13980 Seal Beach Boulevard Hydrogen Fueling Facility Project

Initial Study – Mitigated Negative Declaration

prepared by

City of Seal Beach
211 Eighth Street
Seal Beach, California 90740
Contact: Marco Cuevas Jr., Assistant Planner

prepared with the assistance of

Rincon Consultants, Inc.
250 East 1st Street, Suite 1400
Los Angeles, California 90012

February 2021

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
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Initial Study

1. Project Title

13980 Seal Beach Boulevard Hydrogen Fueling Facility Project

2. Lead Agency Name and Address

City of Seal Beach

Department of Community Development
211 Eighth Street
Seal Beach, California 90740

Contact:

Marco Cuevas, Planner
Phone: (562) 431-2527
Email: mcueaves@sealbeachca.gov

3. Project Applicant

Fiddler Group
229 North Euclid Avenue, Suite 550
Pasadena, California 91101

4. Project Location

The approximately 0.54-acre project site is at the northwest corner of the intersection of Seal Beach Boulevard and Westminster Boulevard in the central area of the City of Seal Beach. The street address is 13980 Seal Beach Boulevard. The assessor's parcel number is 095-641-52. Figure 1 shows the site location in a regional context. Figure 2 shows the location of the site relative to the surrounding area.

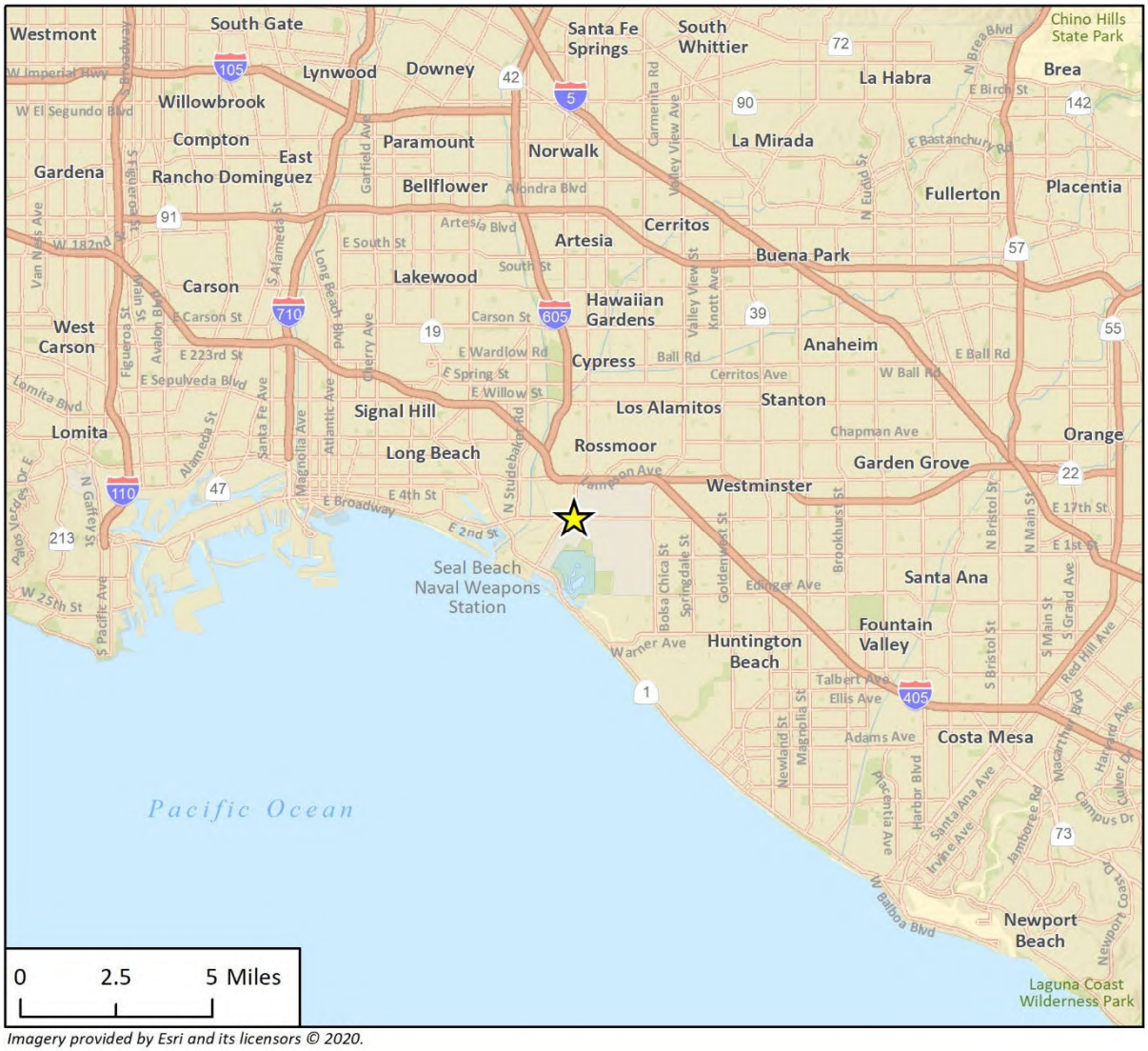
5. General Plan Designation

The project site is designated as Commercial-Service under the City's General Plan (City of Seal Beach 2003). The project site is in a Planning Area 3.

6. Zoning

The project site is zoned General Commercial (GC) by the City of Seal Beach (City of Seal Beach 2010).

Figure 1 Regional Location



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Project Location

N

Figure 2 Project Location and Adjacent Land Uses

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7. Surrounding Land Uses

The project site consists of an existing convenience store and gas station within the Seal Beach Village commercial shopping. Retail parking for the shopping center is adjacent to the north side of the project site. The larger commercial anchor stores in the shopping center are along the western end of the parking area northwest of the project site. The site is bounded by Seal Beach Boulevard to the east and Westminster Boulevard to the south. A chiropractic clinic is located immediately west of the project site. Several additional commercial buildings are located south of Westminster Boulevard and southwest of the project site. A naval weapons station is located southeast and east of the site. An aerial photograph of the site and its surrounding land uses is shown in Figure 2.

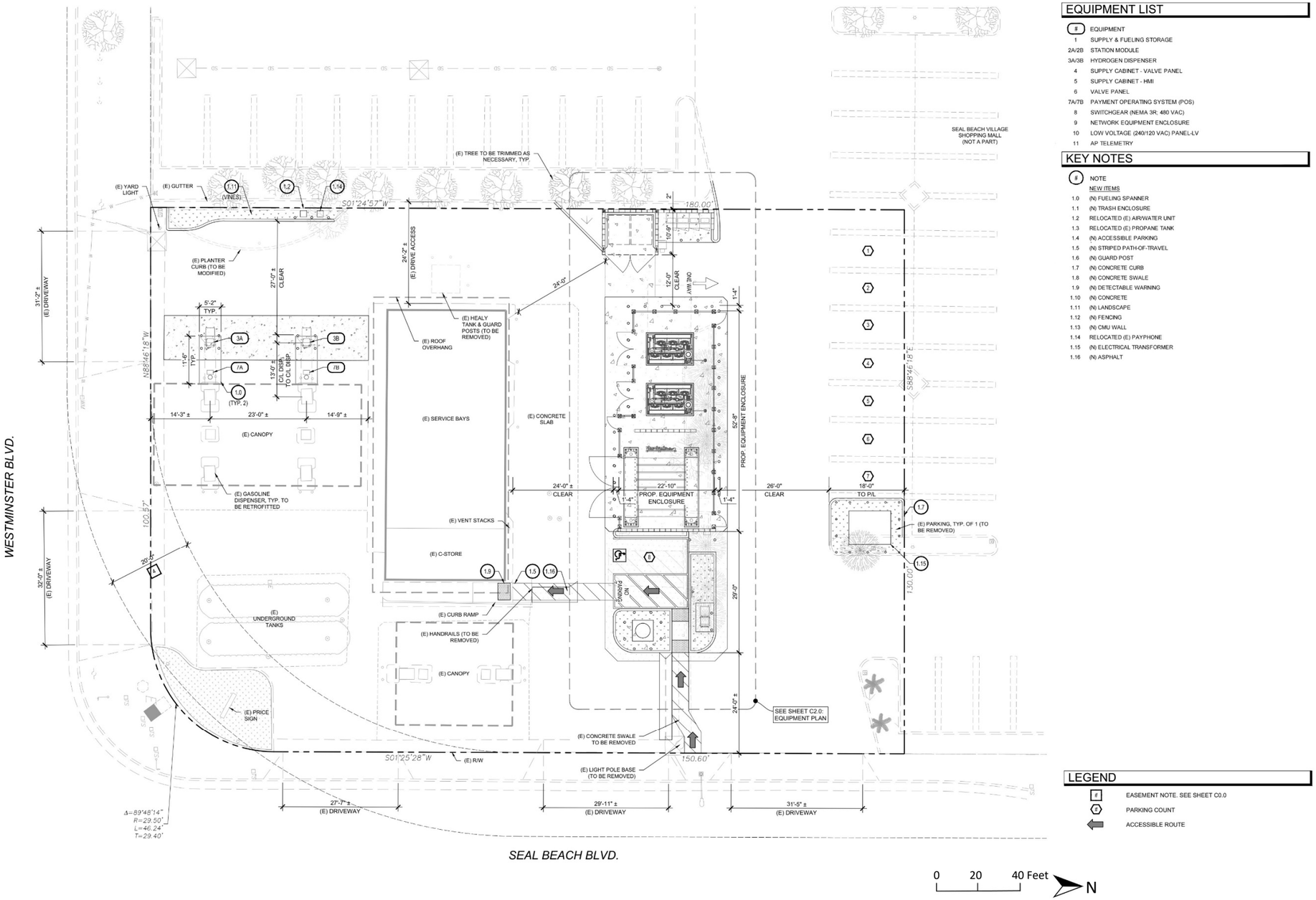
8. Description of Project

The proposed project consists of the installation of a new hydrogen fueling facility at an existing gasoline station and convenience store. The proposed hydrogen fueling station would be similar in construction and appearance to the existing gasoline fueling stations and would provide two new hydrogen fuel dispensers. The existing convenience store, fueling bays canopy, and associated gasoline fueling equipment would remain on site, as would the auto service and repair station attached to the convenience store.

An approximately 1,010-square-foot hydrogen equipment enclosure would be constructed in the northern portion of the project site. The enclosure would be a four-sided wall structure without a roof. The enclosure would be of metal stud construction with fire code gypsum panel with a stucco facade and include steel doors or gates to restrict access. Hydrogen equipment in the enclosure would include two hydrogen station modules for gas compression, hydrogen gas storage vessels, and a delivery manifold for off-loading fuel deliveries. Underground fuel pipelines would be installed to carry the hydrogen to two dispenser pumps, which would be installed west of the existing fueling stations in the southern portion of the site, below the expanded canopy structure. Associated electrical equipment would be installed adjacent to the exterior of the enclosure.

The proposed project would also involve construction of a new trash enclosure along the western site boundary, reconfiguration of landscaping areas, relocation of the air-water unit, relocation of the propane tank, removal of the existing Healy tank, conversion of the existing fueling system into an enhanced vapor recovery system, removal of one parking space along the northern site boundary, installation of an ADA parking stall near the proposed enclosure, removal of a concrete swale, and curb modifications at the existing southwestern-most driveway. The proposed conceptual site plan is shown in Figure 3.

Figure 3 Proposed Site Plan



EQUIPMENT LIST

#	EQUIPMENT
1	SUPPLY & FUELING STORAGE
2A/2B	STATION MODULE
3A/3B	HYDROGEN DISPENSER
4	SUPPLY CABINET - VALVE PANEL
5	SUPPLY CABINET - HMI
6	VALVE PANEL
7A/7B	PAYMENT OPERATING SYSTEM (POS)
8	SWITCHGEAR (NEMA 3R; 480 VAC)
9	NETWORK EQUIPMENT ENCLOSURE
10	LOW VOLTAGE (240/120 VAC) PANEL-LV
11	AP TELEMETRY

KEY NOTES

#	NOTE
	NEW ITEMS
1.0	(N) FUELING SPANNER
1.1	(N) TRASH ENCLOSURE
1.2	RELOCATED (E) AIR/WATER UNIT
1.3	RELOCATED (E) PROPANE TANK
1.4	(N) ACCESSIBLE PARKING
1.5	(N) STRIPED PATH-OF-TRAVEL
1.6	(N) GUARD POST
1.7	(N) CONCRETE CURB
1.8	(N) CONCRETE SWALE
1.9	(N) DETECTABLE WARNING
1.10	(N) CONCRETE
1.11	(N) LANDSCAPE
1.12	(N) FENCING
1.13	(N) CMU WALL
1.14	RELOCATED (E) PAYPHONE
1.15	(N) ELECTRICAL TRANSFORMER
1.16	(N) ASPHALT

LEGEND

- # EASEMENT NOTE. SEE SHEET C0.0
- # PARKING COUNT
- ACCESSIBLE ROUTE

Project Construction

Construction activities would begin soon after entitlements are granted and would be completed in approximately 6 to 8 months. Construction activities would include installation of the equipment enclosure and excavation as part of installation of fuel pumps and related infrastructure. The maximum excavation depth would be 4.5 feet; however, most of the excavation would be in the 2-foot to 3-foot range. Soil excavated would be stored onsite during construction and used to backfill excavation. However, as hydrogen fueling infrastructure would occupy space in the excavation, not all soil would be reused. Excess soil would be exported from the site.

