Appendix FEIR-D

Air Quality and Greenhouse Gas Memorandum

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This *Air Quality and Greenhouse Gas Memorandum* (AQ/GHG Memo) has been prepared by Eyestone Environmental to provide additional supporting information regarding the air quality and greenhouse gas analyses included in the EIR. The majority of public comments received from Soil/Water/Air Protection Enterprise (SWAPE) regarding the Draft EIR focused on two main topics that are addressed in this memorandum: (1) Failure to Use Correct Number of Construction Trips/Need for Additional Construction Mitigation (Comment Nos. 18-37 through 18-62); and (2) Failure to Implement All Feasible Operational Mitigation Measures (Comment Nos. 18-63 through 18-73).

Topic 1: Construction Trips and Suggested Additional Mitigation

Comments by SWAPE raised concerns regarding the air quality impacts during Project construction and specifically claimed the Draft EIR failed to use the correct number of construction worker, vendor, and hauling trips, as well as that additional mitigation measures are needed. The concern regarding trip data pertained to perceived discrepancies between information provided in the Traffic Impact Analysis (Traffic Study) provided as Appendix R of the Draft EIR, and the CalEEMod modeling files prepared for the air quality analysis, which are provided in the Air Quality and GHG Worksheets in Appendix B of the Draft EIR. The perceived discrepancies identified by SWAPE are summarized in Table 1 on page 2.

The information presented in Table 1 requires clarification, as the majority of the data is consistent between the Traffic Study and the Air Quality and GHG Worksheets. Please refer to Table 2 on page 3 which includes additional details and explanations regarding some of the trip numbers.

As shown in Table 2, when clarifying one-way trips vs. round trips, most of the data used in CalEEMod for the air quality analysis matches (or is more conservative than) that provided in the Traffic Study. There are only two discrepancies in the number of trips that require correction, specifically for the demolition phase: the number of construction worker trips (60 one-way trips instead of 40) and haul trips (25 daily round trips instead of 20). Based on this haul trip adjustment, the total number of demolition-related haul trips would

Table 1

Phase	Number of Daily Worker Trips	Number of Daily Vendor Trips	Number of Total Hauling Trips
Demolition			
Traffic Study	60	0	2,250
(CalEEMod)	(40)	(0)	(900)
Site Grading			
Traffic Study	40	0	3,520
(CalEEMod)	(40)	(10)	(910)
Building Construction			
Traffic Study	350	100	0
(CalEEMod)	(350)	(50)	(0)
Paving			
Traffic Study	60	20	0
(CalEEMod)	(60)	(10)	(0)

be 1,125 round trips or 2,250 one-way trips, consistent with the commenter's calculation. The use of 1,125 round-trip haul trips is considered conservative, as the default value calculated in CalEEMod based on the Project's actual amount of floor area to be demolished is 1,081 haul trips. All other purported errors are mischaracterized by the commenter; such differences are instead a function of how the traffic analysis defines a trip (one way or ingress/egress) versus the air quality analysis (hauls or round trips). This distinction is important, as traffic analyses are concerned with the number of daily and peak-hour trips, intersection capacities, and the queuing of vehicles, while air quality analyses are concerned with emissions generated from vehicle miles traveled per trip.

Construction worker trips were input into CalEEMod as one-way trips since workers would travel to the Project Site in the morning and from the Project Site at the end of each work day. Use of one-way trips for workers is important since cold engines produce more emissions. Vendor and haul trips were entered as round trips since each trip would consist of a delivery of materials or export of soil, where the engine would not be shut off for an extended period of time and thus would not warrant analysis of two separate trips (i.e., less cold starts). The CalEEMod default trip length has been doubled to account for round trips.

Updating these inputs in the CalEEMod model increases peak daily regional construction emissions from 90.6 to 98.8 pounds per day. This increase in peak daily emissions would remain below the SCAQMD regional daily nitrogen oxides (NO_X) construction threshold of 100 pounds per day. The refined CalEEMod modeling output file

Table 2

Project Construction Phase	Number of Daily Worker Trips	Number of Daily Vendor Trips[a]	Number of Daily Haul Trips[a]	Total Haul Trips per Phase[b]
Demolition (45 days)				
Traffic Study	60 one-way trips	25 round trips (50 one-way trips)		2,250 one-way trips
Air Quality (CalEEMod)	40 one-way trips *This has been updated to match	0	20 round trips *This has been updated to match	900 round trips *Based on the haul trip update, this is now 1,125 round trips (which matches)
Site Grading (88 days)[c]				
Traffic Study	40 one-way trips	20 round trips (40 one-way trips)		3,520 one-way trips
Air Quality (CalEEMod)	40 one-way trips	10 round trips[d]	10 round trips	910 round trips[c] (Total vendor + haul trips = 3,640 one-way trips, which is more conservative)
Building Construction (228 days)				
Air Quality (CalEEMod)	350 one-way trips	50 round trips	0	0
Paving (120 days)				
Traffic Study	60 one-way trips	10 round trips (20 one-way trips)		0
Air Quality (CalEEMod)	60 one-way trips	10 round trips	0	0

[a] *The Traffic Study combines vendor and haul truck trips. However, for air quality purposes, these two trip types are considered separately in CalEEMod, as haul trips involve heavier trucks with a longer trip distance than vendor trips.*

[b] *The Traffic Study does not calculate total haul trips per phase; the Traffic Study numbers presented reflect the calculations provided by the commenter.*

[c] *Within the CalEEMod model, this construction duration was automatically calculated as 91 days. As the number of daily vendor/haul trips are the same as in the Traffic Study, the total number of truck trips in the air quality analysis is actually higher.*

[d] *The commenter assumes no vendor trips. However, the Project's limited amount of soil export could be hauled in less than 6 days using 14 cubic yard trucks. Therefore, the air quality analysis conservatively assumed half of all truck trips during site grading would be vendor trips (in actuality, the majority of truck trips would be vendor trips given the limited need for haul trucks). Vendor trips involve lighter trucks and shorter trip distances, which yield fewer emissions than haul trips.*

Source: Linscott, Law & Greenspan, Engineers, Traffic Impact Analysis—2nd & PCH Project, March 2017 (see Appendix R of the Draft EIR); and Eyestone Environmental, Air Quality and GHG Worksheets, March 2017 (see Appendix B of the Draft EIR).

is included in this memorandum as Attachment 1.[1] Additionally, this minor discrepancy does not change the results of the localized construction emissions analysis detailed in Table IV.B-5 on page IV.B-36 of the Draft EIR; as such, localized construction impacts would remain less than significant. Overall, construction air quality impacts related to the Project would remain less than significant, and no mitigation measures are warranted. Accordingly, no changes to the conclusions in the Draft EIR are necessary.

Topic 2: Operational Mitigation Measures

Comments by SWAPE raised concerns regarding the Project's significant and unavoidable regional operational NO_X impact and whether additional mitigation measures could be included to reduce the impact.

In general, CEQA requires an agency to consider mitigation measures that are "feasible."[2] CEQA defines "feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors."[3] CEQA also states a lead agency has the authority to determine that a mitigation measure is "infeasible" due to "economic" considerations.[4]

As discussed on page IV.B-47 in Section IV.B, Air Quality, of the Draft EIR, operation of the Project would have a significant and unavoidable Project-level and cumulative impact on air quality since regional emissions would exceed the SCAQMD daily threshold for NO_X of 55 pounds per day. As shown in Table IV.B-6 on page IV.B-38 of the Draft EIR, mobile source emissions represent approximately 136 pounds of the 138 pounds per day of the Project's net NO_X emissions or 99 percent of net NO_X emissions. Energy source emissions associated with natural gas combustion account for only 2 pounds (1 percent) of net NO_X emissions, and area source emissions (e.g., landscape equipment) account for 0.001 pounds (less than 0.09 percent) of net NO_X emissions. As a result, the air quality analysis focuses on reducing mobile source emissions (by reducing

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[1] *For comparison, a hypothetical CalEEMod modeling run has been prepared for Project construction based entirely on CalEEMod default values to demonstrate that use of such values yields lesser impacts than were estimated using Project-specific data (i.e., the default values are less conservative). For example, if only the CalEEMod default values were used in the construction analysis, the Project's regional NO_X emissions would be reduced from approximately 91 pounds per day (as shown in Table IV.B-4 on page IV.B-35 of the Draft EIR) to 70 pounds per day. Refer to the CalEEMod output file provided in Attachment 2.*

[2] *CEQA Guidelines Section 15126.4(a)(1).*

[3] *CEQA Guidelines Section 15364; CEQA Section 21061.1.*

[4] *CEQA Guidelines Section 15091(a)(3).*

vehicular trips or, more specifically, vehicle miles travelled (VMT)) as a means of reducing this impact.

