

Appendix F

Greenhouse Gases Calculations

**Green Hotel Apartments Project
Greenhouse Gas Emissions Analysis**

Table 1. Operational Emissions Summary

Source	Project Emissions (metric tons per year)			
	Total CO2	CH4	N2O	CO2e
Mobile	1,005	0.04	0.00	1,005
Building Electricity	238	0.00	0.00	239
Natural Gas Combustion	38	0.00	0.00	38
Hearth	46	0.02	0.00	47
Landscaping	2	0.00	0.00	2
Indoor/Outdoor Water Use	69	0.14	0.00	73
Solid Waste Disposal	7	0.41	0.00	16
Total Operational Emissions	1,404	0.61	0.00	1,419
Total (Operations + Amortized Construction)	1,432	0.61	0.00	1,448
CEQA Significance Thresholds	n/a	n/a	n/a	3,000
Significant?	n/a	n/a	n/a	No

Table 2. Construction Emissions Summary

Phase	Project Emissions (metric tons per year)			
	Total CO2	CH4	N2O	CO2e
Demolition	40	-	-	40
Site Preparation	4	-	-	4
Grading	398	0.03	-	399
Building Construction	357	0.02	-	358
Architectural Coating	44	-	-	44
Paving	18	-	-	18
Grand Total	861	0.05	-	862
Amortized Construction	29	0.002	-	29

Source: <http://www.aqmd.gov/ceqa/handbook/signthres.pdf>

Note:

Maximum daily ROG emissions estimated from overlap between building construction (2016) and architectural coatings

Table 3. Detailed Construction Emissions Summary

Phase	Year	Category	Annual Emissions (metric tons per year)			
			Total CO2	CH4	N2O	CO2e
Demolition	2014	Off-Road	33	0	0	33
		Hauling	6	0	0	6
		Vendor	0	0	0	0
		Worker	1	0	0	1
Demolition Total			40	0	0	40
Site Preparation	2014	Off-Road	3	0	0	3
		Hauling	1	0	0	1
		Vendor	0	0	0	0
		Worker	0	0	0	0
Site Preparation Total			4	0	0	4
Grading	2014	Off-Road	194	0	0	194
		Hauling	193	0	0	193
		Vendor	2	0	0	2
		Worker	10	0	0	10
Grading Total			398	0	0	399

Phase	Year	Category	Annual Emissions (metric tons per year)			
			Total CO2	CH4	N2O	CO2e
Building Construction	2014	Off-Road	10	0	0	10
		Hauling	0	0	0	0
		Vendor	5	0	0	5
		Worker	9	0	0	9
Building Construction (2014) Total			24	0	0	24
Building Construction	2015	Off-Road	108	0	0	108
		Hauling	0	0	0	0
		Vendor	59	0	0	59
		Worker	100	0	0	100
Building Construction (2015) Total			267	0	0	268
Building Construction	2016	Off-Road	27	0	0	27
		Hauling	0	0	0	0
		Vendor	15	0	0	15
		Worker	25	0	0	25
Building Construction (2016) Total			66	0	0	66
Architectural Coating	2016	Off-Road	28	0	0	28
		Hauling	0	0	0	0
		Vendor	0	0	0	0
		Worker	16	0	0	16
Architectural Coating Total			44	0	0	44
Paving	2016	Off-Road	16	0	0	16
		Hauling	0	0	0	0
		Vendor	0	0	0	0
		Worker	2	0	0	2
Paving Total			18	0	0	18
GRAND TOTAL			861	0	0	862

Source: <http://www.aqmd.gov/ceqa/handbook/signthres.pdf>

Project Lifetime: 30 years

**Pasadena Green Hotels Apartments Project
Los Angeles-South Coast County, Annual**

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Parking Lot	0.5	Acre
Parking Structure	146	Space
Apartments Mid Rise	64	Dwelling Unit
Strip Mall	5	1000sqft

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.2 **Utility Company** Pasadena Water & Power
Climate Zone 12 **Precipitation Freq (Days)** 33

1.3 User Entered Comments

Project Characteristics - Climate zone based on 91105 zip code (CalEEMod User's Guide, Appendix F: Climate Zone Lookup)

Land Use - Project site is 32,362 square feet; lot acreage for residential land use modified so total area = 0.74 acres (32,362 sf). Parking structure is underground and does not contribute to total graded area.

