Emissions - with PDF

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
PM2.5 Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimateregistry.org/wp-content/uploads/2014/11/2016-Climate-Registry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step2 Emergency Generator

Ratings:	750 kW	<i>(based on conservative engineering assumptions)</i>
	1,006 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.06	2.24	2.60	5.50E-05	0.02	0.02	526.17	530.91
lbs/hr	0.10	3.68	4.27	0.00	0.03	0.03	863.55	871.33
lbs/day	0.10	3.68	4.27	0.00009	0.03	0.03	863.55	871.33
lbs/yr	4.92	183.82	213.36	0.00	1.31	1.31	43,177.52	43,566.50
tons/yr	0.00	0.09	0.11	0.00	0.00	0.00	21.59	21.78
metric tons/yr	—	—	—	—	—	—	19.59	19.76

Notes:

- Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
- Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
- Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emissions of GHGs assume 99.11% of the CO₂e emissions occur as CO₂, based on Climate Registry emission factors as referenced above.
- Emissions Factors for Tier 4 Final from CalEEMOD Appendix D, Pg. D-77

Source: ESA 2018.

670 Mesquit Mixed Use Project EIR
Air Quality Assessment
670 Mesquit Mixed Use Project EIR
Emergency Generator Emissions (Step 3&4) - with PDF

Conversion Factors

HP/kW	1.3410	
PM10 Fraction of Total PM	0.960	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
PM2.5 Fraction of Total PM	0.937	Table A - Updated CEIDARS Table with PM2.5 Fractions, INTERNAL COMBUSTION - DISTILLATE AND DIESEL-ELECTRIC GENERATION
CO2 g/gal	10.21	Climate Registry, Table 13.1: https://www.theclimaterestry.org/wp-content/uploads/2014/11/2016-Climaterestry-Default-Emission-Factors.pdf
CH4 g/gal	0.58	Climate Registry, Table 13.7: https://www.theclimaterestry.org/wp-content/uploads/2014/11/2016-Climaterestry-Default-Emission-Factors.pdf
N2O g/gal	0.26	Climate Registry, Table 13.7: https://www.theclimaterestry.org/wp-content/uploads/2014/11/2016-Climaterestry-Default-Emission-Factors.pdf
GWP CH4	25	IPCC AR4
GWP N2O	298	IPCC AR4
CO2e g/gal	10,302	IPCC AR4
CO2 g/gal	10,210	
CO2/CO2e	0.9911	

Step4

Ratings:	1,500 kW	<i>(based on conservative engineering assumptions)</i>
	2,012 HP	<i>(based on conservative engineering assumptions; conversion from kW to hp)</i>
	- kW	<i>(based on conservative engineering assumptions)</i>
	- HP	<i>(conversion from kW to hp)</i>
Load Factor:	0.74	<i>(based on CalEEMod Generator Set Load Factor)</i>
Engine Emissions Tier:	Rule 1470 Compliant	<i>(compliance with CARB and AQMD diesel regulations)</i>
Operating Hours per Unit:	1 hours/day	<i>(testing/maintenance)</i>
	50 hours/year	<i>(testing/maintenance, Regulatory Limit per SCAQMD Rule 1470)</i>

Emergency Generator Emissions

Units	Criteria Pollutants ^{1, 2, 3}					Greenhouse Gases ⁴		
	VOC	NO _x	CO	SO _x	PM10	PM2.5	CO ₂	CO ₂ e
g/kW-hr	—	—	3.50	—	—	—	—	—
g/HP-hr	0.06	2.24	2.60	5.50E-05	0.02	0.02	526.17	530.91
lbs/hr	0.20	7.35	8.53	0.00	0.05	0.05	1727.10	1,742.66
lbs/day	0.20	7.35	8.53	0.00018	0.05	0.05	1,727.10	1,742.66
lbs/yr	9.85	367.63	426.71	0.01	2.63	2.63	86,355.04	87,133.00
tons/yr	0.00	0.18	0.21	0.00	0.00	0.00	43.18	43.57
metric tons/yr	—	—	—	—	—	—	39.17	39.52

Notes:

1. Emission factors for VOC and NO_x: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
2. Emission factors for CO, PM10, and PM2.5: Regulatory Limit per SCAQMD Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines).
3. Emission factor for SO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
Emission Factor for SO₂ is based on 15 ppm (0.0015%) S1 from the EPA Nonroad Diesel Fuel Program, and assumes complete conversion to SO₂.
4. Emission factor for CO₂: U.S. Environmental Protection Agency, AP-42 Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 3.4, Table 3.4-1.
5. Emissions Factors for Tier 4 Final from CalEEMOD Appendix D, Pg. D-77

Source: ESA 2018. pdf file: MEP Info (10-22-18)

670 Mesquit Project - South Coast AQMD Air District, Annual

670 Mesquit Project
South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	944.05	1000sqft	1.00	944,055.00	0
User Defined Commercial	93.62	User Defined Unit	0.50	93,617.00	0
Enclosed Parking with Elevator	2,000.00	Space	0.25	800,000.00	0
City Park	3.26	Acre	3.26	131,353.00	0
Health Club	62.15	1000sqft	1.43	62,148.00	0
High Turnover (Sit Down Restaurant)	20.00	1000sqft	0.46	20,000.00	0
Quality Restaurant	20.00	1000sqft	0.46	20,000.00	0
Regional Shopping Center	10.00	1000sqft	0.23	10,000.00	0
User Defined Retail	800.00	User Defined Unit	0.10	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	12			Operational Year	2025
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MW hr)	595.16	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - updated CO2 intensity factor to match expected RPS incremental targets in buildout year of 2025

Demolition -
 Grading - MCC
 Architectural Coating -
 Vehicle Trips - mcc
 Woodstoves - No fireplaces
 Area Coating -
 Sequestration -
 Energy Mitigation -
 Water Mitigation -
 Waste Mitigation - study data
 Solid Waste - see alternatives assumptions

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblGrading	AcresOfGrading	0.00	10.00
tblLandUse	LandUseSquareFeet	944,050.00	944,055.00
tblLandUse	LandUseSquareFeet	0.00	93,617.00
tblLandUse	LandUseSquareFeet	142,005.60	131,353.00
tblLandUse	LandUseSquareFeet	62,150.00	62,148.00
tblLandUse	LotAcreage	21.67	1.00
tblLandUse	LotAcreage	0.00	0.50
tblLandUse	LotAcreage	18.00	0.25
tblLandUse	LotAcreage	0.00	0.10
tblProjectCharacteristics	CO2IntensityFactor	1227.89	595.16
tblSolidWaste	SolidWasteGenerationRate	0.28	0.00

tblSolidWaste	SolidWasteGenerationRate	877.97	7,125.42
tblSolidWaste	SolidWasteGenerationRate	354.25	0.00
tblSolidWaste	SolidWasteGenerationRate	238.00	0.00
tblSolidWaste	SolidWasteGenerationRate	18.25	0.00
tblSolidWaste	SolidWasteGenerationRate	10.50	0.00
tblWater	IndoorWaterUseRate	167,789,544.79	124,401,125.00
tblWater	IndoorWaterUseRate	3,675,746.40	0.00
tblWater	IndoorWaterUseRate	6,070,674.25	0.00
tblWater	IndoorWaterUseRate	6,070,674.25	0.00
tblWater	IndoorWaterUseRate	740,725.21	0.00
tblWater	OutdoorWaterUseRate	3,884,229.20	1,566,215.00
tblWater	OutdoorWaterUseRate	0.00	205,130.00
tblWater	OutdoorWaterUseRate	102,838,753.26	0.00
tblWater	OutdoorWaterUseRate	2,252,876.83	0.00
tblWater	OutdoorWaterUseRate	387,489.85	0.00
tblWater	OutdoorWaterUseRate	387,489.85	0.00
tblWater	OutdoorWaterUseRate	453,992.87	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.7565	4.6000e-004	0.0503	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0981	0.0981	2.6000e-004	0.0000	0.1045
Energy	0.1089	0.9902	0.8317	5.9400e-003		0.0753	0.0753		0.0753	0.0753	0.0000	6,353.3938	6,353.3938	0.2777	0.0730	6,382.0744

Waste						0.0000	0.0000		0.0000	0.0000	1,446.3959	0.0000	1,446.3959	85.4796	0.0000	3,583.3845
Water						0.0000	0.0000		0.0000	0.0000	39.4667	442.6013	482.0680	4.0752	0.1002	613.8001

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.7565	4.6000e-004	0.0503	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0981	0.0981	2.6000e-004	0.0000	0.1045
Energy	0.1089	0.9902	0.8317	5.9400e-003		0.0753	0.0753		0.0753	0.0753	0.0000	6,353.3938	6,353.3938	0.2777	0.0730	6,382.0744
Waste						0.0000	0.0000		0.0000	0.0000	347.1350	0.0000	347.1350	20.5151	0.0000	860.0123
Water						0.0000	0.0000		0.0000	0.0000	39.4667	442.6013	482.0680	4.0752	0.1002	613.8001

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	5,275.4827	5,275.4827	0.2571	0.0532	5,297.7578
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	5,275.4827	5,275.4827	0.2571	0.0532	5,297.7578
NaturalGas Mitigated	0.1089	0.9902	0.8317	5.9400e-003		0.0753	0.0753		0.0753	0.0753	0.0000	1,077.9111	1,077.9111	0.0207	0.0198	1,084.3166
NaturalGas Unmitigated	0.1089	0.9902	0.8317	5.9400e-003		0.0753	0.0753		0.0753	0.0753	0.0000	1,077.9111	1,077.9111	0.0207	0.0198	1,084.3166

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	9.82761e+006	0.0530	0.4818	0.4047	2.8900e-003		0.0366	0.0366		0.0366	0.0366	0.0000	524.4388	524.4388	0.0101	9.6100e-003	527.5553
Health Club	1.12488e+006	6.0700e-003	0.0551	0.0463	3.3000e-004		4.1900e-003	4.1900e-003		4.1900e-003	4.1900e-003	0.0000	60.0278	60.0278	1.1500e-003	1.1000e-003	60.3845
High Turnover (Sit Down Restaurant)	4.6152e+006	0.0249	0.2262	0.1900	1.3600e-003		0.0172	0.0172		0.0172	0.0172	0.0000	246.2847	246.2847	4.7200e-003	4.5200e-003	247.7482
Quality Restaurant	4.6152e+006	0.0249	0.2262	0.1900	1.3600e-003		0.0172	0.0172		0.0172	0.0172	0.0000	246.2847	246.2847	4.7200e-003	4.5200e-003	247.7482
Regional Shopping Center	16400	9.0000e-005	8.0000e-004	6.8000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.8752	0.8752	2.0000e-005	2.0000e-005	0.8804
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.1089	0.9902	0.8318	5.9400e-003		0.0752	0.0752		0.0752	0.0752	0.0000	1,077.9111	1,077.9111	0.0207	0.0198	1,084.3166

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										Mt/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	9.82761e+006	0.0530	0.4818	0.4047	2.8900e-003		0.0366	0.0366		0.0366	0.0366	0.0000	524.4388	524.4388	0.0101	9.6100e-003	527.5553
Health Club	1.12488e+006	6.0700e-003	0.0551	0.0463	3.3000e-004		4.1900e-003	4.1900e-003		4.1900e-003	4.1900e-003	0.0000	60.0278	60.0278	1.1500e-003	1.1000e-003	60.3845
High Turnover (Sit Down Restaurant)	4.6152e+006	0.0249	0.2262	0.1900	1.3600e-003		0.0172	0.0172		0.0172	0.0172	0.0000	246.2847	246.2847	4.7200e-003	4.5200e-003	247.7482
Quality Restaurant	4.6152e+006	0.0249	0.2262	0.1900	1.3600e-003		0.0172	0.0172		0.0172	0.0172	0.0000	246.2847	246.2847	4.7200e-003	4.5200e-003	247.7482
Regional Shopping Center	16400	9.0000e-005	8.0000e-004	6.8000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.8752	0.8752	2.0000e-005	2.0000e-005	0.8804
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.1089	0.9902	0.8318	5.9400e-003		0.0752	0.0752		0.0752	0.0752	0.0000	1,077.9111	1,077.9111	0.0207	0.0198	1,084.3166

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	4.688e+006	1,265.5726	0.0617	0.0128	1,270.9164
General Office Building	1.22633e+007	3,310.5940	0.1613	0.0334	3,324.5726
Health Club	689843	186.2300	9.0700e-003	1.8800e-003	187.0163
High Turnover (Sit Down Restaurant)	882800	238.3207	0.0116	2.4000e-003	239.3270
Quality Restaurant	882800	238.3207	0.0116	2.4000e-003	239.3270
Regional Shopping Center	135000	36.4446	1.7800e-003	3.7000e-004	36.5985
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		5,275.4827	0.2571	0.0532	5,297.7578

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	4.688e+006	1,265.5726	0.0617	0.0128	1,270.9164
General Office Building	1.22633e+007	3,310.5940	0.1613	0.0334	3,324.5726
Health Club	689843	186.2300	9.0700e-003	1.8800e-003	187.0163
High Turnover (Sit Down Restaurant)	882800	238.3207	0.0116	2.4000e-003	239.3270
Quality Restaurant	882800	238.3207	0.0116	2.4000e-003	239.3270
Regional Shopping Center	135000	36.4446	1.7800e-003	3.7000e-004	36.5985
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		5,275.4827	0.2571	0.0532	5,297.7578

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.7565	4.6000e-004	0.0503	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0981	0.0981	2.6000e-004	0.0000	0.1045
Unmitigated	4.7565	4.6000e-004	0.0503	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0981	0.0981	2.6000e-004	0.0000	0.1045

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.5441					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.2078					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.6300e-003	4.6000e-004	0.0503	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0981	0.0981	2.6000e-004	0.0000	0.1045
Total	4.7565	4.6000e-004	0.0503	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0981	0.0981	2.6000e-004	0.0000	0.1045

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.5441					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.2078					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.6300e-003	4.6000e-004	0.0503	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0981	0.0981	2.6000e-004	0.0000	0.1045
Total	4.7565	4.6000e-004	0.0503	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0981	0.0981	2.6000e-004	0.0000	0.1045

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	482.0680	4.0752	0.1002	613.8001
Unmitigated	482.0680	4.0752	0.1002	613.8001

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.56621	4.6975	2.3000e-004	5.0000e-005	4.7173
Enclosed Parking with Elevator	0 / 0.20513	0.6152	3.0000e-005	1.0000e-005	0.6178
General Office Building	124.401 / 0	476.7553	4.0749	0.1001	608.4650
Health Club	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		482.0680	4.0752	0.1002	613.8001

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.56621	4.6975	2.3000e-004	5.0000e-005	4.7173
Enclosed Parking with Elevator	0 / 0.20513	0.6152	3.0000e-005	1.0000e-005	0.6178
General Office Building	124.401 / 0	476.7553	4.0749	0.1001	608.4650
Health Club	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		482.0680	4.0752	0.1002	613.8001

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	347.1350	20.5151	0.0000	860.0123
Unmitigated	1,446.3959	85.4796	0.0000	3,583.3845

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	7125.42	1,446.3959	85.4796	0.0000	3,583.3845
Health Club	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		1,446.3959	85.4796	0.0000	3,583.3845

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	1710.1	347.1350	20.5151	0.0000	860.0123
Health Club	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		347.1350	20.5151	0.0000	860.0123

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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P-2 Alternatives – Energy Documentation

APPENDIX P - Alternative 2 Energy Documentation

Energy Calculation Worksheets and Model Outputs

1. Operational Energy Worksheets

**670 Mesquit - Alternative 2
Operational Energy Summary**

Electricity	Electricity Use (kWh)
Existing Site	4,304,153
Alternative 2	
Building Energy	24,421,810
Cooling Tower	575,909
Water Heating and Conveyance	2,130,595
EV Charging	192,720
Alternative 2 - Subtotal	27,321,034
Alternative 2 - Total Net Electricity	23,016,881
LADWP Total	23,537,000,000
Project - % of LADWP	0.0978%

Source: Los Angeles Department of Water and Power, 2017 Final Power Strategic Long-Term Resource Plan, p. 70, 2017.

Natural Gas	NG Use (kBtu)
Existing Site	271,303
Alternative 2	35,309,428
Total Net Natural Gas	35,038,126
SoCalGas Total (2025)	884,749,050,000
% of SoCalGas	0.004%
SoCalGas Total (2025)	884,749,050,000
% of SoCalGas	0.000%

Source: California Gas and Electric Utilities, 2018 California Gas Report, p. 103, 2018.

Alternative 2 Fuel Use	
Fuel	Fuel Use (gal)
Existing Site	
Gasoline	24,439
Diesel	83,601
Alternative 2	
Gasoline	1,576,142
Diesel	184,685
Total Net Gasoline	1,551,703
County Total - Gas	3,559,000,000
% of County	0.044%
Total Net Diesel	101,085
County Total - Diesel	584,745,763
% of County	0.017%

Source: California Energy Commission (CEC), California Annual Retail Fuel Outlet Report, 2017.

**670 Mesquit - Alternative 2
Operational Energy Analysis**

Energy Estimate

Source	CalEEMod		Total Water Use (Mgal/yr)	Electricity Demand from water Demand (million kWh)
	Indoor Water Use (Mgal/yr)	Outdoor Water Use (Mgal/yr)		
670 Mesquit - Alternative 2	162.12	1.771	163.888	2.131
Existing Site	5.04	0.000	5.036	0.066
Net Total	157.080	1.771	158.851	2.065
CalEEMod Water Electricity Factors	Electricity Intensity Factor To Supply (kWh/Mgal)	Electricity Intensity Factor To Treat (kWh/Mgal)	Electricity Intensity Factor To Distribute (kWh/Mgal)	Electricity Intensity Factor For Wastewater Treatment (kWh/Mgal)
670 Mesquit	9727	111	1272	1911

Source: California Emissions Estimator Model (CalEEMod).

**670 Mesquit
Cooling Towers
Energy Analysis**

Cooling Towers Daily Emissions

Max Flow Rating:

121,176 gal/day
44,229,240 gal/year
44.2292 mgal/year

CalEEMod Water Electricity Factors	Electricity Intensity Factor To Supply (kWh/Mgal)	Electricity Intensity Factor To Treat (kWh/Mgal)	Electricity Intensity Factor To Distribute (kWh/Mgal)	Electricity Intensity Factor For Wastewater Treatment (kWh/Mgal)
		9727	111	1272

Source	Electricity Demand from Water Demand (million kWh)	GHG Emissions (lbs/yr)				MTCO2e (MT/yr)
		CO2	CH4	N2O	CO2e	
Cooling Tower	0.5759	488,946.68	16.7014	3.4555	490,393.94	222.439

GHG	Intensity factor (lbs/MWh)	Global Warming Potential
CO2	849	1
CH4	0.029	25
N2O	0.006	298

EV Charging Stations

Source	Spaces	Average Charge (kWh/day) ^{1 2 3}	Days	kWh/yr
Residential	60	4.4	365	96,360
Commercial/Retail	60	4.4	365	96,360
Total	120	4.4	365	192,720

¹ US Department of Energy. Alternative Fuels Data Center, 2016. Hybrid and Plug-In Electric Vehicle Emissions Data Sources and Assumptions.

² US Department of Energy. Smith, Margaret, 2016. Level 1 Electric Vehicle Charging Stations at the Workplace.

³ UCLA Luskin Center for Innovation. Williams, Brett and JR deShazo, 2013. Pricing Workplace Charging: Financial Viability and Fueling Costs.

	Total CO ₂ MT/yr	Fuel Type	Factor KGCO ₂ /gal	Gallons	Total Diesel (gal)	Total Gas (gal)
Emergency Generator	99	diesel	10.15	9,754		

Assumptions

- 10.15 diesel KgCO₂/gallon¹
- 8.91 gasoline KgCO₂/gallon¹
- 1 MT = 1,000 kilograms

670 Mesquit - Alternative 2
Operational Energy Analysis
Project Trips
Fuel Usage from VMT

Annual VMT (All): 46,925,130 miles/year
(With trip and VMT reductions from land use characteristics and proximity to public transit.)

Fuel Type: ¹	GAS	DSL	ELEC	NG
Percent:	93.46%	4.21%	2.23%	0.1%
Miles per Gallon Fuel:	27.82	11.30	-	3.42
Annual VMT by Fuel Type :	43,855,660	1,977,026	1,048,493	43,952 miles/year
Annual Fuel Usage :	1,576,142	174,932	-	1,852 gal/year
Annual Fuel Savings from Electric Vehicles: ²	-	-	37,682	gal/year (assumed to t

Notes:

1. California Air Resources Board, EMFAC2014, South Coast Air Basin; 2025; Annual; All vehicle types; Aggregate model year; Aggregate speed).
<https://www.arb.ca.gov/emfac/2014/>
2. Assumes electric vehicles would replace traditional gasoline-fueled vehicles.

670 Mesquit Project - South Coast AQMD Air District, Annual

670 Mesquit Project
South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1,032.82	1000sqft	1.00	1,032,816.00	0
User Defined Commercial	44,069.00	User Defined Unit	0.20	44,069.00	0
Enclosed Parking with Elevator	2,000.00	Space	0.25	800,000.00	0
City Park	3.26	Acre	3.26	138,139.00	0
Health Club	52.42	1000sqft	0.25	52,424.00	0
High Turnover (Sit Down Restaurant)	29.85	1000sqft	0.51	29,850.00	0
Hotel	236.00	Room	0.50	209,560.00	0
Quality Restaurant	29.85	1000sqft	1.00	29,850.00	0
User Defined Recreational	1.70	User Defined Unit	1.70	75,000.00	0
Apartments High Rise	420.00	Dwelling Unit	0.50	420,000.00	1201
Regional Shopping Center	11.66	1000sqft	0.26	11,664.00	0
User Defined Retail	800.00	User Defined Unit	0.10	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	12			Operational Year	2025
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MW hr)	595.16	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - updated CO2 intensity factor to match expected RPS incremental targets in buildout year of 2025

Land Use - See Alternative 2 Assumptions

Demolition -

Grading - MCC

Architectural Coating -

Vehicle Trips - mcc

Woodstoves - No fireplaces

Area Coating -

Solid Waste - see alternatives solid waste calculations

Sequestration -

Energy Mitigation -

Water Mitigation -

Waste Mitigation - study data

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	742,617.00	742,143.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	2,227,850.00	2,226,428.00
tblAreaCoating	Area_Nonresidential_Exterior	742619	742145
tblAreaCoating	Area_Nonresidential_Interior	2227856	2226434
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblEnergyUse	LightingElect	0.00	0.35
tblEnergyUse	LightingElect	0.00	3.70
tblEnergyUse	LightingElect	0.00	0.35

tblEnergyUse	LightingElect	0.00	0.35
tblEnergyUse	NT24E	0.00	4.62
tblEnergyUse	NT24NG	0.00	0.39
tblEnergyUse	T24E	258.09	252.93
tblEnergyUse	T24E	3.92	3.50
tblEnergyUse	T24E	4.60	4.11
tblEnergyUse	T24E	2.25	2.01
tblEnergyUse	T24E	8.11	7.24
tblEnergyUse	T24E	2.55	2.28
tblEnergyUse	T24E	8.11	7.24
tblEnergyUse	T24E	4.01	3.58
tblEnergyUse	T24E	0.00	4.11
tblEnergyUse	T24NG	4,697.18	4,462.32
tblEnergyUse	T24NG	10.02	9.92
tblEnergyUse	T24NG	13.65	13.51
tblEnergyUse	T24NG	42.98	42.55
tblEnergyUse	T24NG	19.92	19.72
tblEnergyUse	T24NG	42.98	42.55
tblEnergyUse	T24NG	1.15	1.14
tblEnergyUse	T24NG	0.00	9.92
tblFireplaces	FireplaceDayYear	25.00	180.00
tblFireplaces	FireplaceHourDay	3.00	12.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00
tblFireplaces	NumberGas	357.00	5.00
tblFireplaces	NumberNoFireplace	42.00	303.00
tblFireplaces	NumberWood	21.00	0.00
tblLandUse	LandUseSquareFeet	1,032,820.00	1,032,816.00
tblLandUse	LandUseSquareFeet	0.00	44,069.00
tblLandUse	LandUseSquareFeet	142,005.60	138,139.00
tblLandUse	LandUseSquareFeet	52,420.00	52,424.00

tblLandUse	LandUseSquareFeet	342,672.00	209,560.00
tblLandUse	LandUseSquareFeet	0.00	75,000.00
tblLandUse	LandUseSquareFeet	11,660.00	11,664.00
tblLandUse	LotAcreage	23.71	1.00
tblLandUse	LotAcreage	0.00	0.20
tblLandUse	LotAcreage	18.00	0.25
tblLandUse	LotAcreage	1.20	0.25
tblLandUse	LotAcreage	0.69	0.51
tblLandUse	LotAcreage	7.87	0.50
tblLandUse	LotAcreage	0.69	1.00
tblLandUse	LotAcreage	0.00	1.70
tblLandUse	LotAcreage	6.77	0.50
tblLandUse	LotAcreage	0.27	0.26
tblLandUse	LotAcreage	0.00	0.10
tblProjectCharacteristics	CO2IntensityFactor	1227.89	595.16
tblSolidWaste	SolidWasteGenerationRate	193.20	937.43
tblSolidWaste	SolidWasteGenerationRate	0.28	0.00
tblSolidWaste	SolidWasteGenerationRate	960.52	8,882.21
tblSolidWaste	SolidWasteGenerationRate	298.79	0.00
tblSolidWaste	SolidWasteGenerationRate	355.22	0.00
tblSolidWaste	SolidWasteGenerationRate	129.21	0.00
tblSolidWaste	SolidWasteGenerationRate	27.24	0.00
tblSolidWaste	SolidWasteGenerationRate	12.24	0.00
tblWater	IndoorWaterUseRate	27,364,690.76	15,369,055.00
tblWater	IndoorWaterUseRate	183,566,969.60	135,054,421.95
tblWater	IndoorWaterUseRate	3,100,283.61	0.00
tblWater	IndoorWaterUseRate	9,060,481.32	0.00
tblWater	IndoorWaterUseRate	5,986,557.72	11,692,775.00
tblWater	IndoorWaterUseRate	9,060,481.32	0.00
tblWater	IndoorWaterUseRate	863,685.60	0.00

tblWater	OutdoorWaterUseRate	17,251,652.87	0.00
tblWater	OutdoorWaterUseRate	3,884,229.20	1,566,215.00
tblWater	OutdoorWaterUseRate	0.00	205,130.00
tblWater	OutdoorWaterUseRate	112,508,787.82	0.00
tblWater	OutdoorWaterUseRate	1,900,173.83	0.00
tblWater	OutdoorWaterUseRate	578,328.59	0.00
tblWater	OutdoorWaterUseRate	665,173.08	0.00
tblWater	OutdoorWaterUseRate	578,328.59	0.00
tblWater	OutdoorWaterUseRate	529,355.69	0.00
tblWoodstoves	NumberCatalytic	21.00	0.00
tblWoodstoves	NumberNoncatalytic	21.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	7.9581	0.0853	4.9543	4.7000e-004		0.0286	0.0286		0.0286	0.0286	0.0000	42.8527	42.8527	0.0106	6.3000e-004	43.3055
Energy	0.1904	1.7176	1.3566	0.0104		0.1316	0.1316		0.1316	0.1316	0.0000	8,477.1600	8,477.1600	0.3574	0.1010	8,516.1950
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	1,993.2982	0.0000	1,993.2982	117.8006	0.0000	4,938.3119
Water						0.0000	0.0000		0.0000	0.0000	51.4320	575.1756	626.6076	5.3106	0.1305	798.2706
Total	8.1484	1.8029	6.3109	0.0109	0.0000	0.1602	0.1602	0.0000	0.1602	0.1602	2,044.7302	9,095.1883	11,139.9185	123.4791	0.2322	14,296.0830

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Hotel	0.00	0.00	0.00		
Quality Restaurant	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
User Defined Commercial	0.00	0.00	0.00		
User Defined Recreational	0.00	0.00	0.00		
User Defined Retail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	11.60	4.70	6.90	40.00	19.00	41.00	86	11	3
City Park	13.10	6.60	5.40	0.00	0.00	0.00	0	0	0
Enclosed Parking with Elevator	13.10	6.60	5.40	0.00	0.00	0.00	0	0	0
General Office Building	13.10	6.60	5.40	33.00	48.00	19.00	77	19	4
Health Club	13.10	6.60	5.40	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down Restaurant)	13.10	6.60	5.40	8.50	72.50	19.00	37	20	43
Hotel	13.10	6.60	5.40	19.40	61.60	19.00	58	38	4
Quality Restaurant	13.10	6.60	5.40	12.00	69.00	19.00	38	18	44
Regional Shopping Center	13.10	6.60	6.90	16.30	64.70	19.00	54	35	11
User Defined Commercial	13.10	6.60	6.90	16.90	64.10	19.00	77	19	4
User Defined Recreational	13.10	6.60	6.90	16.90	64.10	19.00	52	39	9
User Defined Retail	13.10	6.60	6.90	16.30	64.70	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments High Rise	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
City Park	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Enclosed Parking with Elevator	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
General Office Building	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Health Club	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
High Turnover (Sit Down Restaurant)	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Hotel	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Quality Restaurant	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Regional Shopping Center	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
User Defined Commercial	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
User Defined Recreational	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
User Defined Retail	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6,592.9125	6,592.9125	0.3213	0.0665	6,620.7504
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6,592.9125	6,592.9125	0.3213	0.0665	6,620.7504
NaturalGas Mitigated	0.1904	1.7176	1.3566	0.0104		0.1316	0.1316		0.1316	0.1316	0.0000	1,884.2475	1,884.2475	0.0361	0.0345	1,895.4446
NaturalGas Unmitigated	0.1904	1.7176	1.3566	0.0104		0.1316	0.1316		0.1316	0.1316	0.0000	1,884.2475	1,884.2475	0.0361	0.0345	1,895.4446

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments High Rise	4.51219e+006	0.0243	0.2079	0.0885	1.3300e-003		0.0168	0.0168		0.0168	0.0168	0.0000	240.7879	240.7879	4.6200e-003	4.4100e-003	242.2188
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	1.06483e+007	0.0574	0.5220	0.4385	3.1300e-003		0.0397	0.0397		0.0397	0.0397	0.0000	568.2356	568.2356	0.0109	0.0104	571.6123
Health Club	941535	5.0800e-003	0.0462	0.0388	2.8000e-004		3.5100e-003	3.5100e-003		3.5100e-003	3.5100e-003	0.0000	50.2439	50.2439	9.6000e-004	9.2000e-004	50.5425
High Turnover (Sit Down Restaurant)	6.87535e+006	0.0371	0.3370	0.2831	2.0200e-003		0.0256	0.0256		0.0256	0.0256	0.0000	366.8949	366.8949	7.0300e-003	6.7300e-003	369.0752
Hotel	4.98334e+006	0.0269	0.2443	0.2052	1.4700e-003		0.0186	0.0186		0.0186	0.0186	0.0000	265.9298	265.9298	5.1000e-003	4.8800e-003	267.5101