As discussed on pages IV.E-46 and IV.E-47 in Section IV.E, Greenhouse Gas Emissions, of the Draft EIR, the Project incorporates a number of design features to reduce operational VMT. The Project's location in a dense urban environment allows fewer vehicle miles travelled, given the shorter distances required to travel to/from home, work, and/or shopping uses. Public transit in the Project area is provided by Metro, Orange County Transportation Authority, and Long Beach Transit. The Metro Blue Line includes several stations in and around Downtown Long Beach (approximately 5 miles west of the Project Site), as well as near other well-traveled locations, such as Long Beach Airport and the VA Medical Center. Long Beach Transit operates ten bus lines in the Project area and provides free Passport shuttle service connecting visitors to and around Downtown Long Beach attractions and destinations. In particular, Long Beach Transit Lines 121, 131, and 171 collectively provide connections to/from the Project Site and Downtown Long Beach, Long Beach Airport, the VA Medical Center, and various associated Metro stations. In addition, the Orange County Transportation Authority provides three bus lines in the study area.

As discussed in Section IV.K, Traffic and Access, of the Draft EIR, the Project Site is located in an area of the City with a mature network of pedestrian facilities including sidewalks, crosswalks, and pedestrian safety features along PCH, Marina Drive, and 2nd Street. The existing sidewalk system within the Project vicinity provides direct connectivity to the existing shopping center to the immediate south and public transit stops along PCH and 2nd Street. Additionally, the Project Site is located adjacent to existing Class II bike lanes on PCH, Marina Drive, and 2nd Street. The Project would include separate pedestrian entrances and would provide access from adjacent streets, parking facilities, and transit stops to facilitate pedestrian movement. Additionally, the Project would maintain existing sidewalks and provide a direct and safe path of travel with minimal obstructions to pedestrian movement within and adjacent to the Project Site. Furthermore, visitors, patrons, and employees arriving by bicycle would have the same access opportunities as pedestrians, and bike parking would be provided on-site as part of the Project's sustainability features. These design features would connect the Project to the City's pedestrian and bicycle network.

In addition, as discussed in Section II, Project Description, of the Draft EIR, separate from the 2nd & PCH Project, the City is undertaking the Marina Drive "Complete Street" Improvement Project (Marina Drive Project), which involves multimodal improvements along Marina Drive between 2nd Street and Studebaker Road in an effort to accommodate anticipated growth in the southeastern area of the City. Among other improvements, this City project will include a Class II bike lane in either direction, with the northbound bike lane

separated from traffic by a 3-foot buffer; new pedestrian crossings, including a mid-block crossing adjacent to the 2nd & PCH frontage; new sidewalk where there are gaps in the existing sidewalks, thereby providing a continuous sidewalk on the east side between 2nd Street and Studebaker Road; and potentially a new bus stop or shelter, should the City's transit and/or shuttle service be expanded to Marina Drive. These improvements proposed by the Department of Public Works are anticipated to be complete in 2018. The Marina Drive Project will receive funding from the 2nd & PCH Project Applicant as a community benefit.

It is further noted, pursuant to Project Design Feature K-8 detailed in Section IV, Mitigation Monitoring and Reporting Program, of the Final EIR, the Project would implement transportation demand management (TDM) measures to reduce vehicle trips and encourage the use of public transit. These measures include the provision of appropriate bicycle parking facilities; vanpool/carpool loading/unloading and parking areas; preferential parking spaces for employee carpool/vanpool vehicles; and a bulletin board/ kiosk displaying information regarding bus schedules and routes, ridesharing, bike routes, and carpool/vanpool opportunities. Additionally, since publication of the Draft EIR, Project Design Feature K-8 has been augmented to reflect a rideshare drop-off/pickup area and concierge service that would be incorporated into the Project's design. Furthermore, new project design features have been included, including Project Design Features E-2 and E-3, which require pre-wiring for electric vehicles in 25 percent of the parking spaces on-site and EV chargers in 5 percent of the parking spaces on-site, in accordance with LBMC Section 18.47.050. Refer to Section II, Corrections and Additions, and Section IV, Mitigation Monitoring and Reporting Program, of the Final EIR for the new measures. Additional features that would serve to reduce operational NO_X emissions include measures to ensure compliance with local building codes, CalGREEN, and Title 24 energy efficiency requirements, as discussed on page IV.E-39 of the Draft EIR.

In addition, as discussed in Section II, Project Description, of the Draft EIR, the Project would incorporate features to support and promote environmental sustainability. "Green" principles have been incorporated in the Project to comply with the City of Long Beach Green Building Ordinance (Ordinance No. ORD-09-0013) and the sustainability intent of the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED®) program. In particular, the Project would meet the requirements for LEED® Certification (or equivalent) by incorporating a variety of transportation-related, energy conservation, water conservation, waste reduction, sustainable construction material, and indoor air quality features. As part of meeting LEED® Certification (or equivalent), the Project Applicant would incorporate additional features into the Project, based on selections from a long and varied list of conservation-oriented measures. Many of the LEED® measures are the same as or similar to those suggested by SWAPE in its comment letter.

Despite implementation of such measures, in response to public comments received regarding the Draft EIR, additional measures have been considered to address the Project's significant and unavoidable impact with respect to regional NO_X emissions resulting from operations. The following additional project design features and mitigation measure have been included in Section II, Corrections and Additions, and Section IV, Mitigation Monitoring and Reporting Program, of the Final EIR:

Project Design Feature E-1: The design of new buildings shall incorporate features of the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED®) program to be capable of meeting the standards of LEED® Certified or equivalent green building standards. Specific sustainability features integrated into the Project design to enable the Project to achieve the LEED® Certified level shall include, but are not limited to, the following:

- The Project's design shall make use of passive solar energy through appropriate building orientation and landscaping; minimizing heating during cool seasons and solar heat gain during hot seasons; and enhancing natural ventilation by taking advantage of prevailing winds.
- Utilize a paint and surface color palette that emphasizes light and off-white colors that reflect heat away from buildings.
- Provide education regarding energy efficiency to tenants, employees, and customers. Provide information on energy management services for large energy users.
- Provide energy storage where appropriate to optimize renewable energy generation systems and avoid peak energy use.
- Increase insulation such that heat transfer and thermal bridging is minimized.
- Limit air leakage through the structures and/or within the heating and cooling distribution system(s).
- Install energy-efficient space heating and cooling equipment.
- Install electrical hook-ups at loading dock areas.
- Install dual-paned or other energy efficient windows.
- Install automatic devices to turn off lights when they are not needed.

Project Design Feature E-2: Upon buildout of the Project, at least 25 percent of the total code-required parking spaces provided for all types of parking facilities shall be capable of supporting future electric vehicle supply equipment (EVSE). Plans shall indicate the proposed type and location(s) of EVSE and also include raceway method(s), wiring

schematics and electrical calculations to verify that the electrical system has sufficient capacity to simultaneously charge all electric vehicles at all designated EV charging locations at their full rated amperage. Plan design shall be based upon Level 2 or greater EVSE at its maximum operating capacity. Only raceways and related components are required to be installed at the time of construction. A label stating "EV CAPABLE" shall be posted in a conspicuous place at the service panel or subpanel and next to the raceway termination point.

Project Design Feature E-3: Upon buildout of the Project, at least 5 percent of the total code-required parking spaces shall be equipped with EV charging stations and/or outlets for plugin. Plans shall indicate the proposed type and location(s) of charging stations. Plan design for charging stations shall be based on Level 2 or greater EVSE at its maximum operating capacity.

Mitigation Measure E-1: Upon buildout of the Project, the Project shall provide a minimum of 250 kilowatts of photovoltaic panels on the Project Site.

In addition to these new measures, the SWAPE comments recommended a review of measures potentially applicable to the Project in the California Air Pollution Control Officers Association's (CAPCOA) *Quantifying Greenhouse Gas Mitigation Measures*. While a number of such measures were already incorporated into the Project, as discussed on pages IV.E-47 and IV.E-47 in Section IV.E, Greenhouse Gas Emissions, of the Draft EIR, the following additional measures have since been incorporated (as reflected in Section II, Corrections and Additions, of the Final EIR). Where applicable, the implementation of these measures has been quantified in the updated air quality analysis (also provided in Section II, Corrections and Additions, of the Final EIR).

- **Increase Transit Accessibility (LUT-5):** Locating a project with high density near transit will facilitate the use of transit by people traveling to or from the Project Site. CAPCOA provides a range of effectiveness between 0.5- to 24.6-percent reduction in VMT for transit station/stops with high-quality, high-frequency bus service located within a 5- to 10-minute walk. As discussed above, the Project Site is well serviced by Long Beach Transit which operates ten bus lines in the Project area and provides free Passport shuttle service connecting visitors to and around Downtown Long Beach attractions and destinations. However, the air quality analysis conservatively did not quantify the reduction from transit as the transit station is located at a distance greater than a 5- to 10-minute walk.