Construction Phase - Construction schedule provided by developer

Off-road Equipment - .

Off-road Equipment - Equipment list provided by developer.

Off-road Equipment - Construction equipment data provided by project developer.

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Off-road Equipment - Construction equipment provided by project developer.

Off-road Equipment - construction equipment provided by project developer

Trips and VMT - 15-cy haul trucks assumed with 50-mile round trip distance

Demolition -

Grading -

Vehicle Trips - Project will generate 626 additional trips per day; all trips included with apartments.

Road Dust -

Energy Use -

Land Use Change -

Construction Off-road Equipment Mitigation - Watering required for Rule 403 compliance

Area Mitigation -

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	0.39	3.17	2.19	0.01	3.53	0.17	3.70	0.01	0.17	0.18	0.00	465.95	465.95	0.03	0.00	466.52
2015	0.22	1.30	1.46	0.00	0.15	0.08	0.23	0.01	0.08	0.08	0.00	267.16	267.16	0.02	0.00	267.53
2016	1.14	0.72	0.77	0.00	0.06	0.05	0.11	0.00	0.05	0.05	0.00	127.59	127.59	0.01	0.00	127.80
Total	1.75	5.19	4.42	0.01	3.74	0.30	4.04	0.02	0.30	0.31	0.00	860.70	860.70	0.06	0.00	861.85

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	0.39	3.17	2.19	0.01	3.51	0.17	3.68	0.01	0.17	0.18	0.00	465.95	465.95	0.03	0.00	466.52
2015	0.22	1.30	1.46	0.00	0.15	0.08	0.23	0.01	0.08	0.08	0.00	267.16	267.16	0.02	0.00	267.53
2016	1.14	0.72	0.77	0.00	0.06	0.05	0.11	0.00	0.05	0.05	0.00	127.59	127.59	0.01	0.00	127.80
Total	1.75	5.19	4.42	0.01	3.72	0.30	4.02	0.02	0.30	0.31	0.00	860.70	860.70	0.06	0.00	861.85

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	0.83	0.02	1.39	0.00		0.00	0.07		0.00	0.07	6.80	40.78	47.58	0.02	0.00	48.34
Energy	0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00	0.00	275.64	275.64	0.00	0.00	276.45
Mobile	0.60	1.49	5.87	0.01	1.12	0.07	1.20	0.04	0.07	0.11	0.00	1,004.64	1,004.64	0.04	0.00	1,005.45
Waste						0.00	0.00		0.00	0.00	7.04	0.00	7.04	0.42	0.00	15.78
Water						0.00	0.00		0.00	0.00	0.00	68.63	68.63	0.14	0.00	72.77
Total	1.43	1.54	7.27	0.01	1.12	0.07	1.27	0.04	0.07	0.18	13.84	1,389.69	1,403.53	0.62	0.00	1,418.79

2.2 Overall Operational

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	0.63	0.01	0.99	0.00		0.00	0.01		0.00	0.01	0.00	43.09	43.09	0.00	0.00	43.37
Energy	0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00	0.00	275.64	275.64	0.00	0.00	276.45
Mobile	0.60	1.49	5.87	0.01	1.12	0.07	1.20	0.04	0.07	0.11	0.00	1,004.64	1,004.64	0.04	0.00	1,005.45
Waste						0.00	0.00		0.00	0.00	7.04	0.00	7.04	0.42	0.00	15.78
Water						0.00	0.00		0.00	0.00	0.00	68.63	68.63	0.14	0.00	72.77
Total	1.23	1.53	6.87	0.01	1.12	0.07	1.21	0.04	0.07	0.12	7.04	1,392.00	1,399.04	0.60	0.00	1,413.82

3.0 Construction Detail

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2014

Unmitigated Construction On-Site

	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					
Fugitive Dust					0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.23	0.13	0.00		0.01	0.01		0.01	0.01	0.00	32.65	32.65	0.00	0.00	32.69
Total	0.03	0.23	0.13	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	32.65	32.65	0.00	0.00	32.69