The project would be constructed within an area that is currently paved with asphalt concrete. Therefore, the proposed project would not increase the amount of impervious surface on the site. However, pavement that is damaged or demolished during construction, such as the required excavation, would be restored.

Project Operation

The proposed hydrogen fueling station would operate from 6:00 a.m. to 10:00 p.m., 7 days a week, consistent with the operational hours of the existing convenience store and gasoline fueling facilities on-site. Cars that operate using hydrogen are known as fuel-cell electric vehicles (FCEV). As FCEVs become more popular and common, the number of daily trips to the hydrogen fueling station could increase.

Hydrogen gas would be delivered to the site, as needed, based on supply and demand. Tractor trailer trucks designed to transport liquid and gaseous substances, commonly known as tanker trucks, would deliver fuel to the site. Initially, delivery would occur approximately once per week. Delivery frequency could increase as FCEVs become more common and the demand for hydrogen fuel increases. Maximum delivery frequency, based on maximum possible demand, would be once, daily.

The proposed hydrogen fueling facilities would not change current operations of the existing convenience store, gasoline fueling station, and auto service station.

9. Required Public Agency Permits and Approvals

The proposed project would require the following entitlements, permits, and/or approvals:

- City of Seal Beach Grading Permit
- City of Seal Beach Building Permit

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Environmental Factors Potentially Affected

This project would potentially affect the environmental factors checked below, involving at least one impact that is "Potentially Significant" or "Less than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.

☐	Aesthetics	☐	Agriculture and Forestry Resources	☐	Air Quality
☐	Biological Resources	■	Cultural Resources	☐	Energy
■	Geology/Soils	☐	Greenhouse Gas Emissions	☐	Hazards & Hazardous Materials
☐	Hydrology/Water Quality	☐	Land Use/Planning	☐	Mineral Resources
☐	Noise	☐	Population/Housing	☐	Public Services
☐	Recreation	☐	Transportation	☐	Tribal Cultural Resources
☐	Utilities/Service Systems	☐	Wildfire	■	Mandatory Findings of Significance

Determination

Based on this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

■ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "less than significant with mitigation incorporated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potential significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	Date
Printed Name	Title

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Environmental Checklist

1 Aesthetics

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☐	■	☐
b. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	■
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	■	☐
d. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	☐	☐	■	☐

a. Would the project have a substantial adverse effect on a scenic vista?

As documented in the City of Seal Beach General Plan, the coastal waterfront, including shoreline and marshlands, is one of the City's most valuable assets. The project site is at least 1.8 miles from the waterfront scenic area, and 1.0 mile north of the Seal Beach National Wildlife Refuge, which contains the marshlands and ecological areas. The project site and the surrounding area are relatively flat. Prominent viewpoints, other than the surrounding buildings, are limited. Views from the project site are primarily of surrounding urban development, such as the retail shopping center northwest of the site. The proposed hydrogen fueling facilities would appear similar to the existing gasoline fueling facilities on the project site and would therefore be consistent with the urban design conditions of the surrounding shopping center. The proposed hydrogen fueling facilities would be no taller or prominent than existing facilities on the project site. Therefore, no scenic views would be obstructed, and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

There are no state-designated scenic highways in Seal Beach. In Orange County, the only state-designated scenic highway is State Route (SR) 91 between Route 55 to the Anaheim city limit (Caltrans 2019). The distance between the designated segment of SR 91 and the project site is over 15 miles, and therefore not within the viewshed of an identified scenic highway.

Eligible State Scenic Highways that are not officially designated include: SR 57 from Route 90 to Route 60 near the City of Industry, SR 74 from I-5 near San Juan Capistrano to the I-111, and SR 91 from Route 55 near Santa Ana Canyon to I-15 near Corona (Caltrans 2019). The project site is greater than 15 miles from the nearest of these roadway segments. There would be no impact.

NO IMPACT

c. Would the project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

The project site is in an existing fueling station in an urbanized part of Seal Beach. The project would add hydrogen fueling facilities to the station. The project site is zoned General Commercial, which allows for the fueling station. The hydrogen fueling facilities would appear like existing gasoline fueling facilities, such as fuel dispenser machines. Accordingly, the proposed project would not conflict with applicable zoning and other regulations governing scenic quality. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d. Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

The proposed project would include extension of the existing lighted canopy to cover the proposed hydrogen fuel dispensers, to aid customers in refueling during night. Apart from this extension, no additional lights would be installed as part of the project. Canopy lighting would be directed downward toward the dispensers. The lights must also comply with Seal Beach Municipal Code (SBMC) Section 11.4.05.050(B)(6), which pertains to outdoor canopy lighting. The code requires outdoor lighting to be energy efficient, stationary, and shielded or recessed to ensure that all light is directed away from adjoining public rights-of-way and properties. The new canopy lights would be required to comply with SBMC Section 11.4.05.050(B)(6), ensuring the project would not result in a substantial source of new light. The proposed project would not involve the use of reflective materials that create glare. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	■
b. Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	■
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	■
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	■
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	■

a. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

b. Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?

c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

d. Would the project result in the loss of forest land or conversion of forest land to non-forest use?

e. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

The project site is an existing gasoline station that is part of shopping center in an urbanized area of Seal Beach. Neither farmland nor forested lands occur on or adjacent to the project site. The site is not zoned for agriculture, forest land, nor timberland production. The project would add hydrogen fueling facilities to an existing fueling station and not convert any existing land use. There would be no impact.

NO IMPACT

3 Air Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	■	☐
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	■	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	■	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☐	■

Air Quality Standards and Attainment

The project site is located within the South Coast Air Basin (Basin), which is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). As the local air quality management agency, SCAQMD is required to monitor air pollutant levels to ensure that National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) are met and, if they are not met, to develop strategies to meet the standards. Depending on whether the standards are met or exceeded, the Basin is classified as being in "attainment" or "nonattainment." In areas designated as non-attainment for one or more air pollutants, a cumulative air quality impact exists for those air pollutants, and the human health impacts associated with these criteria pollutants, presented in Table 1, are already occurring in that area as part of the environmental baseline condition. Under state law, air districts are required to prepare a plan for air quality improvement for pollutants for which the district is in non-compliance. The Basin is designated a nonattainment area for the federal standards for ozone and $PM_{2.5}$ (particulate matter up to 2.5 microns in size) and the state standards for ozone, PM_{10} (particulate matter up to 10 microns in size), and $PM_{2.5}$ (SCAQMD 2016). This nonattainment status is a result of several factors, the primary ones being the naturally adverse meteorological conditions that limit the dispersion and diffusion of pollutants, the limited capacity of the local airshed to eliminate air pollutants, and the number, type, and density of emission sources in the Basin.

Table 1 Health Effects Associated with Non-Attainment Criteria Pollutants

Pollutant	Adverse Effects
Ozone	(1) Short-term exposures: (a) pulmonary function decrements and localized lung edema in humans and animals and (b) risk to public health implied by alterations in pulmonary morphology and host defense in animals; (2) long-term exposures: risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (3) vegetation damage; and (4) property damage.
Suspended particulate matter (PM_{10})	(1) Excess deaths from short-term and long-term exposures; (2) excess seasonal declines in pulmonary function, especially in children; (3) asthma exacerbation and possibly induction; (4) adverse birth outcomes including low birth weight; (5) increased infant mortality; (6) increased respiratory symptoms in children such as cough and bronchitis; and (7) increased hospitalization for both cardiovascular and respiratory disease (including asthma).[1]
Suspended particulate matter ($PM_{2.5}$)	(1) Excess deaths from short- and long-term exposures; (2) excess seasonal declines in pulmonary function, especially in children; (3) asthma exacerbation and possibly induction; (4) adverse birth outcomes, including low birth weight; (5) increased infant mortality; (6) increased respiratory symptoms in children, such as cough and bronchitis; and (7) increased hospitalization for both cardiovascular and respiratory disease, including asthma.

Source: United States Environmental Protection Agency 2018

Air Quality Management

Because the Basin currently exceeds federal and state ozone, state PM_{10}, and federal and state $PM_{2.5}$ standards, SCAQMD is required to implement strategies to reduce pollutant levels to achieve attainment of the NAAQS and CAAQS. The 2016 AQMP, adopted on March 3, 2017, incorporates new scientific data and notable regulatory actions that have occurred since adoption of the 2012 AQMP, including the approval of the new federal 8-hour ozone standard of 0.070 ppm that was finalized in 2015.

The 2016 AQMP addresses several State and federal planning requirements and incorporates new scientific information, primarily in the form of updated emissions inventories, ambient measurements, and updated meteorological air quality models (SCAQMD 2017). This Plan builds upon the approaches taken in the 2012 AQMP for the attainment of federal PM and ozone standards, and highlights the significant amount of reductions to be achieved. It emphasizes the need for interagency planning to identify additional strategies to achieve reductions within the timeframes allowed under the federal Clean Air Act, especially in the area of mobile sources. The 2016 AQMP also includes a discussion of emerging issues and opportunities, such as fugitive toxic particulate emissions, zero-emission mobile source control strategies, and the interacting dynamics among climate, energy, and air pollution. The Plan also includes attainment demonstrations of the new federal 8-hour ozone standard and vehicle miles travelled (VMT) emissions offsets, as per recent U.S. EPA requirements (SCAQMD 2017).

Air Emission Thresholds

Regional Thresholds

The 2016 AQMP provides a strategy for the attainment of state and federal air quality standards. The SCAQMD recommends quantitative regional significance thresholds for temporary construction activities and long-term project operation within the Basin, shown in Table 2.

Table 2 SCAQMD Air Quality Significance Thresholds (pounds per day)

Pollutant	Construction Thresholds	Operational Thresholds
ROG	75	55
NO_x	100	55
CO	550	550
SO_x	150	150
PM_{10}	150	150
$PM_{2.5}$	55	55

Source: SCAQMD 2019

Localized Significance Thresholds

In addition to regional thresholds, the SCAQMD has developed Localized Significance Thresholds (LSTs) in response to the Governing Board's Environmental Justice Enhancement Initiative (1-4), which was prepared to update the CEQA Air Quality Handbook. LSTs were devised in response to concern regarding exposure of individuals to criteria pollutants in local communities. LSTs represent the maximum emissions from a project that will not cause or contribute to an air quality exceedance of the most stringent applicable federal or state ambient air quality standard at the nearest sensitive receptor, taking into consideration ambient concentrations in each source receptor area (SRA), project size, and distance to the sensitive receptor. However, LSTs only apply to emissions within a fixed stationary location, including idling emissions during both project construction and operation. LSTs have been developed for NO_X, CO, PM_{10}, and $PM_{2.5}$. LSTs do not apply to mobile sources such as cars on a roadway (SCAQMD 2008a). As such, LSTs for operational emissions do not apply to onsite development since the majority of emissions would be generated by cars on the roadways.

The project site is 0.54 acre in size and is located in Source Receptor Area 18 (SRA 18), North Coastal Orange County (SCAQMD 2008a). The SCAQMD provides LSTs for one-, two-, and five-acre project sites for receptors at a distance of 82 to 1,640 feet (25 to 500 meters) from the project site boundary. Because the project site is less than one acre in size, the LSTs associated with one-acre sites are used for the construction air quality analysis are provided in Table 3. The project site is adjacent to commercial land uses; therefore, the 25-meter receptor distance is appropriate.

Table 3 LSTs for SRA 18 (pounds per day)

Pollutant	25 meters	50 meters	100 meters	200 meters	500 meters
NOx (construction and operation)	92	83	108	140	219
CO (construction and operation)	647	738	1,090	2,096	6,841
PM_{10} (operation)	1	4	7	13	33
PM_{10} (construction)	4	13	27	54	135
$PM_{2.5}$ (operation)	1	2	3	6	19
$PM_{2.5}$ (construction)	3	5	9	22	76

Source: SCAQMD 2009

Methodology

Air pollutant emissions generated by project construction and operation were estimated using the California Emissions Estimator Model (CalEEMod), version 2016.3.2. CalEEMod uses project-specific information, including the project's land uses, square footages for different uses (e.g., gasoline/service station for the new hydrogen pumps, parking lot for the new ADA parking space, and other non-asphalt surfaces for the hydrogen equipment area), and location, to model a project's construction and operational emissions. The analysis reflects the construction and operation of the project as described in Section 2.8, *Description of Project*.