- **Locate Project near Bike Path/Bike Lane (LUT-8):** A Project that is designed around an existing or planned bicycle facility encourages alternative mode use. As discussed above, the Project Site is located adjacent to existing Class II bike lanes on PCH, Marina Drive, and 2nd Street. CalEEMod does not provide this

measure under mitigation, and, therefore, it was not quantified in the air quality analysis. However, CAPCOA provides a 0.625-percent reduction in VMT for this measure.

- **Improve Walkability Design (LUT-9)**: Improved design elements to enhance walkability and connectivity within a neighborhood include street accessibility and a pedestrian-oriented environment. CAPCOA provides a range of effectiveness between 3.0- and 21.3-percent reduction in VMT. As discussed above, the Project Site is located in an area of the City with a mature network of pedestrian facilities including sidewalks, crosswalks, and pedestrian safety features along PCH, Marina Drive, and 2nd Street. The existing sidewalk system within the Project vicinity provides direct connectivity to the existing shopping center to the immediate south and public transit stops along PCH and 2nd Street. This measure was not quantified in the Draft EIR. CalEEMod requires the number of intersections within a square mile of the Project Site, which is 46 intersections. This number was then doubled to account for the adjacent marina, which would provide additional walking opportunities.

- **Proximity to Traffic Calming Measures (SDT-2):** Providing traffic calming measures encourages people to walk or bike instead of using a vehicle. CAPCOA provides a range of effectiveness between 0.25- and 1.0-percent reduction in VMT. As discussed above, the City is undertaking the Marina Drive Project which will include a mid-block pedestrian crossing adjacent to the 2nd & PCH frontage; new sidewalk where there are gaps in the existing sidewalks thereby providing a continuous sidewalk on the east side between 2nd Street and Studebaker Road. This measure was not quantified in the Draft EIR. CalEEMod requires the percentage of streets with sidewalks (100 percent) and the percentage of intersections (25 percent) with improvements (e.g., cross walks or other pedestrian safety features) in the Project vicinity.

- **Provide Bike Parking in Non-Residential Projects (SDT-6):** A non-residential project that provides bicycle parking facilities encourages alternative mode use. Bicycle parking spaces for the Project would be provided in compliance with LBMC requirements. Based on LBMC Section 21.64.030(B)(2)(c), a minimum of eight bicycle parking spaces would be required. CalEEMod does not provide this measure under mitigation and, therefore, it was not quantified in the air quality analysis. However, CAPCOA provides a 0.625-percent reduction in VMT for this measure.

- **Limit Parking Supply (PDT-1):** Reducing the number of parking spaces can encourage "smart growth" development and alternative transportation choices. As discussed in Section IV.K, Traffic and Access, of the Draft EIR, that the Project would provide parking at a reduced rate relative to LBMC parking requirements. Specifically, LBMC Chapter 21.41, *Off-Street Parking and Loading Requirements,* sets forth parking requirements for development projects based on the types and floor area of land uses. As detailed therein,

community, regional, and neighborhood shopping centers require five spaces per 1,000 square feet, plus additional parking for detached fast-food restaurants. Based on the Parking Analysis included as Appendix S of the Draft EIR, the proposed 1,150 parking spaces included in the Project (providing a ratio of approximately 4.7 per 1,000 gross square feet of floor area) would be adequate to meet Project-generated parking demand. This measure was not quantified in the Draft EIR.

The CalEEMod modeling for the Project has been updated to account for LUT-9, SDT-2, and PDT-1. As shown in Attachment 1, these additional measures would increase the VMT reduction to 45.7 percent in comparison to the VMT reduction provided in the Draft EIR of 28 percent (see Table IV.E-9 on page IV.E-48 of the Draft EIR). As noted above, CalEEMod does not calculate the reduction in VMT from LUT-8 and SDT-6. However, these measures would further reduce VMT by 1.25 percent. Furthermore, per Project Design Feature K-8 detailed in Section IV, Mitigation Monitoring and Reporting Program, of the Final EIR, the Project would implement TDM measures to reduce vehicle trips and encourage the use of public transit. It is important to note that the air quality analysis provided in the Draft EIR conservatively did not account for a reduction in VMT attributable to the Project's TDM measures. Although a specific reduction in trips has not been calculated, a reasonable conservative estimate based on similar TDM plans would be a 10-percent reduction in trips. When accounting for these measures, it is reasonable to assume that VMT would be reduced by a total of approximately 57 percent as compared to the "no implementation of emission reduction measures" (NIERM) scenario, as opposed to the VMT reduction cited in the Draft EIR of 28 percent. This would reduce the Project's regional operational net NO_X emissions of 138 pounds per day reported in the Draft EIR to 110 pounds per day. Moreover, it has been determined that an additional approximately 48-percent reduction in Project trips would be necessary to reduce the regional operational NO_X impact to a less than significant level, even when accounting for the additional measures considered herein. This level of VMT reduction essentially would render the Project infeasible.

GHG Emissions

While not specifically discussed in the SWAPE comments, the measures discussed in Topic 2 that have been incorporated into the Project also would reduce GHG emissions. The Project's total net GHG emissions (i.e., Project less No Project), with implementation of project design features and mitigation, would be reduced to 7,261 metric tons of carbon dioxide equivalent ($MTCO_2e$) per year from 11,407 $MTCO_2e$ per year. Please refer to Attachment 1 for the calculations supporting these numbers. Accordingly, Project impacts related to GHG emissions would be reduced as compared to those cited in the Draft EIR and would remain less than significant.

Attachment 1

Supporting Calculations for Air Quality and Greenhouse Gas Memorandum

AQ Summary for Section (Updated for Final EIR)
Summary of Project Emissions (Unmitigated)

Construction

Regional (Daily)	ROG	NO_x	CO	SO2	PM_{10}	$PM_{2.5}$
2017	9	99	52	0	13	7
2018	34	76	66	0	16	7
2019	28	33	28	0	2	2
MAX	34	99	66	0	16	7
Threshold	**75**	**100**	**550**	**150**	**150**	**55**
Difference	**41**	**1**	**484**	**150**	**134**	**48**

Localized (Daily)	ROG	NO_x	CO	SO2	PM_{10}	$PM_{2.5}$
2017		83	46		6	4
2018		66	46		6	4
2019		35	25		2	2
MAX		83	46		6	4
Threshold		**92**	**3399**		**75**	**29**
Difference		**9**	**3,353**		**69**	**25**

Summary of Project Emissions (No Project 2019

	ROG	NO_x	CO	SO2	PM_{10}	$PM_{2.5}$
Area	8	0	0	0	0	0
Energy	0	3	3	0	0	0
Mobile	2	8	20	0	4	1
Stationary	0	0	0	0	0	0
	10	11	22	0	5	1

Summary of Project Emissions (Project 2019)

	ROG	NO_x	CO	SO2	PM_{10}	$PM_{2.5}$
Area	6	0	0	0	0	0
Energy	1	5	5	0	0	0
Mobile	35	130	274	1	43	12
Mobile Reduction Measures						
(EV Chargers)	(<1)	(<1)	(<1)	(<1)	(<1)	(<1)
(11.3% reduction in VMT from TDM, LUT-8, and SDT-6)	-4	-15	-31	0	-5	-1
Total Mobile	31	115.19	244	1	38	11
Stationary	0	0	0	0	0	0
	37	121	248	1	39	11

Net 2019

	ROG	**NO_x**	**CO**	**SO2**	**PM_{10}**	**$PM_{2.5}$**
Area	**-2**	**0**	**0**	**0**	**0**	**0**
Energy	**0**	**2**	**2**	**0**	**0**	**0**
Mobile	**29**	**107**	**224**	**1**	**34**	**10**
Stationary	**0**	**0**	**0**	**0**	**0**	**0**
Total	**28**	**110**	**226**	**1**	**34**	**10**
Threshold	**55**	**55**	**550**	**150**	**150**	**55**
Difference	**27**	**-55**	**324**	**149**	**116**	**45**
Onsite Total		**2**	**2**		**0**	**0**
Threshold		**92**	**3399**		**18.0**	**8.0**
Difference		**90**	**3397**		**18**	**8**

Applicable VMT Reduction Measures selected in CalEEMod based on CAPCOA's Quantifying Greenhouse Gas Mitigation Measures, August, 2010.