Quality Restaurant	6.87535e+006	0.0371	0.3370	0.2831	2.0200e-003		0.0256	0.0256		0.0256	0.0256	0.0000	366.8949	366.8949	7.0300e-003	6.7300e-003	369.0752
Regional Shopping Center	19012.3	1.0000e-004	9.3000e-004	7.8000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	1.0146	1.0146	2.0000e-005	2.0000e-005	1.0206
User Defined Commercial	454351	2.4500e-003	0.0223	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.2459	24.2459	4.6000e-004	4.4000e-004	24.3900
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.1904	1.7176	1.3566	0.0104		0.1315	0.1315		0.1315	0.1315	0.0000	1,884.2475	1,884.2475	0.0361	0.0346	1,895.4446

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments High Rise	4.51219e+006	0.0243	0.2079	0.0885	1.3300e-003		0.0168	0.0168		0.0168	0.0168	0.0000	240.7879	240.7879	4.6200e-003	4.4100e-003	242.2188
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	1.06483e+007	0.0574	0.5220	0.4385	3.1300e-003		0.0397	0.0397		0.0397	0.0397	0.0000	568.2356	568.2356	0.0109	0.0104	571.6123
Health Club	941535	5.0800e-003	0.0462	0.0388	2.8000e-004		3.5100e-003	3.5100e-003		3.5100e-003	3.5100e-003	0.0000	50.2439	50.2439	9.6000e-004	9.2000e-004	50.5425
High Turnover (Sit Down Restaurant)	6.87535e+006	0.0371	0.3370	0.2831	2.0200e-003		0.0256	0.0256		0.0256	0.0256	0.0000	366.8949	366.8949	7.0300e-003	6.7300e-003	369.0752
Hotel	4.98334e+006	0.0269	0.2443	0.2052	1.4700e-003		0.0186	0.0186		0.0186	0.0186	0.0000	265.9298	265.9298	5.1000e-003	4.8800e-003	267.5101
Quality Restaurant	6.87535e+006	0.0371	0.3370	0.2831	2.0200e-003		0.0256	0.0256		0.0256	0.0256	0.0000	366.8949	366.8949	7.0300e-003	6.7300e-003	369.0752
Regional Shopping Center	19012.3	1.0000e-004	9.3000e-004	7.8000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	1.0146	1.0146	2.0000e-005	2.0000e-005	1.0206
User Defined Commercial	454351	2.4500e-003	0.0223	0.0187	1.3000e-004		1.6900e-003	1.6900e-003		1.6900e-003	1.6900e-003	0.0000	24.2459	24.2459	4.6000e-004	4.4000e-004	24.3900
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.1904	1.7176	1.3566	0.0104		0.1315	0.1315		0.1315	0.1315	0.0000	1,884.2475	1,884.2475	0.0361	0.0346	1,895.4446

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	1.70036e+006	459.0285	0.0224	4.6300e-003	460.9667
City Park	48348.6	13.0522	6.4000e-004	1.3000e-004	13.1073
Enclosed Parking with Elevator	4.352e+006	1,174.8661	0.0573	0.0118	1,179.8268
General Office Building	1.29102e+007	3,485.2380	0.1698	0.0351	3,499.9541
Health Club	569325	153.6949	7.4900e-003	1.5500e-003	154.3439
High Turnover (Sit Down Restaurant)	1.29161e+006	348.6830	0.0170	3.5200e-003	350.1552
Hotel	1.53188e+006	413.5474	0.0202	4.1700e-003	415.2935
Quality Restaurant	1.29161e+006	348.6830	0.0170	3.5200e-003	350.1552
Regional Shopping Center	152448	41.1550	2.0100e-003	4.1000e-004	41.3288
User Defined Commercial	547778	147.8781	7.2100e-003	1.4900e-003	148.5025
User Defined Recreational	26250	7.0865	3.5000e-004	7.0000e-005	7.1164
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		6,592.9125	0.3213	0.0665	6,620.7504

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	1.70036e+006	459.0285	0.0224	4.6300e-003	460.9667
City Park	48348.6	13.0522	6.4000e-004	1.3000e-004	13.1073
Enclosed Parking with Elevator	4.352e+006	1,174.8661	0.0573	0.0118	1,179.8268
General Office Building	1.29102e+007	3,485.2380	0.1698	0.0351	3,499.9541
Health Club	569325	153.6949	7.4900e-003	1.5500e-003	154.3439
High Turnover (Sit Down Restaurant)	1.29161e+006	348.6830	0.0170	3.5200e-003	350.1552
Hotel	1.53188e+006	413.5474	0.0202	4.1700e-003	415.2935
Quality Restaurant	1.29161e+006	348.6830	0.0170	3.5200e-003	350.1552
Regional Shopping Center	152448	41.1550	2.0100e-003	4.1000e-004	41.3288
User Defined Commercial	547778	147.8781	7.2100e-003	1.4900e-003	148.5025
User Defined Recreational	26250	7.0865	3.5000e-004	7.0000e-005	7.1164
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		6,592.9125	0.3213	0.0665	6,620.7504

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	7.9581	0.0853	4.9543	4.7000e-004		0.0286	0.0286		0.0286	0.0286	0.0000	42.8527	42.8527	0.0106	6.3000e-004	43.3055
Unmitigated	7.9581	0.0853	4.9543	4.7000e-004		0.0286	0.0286		0.0286	0.0286	0.0000	42.8527	42.8527	0.0106	6.3000e-004	43.3055

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.8305					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.9376					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.4900e-003	0.0299	0.0127	1.9000e-004		2.4100e-003	2.4100e-003		2.4100e-003	2.4100e-003	0.0000	34.5798	34.5798	6.6000e-004	6.3000e-004	34.7852
Landscaping	0.1865	0.0554	4.9416	2.7000e-004		0.0262	0.0262		0.0262	0.0262	0.0000	8.2730	8.2730	9.8900e-003	0.0000	8.5203
Total	7.9580	0.0853	4.9543	4.6000e-004		0.0286	0.0286		0.0286	0.0286	0.0000	42.8527	42.8527	0.0106	6.3000e-004	43.3055

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.8305					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.9376					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.4900e-003	0.0299	0.0127	1.9000e-004		2.4100e-003	2.4100e-003		2.4100e-003	2.4100e-003	0.0000	34.5798	34.5798	6.6000e-004	6.3000e-004	34.7852
Landscaping	0.1865	0.0554	4.9416	2.7000e-004		0.0262	0.0262		0.0262	0.0262	0.0000	8.2730	8.2730	9.8900e-003	0.0000	8.5203
Total	7.9580	0.0853	4.9543	4.6000e-004		0.0286	0.0286		0.0286	0.0286	0.0000	42.8527	42.8527	0.0106	6.3000e-004	43.3055

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	626.6076	5.3106	0.1305	798.2706
Unmitigated	626.6076	5.3106	0.1305	798.2706

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	15.3691 / 0	58.9004	0.5034	0.0124	75.1724
City Park	0 / 1.56621	4.6975	2.3000e-004	5.0000e-005	4.7173
Enclosed Parking with Elevator	0 / 0.20513	0.6152	3.0000e-005	1.0000e-005	0.6178
General Office Building	135.054 / 0	517.5830	4.4239	0.1087	660.5719
Health Club	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Hotel	11.6928 / 0	44.8114	0.3830	9.4100e-003	57.1912
Quality Restaurant	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		626.6076	5.3106	0.1305	798.2706

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	15.3691 / 0	58.9004	0.5034	0.0124	75.1724
City Park	0 / 1.56621	4.6975	2.3000e-004	5.0000e-005	4.7173
Enclosed Parking with Elevator	0 / 0.20513	0.6152	3.0000e-005	1.0000e-005	0.6178
General Office Building	135.054 / 0	517.5830	4.4239	0.1087	660.5719
Health Club	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Hotel	11.6928 / 0	44.8114	0.3830	9.4100e-003	57.1912
Quality Restaurant	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		626.6076	5.3106	0.1305	798.2706

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	478.3916	28.2721	0.0000	1,185.1949
Unmitigated	1,993.2982	117.8006	0.0000	4,938.3119

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
	tons	MT/yr			
Apartments High Rise	937.43	190.2898	11.2458	0.0000	471.4350
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	8882.21	1,803.0084	106.5547	0.0000	4,466.8769
Health Club	0	0.0000	0.0000	0.0000	0.0000

High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000
Hotel	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		1,993.2982	117.8006	0.0000	4,938.3119

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	224.983	45.6696	2.6990	0.0000	113.1444
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	2131.73	432.7220	25.5731	0.0000	1,072.0505
Health Club	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000
Hotel	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000

User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		478.3916	28.2721	0.0000	1,185.1949

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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APPENDIX P - Alternative 3 Energy Documentation

Energy Calculation Worksheets and Model Outputs

1. Operational Energy Worksheets

**670 Mesquit - Alternative 3
Operational Energy Summary**

Electricity	Electricity Use (kWh)
Existing Energy	4,304,153
Alternative 3	
Building Energy	24,626,120
Cooling Tower	575,909
Water Heating and Conveyance	2,208,100
EV Charging	192,720
Alternative 3 - Subtotal	27,602,849
Alternative 3 - Total Net Electricity	23,298,695
LADWP Total	23,537,000,000
Project - % of LADWP	0.0990%

Source: Los Angeles Department of Water and Power, 2017 Final Power Strategic Long-Term Resource Plan, p. 70, 2017.

Natural Gas	NG Use (kBtu)
Existing Site	271,303
Alternative 3	36,710,961
Total Net Natural Gas	36,439,659
SoCalGas Total (2025)	884,749,050,000
% of SoCalGas	0.004%
SoCalGas Total (2025)	884,749,050,000
% of SoCalGas	0.000%

Source: California Gas and Electric Utilities, 2018 California Gas Report, p. 103, 2018.

Alternative 3 Fuel Use	
Fuel	Fuel Use (gal)
Existing Site	
Gasoline	24,439
Diesel	83,601
Alternative 3	
Gasoline	1,679,026
Diesel	196,104
Total Net Gasoline	1,654,587
County Total - Gas	3,559,000,000
% of County	0.046%
Total Net Diesel	112,504
County Total - Diesel	584,745,763
% of County	0.019%

Source: California Energy Commission (CEC), California Annual Retail Fuel Outlet Report, 2017.

**670 Mesquit - Alternative 3
Operational Energy Analysis**

Energy Estimate

Source	CalEEMod		Total Water Use (Mgal/yr)	Electricity Demand from water Demand (million kWh)
	Indoor Water Use (Mgal/yr)	Outdoor Water Use (Mgal/yr)		
670 Mesquit - Option 1 & 2	168.07	1.771	169.840	2.208
Existing Site	5.04	0.000	5.036	0.066
Net Total	163.032	1.771	164.804	2.143
CalEEMod Water Electricity Factors	Electricity Intensity Factor To Supply (kWh/Mgal)	Electricity Intensity Factor To Treat (kWh/Mgal)	Electricity Intensity Factor To Distribute (kWh/Mgal)	Electricity Intensity Factor For Wastewater Treatment (kWh/Mgal)
670 Mesquit - Deck	9727	111	1272	1911

Source: California Emissions Estimator Model (CalEEMod).

**670 Mesquit
Cooling Towers
Energy Analysis**

Cooling Towers Daily Emissions

Max Flow Rating:

121,176 gal/day
44,229,240 gal/year
44.2292 mgal/year

CalEEMod Water Electricity Factors	Electricity Intensity Factor To Supply (kWh/Mgal)	Electricity Intensity Factor To Treat (kWh/Mgal)	Electricity Intensity Factor To Distribute (kWh/Mgal)	Electricity Intensity Factor For Wastewater Treatment (kWh/Mgal)
		9727	111	1272

Source	Electricity Demand from Water Demand (million kWh)	GHG Emissions (lbs/yr)				MTCO2e (MT/yr)
		CO2	CH4	N2O	CO2e	
Cooling Tower	0.5759	488,946.68	16.7014	3.4555	490,393.94	222.439

GHG	Intensity factor (lbs/MWh)	Global Warming Potential
CO2	849	1
CH4	0.029	25
N2O	0.006	298

EV Charging Stations

Source	Spaces	Average Charge (kWh/day) ^{1 2 3}	Days	kWh/yr
Residential	60	4.4	365	96,360
Commercial/Retail	60	4.4	365	96,360
Total	120	4.4	365	192,720

¹ US Department of Energy. Alternative Fuels Data Center, 2016. Hybrid and Plug-In Electric Vehicle Emissions Data Sources and Assumptions.

² US Department of Energy. Smith, Margaret, 2016. Level 1 Electric Vehicle Charging Stations at the Workplace.

³ UCLA Luskin Center for Innovation. Williams, Brett and JR deShazo, 2013. Pricing Workplace Charging: Financial Viability and Fueling Costs.

	Total CO ₂ MT/yr	Fuel Type	Factor KGCO ₂ /gal	Gallons	Total Diesel (gal)	Total Gas (gal)
Emergency Generator	99	diesel	10.15	9,754		

Assumptions

- 10.15 diesel KgCO₂/gallon¹
- 8.91 gasoline KgCO₂/gallon¹
- 1 MT = 1,000 kilograms

670 Mesquit - Alternative 3
Operational Energy Analysis
Project Trips
Fuel Usage from VMT

Annual VMT (All): 49,988,210 miles/year
(With trip and VMT reductions from land use characteristics and proximity to public transit.)

Fuel Type: ¹	GAS	DSL	ELEC	NG
Percent:	93.46%	4.21%	2.23%	0.1%
Miles per Gallon Fuel:	27.82	11.30	-	3.42
Annual VMT by Fuel Type :	46,718,377	2,106,078	1,116,934	46,821 miles/year
Annual Fuel Usage :	1,679,026	186,351	-	1,973 gal/year
Annual Fuel Savings from Electric Vehicles: ²	-	-	40,142	gal/year (assumed t

Notes:

- California Air Resources Board, EMFAC2014, South Coast Air Basin; 2025; Annual; All vehicle types; Aggregate model year; Aggregate speed).
<https://www.arb.ca.gov/emfac/2014/>
- Assumes electric vehicles would replace traditional gasoline-fueled vehicles.

670 Mesquit Project - South Coast AQMD Air District, Annual

670 Mesquit Project
South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	973.15	1000sqft	1.00	973,153.00	0
User Defined Commercial	60.10	User Defined Unit	0.50	60,100.00	0
Enclosed Parking with Elevator	2,000.00	Space	0.25	800,000.00	0
City Park	3.26	Acre	3.26	139,414.00	0
Health Club	68.10	1000sqft	1.56	68,102.00	0
High Turnover (Sit Down Restaurant)	33.00	1000sqft	0.76	33,000.00	0
Hotel	236.00	Room	0.50	228,670.00	0
Quality Restaurant	33.00	1000sqft	0.76	33,000.00	0
User Defined Recreational	1.70	User Defined Unit	1.70	75,000.00	0
Apartments High Rise	420.00	Dwelling Unit	0.50	420,000.00	1201
Regional Shopping Center	14.21	1000sqft	0.33	14,208.00	0
User Defined Retail	800.00	User Defined Unit	0.10	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	12			Operational Year	2025
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MW hr)	595.16	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - updated CO2 intensity factor to match expected RPS incremental targets in buildout year of 2025

Land Use - See alternatives assumptions

Demolition -

Grading - MCC

Architectural Coating -

Vehicle Trips - mcc

Woodstoves - No fireplaces

Area Coating -

Solid Waste - see alternatives assumptions

Sequestration -

Energy Mitigation -

Water Mitigation -

Waste Mitigation - study data

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	742,617.00	742,643.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	2,227,850.00	2,227,928.00
tblAreaCoating	Area_Nonresidential_Exterior	742617	742643
tblAreaCoating	Area_Nonresidential_Interior	2227850	2227928
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	300.00	0.00
tblConstructionPhase	NumDays	300.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	30.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblFireplaces	FireplaceDayYear	25.00	180.00
tblFireplaces	FireplaceHourDay	3.00	12.00
tblFireplaces	FireplaceWoodMass	1,019.20	0.00

tblFireplaces	NumberGas	357.00	5.00
tblFireplaces	NumberNoFireplace	42.00	303.00
tblFireplaces	NumberWood	21.00	0.00
tblGrading	AcresOfGrading	0.00	75.00
tblLandUse	LandUseSquareFeet	973,150.00	973,153.00
tblLandUse	LandUseSquareFeet	0.00	60,100.00
tblLandUse	LandUseSquareFeet	142,005.60	139,414.00
tblLandUse	LandUseSquareFeet	68,100.00	68,102.00
tblLandUse	LandUseSquareFeet	342,672.00	228,670.00
tblLandUse	LandUseSquareFeet	0.00	75,000.00
tblLandUse	LandUseSquareFeet	14,210.00	14,208.00
tblLandUse	LotAcreage	22.34	1.00
tblLandUse	LotAcreage	0.00	0.50
tblLandUse	LotAcreage	18.00	0.25
tblLandUse	LotAcreage	7.87	0.50
tblLandUse	LotAcreage	0.00	1.70
tblLandUse	LotAcreage	6.77	0.50
tblLandUse	LotAcreage	0.00	0.10
tblProjectCharacteristics	CO2IntensityFactor	1227.89	595.16
tblSolidWaste	SolidWasteGenerationRate	193.20	937.43
tblSolidWaste	SolidWasteGenerationRate	0.28	0.00
tblSolidWaste	SolidWasteGenerationRate	905.03	8,547.83
tblSolidWaste	SolidWasteGenerationRate	388.17	0.00
tblSolidWaste	SolidWasteGenerationRate	392.70	0.00
tblSolidWaste	SolidWasteGenerationRate	129.21	0.00
tblSolidWaste	SolidWasteGenerationRate	30.11	0.00
tblSolidWaste	SolidWasteGenerationRate	14.92	0.00
tblWater	IndoorWaterUseRate	27,364,690.76	15,369,055.00
tblWater	IndoorWaterUseRate	172,961,596.86	141,006,681.00
tblWater	IndoorWaterUseRate	4,027,648.11	0.00

tblWater	IndoorWaterUseRate	10,016,612.51	0.00
tblWater	IndoorWaterUseRate	5,986,557.72	11,692,775.00
tblWater	IndoorWaterUseRate	10,016,612.51	0.00
tblWater	IndoorWaterUseRate	1,052,570.53	0.00
tblWater	OutdoorWaterUseRate	17,251,652.87	0.00
tblWater	OutdoorWaterUseRate	3,884,229.20	1,566,215.00
tblWater	OutdoorWaterUseRate	0.00	205,130.00
tblWater	OutdoorWaterUseRate	106,008,720.66	0.00
tblWater	OutdoorWaterUseRate	2,468,558.52	0.00
tblWater	OutdoorWaterUseRate	639,358.25	0.00
tblWater	OutdoorWaterUseRate	665,173.08	0.00
tblWater	OutdoorWaterUseRate	639,358.25	0.00
tblWater	OutdoorWaterUseRate	645,123.87	0.00
tblWoodstoves	NumberCatalytic	21.00	0.00
tblWoodstoves	NumberNoncatalytic	21.00	0.00
tblWoodstoves	WoodstoveWoodMass	999.60	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	7.9069	0.0802	4.3937	4.2000e-004		0.0266	0.0266		0.0266	0.0266	0.0000	41.7597	41.7597	7.7100e-003	6.3000e-004	42.1414
Energy	0.1980	1.7860	1.4122	0.0108		0.1368	0.1368		0.1368	0.1368	0.0000	8,607.0949	8,607.0949	0.3615	0.1029	8,646.8072
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	1,925.4221	0.0000	1,925.4221	113.7892	0.0000	4,770.1517
Water						0.0000	0.0000		0.0000	0.0000	53.3204	596.0987	649.4191	5.5056	0.1353	827.3840
Total	8.1049	1.8662	5.8059	0.0112	0.0000	0.1634	0.1634	0.0000	0.1634	0.1634	1,978.7424	9,244.9533	11,223.6957	119.6639	0.2389	14,286.4842

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	7.9069	0.0802	4.3937	4.2000e-004		0.0266	0.0266		0.0266	0.0266	0.0000	41.7597	41.7597	7.7100e-003	6.3000e-004	42.1414
Energy	0.1980	1.7860	1.4122	0.0108		0.1368	0.1368		0.1368	0.1368	0.0000	8,607.0949	8,607.0949	0.3615	0.1029	8,646.8072
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	462.1013	0.0000	462.1013	27.3094	0.0000	1,144.8364
Water						0.0000	0.0000		0.0000	0.0000	53.3204	596.0987	649.4191	5.5056	0.1353	827.3840
Total	8.1049	1.8662	5.8059	0.0112	0.0000	0.1634	0.1634	0.0000	0.1634	0.1634	515.4217	9,244.9533	9,760.3750	33.1842	0.2389	10,661.1690

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	73.95	0.00	13.04	72.27	0.00	25.38

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	0.00	0.00	0.00		
City Park	0.00	0.00	0.00		
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
High Turnover (Sit Down Restaurant)	0.00	0.00	0.00		
Hotel	0.00	0.00	0.00		
Quality Restaurant	0.00	0.00	0.00		
Regional Shopping Center	0.00	0.00	0.00		
User Defined Commercial	0.00	0.00	0.00		
User Defined Recreational	0.00	0.00	0.00		
User Defined Retail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments High Rise	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
City Park	16.60	8.40	6.90	33.00	48.00	19.00	66	28	6
Enclosed Parking with Elevator	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4
Health Club	16.60	8.40	6.90	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down Restaurant)	16.60	8.40	6.90	8.50	72.50	19.00	37	20	43
Hotel	16.60	8.40	6.90	19.40	61.60	19.00	58	38	4
Quality Restaurant	16.60	8.40	6.90	12.00	69.00	19.00	38	18	44
Regional Shopping Center	16.60	8.40	6.90	16.30	64.70	19.00	54	35	11
User Defined Commercial	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
User Defined Recreational	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
User Defined Retail	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments High Rise	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
City Park	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Enclosed Parking with Elevator	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
General Office Building	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Health Club	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
High Turnover (Sit Down Restaurant)	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Hotel	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Quality Restaurant	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
Regional Shopping Center	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
User Defined Commercial	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
User Defined Recreational	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825
User Defined Retail	0.551360	0.042151	0.204257	0.114482	0.014139	0.005783	0.021875	0.035696	0.002143	0.001676	0.004899	0.000713	0.000825

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6,648.0577	6,648.0577	0.3239	0.0670	6,676.1284
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6,648.0577	6,648.0577	0.3239	0.0670	6,676.1284
NaturalGas Mitigated	0.1980	1.7860	1.4122	0.0108		0.1368	0.1368		0.1368	0.1368	0.0000	1,959.0373	1,959.0373	0.0376	0.0359	1,970.6789
NaturalGas Unmitigated	0.1980	1.7860	1.4122	0.0108		0.1368	0.1368		0.1368	0.1368	0.0000	1,959.0373	1,959.0373	0.0376	0.0359	1,970.6789

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments High Rise	4.61084e+006	0.0249	0.2125	0.0904	1.3600e-003		0.0172	0.0172		0.0172	0.0172	0.0000	246.0518	246.0518	4.7200e-003	4.5100e-003	247.5139
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	1.01305e+007	0.0546	0.4966	0.4171	2.9800e-003		0.0377	0.0377		0.0377	0.0377	0.0000	540.6033	540.6033	0.0104	9.9100e-003	543.8158
Health Club	1.23265e+006	6.6500e-003	0.0604	0.0508	3.6000e-004		4.5900e-003	4.5900e-003		4.5900e-003	4.5900e-003	0.0000	65.7787	65.7787	1.2600e-003	1.2100e-003	66.1696
High Turnover (Sit Down Restaurant)	7.61508e+006	0.0411	0.3733	0.3136	2.2400e-003		0.0284	0.0284		0.0284	0.0284	0.0000	406.3697	406.3697	7.7900e-003	7.4500e-003	408.7845
Hotel	5.48351e+006	0.0296	0.2688	0.2258	1.6100e-003		0.0204	0.0204		0.0204	0.0204	0.0000	292.6208	292.6208	5.6100e-003	5.3600e-003	294.3597
Quality Restaurant	7.61508e+006	0.0411	0.3733	0.3136	2.2400e-003		0.0284	0.0284		0.0284	0.0284	0.0000	406.3697	406.3697	7.7900e-003	7.4500e-003	408.7845

Regional Shopping Center	23301.1	1.3000e-004	1.1400e-003	9.6000e-004	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.2434	1.2434	2.0000e-005	2.0000e-005	1.2508
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.1980	1.7860	1.4122	0.0108		0.1368	0.1368		0.1368	0.1368	0.0000	1,959.0373	1,959.0373	0.0376	0.0359	1,970.6789

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments High Rise	4.61084e+006	0.0249	0.2125	0.0904	1.3600e-003		0.0172	0.0172		0.0172	0.0172	0.0000	246.0518	246.0518	4.7200e-003	4.5100e-003	247.5139
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	1.01305e+007	0.0546	0.4966	0.4171	2.9800e-003		0.0377	0.0377		0.0377	0.0377	0.0000	540.6033	540.6033	0.0104	9.9100e-003	543.8158
Health Club	1.23265e+006	6.6500e-003	0.0604	0.0508	3.6000e-004		4.5900e-003	4.5900e-003		4.5900e-003	4.5900e-003	0.0000	65.7787	65.7787	1.2600e-003	1.2100e-003	66.1696
High Turnover (Sit Down Restaurant)	7.61508e+006	0.0411	0.3733	0.3136	2.2400e-003		0.0284	0.0284		0.0284	0.0284	0.0000	406.3697	406.3697	7.7900e-003	7.4500e-003	408.7845
Hotel	5.48351e+006	0.0296	0.2688	0.2258	1.6100e-003		0.0204	0.0204		0.0204	0.0204	0.0000	292.6208	292.6208	5.6100e-003	5.3600e-003	294.3597
Quality Restaurant	7.61508e+006	0.0411	0.3733	0.3136	2.2400e-003		0.0284	0.0284		0.0284	0.0284	0.0000	406.3697	406.3697	7.7900e-003	7.4500e-003	408.7845
Regional Shopping Center	23301.1	1.3000e-004	1.1400e-003	9.6000e-004	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.2434	1.2434	2.0000e-005	2.0000e-005	1.2508
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.1980	1.7860	1.4122	0.0108		0.1368	0.1368		0.1368	0.1368	0.0000	1,959.0373	1,959.0373	0.0376	0.0359	1,970.6789

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	1.70252e+006	459.6136	0.0224	4.6300e-003	461.5543
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	4.688e+006	1,265.5726	0.0617	0.0128	1,270.9164
General Office Building	1.26413e+007	3,412.6343	0.1663	0.0344	3,427.0438
Health Club	755932	204.0715	9.9400e-003	2.0600e-003	204.9332
High Turnover (Sit Down Restaurant)	1.45662e+006	393.2292	0.0192	3.9600e-003	394.8896
Hotel	1.73332e+006	467.9268	0.0228	4.7200e-003	469.9025
Quality Restaurant	1.45662e+006	393.2292	0.0192	3.9600e-003	394.8896
Regional Shopping Center	191808	51.7805	2.5200e-003	5.2000e-004	51.9991
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		6,648.0577	0.3239	0.0670	6,676.1284

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	1.70252e+006	459.6136	0.0224	4.6300e-003	461.5543
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	4.688e+006	1,265.5726	0.0617	0.0128	1,270.9164
General Office Building	1.26413e+007	3,412.6343	0.1663	0.0344	3,427.0438
Health Club	755932	204.0715	9.9400e-003	2.0600e-003	204.9332
High Turnover (Sit Down Restaurant)	1.45662e+006	393.2292	0.0192	3.9600e-003	394.8896
Hotel	1.73332e+006	467.9268	0.0228	4.7200e-003	469.9025
Quality Restaurant	1.45662e+006	393.2292	0.0192	3.9600e-003	394.8896
Regional Shopping Center	191808	51.7805	2.5200e-003	5.2000e-004	51.9991
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		6,648.0577	0.3239	0.0670	6,676.1284

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	7.9069	0.0802	4.3937	4.2000e-004		0.0266	0.0266		0.0266	0.0266	0.0000	41.7597	41.7597	7.7100e-003	6.3000e-004	42.1414
Unmitigated	7.9069	0.0802	4.3937	4.2000e-004		0.0266	0.0266		0.0266	0.0266	0.0000	41.7597	41.7597	7.7100e-003	6.3000e-004	42.1414

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.8310					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.9376					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.4900e-003	0.0299	0.0127	1.9000e-004		2.4100e-003	2.4100e-003		2.4100e-003	2.4100e-003	0.0000	34.5798	34.5798	6.6000e-004	6.3000e-004	34.7852
Landscaping	0.1349	0.0503	4.3810	2.3000e-004		0.0242	0.0242		0.0242	0.0242	0.0000	7.1799	7.1799	7.0500e-003	0.0000	7.3561
Total	7.9069	0.0802	4.3937	4.2000e-004		0.0266	0.0266		0.0266	0.0266	0.0000	41.7597	41.7597	7.7100e-003	6.3000e-004	42.1414

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.8310					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	6.9376					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	3.4900e-003	0.0299	0.0127	1.9000e-004		2.4100e-003	2.4100e-003		2.4100e-003	2.4100e-003	0.0000	34.5798	34.5798	6.6000e-004	6.3000e-004	34.7852
Landscaping	0.1349	0.0503	4.3810	2.3000e-004		0.0242	0.0242		0.0242	0.0242	0.0000	7.1799	7.1799	7.0500e-003	0.0000	7.3561
Total	7.9069	0.0802	4.3937	4.2000e-004		0.0266	0.0266		0.0266	0.0266	0.0000	41.7597	41.7597	7.7100e-003	6.3000e-004	42.1414

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	649.4191	5.5056	0.1353	827.3840
Unmitigated	649.4191	5.5056	0.1353	827.3840

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	15.3691 / 0	58.9004	0.5034	0.0124	75.1724
City Park	0 / 1.56621	4.6975	2.3000e-004	5.0000e-005	4.7173
Enclosed Parking with Elevator	0 / 0.20513	0.6152	3.0000e-005	1.0000e-005	0.6178
General Office Building	141.007 / 0	540.3945	4.6189	0.1135	689.6853
Health Club	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Hotel	11.6928 / 0	44.8114	0.3830	9.4100e-003	57.1912
Quality Restaurant	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		649.4191	5.5056	0.1353	827.3840

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	15.3691 / 0	58.9004	0.5034	0.0124	75.1724
City Park	0 / 1.56621	4.6975	2.3000e-004	5.0000e-005	4.7173
Enclosed Parking with Elevator	0 / 0.20513	0.6152	3.0000e-005	1.0000e-005	0.6178
General Office Building	141.007 / 0	540.3945	4.6189	0.1135	689.6853
Health Club	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Hotel	11.6928 / 0	44.8114	0.3830	9.4100e-003	57.1912
Quality Restaurant	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		649.4191	5.5056	0.1353	827.3840

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	462.1013	27.3094	0.0000	1,144.8364
Unmitigated	1,925.4221	113.7892	0.0000	4,770.1517

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
	tons	MT/yr			
Apartments High Rise	937.43	190.2898	11.2458	0.0000	471.4350
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	8547.83	1,735.1322	102.5434	0.0000	4,298.7167
Health Club	0	0.0000	0.0000	0.0000	0.0000

High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000
Hotel	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		1,925.4221	113.7892	0.0000	4,770.1517

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	224.983	45.6696	2.6990	0.0000	113.1444
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	2051.48	416.4317	24.6104	0.0000	1,031.6920
Health Club	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000
Hotel	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000

User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		462.1013	27.3094	0.0000	1,144.8364

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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APPENDIX P - Alternative 4 Energy Documentation

Energy Calculation Worksheets and Model Outputs

1. Operational Energy Worksheets

**670 Mesquit - Alternative 4
Operational Energy Summary**

Electricity	Electricity Use (kWh)
Existing Site	4,304,153
Alternative 4	
Building Energy	19,541,743
Cooling Tower	575,909
Water Heating and Conveyance	1,639,507
EV Charging	192,720
Alternative 4 - Subtotal	21,949,879
Alternative 4 - Total Net Electricity	17,645,725
LADWP Total	23,537,000,000
Project - % of LADWP	0.0750%

Source: Los Angeles Department of Water and Power, 2017 Final Power Strategic Long-Term Resource Plan, p. 70, 2017.