Unmitigated Construction Off-Site

	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					
Hauling	0.00	0.04	0.02	0.00	0.03	0.00	0.04	0.00	0.00	0.00	0.00	5.88	5.88	0.00	0.00	5.88
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.14	1.14	0.00	0.00	1.14
Total	0.00	0.04	0.03	0.00	0.03	0.00	0.04	0.00	0.00	0.00	0.00	7.02	7.02	0.00	0.00	7.02

3.2 Demolition - 2014

Mitigated Construction On-Site

	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					
Fugitive Dust					0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.03	0.23	0.13	0.00		0.01	0.01		0.01	0.01	0.00	32.65	32.65	0.00	0.00	32.69
Total	0.03	0.23	0.13	0.00	0.01	0.01	0.02	0.00	0.01	0.01	0.00	32.65	32.65	0.00	0.00	32.69

Mitigated Construction Off-Site

	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					
Hauling	0.00	0.04	0.02	0.00	0.03	0.00	0.04	0.00	0.00	0.00	0.00	5.88	5.88	0.00	0.00	5.88
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.14	1.14	0.00	0.00	1.14
Total	0.00	0.04	0.03	0.00	0.03	0.00	0.04	0.00	0.00	0.00	0.00	7.02	7.02	0.00	0.00	7.02

3.3 Site Preparation - 2014

Unmitigated Construction On-Site

	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					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.03	0.02	0.00		0.00	0.00		0.00	0.00	0.00	2.92	2.92	0.00	0.00	2.93
Total	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.92	2.92	0.00	0.00	2.93

Unmitigated Construction Off-Site

	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					
Hauling	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.14	1.14	0.00	0.00	1.14
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13	0.00	0.00	0.13
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.22	0.00	0.00	0.22
Total	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.49	1.49	0.00	0.00	1.49

3.3 Site Preparation - 2014

Mitigated Construction On-Site

	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					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.00	0.03	0.02	0.00		0.00	0.00		0.00	0.00	0.00	2.92	2.92	0.00	0.00	2.93
Total	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.92	2.92	0.00	0.00	2.93

Mitigated Construction Off-Site

	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					
Hauling	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.14	1.14	0.00	0.00	1.14
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.13	0.00	0.00	0.13
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.22	0.00	0.00	0.22
Total	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.49	1.49	0.00	0.00	1.49

3.4 Grading - 2014

Unmitigated Construction On-Site

	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					
Fugitive Dust					0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.20	1.51	1.08	0.00		0.09	0.09		0.09	0.09	0.00	193.84	193.84	0.02	0.00	194.17
Total	0.20	1.51	1.08	0.00	0.02	0.09	0.11	0.00	0.09	0.09	0.00	193.84	193.84	0.02	0.00	194.17

Unmitigated Construction Off-Site

	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					
Hauling	0.13	1.21	0.72	0.00	3.44	0.05	3.49	0.01	0.05	0.06	0.00	192.81	192.81	0.01	0.00	192.93
Vendor	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.63	1.63	0.00	0.00	1.63
Worker	0.01	0.01	0.06	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	9.90	9.90	0.00	0.00	9.91
Total	0.14	1.23	0.79	0.00	3.45	0.05	3.50	0.01	0.05	0.06	0.00	204.34	204.34	0.01	0.00	204.47

3.4 Grading - 2014

Mitigated Construction On-Site

	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					
Fugitive Dust					0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.20	1.51	1.08	0.00		0.09	0.09		0.09	0.09	0.00	193.84	193.84	0.02	0.00	194.17
Total	0.20	1.51	1.08	0.00	0.01	0.09	0.10	0.00	0.09	0.09	0.00	193.84	193.84	0.02	0.00	194.17

Mitigated Construction Off-Site

	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					
Hauling	0.13	1.21	0.72	0.00	3.44	0.05	3.49	0.01	0.05	0.06	0.00	192.81	192.81	0.01	0.00	192.93
Vendor	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.63	1.63	0.00	0.00	1.63
Worker	0.01	0.01	0.06	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	9.90	9.90	0.00	0.00	9.91
Total	0.14	1.23	0.79	0.00	3.45	0.05	3.50	0.01	0.05	0.06	0.00	204.34	204.34	0.01	0.00	204.47