				Reduction in VMT
LUT-3	Increase Diversity of Urban and Suburban Developments (Mixed Use) (Internally calculated in CalEEMod based on mix of land uses)			15.5%
LUT-4	Increase Destination Accessibility			
	Distance to downtown/job center (Port)	4.5	miles	9.3%
SDT-1	Provide pedestrian Network Improvements	Yes		3.6%
LUT-9	Improve Walkability Design			14.1%
	Intersections within one square mile of the Project site	92	intersections	
	***Note: 46 intersections, but doubled to account for adjacent marina			
PDT-1	Limit Parking Supply	6% less spaces per code		3.0%
SDT-2	Provide Traffic Calming Measures			0.2%
	Percent of Streets with sidewalks near the Project site	100	Percent	
	Percent of intersections with crosswalks near the Project site	25	Percent	

VMT:	Unmitigated:	29383772	Mitigated:	15947996	Reduction:	-13435776	Total: -45.7%

Applicable VMT Reduction Measures not included in CalEEMod, but based on CAPCOA's Quantifying Greenhouse Gas Mitigation Measures, August, 2010.

LUT-8	Locate Project near Bike Path/Bike Lane	-0.6%
SDT-6	Provide Bike Parking in Non-Residential Projects	-0.6%
Project Design Feature K-8 (TDM Plan)		-10.0%
	Additional Reduction Total:	-11.3%

	Existing MTCO2E/YR	**No Project MTCO2E/YR**	**BAU MTCO2E/YR**	**Project MTCO2E/YR**	**% Reduction MTCO2E/YR**	
Area	0.0	0.0	0.0	0.0	0%	
Energy	1,711.6	1,711.5	3,354.0	2,775.0	-17%	
Mobile	1,031.2	939.0	14,222.0	6,785.3	-52%	Reflects an 11.3% reduction from CalEEMod to account for TDM, LUT-8, and SDT-6
Waste	46.8	46.8	475.7	475.7	0%	
Water	25.5	25.5	226.0	173.6	-23%	
Construction			69.0	69.0		
Additional Reductions:						
EV Chargers				-199.0		
PV Size (250 kW)				-96		
Total	**2,815**	**2,723**	**18,347**	**9,984**	-46%	

Total Project less No Project: 7,261 MTCO2E/YR

NOx and GHG Emissions Reductions for Commercial Uses Associated with PDF E-3 (Electric Vehicle Charging Stations/Plugins)

Step 1: Estimating NOx Emisisons Reduction to Replace Gasoline/Diesel Vehicle with Electric Vehicle

	NOx		CO2e	
CISO Electricity Emission Factor[1]	0.12	g/kWh	244.79	g/kWh
Fuel Economy of Electric Vehicle[2]	0.25	kWh/mile	0.25	kWh/mile
Gasoline/Diesel Vehicle Emission Factor[3]	0.11	grams/mile	345.38	grams/mile
VMT Reduction per Parking Spot[4]	30	miles/ charging station/day	10,950	miles/ charging station/year
Number of On-Site Chargers[5]	58		58	
VMT Reduction All Stations/Plugins (Based on Charge)	1740	miles/day	635,100	miles/year
Step 2: Estimating NOx Emissions Reduction from Installing Electric Vehicle Charging Stations/Plugins				
Emissions of Gasoline/Diesel Vehicles	0.41	lbs/day	241.8	tons/year
Emissions of Electric Vehicles	0.11	lbs/day	42.8	tons/year
Emisisons Reduction	**0.30**	lbs/day	**199.0**	tons/year

Notes:
1) USEPA eGRID Data. CISO Balancing Authority and CAMx Subregion.
2) US Department of Energy, 2013. Benefits and Considerations of Electricity as a Vehcile Fuel. Available at: http://afdc.energy.gov/fuels/electricity_benefits.html.
3) CARB, 2017. EMFAC2014, running exhaust emission rate for NOX, CO2 and CH4 for light duty gasoline- and diesel-powered vehicles in Los Angeles, aggregated for all models and speeds, averaged over all seasons for **2019.** Attached.
4) Annual VMT reduction estimated based on an estimate of 12 hours of charge time for a Level 2 charging station that charges at a rate of 25 driving range per hour. It is conservatively assumed that 10% of the miles charged would be driven by the charged vehicles.
5) Five percent of proposed 1,150 parking spaces.

PCH & 2nd

Los Angeles-South Coast County, Winter (Updated per SWAPE Comments for Final EIR)

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	1,150.00	Space	10.35	460,000.00	0
Health Club	25.00	1000sqft	0.57	25,000.00	0
High Turnover (Sit Down Restaurant)	30.00	1000sqft	0.69	30,000.00	0
Quality Restaurant	40.00	1000sqft	0.92	40,000.00	0
Regional Shopping Center	95.00	1000sqft	2.18	95,000.00	0
Supermarket	55.00	1000sqft	1.26	55,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	8			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Site Specific

Off-road Equipment - Site Specific

Off-road Equipment - Site Specific

Off-road Equipment - Site Specific

Off-road Equipment - Site Specific

Off-road Equipment - Site Specific

Trips and VMT - The CalEEMod default trip length was doubled to account for round trips. Note: Building Construction phase shows duplicates and, therfore, set to zero.

Demolition -

Grading -

Architectural Coating -

Energy Use - CalGreen 2016

Construction Off-road Equipment Mitigation - Site Specific

Mobile Land Use Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	20.00	101.00
tblConstructionPhase	NumDays	300.00	202.00
tblConstructionPhase	NumDays	20.00	45.00
tblConstructionPhase	NumDays	30.00	91.00

tblConstructionPhase	NumDays	20.00	43.00
tblEnergyUse	T24E	1.71	1.62
tblEnergyUse	T24E	9.13	8.67
tblEnergyUse	T24E	9.13	8.67
tblEnergyUse	T24E	3.07	2.92
tblEnergyUse	T24E	4.94	2.76
tblGrading	MaterialExported	0.00	1,545.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	PhaseName		Demolition
tblOffRoadEquipment	PhaseName		Demolition
tblOffRoadEquipment	PhaseName		Demolition
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2018	2019
tblTripsAndVMT	HaulingTripLength	20.00	40.00
tblTripsAndVMT	HaulingTripLength	20.00	40.00
tblTripsAndVMT	HaulingTripNumber	1,081.00	1,125.00
tblTripsAndVMT	HaulingTripNumber	0.00	910.00
tblTripsAndVMT	VendorTripLength	6.90	13.80
tblTripsAndVMT	VendorTripLength	6.90	13.80
tblTripsAndVMT	VendorTripLength	6.90	13.80
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	116.00	50.00
tblTripsAndVMT	VendorTripNumber	116.00	0.00
tblTripsAndVMT	VendorTripNumber	116.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	38.00	60.00
tblTripsAndVMT	WorkerTripNumber	20.00	40.00
tblTripsAndVMT	WorkerTripNumber	281.00	350.00
tblTripsAndVMT	WorkerTripNumber	281.00	0.00
tblTripsAndVMT	WorkerTripNumber	281.00	0.00
tblTripsAndVMT	WorkerTripNumber	56.00	0.00
tblTripsAndVMT	WorkerTripNumber	56.00	0.00
tblTripsAndVMT	WorkerTripNumber	35.00	60.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	9.2060	98.7572	52.4314	0.1313	9.9367	4.3594	13.0869	3.9306	4.1246	6.8309						
2018	33.9386	76.3870	66.4449	0.1436	12.2656	3.8730	16.1386	3.8988	3.6926	6.8075						
2019	27.6413	33.3121	28.2563	0.0575	0.7984	1.5081	2.3066	0.2146	1.3903	1.6049						
Maximum	**33.9386**	**98.7572**	**66.4449**	**0.1436**	**12.2656**	**4.3594**	**16.1386**	**3.9306**	**4.1246**	**6.8309**						

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	9.2060	98.7572	52.4314	0.1313	4.6448	4.3594	7.9310	1.7366	4.1246	4.8488						
2018	33.9386	76.3870	66.4449	0.1436	12.2656	3.8730	16.1386	3.1149	3.6926	6.8075						
2019	27.6413	33.3121	28.2563	0.0575	0.7984	1.5081	2.3066	0.2146	1.3903	1.6049						
Maximum	**33.9386**	**98.7572**	**66.4449**	**0.1436**	**12.2656**	**4.3594**	**16.1386**	**3.1149**	**4.1246**	**6.8075**						

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**23.01**	**0.00**	**16.35**	**37.02**	**0.00**	**13.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	5.6848	1.3400e-003	0.1438	1.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004						
Energy	0.5918	5.3795	4.5188	0.0323		0.4088	0.4088		0.4088	0.4088						
Mobile	39.9100	166.1928	395.3505	1.0431	78.1842	1.2758	79.4600	20.9273	1.1985	22.1258						
Total	**46.1866**	**171.5737**	**400.0131**	**1.0754**	**78.1842**	**1.6851**	**79.8693**	**20.9273**	**1.6079**	**22.5352**						