Construction emissions modeled include emissions generated by construction equipment used on-site and emissions generated by vehicle trips associated with construction, such as worker and vendor trips. CalEEMod estimates construction emissions by multiplying the amount of time equipment is in operation by emission factors. Construction of the proposed project was analyzed based on the CalEEMod default construction schedule and construction equipment list. It is assumed that all construction equipment used would be diesel-powered. This analysis assumes that the project would comply with all applicable regulatory standards. In particular, the project would comply with SCAQMD Rule 403 (Fugitive Dust).

Operational emissions modeled include mobile source emissions (i.e., vehicle emissions), energy emissions, and area source emissions. Mobile source emissions are generated by vehicle trips to and from the project site. The trip generation rate used is consistent with the methodology described in Section 17, *Transportation*; based on trip generation information from similarly sized facilities, trips were estimated for the proposed facility to be approximately 80 daily trips. Emissions attributed to energy use include the increase in natural gas consumption for water heating at the existing convenience store, due to the increase in daily customers and associated increase in water usage at the on-site restroom facilities, although the store would not be expanded. Area source emissions are generated by landscape maintenance equipment, consumer products and architectural coatings.

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

A project may be inconsistent with the AQMP if it would generate population, housing, or employment growth exceeding the forecasts used in the development of the AQMP. The 2016 AQMP relies on local cities' general plans and the Southern California Association of Government's (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) forecasts of regional population, housing, and employment growth in its own projections for managing Basin air quality.

Construction of the proposed hydrogen fueling facility would not generate new employment opportunities that cause relocation to the area given the temporary nature of construction and the interconnectedness of the southern California region. Project operation would not require increased employment at the existing gas station. Additionally, hydrogen delivery truck trips would not result in increased employment, as the project site would be one stop on the overall route that the truck currently makes to deliver hydrogen fuel in the region. Therefore, the project would not induce population growth that would conflict with the growth forecasts contained in the 2016 AQMP. Further, the addition of hydrogen fueling facilities in the project area could expand the use of hydrogen fuel vehicles, which emit only water (hydrogen and oxygen). Accordingly, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Hydrogen is not a regulated pollutant, so the storage of hydrogen fuel in tanks would not violate an air quality standard or contribute substantially to an existing or projected air quality violation. Stations that merely accept hydrogen fuel deliveries would likely not need air permits for hydrogen fuel storage tanks, as they would have no regulated emissions.

Construction activities associated with development of the proposed project would generate diesel emissions and dust. Construction emissions modeled include emissions generated by construction equipment used on-site and emissions generated by vehicle trips associated with construction, such as worker and vendor trips. It is assumed that all of the construction equipment used would be diesel-powered. Construction emissions were calculated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2. CalEEMod was developed for use throughout the state in estimating construction and operational emissions from land use development. Emissions were based on parameters such as the duration of construction activity, area of disturbance, and anticipated equipment use during construction. The construction schedule and equipment list for the proposed road project were provided by the applicant.

For the purposes of construction emissions modeling, it was assumed that the project would comply with SCAQMD Rule 403, which identifies measures to reduce fugitive dust and is required to be implemented at all construction sites located within the Basin. Therefore, the following conditions, which are required to reduce fugitive dust in compliance with SCAQMD Rule 403, were included in CalEEMod for the site preparation and grading phases of construction.

1. **Minimization of Disturbance.** Construction contractors shall minimize the area disturbed by clearing, grading, earth moving, or excavation operations to prevent excessive amounts of dust.
2. **Soil Treatment.** Construction contractors shall treat all graded and excavated material, exposed soil areas, and active portions of the construction site, including unpaved on-site roadways to minimize fugitive dust. Treatment shall include, but not necessarily be limited to, periodic watering, application of environmentally safe soil stabilization materials, and/or roll compaction as appropriate. Watering shall be done as often as necessary, and at least twice daily, preferably in the late morning and after work is done for the day.
3. **No Grading During High Winds.** Construction contractors shall stop all clearing, grading, earth moving, and excavation operations during periods of high winds (20 miles per hour or greater, as measured continuously over a one-hour period).
4. **Street Sweeping.** Construction contractors shall sweep all on-site driveways and adjacent streets and roads at least once per day, preferably at the end of the day, if visible soil material is carried over to adjacent streets and roads.

As shown in Table 4 and Table 5, estimated maximum daily emissions during construction and operation of the proposed road project would not exceed SCAQMD regional thresholds or LSTs. Therefore, project construction and operation would not violate any air quality standard or contribute substantially to an existing or projected air quality violation, and impacts would be less than significant.

Table 4 Estimated Maximum Daily Construction Emissions (lbs/day)

Construction Year	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
2021	1	10	9	<1	1	1
Maximum Emissions	**1**	**10**	**9**	**<1**	**1**	**1**
SCAQMD Regional Thresholds	75	100	550	150	150	55
Threshold Exceeded?	No	No	No	No	No	No
Maximum On-Site Emissions	**1**	**8**	**8**	**<1**	**1**	**1**
SCAQMD Localized Significance Thresholds (LST)[1]	N/A	92	647	N/A	4	3
Threshold Exceeded?	No	No	No	No	No	No

lbs/day = pounds per day; ROC = reactive organic compounds, NO_X = nitrogen oxides, CO = carbon monoxide, SO_2 = sulfur dioxide, PM_{10} = particulate matter 10 microns in diameter or less, $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

[1] LSTs are for a one-acre project in SRA 18 within a distance of 25 meters from the site boundary.

Notes: All emissions modeling was completed made using CalEEMod. See Appendix A for modeling results. Some numbers may not add up due to rounding. Emission data is pulled from "mitigated" results, which account for compliance with regulations (including SCAQMD Rule 403 [Fugitive Dust]). Emissions presented are the highest of the winter and summer modeled emissions.

Table 5 Estimated Maximum Daily Operational Emissions (lbs/day)

Emissions Source	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area	<1	<1	<1	<1	<1	<1
Energy	<1	<1	<1	<1	<1	<1
Mobile	<1	<1	1	<1	<1	<1
Total	**<1**	**<1**	**1**	**<1**	**<1**	**<1**
SCAQMD Regional Thresholds	55	55	550	150	150	55
Threshold Exceeded?	No	No	No	No	No	No
Maximum On-Site Emissions	**<1**	**<1**	**<1**	**<1**	**<1**	**<1**
SCAQMD Localized Significance Thresholds (LST)[1]	N/A	92	647	N/A	1	1
Threshold Exceeded?	No	No	No	No	No	No

lbs/day = pounds per day; ROC = reactive organic compounds, NO_X = nitrogen oxides, CO = carbon monoxide, SO_2 = sulfur dioxide, PM_{10} = particulate matter 10 microns in diameter or less, $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

[1] LSTs are for a one-acre project in SRA 18 within a distance of 25 meters from the site boundary.

Notes: All emissions modeling was completed made using CalEEMod. See Appendix A for modeling results. Some numbers may not add up due to rounding. Emission data is pulled from "mitigated" results, which account for compliance with regulations (including SCAQMD Rule 403 [Fugitive Dust]). Emissions presented are the highest of the winter and summer modeled emissions.

LESS THAN SIGNIFICANT IMPACT

c. Would the project expose sensitive receptors to substantial pollutant concentrations?

Construction of the proposed project would involve the use of heavy equipment powered by diesel fuel, such as a backhoe. Diesel exhaust contains various pollutants that can be harmful to the environment or human health. Construction of the project would be short term and temporary for approximately 5 to 6 months. The installation of the proposed hydrogen fueling facilities would be minor construction project, not requiring extensive equipment over extended periods of time. Because the site is an existing gasoline station, construction equipment would primarily be operated on asphalt pavement, resulting in little dust emissions. Additionally, as described above, project construction would result in minor air quality emissions, substantially below SCAQMD thresholds for all pollutants. Accordingly, construction emissions would not expose sensitive receptors to substantial pollutant concentrations.

Hydrogen gas would be delivered to the site by tanker trucks during the operational life of the project. Like construction equipment, tanker trucks also generate diesel exhaust. Delivery would occur infrequently. Initially, delivery would occur approximately once per week. Delivery frequency could increase as FCEVs become more common and the demand for hydrogen fuel increases. Maximum delivery frequency, based on maximum possible demand, would be once, daily. A daily increase of a single tractor trailer trip on Seal Beach Boulevard or Westminster Boulevard would not generate substantial pollutant concentrations.

As described above, hydrogen is not a regulated pollutant; therefore, the project is not expected to expose sensitive receptors to substantial pollutant concentrations. Trips made to the site in order to refuel would be by FCEV. As electric vehicles, FCEVs generate no pollutant emissions. For the reasons explained above, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Hydrogen is an odorless gas. Therefore, the hydrogen fuel would result in no adverse odors. However, construction and delivery would require use of diesel equipment, such as a backhoe and tanker truck. Diesel exhaust may be described by some as an adverse odor. However, construction would be temporary, and delivery of fuel with a tanker truck would be infrequent.

The proposed project includes a new trash enclosure at the western boundary of the site. Some trash, such as decomposing food material, may generate odors that some people find adverse. However, the proposed project would not generate new amounts of trash. Therefore, the proposed trash enclosure would not introduce new odors to the site. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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4 Biological Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	■	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	■	☐
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	■
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	■
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	■	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	■

a. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in

local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

The project site is an existing gasoline station that is part of a shopping center in an urbanized portion of Seal Beach. Landscaping is currently present along the project site's western boundary, in the northern portion of the site, and in the southeast corner of the site. These areas contain landscaped lawn area and ornamental trees. In this area, Seal Beach Boulevard is comprised of eight travel lanes and Westminster Boulevard has seven travel lanes. Given that vegetation consists of narrow strips of landscaping near busy roadways and a shopping center, it is unlikely to support special status species. The landscaping is also regularly maintained by contractors. Furthermore, while the proposed project would alter or remove some of the is landscaped area, new landscaping is proposed to replace affected areas. Similarly, riparian habitat or other sensitive natural community do not occur on-site nor within the landscaped areas. Therefore, the proposed project would have a less than significant impact on special-status species, riparian habitat, or other sensitive species or natural communities.

LESS THAN SIGNIFICANT IMPACT

c. Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

The proposed project would be constructed within an asphalt pavement area at an existing gasoline station. Accordingly, wetlands do not occur within the project site and the proposed project would have no impact.

NO IMPACT

d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

There are no streams or other surface waters on or adjacent to the project site. Therefore, the project site is not used for fish migration or movement. As described above under criteria a) and b), the vegetation on the project site is limited to landscaped areas surrounding and within the site. These areas are isolated from contiguous habitat or corridors because it is surrounded by busy arterial streets and a shopping center. Additionally, the landscaping is regularly maintained with activities such as mowing and pruning. Therefore, the project site has no value to wildlife movement or migration, and it is not a native wildlife nursery. The proposed project would have no impact.

NO IMPACT

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The landscaped areas within and adjacent to the project site contain ornamental trees. The proposed project would require the removal of seven existing ornamental juniper trees at the proposed hydrogen equipment storage area. One tree in the landscaped area near the proposed trash enclosure could be trimmed during project construction but would not be removed.

Chapter 9.40 of the SBMC includes tree protection and replacement requirements for City trees and eucalyptus trees. The on-site trees are not located on City property, do not overhang onto City property, and are not eucalyptus trees. The trees proposed for removal are generally short in height (no more than seven feet) and are not considered to be mature full-sized trees. Therefore, the proposed project would not conflict with the City of Seal Beach Tree Ordinance, and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

The County of Orange Central/Coastal Subregion NCCP/HCP does not include the project site or surrounding areas. This is the nearest NCCP or HCP to the project site; therefore, no impact from conflicts with an applicable plan would occur.

NO IMPACT

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5 Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	■
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	■	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	■	☐

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

To be considered a historical resource as defined in California Code of Regulations (CCR) Section 15064.5, a district, site, building, or structure must be significant for their traditional, cultural, and/or historical associations. The project site as well as the surrounding shopping center are not listed on the National Register of Historic Places (National Park Service 2021). The project site is also not listed on the California Register of Historic Resources, and there are no sites on the California Register of Historic Resources within 1.5 miles of the project site (California Office of Historic Preservation 2021). The existing gas station on the project site dates to at least 1963, based on a review of aerial photography dated 1963. Based on aerial photography, the surround shopping center was constructed between 1963 and 1972 (Historic Aerials 2021). While the existing gas station dates to at least 1963, the structure has been updated or remodeled through time. For example, the gas pumps have been updated with modern electronic pumps, typical of current era gasoline dispensers. The gasoline station is not associated with historic or traditional events.

The proposed hydrogen fuel facilities would not alter the gas station structure. The proposed hydrogen fuel dispensers would appear similar to and function like the existing gasoline pumps on the site. Other components of the project, such as the hydrogen fuel storage area and trash dumpster enclosure would appear similar to the existing gasoline station structure and infrastructure. Additionally, the proposed project would not alter the use of the site as a refueling station and convenience store.