3.5 Building Construction - 2014

Unmitigated Construction On-Site

	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					
Off-Road	0.01	0.09	0.06	0.00		0.01	0.01		0.01	0.01	0.00	9.52	9.52	0.00	0.00	9.54
Total	0.01	0.09	0.06	0.00		0.01	0.01		0.01	0.01	0.00	9.52	9.52	0.00	0.00	9.54

Unmitigated Construction Off-Site

	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					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.19	5.19	0.00	0.00	5.19
Worker	0.01	0.01	0.06	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	9.00	9.00	0.00	0.00	9.02
Total	0.01	0.04	0.08	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	14.19	14.19	0.00	0.00	14.21

3.5 Building Construction - 2014

Mitigated Construction On-Site

	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					
Off-Road	0.01	0.09	0.06	0.00		0.01	0.01		0.01	0.01	0.00	9.52	9.52	0.00	0.00	9.54
Total	0.01	0.09	0.06	0.00		0.01	0.01		0.01	0.01	0.00	9.52	9.52	0.00	0.00	9.54

Mitigated Construction Off-Site

	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					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.19	5.19	0.00	0.00	5.19
Worker	0.01	0.01	0.06	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	9.00	9.00	0.00	0.00	9.02
Total	0.01	0.04	0.08	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	14.19	14.19	0.00	0.00	14.21

3.5 Building Construction - 2015

Unmitigated Construction On-Site

	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					
Off-Road	0.13	0.92	0.63	0.00		0.06	0.06		0.06	0.06	0.00	107.98	107.98	0.01	0.00	108.20
Total	0.13	0.92	0.63	0.00		0.06	0.06		0.06	0.06	0.00	107.98	107.98	0.01	0.00	108.20

Unmitigated Construction Off-Site

	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					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.03	0.33	0.23	0.00	0.02	0.01	0.03	0.00	0.01	0.01	0.00	59.05	59.05	0.00	0.00	59.08
Worker	0.05	0.05	0.60	0.00	0.13	0.01	0.13	0.01	0.01	0.01	0.00	100.12	100.12	0.01	0.00	100.24
Total	0.08	0.38	0.83	0.00	0.15	0.02	0.16	0.01	0.02	0.02	0.00	159.17	159.17	0.01	0.00	159.32

3.5 Building Construction - 2015

Mitigated Construction On-Site

	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					
Off-Road	0.13	0.92	0.63	0.00		0.06	0.06		0.06	0.06	0.00	107.98	107.98	0.01	0.00	108.20
Total	0.13	0.92	0.63	0.00		0.06	0.06		0.06	0.06	0.00	107.98	107.98	0.01	0.00	108.20

Mitigated Construction Off-Site

	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					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.03	0.33	0.23	0.00	0.02	0.01	0.03	0.00	0.01	0.01	0.00	59.05	59.05	0.00	0.00	59.08
Worker	0.05	0.05	0.60	0.00	0.13	0.01	0.13	0.01	0.01	0.01	0.00	100.12	100.12	0.01	0.00	100.24
Total	0.08	0.38	0.83	0.00	0.15	0.02	0.16	0.01	0.02	0.02	0.00	159.17	159.17	0.01	0.00	159.32

3.5 Building Construction - 2016

Unmitigated Construction On-Site

	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					
Off-Road	0.03	0.21	0.16	0.00		0.01	0.01		0.01	0.01	0.00	26.89	26.89	0.00	0.00	26.94
Total	0.03	0.21	0.16	0.00		0.01	0.01		0.01	0.01	0.00	26.89	26.89	0.00	0.00	26.94

Unmitigated Construction Off-Site

	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					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.01	0.08	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	14.74	14.74	0.00	0.00	14.74
Worker	0.01	0.01	0.14	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00	24.57	24.57	0.00	0.00	24.60
Total	0.02	0.09	0.19	0.00	0.03	0.00	0.04	0.00	0.00	0.00	0.00	39.31	39.31	0.00	0.00	39.34

3.5 Building Construction - 2016

Mitigated Construction On-Site

	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					
Off-Road	0.03	0.21	0.16	0.00		0.01	0.01		0.01	0.01	0.00	26.89	26.89	0.00	0.00	26.94
Total	0.03	0.21	0.16	0.00		0.01	0.01		0.01	0.01	0.00	26.89	26.89	0.00	0.00	26.94