Natural Gas	NG Use (kBtu)
Existing Site	271,303
Alternative 4	20,199,290
Total Net Natural Gas	19,927,987
SoCalGas Total (2025)	884,749,050,000
% of SoCalGas	0.002%
SoCalGas Total (2025)	884,749,050,000
% of SoCalGas	0.000%

Source: California Gas and Electric Utilities, 2018 California Gas Report, p. 103, 2018.

Alternative 4 Fuel Use	
Fuel	Fuel Use (gal)
Existing Site	
Gasoline	24,439
Diesel	83,601
Alternative 4	
Gasoline	1,244,588
Diesel	147,887
Total Net Gasoline	1,220,150
County Total - Gas	3,559,000,000
% of County	0.034%
Total Net Diesel	64,287
County Total - Diesel	584,745,763
% of County	0.011%

Source: California Energy Commission (CEC), California Annual Retail Fuel Outlet Report, 2017.

**670 Mesquit - Alternative 4
Operational Energy Analysis**

Energy and VMT Estimates

Source	CalEEMod		Total Water Use (Mgal/yr)	Electricity Demand from water Demand (million kWh)
	Indoor Water Use (Mgal/yr)	Outdoor Water Use (Mgal/yr)		
670 Mesquit - Option 1 & 2	124.40	1.771	126.172	1.640
Existing Site	5.04	0.000	5.036	0.066
Net Total	119.365	1.771	121.136	1.574
CalEEMod Water Electricity Factors	Electricity Intensity Factor To Supply (kWh/Mgal)	Electricity Intensity Factor To Treat (kWh/Mgal)	Electricity Intensity Factor To Distribute (kWh/Mgal)	Electricity Intensity Factor For Wastewater Treatment (kWh/Mgal)
670 Mesquit - Deck	9727	111	1272	1911

Source: California Emissions Estimator Model (CalEEMod).

**670 Mesquit
Cooling Towers
Energy Analysis**

Cooling Towers Daily Emissions

Max Flow Rating:

121,176 gal/day
44,229,240 gal/year
44.2292 mgal/year

CalEEMod Water Electricity Factors	Electricity Intensity Factor To Supply (kWh/Mgal)	Electricity Intensity Factor To Treat (kWh/Mgal)	Electricity Intensity Factor To Distribute (kWh/Mgal)	Electricity Intensity Factor For Wastewater Treatment (kWh/Mgal)
		9727	111	1272

Source	Electricity Demand from Water Demand (million kWh)	GHG Emissions (lbs/yr)				MTCO2e (MT/yr)
		CO2	CH4	N2O	CO2e	
Cooling Tower	0.5759	488,946.68	16.7014	3.4555	490,393.94	222.439

GHG	Intensity factor (lbs/MWh)	Global Warming Potential
CO2	849	1
CH4	0.029	25
N2O	0.006	298

EV Charging Stations

Source	Spaces	Average Charge (kWh/day) ^{1 2 3}	Days	kWh/yr
Residential	60	4.4	365	96,360
Commercial/Retail	60	4.4	365	96,360
Total	120	4.4	365	192,720

¹ US Department of Energy. Alternative Fuels Data Center, 2016. Hybrid and Plug-In Electric Vehicle Emissions Data Sources and Assumptions.

² US Department of Energy. Smith, Margaret, 2016. Level 1 Electric Vehicle Charging Stations at the Workplace.

³ UCLA Luskin Center for Innovation. Williams, Brett and JR deShazo, 2013. Pricing Workplace Charging: Financial Viability and Fueling Costs.

	Total CO ₂ MT/yr	Fuel Type	Factor KGCO ₂ /gal	Gallons	Total Diesel (gal)	Total Gas (gal)
Emergency Generator	99	diesel	10.15	9,754		

Assumptions

- 10.15 diesel KgCO₂/gallon¹
- 8.91 gasoline KgCO₂/gallon¹
- 1 MT = 1,000 kilograms

670 Mesquit - Alternative 4
Operational Energy Analysis
Project Trips
Fuel Usage from VMT

Annual VMT (All): 37,054,070 miles/year
(With trip and VMT reductions from land use characteristics and proximity to public transit.)

Fuel Type: ¹	GAS	DSL	ELEC	NG
Percent:	93.46%	4.21%	2.23%	0.1%
Miles per Gallon Fuel:	27.82	11.30	-	3.42
Annual VMT by Fuel Type :	34,630,286	1,561,143	827,934	34,706 miles/year
Annual Fuel Usage :	1,244,588	138,134	-	1,463 gal/year
Annual Fuel Savings from Electric Vehicles: ²	-	-	29,755	gal/year (assumed t

Notes:

- California Air Resources Board, EMFAC2014, South Coast Air Basin; 2025; Annual; All vehicle types; Aggregate model year; Aggregate speed).
<https://www.arb.ca.gov/emfac/2014/>
- Assumes electric vehicles would replace traditional gasoline-fueled vehicles.

670 Mesquit Project - South Coast AQMD Air District, Annual

670 Mesquit Project
South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	944.05	1000sqft	1.00	944,055.00	0
User Defined Commercial	93.62	User Defined Unit	0.50	93,617.00	0
Enclosed Parking with Elevator	2,000.00	Space	0.25	800,000.00	0
City Park	3.26	Acre	3.26	131,353.00	0
Health Club	62.15	1000sqft	1.43	62,148.00	0
High Turnover (Sit Down Restaurant)	20.00	1000sqft	0.46	20,000.00	0
Quality Restaurant	20.00	1000sqft	0.46	20,000.00	0
Regional Shopping Center	10.00	1000sqft	0.23	10,000.00	0
User Defined Retail	800.00	User Defined Unit	0.10	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	12			Operational Year	2025
Utility Company	Los Angeles Department of Water & Power				
CO2 Intensity (lb/MW hr)	595.16	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - updated CO2 intensity factor to match expected RPS incremental targets in buildout year of 2025

Demolition -
 Grading - MCC
 Architectural Coating -
 Vehicle Trips - mcc
 Woodstoves - No fireplaces
 Area Coating -
 Sequestration -
 Energy Mitigation -
 Water Mitigation -
 Waste Mitigation - study data
 Solid Waste - see alternatives assumptions

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	230.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblConstructionPhase	NumDays	20.00	0.00
tblGrading	AcresOfGrading	0.00	10.00
tblLandUse	LandUseSquareFeet	944,050.00	944,055.00
tblLandUse	LandUseSquareFeet	0.00	93,617.00
tblLandUse	LandUseSquareFeet	142,005.60	131,353.00
tblLandUse	LandUseSquareFeet	62,150.00	62,148.00
tblLandUse	LotAcreage	21.67	1.00
tblLandUse	LotAcreage	0.00	0.50
tblLandUse	LotAcreage	18.00	0.25
tblLandUse	LotAcreage	0.00	0.10
tblProjectCharacteristics	CO2IntensityFactor	1227.89	595.16
tblSolidWaste	SolidWasteGenerationRate	0.28	0.00

tblSolidWaste	SolidWasteGenerationRate	877.97	7,125.42
tblSolidWaste	SolidWasteGenerationRate	354.25	0.00
tblSolidWaste	SolidWasteGenerationRate	238.00	0.00
tblSolidWaste	SolidWasteGenerationRate	18.25	0.00
tblSolidWaste	SolidWasteGenerationRate	10.50	0.00
tblWater	IndoorWaterUseRate	167,789,544.79	124,401,125.00
tblWater	IndoorWaterUseRate	3,675,746.40	0.00
tblWater	IndoorWaterUseRate	6,070,674.25	0.00
tblWater	IndoorWaterUseRate	6,070,674.25	0.00
tblWater	IndoorWaterUseRate	740,725.21	0.00
tblWater	OutdoorWaterUseRate	3,884,229.20	1,566,215.00
tblWater	OutdoorWaterUseRate	0.00	205,130.00
tblWater	OutdoorWaterUseRate	102,838,753.26	0.00
tblWater	OutdoorWaterUseRate	2,252,876.83	0.00
tblWater	OutdoorWaterUseRate	387,489.85	0.00
tblWater	OutdoorWaterUseRate	387,489.85	0.00
tblWater	OutdoorWaterUseRate	453,992.87	0.00

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.7565	4.6000e-004	0.0503	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0981	0.0981	2.6000e-004	0.0000	0.1045
Energy	0.1089	0.9902	0.8317	5.9400e-003		0.0753	0.0753		0.0753	0.0753	0.0000	6,353.3938	6,353.3938	0.2777	0.0730	6,382.0744

Waste						0.0000	0.0000		0.0000	0.0000	1,446.3959	0.0000	1,446.3959	85.4796	0.0000	3,583.3845
Water						0.0000	0.0000		0.0000	0.0000	39.4667	442.6013	482.0680	4.0752	0.1002	613.8001

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.7565	4.6000e-004	0.0503	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0981	0.0981	2.6000e-004	0.0000	0.1045
Energy	0.1089	0.9902	0.8317	5.9400e-003		0.0753	0.0753		0.0753	0.0753	0.0000	6,353.3938	6,353.3938	0.2777	0.0730	6,382.0744
Waste						0.0000	0.0000		0.0000	0.0000	347.1350	0.0000	347.1350	20.5151	0.0000	860.0123
Water						0.0000	0.0000		0.0000	0.0000	39.4667	442.6013	482.0680	4.0752	0.1002	613.8001

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	5,275.4827	5,275.4827	0.2571	0.0532	5,297.7578
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	5,275.4827	5,275.4827	0.2571	0.0532	5,297.7578
NaturalGas Mitigated	0.1089	0.9902	0.8317	5.9400e-003		0.0753	0.0753		0.0753	0.0753	0.0000	1,077.9111	1,077.9111	0.0207	0.0198	1,084.3166
NaturalGas Unmitigated	0.1089	0.9902	0.8317	5.9400e-003		0.0753	0.0753		0.0753	0.0753	0.0000	1,077.9111	1,077.9111	0.0207	0.0198	1,084.3166

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	9.82761e+006	0.0530	0.4818	0.4047	2.8900e-003		0.0366	0.0366		0.0366	0.0366	0.0000	524.4388	524.4388	0.0101	9.6100e-003	527.5553
Health Club	1.12488e+006	6.0700e-003	0.0551	0.0463	3.3000e-004		4.1900e-003	4.1900e-003		4.1900e-003	4.1900e-003	0.0000	60.0278	60.0278	1.1500e-003	1.1000e-003	60.3845
High Turnover (Sit Down Restaurant)	4.6152e+006	0.0249	0.2262	0.1900	1.3600e-003		0.0172	0.0172		0.0172	0.0172	0.0000	246.2847	246.2847	4.7200e-003	4.5200e-003	247.7482
Quality Restaurant	4.6152e+006	0.0249	0.2262	0.1900	1.3600e-003		0.0172	0.0172		0.0172	0.0172	0.0000	246.2847	246.2847	4.7200e-003	4.5200e-003	247.7482
Regional Shopping Center	16400	9.0000e-005	8.0000e-004	6.8000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.8752	0.8752	2.0000e-005	2.0000e-005	0.8804
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.1089	0.9902	0.8318	5.9400e-003		0.0752	0.0752		0.0752	0.0752	0.0000	1,077.9111	1,077.9111	0.0207	0.0198	1,084.3166

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										Mt/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	9.82761e+006	0.0530	0.4818	0.4047	2.8900e-003		0.0366	0.0366		0.0366	0.0366	0.0000	524.4388	524.4388	0.0101	9.6100e-003	527.5553
Health Club	1.12488e+006	6.0700e-003	0.0551	0.0463	3.3000e-004		4.1900e-003	4.1900e-003		4.1900e-003	4.1900e-003	0.0000	60.0278	60.0278	1.1500e-003	1.1000e-003	60.3845
High Turnover (Sit Down Restaurant)	4.6152e+006	0.0249	0.2262	0.1900	1.3600e-003		0.0172	0.0172		0.0172	0.0172	0.0000	246.2847	246.2847	4.7200e-003	4.5200e-003	247.7482
Quality Restaurant	4.6152e+006	0.0249	0.2262	0.1900	1.3600e-003		0.0172	0.0172		0.0172	0.0172	0.0000	246.2847	246.2847	4.7200e-003	4.5200e-003	247.7482
Regional Shopping Center	16400	9.0000e-005	8.0000e-004	6.8000e-004	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.8752	0.8752	2.0000e-005	2.0000e-005	0.8804
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.1089	0.9902	0.8318	5.9400e-003		0.0752	0.0752		0.0752	0.0752	0.0000	1,077.9111	1,077.9111	0.0207	0.0198	1,084.3166

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	4.688e+006	1,265.5726	0.0617	0.0128	1,270.9164
General Office Building	1.22633e+007	3,310.5940	0.1613	0.0334	3,324.5726
Health Club	689843	186.2300	9.0700e-003	1.8800e-003	187.0163
High Turnover (Sit Down Restaurant)	882800	238.3207	0.0116	2.4000e-003	239.3270
Quality Restaurant	882800	238.3207	0.0116	2.4000e-003	239.3270
Regional Shopping Center	135000	36.4446	1.7800e-003	3.7000e-004	36.5985
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		5,275.4827	0.2571	0.0532	5,297.7578

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	4.688e+006	1,265.5726	0.0617	0.0128	1,270.9164
General Office Building	1.22633e+007	3,310.5940	0.1613	0.0334	3,324.5726
Health Club	689843	186.2300	9.0700e-003	1.8800e-003	187.0163
High Turnover (Sit Down Restaurant)	882800	238.3207	0.0116	2.4000e-003	239.3270
Quality Restaurant	882800	238.3207	0.0116	2.4000e-003	239.3270
Regional Shopping Center	135000	36.4446	1.7800e-003	3.7000e-004	36.5985
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		5,275.4827	0.2571	0.0532	5,297.7578

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.7565	4.6000e-004	0.0503	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0981	0.0981	2.6000e-004	0.0000	0.1045
Unmitigated	4.7565	4.6000e-004	0.0503	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0981	0.0981	2.6000e-004	0.0000	0.1045

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.5441					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.2078					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.6300e-003	4.6000e-004	0.0503	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0981	0.0981	2.6000e-004	0.0000	0.1045
Total	4.7565	4.6000e-004	0.0503	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0981	0.0981	2.6000e-004	0.0000	0.1045

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.5441					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.2078					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.6300e-003	4.6000e-004	0.0503	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0981	0.0981	2.6000e-004	0.0000	0.1045
Total	4.7565	4.6000e-004	0.0503	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004	0.0000	0.0981	0.0981	2.6000e-004	0.0000	0.1045

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	482.0680	4.0752	0.1002	613.8001
Unmitigated	482.0680	4.0752	0.1002	613.8001

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.56621	4.6975	2.3000e-004	5.0000e-005	4.7173
Enclosed Parking with Elevator	0 / 0.20513	0.6152	3.0000e-005	1.0000e-005	0.6178
General Office Building	124.401 / 0	476.7553	4.0749	0.1001	608.4650
Health Club	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		482.0680	4.0752	0.1002	613.8001

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.56621	4.6975	2.3000e-004	5.0000e-005	4.7173
Enclosed Parking with Elevator	0 / 0.20513	0.6152	3.0000e-005	1.0000e-005	0.6178
General Office Building	124.401 / 0	476.7553	4.0749	0.1001	608.4650
Health Club	0 / 0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0 / 0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	0 / 0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0 / 0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		482.0680	4.0752	0.1002	613.8001

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	347.1350	20.5151	0.0000	860.0123
Unmitigated	1,446.3959	85.4796	0.0000	3,583.3845

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	7125.42	1,446.3959	85.4796	0.0000	3,583.3845
Health Club	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		1,446.3959	85.4796	0.0000	3,583.3845

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	1710.1	347.1350	20.5151	0.0000	860.0123
Health Club	0	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	0	0.0000	0.0000	0.0000	0.0000
Quality Restaurant	0	0.0000	0.0000	0.0000	0.0000
Regional Shopping Center	0	0.0000	0.0000	0.0000	0.0000
User Defined Commercial	0	0.0000	0.0000	0.0000	0.0000
User Defined Retail	0	0.0000	0.0000	0.0000	0.0000
Total		347.1350	20.5151	0.0000	860.0123

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
----------------	--------

P-3 Alternatives – Hydrology Memorandum



MEMO

DATE: June 29, 2021
 TO: Jessie Fan, ESA
 Jay Ziff, ESA
 FROM: Astrid Theeuwes, KPFF
 RE: 670 Mesquit – Hydrology Technical Report Alternatives

PROJECT WITH THE DECK CONCEPT:

Please see Table 4b below from the April 15, 2021 Hydrology Technical Report, which is based on the 132,000 square foot Deck under the Project with the Deck Concept:

Table 4b summarizes the existing and post-Project 50-year design storm event 24-hour volumetric flows from the Project with Deck Site.

Table 4b – Pre- and Post-Project 50-year 24-hour volume flow for Project with Deck Area					
Drainage Area	Project Site Area (Acres)	Pre-Project V50 (cf) (volumetric flow measured in cubic feet)	Post-Project V50 (cf) (volumetric flow measured in cubic feet)	Estimated Low Impact Development Treatment Volume (volumetric flow measured in cubic feet)	Increase from Existing to Proposed Condition (%)
Entire Site	8.47	110,648	157,180	25,969	18.6%

ALTERNATIVES:

Under Alternatives 2 and 3, the alternatives would be developed with a 75,000 square foot deck.

Table 4b-ALT below summarizes the existing and post-Project 50-year design storm event 24-hour volumetric flows from Alternatives 2 and 3.

Table 4b – Pre- and Post-Project 50-year 24-hour volume flow for Alternatives 2 and 3					
Drainage Area	Project Site Area (Acres)	Pre-Project V50 (cf) (volumetric flow measured in cubic feet)	Post-Project V50 (cf) (volumetric flow measured in cubic feet)	Estimated Low Impact Development Treatment Volume (volumetric flow measured in cubic feet)	Increase from Existing to Proposed Condition (%)
Entire Site	7.18	104,596	132,559	21,893	5.8%

It is estimated that Alternatives 2 and 3 will increase the 50-year 24-hour flow volume discharging from the site by up to 5.8%.

As discussed in KPFF Hydrology Report dated April 15, 2021, Alternatives 2 and 3, similar to the Project, would be required to, during the design and plan check process, coordinate with the City of Los Angeles Bureau of Engineering (BOE) to assess the potential for Alternatives 2 and 3 to cause an exceedance of the capacity of existing or planned tributary municipal stormwater drainage systems. In the event this assessment identifies potential for exceedance of the capacity of the municipal stormwater drainage system, Alternatives 2 and 3 shall address the deficiency through either an expanded on-site LID system, or through reconstruction and upgrades to the existing catch basins in Mesquit Street, the 15-inch storm main in Jesse Street, and the 24-inch storm lateral on 7th Street. The assessment of stormwater drainage systems and the design and construction of any upgrades to the proposed LID system and/or off-site municipal stormwater drainage systems shall be subject to review and approval by BOE.

P-4 Alternatives – Transportation Memorandum

Technical Memorandum

Date: October 8, 2021
To: Jay Ziff and Mike Harden, ESA
From: Rachel Om, Netai Basu, and Tom Gaul
Subject: **Analysis of 670 Mesquit Project Alternatives**

LA16-2847

1. Introduction

Fehr & Peers conducted a study to evaluate the potential transportation impacts of the proposed project located at 670 Mesquit Street (Project/Project Site), situated east and west of Mesquit Street, south of the Sixth Street Viaduct, north of the 7th Street Bridge, and west of the Los Angeles River in the City of Los Angeles. The study included an evaluation of the Project and the Project with the Deck Concept. The findings are documented in a Draft Transportation Assessment dated November 2020¹.

This technical memorandum documents the assumptions, methodologies, and findings of a vehicle miles traveled (VMT) analysis and freeway safety impact analysis for four proposed Alternatives to the Project (Alternatives). The four Alternatives were analyzed using the same methodologies used to analyze the Project, which are in accordance with the City's CEQA transportation thresholds of significance, LADOT's *Transportation Assessment Guidelines (TAG)*², and LADOT's interim guidance on freeway safety analysis³. This memorandum provides a description of each Project Alternative, the trip generation estimates used as inputs to the freeway safety analysis and VMT analysis, and the findings of the freeway safety analysis and VMT analysis. References to the Transportation Assessment are made throughout the memorandum to draw comparisons between the Project and the Project Alternatives.

¹ Fehr & Peers, *670 Mesquit Draft Transportation Assessment (November 2020)*.

² Los Angeles Department of Transportation, *Transportation Assessment Guidelines (July 2020)*.

³ Los Angeles Department of Transportation, *LADOT Transportation Assessments – Interim Guidance for Freeway Safety Analysis (May 2020)*.

2. Description of Project Alternatives

In addition to the "No Project" Alternative, three Alternatives were evaluated to determine their potential impacts on the surrounding transportation system as compared to the Project. The Alternatives to the Project are described below and summarized in **Table 1**:

1. **Alternative 1 - No Project:** Under the "No Project" Alternative, no new development would occur within the Project Site. The Project Site would continue to be occupied with existing one- to four-story freezer, cold storage, and dry storage warehouses with associated office space, loading docks, and surface parking.
2. **Alternative 2 – Reduced Retail:** Alternative 2 would relocate the hotel use from Building 1, where it would be co-located with residential uses under the Project, to Building 3 as a standalone hotel building. Building 1 would then be comprised of residential and retail uses. Building 2 would have an increased footprint with more office floor area, less retail space, and a smaller gym. Building 4 would consist of office use, studio/event/gallery and potential museum uses. Building 5 would consist of office space and a neighborhood-serving charter elementary school.

Alternative 2 would increase the number of residential units by 112 units from 308 units under the Project to 420 units, 67 of which would be affordable. Alternative 2 would also increase office floor area by 58,761 square feet from 944,055 square feet under the Project to 1,002,816 square feet. Alternative 2 would add approximately 30,000 square feet of a neighborhood-serving charter school, which would accommodate up to 300 K-5 students. Alternative 2 would reduce the retail floor area by 124,488 square feet from 136,152 square feet under the Project, which includes general retail, grocery, and food hall, to 11,664 square feet of general retail. Alternative 2 would reduce the restaurant floor area by 29,877 square feet from 89,577 square feet under the Project to 59,700 square feet. The hotel, which would still contain 236 rooms, would increase in size by 50,913 square feet of floor area from 158,647 square feet of floor area under the Project to 209,560 square feet of floor area. The space available for the studio/event/gallery/potential museum would be reduced by 49,548 square feet of floor area from 93,617 square feet of floor area under the Project to 44,069 square feet of floor area. The gym would be reduced by 9,724 square feet of floor area from 62,148 square feet of floor area under the Project to 52,424 square feet of floor area. While the total commercial square footage would be reduced by 73,963 square feet from 1,484,196 square feet under the Project to 1,410,233 square feet, the total developed floor area on the Project Site would remain at 1,792,103 square feet. Therefore, the floor area ratio (FAR) would continue to be 7.5:1 as under the Project.

Similar to the Project with the Deck Concept, Alternative 2 would include a deck; however, the deck would be reduced by 57,000 square feet from 132,000 square feet to 75,000 square feet. The outdoor programming would remain the same under Alternative 2 as the

Project with the Deck Concept and would include the weekly farmers' market, group exercise classes, and busking. This programming would draw people from the Project Site and adjacent neighborhood.

3. **Alternative 3 –Increased Offices:** Alternative 3 would relocate the hotel use from Building 1, where it would be co-located with residential uses under the proposed Project, to Building 2, where it would be co-located with event space and the gym. Under Alternative 3, the offices would be relocated into Buildings 3, 4, and 5 to create a cluster of office buildings. The retail spaces would be reduced and would only be located in Buildings 1 and 3. The building footprints for Alternative 3 would remain the same as under the Project, and the maximum heights for all of the buildings would be the same as the Project.

Alternative 3 would increase the number of residential units by 112 units from 308 units under the Project to 420 units, 67 of which would be affordable. Alternative 3 would also increase office floor area by 29,098 square feet from 944,055 square feet under the Project to 973,153 square feet. Alternative 3 would reduce the retail floor area by 122,944 square feet from 136,152 square feet under the Project, which includes general retail, grocery, and food hall, to 14,208 square feet of general retail. Alternative 3 would reduce the restaurant floor area by 23,577 square feet from 89,577 square feet under the Project to 66,000 square feet. The hotel, which would still contain 236 rooms, would increase in size by 70,023 square feet of floor area from 158,647 square feet of floor area under the Project to 228,670 square feet of floor area. The space available for the studio/event/gallery/potential museum would be reduced by 33,517 square feet of floor area from 93,617 square feet of floor area under the Project to 60,100 square feet of floor area. The gym would increase in size by 5,954 square feet of floor area from 62,148 square feet of floor area under the Project to 68,102 square feet of floor area. While the total commercial square footage would be reduced by 73,963 square feet from 1,484,196 square feet under the Project to 1,410,233 square feet, the total developed floor area on the Project Site would remain at 1,792,103 square feet. Therefore, the FAR would continue to be 7.5:1 as under the Project.

Similar to the Project with the Deck Concept, Alternative 3 would include a deck; however, the deck would be reduced by 57,000 square feet from 132,000 square feet to 75,000 square feet. The outdoor programming would remain the same under Alternative 3 as the Project with the Deck Concept and would include the weekly farmers' market, group exercise classes, and busking. This programming would draw people from the Project Site and adjacent neighborhood.

4. **Alternative 4 – Reduced Density:** Alternative 4 would have reduced density compared to the Project as it would remove Building 1, which includes both residential units and the hotel under the Project, from the development program. All other uses in Buildings 2, 3, 4, and 5 would remain as proposed under the Project. The footprint from Building 1 would be replaced with a 20,000 square-foot landscaped area that would be used as publicly

accessible open space. The building footprints and maximum heights for the buildings under Alternative 4, excluding the removal of Building 1, would remain the same as under the Project.

Alternative 4 would not include any of the residential units or hotel uses proposed under the Project. Alternative 4 would have the same square footage for office uses as under the Project. Alternative 4 would reduce the retail floor area by 126,152 square feet from 136,152 square feet under the Project, which includes general retail, grocery, and food hall, to 10,000 square feet of general retail. Alternative 4 would reduce the restaurant floor area by 49,577 square feet from 89,577 square feet under the Project to 40,000 square feet. The spaces available for the studio/event/gallery/potential museum and gym would be the same as under the Project. The total commercial square footage would be reduced by 334,376 square feet from 1,484,196 square feet under the Project to 1,149,820 square feet. The total developed floor area on the Project Site would be reduced by 642,283 square feet from 1,792,103 square feet under the Project to 1,149,820 square feet. Therefore, the FAR would be reduced from 7.5:1 under the Project to 4.8:1 for Alternative 4.

Alternative 4 would not include a deck. The outdoor programming would remain the same under Alternative 4 as the Project and would include the weekly farmers' market, group exercise classes, and busking. The farmers' market would draw people from the Project Site and adjacent neighborhood. Without the deck, the group exercise classes and busking would be smaller and draw participants and observers from within the Project Site only.

3. Peak Hour Trip Generation Estimates for Project Alternatives

The AM and PM peak hour trip generation for each of the Alternatives was estimated using the same methodology that was used for the Project, described in Chapter 4.2 of the Transportation Assessment. The resulting trip generation estimates for each Alternative are shown in **Table 2** to **Table 4**. **Table 5** compares estimated peak hour trip generation for the four project Alternatives with the estimated peak hour trip generation for the Project and Project with the Deck Concept. The estimated AM and PM peak hour trip generation for each Alternative is summarized below.

- **Alternative 1 – No Project:** Under this Alternative, the Project would not be constructed, and there would be no new trips generated to or from the Project Site. Existing uses would continue to generate trips.
- **Alternative 2 – Reduced Retail:** As shown in **Table 2**, Alternative 2 is expected to generate a net increase of 1,337 trips in the AM peak hour and 1,472 trips in the PM peak hour. As shown in **Table 5**, the peak hour trip generation for this Alternative would be 1% - 13% lower than that of the Project and 9% - 18% lower than that of the Project with the Deck Concept.

- **Alternative 3 – Increased Offices:** As shown in **Table 3**, Alternative 3 is expected to generate a net increase of 1,126 trips in the AM peak hour and 1,482 trips in the PM peak hour. As shown in **Table 5**, the peak hour trip generation for this Alternative would be 12% - 16% lower than that of the Project and 18% - 23% lower than that of the Project with the Deck Concept.
- **Alternative 4 – Reduced Density:** As shown in **Table 4**, Alternative 4 is expected to generate a net increase of 893 trips in the AM peak hour and 1,248 trips in the PM peak hour. As shown in **Table 5**, the peak hour trip generation for this Alternative would be 26% - 34% lower than that of the Project and 31% - 39% lower than that of the Project with the Deck Concept.

4. Freeway Safety Analysis of Project Alternatives

Freeway Safety Impact Analysis

As described in Chapter 3.4 of the Transportation Assessment, the Project with the Deck Concept is projected to have a significant safety impact on Intersection H, the US-101 Southbound Off-ramp to 7th Street, in Future Year 2026 and Future Year 2040 as it is projected to add more than two car lengths (50 feet) to a queue that is projected to extend past the ramp capacity with a speed differential greater than 30 mph from the mainline freeway. The queuing capacity of the off-ramp is projected to be exceeded under No Project conditions in both future horizon years. Project Alternative 1 would not have a freeway safety impact as new development would not occur on the Project Site and therefore would not generate any new trips that add to the off-ramp queue. Project Alternatives 2, 3 and 4 were analyzed using the same methodology outlined in Chapter 3.4 of the Transportation Assessment, which follows LADOT's interim guidance on freeway safety analysis. As shown in **Table 6** and **Table 7**, the Project with the Deck Concept is projected to increase the southbound queue at this off-ramp onto the mainline lanes by six car lengths and Alternative 2, Alternative 3, and Alternative 4 are each projected to increase the southbound queue at this off-ramp onto the mainline lanes by five car lengths. Therefore, the addition of traffic generated by the Project with the Deck Concept, Alternative 2, Alternative 3, and Alternative 4 are each projected to exceed the threshold of increasing the projected overflow onto the mainline lanes by more than two car lengths (assuming an average queue storage length of 25 feet per car) for the US-101 Southbound Off-ramp to 7th Street (Study Intersection H) in both Future Base (2026 and 2040) plus Project scenarios. Using the same methodology as the Project, Caltrans Performance Measurement System (PeMS) data were used to identify freeway operating speed(s) during the peak hour being analyzed. The PeMS data showed that the average mainline speed on US-101 Southbound freeway near the 7th Street Off-ramp is 57 miles per hour. Assuming that the traffic queued on the ramp is traveling at zero miles per hour since the vehicles extend past the ramp length, this constitutes a potential safety issue at the US-101 Southbound Off-ramp to 7th Street for each Project Alternative.