Because the site is not associated with historical or traditional events, and not listed as historic resources, and because the project would not substantially alter the site, there would be no impact to historic resources.

NO IMPACT

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

The project would involve construction within a fully developed and previously disturbed site. Construction the existing gasoline station on the site required excavation and disturbed native soils, reducing the potential for subsurface archaeological resources to remain intact on-site. However, there is always the possibility to encounter intact archaeological deposits or undocumented human remains during construction. If encountered, construction could damage or destroy these resources or remains. With implementation of the Mitigation Measure CR-1, the project would have a less than significant impact on archaeological resources.

Mitigation Measures

CR-1 Discovery of Unanticipated Archaeological Resources

If cultural resources are encountered during ground-disturbing activities, work in the immediate area shall be halted and an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for archaeology (NPS 1983) shall be contacted immediately to evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for CRHR eligibility. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work such as data recovery excavation may be warranted to mitigate any significant impacts to cultural resources.

In the event that archaeological resources of Native American origin are identified during project construction, a qualified archaeologist shall consult with the City of Seal Beach to begin Native American consultation procedures. As part of this process, it may be determined that archaeological monitoring is required. A Native American monitor may also be required in addition to the archaeologist.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

c. Would the project disturb any human remains, including those interred outside of formal cemeteries?

The project would involve construction within a fully developed and previously disturbed site. Construction the existing gasoline station on the site required excavation and disturbed native soils, reducing the potential for subsurface human remains to remain intact on-site. If any human remains are found as a result of construction activities, adherence to California Health and Safety Code Section 7050.5 would be required. Section 7050.5 requires that if human remains are discovered, the County Coroner shall be notified to make a determination as to whether the remains are of Native American origin or whether an investigation into the cause of death is required. If the remains are determined to be Native American, the Coroner will notify the Native American Heritage Commission (NAHC) immediately. Once the NAHC identifies the most likely descendants, the descendants will make recommendations regarding proper burial, which will be implemented in accordance with Section 15064.5(e) of the CEQA Guidelines. Compliance with the California Health and Safety Code would ensure impacts to human remains are less than significant.

LESS THAN SIGNIFICANT IMPACT

6 Energy

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	■	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	■	☐

a. Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Construction of the proposed project would require the consumption of fuel energy. However, the project site is nearly flat and would require minimal use of grading equipment for project construction. Construction would be short-term and would not require substantial quantities of equipment. Therefore, project construction would not result in wasteful, inefficient, or unnecessary consumption of energy resources.

Operation of the project would require electricity to power hydrogen fuel dispensers, and other project components, such as the proposed panels and switchgears. However, the energy required to power two fuel dispensers and lighting would be negligible. Additionally, the project would facilitate the use of FCEVs, which utilize less energy to operate than traditional gasoline-powered vehicles. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Electricity required for operation of the proposed project would be provided by Southern California Edison (SCE). In 2019, 48 percent of SCE-provided energy came from carbon-free sources, and SCE is working toward a goal of providing 80 percent carbon-free energy. SCE is the electricity provider for residents and businesses in the City of Seal Beach, as well as most of Orange County and many other nearby counties in southern California. SCE is required to mee the Renewable Portfolio Standards goal for 2030 to provide at least 60 percent clean energy to its customers. Therefore, energy used for operation of the project would be consistent with statewide goals.

The City of Seal Beach's General Plan includes energy conservation opportunities and techniques, aimed at reducing building energy use (City of Seal Beach 2003). The project would install no habitable structures; therefore, these strategies would not apply to the project.

Additionally, the provision of hydrogen fueling facilities would facilitate the use of FCEVs, potentially reducing gasoline consumption. Therefore, the proposed project would not conflict with state or local plans for renewable energy or energy efficiency. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

7 Geology and Soils

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☐	■	☐
2. Strong seismic ground shaking?	☐	☐	■	☐
3. Seismic-related ground failure, including liquefaction?	☐	☐	■	☐
4. Landslides?	☐	☐	☐	■
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	■	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	■	☐
d. Be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	■	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	■
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	■	☐	☐

a.1. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

a.2. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

The Los Angeles Basin is one of the most seismically active regions in the United States. The Newport-Inglewood Fault traverses the City of Seal Beach, approximately 1.0 mile southwest of the project site. The project site would experience intense ground shaking in the event of a large earthquake. No active faults or fault zones have been mapped on-site (California Department of Conservation 2020). Therefore, the risk of fault rupture at the project site is low.

The greatest risk during strong seismic ground shaking is structural collapse, leading to falling objects, such as roofing rafters or retaining walls. The proposed project would not involve the construction of new building with occupancy or retaining walls. Hydrogen fueling facilities would largely be at ground level to several feet above ground level and not present a toppling risk during shaking. Additionally, the project would be constructed consistent with the most current California Building Code, which requires seismic stability measures be incorporated into design and construction. For these reasons, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

a.3. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

Liquefaction generally occurs as a result of strong ground shaking in areas where granular sediment or fill material either contains, or is located immediately above, high moisture content. The ground shaking transforms the material from a solid state to a temporarily liquid state and can result in settlement, flow failure, and lateral spreading. Liquefaction is a serious hazard because buildings in areas that experience liquefaction may sink or suffer major structural damage. These geological and groundwater conditions are prevalent in the City of Seal Beach and surrounding areas. The project site is in a liquefaction zone (California Department of Conservation 2020). However, the site is developed with an existing gas station, which required proper soil compaction and grading when the station was constructed consistent with mandatory regulations and requirements, such as the California Building Code. The proposed project would also be constructed consistent with all regulations pertaining to safety and stability, such as the most current version of the California Building Code, which addresses seismic safety. With adherence to building regulations, impacts to people or structures resulting from seismic-related ground failure and liquefaction would be less than significant.

LESS THAN SIGNIFICANT IMPACT

a.4. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

Landslides are the downward and outward movements of slope-forming materials including rock, soil, artificial fill, or combinations of such materials under the direct influence of gravity. The proposed project site is nearly level, and there are no hills adjacent to the site. There are no known landslides near the site, nor is the site in an identified landslide zone (California Department of Conservation 2020). The proposed project does not involve substantial mounding of earth or other

substantive changes to grade that would create slope instability hazards. Therefore, the proposed project would have no impact.

NO IMPACT

b. Would the project result in substantial soil erosion or the loss of topsoil?

The project site is relatively flat and would require little to no grading to install the proposed hydrogen fueling facilities. Excavation would be required but would be minimal. Most of the site would remain covered in either asphalt or structures during project construction, and all disturbance would be repaved following construction. Therefore, the potential for soil erosion or loss would be negligible. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c. Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

The proposed project would be constructed on existing engineered fill that was graded and prepared when the existing gasoline station was constructed on the project site. The proposed project would involve relatively shallow trenching to install electrical conduit and hydrogen fuel lines. These trenches would be backfilled and compacted in accordance with the California Building Code. Therefore, the proposed project would not lead to unstable geology or soils. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d. Would the project be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Expansive soils have a potential to undergo significant changes in volume in the form of either shrinking or swelling due to changes in moisture content. Periodic shrinking and swelling of expansive soils can cause extensive damage to buildings, other structures, and roads. The Uniform Building Code requirements (defined in UBC Table 18-1-B) were primarily designed to test stability of foundations to avoid substantial risks to life or property. The proposed project would not require a building foundation; furthermore, on-site drainage features and compliance with existing building code requirements would ensure that surface flows do not impact underlying subgrade support characteristics. Additionally, the entire project site part of a larger shopping center. The site underwent grading and preparation when the existing fueling facility was constructed to ensure proper soil compaction and stability. Soils on the project site are engineered fill and are not expansive soils. For these reasons, impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

The proposed project involves installation and subsequent operation of hydrogen fueling facilities. The proposed project would not require the septic tanks or alternative wastewater disposal systems. The project site is currently served by the City's sanitary sewer system. The proposed project would have no impact.

NO IMPACT

f. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

The project would involve construction within a fully developed and previously disturbed site. Construction of the existing gasoline station on the site required excavation and disturbed native soils, reducing the potential for subsurface paleontological resources to remain intact on-site. According to the Orange County General Plan, the City of Seal Beach is not within an area of paleontological sensitivity (County of Orange 2005). However, the project would involve subsurface construction activities, and there is always possibility for intact paleontological deposits to be discovered during construction. Impacts would be less than significant with incorporation of Mitigation Measure GEO-1.

Mitigation Measure

GEO-1 Discovery of Previously Unidentified Paleontological Resources

In the event a previously unknown fossil is uncovered during construction, all work shall cease until a certified paleontologist can investigate the finds and make appropriate recommendations. Any artifacts uncovered shall be recorded and removed for storage at a location to be determined by the certified paleontologist.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	■	☐
b. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	■	☐

Overview of Climate Change and Greenhouse Gases

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period of time. Climate change is the result of numerous, cumulative sources of GHG emissions contributing to the "greenhouse effect," a natural occurrence which takes place in Earth's atmosphere and helps regulate the temperature of the planet. The majority of radiation from the sun hits Earth's surface and warms it. The surface, in turn, radiates heat back towards the atmosphere in the form of infrared radiation. Gases and clouds in the atmosphere trap and prevent some of this heat from escaping into space and re-radiate it in all directions.

GHG emissions occur both naturally and as a result of human activities, such as fossil fuel burning, decomposition of landfill wastes, raising livestock, deforestation, and some agricultural practices. GHGs produced by human activities include carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Different types of GHGs have varying global warming potentials (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO_2) is used to relate the amount of heat absorbed to the amount of the gas emitted, referred to as "carbon dioxide equivalent" (CO_2e), which is the amount of GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane has a GWP of 28, meaning its global warming effect is 28 times greater than CO_2 on a molecule per molecule basis (IPCC 2014).[1]

Anthropogenic activities since the beginning of the industrial revolution (approximately 250 years ago) are adding to the natural greenhouse effect by increasing the concentration of GHGs in the atmosphere that trap heat. Since the late 1700s, estimated concentrations of CO_2, methane, and nitrous oxide in the atmosphere have increased by over 43 percent, 156 percent, and 17 percent,

[1] The IPCC's (2014) *Fifth Assessment Report* determined that methane has a GWP of 28. However, the 2017 Climate Change Scoping Plan published by the California Air Resources Board uses a GWP of 25 for methane, consistent with the IPCC's (2007) *Fourth Assessment Report*. Therefore, this analysis utilizes a GWP of 25.

respectively, primarily due to human activity (United States Environmental Protection Agency 2020). Emissions resulting from human activities are thereby contributing to an average increase in Earth's temperature. Potential climate change impacts in California may include loss of snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years (State of California 2018).

Regulatory Framework

In response to climate change, California implemented Assembly Bill (AB) 32, the "California Global Warming Solutions Act of 2006." AB 32 required the reduction of statewide GHG emissions to 1990 emissions levels (essentially a 15 percent reduction below 2005 emission levels) by 2020 and the adoption of rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions. On September 8, 2016, the Governor signed Senate Bill 32 into law, extending AB 32 by requiring the State to further reduce GHG emissions to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, the California Air Resources Board (CARB) adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program and the Low Carbon Fuel Standard, and implementation of recently adopted policies and legislation, such as SB 1383 (aimed at reducing short-lived climate pollutants including methane, hydrofluorocarbon gases, and anthropogenic black carbon) and SB 100 (discussed further below) . The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan Update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends local governments adopt policies and locally-appropriate quantitative thresholds consistent with a statewide per capita goal of six metric tons (MT) of carbon dioxide equivalents (CO_2e) by 2030 and two MT of CO_2e by 2050 (CARB 2017).

Other relevant state laws and regulations include:

- **SB 375**: The Sustainable Communities and Climate Protection Act of 2008 (SB 375), signed in August 2008, enhances the state's ability to reach AB 32 goals by directing the CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. Metropolitan Planning Organizations are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the Metropolitan Planning Organization's Regional Transportation Plan (RTP). On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. The Southern California Association of Governments (SCAG) was assigned targets of a 8 percent reduction in per capita GHG emissions from passenger vehicles from 2005 levels by 2020 and a 19 percent reduction in per capita GHG emissions from passenger vehicles from 2005 levels by 2035. SCAG adopted the 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (SCAG RTP/SCS) in September 2020, which meets the requirements of SB 375.
- **SB 100**: Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the state's Renewables Portfolio Standard Program. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.
- **California Building Standards Code (California Code of Regulations Title 24)**: The California Building Standards Code consists of a compilation of several distinct standards and codes related to building construction including plumbing, electrical, interior acoustics, energy

efficiency, and handicap accessibility for persons with physical and sensory disabilities. The current iteration is the 2019 Title 24 standards. Part 6 is the Building Energy Efficiency Standards, which establishes energy-efficiency standards for residential and non-residential buildings in order to reduce California's energy demand. Part 12 is the California Green Building Standards Code (CALGreen), which includes mandatory minimum environmental performance standards for all ground-up new construction of residential and non-residential structures.