Mitigated Construction Off-Site

	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					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.01	0.08	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	14.74	14.74	0.00	0.00	14.74
Worker	0.01	0.01	0.14	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00	24.57	24.57	0.00	0.00	24.60
Total	0.02	0.09	0.19	0.00	0.03	0.00	0.04	0.00	0.00	0.00	0.00	39.31	39.31	0.00	0.00	39.34

3.6 Architectural Coating - 2016

Unmitigated Construction On-Site

	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					
Archit. Coating	1.02					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.26	0.20	0.00		0.02	0.02		0.02	0.02	0.00	27.67	27.67	0.00	0.00	27.74
Total	1.06	0.26	0.20	0.00		0.02	0.02		0.02	0.02	0.00	27.67	27.67	0.00	0.00	27.74

Unmitigated Construction Off-Site

	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					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.09	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	15.95	15.95	0.00	0.00	15.97
Total	0.01	0.01	0.09	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	15.95	15.95	0.00	0.00	15.97

3.6 Architectural Coating - 2016

Mitigated Construction On-Site

	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					
Archit. Coating	1.02					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.04	0.26	0.20	0.00		0.02	0.02		0.02	0.02	0.00	27.67	27.67	0.00	0.00	27.74
Total	1.06	0.26	0.20	0.00		0.02	0.02		0.02	0.02	0.00	27.67	27.67	0.00	0.00	27.74

Mitigated Construction Off-Site

	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					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.01	0.01	0.09	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	15.95	15.95	0.00	0.00	15.97
Total	0.01	0.01	0.09	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	15.95	15.95	0.00	0.00	15.97

3.7 Paving - 2016

Unmitigated Construction On-Site

	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					
Off-Road	0.02	0.15	0.12	0.00		0.01	0.01		0.01	0.01	0.00	15.96	15.96	0.00	0.00	16.00
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.02	0.15	0.12	0.00		0.01	0.01		0.01	0.01	0.00	15.96	15.96	0.00	0.00	16.00

Unmitigated Construction Off-Site

	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					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.81	1.81	0.00	0.00	1.81
Total	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.81	1.81	0.00	0.00	1.81

3.7 Paving - 2016

Mitigated Construction On-Site

	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					
Off-Road	0.02	0.15	0.12	0.00		0.01	0.01		0.01	0.01	0.00	15.96	15.96	0.00	0.00	16.00
Paving	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.02	0.15	0.12	0.00		0.01	0.01		0.01	0.01	0.00	15.96	15.96	0.00	0.00	16.00

Mitigated Construction Off-Site

	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					
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.81	1.81	0.00	0.00	1.81
Total	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.81	1.81	0.00	0.00	1.81

4.0 Mobile Detail

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	0.60	1.49	5.87	0.01	1.12	0.07	1.20	0.04	0.07	0.11	0.00	1,004.64	1,004.64	0.04	0.00	1,005.45
Unmitigated	0.60	1.49	5.87	0.01	1.12	0.07	1.20	0.04	0.07	0.11	0.00	1,004.64	1,004.64	0.04	0.00	1,005.45
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	625.92	625.92	625.92	2,084,673	2,084,673
Parking Lot	0.00	0.00	0.00		
Parking Structure	0.00	0.00	0.00		
Strip Mall	0.00	0.00	0.00		
Total	625.92	625.92	625.92	2,084,673	2,084,673

4.3 Trip Type Information

Land Use	Miles			Trip %		
	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
Apartments Mid Rise	12.70	7.00	9.50	40.20	19.20	40.60

Land Use	Miles			Trip %		
	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
Parking Lot	8.90	13.30	7.40	0.00	0.00	0.00
Parking Structure	8.90	13.30	7.40	0.00	0.00	0.00
Strip Mall	8.90	13.30	7.40	16.60	64.40	19.00

5.0 Energy Detail

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						0.00	0.00		0.00	0.00	0.00	238.06	238.06	0.00	0.00	238.64
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	238.06	238.06	0.00	0.00	238.64
NaturalGas Mitigated	0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00	0.00	37.58	37.58	0.00	0.00	37.81
NaturalGas Unmitigated	0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00	0.00	37.58	37.58	0.00	0.00	37.81
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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	tons/yr										MT/yr					
Apartments Mid Rise	695741	0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00	0.00	37.13	37.13	0.00	0.00	37.35
Parking Lot	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Parking Structure	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Strip Mall	8500	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.45	0.45	0.00	0.00	0.46
Total		0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00	0.00	37.58	37.58	0.00	0.00	37.81