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	5.6848	1.3400e-003	0.1438	1.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004						
Energy	0.5725	5.2044	4.3717	0.0312		0.3955	0.3955		0.3955	0.3955						
Mobile	34.8451	130.1325	274.4217	0.6130	42.4344	0.7769	43.2112	11.3583	0.7292	12.0875						

Total	41.1024	135.3382	278.9372	0.6443	42.4344	1.1729	43.6073	11.3583	1.1252	12.4835						

	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	N20	CO2e
Percent Reduction	11.01	21.12	30.27	40.09	45.73	30.40	45.40	45.73	30.02	44.60	0.00	0.00	0.00	0.00	0.00	

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/4/2017	11/3/2017	5	45	
2	Grading	Grading	11/6/2017	3/12/2018	5	91	
3	Building Construction	Building Construction	3/13/2018	12/19/2018	5	202	
4	Architectural Coating	Architectural Coating	10/1/2018	2/18/2019	5	101	
5	Paving	Paving	12/20/2018	2/18/2019	5	43	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 227.5

Acres of Paving: 10.35

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 367,500; Non-Residential Outdoor: 122,500; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Air Compressors	2	8.00	78	0.48
Demolition	Concrete/Industrial Saws	3	8.00	81	0.73
Demolition	Cranes	1	4.00	231	0.29
Demolition	Excavators	4	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Demolition	Rubber Tired Loaders	3	8.00	203	0.36
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Aerial Lifts	3	8.00	63	0.31
Building Construction	Air Compressors	3	8.00	78	0.48
Building Construction	Cement and Mortar Mixers	3	8.00	9	0.56
Building Construction	Cranes	4	8.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Plate Compactors	4	8.00	8	0.43
Building Construction	Pumps	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Architectural Coating	Air Compressors	0	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	8.00	9	0.56
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Paving	Rubber Tired Loaders	2	8.00	203	0.36
Paving	Skid Steer Loaders	3	8.00	65	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	15	60.00	0.00	1,125.00	14.70	6.90	40.00	LD_Mix	HDT_Mix	HHDT
Grading	8	40.00	10.00	910.00	14.70	13.80	40.00	LD_Mix	HDT_Mix	HHDT
Building Construction	28	350.00	50.00	0.00	14.70	13.80	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	28	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	28	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	14	60.00	10.00	0.00	14.70	13.80	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Clean Paved Roads

3.2 Demolition - 2017

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	lb/day										lb/day					
Fugitive Dust					5.1982	0.0000	5.1982	0.7871	0.0000	0.7871						
Off-Road	8.2766	83.3311	45.7172	0.0861		4.2633	4.2633		4.0328	4.0328						
Total	**8.2766**	**83.3311**	**45.7172**	**0.0861**	**5.1982**	**4.2633**	**9.4615**	**0.7871**	**4.0328**	**4.8198**						

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	lb/day										lb/day					
Hauling	0.5145	15.1073	3.2947	0.0380	0.8736	0.0900	0.9636	0.2394	0.0861	0.3255						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.4149	0.3187	3.4195	7.3300e-003	0.6707	6.2400e-003	0.6769	0.1779	5.7600e-003	0.1836						
Total	**0.9294**	**15.4260**	**6.7143**	**0.0453**	**1.5443**	**0.0962**	**1.6405**	**0.4173**	**0.0918**	**0.5091**						

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	lb/day										lb/day					
Fugitive Dust					2.0273	0.0000	2.0273	0.3070	0.0000	0.3070						
Off-Road	8.2766	83.3311	45.7172	0.0861		4.2633	4.2633		4.0328	4.0328						
Total	**8.2766**	**83.3311**	**45.7172**	**0.0861**	**2.0273**	**4.2633**	**6.2906**	**0.3070**	**4.0328**	**4.3397**						

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	lb/day										lb/day					
Hauling	0.5145	15.1073	3.2947	0.0380	0.8736	0.0900	0.9636	0.2394	0.0861	0.3255						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.4149	0.3187	3.4195	7.3300e-003	0.6707	6.2400e-003	0.6769	0.1779	5.7600e-003	0.1836						
Total	**0.9294**	**15.4260**	**6.7143**	**0.0453**	**1.5443**	**0.0962**	**1.6405**	**0.4173**	**0.0918**	**0.5091**						

3.3 Grading - 2017

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	lb/day										lb/day					
Fugitive Dust					8.6753	0.0000	8.6753	3.5968	0.0000	3.5968						
Off-Road	5.8754	70.1504	37.2726	0.0631		3.0887	3.0887		2.8416	2.8416						
Total	**5.8754**	**70.1504**	**37.2726**	**0.0631**	**8.6753**	**3.0887**	**11.7640**	**3.5968**	**2.8416**	**6.4384**						

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	lb/day										lb/day					
Hauling	0.2058	6.0429	1.3179	0.0152	0.6866	0.0360	0.7226	0.1785	0.0344	0.2129						
Vendor	0.0873	1.9895	0.5902	4.6800e-003	0.1278	0.0213	0.1491	0.0368	0.0204	0.0572						
Worker	0.2766	0.2125	2.2797	4.8800e-003	0.4471	4.1600e-003	0.4513	0.1186	3.8400e-003	0.1224						
Total	**0.5697**	**8.2449**	**4.1878**	**0.0247**	**1.2615**	**0.0615**	**1.3229**	**0.3339**	**0.0587**	**0.3925**						

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	lb/day										lb/day					
Fugitive Dust					3.3834	0.0000	3.3834	1.4028	0.0000	1.4028						
Off-Road	5.8754	70.1504	37.2726	0.0631		3.0887	3.0887		2.8416	2.8416						
Total	**5.8754**	**70.1504**	**37.2726**	**0.0631**	**3.3834**	**3.0887**	**6.4721**	**1.4028**	**2.8416**	**4.2444**						

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	lb/day										lb/day					
Hauling	0.2058	6.0429	1.3179	0.0152	0.6866	0.0360	0.7226	0.1785	0.0344	0.2129						
Vendor	0.0873	1.9895	0.5902	4.6800e-003	0.1278	0.0213	0.1491	0.0368	0.0204	0.0572						
Worker	0.2766	0.2125	2.2797	4.8800e-003	0.4471	4.1600e-003	0.4513	0.1186	3.8400e-003	0.1224						
Total	**0.5697**	**8.2449**	**4.1878**	**0.0247**	**1.2615**	**0.0615**	**1.3229**	**0.3339**	**0.0587**	**0.3925**						

3.3 Grading - 2018

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	lb/day										lb/day					
Fugitive Dust					8.6753	0.0000	8.6753	3.5968	0.0000	3.5968						
Off-Road	5.2308	61.7508	33.5492	0.0631		2.6642	2.6642		2.4511	2.4511						
Total	**5.2308**	**61.7508**	**33.5492**	**0.0631**	**8.6753**	**2.6642**	**11.3395**	**3.5968**	**2.4511**	**6.0479**						

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	lb/day										lb/day					
Hauling	0.1807	5.5656	1.2431	0.0150	0.5568	0.0241	0.5809	0.1467	0.0231	0.1697						
Vendor	0.0767	1.8429	0.5330	4.6500e-003	0.1278	0.0169	0.1447	0.0368	0.0162	0.0529						
Worker	0.2446	0.1847	1.9891	4.7500e-003	0.4471	3.9900e-003	0.4511	0.1186	3.6800e-003	0.1223						
Total	**0.5020**	**7.5932**	**3.7652**	**0.0244**	**1.1317**	**0.0450**	**1.1767**	**0.3020**	**0.0429**	**0.3449**						

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	lb/day										lb/day					
Fugitive Dust					3.3834	0.0000	3.3834	1.4028	0.0000	1.4028						
Off-Road	5.2308	61.7508	33.5492	0.0631		2.6642	2.6642		2.4511	2.4511						
Total	**5.2308**	**61.7508**	**33.5492**	**0.0631**	**3.3834**	**2.6642**	**6.0475**	**1.4028**	**2.4511**	**3.8538**						

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	lb/day										lb/day					
Hauling	0.1807	5.5656	1.2431	0.0150	0.5568	0.0241	0.5809	0.1467	0.0231	0.1697						
Vendor	0.0767	1.8429	0.5330	4.6500e-003	0.1278	0.0169	0.1447	0.0368	0.0162	0.0529						
Worker	0.2446	0.1847	1.9891	4.7500e-003	0.4471	3.9900e-003	0.4511	0.1186	3.6800e-003	0.1223						
Total	**0.5020**	**7.5932**	**3.7652**	**0.0244**	**1.1317**	**0.0450**	**1.1767**	**0.3020**	**0.0429**	**0.3449**						