Methodology

GHG emissions associated with project construction and operation were estimated using CalEEMod, version 2016.3.2, with the assumptions described under Section 3, *Air Quality*, in addition to the following:

- **Amortization of Construction Emissions.** In accordance with South Coast Air Quality Management District's (SCAQMD) recommendation, GHG emissions from construction of the proposed project were amortized over a 30-year period and added to annual operational emissions to determine the project's total annual GHG emissions (SCAQMD 2008).
- **Utility Energy Intensity Factors.** Electricity emissions are calculated by multiplying the energy use times the carbon intensity of the utility district per kilowatt hour (CAPCOA 2017). The project would be served by Southern California Edison (SCE). Therefore, SCE's specific energy intensity factors (i.e., the amount of CO_2, CH_4, and N_2O per kilowatt-hour) are used in the calculations of GHG emissions. The energy intensity factors included in CalEEMod are based on 2012 data by default at which time SCE had only achieved a 20.6 percent procurement of renewable energy. Per SB 100, the statewide Renewable Portfolio Standard (RPS) Program requires electricity providers to increase procurement from eligible renewable energy sources to 60 percent by 2030. To account for the continuing effects of the RPS, the energy intensity factors included in CalEEMod were reduced based on the percentage of renewables reported by SCE. SCE energy intensity factors that include this reduction are shown in Table 6.

Table 6 SCE Energy Intensity Factors

	2012 (lbs/MWh)	2030 (lbs/MWh)[2]
Percent procurement	20.6%[1]	60%
Carbon dioxide (CO_2)	702.44	353.87
Methane (CH_4)	0.029	0.015
Nitrous oxide (N_2O)	0.006	0.003

[1] Source: SCE 2012

[2] RPS goal established by SB 100

lbs = pounds; MWh = megawatt-hour; RPS = Renewable Portfolio Standards; SB = Senate Bill

- **Nitrous Oxide Emissions from Mobile Sources.** Because CalEEMod does not calculate nitrous oxide emissions from mobile sources, nitrous oxide emissions were quantified using guidance from the CARB and the EMFAC2017 Emissions Inventory for the SCAQMD region for the year 2030 (the next State milestone target year for GHG emission reductions) using the EMFAC2011 categories (CARB 2018 and 2020; see Appendix A for calculations).
- **Water Use.** CalEEMod does not incorporate water use reductions achieved by 2016 CALGreen (Part 11 of Title 24). New development would be subject to CalGreen, which requires a 20 percent increase in indoor water use efficiency. Thus, in order to account for compliance with

CalGreen, a 20 percent reduction in indoor water use was included in the water consumption calculations for new development.

Significance Thresholds

Individual projects do not generate sufficient GHG emissions to influence climate change directly. However, physical changes caused by a project can contribute incrementally to significant cumulative effects, even if individual changes resulting from a project are limited. The issue of climate change typically involves an analysis of whether a project's contribution towards an impact would be cumulatively considerable. "Cumulatively considerable" means the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines Section 15064[h][1]).

According to CEQA Guidelines Section 15183.5(b), projects can tier from a qualified GHG reduction plan, which allows for project-level evaluation of GHG emissions through the comparison of the project's consistency with the GHG reduction policies included in a qualified GHG reduction plan. This approach is considered by the Association of Environmental Professionals (2016) in its white paper, *Beyond Newhall and 2020*, to be the most defensible approach presently available under CEQA to determine the significance of a project's GHG emissions. The City of Seal Beach does not have a qualified CAP that can be used for tiering from.

There are no established City thresholds applicable to the project to determine the quantity of GHG emissions that may have a significant effect on the environment. CARB, the SCAQMD, and various cities and agencies have proposed, or adopted on an interim basis, thresholds of significance that require the implementation of GHG emission reduction measures. For the proposed project, which is located in the South Coast Air Basin, the most appropriate screening threshold for determining GHG emissions is the SCAQMD proposed Tier 3 screening threshold, which applies to commercial/residential projects (SCAQMD 2008b); therefore, for the purposes of this analysis, a significant impact would occur if the proposed project would exceed the SCAQMD proposed Tier 3 screening threshold of 3,000 MT CO_2e per year.

a. Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction and operation of the proposed project would generate GHG emissions. This analysis considers the combined impact of GHG emissions from both construction and operation. Calculations of CO_2, methane, and nitrous oxide emissions are provided to identify the magnitude of potential project effects.

Construction of the proposed project would generate temporary GHG emissions primarily as a result of operation of construction equipment on-site as well as from vehicles transporting construction workers to and from the project site and heavy trucks to transport building materials and soil export. As shown in Table 7, construction of the proposed project would generate an estimated total of 67 MT of CO_2e. Amortized over a 30-year period per SCAQMD guidance, construction of the proposed project would generate an estimated 2 MT of CO_2e per year.

Table 7 Estimated Construction GHG Emissions

Year	Emissions (MT of CO_2e)
2021	67
Total	**67**
Amortized over 30 years	**2**

MT = metric tons; CO_2e = carbon dioxide equivalents

Notes: Emissions modeling was completed using CalEEMod. See Appendix A for modeling results.

Operation of the proposed project would generate GHG emissions associated with area sources (e.g., landscape maintenance), energy and water usage, vehicle trips, and wastewater and solid waste generation. As shown in Table 8, annual operational emissions generated by the proposed project combined with amortized construction emissions would total approximately 29 MT of CO_2e per year, which would not exceed the screening threshold of 3,000 MT of CO_2e per year. Therefore, impacts would be less than significant.

Table 8 Combined Annual GHG Emissions

Emission Source	Annual Emissions (MT of CO_2e per year)
Construction	2
Operational	
Area	<1
Energy	1
Solid Waste	1
Water	<1
Mobile	
CO_2 and CH_4	23
N_2O	2
Total Emissions	**29**
Threshold	3,000
Threshold Exceeded?	No

Notes: Emissions modeling was completed using CalEEMod, except for N_2O mobile emissions. N_2O mobile emissions completed consistent with the description in *Methodology*. See Appendix A for modeling results.

LESS THAN SIGNIFICANT IMPACT

b. Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Several plans and policies have been adopted to reduce GHG emissions in the southern California region, including the State's 2017 Scoping Plan, and SCAG's 2020-2045 RTP/SCS. The proposed

project's consistency with these plans is discussed in the following subsections. As discussed therein, the proposed project would not conflict with plans and policies aimed at reducing GHG emissions.

2017 Scoping Plan

The principal state plans and policies are AB 32, the California Global Warming Solutions Act of 2006, and the subsequent legislation, SB 32. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020 and the goal of SB 32 is to reduce GHG emissions to 40 percent below 1990 levels by 2030. Pursuant to the SB 32 goal, the 2017 Scoping Plan was created to outline goals and measures for the state to achieve the reductions. The 2017 Scoping Plan's strategies that are applicable to the proposed project include reducing fossil fuel use, energy demand, and vehicle miles traveled (VMT); maximizing recycling and diversion from landfills; and increasing water conservation. The project would be consistent with these goals through project design, which includes complying with the latest Title 24 Green Building Code and Building Efficiency Energy Standards and installing hydrogen fueling infrastructure, which supports the use of alternative fuel vehicles. The project would be served by Southern California Edison, which is required to increase its renewable energy procurement in accordance with SB 100 targets. Furthermore, the project would be required to comply with the City's recycling requirements for commercial land uses set forth in SBMC Chapter 6.20, *Solid Waste and Recyclables*, which would maximize the project's recycling and solid waste diversion. Therefore, the project would be consistent with the 2017 Scoping Plan, and impacts would be less than significant.

SCAG 2020-2045 RTP/SCS

The SCAG 2020-2045 RTP/SCS contains 10 main goals, which include improving mobility and accessibility, increasing travel choices, reducing GHG emissions and improving air quality, adapting to a changing climate, and leveraging new transportation technologies. The project would construct a hydrogen fueling facility on an existing gas station property, which would allow consumers better access to hydrogen fuels, encouraging the use of hydrogen-fuel vehicles. This would reduce GHG emissions through the replacement of gasoline vehicles with hydrogen vehicles and support the use of alternative fueling technologies in the vicinity of the project site. The project would be consistent with the goals of the RTP/SCS, and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	■	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	■	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	☐	☐	☐	■
d. Be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	■	☐
e. For a project located in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	■
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	■
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☐	■

Regulatory Framework

The storage, use, generation, transport, and disposal of hazardous materials and waste are regulated under federal and state laws. Federal regulations and policies related to development include the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, and the Resource Conservation and Recovery Act (RCRA). In California, the USEPA has granted most enforcement authority over federal hazardous materials regulations to the California Environmental Protection Agency (CalEPA). In turn, local agencies have been granted responsibility for implementation and enforcement of many hazardous materials regulations under the Certified Unified Program Agency (CUPA) program.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress in 1980 and is administered by the USEPA. This law created a tax on the chemical and petroleum industries and provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) is a federal law passed by Congress in 1976 to address the increasing problems from the nation's growing volume of municipal and industrial waste. RCRA creates the framework for the proper management of hazardous and non-hazardous solid waste and is administered by the USEPA. RCRA protects communities and resource conservation by enabling the USEPA to develop regulations, guidance, and policies that ensure the safe management and cleanup of solid and hazardous waste, and programs that encourage source reduction and beneficial reuse. The term RCRA is often used interchangeably to refer to the law, regulations, and USEPA policy and guidance.

Cortese List

Section 65962.5 of the Government Code requires CalEPA to develop and update a list of hazardous waste and substances sites, known as the Cortese List. Government Code § 65962.5 was originally enacted in 1985, and per subsection (g), the effective date of the changes called for under the amendments to this section was January 1, 1992. While Government Code Section 65962.5 refers to the preparation of a "list," many changes have occurred related to web-based information access since 1992 and this information is now available on the websites of the responsible organizations. Two of which are the California Department of Toxic Substances Control (DTSC) and the State Water Resources Control Board (SWRCB), which are responsible for updating the EnviroStor and GeoTracker databases, respectively (DTSC 2020; SWRCB 2020a). Information in these databases is considered part of the Cortese List. Refer to the description of these organizations in the state regulation section below for more information. The Cortese List is used by state and local agencies and developers to comply with CEQA requirements.

California Department of Toxic Substances Control

The California Department of Toxic Substances Control (DTSC) is a State agency that protects State citizens and the environment from exposure to hazardous wastes by enforcing hazardous waste laws and regulations. DTSC enforces action against violators; oversees cleanup of hazardous wastes on contaminated properties; makes decisions on permit applications from companies that want to store, treat or dispose of hazardous waste; and protects consumers against toxic ingredients in everyday products. DTSC is responsible for publishing and revising hazardous substance release sites selected for, and subject to, a response action for inclusion in the EnviroStor database, which is considered part of the Cortese List described above.

State Water Resources Control Board

The SWRCB is responsible for compiling and updating all underground storage tanks for which an unauthorized release report is filed. These are referred to as Leaking Underground Storage Tanks (LUST). The Health and Safety Code Division 20, Chapters 6.7 and 6.75, gives local agencies the authority to oversee investigation and cleanup of LUST sites. The Santa Ana Regional Water Quality Control Board (RWQCB) is one of nine regional boards of the SWRCB and is the lead agency responsible for identifying, monitoring and remediating LUST's in the Santa Ana region and for updating the GeoTracker database, which is considered part of the Cortese List described above.

California Department of Industrial Relations, Division of Occupational Safety and Health

Worker health and safety and public safety are key issues when dealing with hazardous materials. Proper handling and disposal of hazardous material is vital if it is disturbed during project construction. The California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) enforces state worker health and safety regulations related to construction activities. Regulations include exposure limits, requirements for protective clothing, and training requirements to prevent exposure to hazardous materials. Cal/OSHA also enforces occupational health and safety regulations specific to lead and asbestos investigations and abatement.

California Accidental Release Prevention Program

The California Accidental Release Prevention (CalARP) Program aims to prevent accidental releases of regulated substances that can cause serious harm to the public and the environment, to minimize the damage if releases do occur, and to satisfy community right-to-know laws. Facilities that are required to participate in the CalARP program use or store more than a threshold quantify of toxic and flammable substances (hazardous materials) must develop a Risk Management Plan (RMP). An RMP is a detailed engineering analysis of the potential accident factors present at a business and the mitigation measures that can be implemented to reduce the potential of accidents occurring. The County of Orange Environmental Health Division reviews CalARP RMPs as the CUPA.

Asbestos-Containing Materials and Lead-Based Paint

Friable asbestos is any asbestos containing material (ACM) that, when dry, can easily be crumbled or pulverized to a powder by hand, allowing the asbestos particles to become airborne. Common examples of products that have been found to contain friable asbestos include acoustical ceilings, plaster, wallboard, and thermal insulation for water heaters and pipes. Common examples of nonfriable ACMs are asphalt roofing shingles, vinyl floor tiles, and transite siding made with cement. The EPA phased out use of friable asbestos products between 1973 and 1978. National Emission

Standards for Hazardous Air Pollutants (NESHAP) guidelines require that potentially friable ACMs be removed prior to building demolition or remodeling that may disturb the ACMs.