Freeway Safety Mitigation

To offset the potential safety issue, the following mitigation measure, which is the same mitigation measure presented for the Project, was identified:

- The Project applicant shall work with the City of Los Angeles and Caltrans to signalize the intersection of the US-101 Southbound Off-ramp & 7th Street. This would require complying with the Caltrans project development process as a local agency-sponsored project.

As described in Chapter 3.4 and 4.2 of the Transportation Assessment, the peak hour signal warrant would be met in the AM and PM peak hours. As shown in **Table 8** and **Table 9**, signalization is estimated to reduce the off-ramp queue such that it would no longer extend onto the freeway mainline and would mitigate the impact of each Project Alternative in both Future Base (2026 and 2040) plus Project scenarios. However, since the improvement involves another jurisdiction (Caltrans) beyond the City of Los Angeles, its implementation cannot be guaranteed, and the impact is therefore considered to be significant and unavoidable. Detailed queue calculations are provided in **Attachment A**.

5. Vehicle Miles Traveled Analysis of Project Alternatives

VMT Impact Criteria

As described in Chapter 3.2 of the Transportation Assessment, the Project was analyzed using the City's analysis procedures and Version 1.3 of the VMT Calculator. Each Project Alternative was analyzed for potential significant impacts under the following criteria:

- For residential projects, a development project may have a potential significant impact if it generates daily household VMT per capita exceeding 15% below the existing average daily household VMT per capita for the Area Planning Commission (APC) area in which the project is located (see table below). This criterion was used for the multifamily residential component of Project Alternatives 2 and 3.
- For office projects, a development project may have a potential significant impact if it generates daily work VMT per employee exceeding 15% below the existing average daily work VMT per employee for the APC in which the project is located (see the table below). This criterion was used for the office component of Project Alternatives 2, 3, and 4.
- Local-serving retail development tends to shorten trips and reduce VMT whereas regional-serving retail development can lead to substitution of longer trips for shorter ones and could increase VMT. In the latter case, any net increase in VMT is considered to be significant. Local-serving is defined as retail uses less than 50,000 square feet. Schools that are intended to primarily serve the immediate community, such as the charter elementary school in Alternative 2, may also be screened out from further VMT analysis. It was

included, however, in the full mixed-use analysis of Alternative 2. The proposed retail components of Project Alternatives 2, 3, and 4 total more than 50,000 square feet and are therefore considered regional-serving. Per the City's procedures, the City of Los Angeles' citywide travel demand forecasting model was run to evaluate the potential for the proposed retail uses to result in a net increase in VMT. The methodology and results for the regional-serving retail uses is further detailed in the next section.

- For mixed-use projects, reductions in daily trips and VMT due to internal capture between the project's land uses should be considered, after which the impact criteria above are applied to each individual land use.

VMT Impact Criteria (15% Below APC Average)

Area Planning Commission	Daily Household VMT per Capita	Daily Work VMT per Employee
Central	6.0	7.6
East LA	7.2	12.7
Harbor	9.2	12.3
North Valley	9.2	15.0
South LA	6.0	11.6
South Valley	9.4	11.6
West LA	7.4	11.1

The Project is located in the Central APC.

Per the TAG, a project could have a significant cumulative impact on VMT if the project has both a significant project-level impact as determined above and is not consistent with the Southern California Association of Governments' Regional Transportation Plan/Sustainable Communities Strategy (SCAG RTP/SCS) in terms of development location, density, and intensity.

VMT Impact Analysis

Per the City's procedures, daily household VMT per capita and daily work VMT per employee were estimated using the City's VMT Calculator tool for each Project Alternative. As described in Chapter 3.2 of the Transportation Assessment, the VMT Calculator allows for the selection of a wide variety of potential land uses including the multi-family housing, hotel, office, retail and restaurant uses

(which was analyzed as half quality restaurant and half high-turnover restaurant) proposed as part of the Project and the Project Alternatives. Certain components of the Project and Project Alternative land uses, however, are not explicitly included in the VMT Calculator. For the purposes of the VMT analysis, the farmer's market was analyzed as grocery, the food hall was included with the quality restaurant, the charter elementary school was analyzed as elementary school, and the studio/event/gallery, group exercise classes, and busking were included with the gym.

In addition to the VMT Calculator, the City of Los Angeles' citywide travel demand forecasting model was run without and with the retail components to evaluate the potential for the proposed retail uses in Alternatives 2, 3, and 4 to result in a net increase in VMT. Per the City's procedures, retail VMT was estimated through the following steps:

1. The model traffic analysis zone (TAZ) in which the Project is located was determined.
2. The Project land uses were converted into the appropriate socioeconomic categories utilized in the model. The socioeconomic parameters in the TAZ were adjusted appropriately to reflect removal of the existing land uses and addition of the Project land uses.
3. The model process was run for the model existing base year for the four time periods in the model (AM peak period, midday period, PM peak period, nighttime period) for the following scenarios:
 - a. Base ("without project") scenario
 - b. "Project without retail" scenario, consisting of all of the Project's proposed land uses except the retail uses
 - c. "Project with retail" scenario including all Project land uses
4. The total VMT on the model network within a 12-mile radius of the Project TAZ was calculated for each time period and summed to determine the estimated daily citywide VMT for each scenario. The daily VMT for the "Project without retail" scenario was subtracted from the daily VMT for the "Project with retail" scenario to determine the net change in daily VMT caused by the Project retail uses.

Total VMT

Figures 1, 2, and 3 present the City's VMT Calculator dashboard as analyzed for Project Alternative 2, 3, and 4, respectively. **Table 10** compares the residential and work VMT results for the Project and Project with the Deck Concept with the four project Alternatives. The Project is estimated to produce a total of 27,040 daily vehicle trips and a total daily VMT of 195,304. The Project with the Deck Concept is estimated to produce a total of 27,493 daily vehicle trips and a total daily VMT of 198,540. Each of the Alternatives is estimated to generate less daily vehicle trips and less daily VMT than the Project with the Deck Concept. Project Alternative 2 is estimated by the Calculator to produce a total of 17,855 daily vehicle trips and a total daily VMT of 129,528. Project Alternative 3 is estimated by the Calculator to produce a total of 18,899 daily vehicle trips and a total daily VMT

of 136,954. Project Alternative 4 is estimated by the Calculator to produce a total of 13,754 daily vehicle trips and a total daily VMT of 101,518.

Residential VMT

As indicated in **Figure 1** and **2**, the daily residential VMT per capita is estimated at 4.4 for Project Alternatives 2 and 3, below the threshold of 6.0 for the Central APC. The daily residential VMT per capita for Project Alternative 4 is not applicable since there are no residential uses proposed for this Alternative. Project Alternative 1 would not have a VMT impact since there would be no new development on the Project Site. Thus, neither the Project nor any of the Project Alternatives would have a significant impact on residential VMT per capita as estimated by the VMT Calculator. Additional details regarding the VMT analysis are available in **Attachment B**.

Work VMT

The daily work VMT per employee was estimated for all Project Alternatives and is estimated at 6.2 for Alternative 2, 6.3 for Alternative 3, and 6.4 for Alternative 4. Similar to the Project, these are all below the threshold of significance for the Central APC of 7.6 work VMT per employee. Project Alternative 1 would not have a VMT impact since there would be no new development on for the Project Site. Thus, none of the Project Alternatives would have a significant impact on work VMT per employee as estimated by the VMT Calculator. Additional details regarding the analysis are available in **Attachment B**.

Regional Serving Retail VMT

For the purposes of this analysis, consistent with the TAG, the retail components of the Project Alternatives include the restaurant uses (quality restaurant and high-turnover restaurant), the studio/event/gallery, the gym, general retail, farmers' market, group exercise classes, and busking. Since the retail components of each Project Alternative are greater than 50,000 square feet, they were evaluated using the City's travel demand forecasting model.

Table 11 compares the retail VMT results for the Project with the Deck Concept with the four project Alternatives. The Project with the Deck Concept is estimated to have a significant retail impact with an estimated increase of 32,000 miles when the retail components are added to the Project. Results for each of the Alternatives are as follows:

- **Alternative 1 – No Project:** Since there is no new development proposed for the Project Site, there would continue to be no retail land uses on the site and thus, Alternative 1 would not have a significant impact on retail VMT.
- **Alternative 2 – Reduced Retail:** The City's model estimated a total daily VMT of 96,924,000 miles within a 12-mile radius from the Project TAZ when run without the retail components of Alternative 2. With all the Alternative 2 retail uses included, the model estimated a total daily VMT of 96,918,000 miles within a 12-mile radius from the Project TAZ. This is a net

decrease of 6,000 daily miles from the network before the retail was added. This decrease in VMT is not considered to be a significant impact since an impact is considered to be significant when any increase in VMT due to retail occurs.

Compared to the Project with the Deck Concept, Alternative 2 would have less restaurant, general retail, studio/event/gallery space, and gym, and no grocery store or food hall. The overall retail floor area including each of these components would be less than that of the Project with the Deck Concept resulting in a net reduction in VMT when the retail is added as opposed to the Project's net increase in VMT.

- **Alternative 3 – Increased Offices:** The City's model estimated a total daily VMT of 96,945,000 miles within a 12-mile radius from the Project TAZ when run without the retail components of Alternative 3. With all the Alternative 3 retail uses included, the model estimated a total daily VMT of 96,962,000 miles within a 12-mile radius from the Project TAZ. This is a net increase of 17,000 daily miles from the network before the retail was added. This increase in VMT is considered to be a significant impact, since impact is considered to be significant when any increase in VMT due to retail occurs.

Compared to the Project with the Deck Concept, Alternative 3 would have less restaurant, general retail space, studio/event/gallery space; slightly more gym space; and no grocery store or food hall. The overall retail floor area would be less than that of the Project with the Deck Concept resulting in a lesser increase in retail VMT than the Project with the Deck Concept.

- **Alternative 4 – Reduced Density:** The City's model estimated a total daily VMT of 96,937,000 miles within a 12-mile radius from the Project TAZ when run without the retail components of Alternative 4. With all the Alternative 4 retail uses included, the model estimated a total daily VMT of 96,904,000 miles within a 12-mile radius from the Project TAZ. This is a net decrease of 33,000 daily miles from the network before the retail was added. This decrease in VMT is not considered to be a significant impact since impact is considered to be significant when any increase in VMT due to retail occurs.

Compared to the Project with the Deck Concept, Alternative 4 would have less restaurant and general retail space and no grocery store or food hall. The studio/event/gallery and gym space would be the same size as the Project. The overall retail floor area including each of these components would be less than that of the Project with the Deck Concept resulting in a net reduction in VMT when the retail is added as opposed to the Project's net increase in VMT.

Proposed mitigation measures for Alternative 3 are described in the next section.

VMT Mitigation

As described above in Section 5, Project Alternative 3 is projected to result in a significant retail VMT impact. The transportation demand management (TDM) program proposed for the Project, described in Chapter 3.2 of the Transportation Assessment, is also applicable to Alternative 3.

Because Project Alternatives 2 and 4 would not result in significant VMT impacts, no mitigation measures are applicable. However, the basic TDM requirements per the Los Angeles Municipal Code would be applicable to each Project Alternative⁴.

The TDM program measures related to pedestrian, bicycle, and transit amenities would also help to reduce retail trip making and would partially offset the increase in VMT projected for the retail uses in Project Alternative 3. This VMT analysis is conservative in that it does not quantify the partial reduction in retail VMT that is expected from the TDM program measures. This is because there is insufficient research to do so. There are no additional feasible mitigation measures that would further reduce the retail VMT impact for Alternative 3, and the retail VMT impact would remain significant and unavoidable. Also, as mentioned in Chapter 2.2 of the Transportation Assessment, the potential construction and operation of a 6th Street Metro station would further reduce vehicle trips generated by all Project Alternatives. Additional details regarding the VMT analysis are available in **Attachment B**.

6. Summary and Conclusions

This study was undertaken to analyze the potential VMT and freeway safety impacts of the four Alternatives to the proposed Project at 670 Mesquit Street.

- The following four Alternatives were included in the analysis:
 - Alternative 1 – No Project: No new development would occur within the Project Site. The Project Site would continue to be developed with existing one- to four-story freezer, cold storage, and dry storage warehouses with associated office space, loading docks, and surface parking.
 - Alternative 2 – Reduced Retail: Alternative 2 involves the construction of 1,002,816 square feet of creative office, 30,000 square feet of neighborhood-serving charter school, 29,850 square feet of quality restaurant, 29,850 square feet of high-turnover restaurant, 236 hotel rooms, 353 residential dwelling units, 67 affordable housing dwelling units, 44,069 square feet of studio/event/gallery, 52,424 square feet of gym, 11,664 square feet of general retail, and a deck that is approximately 1.7 acres and includes programmatic features.
 - Alternative 3 – Increased Offices: Alternative 3 involves the construction of 973,153 square feet of creative office, 33,000 square feet of quality restaurant, 33,000 square feet of high-turnover restaurant, 236 hotel rooms, 353 residential dwelling units, 67 affordable housing dwelling units, 60,100 square feet of studio/event/gallery, 68,102 square feet of gym, 14,208 square feet of general retail, and a deck that is approximately 1.7 acres and includes programmatic features.

⁴ City of Los Angeles, *Los Angeles Municipal Code Section 12.26J Transportation Demand Management and Trip Reduction Measures*.

- Alternative 4 – Reduced Density: Alternative 4 involves the construction of 944,055 square feet of creative office, 20,000 square feet of quality restaurant, 20,000 square feet of high-turnover restaurant, 93,617 square feet of studio/event/gallery, 62,148 square feet of gym, and 10,000 square feet of general retail. This Alternative does not include a deck but still includes programmatic features.
- During each of the analyzed peak hours, Alternative 2 is projected to generate 1% - 13% fewer trips than the Project and 9% - 18% fewer trips than the Project with the Deck Concept. Alternative 3 is projected to generate 12% - 16% fewer trips than the Project and 18% - 23% fewer trips than the Project with the Deck Concept. Alternative 4 is projected to generate 26% - 34% fewer trips than the Project and 31% - 39% fewer trips than the Project with the Deck Concept.
- A freeway safety analysis was conducted for Study Intersection H, US-101 Southbound Off-ramp to 7th Street. In the AM peak hour, the Project with the Deck Concept is projected to increase the queue onto the mainline lanes by six car lengths and Alternative 2, Alternative 3, and Alternative 4 are each projected to increase the queue onto the mainline lanes by five car lengths. Therefore, similar to the Project with the Deck Concept, Alternative 2, Alternative 3, and Alternative 4 are projected to have a significant safety impact on the US-101 Southbound Off-ramp to 7th Street as, in the AM peak hour, they are each projected to add more than two car lengths (50 feet) to a queue that is extending past the ramp capacity with speed differential greater than 30 mph from the mainline freeway. Signalization of the intersection would mitigate the identified safety issue by reducing the off-ramp queues onto the freeway. However, since the improvement involves another jurisdiction (Caltrans) beyond the City of Los Angeles, its implementation cannot be guaranteed, and the impact is therefore considered to be significant and unavoidable.
- Based on the Project Alternatives' mix of land uses, location and other characteristics, and similar to the Project, the Alternatives are projected to have less than significant VMT impacts for the residential and office land uses. Project Alternatives 2 and 4 are not projected to have a significant impact for the retail land uses, unlike the significant and unavoidable finding for the Project. Project Alternative 3 is projected to have significant and unavoidable impacts for the retail land uses, but at a lesser level than the Project. Project Alternative 3 would implement transportation demand measures through compliance with regulatory requirements, site design elements and a transportation demand management plan to reduce and mitigate Project VMT; however, as with the Project, the retail VMT impact would remain significant and unavoidable as there are no additional feasible mitigation measures that would further reduce the retail VMT impact to a less-than-significant level. The basic TDM requirements per the Los Angeles Municipal Code would be applicable to each Project Alternative.

TABLE 1
670 MESQUIT PROJECT
PROJECT AND PROJECT ALTERNATIVES - SUMMARY OF PROPOSED LAND USES

Land Use	Units	Project	Alternative 2 - Reduced Retail	Alternative 3 - Increased Offices	Alternative 4 - Reduced Density
Residential	dwelling units	258	353	353	0
Affordable Housing	dwelling units	50	67	67	0
Office	ksf	944.055	1002.816	973.153	944.055
General Retail	ksf	79.24	11.664	14.208	10
Quality Restaurant	ksf	44.788	29.85	33	20
High-Turnover Restaurant	ksf	44.788	29.85	33	20
Hotel	rooms (ksf)	236 (158.647)	236 (209.560)	236 (228.670)	0 (0)
Studio/Event/Gallery	ksf	93.617	44.069	60.1	93.617
Gym	ksf	62.148	52.424	68.102	62.148
Grocery	ksf	28.054	0	0	0
Food Hall	ksf	28.858	0	0	0
Charter Elementary School	students	0	300	0	0
Farmers' Market	persons	500	500	500	500
Deck Size and Programming	Units	Project with the Deck Concept	Alternative 2	Alternative 3	Alternative 4*
Deck	acres	3.03	1.7	1.7	0
Group Exercise Classes	persons	280	280	280	90
Busking	persons	20	20	20	10

*Note: The people expected to participate in the group exercise classes or observe busking for Alternative 4 would come from the Project Site.

TABLE 2 PROPOSED PROJECT ALTERNATIVE 2 TRIP GENERATION 670 MESQUIT PROJECT														
Land Use	ITE Land Use Code	Size	Trip Generation Rates [a]						Estimated Trip Generation					
			AM Peak Hour			PM Peak Hour			AM Peak Hour Trips			PM Peak Hour Trips		
			Rate	In%	Out%	Rate	In%	Out%	In	Out	Total	In	Out	Total
PROPOSED PROJECT														
Creative Office	710	1002.816 ksf	[b]	86%	14%	[b]	17%	83%	640	104	744	143	697	840
Internal Capture [c]				78%	88%		71%	5%	(117)	(91)	(208)	(15)	(34)	(49)
Transit, Bike, Ped Adjustment [d]														
Net External Office (before TNC adjustment)									523	13	536	128	663	791
Added TNC - from transit			2.5%			2.5%			13	13	26	20	20	40
Added TNC - from vehicles			2.5%			2.5%			0	13	13	17	3	20
TNCs already in vehicle trip generation									13	0	13	3	17	20
Total TNC									26	26	52	40	40	80
Non-TNC									510	13	523	125	646	771
Total Vehicle									536	39	575	165	686	851
Quality Restaurant	931	29.850 ksf	0.73	50%	50%	7.8	67%	33%	11	11	22	156	77	233
Internal Capture [c]				41%	41%		21%	57%	(4)	(4)	(8)	(32)	(44)	(76)
Transit, Bike, Ped Adjustment [d]			25%			25%			(2)	(2)	(4)	(31)	(8)	(39)
Net Driveway Trips (before TNC adjustment)									5	5	10	93	25	118
Added TNC - from transit			2.5%			2.5%			0	0	0	3	3	6
Added TNC - from vehicles			2.5%			2.5%			0	0	0	1	2	3
TNCs already in vehicle trip generation									0	0	0	2	1	3
Total TNC									0	0	0	6	6	12
Non-TNC (before pass-by adjustment)									5	5	10	91	24	115
Total Vehicle									5	5	10	97	30	127
Pass-by adjustment [e]			10%			10%			0	0	0	(9)	(2)	(11)
Non-TNC									5	5	10	82	22	104
High-Turnover Restaurant	932	29.850 ksf	9.94	55%	45%	9.77	62%	38%	163	134	297	181	111	292
Internal Capture [c]				41%	41%		21%	57%	(66)	(55)	(121)	(38)	(63)	(101)
Transit, Bike, Ped Adjustment [d]			25%			25%			(24)	(20)	(44)	(26)	(12)	(38)
Net Driveway Trips (before TNC adjustment)									73	59	132	107	36	143
Added TNC - from transit			2.5%			2.5%			3	3	6	4	4	8
Added TNC - from vehicles			2.5%			2.5%			1	2	3	1	3	4
TNCs already in vehicle trip generation									2	1	3	3	1	4
Total TNC									6	6	12	8	8	16
Non-TNC (before pass-by adjustment)									71	58	129	104	35	139
Total Vehicle									77	64	141	112	43	155
Pass-by adjustment [e]			20%			20%			(14)	(11)	(25)	(20)	(7)	(27)
Non-TNC									57	47	104	84	28	112
Hotel	310	236 rooms	0.47	59%	41%	0.6	51%	49%	65	46	111	72	70	142
Internal Capture [c]				4%	51%		33%	32%	(3)	(24)	(27)	(24)	(22)	(46)
Transit, Bike, Ped Adjustment [d]			25%			25%			(16)	(6)	(22)	(12)	(12)	(24)
Net External Hotel (before TNC adjustment)									46	16	62	36	36	72
Added TNC - from transit			2.5%			2.5%			2	2	4	2	2	4
Added TNC - from vehicles			2.5%			2.5%			0	1	1	1	1	2
TNCs already in vehicle trip generation									1	0	1	1	1	2
Total TNC									3	3	6	4	4	8
Non-TNC									45	16	61	35	35	70
Total Vehicle									48	19	67	39	39	78
Residential*	222	353 DU	0.23	12%	88%	0.30	70%	30%	10	71	81	74	32	106
Internal Capture [c]				9%	23%		66%	68%	(1)	(16)	(17)	(49)	(22)	(71)
Transit, Bike, Ped Adjustment [d]									9	55	64	25	10	35
Net External Residential (before TNC adjustment)			2.5%			2.5%			2	2	4	1	1	2
Added TNC - from transit			2.5%			2.5%			1	0	1	0	1	1
Added TNC - from vehicles									0	1	1	1	0	1
TNCs already in vehicle trip generation									3	3	6	2	2	4
Total TNC									9	54	63	24	10	34
Non-TNC									12	57	69	26	12	38
Total Vehicle														
Affordable Housing	fff	67 DU	0.5	40%	60%	0.34	55%	45%	14	20	34	13	10	23
Internal Capture [c]				9%	23%		66%	68%	(1)	(5)	(6)	(9)	(7)	(16)
Net External Affordable Housing									13	15	28	4	3	7
Added TNC - from transit			2.5%			2.5%			1	1	2	0	0	0
Added TNC - from vehicles			2.5%			2.5%			0	0	0	0	0	0
TNCs already in vehicle trip generation									0	0	0	0	0	0
Total TNC									1	1	2	0	0	0
Non-TNC									13	15	28	4	3	7
Total Vehicle									14	16	30	4	3	7
Studio, Event, Gallery [g]	495	44.069 ksf	1.76	66%	34%	2.31	47%	53%	51	27	78	48	54	102
Internal Capture [c]				25%		25%			(13)	(7)	(20)	(12)	(14)	(26)
Transit, Bike, Ped Adjustment [d]									38	20	58	36	40	76
Net External Gallery (before TNC adjustment)			2.5%			2.5%			1	1	2	2	2	4
Added TNC - from transit			2.5%			2.5%			1	1	2	1	1	2
Added TNC - from vehicles									1	1	2	1	1	2
TNCs already in vehicle trip generation									3	3	6	4	4	8
Total TNC									37	19	56	35	39	74
Non-TNC									40	22	62	39	43	82
Total Vehicle														
Gym (Health / Fitness Club)	492	52.424 ksf	1.31	51%	49%	3.45	57%	43%	35	34	69	103	78	181
Internal Capture [c]				27%	31%		68%	61%	(9)	(11)	(20)	(70)	(47)	(117)
Transit, Bike, Ped Adjustment [d]			25%			25%			(7)	(6)	(13)	(8)	(8)	(16)
Net Driveway Trips (before TNC adjustment)									19	17	36	25	23	48
Added TNC - from transit			2.5%			2.5%			1	1	2	1	1	2
Added TNC - from vehicles			2.5%			2.5%			0	0	0	1	1	2
TNCs already in vehicle trip generation									0	0	0	1	1	2
Total TNC									1	1	2	3	3	6
Non-TNC (before pass-by adjustment)									19	17	36	24	22	46
Total Vehicle									20	18	38	27	25	52
Pass-by adjustment [e]			20%			20%			(3)	(3)	(6)	(4)	(4)	(8)
Non-TNC									16	14	30	20	18	38
General Retail	820	11.664 ksf	[h]	62%	38%	[h]	48%	52%	98	60	158	53	58	111
Internal Capture [c]				27%	31%		68%	61%	(26)	(19)	(45)	(36)	(35)	(71)
Transit, Bike, Ped Adjustment [d]			25%			25%			(18)	(10)	(28)	(4)	(6)	(10)
Net Driveway Trips (before TNC adjustment)									54	31	85	13	17	30
Added TNC - from transit			2.5%			2.5%			2	2	4	1	1	2
Added TNC - from vehicles			2.5%			2.5%			1	1	2	0	0	0
TNCs already in vehicle trip generation									1	1	2	0	0	0
Total TNC									4	4	8	1	1	2
Non-TNC (before pass-by adjustment)									53	30	83	13	17	30
Total Vehicle									57	34	91	14	18	32
Pass-by adjustment [e]			40%			40%			(21)	(12)	(33)	(5)	(6)	(11)
Non-TNC									32	18	50	8	11	19

TABLE 2 PROPOSED PROJECT ALTERNATIVE 2 TRIP GENERATION 670 MESQUIT PROJECT														
Land Use	ITE Land Use Code	Size	Trip Generation Rates [a]						Estimated Trip Generation					
			AM Peak Hour			PM Peak Hour			AM Peak Hour Trips			PM Peak Hour Trips		
			Rate	In%	Out%	Rate	In%	Out%	In	Out	Total	In	Out	Total
Charter Elementary School	537	300 students	[j]	53%	47%	0.14	35%	65%	167	149	316	15	27	42
<i>Transit, Bike, Ped Adjustment [d]</i>			25%			25%			(42)	(37)	(79)	(4)	(7)	(11)
Total Vehicle									125	112	237	11	20	31
Deck	[i]	1,700 acres	2.6	50%	50%	1.8	50%	50%	2	2	4	2	1	3
Net External Deck (before TNC adjustment)									2	2	4	2	1	3
Added TNC - from transit			2.5%			2.5%			0	0	0	0	0	0
Added TNC - from vehicles			2.5%			2.5%			0	0	0	0	0	0
TNCs already in vehicle trip generation									0	0	0	0	0	0
Total TNC									0	0	0	0	0	0
Non-TNC									2	2	4	2	1	3
Total Vehicle									2	2	4	2	1	3
Farmers' Market	[k]	500 persons	n/a	n/a	n/a	n/a	n/a	n/a	0	0	0	0	0	0
<i>Internal Capture [c]</i>									0	0	0	0	0	0
<i>Transit, Bike, Ped Adjustment [d]</i>									0	0	0	0	0	0
Net External Farmers' Market (before TNC adjustment)									0	0	0	0	0	0
Added TNC - from transit			2.5%			2.5%			0	0	0	0	0	0
Added TNC - from vehicles			2.5%			2.5%			0	0	0	0	0	0
TNCs already in vehicle trip generation									0	0	0	0	0	0
Total TNC									0	0	0	0	0	0
Non-TNC									0	0	0	0	0	0
Total Vehicle									0	0	0	0	0	0
Group Exercise Classes	[l]	280 persons	1.0	50%	50%	1.0	50%	50%	140	140	280	140	140	280
<i>Internal Capture [c]</i>									(70)	(70)	(140)	(70)	(70)	(140)
<i>Transit, Bike, Ped Adjustment [d]</i>			25%			25%			(18)	(18)	(36)	(18)	(18)	(36)
Net External Exercise Classes (before TNC adjustment)									52	52	104	52	52	104
Added TNC - from transit			2.5%			2.5%			3	3	6	3	3	6
Added TNC - from vehicles			2.5%			2.5%			1	1	2	1	1	2
TNCs already in vehicle trip generation									1	1	2	1	1	2
Total TNC									5	5	10	5	5	10
Non-TNC									51	51	102	51	51	102
Total Vehicle									56	56	112	56	56	112
Busking	[m]	20 persons	n/a	n/a	n/a	n/a	n/a	n/a	0	0	0	0	0	0
<i>Internal Capture [c]</i>									0	0	0	0	0	0
<i>Transit, Bike, Ped Adjustment [d]</i>									0	0	0	0	0	0
Net External Busking (before TNC adjustment)									0	0	0	0	0	0
Added TNC - from transit			2.5%			2.5%			0	0	0	0	0	0
Added TNC - from vehicles			2.5%			2.5%			0	0	0	0	0	0
TNCs already in vehicle trip generation									0	0	0	0	0	0
Total TNC									0	0	0	0	0	0
Non-TNC									0	0	0	0	0	0
Total Vehicle									0	0	0	0	0	0
TOTAL PROJECT DRIVEWAY TRIPS									940	392	1,332	519	903	1,422
NET EXTERNAL VEHICLE TRIPS									954	418	1,372	554	957	1,511
EXISTING USE CREDIT														
Warehousing	150	205.4 ksf	0.17	77%	23%	0.19	27%	73%	27	8	35	11	28	39
Total Existing Use Credit									27	8	35	11	28	39
NET INCREMENTAL EXTERNAL TRIPS									927	410	1,337	543	929	1,472

Notes:

The proliferation of shared mobility transportation network companies (TNCs), such as Lyft and Uber, in recent years is important to consider in a project of this size. In order to account for TNCs, it was assumed that TNCs would account for 5% of the vehicle trips generated by each land use. Available empirical evidence indicates that TNC trips replace both transit/bike/walk trips and private vehicle trips. Therefore, 2.5% of the TNC trips were considered to replace transit trips, which results in an additional vehicle trip in and out of the site that would not have been considered in the basic trip generation rates. The 2.5% of TNC trips attributed to the replacement of private vehicles result in an additional vehicle trip added only to the opposite movement of the vehicle trip already considered in the basic trip generation rates. TNC vehicles will have a loading/unloading zone at the front of the project site and were not included in the total project driveway trips, but were included in the net external vehicle trips (which do not include pass-by vehicles).