3.4 Building Construction - 2018

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	lb/day										lb/day					
Off-Road	7.6616	65.5564	46.3754	0.0788		3.7536	3.7536		3.5796	3.5796						
Total	**7.6616**	**65.5564**	**46.3754**	**0.0788**		**3.7536**	**3.7536**		**3.5796**	**3.5796**						

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.3837	9.2147	2.6651	0.0232	1.5511	0.0845	1.6356	0.4077	0.0809	0.4886						
Worker	2.1402	1.6160	17.4045	0.0415	10.7144	0.0349	10.7493	2.7072	0.0322	2.7393						
Total	**2.5238**	**10.8306**	**20.0695**	**0.0648**	**12.2656**	**0.1194**	**12.3850**	**3.1149**	**0.1130**	**3.2279**						

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	lb/day										lb/day					
Off-Road	7.6616	65.5564	46.3754	0.0788		3.7536	3.7536		3.5796	3.5796						
Total	**7.6616**	**65.5564**	**46.3754**	**0.0788**		**3.7536**	**3.7536**		**3.5796**	**3.5796**						

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.3837	9.2147	2.6651	0.0232	1.5511	0.0845	1.6356	0.4077	0.0809	0.4886						
Worker	2.1402	1.6160	17.4045	0.0415	10.7144	0.0349	10.7493	2.7072	0.0322	2.7393						
Total	**2.5238**	**10.8306**	**20.0695**	**0.0648**	**12.2656**	**0.1194**	**12.3850**	**3.1149**	**0.1130**	**3.2279**						

3.5 Architectural Coating - 2018

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	lb/day										lb/day					
Archit. Coating	23.7532					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total	**23.7532**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**						

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	lb/day										lb/day					
Archit. Coating	23.7532					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total	**23.7532**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**						

3.5 Architectural Coating - 2019

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	lb/day										lb/day					
Archit. Coating	23.7532					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total	**23.7532**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**						

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	lb/day										lb/day					
Archit. Coating	23.7532					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total	**23.7532**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**						

3.6 Paving - 2018

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	lb/day										lb/day					
Off-Road	3.1616	35.1762	25.3972	0.0460		1.7105	1.7105		1.5760	1.5760						
Paving	0.6306					0.0000	0.0000		0.0000	0.0000						
Total	**3.7922**	**35.1762**	**25.3972**	**0.0460**		**1.7105**	**1.7105**		**1.5760**	**1.5760**						

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0767	1.8429	0.5330	4.6500e-003	0.1278	0.0169	0.1447	0.0368	0.0162	0.0529						
Worker	0.3669	0.2770	2.9836	7.1200e-003	0.6707	5.9800e-003	0.6766	0.1779	5.5100e-003	0.1834						
Total	**0.4436**	**2.1200**	**3.5166**	**0.0118**	**0.7984**	**0.0229**	**0.8213**	**0.2146**	**0.0217**	**0.2363**						

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	lb/day										lb/day					
Off-Road	3.1616	35.1762	25.3972	0.0460		1.7105	1.7105		1.5760	1.5760						
Paving	0.6306					0.0000	0.0000		0.0000	0.0000						
Total	**3.7922**	**35.1762**	**25.3972**	**0.0460**		**1.7105**	**1.7105**		**1.5760**	**1.5760**						

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0767	1.8429	0.5330	4.6500e-003	0.1278	0.0169	0.1447	0.0368	0.0162	0.0529						
Worker	0.3669	0.2770	2.9836	7.1200e-003	0.6707	5.9800e-003	0.6766	0.1779	5.5100e-003	0.1834						
Total	**0.4436**	**2.1200**	**3.5166**	**0.0118**	**0.7984**	**0.0229**	**0.8213**	**0.2146**	**0.0217**	**0.2363**						

3.6 Paving - 2019

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	lb/day										lb/day					
Off-Road	2.8560	31.3501	25.1123	0.0460		1.4879	1.4879		1.3712	1.3712						
Paving	0.6306					0.0000	0.0000		0.0000	0.0000						
Total	**3.4867**	**31.3501**	**25.1123**	**0.0460**		**1.4879**	**1.4879**		**1.3712**	**1.3712**						

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0691	1.7181	0.4891	4.5900e-003	0.1278	0.0144	0.1422	0.0368	0.0138	0.0506						
Worker	0.3323	0.2440	2.6549	6.8800e-003	0.6707	5.7800e-003	0.6764	0.1779	5.3300e-003	0.1832						
Total	**0.4014**	**1.9620**	**3.1440**	**0.0115**	**0.7984**	**0.0202**	**0.8187**	**0.2146**	**0.0191**	**0.2338**						

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	lb/day										lb/day					
Off-Road	2.8560	31.3501	25.1123	0.0460		1.4879	1.4879		1.3712	1.3712						
Paving	0.6306					0.0000	0.0000		0.0000	0.0000						
Total	**3.4867**	**31.3501**	**25.1123**	**0.0460**		**1.4879**	**1.4879**		**1.3712**	**1.3712**						

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	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0691	1.7181	0.4891	4.5900e-003	0.1278	0.0144	0.1422	0.0368	0.0138	0.0506						
Worker	0.3323	0.2440	2.6549	6.8800e-003	0.6707	5.7800e-003	0.6764	0.1779	5.3300e-003	0.1832						
Total	**0.4014**	**1.9620**	**3.1440**	**0.0115**	**0.7984**	**0.0202**	**0.8187**	**0.2146**	**0.0191**	**0.2338**						

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Diversity

Improve Walkability Design

Improve Destination Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Limit Parking Supply

	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	34.8451	130.1325	274.4217	0.6130	42.4344	0.7769	43.2112	11.3583	0.7292	12.0875						
Unmitigated	39.9100	166.1928	395.3505	1.0431	78.1842	1.2758	79.4600	20.9273	1.1985	22.1258						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Health Club	823.25	521.75	668.25	1,621,265	879,939
High Turnover (Sit Down Restaurant)	3,814.50	4,751.10	3955.20	5,408,257	2,935,323
Parking Lot	0.00	0.00	0.00		
Quality Restaurant	3,598.00	3,774.40	2886.40	5,013,379	2,721,003
Regional Shopping Center	4,056.50	4,747.15	2397.80	8,474,471	4,599,506
Supermarket	5,623.20	9,767.45	9154.20	8,866,401	4,812,225

Total	17,915.45	23,561.85	19,061.85	29,383,772	15,947,996

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
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
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
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
Supermarket	16.60	8.40	6.90	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925
Health Club	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925
High Turnover (Sit Down Restaurant)	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925
Quality Restaurant	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925
Regional Shopping Center	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925
Supermarket	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	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	0.5725	5.2044	4.3717	0.0312		0.3955	0.3955		0.3955	0.3955						
NaturalGas Unmitigated	0.5918	5.3795	4.5188	0.0323		0.4088	0.4088		0.4088	0.4088						

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					
Health Club	1436.3	0.0155	0.1408	0.1183	8.4000e-004		0.0107	0.0107		0.0107	0.0107						
High Turnover (Sit Down Restaurant)	21346	0.2302	2.0928	1.7579	0.0126		0.1591	0.1591		0.1591	0.1591						
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						

Quality Restaurant	28461.4	0.3069	2.7903	2.3439	0.0167		0.2121	0.2121		0.2121	0.2121							
Regional Shopping Center	523.151	5.6400e-003	0.0513	0.0431	3.1000e-004		3.9000e-003	3.9000e-003		3.9000e-003	3.9000e-003							
Supermarket	3104.11	0.0335	0.3043	0.2556	1.8300e-003		0.0231	0.0231		0.0231	0.0231							
Total		**0.5918**	**5.3795**	**4.5188**	**0.0323**		**0.4089**	**0.4089**		**0.4089**	**0.4089**							

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					
Health Club	1.33966	0.0145	0.1313	0.1103	7.9000e-004		9.9800e-003	9.9800e-003		9.9800e-003	9.9800e-003						
High Turnover (Sit Down Restaurant)	20.6971	0.2232	2.0291	1.7045	0.0122		0.1542	0.1542		0.1542	0.1542						
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Quality Restaurant	27.5962	0.2976	2.7055	2.2726	0.0162		0.2056	0.2056		0.2056	0.2056						
Regional Shopping Center	0.498164	5.3700e-003	0.0488	0.0410	2.9000e-004		3.7100e-003	3.7100e-003		3.7100e-003	3.7100e-003						
Supermarket	2.95342	0.0319	0.2896	0.2432	1.7400e-003		0.0220	0.0220		0.0220	0.0220						
Total		**0.5725**	**5.2044**	**4.3717**	**0.0312**		**0.3955**	**0.3955**		**0.3955**	**0.3955**						

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	5.6848	1.3400e-003	0.1438	1.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004						
Unmitigated	5.6848	1.3400e-003	0.1438	1.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004						