The U.S. Consumer Product Safety Commission banned the use of lead-based paint in 1978. Removal of older structures with lead-based paint is subject to requirements outlined by Cal/OSHA Lead in Construction Standard, Title 8, California Code of Regulations 1532.1 during demolition activities. Requirements include employee training, employee air monitoring, and dust control. If lead-based paint is peeling, flaking, or blistered, it is required to be removed prior to demolition.

SCAQMD Rules

The SCAQMD regulates the demolition and renovation of buildings and structures that may contain asbestos, and the manufacture of materials known to contain asbestos. SCAQMD Rule 1403 governs work practice requirements for asbestos in all renovation and demolition activities. The rule includes requirements for asbestos surveying, notifications, ACM removal procedures and time schedules, ACM handling and clean-up procedures, and the storage, disposal, and landfilling requirements for resulting waste materials. All operators are also required to maintain records, including waste shipment records, and must use appropriate warning labels, signs, and markings.

City of Seal Beach General Plan

The General Plan includes the following hazards and hazardous materials policies applicable to the proposed project.

Policy 2B	Implement the measures outlined in the City's Household Hazardous Waste Plan, Orange County's Hazardous Waste Management Plan and hazardous Materials Area Plan, and the County's Operational Area Marine Oil Spill Contingency Plan to ensure the effective management, transportation and disposal of hazardous waste on a City-wide level.
Policy 2F	Facilitate coordinated, effective response to hazardous materials emergencies in the City to minimize health and environmental risks.
Policy 2O	Facilitate coordination and participation by all of the jurisdictions that make up the Los Angeles and Santa Ana Regional Water Quality Control Boards to improve water quality. Encourage the elimination of sewer discharges and non-point source pollution into the San Gabriel River.
Policy 2S	Minimize changes in hydrology and pollutant loading, require incorporation of control, including structural and non-structural BMPs to mitigate the projected increases in pollutant loads and flows, ensure that post-development runoff rates and velocities from a site have no significant adverse impact on downstream erosion and stream habitat, minimize the quantity of storm water directed to impermeable surfaces and the MS4s, and maximize the percentage of permeable surfaces to allow more percolation of storm water into the ground.
Policy 2V	Provide for appropriate permanent measures to reduce storm water pollutant loads in storm water from the development site.

Existing Conditions

The project site is currently developed with a convenience store, auto service station, and gasoline station. Due to the existing uses, gasoline fuel is the primary hazardous material currently stored

and used on the project site. Gasoline is delivered to the site by tanker truck and stored in underground tanks connected to fuel dispensers. The gasoline station includes mandatory safety measures, such as emergency shut-off switches for the fuel dispensers. In addition to gasoline, hazardous substances may be used in the auto service station, such as motor oils. Additionally, minor quantities of cleaning fluids and products are stored and used in the convenience store.

The project site has been listed twice for contaminant releases associated with on-site leaking underground storage tanks (LUSTs). Both cases were related to gasoline contamination of local groundwater supplies. The first case was closed in December 1991, following the reported release in April 1990 and closure and removal of the leaking tank. The second case was reported in October 1998 and closed in March 2013, following replacement of product piping. Monitoring of local wells has confirmed no substantial pollutant quantities entered the local groundwater as a result of both LUST cases (SWRCB 2020b, 2020c).

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

The routine transport, use, and disposal of hazardous materials is a normal part of the existing operation and maintenance of the gasoline station. As a gasoline station in daily operation, the project site regularly receives deliveries of fuel. Delivery complies with all applicable federal, state, and local laws and regulations designed to protect the public from both health risks and environmental hazards.

The proposed project would result in a slight increase in the routine transport associated with hydrogen deliveries, and may require minor quantities of lubricants, paints, solvents, and other products to maintain the hydrogen fueling equipment and enclosures. However, the hydrogen fuel deliveries would be infrequent and based on market demand, which is expected to be low at first and slowly increase. Additional materials would be like those currently kept and managed on site for existing maintenance and operations. The proposed project would therefore have a minimal and incremental impact on the routine transport, use, and disposal of hazardous materials. The gas station would continue to comply with all applicable federal, state, and local laws and regulations. For these reasons, the impact of the project on public hazards resulting from transport, use, or disposal of hazardous materials would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Reasonably foreseeable upset and accident conditions involving the release of hazardous materials to the environment would consist of the potential for hydrogen equipment to leak, rupture or malfunction, leading to the risk of fire or explosion. Hydrogen is a colorless, odorless, tasteless, highly flammable diatomic gas with the molecular formula H_2. The vapors are lighter than air, and it is flammable over a wide range of vapor/air concentrations. Hydrogen is not toxic but can be an asphyxiation risk by displacing oxygen in the air. Hazardous events associated with hydrogen gas releases would include jet fires, flash fires, and vapor cloud explosions.

The proposed hydrogen fueling system design is required to conform with the National Fire Protection Association (NFPA) 2 – Hydrogen Technologies Code (2020). The purpose of NFPA 2 is to provide fundamental safeguards for the generation, installation, storage, piping, use, and handling

of hydrogen in compressed gas (GH_2) form or cryogenic liquid (LH_2) form. One of the requirements of NFPA 2 is that radiant impacts greater than 1,500 British thermal units per hour per square foot ($Btu/hr \cdot ft^2$) are not allowed off site. It is this requirement that necessitates the installation of solid barrier walls designed to prevent flame or explosion hazards around the hydrogen equipment enclosure area, if they were to occur, from extending off site. The NFPA 2 also provides setback standards to prevent hydrogen hazards from affecting adjacent uses or groups. The proposed project has been designed to achieve these standards, and fire hazard exposure would not extend beyond on-site setback areas. The design, installation and testing of the hydrogen fueling station in accordance with NFPA 2, applicable safety regulations, and professional engineering standards of care means that the risk of fire or explosion from hydrogen equipment would be low.

Furthermore, the proposed project would include safety precautions to prevent such accidents from occurring in the first place and to minimize the consequence of such an accident. Accident prevention measures included in project plans consist of the installation of guard posts to protect appurtenant facilities from being struck by vehicles and provision of adequate ventilation systems and pressure release valves. The hydrogen fueling facilities would also include hydrogen-specific flame detectors and gas detectors, and emergency shutoff switches, designed to stop the flow or release of hydrogen gas if ignited.

The storage and use of hydrogen gas on-site would not be a substantial increase in hazardous risk compared with existing uses on-site associated with gasoline and diesel fuel. Gasoline and diesel fuel, if spilled or leaked, would pool on the ground surface at the project site. The pools would be an ignition hazard, which could also migrate across the ground surface, spreading the fire. Hydrogen gas is lighter than air and evaporates instantly and does not pool on the ground. Additionally, the proposed hydrogen fuel system would have more modern safety features, such as the aforementioned flame detectors, compared with the existing gasoline and diesel fuel system, which has existed on-site for decades.

According to the project plans, construction of the proposed project would not involve relocating or encountering existing buried pipes. Therefore, there would be no potential to encounter pipes with asbestos containing materials during construction. There would also be no potential to rupture pipes that are associated with the gasoline station on-site.

Given that the risk of accident and upset conditions associated with the proposed project would be low, and not more severe than that associated with the existing site, and that the project would implement numerous safety, accident prevention, and response measures, the risk of exposure to hazardous materials from accident conditions associated with operation of the project would be low. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

The nearest school to the project site is the JH McGaugh Elementary School, located 1.4 miles southwest of the site. There are no schools within 0.25 mile of the project site. The proposed project would not present substantial hazards to schools. No impacts would occur.

NO IMPACT

d. Would the project be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

As described above in *Existing Conditions*, the project site currently appears on the Cortese list due to groundwater contamination associated with closed LUST cases. Because these two cases were closed in 1991 and 2013, hazardous material contamination from the on-site gasoline USTs is no longer occurring, and previous contamination has been addressed to the satisfaction of SWRCB.

Although the project site is listed on a Government Code Section 65962.5 list for LUSTs, these previous LUST cases have been adequately remediated, closed, and no longer pose a significant hazard to the public or the environment. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

The Long Beach Airport is located 4.6 miles northwest of the project site, and the Los Alamitos Army Airfield is located 1.4 miles northeast of the project site; however, this airfield is not open to the public. The project site is not within the adopted Airport Comprehensive Land Use Plan for the Long Beach Airport (Los Angeles County Airport Land Use Commission 2003). The proposed project would have no impact.

NO IMPACT

f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The project would have no effect on an adopted emergency response plan or emergency evacuation plan because it is an addition to an existing facility and would not block roads or interfere with circulation. Therefore, the proposed project would have no impact.

NO IMPACT

g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

The project site is in an existing shopping center in an urbanized area of Seal Beach. Wildland fuels, such as forest, chaparral, or annual grasslands do not occur on the project site or in the adjacent areas. The proposed project would have no impact.

NO IMPACT

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10 Hydrology and Water Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	■	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	■
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
(i) Result in substantial erosion or siltation on- or off-site;	☐	☐	☐	■
(ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☐	■
(iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☐	■
(iv) Impede or redirect flood flows?	☐	☐	☐	■
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	■
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	■	☐

a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Temporary site preparation, grading, and paving activities associated with construction of the project could result in limited soil erosion that may degrade water quality. However, such construction activities would be required to comply with the requirements of SBMC Chapter 9.20 (the City's Stormwater Management Program). SBMC Chapter 9.20 is enforced by City officials during the permit approval process. This chapter requires development projects to comply with the Orange County Drainage Area Management Plan (DAMP) and properly store waste material, to ensure the protection of water quality from stormwater runoff.

Because the project would be constructed in an asphalt pavement area, construction equipment would largely be operated on pavement. This would reduce the potential for construction vehicles to carry soil or dust onto adjacent streets, such as Seal Beach Boulevard and Westminster Boulevard. Operation of the proposed project would not substantially alter the amount or type of pollutants in stormwater runoff. Land use would not change, because the proposed new fueling facilities would be added to the existing gasoline station at the site. Similar to existing conditions, stormwater runoff would occur as sheet flow, which would be transmitted into subdrains that would drain into a curb and gutter system. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

The proposed project would be constructed in an existing impervious area of the site currently paved with asphalt. While some existing landscaped planters would be removed, new planters would be constructed to replace those pervious areas. Therefore, the proposed project would not increase the amount of impervious surface on site, or the resultant volume of water that is able to infiltrate the ground. The proposed project would have no impact.

NO IMPACT

c.(i) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site?

c.(ii) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

c.(iii) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

c.(iv) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?

As described above for criterion b), the proposed project would not increase the impervious surface area on the project site. There would be no change to existing drainage patterns on the site. There are no streams or rivers on the site. The proposed project would have no impact.

NO IMPACT

d. In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

The proposed project is not a 100-year flood zone (Federal Emergency Management Agency 2019). There are no landlocked bodies of water near the project site that could seiche. The project site is 1.8 miles from the Pacific Ocean, and outside the mapped tsunami inundation area (California Department of Conservation 2009). Additionally, hydrogen fuel is not a pollutant of concern because water is comprised of hydrogen and oxygen. The proposed project would have no impact.

NO IMPACT

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

A Groundwater Sustainability Agency has not been formed for the portion of the Coastal Plain of Orange County Groundwater Basin located beneath the City of Seal Beach, and no Groundwater Sustainability plan for this portion of the basin exists.

The Water Quality Control Plan (2019 Update) for the Santa Ana River Basin includes the City of Seal Beach in the plan boundaries. This plan provides water quality objectives and Total Maximum Daily Loads (TMDL) for pollutants in the plan area. As described above for criterion b), the proposed project would not increase the impervious surface area on the project site. Therefore, there would be no substantial change to precipitation and runoff infiltration and groundwater. The project would not generate increased demand for water. As described above for criterion d), hydrogen is not a pollutant of concern because water is comprised of hydrogen and oxygen. FCEVs using the hydrogen fueling facilities would only emit water. Therefore, the proposed project would not conflict with the water quality control plan. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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11 Land Use and Planning

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Physically divide an established community?	☐	☐	☐	■
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	■	☐

a. Would the project physically divide an established community?

The proposed project would not include construction of a physical barrier that would physically divide the existing area surrounding the proposed project site. No freeways, railroad tracks, or any kind of physical obstruction is included as part of the proposed project. Construction associated with the project would not result in major changes to any public roadways. The proposed hydrogen fueling facilities would be compatible with the existing variety of uses in the project vicinity, including the existing gasoline station on the project site. Therefore, the project would not physically divide an established community and there would be no impact.