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	tons/yr										MT/yr					
Apartments Mid Rise	695741	0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00	0.00	37.13	37.13	0.00	0.00	37.35
Parking Lot	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Parking Structure	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Strip Mall	8500	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.45	0.45	0.00	0.00	0.46
Total		0.00	0.03	0.01	0.00		0.00	0.00		0.00	0.00	0.00	37.58	37.58	0.00	0.00	37.81

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Apartments Mid Rise	239531					180.81	0.00	0.00	181.24
Parking Lot	0					0.00	0.00	0.00	0.00
Parking Structure	0					0.00	0.00	0.00	0.00
Strip Mall	75850					57.25	0.00	0.00	57.39
Total						238.06	0.00	0.00	238.63

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Apartments Mid Rise	239531					180.81	0.00	0.00	181.24
Parking Lot	0					0.00	0.00	0.00	0.00
Parking Structure	0					0.00	0.00	0.00	0.00
Strip Mall	75850					57.25	0.00	0.00	57.39
Total						238.06	0.00	0.00	238.63

6.0 Area Detail

6.1 Mitigation Measures Area

Use only Natural Gas Hearths

	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	0.63	0.01	0.99	0.00		0.00	0.01		0.00	0.01	0.00	43.09	43.09	0.00	0.00	43.37
Unmitigated	0.83	0.02	1.39	0.00		0.00	0.07		0.00	0.07	6.80	40.78	47.58	0.02	0.00	48.34
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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	0.10					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.49					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.21	0.01	0.40	0.00		0.00	0.06		0.00	0.06	6.80	39.19	45.99	0.02	0.00	46.72
Landscaping	0.03	0.01	0.99	0.00		0.00	0.01		0.00	0.01	0.00	1.59	1.59	0.00	0.00	1.63
Total	0.83	0.02	1.39	0.00		0.00	0.07		0.00	0.07	6.80	40.78	47.58	0.02	0.00	48.35

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	0.10					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.49					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	41.50	41.50	0.00	0.00	41.75
Landscaping	0.03	0.01	0.99	0.00		0.00	0.01		0.00	0.01	0.00	1.59	1.59	0.00	0.00	1.63
Total	0.62	0.01	0.99	0.00		0.00	0.01		0.00	0.01	0.00	43.09	43.09	0.00	0.00	43.38

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					68.63	0.14	0.00	72.77
Unmitigated					68.63	0.14	0.00	72.77
Total	NA	NA	NA	NA	NA	NA	NA	NA

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Apartments Mid Rise	4.16986 / 2.62882					63.08	0.13	0.00	66.88
Parking Lot	0 / 0					0.00	0.00	0.00	0.00
Parking Structure	0 / 0					0.00	0.00	0.00	0.00
Strip Mall	0.370363 / 0.226996					5.55	0.01	0.00	5.89
Total						68.63	0.14	0.00	72.77

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Apartments Mid Rise	4.16986 / 2.62882					63.08	0.13	0.00	66.88
Parking Lot	0 / 0					0.00	0.00	0.00	0.00
Parking Structure	0 / 0					0.00	0.00	0.00	0.00
Strip Mall	0.370363 / 0.226996					5.55	0.01	0.00	5.89
Total						68.63	0.14	0.00	72.77

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					7.04	0.42	0.00	15.78
Unmitigated					7.04	0.42	0.00	15.78
Total	NA	NA	NA	NA	NA	NA	NA	NA

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Apartments Mid Rise	29.44					5.98	0.35	0.00	13.39
Parking Lot	0					0.00	0.00	0.00	0.00
Parking Structure	0					0.00	0.00	0.00	0.00
Strip Mall	5.25					1.07	0.06	0.00	2.39
Total						7.05	0.41	0.00	15.78

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Apartments Mid Rise	29.44					5.98	0.35	0.00	13.39
Parking Lot	0					0.00	0.00	0.00	0.00
Parking Structure	0					0.00	0.00	0.00	0.00
Strip Mall	5.25					1.07	0.06	0.00	2.39
Total						7.05	0.41	0.00	15.78

9.0 Vegetation