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	0.6573					0.0000	0.0000		0.0000	0.0000						
Consumer Products	5.0139					0.0000	0.0000		0.0000	0.0000						
Landscaping	0.0136	1.3400e-003	0.1438	1.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004						

Total	**5.6848**	**1.3400e-003**	**0.1438**	**1.0000e-005**		**5.2000e-004**	**5.2000e-004**		**5.2000e-004**	**5.2000e-004**						

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	0.6573					0.0000	0.0000		0.0000	0.0000						
Consumer Products	5.0139					0.0000	0.0000		0.0000	0.0000						
Landscaping	0.0136	1.3400e-003	0.1438	1.0000e-005		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004						
Total	**5.6848**	**1.3400e-003**	**0.1438**	**1.0000e-005**		**5.2000e-004**	**5.2000e-004**		**5.2000e-004**	**5.2000e-004**						

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

PCH & 2nd (Updated per SWAPE Comments for Final EIR))

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	1,150.00	Space	10.35	460,000.00	0
Health Club	25.00	1000sqft	0.57	25,000.00	0
High Turnover (Sit Down Restaurant)	30.00	1000sqft	0.69	30,000.00	0
Quality Restaurant	40.00	1000sqft	0.92	40,000.00	0
Regional Shopping Center	95.00	1000sqft	2.18	95,000.00	0
Supermarket	55.00	1000sqft	1.26	55,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	8			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Site Specific

Off-road Equipment - Site Specific

Off-road Equipment - Site Specific

Off-road Equipment - Site Specific

Off-road Equipment - Site Specific

Off-road Equipment - Site Specific

Trips and VMT - The CalEEMod default trip length was doubled to account for round trips. Note: Building Construction phase shows duplicates and, therefore, set to zero.

Demolition -

Grading -

Architectural Coating -

Energy Use - CalGreen 2016

Construction Off-road Equipment Mitigation - Site Specific

Mobile Land Use Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	0
tblConstructionPhase	NumDays	20.00	101.00
tblConstructionPhase	NumDays	300.00	202.00
tblConstructionPhase	NumDays	20.00	45.00
tblConstructionPhase	NumDays	30.00	91.00
tblConstructionPhase	NumDays	20.00	43.00

tblEnergyUse	T24E	1.71	1.62
tblEnergyUse	T24E	9.13	8.67
tblEnergyUse	T24E	9.13	8.67
tblEnergyUse	T24E	3.07	2.92
tblEnergyUse	T24E	4.94	2.76
tblGrading	MaterialExported	0.00	1,545.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	PhaseName		Demolition
tblOffRoadEquipment	PhaseName		Demolition
tblOffRoadEquipment	PhaseName		Demolition
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblProjectCharacteristics	OperationalYear	2018	2019
tblTripsAndVMT	HaulingTripLength	20.00	40.00
tblTripsAndVMT	HaulingTripLength	20.00	40.00
tblTripsAndVMT	HaulingTripNumber	1,081.00	1,125.00
tblTripsAndVMT	HaulingTripNumber	0.00	910.00
tblTripsAndVMT	VendorTripLength	6.90	13.80
tblTripsAndVMT	VendorTripLength	6.90	13.80
tblTripsAndVMT	VendorTripLength	6.90	13.80
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	116.00	50.00
tblTripsAndVMT	VendorTripNumber	116.00	0.00
tblTripsAndVMT	VendorTripNumber	116.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	WorkerTripNumber	38.00	60.00
tblTripsAndVMT	WorkerTripNumber	20.00	40.00
tblTripsAndVMT	WorkerTripNumber	281.00	350.00
tblTripsAndVMT	WorkerTripNumber	281.00	0.00
tblTripsAndVMT	WorkerTripNumber	281.00	0.00
tblTripsAndVMT	WorkerTripNumber	56.00	0.00
tblTripsAndVMT	WorkerTripNumber	56.00	0.00
tblTripsAndVMT	WorkerTripNumber	35.00	60.00

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					
2017																441.9174
2018																1,536.0628
2019																91.1821
Maximum																**1,536.0628**

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					
2017																441.9170
2018																1,536.0618
2019																91.1820
Maximum																**1,536.0618**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**24.87**	**0.00**	**19.22**	**30.90**	**0.00**	**16.20**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**9-4-2017**	**12-3-2017**	3.1962	3.1962
2	**12-4-2017**	**3-3-2018**	2.5108	2.5108
3	**3-4-2018**	**6-3-2018**	2.7960	2.7960
4	**6-4-2018**	**9-3-2018**	2.8279	2.8279
5	**9-4-2018**	**12-3-2018**	3.3516	3.3516
6	**12-4-2018**	**3-3-2019**	1.9769	1.9769
		Highest	3.3516	3.3516

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																0.0370
Energy																3,093.3376
Mobile																14,221.9722
Waste																475.7197
Water																225.9937
Total																**18,017.0602**

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																0.0370
Energy																2,775.0259
Mobile																8,385.2563
Waste																475.7197
Water																173.5637
Total																**11,809.6026**

	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	N20	CO2e
Percent Reduction											**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**34.45**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	9/4/2017	11/3/2017	5	45	
2	Grading	Grading	11/6/2017	3/12/2018	5	91	
3	Building Construction	Building Construction	3/13/2018	12/19/2018	5	202	
4	Architectural Coating	Architectural Coating	10/1/2018	2/18/2019	5	101	
5	Paving	Paving	12/20/2018	2/18/2019	5	43	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 227.5

Acres of Paving: 10.35

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 367,500; Non-Residential Outdoor: 122,500; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Air Compressors	2	8.00	78	0.48
Demolition	Concrete/Industrial Saws	3	8.00	81	0.73
Demolition	Cranes	1	4.00	231	0.29
Demolition	Excavators	4	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Demolition	Rubber Tired Loaders	3	8.00	203	0.36
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Aerial Lifts	3	8.00	63	0.31
Building Construction	Air Compressors	3	8.00	78	0.48

Building Construction	Cement and Mortar Mixers	3	8.00	9	0.56
Building Construction	Cranes	4	8.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Plate Compactors	4	8.00	8	0.43
Building Construction	Pumps	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Architectural Coating	Air Compressors	0	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	8.00	9	0.56
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Paving	Rubber Tired Loaders	2	8.00	203	0.36
Paving	Skid Steer Loaders	3	8.00	65	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	15	60.00	0.00	1,125.00	14.70	6.90	40.00	LD_Mix	HDT_Mix	HHDT
Grading	8	40.00	10.00	910.00	14.70	13.80	40.00	LD_Mix	HDT_Mix	HHDT
Building Construction	28	350.00	50.00	0.00	14.70	13.80	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	28	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	28	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	0	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	14	60.00	10.00	0.00	14.70	13.80	20.00	LD_Mix	HDT_Mix	HHDT

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Diversity

Improve Walkability Design

Improve Destination Accessibility

Improve Pedestrian Network

Provide Traffic Calming Measures

Limit Parking Supply

	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																8,385.2563
Unmitigated																14,221.9722

4.2 Trip Summary Information

	Average Daily Trip Rate		
	Unmitigated	Mitigated	

Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Health Club	823.25	521.75	668.25	1,621,265	879,939
High Turnover (Sit Down Restaurant)	3,814.50	4,751.10	3955.20	5,408,257	2,935,323
Parking Lot	0.00	0.00	0.00		
Quality Restaurant	3,598.00	3,774.40	2886.40	5,013,379	2,721,003
Regional Shopping Center	4,056.50	4,747.15	2397.80	8,474,471	4,599,506
Supermarket	5,623.20	9,767.45	9154.20	8,866,401	4,812,225
Total	17,915.45	23,561.85	19,061.85	29,383,772	15,947,996

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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
Health Club	16.60	8.40	6.90	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down R...	16.60	8.40	6.90	8.50	72.50	19.00	37	20	43
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
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
Supermarket	16.60	8.40	6.90	6.50	74.50	19.00	34	30	36

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925
Health Club	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925
High Turnover (Sit Down Restaurant)	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925
Quality Restaurant	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925
Regional Shopping Center	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925
Supermarket	0.548007	0.045751	0.200309	0.124119	0.017133	0.006025	0.018861	0.028423	0.002391	0.002469	0.004915	0.000672	0.000925

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	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																1,734.9121
Electricity Unmitigated																2,018.2214
NaturalGas Mitigated																1,040.1138
NaturalGas Unmitigated																1,075.1162

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					
Health Club	524250																28.1422
High Turnover (Sit Down Restaurant)	7.7913e+006																418.2442
Parking Lot	0																0.0000
Quality Restaurant	1.03884e+007																557.6589
Regional Shopping Center	190950																10.2504
Supermarket	1.133e+006																60.8205
Total																	**1,075.1162**