* Local data collected at high-rise residential sites was approved by LADOT to use for AM and PM peak period trip rates.

a) Source: Institute of Transportation Engineers (ITE), *Trip Generation, 10th Edition, 2017*.

b) ITE office trip generation equations used rather than linear trip generation rate:
AM Peak Hour: $Ln(T) = 0.72 * A + 21.64$, where T = trips, A = area in ksf (Dense Multi-Use Urban equation used)
PM Peak Hour: $Ln(T) = 0.83 * A + 7.99$, where T = trips, A = area in ksf (Dense Multi-Use Urban equation used)

c) Internal capture represents the percentage of trips between land uses that occur within the site. This percentage is informed by Multi-Use Trip Generation Methodology described in ITE Trip Generation Handbook, 9th Edition. Internalization percentages are derived from NCHRP Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments, Transportation Research Board, 2011.

d) The transit credit is based on LADOT's *Transportation Assessment Guidelines, July 2020*. The guidelines state that up to 15% transit credit may be taken for projects within 1/4 mile of a Rapid bus line. In addition to the 15% transit credit, a 10% walking/biking credit was applied to land uses due to the walkable nature of the area (only 5% walking/biking credit was taken for office land use). For Dense Multi-Use Urban location rates, a transit credit was not explicitly added since the effects of transit are assumed to be implicit in the rates.

e) The pass-by adjustment is based on Attachment H, Pass-By Trip Rates, from LADOT's *Transportation Assessment Guidelines, July 2020*.

f) Trip rates for affordable housing taken from LADOT's *Transportation Assessment Guidelines, July 2020*.

g) Trip generation rates for recreation center used for Studio, Event, Gallery.

h) ITE retail trip generation equations used rather than linear trip generation rate:
AM Peak Hour: $Ln(T) = 0.50 * A + 151.78$, where T = trips, A = area in ksf
PM Peak Hour: $Ln(T) = 0.74 * Ln(A) + 2.89$, where T = trips, A = area in ksf

i) ITE charter elementary school trip generation equation used rather than linear trip generation rate in the AM peak hour:
AM Peak Hour: $Ln(T) = 1.17 * A - 34.68$, where T = trips, A = number of students

j) Regional Park (Developed) rate from San Diego Association of Governments, (Not So) *Brief Guide of Vehicular Traffic Generation Rates* for the San Diego Region, April 2002.

k) Weekly farmers market from 11am-2pm, no peak hour trips generated. Assumes an average vehicle occupancy of 2 person per vehicle. A larger monthly farmers' market is planned, but is not part of the weekday traffic analysis because it is proposed for weekends only.

l) Group exercise classes are proposed 3-4 times a week, from 7am-9am & 4pm-7pm. Assumes an average vehicle occupancy of 1 person per vehicle and that a class will begin and end (generating both inbound and outbound trips) during the AM and PM peak hours.

m) Busking is proposed to occur six times a month from 12pm-2pm & 7pm-9pm, no peak hour trips generated. Assumes an average vehicle occupancy of 2 person per vehicle.

TABLE 3 PROPOSED PROJECT ALTERNATIVE 3 TRIP GENERATION 670 MESQUIT PROJECT														
Land Use	ITE Land Use Code	Size	Trip Generation Rates (a)						Estimated Trip Generation					
			AM Peak Hour			PM Peak Hour			AM Peak Hour Trips			PM Peak Hour Trips		
			Rate	In%	Out%	Rate	In%	Out%	In	Out	Total	In	Out	Total
PROPOSED PROJECT														
<u>Creative Office</u>	710	973.153 ksf	(b)	86%	14%	(b)	17%	83%	621	101	722	139	677	816
Internal Capture (c)				20%	91%		12%	6%	(122)	(92)	(214)	(17)	(61)	(58)
Transit, Bike, Ped Adjustment (d)														
Net External Office (before TNC adjustment)									499	9	508	122	636	758
Added TNC - from transit			2.5%			2.5%			13	13	26	19	19	38
Added TNC - from vehicles			2.5%			2.5%			0	12	12	16	3	19
TNCs already in vehicle trip generation									12	0	12	3	16	19
Total TNC									25	25	50	38	38	76
Non-TNC									487	9	496	119	620	739
Total Vehicle									512	34	546	157	658	815
<u>Quality Restaurant</u>	931	33.000 ksf	0.73	50%	50%	7.8	67%	33%	12	12	24	172	85	257
Internal Capture (c)				38%	40%		22%	57%	(5)	(5)	(10)	(38)	(48)	(86)
Transit, Bike, Ped Adjustment (d)			25%			25%			(2)	(2)	(4)	(24)	(9)	(43)
Net Driveway Trips (before TNC adjustment)									5	5	10	100	28	128
Added TNC - from transit			2.5%			2.5%			0	0	0	3	3	6
Added TNC - from vehicles			2.5%			2.5%			0	0	0	1	3	4
TNCs already in vehicle trip generation									0	0	0	3	1	4
Total TNC									0	0	0	7	7	14
Non-TNC (before pass-by adjustment)									5	5	10	97	27	124
Total Vehicle									5	5	10	104	34	138
Pass-by adjustment (e)			10%			10%			1	1	2	19	12	111
Non-TNC									5	5	10	88	25	113
<u>High-Turnover Restaurant</u>	932	33.000 ksf	9.94	55%	45%	9.77	62%	38%	180	148	328	200	122	322
Internal Capture (c)				38%	40%		22%	57%	(68)	(60)	(128)	(44)	(69)	(113)
Transit, Bike, Ped Adjustment (d)			25%			25%			(28)	(22)	(50)	(39)	(13)	(52)
Net Driveway Trips (before TNC adjustment)									84	66	150	117	40	157
Added TNC - from transit			2.5%			2.5%			4	4	8	4	4	8
Added TNC - from vehicles			2.5%			2.5%			2	2	4	1	3	4
TNCs already in vehicle trip generation									2	2	4	3	1	4
Total TNC									8	8	16	8	8	16
Non-TNC (before pass-by adjustment)									82	64	146	114	39	153
Total Vehicle									90	72	162	122	47	169
Pass-by adjustment (e)			20%			20%			(16)	(12)	(28)	(22)	(7)	(29)
Non-TNC									66	52	118	92	32	124
<u>Hotel</u>	310	236 rooms	0.47	59%	41%	0.6	51%	49%	65	46	111	72	70	142
Internal Capture (c)				4%	51%		37%	36%	(3)	(24)	(27)	(27)	(26)	(53)
Transit, Bike, Ped Adjustment (d)			25%			25%			(16)	(6)	(22)	(11)	(11)	(22)
Net External Hotel (before TNC adjustment)									46	16	62	34	33	67
Added TNC - from transit			2.5%			2.5%			2	2	4	2	2	4
Added TNC - from vehicles			2.5%			2.5%			0	1	1	1	1	2
TNCs already in vehicle trip generation									1	0	1	1	1	2
Total TNC									3	3	6	4	4	8
Non-TNC									45	16	61	33	32	65
Total Vehicle									48	19	67	37	36	73
<u>Residential*</u>	222	353 DU	0.23	12%	88%	0.30	70%	30%	10	71	81	74	32	106
Internal Capture (c)				9%	23%		66%	68%	(1)	(16)	(17)	(49)	(22)	(71)
Transit, Bike, Ped Adjustment (d)														
Net External Residential (before TNC adjustment)									9	55	64	25	10	35
Added TNC - from transit			2.5%			2.5%			2	2	4	1	1	2
Added TNC - from vehicles			2.5%			2.5%			1	0	1	0	1	1
TNCs already in vehicle trip generation									0	1	1	1	0	1
Total TNC									3	3	6	2	2	4
Non-TNC									9	54	63	24	10	34
Total Vehicle									12	57	69	26	12	38
<u>Affordable Housing</u>	(f)	67 DU	0.5	40%	60%	0.34	55%	45%	14	20	34	13	10	23
Internal Capture (c)				9%	23%		66%	68%	(1)	(5)	(6)	(9)	(7)	(16)
Transit, Bike, Ped Adjustment (d)														
Net External Affordable Housing									13	15	28	4	3	7
Added TNC - from transit			2.5%			2.5%			1	1	2	0	0	0
Added TNC - from vehicles			2.5%			2.5%			0	0	0	0	0	0
TNCs already in vehicle trip generation									0	0	0	0	0	0
Total TNC									1	1	2	0	0	0
Non-TNC									13	15	28	4	3	7
Total Vehicle									14	16	30	4	3	7
<u>Studio, Event, Gallery (g)</u>	495	60.1 ksf	1.76	66%	34%	2.31	47%	53%	70	36	106	65	74	139
Internal Capture (c)									(18)	(9)	(27)	(16)	(19)	(35)
Transit, Bike, Ped Adjustment (d)			25%			25%			52	27	79	49	55	104
Net External Gallery (before TNC adjustment)									2	2	4	3	3	6
Added TNC - from transit			2.5%			2.5%			1	1	2	1	1	2
Added TNC - from vehicles			2.5%			2.5%			1	1	2	1	1	2
TNCs already in vehicle trip generation									4	4	8	5	5	10
Total TNC									51	26	77	48	54	102
Non-TNC									55	30	85	53	59	112
Total Vehicle														
<u>Gym (Health / Fitness Club)</u>	492	68.102 ksf	1.31	51%	49%	3.45	57%	43%	45	44	89	134	101	235
Internal Capture (c)				25%	29%		61%	56%	(11)	(13)	(24)	(82)	(56)	(138)
Transit, Bike, Ped Adjustment (d)			25%			25%			(9)	(6)	(17)	(13)	(11)	(24)
Net Driveway Trips (before TNC adjustment)									25	23	48	39	34	73
Added TNC - from transit			2.5%			2.5%			1	1	2	2	2	4
Added TNC - from vehicles			2.5%			2.5%			1	1	2	1	1	2
TNCs already in vehicle trip generation									1	1	2	1	1	2
Total TNC									3	3	6	4	4	8
Non-TNC (before pass-by adjustment)									24	22	46	38	33	71
Total Vehicle									27	25	52	42	37	79
Pass-by adjustment (e)			20%			20%			(4)	(4)	(8)	(7)	(6)	(13)
Non-TNC									20	18	38	31	27	58
<u>General Retail</u>	820	14.208 ksf	(h)	62%	38%	(h)	48%	52%	99	60	159	61	67	128
Internal Capture (c)				25%	29%		61%	56%	(25)	(17)	(42)	(37)	(37)	(74)
Transit, Bike, Ped Adjustment (d)			25%			25%			(19)	(11)	(30)	(6)	(8)	(14)
Net Driveway Trips (before TNC adjustment)									55	32	87	18	22	40
Added TNC - from transit			2.5%			2.5%			2	2	4	1	1	2
Added TNC - from vehicles			2.5%			2.5%			1	1	2	1	0	1
TNCs already in vehicle trip generation									1	1	2	0	1	1
Total TNC									4	4	8	2	2	4
Non-TNC (before pass-by adjustment)									54	31	85	18	21	39
Total Vehicle									58	35	93	20	23	43
Pass-by adjustment (e)			40%			40%			(21)	(12)	(33)	(7)	(8)	(15)
Non-TNC									33	19	52	11	13	24

**TABLE 3
PROPOSED PROJECT ALTERNATIVE 3 TRIP GENERATION
670 MESQUIT PROJECT**

Land Use	ITE Land Use Code	Size	Trip Generation Rates (a)						Estimated Trip Generation								
			AM Peak Hour			PM Peak Hour			AM Peak Hour Trips			PM Peak Hour Trips					
			Rate	In%	Out%	Rate	In%	Out%	In	Out	Total	In	Out	Total			
Deck																	
Net External Deck (before TNC adjustment)	[i]	1,700 acres	2.6	50%	50%	1.8	50%	50%	2	2	4	2	1	3			
Added TNC - from transit			2.5%			2.5%			0	0	0	0	0	0			
Added TNC - from vehicles			2.5%			2.5%			0	0	0	0	0	0			
TNCs already in vehicle trip generation									0	0	0	0	0	0			
Total TNC									0	0	0	0	0	0			
Non-TNC									2	2	4	2	1	3			
Total Vehicle									2	2	4	2	1	3			
Farmers' Market																	
Internal Capture [c]	[j]	500 persons	n/a	n/a	n/a	n/a	n/a	n/a	0	0	0	0	0	0			
Transit, Bike, Ped Adjustment [d]									0	0	0	0	0	0			
Net External Farmers' Market (before TNC adjustment)									0	0	0	0	0	0			
Added TNC - from transit			2.5%			2.5%			0	0	0	0	0	0			
Added TNC - from vehicles			2.5%			2.5%			0	0	0	0	0	0			
TNCs already in vehicle trip generation									0	0	0	0	0	0			
Total TNC									0	0	0	0	0	0			
Non-TNC									2	2	4	2	1	3			
Total Vehicle									2	2	4	2	1	3			
Group Exercise Classes																	
Internal Capture [c]	[k]	280 persons	1.0	50%	50%	1.0	50%	50%	140	140	280	140	140	280			
Transit, Bike, Ped Adjustment [d]			25%			25%			(18)	(18)	(36)	(18)	(18)	(36)			
Net External Exercise Classes (before TNC adjustment)									52	52	104	52	52	104			
Added TNC - from transit			2.5%			2.5%			3	3	6	3	3	6			
Added TNC - from vehicles			2.5%			2.5%			1	1	2	1	1	2			
TNCs already in vehicle trip generation									1	1	2	1	1	2			
Total TNC									5	5	10	5	5	10			
Non-TNC									51	51	102	51	51	102			
Total Vehicle									56	56	112	56	56	112			
Busking																	
Internal Capture [c]	[l]	20 persons	n/a	n/a	n/a	n/a	n/a	n/a	0	0	0	0	0	0			
Transit, Bike, Ped Adjustment [d]									0	0	0	0	0	0			
Net External Busking (before TNC adjustment)									0	0	0	0	0	0			
Added TNC - from transit			2.5%			2.5%			0	0	0	0	0	0			
Added TNC - from vehicles			2.5%			2.5%			0	0	0	0	0	0			
TNCs already in vehicle trip generation									0	0	0	0	0	0			
Total TNC									0	0	0	0	0	0			
Non-TNC									0	0	0	0	0	0			
Total Vehicle									0	0	0	0	0	0			
TOTAL PROJECT DRIVEWAY TRIPS									823	295	1,118	548	891	1,439			
NET EXTERNAL VEHICLE TRIPS									838	323	1,161	578	943	1,521			
EXISTING USE CREDIT																	
Warehousing		150	205.4 ksf	0.17	77%	23%	0.19	27%	73%	27	8	35	11	28	39		
Total Existing Use Credit									27	8	35	11	28	39			
NET INCREMENTAL EXTERNAL TRIPS									811	315	1,126	567	915	1,482			

Notes:

The proliferation of shared mobility transportation network companies (TNCs), such as Lyft and Uber, in recent years is important to consider in a project of this size. In order to account for TNCs, it was assumed that TNCs would account for 5% of the vehicle trips generated by each land use. Available empirical evidence indicates that TNC trips replace both transit/bike/walk trips and private vehicle trips. Therefore, 2.5% of the TNC trips were considered to replace transit trips, which results in an additional vehicle trip in and out of the site that would not have been considered in the basic trip generation rates. The 2.5% of TNC trips attributed to the replacement of private vehicles result in an additional vehicle trip added only to the opposite movement of the vehicle trip already considered in the basic trip generation rates. TNC vehicles will have a loading/unloading zone at the front of the project site and were not included in the total project driveway trips, but were included in the net external vehicle trips (which do not include pass-by vehicles).

* Local data collected at high-rise residential sites was approved by LADOT to use for AM and PM peak period trip rates.

[a] Source: Institute of Transportation Engineers (ITE), *Trip Generation, 10th Edition*, 2017.

[b] ITE office trip generation equations used rather than linear trip generation rate:
 AM Peak Hour: $Ln(T) = 0.72 * A + 21.64$, where T = trips, A = area in ksf (Dense Multi-Use Urban equation used)
 PM Peak Hour: $Ln(T) = 0.83 * A + 7.99$, where T = trips, A = area in ksf (Dense Multi-Use Urban equation used)

[c] Internal capture represents the percentage of trips between land uses that occur within the site. This percentage is informed by Multi-Use Trip Generation Methodology described in ITE Trip Generation Handbook, 9th Edition. Internalization percentages are derived from NCHRP Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments, Transportation Research Board, 2011.

[d] The transit credit is based on LADOT's *Transportation Assessment Guidelines, July 2020*. The guidelines state that up to 15% transit credit may be taken for projects within 1/4 mile of a Rapid bus line. In addition to the 15% transit credit, a 10% walking/biking credit was applied to land uses due to the walkable nature of the area (only 5% walking/biking credit was taken for office land use). For Dense Multi-Use Urban location rates, a transit credit was not explicitly added since the effects of transit are assumed to be implicit in the rates.

[e] The pass-by adjustment is based on Attachment H, Pass-By Trip Rates, from LADOT'S *Transportation Assessment Guidelines, July 2020*.

[f] Trip rates for affordable housing taken from LADOT'S *Transportation Assessment Guidelines, July 2020*.

[g] Trip generation rates for recreation center used for Studio, Event, Gallery.

[h] ITE retail trip generation equations used rather than linear trip generation rate:
 AM Peak Hour: $Ln(T) = 0.50 * A + 151.78$, where T = trips, A = area in ksf
 PM Peak Hour: $Ln(T) = 0.72 * Ln(A) + 2.89$, where T = trips, A = area in ksf

[i] Regional Park (Developed) rate from San Diego Association of Governments, (Not So) *Brief Guide of Vehicular Traffic Generation Rates* for the San Diego Region, April 2002.

[j] Weekly farmers market from 11am-2pm, no peak hour trips generated. Assumes an average vehicle occupancy of 2 person per vehicle. A larger monthly farmers' market is planned, but is not part of the weekday traffic analysis because it is proposed for weekends only.

[k] Group exercise classes are proposed 3-4 times a week, from 7am-9am & 4pm-7pm. Assumes an average vehicle occupancy of 1 person per vehicle and that a class will begin and end (generating both inbound and outbound trips) during the AM and PM peak hours.

[l] Busking is proposed to occur six times a month from 12pm-2pm & 7pm-9pm, no peak hour trips generated. Assumes an average vehicle occupancy of 2 person per vehicle.

**TABLE 4
PROPOSED PROJECT ALTERNATIVE 4 TRIP GENERATION
670 MESQUIT PROJECT**

Land Use	ITE Land Use Code	Size	Trip Generation Rates [a]						Estimated Trip Generation						
			AM Peak Hour			PM Peak Hour			AM Peak Hour Trips			PM Peak Hour Trips			
			Rate	In%	Out%	Rate	In%	Out%	In	Out	Total	In	Out	Total	
PROPOSED PROJECT															
Creative Office	710	944.055 ksf	[b]	86%	14%	[b]	17%	83%	603	98	701	135	657	792	
<i>Internal Capture [c]</i>				12%	70%		7%	4%	(71)	(69)	(140)	(10)	(28)	(38)	
<i>Transit, Bike, Ped Adjustment [d]</i>															
Net External Office (before TNC adjustment)									532	29	561	125	629	754	
Added TNC - from transit			2.5%			2.5%			14	14	28	19	19	38	
Added TNC - from vehicles			2.5%			2.5%			1	13	14	16	3	19	
TNCs already in vehicle trip generation									13	1	14	3	16	19	
Total TNC									28	28	56	38	38	76	
Non-TNC									519	28	547	122	613	735	
Total Vehicle									547	56	603	160	651	811	
Quality Restaurant	931	20.000 ksf	0.73	50%	50%	7.8	67%	33%	8	7	15	105	51	156	
<i>Internal Capture [c]</i>				34%	42%		20%	44%	(3)	(3)	(6)	(21)	(22)	(43)	
<i>Transit, Bike, Ped Adjustment [d]</i>			25%			25%			(1)	(1)	(2)	(21)	(7)	(28)	
Net Driveway Trips (before TNC adjustment)									4	3	7	63	22	85	
Added TNC - from transit			2.5%			2.5%			0	0	0	2	2	4	
Added TNC - from vehicles			2.5%			2.5%			0	0	0	1	2	3	
TNCs already in vehicle trip generation									0	0	0	2	1	3	
Total TNC									0	0	0	5	5	10	
Non-TNC (before pass-by adjustment)									4	3	7	61	21	82	
Total Vehicle									4	3	7	66	26	92	
<i>Pass-by adjustment [e]</i>			10%			10%			0	0	0	(6)	(2)	(8)	
Non-TNC									4	3	7	55	19	74	
High-Turnover Restaurant	932	20.000 ksf	9.94	55%	45%	9.77	62%	38%	109	90	199	121	74	195	
<i>Internal Capture [c]</i>				34%	42%		20%	44%	(37)	(38)	(75)	(25)	(32)	(57)	
<i>Transit, Bike, Ped Adjustment [d]</i>			25%			25%			(18)	(13)	(31)	(24)	(11)	(35)	
Net Driveway Trips (before TNC adjustment)									54	39	93	72	31	103	
Added TNC - from transit			2.5%			2.5%			2	2	4	3	3	6	
Added TNC - from vehicles			2.5%			2.5%			1	1	2	1	2	3	
TNCs already in vehicle trip generation									1	1	2	2	1	3	
Total TNC									4	4	8	6	6	12	
Non-TNC (before pass-by adjustment)									53	38	91	70	30	100	
Total Vehicle									57	42	99	76	36	112	
<i>Pass-by adjustment [e]</i>			20%			20%			(10)	(7)	(17)	(14)	(6)	(20)	
Non-TNC									43	31	74	56	24	80	
Studio, Event Gallery [f]	495	93.617 ksf	1.76	66%	34%	2.31	47%	53%	109	56	165	102	114	216	
<i>Transit, Bike, Ped Adjustment [d]</i>			25%			25%			(27)	(14)	(41)	(26)	(29)	(55)	
Net External Gallery (before TNC adjustment)									82	42	124	76	85	161	
Added TNC - from transit			2.5%			2.5%			3	3	6	4	4	8	
Added TNC - from vehicles			2.5%			2.5%			1	2	3	2	2	4	
TNCs already in vehicle trip generation									2	1	3	2	2	4	
Total TNC									6	6	12	8	8	16	
Non-TNC									80	41	121	74	83	157	
Total Vehicle									86	47	133	82	91	173	
Gym (Health / Fitness Club)	492	62.148 ksf	1.31	51%	49%	3.45	57%	43%	41	40	81	122	92	214	
<i>Internal Capture [c]</i>				21%	29%		38%	31%	(9)	(12)	(21)	(46)	(28)	(74)	
<i>Transit, Bike, Ped Adjustment [d]</i>			25%			25%			(8)	(7)	(15)	(19)	(16)	(35)	
Net Driveway Trips (before TNC adjustment)									24	21	45	57	48	105	
Added TNC - from transit			2.5%			2.5%			1	1	2	3	3	6	
Added TNC - from vehicles			2.5%			2.5%			1	1	2	1	1	2	
TNCs already in vehicle trip generation									1	1	2	1	1	2	
Total TNC									3	3	6	5	5	10	
Non-TNC (before pass-by adjustment)									23	20	43	56	47	103	
Total Vehicle									26	23	49	61	52	113	
<i>Pass-by adjustment [e]</i>			20%			20%			(4)	(4)	(8)	(11)	(9)	(20)	
Non-TNC									19	16	35	45	38	83	

**TABLE 4
PROPOSED PROJECT ALTERNATIVE 4 TRIP GENERATION
670 MESQUIT PROJECT**

Land Use	ITE Land Use Code	Size	Trip Generation Rates [a]						Estimated Trip Generation								
			AM Peak Hour			PM Peak Hour			AM Peak Hour Trips			PM Peak Hour Trips					
			Rate	In%	Out%	Rate	In%	Out%	In	Out	Total	In	Out	Total			
General Retail	820	10,000 ksf	[g]	62%	38%	[g]	48%	52%	97	60	157	48	51	99			
<i>Internal Capture [c]</i>				21%	29%		38%	31%	(20)	(17)	(37)	(18)	(16)	(34)			
<i>Transit, Bike, Ped Adjustment [d]</i>				25%			25%		(19)	(11)	(30)	(8)	(9)	(17)			
Net Driveway Trips (before TNC adjustment)									58	32	90	22	26	48			
Added TNC - from transit				2.5%			2.5%		2	2	4	1	1	2			
Added TNC - from vehicles				2.5%			2.5%		1	1	2	1	1	2			
TNCs already in vehicle trip generation									1	1	2	1	1	2			
Total TNC									4	4	8	3	3	6			
Non-TNC (before pass-by adjustment)									57	31	88	21	25	46			
Total Vehicle									61	35	96	24	28	52			
<i>Pass-by adjustment [e]</i>					40%			40%				(22)	(12)	(34)	(8)	(10)	(18)
Non-TNC												35	19	54	13	15	28
Farmers' Market	[h]	500 persons	n/a	n/a	n/a	n/a	n/a	n/a	0	0	0	0	0	0			
<i>Internal Capture [c]</i>									0	0	0	0	0	0			
<i>Transit, Bike, Ped Adjustment [d]</i>									0	0	0	0	0	0			
Net External Farmers' Market (before TNC adjustment)									0	0	0	0	0	0			
Added TNC - from transit				2.5%			2.5%		0	0	0	0	0	0			
Added TNC - from vehicles				2.5%			2.5%		0	0	0	0	0	0			
TNCs already in vehicle trip generation									0	0	0	0	0	0			
Total TNC									0	0	0	0	0	0			
Non-TNC									0	0	0	0	0	0			
Total Vehicle									0	0	0	0	0	0			
TOTAL PROJECT DRIVEWAY TRIPS												736	161	897	404	819	1,223
NET EXTERNAL VEHICLE TRIPS												745	183	928	430	857	1,287
EXISTING USE CREDIT																	
Warehousing	150	205.4 ksf	0.17	77%	23%	0.19	27%	73%	27	8	35	11	28	39			
Total Existing Use Credit									27	8	35	11	28	39			
NET INCREMENTAL EXTERNAL TRIPS										718	175	893	419	829	1,248		

Notes:

The proliferation of shared mobility transportation network companies (TNCs), such as Lyft and Uber, in recent years is important to consider in a project of this size. In order to account for TNCs, it was assumed that TNCs would account for 5% of the vehicle trips generated by each land use. Available empirical evidence indicates that TNC trips replace both transit/bike/walk trips and private vehicle trips. Therefore, 2.5% of the TNC trips were considered to replace transit trips, which results in an additional vehicle trip in and out of the site that would not have been considered in the basic trip generation rates. The 2.5% of TNC trips attributed to the replacement of private vehicles result in an additional vehicle trip added only to the opposite movement of the vehicle trip already considered in the basic trip generation rates. TNC vehicles will have a loading/unloading zone at the front of the project site and were not included in the total project driveway trips, but were included in the net external vehicle trips (which do not include pass-by vehicles).

* Local data collected at high-rise residential sites was approved by LADOT to use for AM and PM peak period trip rates.

[a] Source: Institute of Transportation Engineers (ITE), *Trip Generation, 10th Edition*, 2017.

[b] ITE office trip generation linear equations used rather than average rate:

AM Peak Hour: $T = 0.72 * A + 21.64$, where T = trips, A = area in ksf (Dense Multi-Use Urban equation used)

PM Peak Hour: $T = 0.83 * A + 7.99$, where T = trips, A = area in ksf (Dense Multi-Use Urban equation used)

[c] Internal capture represents the percentage of trips between land uses that occur within the site. This percentage is informed by Multi-Use Trip Generation Methodology described in ITE Trip Generation Handbook, 9th Edition. Internalization percentages are derived from NCHRP Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments, Transportation Research Board, 2011.

[d] The transit credit is based on LADOT's Transportation Assessment Guidelines, July 2020. The guidelines state that up to 15% transit credit may be taken for projects within 1/4 mile of a Rapid bus line. In addition to the 15% transit credit, a 10% walking/biking credit was applied to land uses due to the walkable nature of the area (only 5% walking/biking credit was taken for office land use). For Dense Multi-Use Urban location rates, a transit credit was not explicitly added since the effects of transit are assumed to be implicit in the rates.

[e] The pass-by adjustment is based on Attachment H, Pass-By Trip Rates, from LADOT's Transportation Assessment Guidelines, July 2020.

[f] Trip generation rates for recreation center used for Studio, Event, Gallery.

[g] ITE retail trip generation equations used rather than linear trip generation rate:

AM Peak Hour: $\ln(T) = 0.50 * A + 151.78$, where T = trips, A = area in ksf

PM Peak Hour: $T = 0.74 * \ln(A) + 2.89$, where T = trips, A = area in ksf

[h] Weekly farmers market from 11am-2pm, no peak hour trips generated. Assumes an average vehicle occupancy of 2 person per vehicle. A larger monthly farmers' market is planned, but is not be part of the weekday traffic analysis because it is proposed for weekends only.

TABLE 5
670 MESQUIT PROJECT
PROJECT AND PROJECT ALTERNATIVES - COMPARISON OF PEAK HOUR TRIP GENERATION ESTIMATES

Project Option/Alternative	AM Peak Hour Trips			PM Peak Hour Trips		
	In	Out	Total	In	Out	Total
Proposed Project						
Net New Trips	942	402	1,344	709	979	1,688
Proposed Project with the Deck Concept						
Net New Trips	1,002	462	1,464	768	1,037	1,805
Alternative 1 - No Project						
Net New Trips	0	0	0	0	0	0
Percent Change: Alt 1 vs. Proposed Project			-100%			-100%
Percent Change: Alt 1 vs. Proposed Project with the Deck Concept			-100%			-100%
Alternative 2 - Reduced Retail						
Net New Trips	927	410	1,337	543	929	1,472
Percent Change: Alt 2 vs. Proposed Project			-1%			-13%
Percent Change: Alt 2 vs. Proposed Project with the Deck Concept			-9%			-18%
Alternative 3 - Increased Offices						
Net New Trips	811	315	1,126	567	915	1,482
Percent Change: Alt 3 vs. Proposed Project			-16%			-12%
Percent Change: Alt 3 vs. Proposed Project with the Deck Concept			-23%			-18%
Alternative 4 - Reduced Density						
Net New Trips	718	175	893	419	829	1,248
Percent Change: Alt 4 vs. Proposed Project			-34%			-26%
Percent Change: Alt 4 vs. Proposed Project with the Deck Concept			-39%			-31%

**TABLE 6
PEAK HOUR OFF-RAMP QUEUE ANALYSIS
FUTURE BASE (2026) AND FUTURE BASE (2026) PLUS PROJECT WITH THE DECK CONCEPT/ALTERNATIVES
670 MESQUIT PROJECT**

ID	Ramp	Cross Street	Total Capacity (ft) [a]	Project/Alternative [b]	Turning Movements by Lanes at Intersection	Control	Future Base (2026) Conditions						Future Base (2026) + Project with the Deck Concept/Alternative							
							AM 95th Percentile Queue		PM 95th Percentile Queue		Queue Exceeds Storage?		AM 95th Percentile Queue		PM 95th Percentile Queue		Queue Length Increase (car lengths) [c]		Potential Safety Issue? [d]	
							Queue (ft)	Total (ft)	Lane (ft)	Total (ft)	AM	PM	Lane (ft)	Total (ft)	Lane (ft)	Total (ft)	AM	PM	AM	PM
H	US-101 SB Off-Ramp	7th Street	310	Project with the Deck Concept	Left Right	Two-Way Stop Controlled	48 478	526	128 50	178	Yes	No	55 613	668	155 65	220	6	2	Yes	No
				Alternative 2 - Reduced Retail	Left Right		48 478	526	128 50	178	Yes	No	53 585	638	150 60	210	5	2	Yes	No
				Alternative 3 - Increased Offices	Left Right		48 478	526	128 50	178	Yes	No	53 585	638	150 60	210	5	2	Yes	No
				Alternative 4 - Reduced Density	Left Right		48 478	526	128 50	178	Yes	No	53 583	636	148 58	206	5	2	Yes	No

[a]: Ramp lengths determined based on scaled distances from on-line aerial photographs. Per LADOT guidance, max length is measured from the intersection to the gore point.