NO IMPACT

b. Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

The project site is designated as Commercial-Service under the City's General Plan. This designation supports a very broad range of convenience and consumer goods and personal services. These uses are either located along streets with relatively heavy pedestrian traffic with stores close to the right-of-way line, or establishments to which customers arrive by vehicle with stores set back from the road to allow for parking. The City's General Plan identifies the Seal Beach Shopping Center as an existing functioning service commercial area (City of Seal Beach 2003). The project would be considered a service commercial land use, with expanded services provided from the proposed hydrogen fueling stations, which is not currently available at the existing fueling station. Therefore, the proposed project would be consistent with the land use designation and future development of the site area. As described throughout the Initial Study, there would be no significant environmental impacts resulting from the proposed project with implementation of applicable mitigation measures. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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12 Mineral Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	■
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	■

a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

Mineral resources in the City of Seal Beach include an oil extraction at Esther Island within the tidelands, oil extraction along the Newport-Inglewood Fault on the Hellman Ranch property, and an oil lease site in the National Wildlife Refuge (City of Seal Beach 2003). The project site is not within these identified resource areas. The project site is an existing gasoline station and is part of a larger shopping center in a developed area of Seal Beach. The site is not used for mineral extraction and does not contain any known or designated mineral resources. The physical distance between the project site and the nearest oil extraction site is approximately 1.0 mile. Implementation of the project would not result in the loss of availability of any known mineral resources. There would be no impact.

NO IMPACT

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13 Noise

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project result in:				
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	■	☐
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	■	☐
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	■

Noise

Sound is a vibratory disturbance created by a moving or vibrating source, which is capable of being detected by the hearing organs (e.g., the human ear). Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and may therefore be classified as a more specific group of sounds. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment (Crocker 2007).

The unit of measurement used to describe a noise level is the decibel (dB). However, the human ear is not equally sensitive to all frequencies within the sound spectrum. Therefore, a method called "A-weighting" is used to filter noise frequencies that are not audible to the human ear. A-weighting approximates the frequency response of the average young ear when listening to most ordinary everyday sounds. When people make relative judgments of the loudness or annoyance of a sound, their judgments correlate well with the "A-weighted" levels of those sounds. Therefore, the A-weighted noise scale is used for measurements and standards involving the human perception of noise. In this analysis, all noise levels are A-weighted, and the abbreviation "dBA" identifies the A-weighted decibel.

Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. A 10 dB increase represents a 10-fold increase in sound intensity, a 20 dB increase is a 100-fold intensity increase, a 30 dB increase is a 1,000-fold

intensity increase, etc. Similarly, a doubling of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; a halving of the noise source would result in a 3 dB decrease.

Human perception of noise has no simple correlation with acoustical energy. The perception of noise is not linear in terms of dBA or in terms of acoustical energy. Two equivalent noise sources combined do not sound twice as loud as one source. It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA (increase or decrease); that a change of 5 dBA is readily perceptible; and that an increase or decrease of 10 dBA sounds twice (half) as loud (Caltrans 2013).

Descriptors

The impact of noise is not a function of loudness alone. The time of day when noise occurs and the duration of the noise are also important. In addition, most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors has been developed. The noise descriptors used for this analysis are the one-hour equivalent noise level (L_{eq}) and the community noise equivalent level (CNEL).

The L_{eq} is the level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time-varying sound. For example, $L_{eq(1h)}$ is the equivalent noise level over a 1-hour period, and $L_{eq(8h)}$ is the equivalent noise level over an 8-hour period. $L_{eq(1h)}$ is a common metric for limiting nuisance noise, whereas $L_{eq(8h)}$ is a common metric for evaluating construction noise.

The CNEL is a 24-hour equivalent sound level. The CNEL calculation applies an additional +5 dBA penalty to noise occurring during evening hours (i.e., 7:00 p.m. to 10:00 p.m.) and an additional +10 dBA penalty to noise occurring during nighttime hours (i.e., 10:00 p.m. to 7:00 a.m.). These increases for certain times are intended to account for the added sensitivity of humans to noise during the evening and night.

There is no precise way to convert a peak hour L_{eq} to DNL or CNEL – the relationship between the peak hour L_{eq} value and the DNL/CNEL value depends on the distribution of traffic volumes during the day, evening, and night. However, in urban areas near heavy traffic, the peak hour L_{eq} is typically 2 to 4 dBA lower than the daily DNL/CNEL. In less heavily developed areas, such as suburban areas, the peak hour L_{eq} is often roughly equal to the daily DNL/CNEL. For rural areas with little nighttime traffic, the peak hour L_{eq} will often be 3 to 4 dBA greater than the daily DNL/CNEL value (SWRCB 1999). The project site is located in an urban area; therefore, the DNL/CNEL in the area would be approximately 2 to 4 dBA higher than the peak hour L_{eq}.

Propagation

Sound from a small, localized source (approximating a “point” source) decreases or drops off at a rate of 6 dBA for each doubling of distance. Traffic noise is not a single, stationary point source of sound. Over a time interval, the movement of vehicles makes the source of the sound appear to emanate from a line (line source) rather than a point. The drop-off rate for a line source is 3 dBA for each doubling of distance.

Vibration

Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent structures. The number of cycles per second of oscillation makes up the vibration frequency, described in terms of hertz (Hz). The frequency of a vibrating object describes how rapidly it oscillates. The normal frequency range of most

groundborne vibration that can be felt by the human body is from a low of less than 1 Hz up to a high of about 200 Hz (Crocker 2007).

While people have varying sensitivities to vibrations at different frequencies, in general they are most sensitive to low-frequency vibration. Vibration in buildings, such as from nearby construction activities, may cause windows, items on shelves, and pictures on walls to rattle. Vibration of building components can also take the form of an audible low-frequency rumbling noise, referred to as groundborne noise. Groundborne noise may result in adverse effects, such as building damage, when the originating vibration spectrum is dominated by frequencies in the upper end of the range (60 to 200 Hz). Vibration may also damage infrastructure when foundations or utilities, such as sewer and water pipes, physically connect the structure and the vibration source (Federal Transit Administration [FTA] 2018). Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants and vibration-sensitive land uses.

Descriptors

Vibration amplitudes are usually expressed in peak particle velocity (PPV) or RMS vibration velocity. Particle velocity is the velocity at which the ground moves. The PPV and RMS velocity are normally described in inches per second (in/sec). PPV is defined as the greatest magnitude of particle velocity associated with a vibration event. PPV is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings (Caltrans 2020).

Vibration limits used in this analysis to determine a potential impact to local land uses from construction activities, such as blasting, pile-driving, vibratory compaction, demolition, drilling, and excavation, are based on information contained in Caltrans' *Transportation and Construction Vibration Guidance Manual* and the Federal Transit Administration's (FTA) *Transit Noise and Vibration Impact Assessment Manual* (Caltrans 2020; FTA 2018). Maximum recommended vibration limits by the American Association of State Highway and Transportation Officials (AASHTO) are identified in Table 9.

Table 9 AASHTO Maximum Vibration Levels for Preventing Damage

Type of Situation	Limiting Velocity (in./sec.)
Historic sites or other critical locations	0.1
Residential buildings, plastered walls	0.2–0.3
Residential buildings in good repair with gypsum board walls	0.4–0.5
Engineered structures, without plaster	1.0–1.5

Source: Caltrans 2020

Based on AASHTO recommendations, limiting vibration levels to below 0.2 in/sec PPV at residential structures would prevent structural damage regardless of building construction type. These limits are applicable regardless of the frequency of the source. However, as shown in Table 10 and Table 11 potential human annoyance associated with vibration is usually different if it is generated by a steady state or a transient vibration source.

Table 10 Human Response to Steady State Vibration

in/sec PPV	Human Response
3.6 (at 2 Hz)–0.4 (at 20 Hz)	Very disturbing
0.7 (at 2 Hz)–0.17 (at 20 Hz)	Disturbing
0.10	Strongly perceptible
0.035	Distinctly perceptible
0.012	Slightly perceptible

Source: Caltrans 2020

Table 11 Human Response to Transient Vibration

in/sec PPV	Human Response
2.0	Severe
0.9	Strongly perceptible
0.24	Distinctly perceptible
0.035	Barely perceptible

Source: Caltrans 2020

As shown in Table 10, the vibration level threshold at which steady vibration sources are considered to be distinctly perceptible is 0.035 in/sec PPV. However, as shown in Table 11, the vibration level threshold at which transient vibration sources (such as construction equipment pass-bys) are considered to be distinctly perceptible is 0.24 in/sec PPV. This analysis uses the distinctly perceptible threshold for purposes of assessing vibration impacts.

Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors and the vibration level threshold for human perception is assessed at occupied structures (FTA 2018). Therefore, vibration impacts are assessed at the structure of an affected property.

Regulatory Framework

Federal Transit Administration

The FTA has recommended noise criteria related to traffic-generated noise in *Transit Noise and Vibration Impact Assessment* that can be used to determine whether a change in traffic would result in a substantial permanent increase in noise (FTA 2018). Table 12 shows the significance thresholds for increases in traffic-related noise levels. These standards are applicable to project impacts on existing sensitive receivers.

Table 12 Significance of Changes in Operational Roadway Noise Exposure

Existing Noise Exposure (dBA L_{dn} or L_{eq})	Significant Noise Increase (dBA L_{dn} or L_{eq})
45-50	7
50-55	5
55-60	3
60-65	2
65-74	1
75+	0

dBA = A-weighted sound pressure level; DNL =Day-Night Average Level; L_{eq} =Equivalent continuous sound level
Source: FTA 2018.

The FTA provides reasonable criteria for assessing construction noise impacts based on the potential for adverse community reaction in their *Transit and Noise Vibration Impact Assessment Manual* (FTA 2018). For residential, commercial, and industrial uses, the daytime noise threshold is 80 dBA L_{eq}, 85 dBA L_{eq}, and 90 dBA L_{eq} for an 8-hour period, respectively. These values are used in the construction noise analysis as the thresholds as the City does not specify construction noise limits.

City of Seal Beach Municipal Code

Chapter 7.15 of the SBMC sets noise standards of 65 dBA at commercial properties at any time, 55 dBA at residential properties from 7:00 a.m. to 10:00 p.m., and 50 dBA at residential properties from 10:00 p.m. to 7:00 a.m.

Section 7.15.025 of the SBMC exempts construction noise when performed between 7:00 a.m. and 8:00 p.m. on weekdays, and between 8:00 a.m. and 8:00 p.m. on Saturday.

City of Seal Beach General Plan

The City's General Plan contains a Noise Element which identifies and appraises existing noises in Seal Beach and provides guidance to avoid noise-related impacts in the future. Table 13 below, shows the land use compatibility matrix from the General Plan.

Table 13 City of Seal Beach Noise and Land Use Compatibility Guidelines (Noise Exposure Levels in Ldn or CNEL, dBA)

Land Use Category	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential - Low Density Single family, Duplex, Mobile Home	50-60	55-70	70-75	75-85
Residential - Multi-family	50-65	60-70	70-75	75-85
Transient Lodging - Motels, Hotels	50-65	60-70	70-80	80-85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50-70	60-70	70-80	80-85
Auditoriums, Concert Halls, Amphitheaters	NA	50-70	65-85	NA
Sports Arenas, Outdoor Spectator Sports	NA	50-75	70-85	NA
Playgrounds, Neighborhood Park	50-70	NA	68-75	73-85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50-75	NA	70-80	80-85
Office Buildings, Business Commercial and Professional	50-70	68-78	75-85	NA
Industrial, Manufacturing, Utilities, Agriculture	50-75	70-80	75-85	NA

NA = no compatibility guideline in this category

Source: City of Seal Beach 2003

Existing Noise Setting

The project site is currently developed with a convenience store, auto shop, and gasoline station. Vehicle noise is the primary noise source on the project site. Other sources of noise include car doors closing, people shopping, and fuel dispensers.

The primary noise source in the project area is roadway traffic noise on Seal Beach Boulevard and Westminster Boulevard. Ambient noise levels are generally highest during the daytime and rush hour unless congestion substantially slows speeds. Motor vehicle noise is characterized by a high number of individual events, which creates sustained noise levels.

Measured noise levels (taken November 2002) at Westminster Boulevard west of Seal Beach Boulevard were 69 dBA L_{max} and 65 dBA L_{eq}, and 65 dBA CNEL along both Seal Beach Boulevard and Westminster Boulevard (City of Seal Beach 2003). Additionally, military aircraft overflights are common in the City of Seal Beach; however, the project site is not within any of the designated noise contours (City of Seal Beach 2003).

Sensitive Receivers

Noise exposure standards for various types of land uses reflect the varying noise sensitivities associated with each of these uses. Noise sensitive receivers include residences, schools, hospitals, rest homes, and long-term medical or mental care facilities (City of Seal Beach 2003). Noise-sensitive receivers nearest to the project sites are residences located a minimum of 460 feet west of the project site.