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	tons/yr										MT/yr					
Health Club	488975																26.2486
High Turnover (Sit Down Restaurant)	7.55445e+006																405.5299
Parking Lot	0																0.0000
Quality Restaurant	1.00726e+007																540.7065
Regional Shopping Center	181830																9.7608
Supermarket	1.078e+006																57.8680
Total																	**1,040.1138**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Health Club	213250				68.1891
High Turnover (Sit Down Restaurant)	1.0995e+006				351.5776
Parking Lot	404800				129.4394
Quality Restaurant	1.466e+006				468.7701
Regional Shopping Center	1.09915e+006				351.4656
Supermarket	2.02895e+006				648.7797
Total					**2,018.2214**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Health Club	187288				59.8873
High Turnover (Sit Down Restaurant)	1.01447e+006				324.3867
Parking Lot	303600				97.0795
Quality Restaurant	1.29436e+006				413.8862
Regional Shopping Center	917938				293.5209
Supermarket	1.708e+006				546.1515
Total					**1,734.9121**

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																0.0370
Unmitigated																0.0370

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																0.0000
Consumer Products																0.0000
Landscaping																0.0370
Total																**0.0370**

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																0.0000

Consumer Products																0.0000
Landscaping																0.0370
Total																**0.0370**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated				173.5637
Unmitigated				225.9937

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Health Club	1.47858 / 0.906226				11.3882
High Turnover (Sit Down Restaurant)	9.10601 / 0.581235				52.3735
Parking Lot	0 / 0				0.0000
Quality Restaurant	12.1413 / 0.77498				69.8314
Regional Shopping Center	7.03689 / 4.31293				54.1991
Supermarket	6.77975 / 0.209683				38.2015
Total					**225.9937**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Health Club	1.18286 / 0.453113				8.1448
High Turnover (Sit Down Restaurant)	7.28481 / 0.290617				41.2794
Parking Lot	0 / 0				0.0000
Quality Restaurant	9.71308 / 0.38749				55.0391

Regional Shopping Center	5.62951 / 2.15647			38.7627
Supermarket	5.4238 / 0.104842			30.3377
Total				**173.5637**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated				475.7197
Unmitigated				475.7197

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Health Club	142.5				71.6635
High Turnover (Sit Down Restaurant)	357				179.5358
Parking Lot	0				0.0000
Quality Restaurant	36.5				18.3559
Regional Shopping Center	99.75				50.1644
Supermarket	310.2				156.0001
Total					**475.7197**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Health Club	142.5				71.6635
High Turnover (Sit Down Restaurant)	357				179.5358
Parking Lot	0				0.0000
Quality Restaurant	36.5				18.3559

Regional Shopping Center	99.75			50.1644
Supermarket	310.2			156.0001
Total				**475.7197**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Attachment 2

Supporting Calculations for Air Quality and Greenhouse Gas Memorandum

PCH&2nd (DEFAULT CALEEMOD ASSUMPTIONS)

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unenclosed Parking with Elevator	1,150.00	Space	10.35	460,000.00	0
Health Club	25.00	1000sqft	0.57	25,000.00	0
High Turnover (Sit Down Restaurant)	30.00	1000sqft	0.69	30,000.00	0
Quality Restaurant	40.00	1000sqft	0.92	40,000.00	0
Regional Shopping Center	95.00	1000sqft	2.18	95,000.00	0
Supermarket	55.00	1000sqft	1.26	55,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	8			**Operational Year**	2019
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Grading -

Demolition -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Parking	100.00	0.00
tblAreaCoating	Area_EF_Parking	100	0
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	100	0
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	100	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	50	0
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	50	0
tblGrading	MaterialExported	0.00	1,545.00
tblProjectCharacteristics	OperationalYear	2018	2019

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017		70.3149														

2018		61.7210														
2019		35.6640														
Maximum		**70.3149**														

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017		70.3149														
2018		61.7210														
2019		35.6640														
Maximum		**70.3149**														

	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	N20	CO2e
Percent Reduction	**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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	4/17/2019	5/14/2019	5	20	
2	Building Construction	Building Construction	1/24/2018	3/19/2019	5	300	
3	Demolition	Demolition	11/1/2017	11/28/2017	5	20	
4	Grading	Grading	12/13/2017	1/23/2018	5	30	
5	Paving	Paving	3/20/2019	4/16/2019	5	20	
6	Site Preparation	Site Preparation	11/29/2017	12/12/2017	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 75

Acres of Paving: 10.35

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 367,500; Non-Residential Outdoor: 122,500; Striped Parking Area:

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	2	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40

Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	56.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	281.00	116.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	1,081.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	193.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2019

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	lb/day										lb/day					
Archit. Coating																
Off-Road		1.8354														
Total		**1.8354**														

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	lb/day										lb/day					
Hauling		0.0000														
Vendor		0.0000														
Worker		0.2277														
Total		**0.2277**														

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	lb/day										lb/day					
Archit. Coating																
Off-Road		1.8354														
Total		**1.8354**														

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	lb/day										lb/day					
Hauling		0.0000														
Vendor		0.0000														
Worker		0.2277														
Total		**0.2277**														

3.3 Building Construction - 2018

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	lb/day										lb/day					
Off-Road		23.3900														
Total		**23.3900**														

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	lb/day										lb/day					
Hauling		0.0000														
Vendor		14.2489														
Worker		1.2974														
Total		**15.5463**														

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	lb/day										lb/day					
Off-Road		23.3900														
Total		**23.3900**														

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	lb/day										lb/day					
Hauling		0.0000														
Vendor		14.2489														
Worker		1.2974														
Total		**15.5463**														

3.3 Building Construction - 2019

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	lb/day										lb/day					
Off-Road		21.0788														
Total		**21.0788**														

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	lb/day										lb/day					
Hauling		0.0000														
Vendor		13.4426														
Worker		1.1425														
Total		**14.5852**														

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	lb/day										lb/day					
Off-Road		21.0788														
Total		**21.0788**														

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	lb/day										lb/day					
Hauling		0.0000														
Vendor		13.4426														
Worker		1.1425														
Total		**14.5852**														

3.4 Demolition - 2017

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	lb/day										lb/day					
Fugitive Dust																
Off-Road		42.7475														
Total		**42.7475**														

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	lb/day										lb/day					
Hauling		19.0633														
Vendor		0.0000														
Worker		0.0797														
Total		**19.1430**														

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	lb/day										lb/day					
Fugitive Dust																
Off-Road		42.7475														
Total		**42.7475**														

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	lb/day										lb/day					
Hauling		19.0633														
Vendor		0.0000														
Worker		0.0797														
Total		**19.1430**														

3.5 Grading - 2017

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	lb/day										lb/day					
Fugitive Dust																
Off-Road		67.9396														
Total		**67.9396**														

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	lb/day										lb/day					
Hauling		2.2690														
Vendor		0.0000														
Worker		0.1062														
Total		**2.3753**														

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	lb/day										lb/day					
Fugitive Dust																
Off-Road		67.9396														
Total		**67.9396**														

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	lb/day										lb/day					
Hauling		2.2690														
Vendor		0.0000														
Worker		0.1062														
Total		**2.3753**														

3.5 Grading - 2018

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	lb/day										lb/day					
Fugitive Dust																
Off-Road		59.5218														
Total		**59.5218**														

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	lb/day										lb/day					
Hauling		2.1069														
Vendor		0.0000														
Worker		0.0923														
Total		**2.1992**														

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	lb/day										lb/day					
Fugitive Dust																
Off-Road		59.5218														
Total		**59.5218**														

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	lb/day										lb/day					
Hauling		2.1069														
Vendor		0.0000														
Worker		0.0923														
Total		**2.1992**														

3.6 Paving - 2019

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	lb/day										lb/day					
Off-Road		15.2441														
Paving																
Total		**15.2441**														

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	lb/day										lb/day					
Hauling		0.0000														
Vendor		0.0000														
Worker		0.0610														
Total		**0.0610**														

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	lb/day										lb/day					
Off-Road		15.2441														
Paving																
Total		**15.2441**														

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	lb/day										lb/day					
Hauling		0.0000														
Vendor		0.0000														
Worker		0.0610														
Total		**0.0610**														

3.7 Site Preparation - 2017

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	lb/day										lb/day					
Fugitive Dust																
Off-Road		52.2754														
Total		**52.2754**														

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	lb/day										lb/day					
Hauling		0.0000														
Vendor		0.0000														
Worker		0.0956														
Total		**0.0956**														

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	lb/day										lb/day					
Fugitive Dust																
Off-Road		52.2754														
Total		**52.2754**														

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	lb/day										lb/day					
Hauling		0.0000														
Vendor		0.0000														
Worker		0.0956														
Total		**0.0956**														