When an auxiliary lane is present, the maximum length includes one half of the length of the auxiliary lane to the gore point of the preceding on-ramp.

[b]: Alternative 1 - No Project would not have a freeway safety impact as new development would not occur on the Project site and therefore would not generate any new trips that add to the off-ramp queue.

[c]: Assumes an average storage length per car of 25 feet.

[d]: If a proposed project adds two or more car lengths to a ramp queue that extends to the freeway mainline, then the location must be tested for safety issues.

**TABLE 7
PEAK HOUR OFF-RAMP QUEUE ANALYSIS
FUTURE BASE (2040) AND FUTURE BASE (2040) PLUS PROJECT WITH THE DECK CONCEPT/ALTERNATIVES
670 MESQUIT PROJECT**

ID	Ramp	Cross Street	Total Capacity (ft) [a]	Project/Alternative [b]	Turning Movements by Lanes at Intersection	Control	Future Base (2040) Conditions						Future Base (2040) + Project with the Deck Concept/Alternative							
							AM 95th Percentile Queue		PM 95th Percentile Queue		Queue Exceeds Storage?		AM 95th Percentile Queue		PM 95th Percentile Queue		Queue Length Increase (car lengths) [c]		Potential Safety Issue? [d]	
							Queue (ft)	Total (ft)	Lane (ft)	Total (ft)	AM	PM	Lane (ft)	Total (ft)	Lane (ft)	Total (ft)	AM	PM	AM	PM
H	US-101 SB Off-Ramp	7th Street	310	Project with the Deck Concept	Left Right	Two-Way Stop Controlled	53 508	561	140 53	193	Yes	No	60 643	703	168 70	238	6	2	Yes	No
				Alternative 2 - Reduced Retail	Left Right		53 508	561	140 53	193	Yes	No	58 615	673	163 63	226	5	2	Yes	No
				Alternative 3 - Increased Offices	Left Right		53 508	561	140 53	193	Yes	No	58 615	673	163 63	226	5	2	Yes	No
				Alternative 4 - Reduced Density	Left Right		53 508	561	140 53	193	Yes	No	58 610	668	158 60	218	5	1	Yes	No

[a]: Ramp lengths determined based on scaled distances from on-line aerial photographs. Per LADOT guidance, max length is measured from the intersection to the gore point.

When an auxiliary lane is present, the maximum length includes one half of the length of the auxiliary lane to the gore point of the preceding on-ramp.

[b]: Alternative 1 - No Project would not have a freeway safety impact as new development would not occur on the Project site and therefore would not generate any new trips that add to the off-ramp queue.

[c]: Assumes an average storage length per car of 25 feet.

[d]: If a proposed project adds two or more car lengths to a ramp queue that extends to the freeway mainline, then the location must be tested for safety issues.

**TABLE 8
PEAK HOUR OFF-RAMP QUEUE ANALYSIS - WITH MITIGATION
FUTURE BASE (2026) AND FUTURE BASE (2026) PLUS PROJECT WITH THE DECK CONCEPT/ALTERNATIVES
670 MESQUIT PROJECT**

ID	Ramp	Cross Street	Total Capacity (ft) [a]	Project/Alternative [b]	Turning Movements by Lanes at Intersection	Control	Future Base (2026) Conditions						Future Base (2026) + Project with the Deck Concept/Alternative with Signal							
							AM 95th Percentile Queue		PM 95th Percentile Queue		Queue Exceeds Storage?		AM 95th Percentile Queue		PM 95th Percentile Queue		Queue Length Increase (car lengths) [c]		Project Impact Mitigated?	
							Queue (ft)	Total (ft)	Lane (ft)	Total (ft)	AM	PM	Lane (ft)	Total (ft)	Lane (ft)	Total (ft)	AM	PM	AM	PM
H	US-101 SB Off-Ramp	7th Street	310	Project with the Deck Concept	Left Right	Two-Way Stop Controlled	48	526	128	178	Yes	No	18	284	55	152	-10	-2	Yes	N/A
				Alternative 2 - Reduced Retail	Left Right		48	526	128	178	Yes	No	18	279	55	145	-10	-2	Yes	N/A
				Alternative 3 - Increased Offices	Left Right		48	526	128	178	Yes	No	18	279	55	146	-10	-2	Yes	N/A
				Alternative 4 - Reduced Density	Left Right		48	526	128	178	Yes	No	18	277	55	143	-10	-2	Yes	N/A

[a]: Ramp lengths determined based on scaled distances from on-line aerial photographs. Per LADOT guidance, max length is measured from the intersection to the gore point.

When an auxiliary lane is present, the maximum length includes one half of the length of the auxiliary lane to the gore point of the preceding on-ramp.

[b]: Alternative 1 - No Project would not have a freeway safety impact as new development would not occur on the Project site and therefore would not generate any new trips that add to the off-ramp queue.

[c]: Assumes an average storage length per car of 25 feet.

**TABLE 9
PEAK HOUR OFF-RAMP QUEUE ANALYSIS - WITH MITIGATION
FUTURE BASE (2040) AND FUTURE BASE (2040) PLUS PROJECT WITH THE DECK CONCEPT/ALTERNATIVES
670 MESQUIT PROJECT**

ID	Ramp	Cross Street	Total Capacity (ft) [a]	Project/Alternative [b]	Turning Movements by Lanes at Intersection	Control	Future Base (2040) Conditions						Future Base (2040) + Project with the Deck Concept/Alternative with Signal							
							AM 95th Percentile Queue		PM 95th Percentile Queue		Queue Exceeds Storage?		AM 95th Percentile Queue		PM 95th Percentile Queue		Queue Length Increase (car lengths) [c]		Project Impact Mitigated?	
							Queue (ft)	Total (ft)	Lane (ft)	Total (ft)	AM	PM	Lane (ft)	Total (ft)	Lane (ft)	Total (ft)	AM	PM	AM	PM
H	US-101 SB Off-Ramp	7th Street	310	Project with the Deck Concept	Left Right	Two-Way Stop Controlled	53	561	140	193	Yes	No	18	288	56	156	-11	-2	Yes	N/A
				Alternative 2 - Reduced Retail	Left Right		53	561	140	193	Yes	No	18	284	56	150	-12	-2	Yes	N/A
				Alternative 3 - Increased Offices	Left Right		53	561	140	193	Yes	No	18	284	56	151	-12	-2	Yes	N/A
				Alternative 4 - Reduced Density	Left Right		53	561	140	193	Yes	No	18	283	56	148	-12	-2	Yes	N/A

[a]: Ramp lengths determined based on scaled distances from on-line aerial photographs. Per LADOT guidance, max length is measured from the intersection to the gore point.

When an auxiliary lane is present, the maximum length includes one half of the length of the auxiliary lane to the gore point of the preceding on-ramp.

[b]: Alternative 1 - No Project would not have a freeway safety impact as new development would not occur on the Project site and therefore would not generate any new trips that add to the off-ramp queue.

[c]: Assumes an average storage length per car of 25 feet.

TABLE 10
PROJECT AND PROJECT ALTERNATIVES COMPARISON
DAILY HOUSEHOLD VMT PER CAPITA AND DAILY WORK VMT PER EMPLOYEE ANALYSIS
670 MESQUIT PROJECT

Project Option/Alternative	Daily VMT	Daily Vehicle Trips	Daily Household VMT per Capita	Daily Household VMT per Capita Impact?	Daily Work VMT per Employee	Daily Work VMT per Employee Impact?
Proposed Project	195,304	27,040	4.0	No	6.6	No
Proposed Project with the Deck Concept	198,540	27,493	4.0	No	6.6	No
Alternative 1 - No Project	3,135	428	N/A	No	N/A	No
Percent Change: Alt 1 vs. Proposed Project	-98%	-98%	N/A		N/A	
Percent Change: Alt 1 vs. Proposed Project with the Deck Concept	-98%	-98%	N/A		N/A	
Alternative 2 - Reduced Retail	129,528	17,855	4.4	No	6.2	No
Percent Change: Alt 2 vs. Proposed Project	-34%	-34%	10%		-6%	
Percent Change: Alt 2 vs. Proposed Project with the Deck Concept	-35%	-35%	10%		-6%	
Alternative 3 - Increased Offices	136,954	18,899	4.4	No	6.3	No
Percent Change: Alt 3 vs. Proposed Project	-30%	-30%	10%		-5%	
Percent Change: Alt 3 vs. Proposed Project with the Deck Concept	-31%	-31%	10%		-5%	
Alternative 4 - Reduced Density	101,518	13,754	N/A	No	6.4	No
Percent Change: Alt 4 vs. Proposed Project	-48%	-49%	N/A		-3%	
Percent Change: Alt 4 vs. Proposed Project with the Deck Concept	-49%	-50%	N/A		-3%	

TABLE 11
PROJECT AND PROJECT ALTERNATIVES COMPARISON
RETAIL VMT ANALYSIS
670 MESQUIT PROJECT

	Proposed Project with the Deck Concept	Alternative 1 - No Project	Alternative 2 - Reduced Retail	Alternative 3 - Increased Offices	Alternative 4 - Reduced Density
No Retail	96,866,000	N/A	96,924,000	96,945,000	96,937,000
Full Project	96,898,000	N/A	96,918,000	96,962,000	96,904,000
Difference	32,000	N/A	-6,000	17,000	-33,000
Retail VMT Impact?	Yes	No	No	Yes	No

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Project Information

Project: 670 Mesquit
Scenario: Project Alternative 2
Address: 670 S MESQUIT ST, 90021



Proposed Project Land Use Type	Value	Unit
Housing Multi-Family	353	DU
Housing Hotel	236	Rooms
Retail General Retail	11.664	ksf
Retail Supermarket	4.683	ksf
Retail Health Club	114.106	ksf
Retail High-Turnover Sit-Down Restaurant	29.85	ksf
Retail Quality Restaurant	29.85	ksf
Office General Office	1002.816	ksf
School Elementary	300	Students
Housing Affordable Housing - Family	67	DU

TDM Strategies

Select each section to show individual strategies
 Use to denote if the TDM strategy is part of the proposed project or is a mitigation strategy

Max Home Based TDM Achieved? Proposed Project **No** With Mitigation **No**
Max Work Based TDM Achieved? Proposed Project **No** With Mitigation **No**

A Parking

Reduce Parking Supply Proposed Prj Mitigation
 City code parking provision for the project site: 100
 actual parking provision for the project site: 74

Unbundle Parking Proposed Prj Mitigation
 monthly parking cost (dollar) for the project site: 125

Parking Cash-Out Proposed Prj Mitigation
 percent of employees eligible: 50

Price Workplace Parking Proposed Prj Mitigation
 daily parking charge (dollar): 6.00
 percent of employees subject to priced parking: 50

Residential Area Parking Permits Proposed Prj Mitigation
 cost (dollar) of annual permit: 200

- B** Transit
- C** Education & Encouragement
- D** Commute Trip Reductions
- E** Shared Mobility
- F** Bicycle Infrastructure
- G** Neighborhood Enhancement

Analysis Results

Proposed Project	With
17,855 Daily Vehicle Trips	17,855 Daily Vehicle Trips
129,528 Daily VMT	129,528 Daily VMT
4.4 Household VMT per Capita	4.4 Household VMT
6.2 Work VMT per Employee	6.2 Work VMT per Employee
Significant VMT Impact?	
Household: No Threshold = 6.0 15% Below APC	Household: No Threshold = 6.0 15% Below APC
Work: No Threshold = 7.6 15% Below APC	Work: No Threshold = 7.6 15% Below APC



Figure 1

VMT Calculator Results for Project Alternative 2

CITY OF LOS ANGELES VMT CALCULATOR Version 1.3



Project Information

Project:

Scenario:

Address:



TDM Strategies

Select each section to show individual strategies
Use to denote if the TDM strategy is part of the proposed project or is a mitigation strategy

	Proposed Project	With Mitigation
Max Home Based TDM Achieved?	No	Yes
Max Work Based TDM Achieved?	No	Yes

- A** Parking
- B** Transit
- C** Education & Encouragement
- D** Commute Trip Reductions
- E** Shared Mobility
- F** Bicycle Infrastructure
- G** Neighborhood Enhancement
 - Traffic Calming Improvements: Proposed Prj Mitigation. Value: 25 percent of streets within project with traffic calming improvements.
 - Traffic Calming Improvements: Proposed Prj Mitigation. Value: 25 percent of intersections within project with traffic calming improvements.
 - Pedestrian Network Improvements: Proposed Prj Mitigation. Value: within project and connecting off-site.

Analysis Results

Proposed Project	With Mitigation
18,899 Daily Vehicle Trips	17,008 Daily Vehicle Trips
136,954 Daily VMT	122,997 Daily VMT
4.4 Household VMT per Capita	3.7 Household VMT per Capita
6.3 Work VMT per Employee	5.2 Work VMT per Employee
Significant VMT Impact?	
Household: No Threshold = 6.0 15% Below APC	Household: No Threshold = 6.0 15% Below APC
Work: No Threshold = 7.6 15% Below APC	Work: No Threshold = 7.6 15% Below APC

Proposed Project Land Use Type	Value	Unit
Housing Hotel	236	Rooms
Retail General Retail	14.208	ksf
Retail Supermarket	4.683	ksf
Retail Health Club	145.815	ksf
Retail High-Turnover Sit-Down Restaurant	33	ksf
Retail Quality Restaurant	33	ksf
Office General Office	973.153	ksf
Housing Affordable Housing - Family	67	DU
Housing Multi-Family	353	DU



Figure 2

VMT Calculator Results for Project Alternative 3

CITY OF LOS ANGELES VMT CALCULATOR Version 1.3

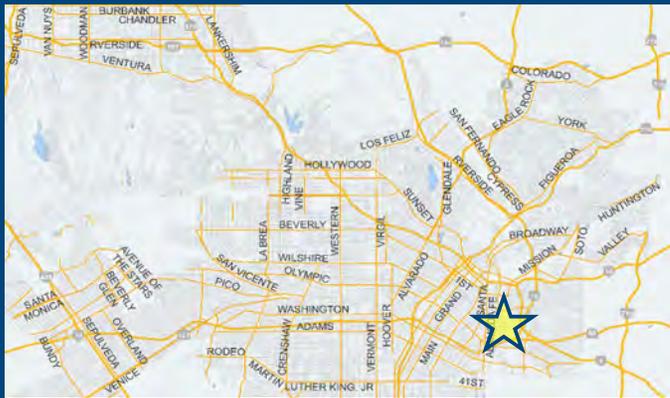


Project Information

Project:

Scenario:

Address:



Proposed Project Land Use Type	Value	Unit
Retail General Retail	10	ksf
Retail Health Club	155.765	ksf
Retail High-Turnover Sit-Down Restaurant	20	ksf
Retail Quality Restaurant	20	ksf
Office General Office	944.055	ksf
Retail Supermarket	4.683	ksf

TDM Strategies

Select each section to show individual strategies
Use to denote if the TDM strategy is part of the proposed project or is a mitigation strategy

	Proposed Project	With Mitigation
Max Home Based TDM Achieved?	No	No
Max Work Based TDM Achieved?	No	No
A Parking		
B Transit		
C Education & Encouragement		
D Commute Trip Reductions		
E Shared Mobility		
F Bicycle Infrastructure		
Implement/Improve On-street Bicycle Facility	Select Proposed Prj or Mitigation to include this strategy	
<input type="checkbox"/> Proposed Prj <input type="checkbox"/> Mitigation		
Include Bike Parking Per LAMC	Select Proposed Prj or Mitigation to include this strategy	
<input checked="" type="checkbox"/> Proposed Prj <input type="checkbox"/> Mitigation		
Include Secure Bike Parking and Showers	Select Proposed Prj or Mitigation to include this strategy	
<input checked="" type="checkbox"/> Proposed Prj <input type="checkbox"/> Mitigation		
G Neighborhood Enhancement		

Analysis Results

Proposed Project	With Mitigation
13,754 Daily Vehicle Trips	13,754 Daily Vehicle Trips
101,518 Daily VMT	101,518 Daily VMT
0.0 Household VMT per Capita	0.0 Household VMT per Capita
6.4 Work VMT per Employee	6.4 Work VMT per Employee
Significant VMT Impact?	
Household: No Threshold = 6.0 15% Below APC	Household: No Threshold = 6.0 15% Below APC
Work: No Threshold = 7.6 15% Below APC	Work: No Threshold = 7.6 15% Below APC



Figure 3

VMT Calculator Results for Project Alternative 4

Attachment A
Freeway Safety Analysis
Ramp Queuing Results

Alternative 2 Reduced Retail

HCM 6th TWSC
58: US-101 SB Ramps & 7th St

10/07/2021

Intersection												
Int Delay, s/veh	40.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑					↑		↑
Traffic Vol, veh/h	0	415	344	2	2172	0	0	0	0	14	0	302
Future Vol, veh/h	0	415	344	2	2172	0	0	0	0	14	0	302
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	451	374	2	2361	0	0	0	0	15	0	328

Major/Minor	Major1			Major2			Minor2				
Conflicting Flow All	-	0	0	825	0	0			2591	-	1181
Stage 1	-	-	-	-	-	-			2365	-	-
Stage 2	-	-	-	-	-	-			226	-	-
Critical Hdwy	-	-	-	4.14	-	-			6.84	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-			5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.84	-	-
Follow-up Hdwy	-	-	-	2.22	-	-			3.52	-	3.32
Pot Cap-1 Maneuver	0	-	-	801	-	0			20	0	~ 183
Stage 1	0	-	-	-	-	0			57	0	-
Stage 2	0	-	-	-	-	0			790	0	-
Platoon blocked, %		-	-	-	-	-					
Mov Cap-1 Maneuver	-	-	-	801	-	-			20	0	~ 183
Mov Cap-2 Maneuver	-	-	-	-	-	-			20	0	-
Stage 1	-	-	-	-	-	-			57	0	-
Stage 2	-	-	-	-	-	-			790	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	\$ 420.3
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	801	-	20	183
HCM Lane V/C Ratio	-	-	0.003	-	0.761	1.794
HCM Control Delay (s)	-	-	9.5	-	\$ 385.2	\$ 421.9
HCM Lane LOS	-	-	A	-	F	F
HCM 95th %tile Q(veh)	-	-	0	-	2.1	23.4

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	7.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑					↑		↑
Traffic Vol, veh/h	0	1166	412	1	1104	0	0	0	0	70	0	189
Future Vol, veh/h	0	1166	412	1	1104	0	0	0	0	70	0	189
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1267	448	1	1200	0	0	0	0	76	0	205

Major/Minor	Major1			Major2			Minor2			
Conflicting Flow All	-	0	0	1715	0	0		1836	-	600
Stage 1	-	-	-	-	-	-		1202	-	-
Stage 2	-	-	-	-	-	-		634	-	-
Critical Hdwy	-	-	-	4.14	-	-		6.84	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-		5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.84	-	-
Follow-up Hdwy	-	-	-	2.22	-	-		3.52	-	3.32
Pot Cap-1 Maneuver	0	-	-	366	-	0		~ 67	0	444
Stage 1	0	-	-	-	-	0		247	0	-
Stage 2	0	-	-	-	-	0		491	0	-
Platoon blocked, %	-	-	-	-	-	-		-	-	-
Mov Cap-1 Maneuver	-	-	-	366	-	-		~ 66	0	444
Mov Cap-2 Maneuver	-	-	-	-	-	-		~ 66	0	-
Stage 1	-	-	-	-	-	-		247	0	-
Stage 2	-	-	-	-	-	-		487	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	86.3
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	366	-	66	444
HCM Lane V/C Ratio	-	-	0.003	-	1.153	0.463
HCM Control Delay (s)	-	-	14.9	-	265.6	19.9
HCM Lane LOS	-	-	B	-	F	C
HCM 95th %tile Q(veh)	-	-	0	-	6	2.4

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	45											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑					↑		↑
Traffic Vol, veh/h	0	421	348	2	2217	0	0	0	0	15	0	306
Future Vol, veh/h	0	421	348	2	2217	0	0	0	0	15	0	306
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	458	378	2	2410	0	0	0	0	16	0	333

Major/Minor	Major1			Major2			Minor2			
Conflicting Flow All	-	0	0	836	0	0		2643	-	1205
Stage 1	-	-	-	-	-	-		2414	-	-
Stage 2	-	-	-	-	-	-		229	-	-
Critical Hdwy	-	-	-	4.14	-	-		6.84	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-		5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.84	-	-
Follow-up Hdwy	-	-	-	2.22	-	-		3.52	-	3.32
Pot Cap-1 Maneuver	0	-	-	794	-	0		19	0	~ 176
Stage 1	0	-	-	-	-	0		53	0	-
Stage 2	0	-	-	-	-	0		787	0	-
Platoon blocked, %		-	-	-	-	-				
Mov Cap-1 Maneuver	-	-	-	794	-	-		19	0	~ 176
Mov Cap-2 Maneuver	-	-	-	-	-	-		19	0	-
Stage 1	-	-	-	-	-	-		53	0	-
Stage 2	-	-	-	-	-	-		787	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	\$ 464
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	794	-	19	176
HCM Lane V/C Ratio	-	-	0.003	-	0.858	1.89
HCM Control Delay (s)	-	-	9.5	-	\$ 434.9	\$ 465.4
HCM Lane LOS	-	-	A	-	F	F
HCM 95th %tile Q(veh)	-	-	0	-	2.3	24.6

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	8.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑					↑		↑
Traffic Vol, veh/h	0	1186	416	1	1120	0	0	0	0	72	0	192
Future Vol, veh/h	0	1186	416	1	1120	0	0	0	0	72	0	192
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	-	-	-	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1289	452	1	1217	0	0	0	0	78	0	209

Major/Minor	Major1			Major2			Minor2			
Conflicting Flow All	-	0	0	1741	0	0		1864	-	609
Stage 1	-	-	-	-	-	-		1219	-	-
Stage 2	-	-	-	-	-	-		645	-	-
Critical Hdwy	-	-	-	4.14	-	-		6.84	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-		5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.84	-	-
Follow-up Hdwy	-	-	-	2.22	-	-		3.52	-	3.32
Pot Cap-1 Maneuver	0	-	-	357	-	0		~ 64	0	438
Stage 1	0	-	-	-	-	0		242	0	-
Stage 2	0	-	-	-	-	0		484	0	-
Platoon blocked, %	-	-	-	-	-	-		-	-	-
Mov Cap-1 Maneuver	-	-	-	357	-	-		~ 63	0	438
Mov Cap-2 Maneuver	-	-	-	-	-	-		~ 63	0	-
Stage 1	-	-	-	-	-	-		242	0	-
Stage 2	-	-	-	-	-	-		480	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	97.7
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	357	-	63	438
HCM Lane V/C Ratio	-	-	0.003	-	1.242	0.476
HCM Control Delay (s)	-	-	15.1	-	303.5	20.5
HCM Lane LOS	-	-	C	-	F	C
HCM 95th %tile Q(veh)	-	-	0	-	6.5	2.5

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Queues

58: US-101 SB Ramps & 7th St

10/07/2021



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	825	2363	15	328
v/c Ratio	0.36	1.06	0.04	1.01
Control Delay	2.8	51.6	20.3	79.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.8	51.6	20.3	79.6
Queue Length 50th (ft)	27	~512	5	~112
Queue Length 95th (ft)	46	#643	18	#261
Internal Link Dist (ft)	258	273		
Turn Bay Length (ft)			100	
Base Capacity (vph)	2299	2225	339	325
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.36	1.06	0.04	1.01

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

58: US-101 SB Ramps & 7th St

10/07/2021



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1715	1201	76	205
v/c Ratio	0.71	0.51	0.28	0.64
Control Delay	7.2	5.5	24.3	22.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	7.2	5.5	24.3	22.2
Queue Length 50th (ft)	135	86	24	36
Queue Length 95th (ft)	232	140	55	90
Internal Link Dist (ft)	258	273		
Turn Bay Length (ft)			100	
Base Capacity (vph)	2427	2357	339	381
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.71	0.51	0.22	0.54

Intersection Summary

Queues

58: US-101 SB Ramps & 7th St

10/07/2021



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	836	2412	16	333
v/c Ratio	0.36	1.08	0.05	1.02
Control Delay	2.8	60.2	20.3	83.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.8	60.2	20.3	83.6
Queue Length 50th (ft)	28	~532	5	~117
Queue Length 95th (ft)	47	#664	18	#266
Internal Link Dist (ft)	258	273		
Turn Bay Length (ft)			100	
Base Capacity (vph)	2300	2225	339	325
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.36	1.08	0.05	1.02

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

58: US-101 SB Ramps & 7th St

10/07/2021



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1741	1218	78	209
v/c Ratio	0.72	0.52	0.29	0.65
Control Delay	7.5	5.7	24.3	23.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	7.5	5.7	24.3	23.1
Queue Length 50th (ft)	144	90	25	38
Queue Length 95th (ft)	241	143	56	94
Internal Link Dist (ft)	258	273		
Turn Bay Length (ft)			100	
Base Capacity (vph)	2421	2351	339	379
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.72	0.52	0.23	0.55

Intersection Summary

Alternative 3 Increased Offices

Intersection												
Int Delay, s/veh	40.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑					↑		↑
Traffic Vol, veh/h	0	416	344	2	2171	0	0	0	0	14	0	302
Future Vol, veh/h	0	416	344	2	2171	0	0	0	0	14	0	302
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	452	374	2	2360	0	0	0	0	15	0	328

Major/Minor	Major1			Major2			Minor2			
Conflicting Flow All	-	0	0	826	0	0		2590	-	1180
Stage 1	-	-	-	-	-	-		2364	-	-
Stage 2	-	-	-	-	-	-		226	-	-
Critical Hdwy	-	-	-	4.14	-	-		6.84	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-		5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.84	-	-
Follow-up Hdwy	-	-	-	2.22	-	-		3.52	-	3.32
Pot Cap-1 Maneuver	0	-	-	800	-	0		21	0	~ 183
Stage 1	0	-	-	-	-	0		57	0	-
Stage 2	0	-	-	-	-	0		790	0	-
Platoon blocked, %	-	-	-	-	-	-		-	-	-
Mov Cap-1 Maneuver	-	-	-	800	-	-		21	0	~ 183
Mov Cap-2 Maneuver	-	-	-	-	-	-		21	0	-
Stage 1	-	-	-	-	-	-		57	0	-
Stage 2	-	-	-	-	-	-		790	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	\$ 419.1
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	800	-	21	183
HCM Lane V/C Ratio	-	-	0.003	-	0.725	1.794
HCM Control Delay (s)	-	-	9.5	-	\$ 358.9	\$ 421.9
HCM Lane LOS	-	-	A	-	F	F
HCM 95th %tile Q(veh)	-	-	0	-	2.1	23.4

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	7.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑					↘		↗
Traffic Vol, veh/h	0	1165	412	1	1107	0	0	0	0	70	0	190
Future Vol, veh/h	0	1165	412	1	1107	0	0	0	0	70	0	190
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1266	448	1	1203	0	0	0	0	76	0	207

Major/Minor	Major1			Major2			Minor2				
Conflicting Flow All	-	0	0	1714	0	0			1838	-	602
Stage 1	-	-	-	-	-	-			1205	-	-
Stage 2	-	-	-	-	-	-			633	-	-
Critical Hdwy	-	-	-	4.14	-	-			6.84	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-			5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.84	-	-
Follow-up Hdwy	-	-	-	2.22	-	-			3.52	-	3.32
Pot Cap-1 Maneuver	0	-	-	366	-	0			~ 67	0	443
Stage 1	0	-	-	-	-	0			247	0	-
Stage 2	0	-	-	-	-	0			491	0	-
Platoon blocked, %	-	-	-	-	-	-			-	-	-
Mov Cap-1 Maneuver	-	-	-	366	-	-			~ 66	0	443
Mov Cap-2 Maneuver	-	-	-	-	-	-			~ 66	0	-
Stage 1	-	-	-	-	-	-			247	0	-
Stage 2	-	-	-	-	-	-			487	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	86.1
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	366	-	66	443
HCM Lane V/C Ratio	-	-	0.003	-	1.153	0.466
HCM Control Delay (s)	-	-	14.9	-	265.6	20
HCM Lane LOS	-	-	B	-	F	C
HCM 95th %tile Q(veh)	-	-	0	-	6	2.4

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection												
Int Delay, s/veh	45											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑					↘		↗
Traffic Vol, veh/h	0	422	348	2	2216	0	0	0	0	15	0	306
Future Vol, veh/h	0	422	348	2	2216	0	0	0	0	15	0	306
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	459	378	2	2409	0	0	0	0	16	0	333

Major/Minor	Major1			Major2			Minor2				
Conflicting Flow All	-	0	0	837	0	0			2643	-	1205
Stage 1	-	-	-	-	-	-			2413	-	-
Stage 2	-	-	-	-	-	-			230	-	-
Critical Hdwy	-	-	-	4.14	-	-			6.84	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-			5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.84	-	-
Follow-up Hdwy	-	-	-	2.22	-	-			3.52	-	3.32
Pot Cap-1 Maneuver	0	-	-	793	-	0			19	0	~ 176
Stage 1	0	-	-	-	-	0			53	0	-
Stage 2	0	-	-	-	-	0			786	0	-
Platoon blocked, %	-	-	-	-	-	-			-	-	-
Mov Cap-1 Maneuver	-	-	-	793	-	-			19	0	~ 176
Mov Cap-2 Maneuver	-	-	-	-	-	-			19	0	-
Stage 1	-	-	-	-	-	-			53	0	-
Stage 2	-	-	-	-	-	-			786	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	\$ 464
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	793	-	19	176
HCM Lane V/C Ratio	-	-	0.003	-	0.858	1.89
HCM Control Delay (s)	-	-	9.6	-	\$ 434.9	\$ 465.4
HCM Lane LOS	-	-	A	-	F	F
HCM 95th %tile Q(veh)	-	-	0	-	2.3	24.6

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
58: US-101 SB Ramps & 7th St

03/19/2021

Intersection												
Int Delay, s/veh	8.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑					↘		↗
Traffic Vol, veh/h	0	1185	416	1	1123	0	0	0	0	72	0	193
Future Vol, veh/h	0	1185	416	1	1123	0	0	0	0	72	0	193
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1288	452	1	1221	0	0	0	0	78	0	210

Major/Minor	Major1			Major2			Minor2			
Conflicting Flow All	-	0	0	1740	0	0		1867	-	611
Stage 1	-	-	-	-	-	-		1223	-	-
Stage 2	-	-	-	-	-	-		644	-	-
Critical Hdwy	-	-	-	4.14	-	-		6.84	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-		5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.84	-	-
Follow-up Hdwy	-	-	-	2.22	-	-		3.52	-	3.32
Pot Cap-1 Maneuver	0	-	-	358	-	0		~ 64	0	437
Stage 1	0	-	-	-	-	0		241	0	-
Stage 2	0	-	-	-	-	0		485	0	-
Platoon blocked, %	-	-	-	-	-	-		-	-	-
Mov Cap-1 Maneuver	-	-	-	358	-	-		~ 63	0	437
Mov Cap-2 Maneuver	-	-	-	-	-	-		~ 63	0	-
Stage 1	-	-	-	-	-	-		241	0	-
Stage 2	-	-	-	-	-	-		481	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	97.5
HCM LOS			F

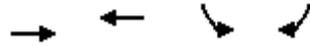
Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	358	-	63	437
HCM Lane V/C Ratio	-	-	0.003	-	1.242	0.48
HCM Control Delay (s)	-	-	15.1	-	303.5	20.6
HCM Lane LOS	-	-	C	-	F	C
HCM 95th %tile Q(veh)	-	-	0	-	6.5	2.5

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Queues

58: US-101 SB Ramps & 7th St

03/19/2021



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	826	2362	15	328
v/c Ratio	0.36	1.06	0.04	1.01
Control Delay	2.8	51.4	20.3	79.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.8	51.4	20.3	79.6
Queue Length 50th (ft)	27	~512	5	~112
Queue Length 95th (ft)	47	#643	18	#261
Internal Link Dist (ft)	258	273		
Turn Bay Length (ft)			100	
Base Capacity (vph)	2299	2225	339	325
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.36	1.06	0.04	1.01

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

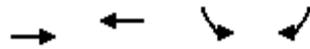
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues

58: US-101 SB Ramps & 7th St

03/19/2021



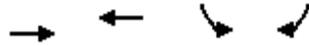
Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1714	1204	76	207
v/c Ratio	0.71	0.51	0.28	0.64
Control Delay	7.2	5.6	24.3	22.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	7.2	5.6	24.3	22.4
Queue Length 50th (ft)	136	86	24	36
Queue Length 95th (ft)	232	140	55	91
Internal Link Dist (ft)	258	273		
Turn Bay Length (ft)			100	
Base Capacity (vph)	2426	2356	339	381
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.71	0.51	0.22	0.54

Intersection Summary

Queues

58: US-101 SB Ramps & 7th St

03/19/2021



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	837	2411	16	333
v/c Ratio	0.36	1.08	0.05	1.02
Control Delay	2.8	60.0	20.3	83.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.8	60.0	20.3	83.6
Queue Length 50th (ft)	28	~532	5	~117
Queue Length 95th (ft)	47	#663	18	#266
Internal Link Dist (ft)	258	273		
Turn Bay Length (ft)			100	
Base Capacity (vph)	2300	2225	339	325
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.36	1.08	0.05	1.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

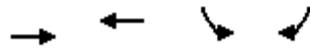
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues

58: US-101 SB Ramps & 7th St

03/19/2021



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1740	1222	78	210
v/c Ratio	0.72	0.52	0.29	0.65
Control Delay	7.5	5.7	24.3	23.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	7.5	5.7	24.3	23.4
Queue Length 50th (ft)	144	90	25	39
Queue Length 95th (ft)	241	143	56	95
Internal Link Dist (ft)	258	273		
Turn Bay Length (ft)			100	
Base Capacity (vph)	2420	2350	339	378
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.72	0.52	0.23	0.56

Intersection Summary

Alternative 4 Reduced Density

HCM 6th TWSC
58: US-101 SB Ramps & 7th St

01/28/2021

Intersection												
Int Delay, s/veh	40.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑					↑		↑
Traffic Vol, veh/h	0	407	343	2	2168	0	0	0	0	14	0	301
Future Vol, veh/h	0	407	343	2	2168	0	0	0	0	14	0	301
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	442	373	2	2357	0	0	0	0	15	0	327

Major/Minor	Major1			Major2			Minor2			
Conflicting Flow All	-	0	0	815	0	0		2582	-	1179
Stage 1	-	-	-	-	-	-		2361	-	-
Stage 2	-	-	-	-	-	-		221	-	-
Critical Hdwy	-	-	-	4.14	-	-		6.84	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-		5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.84	-	-
Follow-up Hdwy	-	-	-	2.22	-	-		3.52	-	3.32
Pot Cap-1 Maneuver	0	-	-	808	-	0		21	0	~ 183
Stage 1	0	-	-	-	-	0		57	0	-
Stage 2	0	-	-	-	-	0		795	0	-
Platoon blocked, %	-	-	-	-	-	-		-	-	-
Mov Cap-1 Maneuver	-	-	-	808	-	-		21	0	~ 183
Mov Cap-2 Maneuver	-	-	-	-	-	-		21	0	-
Stage 1	-	-	-	-	-	-		57	0	-
Stage 2	-	-	-	-	-	-		795	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	\$ 416.6
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	808	-	21	183
HCM Lane V/C Ratio	-	-	0.003	-	0.725	1.788
HCM Control Delay (s)	-	-	9.5	-	\$ 358.9	\$ 419.3
HCM Lane LOS	-	-	A	-	F	F
HCM 95th %tile Q(veh)	-	-	0	-	2.1	23.3

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
58: US-101 SB Ramps & 7th St

01/28/2021

Intersection												
Int Delay, s/veh	7.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑					↘		↗
Traffic Vol, veh/h	0	1160	411	1	1093	0	0	0	0	70	0	187
Future Vol, veh/h	0	1160	411	1	1093	0	0	0	0	70	0	187
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1261	447	1	1188	0	0	0	0	76	0	203

Major/Minor	Major1			Major2			Minor2				
Conflicting Flow All	-	0	0	1708	0	0			1821	-	594
Stage 1	-	-	-	-	-	-			1190	-	-
Stage 2	-	-	-	-	-	-			631	-	-
Critical Hdwy	-	-	-	4.14	-	-			6.84	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-			5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.84	-	-
Follow-up Hdwy	-	-	-	2.22	-	-			3.52	-	3.32
Pot Cap-1 Maneuver	0	-	-	368	-	0			~ 69	0	448
Stage 1	0	-	-	-	-	0			251	0	-
Stage 2	0	-	-	-	-	0			492	0	-
Platoon blocked, %		-	-	-	-	-					
Mov Cap-1 Maneuver	-	-	-	368	-	-			~ 68	0	448
Mov Cap-2 Maneuver	-	-	-	-	-	-			~ 68	0	-
Stage 1	-	-	-	-	-	-			251	0	-
Stage 2	-	-	-	-	-	-			488	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	82.3
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	368	-	68	448
HCM Lane V/C Ratio	-	-	0.003	-	1.119	0.454
HCM Control Delay (s)	-	-	14.8	-	250.1	19.5
HCM Lane LOS	-	-	B	-	F	C
HCM 95th %tile Q(veh)	-	-	0	-	5.9	2.3

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
58: US-101 SB Ramps & 7th St

01/28/2021

Intersection												
Int Delay, s/veh	44.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑					↑		↑
Traffic Vol, veh/h	0	413	347	2	2213	0	0	0	0	15	0	305
Future Vol, veh/h	0	413	347	2	2213	0	0	0	0	15	0	305
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	449	377	2	2405	0	0	0	0	16	0	332

Major/Minor	Major1			Major2			Minor2				
Conflicting Flow All	-	0	0	826	0	0			2634	-	1203
Stage 1	-	-	-	-	-	-			2409	-	-
Stage 2	-	-	-	-	-	-			225	-	-
Critical Hdwy	-	-	-	4.14	-	-			6.84	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-			5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.84	-	-
Follow-up Hdwy	-	-	-	2.22	-	-			3.52	-	3.32
Pot Cap-1 Maneuver	0	-	-	800	-	0			19	0	~ 177
Stage 1	0	-	-	-	-	0			53	0	-
Stage 2	0	-	-	-	-	0			791	0	-
Platoon blocked, %		-	-	-	-	-					
Mov Cap-1 Maneuver	-	-	-	800	-	-			19	0	~ 177
Mov Cap-2 Maneuver	-	-	-	-	-	-			19	0	-
Stage 1	-	-	-	-	-	-			53	0	-
Stage 2	-	-	-	-	-	-			791	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	\$ 456.7
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	800	-	19	177
HCM Lane V/C Ratio	-	-	0.003	-	0.858	1.873
HCM Control Delay (s)	-	-	9.5	-	\$ 434.9	\$ 457.8
HCM Lane LOS	-	-	A	-	F	F
HCM 95th %tile Q(veh)	-	-	0	-	2.3	24.4

Notes
 -: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
58: US-101 SB Ramps & 7th St

01/28/2021

Intersection												
Int Delay, s/veh	8.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑			↑↑					↑		↑
Traffic Vol, veh/h	0	1180	415	1	1109	0	0	0	0	72	0	190
Future Vol, veh/h	0	1180	415	1	1109	0	0	0	0	72	0	190
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	100	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1283	451	1	1205	0	0	0	0	78	0	207

Major/Minor	Major1			Major2			Minor2			
Conflicting Flow All	-	0	0	1734	0	0		1849	-	603
Stage 1	-	-	-	-	-	-		1207	-	-
Stage 2	-	-	-	-	-	-		642	-	-
Critical Hdwy	-	-	-	4.14	-	-		6.84	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-		5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-		5.84	-	-
Follow-up Hdwy	-	-	-	2.22	-	-		3.52	-	3.32
Pot Cap-1 Maneuver	0	-	-	359	-	0		~ 66	0	442
Stage 1	0	-	-	-	-	0		246	0	-
Stage 2	0	-	-	-	-	0		486	0	-
Platoon blocked, %		-	-	-	-	-				
Mov Cap-1 Maneuver	-	-	-	359	-	-		~ 65	0	442
Mov Cap-2 Maneuver	-	-	-	-	-	-		~ 65	0	-
Stage 1	-	-	-	-	-	-		246	0	-
Stage 2	-	-	-	-	-	-		482	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	93
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	359	-	65	442
HCM Lane V/C Ratio	-	-	0.003	-	1.204	0.467
HCM Control Delay (s)	-	-	15.1	-	285.5	20.1
HCM Lane LOS	-	-	C	-	F	C
HCM 95th %tile Q(veh)	-	-	0	-	6.3	2.4

Notes
 -: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Queues

58: US-101 SB Ramps & 7th St

01/28/2021



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	815	2359	15	327
v/c Ratio	0.35	1.06	0.04	1.01
Control Delay	2.8	50.9	20.3	78.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.8	50.9	20.3	78.8
Queue Length 50th (ft)	26	~510	5	~111
Queue Length 95th (ft)	46	#642	18	#259
Internal Link Dist (ft)	258	273		
Turn Bay Length (ft)			100	
Base Capacity (vph)	2296	2225	339	325
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.35	1.06	0.04	1.01

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

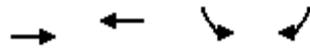
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Queues

58: US-101 SB Ramps & 7th St

01/28/2021



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1708	1189	76	203
v/c Ratio	0.70	0.50	0.29	0.63
Control Delay	7.1	5.5	24.4	21.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	7.1	5.5	24.4	21.5
Queue Length 50th (ft)	132	83	25	34
Queue Length 95th (ft)	230	137	55	88
Internal Link Dist (ft)	258	273		
Turn Bay Length (ft)			100	
Base Capacity (vph)	2431	2362	339	384
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.70	0.50	0.22	0.53

Intersection Summary

Queues

58: US-101 SB Ramps & 7th St

01/28/2021



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	826	2407	16	332
v/c Ratio	0.36	1.08	0.05	1.02
Control Delay	2.8	59.3	20.3	82.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.8	59.3	20.3	82.8
Queue Length 50th (ft)	27	~530	5	~116
Queue Length 95th (ft)	46	#662	18	#265
Internal Link Dist (ft)	258	273		
Turn Bay Length (ft)			100	
Base Capacity (vph)	2300	2225	339	325
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.36	1.08	0.05	1.02

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

58: US-101 SB Ramps & 7th St

01/28/2021



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1734	1206	78	207
v/c Ratio	0.72	0.51	0.29	0.64
Control Delay	7.4	5.6	24.4	22.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	7.4	5.6	24.4	22.5
Queue Length 50th (ft)	140	86	25	37
Queue Length 95th (ft)	238	140	56	92
Internal Link Dist (ft)	258	273		
Turn Bay Length (ft)			100	
Base Capacity (vph)	2424	2355	339	381
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.72	0.51	0.23	0.54

Intersection Summary

Attachment B
VMT Analysis Worksheets

Project Alternative 2

CITY OF LOS ANGELES VMT CALCULATOR Version 1.3



Project Screening Criteria: Is this project required to conduct a vehicle miles traveled analysis?

Project Information

Project:

Scenario:

Address:



Is the project replacing an existing number of residential units with a smaller number of residential units AND is located within one-half mile of a fixed-rail or fixed-guideway transit

Yes No

Existing Land Use

Land Use Type	Value	Unit
Industrial Warehousing/Self-Storage	205.4	ksf

[Click here to add a single custom land use type \(will be included in the above list\)](#)

Proposed Project Land Use

Land Use Type	Value	Unit
School Elementary		Students
Housing Multi-Family	353	DU
Housing Hotel	236	Rooms
Retail General Retail	11.664	ksf
Retail Supermarket	4.683	ksf
Retail Health Club	114.106	ksf
Retail High-Turnover Sit-Down Restaurant	29.85	ksf
Retail Quality Restaurant	29.85	ksf
Office General Office	1002.816	ksf
School Elementary	300	Students
Housing Affordable Housing - Family	67	DU

[Click here to add a single custom land use type \(will be included in the above list\)](#)

Project Screening Summary

Existing Land Use	Proposed
428 Daily Vehicle Trips	18,449 Daily Vehicle Trips
3,135 Daily VMT	133,839 Daily VMT
Tier 1 Screening Criteria	
Project will have less residential units compared to existing residential units & is within one-half mile of a fixed-rail station. <input type="checkbox"/>	
Tier 2 Screening Criteria	
The net increase in daily trips < 250 trips	18,021 Net Daily Trips
The net increase in daily VMT ≤ 0	130,704 Net Daily VMT
The proposed project consists of only retail land uses ≤ 50,000 square feet total.	190.153 ksf
The proposed project is required to perform VMT analysis.	



CITY OF LOS ANGELES VMT CALCULATOR Version 1.3



Project Information

Project: 670 Mesquit
 Scenario: Project Alternative 2
 Address: 670 S MESQUIT ST, 90021



Proposed Project Land Use Type	Value	Unit
Housing Multi-Family	353	DU
Housing Hotel	236	Rooms
Retail General Retail	11.664	ksf
Retail Supermarket	4.683	ksf
Retail Health Club	114.106	ksf
Retail High-Turnover Sit-Down Restaurant	29.85	ksf
Retail Quality Restaurant	29.85	ksf
Office General Office	1002.816	ksf
School Elementary	300	Students
Housing Affordable Housing - Family	67	DU

TDM Strategies

Select each section to show individual strategies
 Use to denote if the TDM strategy is part of the proposed project or is a mitigation strategy

	Proposed Project	With Mitigation
Max Home Based TDM Achieved?	No	No
Max Work Based TDM Achieved?	No	No

A Parking

Proposed Prj Mitigation

Reduce Parking Supply: 100 city code parking provision for the project site
 74 actual parking provision for the project site

Unbundle Parking: 125 monthly parking cost (dollar) for the project site
 Proposed Prj Mitigation

Parking Cash-Out: 50 percent of employees eligible
 Proposed Prj Mitigation

Price Workplace Parking: 6.00 daily parking charge (dollar)
 50 percent of employees subject to priced parking
 Proposed Prj Mitigation

Residential Area Parking Permits: 200 cost (dollar) of annual permit
 Proposed Prj Mitigation

- B** Transit
- C** Education & Encouragement
- D** Commute Trip Reductions
- E** Shared Mobility
- F** Bicycle Infrastructure
- G** Neighborhood Enhancement

Analysis Results

Proposed Project	With
17,855 Daily Vehicle Trips	17,855 Daily Vehicle Trips
129,528 Daily VMT	129,528 Daily VMT
4.4 Household VMT per Capita	4.4 Household VMT
6.2 Work VMT per Employee	6.2 Work VMT per Employee
Significant VMT Impact?	
Household: No Threshold = 6.0 15% Below APC	Household: No Threshold = 6.0 15% Below APC
Work: No Threshold = 7.6 15% Below APC	Work: No Threshold = 7.6 15% Below APC



CITY OF LOS ANGELES VMT CALCULATOR

Report 1: Project & Analysis Overview

Date: October 7, 2021

Project Name: 670 Mesquit

Project Scenario: Project Alternative 2

Project Address: 670 S MESQUIT ST, 90021



Version 1.3

Project Information			
Land Use Type		Value	Units
Housing	<i>Single Family</i>	0	DU
	Multi Family	353	DU
	<i>Townhouse</i>	0	DU
	Hotel	236	Rooms
	<i>Motel</i>	0	Rooms
Affordable Housing	Family	67	DU
	<i>Senior</i>	0	DU
	<i>Special Needs</i>	0	DU
	<i>Permanent Supportive</i>	0	DU
Retail	General Retail	11.664	ksf
	<i>Furniture Store</i>	0.000	ksf
	<i>Pharmacy/Drugstore</i>	0.000	ksf
	Supermarket	4.683	ksf
	<i>Bank</i>	0.000	ksf
	Health Club	114.106	ksf
	High-Turnover Sit-Down Restaurant	29.850	ksf
	<i>Fast-Food Restaurant</i>	0.000	ksf
	Quality Restaurant	29.850	ksf
	<i>Auto Repair</i>	0.000	ksf
	<i>Home Improvement</i>	0.000	ksf
	<i>Free-Standing Discount</i>	0.000	ksf
	<i>Movie Theater</i>	0	Seats
Office	General Office	1,002.816	ksf
	<i>Medical Office</i>	0.000	ksf
Industrial	<i>Light Industrial</i>	0.000	ksf
	<i>Manufacturing</i>	0.000	ksf
	<i>Warehousing/Self-Storage</i>	0.000	ksf
School	<i>University</i>	0	Students
	<i>High School</i>	0	Students
	<i>Middle School</i>	0	Students
	Elementary	300	Students
	<i>Private School (K-12)</i>	0	Students
Other		0	Trips

CITY OF LOS ANGELES VMT CALCULATOR

Report 1: Project & Analysis Overview

Date: October 7, 2021

Project Name: 670 Mesquit

Project Scenario: Project Alternative 2

Project Address: 670 S MESQUIT ST, 90021



Version 1.3

Analysis Results			
Total Employees: 4,554 Total Population: 1,006			
Proposed Project		With Mitigation	
17,855	Daily Vehicle Trips	17,855	Daily Vehicle Trips
129,528	Daily VMT	129,528	Daily VMT
4.4	Household VMT per Capita	4.4	Household VMT per Capita
6.2	Work VMT per Employee	6.2	Work VMT per Employee
Significant VMT Impact?			
APC: Central			
Impact Threshold: 15% Below APC Average Household = 6.0 Work = 7.6			
Proposed Project		With Mitigation	
VMT Threshold	Impact	VMT Threshold	Impact
Household > 6.0	No	Household > 6.0	No
Work > 7.6	No	Work > 7.6	No

CITY OF LOS ANGELES VMT CALCULATOR

Report 2: TDM Inputs

Date: October 7, 2021

Project Name: 670 Mesquit

Project Scenario: Project Alternative 2

Project Address: 670 S MESQUIT ST, 90021



Version 1.3

TDM Strategy Inputs				
Strategy Type	Description	Proposed Project	Mitigations	
Parking	Reduce parking supply	City code parking provision (spaces)	0	0
		Actual parking provision (spaces)	0	0
	Unbundle parking	Monthly cost for parking (\$)	\$0	\$0
	Parking cash-out	Employees eligible (%)	0%	0%
	Price workplace parking	Daily parking charge (\$)	\$0.00	\$0.00
		Employees subject to priced parking (%)	0%	0%
	Residential area parking permits	Cost of annual permit (\$)	\$0	\$0
(cont. on following page)				

CITY OF LOS ANGELES VMT CALCULATOR

Report 2: TDM Inputs

Date: October 7, 2021

Project Name: 670 Mesquit

Project Scenario: Project Alternative 2

Project Address: 670 S MESQUIT ST, 90021



Version 1.3

TDM Strategy Inputs, Cont.				
Strategy Type	Description	Proposed Project	Mitigations	
Transit	<i>Reduce transit headways</i>	<i>Reduction in headways (increase in frequency) (%)</i>	0%	
		<i>Existing transit mode share (as a percent of total daily trips) (%)</i>	0%	
		<i>Lines within project site improved (<50%, >=50%)</i>	0	
	<i>Implement neighborhood shuttle</i>	<i>Degree of implementation (low, medium, high)</i>	0	0
		<i>Employees and residents eligible (%)</i>	0%	0%
	<i>Transit subsidies</i>	<i>Employees and residents eligible (%)</i>	0%	0%
<i>Amount of transit subsidy per passenger (daily equivalent) (\$)</i>		\$0.00	\$0.00	
Education & Encouragement	<i>Voluntary travel behavior change program</i>	<i>Employees and residents participating (%)</i>	0%	
	<i>Promotions and marketing</i>	<i>Employees and residents participating (%)</i>	0%	
(cont. on following page)				

CITY OF LOS ANGELES VMT CALCULATOR

Report 2: TDM Inputs

Date: October 7, 2021

Project Name: 670 Mesquit

Project Scenario: Project Alternative 2

Project Address: 670 S MESQUIT ST, 90021



Version 1.3

TDM Strategy Inputs, Cont.				
Strategy Type		Description	Proposed Project	Mitigations
Commuter Trip Reductions	<i>Required commute trip reduction program</i>	<i>Employees participating (%)</i>	0%	0%
	<i>Alternative Work Schedules and Telecommute</i>	<i>Employees participating (%)</i>	0%	0%
		<i>Type of program</i>	0	0
		<i>Degree of implementation (low, medium, high)</i>	0	0
	<i>Employer sponsored vanpool or shuttle</i>	<i>Employees eligible (%)</i>	0%	0%
		<i>Employer size (small, medium, large)</i>	0	0
	<i>Ride-share program</i>	<i>Employees eligible (%)</i>	0%	0%
Shared Mobility	<i>Car share</i>	<i>Car share project setting (Urban, Suburban, All Other)</i>	0	0
	<i>Bike share</i>	<i>Within 600 feet of existing bike share station - OR- implementing new bike share station (Yes/No)</i>	0	0
	<i>School carpool program</i>	<i>Level of implementation (Low, Medium, High)</i>	0	0
(cont. on following page)				

CITY OF LOS ANGELES VMT CALCULATOR

Report 2: TDM Inputs

Date: October 7, 2021

Project Name: 670 Mesquit

Project Scenario: Project Alternative 2

Project Address: 670 S MESQUIT ST, 90021



Version 1.3

TDM Strategy Inputs, Cont.			
Strategy Type	Description	Proposed Project	Mitigations
Bicycle Infrastructure	<i>Implement/Improve on-street bicycle facility</i>	<i>Provide bicycle facility along site (Yes/No)</i>	<i>0</i>
	Include Bike parking per LAMC	Meets City Bike Parking Code (Yes/No)	Yes
	Include secure bike parking and showers	Includes indoor bike parking/lockers, showers, & repair station (Yes/No)	Yes
Neighborhood Enhancement	<i>Traffic calming improvements</i>	<i>Streets with traffic calming improvements (%)</i>	<i>0%</i>
		<i>Intersections with traffic calming improvements (%)</i>	<i>0%</i>
	Pedestrian network improvements	Included (within project and connecting off-site/within project only)	within project and connecting off-site

CITY OF LOS ANGELES VMT CALCULATOR

Report 3: TDM Outputs

Date: October 7, 2021
 Project Name: 670 Mesquit
 Project Scenario: Project Alternative 2
 Project Address: 670 S MESQUIT ST, 90021



Version 1.3

TDM Adjustments by Trip Purpose & Strategy														
Place type: Suburban Center														
		Home Based Work Production		Home Based Work Attraction		Home Based Other Production		Home Based Other Attraction		Non-Home Based Other Production		Non-Home Based Other Attraction		Source
		Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	
Parking	Reduce parking supply	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	TDM Strategy Appendix, Parking sections 1 - 5
	Unbundle parking	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	Parking cash-out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	Price workplace parking	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	Residential area parking permits	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Transit	Reduce transit headways	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	TDM Strategy Appendix, Transit sections 1 - 3
	Implement neighborhood shuttle	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	Transit subsidies	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Education & Encouragement	Voluntary travel behavior change program	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	TDM Strategy Appendix, Education & Encouragement sections 1 - 2
	Promotions and marketing	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Commute Trip Reductions	Required commute trip reduction program	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	TDM Strategy Appendix, Commute Trip Reductions sections 1 - 4
	Alternative Work Schedules and Telecommute Program	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	Employer sponsored vanpool or shuttle	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	Ride-share program	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Shared Mobility	Car-share	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	TDM Strategy Appendix, Shared Mobility sections 1 - 3
	Bike share	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	School carpool program	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

CITY OF LOS ANGELES VMT CALCULATOR

Report 3: TDM Outputs

Date: October 7, 2021

Project Name: 670 Mesquit
 Project Scenario: Project Alternative 2
 Project Address: 670 S MESQUIT ST, 90021



Version 1.3

TDM Adjustments by Trip Purpose & Strategy, Cont.

Place type: Suburban Center

		Home Based Work Production		Home Based Work Attraction		Home Based Other Production		Home Based Other Attraction		Non-Home Based Other Production		Non-Home Based Other Attraction		Source
		Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	
		Bicycle Infrastructure	Implement/ Improve on-street bicycle facility	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	Include Bike parking per LAMC	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	
	Include secure bike parking and showers	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	
Neighborhood Enhancement	Traffic calming improvements	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	TDM Strategy Appendix, Neighborhood Enhancement
	Pedestrian network improvements	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	

Final Combined & Maximum TDM Effect

	Home Based Work Production		Home Based Work Attraction		Home Based Other Production		Home Based Other Attraction		Non-Home Based Other Production		Non-Home Based Other Attraction	
	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated
	COMBINED TOTAL	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
MAX. TDM EFFECT	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%

$$= \text{Minimum}(X\%, 1 - [(1-A) * (1-B)...])$$

where X%=

PLACE	urban	75%
TYPE	compact infill	40%
MAX:	suburban center	20%
	suburban	15%

Note: $(1 - [(1-A) * (1-B)...])$ reflects the dampened combined effectiveness of TDM Strategies (e.g., A, B,...). See the TDM Strategy Appendix (*Transportation Assessment Guidelines Attachment G*) for further discussion of dampening.

CITY OF LOS ANGELES VMT CALCULATOR

Report 4: MXD Methodology

Date: October 7, 2021

Project Name: 670 Mesquit

Project Scenario: Project Alternative 2

Project Address: 670 S MESQUIT ST, 90021



Version 1.3

MXD Methodology - Project Without TDM

	Unadjusted Trips	MXD Adjustment	MXD Trips	Average Trip Length	Unadjusted VMT	MXD VMT
Home Based Work Production	373	-55.2%	167	7.4	2,760	1,236
Home Based Other Production	1,033	-38.2%	638	5.3	5,475	3,381
Non-Home Based Other Production	4,062	-4.5%	3,880	7.9	32,090	30,652
Home-Based Work Attraction	4,768	-26.8%	3,492	8.4	40,051	29,333
Home-Based Other Attraction	9,665	-30.2%	6,745	6.5	62,823	43,843
Non-Home Based Other Attraction	3,697	-4.6%	3,527	7.2	26,618	25,394

MXD Methodology with TDM Measures

	<i>Proposed Project</i>			<i>Project with Mitigation Measures</i>		
	TDM Adjustment	Project Trips	Project VMT	TDM Adjustment	Mitigated Trips	Mitigated VMT
Home Based Work Production	-3.2%	162	1,196	-3.2%	162	1,196
Home Based Other Production	-3.2%	617	3,272	-3.2%	617	3,272
Non-Home Based Other Production	-3.2%	3,755	29,665	-3.2%	3,755	29,665
Home-Based Work Attraction	-3.2%	3,380	28,388	-3.2%	3,380	28,388
Home-Based Other Attraction	-3.2%	6,528	42,431	-3.2%	6,528	42,431
Non-Home Based Other Attraction	-3.2%	3,413	24,576	-3.2%	3,413	24,576

MXD VMT Methodology Per Capita & Per Employee

Total Population: 1,006

Total Employees: 4,554

APC: Central

	<i>Proposed Project</i>	<i>Project with Mitigation Measures</i>
<i>Total Home Based Production VMT</i>	4,468	4,468
<i>Total Home Based Work Attraction VMT</i>	28,388	28,388
<i>Total Home Based VMT Per Capita</i>	4.4	4.4
<i>Total Work Based VMT Per Employee</i>	6.2	6.2

CITY OF LOS ANGELES VMT CALCULATOR Version 1.3



Project Screening Criteria: Is this project required to conduct a vehicle miles traveled analysis?

Project Information

Project: 670 Mesquit
 Scenario: Project Alternative 3
 Address: 670 S MESQUIT ST, 90021



Is the project replacing an existing number of residential units with a smaller number of residential units AND is located within one-half mile of a fixed-rail or fixed-guideway transit station?

Yes No

Existing Land Use

Unit	Value	Land Use Type
205.4 ksf	205.4	Industrial Warehousing/Self-Storage
205.4 ksf	205.4	Industrial Warehousing/Self-Storage

Click here to add a single custom land use type (will be included in the above list)

Proposed Project Land Use

Unit	Value	Land Use Type
353 DU	353	Housing Multi-Family
236 Rooms	236	Housing Hotel
14,208 ksf	14,208	Retail General Retail
4,683 ksf	4,683	Retail Supermarket
1,45,815 ksf	1,45,815	Retail Health Club
33 ksf	33	Retail High-Turnover Sit-Down Restaurant
33 ksf	33	Retail Quality Restaurant
973,153 ksf	973,153	Office General Office
67 DU	67	Housing Affordable Housing - Family
353 DU	353	Housing Multi-Family

Click here to add a single custom land use type (will be included in the above list)

Project Screening Summary

Existing Land Use	Proposed
428 Daily Vehicle Trips	19,528 Daily Vehicle Trips
3,135 Daily VMT	141,512 Daily VMT

Tier 1 Screening Criteria
 Project will have less residential units compared to existing residential units & is within one-half mile of a fixed-rail station.

Tier 2 Screening Criteria

The net increase in daily trips > 250 trips
 Net Daily Trips: 19,100

The net increase in daily VMT ≤ 0
 Net Daily VMT: 138,377

The proposed project consists of only retail land uses ≤ 50,000 square feet total.
 Net Daily VMT: 230,706 ksf

The proposed project is required to perform VMT analysis.

CITY OF LOS ANGELES VMT CALCULATOR Version 1.3



Project Information

Project:

Scenario:

Address:



TDM Strategies

Select each section to show individual strategies
Use to denote if the TDM strategy is part of the proposed project or is a mitigation strategy

	Proposed Project	With Mitigation
Max Home Based TDM Achieved?	No	Yes
Max Work Based TDM Achieved?	No	Yes

- A** Parking
- B** Transit
- C** Education & Encouragement
- D** Commute Trip Reductions
- E** Shared Mobility
- F** Bicycle Infrastructure
- G** Neighborhood Enhancement
 - Traffic Calming Improvements: Proposed Prj Mitigation. Value: 25 percent of streets within project with traffic calming improvements.
 - Traffic Calming Improvements: Proposed Prj Mitigation. Value: 25 percent of intersections within project with traffic calming improvements.
 - Pedestrian Network Improvements: Proposed Prj Mitigation. Value: within project and connecting off-site.

Analysis Results

Proposed Project	With Mitigation
18,899 Daily Vehicle Trips	17,008 Daily Vehicle Trips
136,954 Daily VMT	122,997 Daily VMT
4.4 Household VMT per Capita	3.7 Household VMT per Capita
6.3 Work VMT per Employee	5.2 Work VMT per Employee
Significant VMT Impact?	
Household: No Threshold = 6.0 15% Below APC	Household: No Threshold = 6.0 15% Below APC
Work: No Threshold = 7.6 15% Below APC	Work: No Threshold = 7.6 15% Below APC

Proposed Project Land Use Type

Proposed Project Land Use Type	Value	Unit
Housing Hotel	236	Rooms
Retail General Retail	14.208	ksf
Retail Supermarket	4.683	ksf
Retail Health Club	145.815	ksf
Retail High-Turnover Sit-Down Restaurant	33	ksf
Retail Quality Restaurant	33	ksf
Office General Office	973.153	ksf
Housing Affordable Housing - Family	67	DU
Housing Multi-Family	353	DU



CITY OF LOS ANGELES VMT CALCULATOR

Report 1: Project & Analysis Overview

Date: April 2, 2021

Project Name: 670 Mesquit

Project Scenario: Project Alternative 3

Project Address: 670 S MESQUIT ST, 90021



Version 1.3

Project Information			
	Land Use Type	Value	Units
Housing	<i>Single Family</i>	0	DU
	Multi Family	353	DU
	<i>Townhouse</i>	0	DU
	Hotel	236	Rooms
	<i>Motel</i>	0	Rooms
Affordable Housing	Family	67	DU
	<i>Senior</i>	0	DU
	<i>Special Needs</i>	0	DU
	<i>Permanent Supportive</i>	0	DU
Retail	General Retail	14.208	ksf
	<i>Furniture Store</i>	0.000	ksf
	<i>Pharmacy/Drugstore</i>	0.000	ksf
	Supermarket	4.683	ksf
	<i>Bank</i>	0.000	ksf
	Health Club	145.815	ksf
	High-Turnover Sit-Down Restaurant	33.000	ksf
	<i>Fast-Food Restaurant</i>	0.000	ksf
	Quality Restaurant	33.000	ksf
	<i>Auto Repair</i>	0.000	ksf
	<i>Home Improvement</i>	0.000	ksf
	<i>Free-Standing Discount</i>	0.000	ksf
	<i>Movie Theater</i>	0	Seats
Office	General Office	973.153	ksf
	<i>Medical Office</i>	0.000	ksf
<i>Industrial</i>	<i>Light Industrial</i>	0.000	ksf
	<i>Manufacturing</i>	0.000	ksf
	<i>Warehousing/Self-Storage</i>	0.000	ksf
School	<i>University</i>	0	Students
	<i>High School</i>	0	Students
	<i>Middle School</i>	0	Students
	<i>Elementary</i>	0	Students
	<i>Private School (K-12)</i>	0	Students
<i>Other</i>		0	Trips

CITY OF LOS ANGELES VMT CALCULATOR

Report 1: Project & Analysis Overview

Date: April 2, 2021

Project Name: 670 Mesquit

Project Scenario: Project Alternative 3

Project Address: 670 S MESQUIT ST, 90021



Version 1.3

Analysis Results			
Total Employees: 4,468			
Total Population: 1,006			
Proposed Project		With Mitigation	
18,899	Daily Vehicle Trips	17,008	Daily Vehicle Trips
136,954	Daily VMT	122,997	Daily VMT
4.4	Household VMT per Capita	3.7	Household VMT per Capita
6.3	Work VMT per Employee	5.2	Work VMT per Employee
Significant VMT Impact?			
APC: Central			
Impact Threshold: 15% Below APC Average			
Household = 6.0			
Work = 7.6			
Proposed Project		With Mitigation	
VMT Threshold	Impact	VMT Threshold	Impact
Household > 6.0	No	Household > 6.0	No
Work > 7.6	No	Work > 7.6	No

CITY OF LOS ANGELES VMT CALCULATOR

Report 2: TDM Inputs

Date: April 2, 2021

Project Name: 670 Mesquit

Project Scenario: Project Alternative 3

Project Address: 670 S MESQUIT ST, 90021



Version 1.3

TDM Strategy Inputs				
Strategy Type	Description	Proposed Project	Mitigations	
Parking	<i>Reduce parking supply</i>	<i>City code parking provision (spaces)</i>	0	
		<i>Actual parking provision (spaces)</i>	0	
	Unbundle parking	Monthly cost for parking (\$)	\$0	\$125
	Parking cash-out	Employees eligible (%)	0%	50%
	Price workplace parking	Daily parking charge (\$)	\$0.00	\$6.00
		Employees subject to priced parking (%)	0%	50%
<i>Residential area parking permits</i>	<i>Cost of annual permit (\$)</i>	\$0	\$0	
(cont. on following page)				

CITY OF LOS ANGELES VMT CALCULATOR

Report 2: TDM Inputs

Date: April 2, 2021

Project Name: 670 Mesquit

Project Scenario: Project Alternative 3

Project Address: 670 S MESQUIT ST, 90021



Version 1.3

TDM Strategy Inputs, Cont.				
Strategy Type	Description	Proposed Project	Mitigations	
Transit	<i>Reduce transit headways</i>	<i>Reduction in headways (increase in frequency) (%)</i>	0%	
		<i>Existing transit mode share (as a percent of total daily trips) (%)</i>	0%	
		<i>Lines within project site improved (<50%, >=50%)</i>	0	
	<i>Implement neighborhood shuttle</i>	<i>Degree of implementation (low, medium, high)</i>	0	0
		<i>Employees and residents eligible (%)</i>	0%	0%
	Transit subsidies	Employees and residents eligible (%)	0%	100%
		Amount of transit subsidy per passenger (daily equivalent) (\$)	\$0.00	\$0.75
Education & Encouragement	<i>Voluntary travel behavior change program</i>	<i>Employees and residents participating (%)</i>	0%	
	Promotions and marketing	Employees and residents participating (%)	100%	
(cont. on following page)				

CITY OF LOS ANGELES VMT CALCULATOR

Report 2: TDM Inputs

Date: April 2, 2021

Project Name: 670 Mesquit

Project Scenario: Project Alternative 3

Project Address: 670 S MESQUIT ST, 90021



Version 1.3

TDM Strategy Inputs, Cont.				
Strategy Type		Description	Proposed Project	Mitigations
Commute Trip Reductions	Required commute trip reduction program	Employees participating (%)	0%	90%
	Alternative Work Schedules and Telecommute	Employees participating (%)	0%	0%
		Type of program	0	0
	Employer sponsored vanpool or shuttle	Degree of implementation (low, medium, high)	0	0
		Employees eligible (%)	0%	0%
		Employer size (small, medium, large)	0	0
Ride-share program	Employees eligible (%)	0%	0%	
Shared Mobility	Car share	Car share project setting (Urban, Suburban, All Other)	0	Urban + Comprehensive Transit
	Bike share	Within 600 feet of existing bike share station - OR- implementing new bike share station (Yes/No)	0	Yes
	School carpool program	Level of implementation (Low, Medium, High)	0	0
(cont. on following page)				

CITY OF LOS ANGELES VMT CALCULATOR

Report 2: TDM Inputs

Date: April 2, 2021

Project Name: 670 Mesquit

Project Scenario: Project Alternative 3

Project Address: 670 S MESQUIT ST, 90021



Version 1.3

TDM Strategy Inputs, Cont.				
Strategy Type		Description	Proposed Project	Mitigations
Bicycle Infrastructure	<i>Implement/Improve on-street bicycle facility</i>	<i>Provide bicycle facility along site (Yes/No)</i>	0	0
	Include Bike parking per LAMC	Meets City Bike Parking Code (Yes/No)	Yes	Yes
	Include secure bike parking and showers	Includes indoor bike parking/lockers, showers, & repair station (Yes/No)	Yes	Yes
Neighborhood Enhancement	<i>Traffic calming improvements</i>	<i>Streets with traffic calming improvements (%)</i>	0%	0%
		<i>Intersections with traffic calming improvements (%)</i>	0%	0%
	Pedestrian network improvements	Included (within project and connecting off-site/within project only)	within project and connecting off-site	within project and connecting off-site

CITY OF LOS ANGELES VMT CALCULATOR

Report 3: TDM Outputs

Date: April 2, 2021
 Project Name: 670 Mesquit
 Project Scenario: Project Alternative 3
 Project Address: 670 S MESQUIT ST, 90021



Version 1.3

TDM Adjustments by Trip Purpose & Strategy														
Place type: Suburban Center														
		Home Based Work Production		Home Based Work Attraction		Home Based Other Production		Home Based Other Attraction		Non-Home Based Other Production		Non-Home Based Other Attraction		Source
		Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	
		Parking	Reduce parking supply	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Unbundle parking	0%		15%	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	
Parking cash-out	0%		0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	
Price workplace parking	0%		0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	
Residential area parking permits	0.00%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Transit	Reduce transit headways	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	TDM Strategy Appendix, Transit sections 1 - 3
	Implement neighborhood shuttle	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	Transit subsidies	0%	3%	0%	3%	0%	3%	0%	3%	0%	3%	0%	3%	
Education & Encouragement	Voluntary travel behavior change program	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	TDM Strategy Appendix, Education & Encouragement sections 1 - 2
	Promotions and marketing	0%	4%	0%	4%	0%	4%	0%	4%	0%	4%	0%	0%	
Commute Trip Reductions	Required commute trip reduction program	0%	0%	0%	19%	0%	0%	0%	0%	0%	0%	0%	0%	TDM Strategy Appendix, Commute Trip Reductions sections 1 - 4
	Alternative Work Schedules and Telecommute Program	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	Employer sponsored vanpool or shuttle	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	Ride-share program	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Shared Mobility	Car-share	0.0%	0.5%	0.0%	0.5%	0.0%	0.5%	0.0%	0.5%	0.0%	0.5%	0.0%	0.5%	TDM Strategy Appendix, Shared Mobility sections 1 - 3
	Bike share	0.00%	0.25%	0.00%	0.25%	0.00%	0.25%	0.00%	0.25%	0.00%	0.25%	0.00%	0.25%	
	School carpool program	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

CITY OF LOS ANGELES VMT CALCULATOR

Report 3: TDM Outputs

Date: April 2, 2021
 Project Name: 670 Mesquit
 Project Scenario: Project Alternative 3
 Project Address: 670 S MESQUIT ST, 90021



Version 1.3

TDM Adjustments by Trip Purpose & Strategy, Cont.

Place type: Suburban Center

		Home Based Work Production		Home Based Work Attraction		Home Based Other Production		Home Based Other Attraction		Non-Home Based Other Production		Non-Home Based Other Attraction		Source
		Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	
Bicycle Infrastructure	Implement/ Improve on-street bicycle facility	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	TDM Strategy Appendix, Bicycle Infrastructure sections 1 - 3
	Include Bike parking per LAMC	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	
	Include secure bike parking and showers	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	
Neighborhood Enhancement	Traffic calming improvements	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	TDM Strategy Appendix, Neighborhood Enhancement sections 1 - 2
	Pedestrian network improvements	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	

Final Combined & Maximum TDM Effect

	Home Based Work Production		Home Based Work Attraction		Home Based Other Production		Home Based Other Attraction		Non-Home Based Other Production		Non-Home Based Other Attraction	
	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated
COMBINED TOTAL	3%	24%	3%	32%	3%	24%	3%	11%	3%	11%	3%	7%
MAX. TDM EFFECT	3%	20%	3%	20%	3%	20%	3%	11%	3%	11%	3%	11%

$$= \text{Minimum}(X\%, 1 - [(1-A) * (1-B)...])$$

where X%=

PLACE	urban	75%
TYPE	compact infill	40%
MAX:	suburban center	20%
	suburban	15%

Note: $(1 - [(1-A) * (1-B)...])$ reflects the dampened combined effectiveness of TDM Strategies (e.g., A, B,...). See the TDM Strategy Appendix (*Transportation Assessment Guidelines Attachment G*) for further discussion of dampening.

CITY OF LOS ANGELES VMT CALCULATOR

Report 4: MXD Methodology

Date: April 2, 2021

Project Name: 670 Mesquit

Project Scenario: Project Alternative 3

Project Address: 670 S MESQUIT ST, 90021



Version 1.3

MXD Methodology - Project Without TDM

	Unadjusted Trips	MXD Adjustment	MXD Trips	Average Trip Length	Unadjusted VMT	MXD VMT
Home Based Work Production	373	-55.0%	168	7.4	2,760	1,243
Home Based Other Production	1,033	-38.3%	637	5.3	5,475	3,376
Non-Home Based Other Production	4,419	-4.5%	4,221	7.9	34,910	33,346
Home-Based Work Attraction	4,725	-26.8%	3,461	8.4	39,690	29,072
Home-Based Other Attraction	10,272	-30.2%	7,173	6.5	66,768	46,625
Non-Home Based Other Attraction	4,054	-4.6%	3,868	7.2	29,189	27,850

MXD Methodology with TDM Measures

	<i>Proposed Project</i>			<i>Project with Mitigation Measures</i>		
	TDM Adjustment	Project Trips	Project VMT	TDM Adjustment	Mitigated Trips	Mitigated VMT
Home Based Work Production	-3.2%	163	1,203	-20.0%	134	994
Home Based Other Production	-3.2%	616	3,267	-20.0%	510	2,701
Non-Home Based Other Production	-3.2%	4,085	32,272	-10.9%	3,760	29,704
Home-Based Work Attraction	-3.2%	3,350	28,136	-20.0%	2,769	23,258
Home-Based Other Attraction	-3.2%	6,942	45,123	-10.9%	6,389	41,532
Non-Home Based Other Attraction	-3.2%	3,743	26,953	-10.9%	3,446	24,808

MXD VMT Methodology Per Capita & Per Employee

Total Population: 1,006

Total Employees: 4,468

APC: Central

	<i>Proposed Project</i>	<i>Project with Mitigation Measures</i>
<i>Total Home Based Production VMT</i>	4,470	3,695
<i>Total Home Based Work Attraction VMT</i>	28,136	23,258
<i>Total Home Based VMT Per Capita</i>	4.4	3.7
<i>Total Work Based VMT Per Employee</i>	6.3	5.2

Project Alternative 4

CITY OF LOS ANGELES VMT CALCULATOR Version 1.3



Project Screening Criteria: Is this project required to conduct a vehicle miles traveled analysis?

Project Information

Project:

Scenario: [WWW](#)

Address:



Existing Land Use

Land Use Type	Value	Unit
Industrial Warehousing/Self-Storage	205.4	ksf
Industrial Warehousing/Self-Storage	205.4	ksf

Click here to add a single custom land use type (will be included in the above list)

Proposed Project Land Use

Project Screening Summary

Existing Land Use	Proposed Project
428 Daily Vehicle Trips	14,212 Daily Vehicle Trips
3,135 Daily VMT	104,896 Daily VMT
Tier 1 Screening Criteria	
Project will have less residential units compared to existing residential units & is within one-half mile of a fixed-rail station. <input type="checkbox"/>	
Tier 2 Screening Criteria	
The net increase in daily trips < 250 trips	13,784
The net increase in daily VMT ≤ 0	101,761
The proposed project consists of only retail land uses ≤ 50,000 square feet total.	210.448 ksf
The proposed project is required to perform VMT analysis.	

Is the project replacing an existing number of residential units with a smaller number of residential units AND is located within one-half mile of a fixed-rail or fixed-guideway transit station?

Yes No



CITY OF LOS ANGELES VMT CALCULATOR Version 1.3

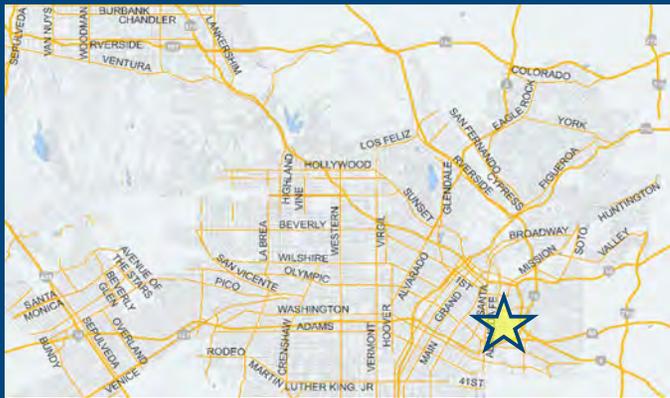


Project Information

Project:

Scenario:

Address:



Proposed Project Land Use Type	Value	Unit
Retail General Retail	10	ksf
Retail Health Club	155.765	ksf
Retail High-Turnover Sit-Down Restaurant	20	ksf
Retail Quality Restaurant	20	ksf
Office General Office	944.055	ksf
Retail Supermarket	4.683	ksf

TDM Strategies

Select each section to show individual strategies
Use to denote if the TDM strategy is part of the proposed project or is a mitigation strategy

	Proposed Project	With Mitigation
Max Home Based TDM Achieved?	No	No
Max Work Based TDM Achieved?	No	No
A Parking		
B Transit		
C Education & Encouragement		
D Commute Trip Reductions		
E Shared Mobility		
F Bicycle Infrastructure		
Implement/Improve On-street Bicycle Facility	Select Proposed Prj or Mitigation to include this strategy	
	<input type="checkbox"/> Proposed Prj	<input type="checkbox"/> Mitigation
Include Bike Parking Per LAMC	Select Proposed Prj or Mitigation to include this strategy	
	<input checked="" type="checkbox"/> Proposed Prj	<input type="checkbox"/> Mitigation
Include Secure Bike Parking and Showers	Select Proposed Prj or Mitigation to include this strategy	
	<input checked="" type="checkbox"/> Proposed Prj	<input type="checkbox"/> Mitigation
G Neighborhood Enhancement		

Analysis Results

Proposed Project	With Mitigation
13,754 Daily Vehicle Trips	13,754 Daily Vehicle Trips
101,518 Daily VMT	101,518 Daily VMT
0.0 Household VMT per Capita	0.0 Household VMT per Capita
6.4 Work VMT per Employee	6.4 Work VMT per Employee
Significant VMT Impact?	
Household: No Threshold = 6.0 15% Below APC	Household: No Threshold = 6.0 15% Below APC
Work: No Threshold = 7.6 15% Below APC	Work: No Threshold = 7.6 15% Below APC



CITY OF LOS ANGELES VMT CALCULATOR

Report 1: Project & Analysis Overview

Date: February 4, 2021

Project Name: 670 Mesquit

Project Scenario: Project Alternative 4

Project Address: 670 S MESQUIT ST, 90021



Version 1.3

Project Information			
	Land Use Type	Value	Units
Housing	Single Family	0	DU
	Multi Family	0	DU
	Townhouse	0	DU
	Hotel	0	Rooms
	Motel	0	Rooms
Affordable Housing	Family	0	DU
	Senior	0	DU
	Special Needs	0	DU
	Permanent Supportive	0	DU
Retail	General Retail	10.000	ksf
	Furniture Store	0.000	ksf
	Pharmacy/Drugstore	0.000	ksf
	Supermarket	4.683	ksf
	Bank	0.000	ksf
	Health Club	155.765	ksf
	High-Turnover Sit-Down Restaurant	20.000	ksf
	Fast-Food Restaurant	0.000	ksf
	Quality Restaurant	20.000	ksf
	Auto Repair	0.000	ksf
	Home Improvement	0.000	ksf
	Free-Standing Discount	0.000	ksf
	Movie Theater	0	Seats
Office	General Office	944.055	ksf
	Medical Office	0.000	ksf
Industrial	Light Industrial	0.000	ksf
	Manufacturing	0.000	ksf
	Warehousing/Self-Storage	0.000	ksf
School	University	0	Students
	High School	0	Students
	Middle School	0	Students
	Elementary	0	Students
	Private School (K-12)	0	Students
Other		0	Trips

CITY OF LOS ANGELES VMT CALCULATOR

Report 1: Project & Analysis Overview

Date: February 4, 2021

Project Name: 670 Mesquit

Project Scenario: Project Alternative 4

Project Address: 670 S MESQUIT ST, 90021



Version 1.3

Analysis Results			
Total Employees: 4,131			
Total Population: 0			
Proposed Project		With Mitigation	
13,754	Daily Vehicle Trips	13,754	Daily Vehicle Trips
101,518	Daily VMT	101,518	Daily VMT
0	Household VMT per Capita	0	Household VMT per Capita
6.4	Work VMT per Employee	6.4	Work VMT per Employee
Significant VMT Impact?			
APC: Central			
Impact Threshold: 15% Below APC Average			
Household = 6.0			
Work = 7.6			
Proposed Project		With Mitigation	
VMT Threshold	Impact	VMT Threshold	Impact
Household > 6.0	No	Household > 6.0	No
Work > 7.6	No	Work > 7.6	No

CITY OF LOS ANGELES VMT CALCULATOR

Report 2: TDM Inputs

Date: February 4, 2021

Project Name: 670 Mesquit

Project Scenario: Project Alternative 4

Project Address: 670 S MESQUIT ST, 90021



Version 1.3

TDM Strategy Inputs				
Strategy Type	Description	Proposed Project	Mitigations	
Parking	<i>Reduce parking supply</i>	<i>City code parking provision (spaces)</i>	0	0
		<i>Actual parking provision (spaces)</i>	0	0
	<i>Unbundle parking</i>	<i>Monthly cost for parking (\$)</i>	\$0	\$0
	<i>Parking cash-out</i>	<i>Employees eligible (%)</i>	0%	0%
	<i>Price workplace parking</i>	<i>Daily parking charge (\$)</i>	\$0.00	\$0.00
		<i>Employees subject to priced parking (%)</i>	0%	0%
	<i>Residential area parking permits</i>	<i>Cost of annual permit (\$)</i>	\$0	\$0
(cont. on following page)				

CITY OF LOS ANGELES VMT CALCULATOR

Report 2: TDM Inputs

Date: February 4, 2021

Project Name: 670 Mesquit

Project Scenario: Project Alternative 4

Project Address: 670 S MESQUIT ST, 90021



Version 1.3

TDM Strategy Inputs, Cont.				
Strategy Type	Description	Proposed Project	Mitigations	
Transit	<i>Reduce transit headways</i>	<i>Reduction in headways (increase in frequency) (%)</i>	0%	
		<i>Existing transit mode share (as a percent of total daily trips) (%)</i>	0%	
		<i>Lines within project site improved (<50%, >=50%)</i>	0	
	<i>Implement neighborhood shuttle</i>	<i>Degree of implementation (low, medium, high)</i>	0	0
		<i>Employees and residents eligible (%)</i>	0%	0%
	<i>Transit subsidies</i>	<i>Employees and residents eligible (%)</i>	0%	0%
<i>Amount of transit subsidy per passenger (daily equivalent) (\$)</i>		\$0.00	\$0.00	
Education & Encouragement	<i>Voluntary travel behavior change program</i>	<i>Employees and residents participating (%)</i>	0%	
	<i>Promotions and marketing</i>	<i>Employees and residents participating (%)</i>	0%	
(cont. on following page)				

CITY OF LOS ANGELES VMT CALCULATOR

Report 2: TDM Inputs

Date: February 4, 2021

Project Name: 670 Mesquit

Project Scenario: Project Alternative 4

Project Address: 670 S MESQUIT ST, 90021



Version 1.3

TDM Strategy Inputs, Cont.				
Strategy Type	Description	Proposed Project	Mitigations	
Commute Trip Reductions	<i>Required commute trip reduction program</i>	<i>Employees participating (%)</i>	0%	0%
	<i>Alternative Work Schedules and Telecommute</i>	<i>Employees participating (%)</i>	0%	0%
		<i>Type of program</i>	0	0
		<i>Degree of implementation (low, medium, high)</i>	0	0
	<i>Employer sponsored vanpool or shuttle</i>	<i>Employees eligible (%)</i>	0%	0%
		<i>Employer size (small, medium, large)</i>	0	0
	<i>Ride-share program</i>	<i>Employees eligible (%)</i>	0%	0%
Shared Mobility	<i>Car share</i>	<i>Car share project setting (Urban, Suburban, All Other)</i>	0	0
	<i>Bike share</i>	<i>Within 600 feet of existing bike share station - OR- implementing new bike share station (Yes/No)</i>	0	0
	<i>School carpool program</i>	<i>Level of implementation (Low, Medium, High)</i>	0	0
(cont. on following page)				

CITY OF LOS ANGELES VMT CALCULATOR

Report 2: TDM Inputs

Date: February 4, 2021

Project Name: 670 Mesquit

Project Scenario: Project Alternative 4

Project Address: 670 S MESQUIT ST, 90021



Version 1.3

TDM Strategy Inputs, Cont.				
Strategy Type	Description	Proposed Project	Mitigations	
Bicycle Infrastructure	<i>Implement/Improve on-street bicycle facility</i>	<i>Provide bicycle facility along site (Yes/No)</i>	0	0
	Include Bike parking per LAMC	Meets City Bike Parking Code (Yes/No)	Yes	Yes
	Include secure bike parking and showers	Includes indoor bike parking/lockers, showers, & repair station (Yes/No)	Yes	Yes
Neighborhood Enhancement	<i>Traffic calming improvements</i>	<i>Streets with traffic calming improvements (%)</i>	0%	0%
		<i>Intersections with traffic calming improvements (%)</i>	0%	0%
	Pedestrian network improvements	Included (within project and connecting off-site/within project only)	within project and connecting off-site	within project and connecting off-site

CITY OF LOS ANGELES VMT CALCULATOR

Report 3: TDM Outputs

Date: February 4, 2021
 Project Name: 670 Mesquit
 Project Scenario: Project Alternative 4
 Project Address: 670 S MESQUIT ST, 90021



Version 1.3

TDM Adjustments by Trip Purpose & Strategy

Place type: Suburban Center

		Home Based Work Production		Home Based Work Attraction		Home Based Other Production		Home Based Other Attraction		Non-Home Based Other Production		Non-Home Based Other Attraction		Source
		Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	
Parking	Reduce parking supply	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	Unbundle parking	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	Parking cash-out	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	Price workplace parking	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	Residential area parking permits	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Transit	Reduce transit headways	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	TDM Strategy Appendix, Transit sections 1 - 3
	Implement neighborhood shuttle	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	Transit subsidies	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Education & Encouragement	Voluntary travel behavior change program	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	TDM Strategy Appendix, Education & Encouragement sections 1 - 2
	Promotions and marketing	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Commute Trip Reductions	Required commute trip reduction program	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	TDM Strategy Appendix, Commute Trip Reductions sections 1 - 4
	Alternative Work Schedules and Telecommute Program	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	Employer sponsored vanpool or shuttle	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	Ride-share program	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Shared Mobility	Car-share	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	TDM Strategy Appendix, Shared Mobility sections 1 - 3
	Bike share	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
	School carpool program	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

CITY OF LOS ANGELES VMT CALCULATOR

Report 3: TDM Outputs

Date: February 4, 2021

Project Name: 670 Mesquit

Project Scenario: Project Alternative 4

Project Address: 670 S MESQUIT ST, 90021



Version 1.3

TDM Adjustments by Trip Purpose & Strategy, Cont.

Place type: Suburban Center

		Home Based Work Production		Home Based Work Attraction		Home Based Other Production		Home Based Other Attraction		Non-Home Based Other Production		Non-Home Based Other Attraction		Source
		Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	
		Bicycle Infrastructure	Implement/ Improve on-street bicycle facility	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	Include Bike parking per LAMC	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	
	Include secure bike parking and showers	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	
Neighborhood Enhancement	Traffic calming improvements	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	TDM Strategy Appendix, Neighborhood Enhancement sections 1 - 2
	Pedestrian network improvements	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	

Final Combined & Maximum TDM Effect

	Home Based Work Production		Home Based Work Attraction		Home Based Other Production		Home Based Other Attraction		Non-Home Based Other Production		Non-Home Based Other Attraction	
	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated	Proposed	Mitigated
	COMBINED TOTAL	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
MAX. TDM EFFECT	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%

$$= \text{Minimum}(X\%, 1 - [(1-A) * (1-B) \dots])$$

where X%=

PLACE	urban	75%
TYPE	compact infill	40%
MAX:	suburban center	20%
	suburban	15%

Note: $(1 - [(1-A) * (1-B) \dots])$ reflects the dampened combined effectiveness of TDM Strategies (e.g., A, B, ...). See the TDM Strategy Appendix (*Transportation Assessment Guidelines Attachment G*) for further discussion of dampening.

CITY OF LOS ANGELES VMT CALCULATOR

Report 4: MXD Methodology

Date: February 4, 2021

Project Name: 670 Mesquit

Project Scenario: Project Alternative 4

Project Address: 670 S MESQUIT ST, 90021



Version 1.3

MXD Methodology - Project Without TDM

	Unadjusted Trips	MXD Adjustment	MXD Trips	Average Trip Length	Unadjusted VMT	MXD VMT
Home Based Work Production	0	0.0%	0	7.4	0	0
Home Based Other Production	0	0.0%	0	5.3	0	0
Non-Home Based Other Production	3,154	-4.5%	3,013	7.9	24,917	23,803
Home-Based Work Attraction	4,316	-24.5%	3,257	8.4	36,254	27,359
Home-Based Other Attraction	6,985	-29.5%	4,926	6.5	45,403	32,019
Non-Home Based Other Attraction	3,154	-4.4%	3,016	7.2	22,709	21,715

MXD Methodology with TDM Measures

	<i>Proposed Project</i>			<i>Project with Mitigation Measures</i>		
	TDM Adjustment	Project Trips	Project VMT	TDM Adjustment	Mitigated Trips	Mitigated VMT
Home Based Work Production	-3.2%	0	0	-3.2%	0	0
Home Based Other Production	-3.2%	0	0	-3.2%	0	0
Non-Home Based Other Production	-3.2%	2,916	23,036	-3.2%	2,916	23,036
Home-Based Work Attraction	-3.2%	3,152	26,478	-3.2%	3,152	26,478
Home-Based Other Attraction	-3.2%	4,767	30,988	-3.2%	4,767	30,988
Non-Home Based Other Attraction	-3.2%	2,919	21,016	-3.2%	2,919	21,016

MXD VMT Methodology Per Capita & Per Employee

Total Population: 0

Total Employees: 4,131

APC: Central

	<i>Proposed Project</i>	<i>Project with Mitigation Measures</i>
<i>Total Home Based Production VMT</i>	0	0
<i>Total Home Based Work Attraction VMT</i>	26,478	26,478
<i>Total Home Based VMT Per Capita</i>	0.0	0.0
<i>Total Work Based VMT Per Employee</i>	6.4	6.4