Methodology

Construction Noise

Construction noise was estimated using the FHWA Roadway Construction Noise Model (RCNM) (FTA 2018). RCNM predicts construction noise levels for a variety of construction operations based on empirical data and the application of acoustical propagation formulas. Using RCNM, construction noise levels were estimated at noise sensitive receivers near the project site. RCNM provides reference noise levels for standard construction equipment, with an attenuation of 6 dBA per doubling of distance for stationary equipment.

Variation in power imposes additional complexity in characterizing the noise source level from construction equipment. Power variation is accounted for by describing the noise at a reference distance from the equipment operating at full power and adjusting it based on the duty cycle of the activity to determine the L_{eq} of the operation (FTA 2018). Each phase of construction has a specific equipment mix, depending on the work to be accomplished during that phase. Each phase also has its own noise characteristics; some would have higher continuous noise levels than others, and some have high-impact noise levels. In typical construction projects, grading activities generate the highest noise levels because grading involves the largest equipment and covers the greatest area.

Construction would last less than one year and would include demolition, site preparation, grading, building construction, architectural coating, and paving of the project site. Construction would not require any blasting or pile driving. It is assumed that diesel engines would power all construction equipment. For assessment purposes, and to be conservative, the loudest construction hour has been used for assessment. The loudest construction activities typically occur during grading activities. Therefore, noise levels are based on a potential construction scenario of one bulldozer, one backhoe, and one concrete saw operating simultaneously during the grading phase. At a distance of 525 feet, one bulldozer, one backhoe, and one concrete saw would generate a noise level of approximately 64 dBA L_{eq} (RCNM Calculations are included in Appendix B). The grading phase was the only phase modeled in RCNM because it would be the loudest construction phase.

For residential, commercial, and industrial uses, the daytime noise threshold is 80 dBA L_{eq}, 85 dBA L_{eq}, and 90 dBA L_{eq} for an 8-hour period, respectively. The FTA residential, commercial, and industrial daytime noise thresholds of 80 dBA L_{eq}, 85 dBA L_{eq}, and 90 dBA L_{eq} for an 8-hour period, respectively, are used in the construction noise analysis as significance thresholds as the City does not specify construction noise criteria.

Groundborne Vibration

The City's General Plan and Municipal Code do not contain criteria for vibration impacts or analysis. Therefore, the threshold for structure damage applied to the project is from Caltrans' *Transportation and Construction Vibration Guidance Manual* (Caltrans 2020), which lists 0.2 in/sec PPV at residential structures as the limit that would prevent structural damage regardless of building construction type, and lists 0.2 in/sec PPV as the distinctly perceptible vibration annoyance potential criteria for human receivers.

a. Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Construction

The nearest noise-sensitive receivers to project construction would include the residences located a minimum 460 feet west of the project site. Over the course of a typical construction day, construction equipment would be located as far as 590 feet to the nearest receivers. As the equipment would move throughout the site during a normal construction day (e.g., from between 460 feet to 590 feet from the property line adjacent to the nearest receivers), a reasonable estimate of the average distance during a day of the equipment to the nearest residences would be 525 feet for construction on the project site (i.e., the approximate center of construction activity) for the purposes of estimating a typical noise level that sensitive receivers would experience. At 525 feet, one bulldozer, one backhoe, and one concrete saw would generate a noise level of approximately 64 dBA L_{eq} (RCNM calculations are included in Appendix B). Therefore, construction noise levels would not exceed the FTA daytime construction noise threshold of 80 dBA L_{eq} (8-hour) at residential sensitive receivers. Additionally, noise levels of 64 dBA is typical of the volume of normal conversation (Centers for Disease Control and Prevention 2019). Therefore, construction noise would not be a substantial increase in ambient noise levels typical of residential areas.

Similarly, project construction would occur at an average distance of 75 feet from the nearest adjacent commercial property. At 75 feet, one bulldozer, one backhoe, and one concrete saw would generate a noise level of approximately 81 dBA L_{eq} (RCNM calculations are included in Appendix B). Therefore, construction noise levels would not exceed the FTA daytime construction noise threshold of 85 dBA L_{eq} (8-hour) at commercial receivers.

According to the CalEEMod outputs for air quality and GHG emissions (Appendix A), the paving phase of project construction would generate the greatest number of worker vehicle trips, with a total of 18 worker trips that would occur per day. Assuming that all worker trips would occur during the AM and PM peak hour, up to 18 peak hour trips would occur during the building construction phase. In the vicinity of the project site, Seal Beach Boulevard has a measured average daily traffic (ADT) count of approximately 24,000 trips, and Westminster Boulevard has an ADT of approximately 25,000 trips (City of Seal Beach 2012). Project construction would result in a less than 0.1 percent increase in daily trips, which would less than double existing traffic, resulting in no noticeable increase in traffic noise from construction trips.

Project construction would adhere to the hour limitations identified in the SBMC Noise Ordinance related to construction noise, which restrict construction hours to between 7:00 a.m. and 8:00 p.m. on weekdays, and between 8:00 a.m. and 8:00 p.m. on Saturday (SBMC Section 7.15.025). Compliance with the City's Noise Ordinance would ensure that construction noise does not disturb residents during the times they are most likely to be home or during hours when ambient noise levels are likely to be lower (i.e., at night). Construction noise impacts would be less than significant.

Operation

A confidential noise assessment was prepared that involved measuring the noise levels generated by the proposed hydrogen fueling equipment. Measurements were conducted at an undisclosed location where the proposed hydrogen fueling equipment is already installed and operational. Measurements were conducted during both daytime operations and nighttime operations, as equipment would operate more frequently during daytime when use is more common. Table 14

shows the 12-hour average noise levels of the hydrogen equipment at various distances from the equipment.

Table 14 Hydrogen Fueling Equipment Noise Measurements

Distance from Hydrogen Equipment	Daytime dBA L_{eq}	Nighttime dBA L_{eq}
Five meters (approximately 16 feet)	70	54
Ten meters (approximately 33 feet)	64	48
Twenty meters (approximately 66 feet)	58	42
Forty meters (approximately 131 feet)	52	36

Source: Confidential report prepared by Nel Hydrogen A/S. Report is on file at Seal Beach City Hall.

As described above, the nearest sensitive receptor to the project site is a residence located approximately 460 feet west of the site. As Table 14 shows, noise levels generated by the equipment would be 52 dBA at approximately 131 feet from the hydrogen fueling equipment. Noise would attenuate to 41 dBA at 460 feet, where the nearest receptor is located. This is below the 55 dBA standard for residences set forth in Chapter 7.15 of the SBMC and in the City of Seal Beach General Plan (refer to Table 13). Additionally, 41 dBA is well below the volume of normal conversation, which is approximately 60 dBA (Centers for Disease Control and Prevention 2019). Therefore, hydrogen fuel equipment would not increase ambient noise levels typical of residential areas, which includes noises from conversations, cars, children playing, etc.

The nearest commercial property to the project site is located approximately 75 feet from the center of the project site. Attenuation would result in a noise level of less than 58 dBA at the nearest commercial property. This is below the 65 dBA threshold set forth in Chapter 7.15 of the SBMC for noise at commercial properties.

FCEVs do not generate exhaust noise like conventional gasoline-powered cars. However, the operation of FCEVs on roadways does generate traffic noise from the friction of tires on the road surface, like conventional vehicles. The confidential noise assessment did not measure noise from the vehicle trips arriving and departing hydrogen fueling facilities. As described in Section 17, *Transportation*, the proposed project would generate eight vehicle trips during the AM peak hour (7 am to 9 am), 12 vehicle trips during the PM peak hour (4 pm to 6 pm), and approximately 80 daily trips. Peak hours are likely when the most FCEV trips to the project site would occur, as refueling would likely occur as accessory stop to regional commutes in the area.

According to Crocker (2007), traffic volumes must approximately double on roadway for a 2 to 3 dBA increase in traffic noise levels. In the vicinity of the project site, Seal Beach Boulevard has a measured average daily traffic (ADT) count of approximately 24,000 trips, and Westminster Boulevard has an ADT of approximately 25,000 trips (City of Seal Beach 2012). The additional 80 daily trips generated by the project would not double the existing large volume of traffic on these roadways and the resultant noise level increase would be less than 0.1 dBA, which is below the 2 dBA threshold for operational traffic noise increases in areas where the existing ambient noise level is 65 dBA. Therefore, FCEV trips generated by the project would not result in a noticeable increase in traffic noise levels at receptors. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Construction activities known to generate excessive ground-borne vibration, such as pile driving, would not be conducted by the project. The greatest anticipated source of vibration during general project construction activities would be from a large bulldozer, which may be used within 75 feet of the nearest structures. A dozer would create approximately 0.089 in/sec PPV at a distance of 25 feet (Caltrans 2020). This would equal a vibration level of 0.027 in/sec PPV at a distance of 75 feet.[2] This would be lower than what is considered a distinctly perceptible impact for humans of 0.2 in/sec PPV, and the structural damage impact of 0.2 in/sec PPV. Therefore, temporary impacts associated with construction equipment use would be less than significant.

Operation of the project would not generate groundborne vibration. Therefore, groundborne vibration and noise impacts resulting from implementation of the project would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The Long Beach Airport is located 4.6 miles northwest of the project site, and the Los Alamitos Army Airfield is located 1.4 miles northeast of the project site; however, this airfield is not open to the public. The project site is not within the adopted Airport Comprehensive Land Use Plan for the Long Beach Airport (Los Angeles County Airport Land Use Commission 2003), nor is it located within the aircraft noise impact area (65 dBA CNEL) of the Los Alamitos Army Airfield. The proposed project would have no impact.

NO IMPACT

[2] $PPV_{Equipment} = PPV_{Ref} (25/D)^n$ (in/sec); PPV_{Ref} = reference PPV at 25 feet, D = distance, and n = 1.1

14 Population and Housing

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☐	■
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	■

a. Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

The proposed project would involve the addition of hydrogen fueling facilities to an existing gasoline station. Residential units do not exist on the site, nor are any proposed as part of the project. The project would not induce population growth directly or indirectly because it does not include the expansion of infrastructure or roads and does not include educational or large-scale employment opportunities. The altered facility would provide additional fueling opportunities for the City of Seal Beach. The project would not impact population growth and would not displace housing units or people, necessitating the construction of replacement housing elsewhere. There would be no impact.

NO IMPACT

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15 Public Services

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a.	Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
	1 Fire protection?	☐	☐	■	☐
	2 Police protection?	☐	☐	☐	■
	3 Schools?	☐	☐	☐	■
	4 Parks?	☐	☐	☐	■
	5 Other public facilities?	☐	☐	☐	■

a.1. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

The proposed project would not involve the construction of new or expanded fire protection facilities. The existing Orange County Fire Station 48 is located on the northern corner of the intersection of Seal Beach Boulevard and North Gate Road, approximately 0.9 mile north of the project site. Given its proximity to the site, the Fire Department would respond to a fire on-site within minutes. Therefore, no new fire protection facilities would be required to maintain acceptable response times.

Operation of the proposed project would not result in increased demand for fire protection services. Although hydrogen is flammable, the proposed project includes emergency shutoff valves to stop fuel flows if there is ignition. Additionally, the proposed hydrogen fueling system design is required to conform with the National Fire Protection Association (NFPA) 2 – Hydrogen Technologies Code [2020]. Conformance with the NFPA 2 reduces the severity of hydrogen fires, especially to offsite property or people. The Orange County Fire Authority would review project plans prior to issuance of building permits to ensure compliance with all applicable fire and building safety codes. Therefore, impacts to fire protection services would be less than significant.

LESS THAN SIGNIFICANT IMPACT

a.2. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

The proposed project does not involve the construction of new or expanded police protection facilities. The proposed project would add hydrogen fueling facilities to an existing gasoline station. Therefore, the proposed project would not generate new demand for police protection facilities or services because it would be an addition to an existing business. The proposed project would have no impact.

NO IMPACT

a.3. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

The proposed project does not involve the construction of new or expanded school facilities. The proposed project would involve hydrogen fueling facilities for FCEVs, which would not generate population growth that could in turn increase enrollment at schools. The proposed project would have no impact on schools.

NO IMPACT

a.4. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered parks, or the need for new or physically altered parks, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

The proposed project does involve the construction of new or expanded park facilities. The proposed project would provide hydrogen fueling facilities at an existing gasoline station in a shopping center. There would be no increased use of parks resulting from implementation of the proposed project. The proposed project would have no impact.

NO IMPACT

a.5. Would the project result in substantial adverse physical impacts associated with the provision of other new or physically altered public facilities, or the need for other new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

The proposed project does not involve the construction of new public facilities, such as libraries. The proposed project would serve to fuel FCEVs, which would not generate population growth resulting in increased need or demand for public facilities. There would be no impact.

NO IMPACT

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16 Recreation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	■
a. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	■

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The proposed project would involve the addition of hydrogen fueling facilities to an existing gasoline station; it would not include the construction of residential units and would not generate substantial numbers of people in the area. Therefore, the project would not increase the use and deterioration of existing recreational facilities or require the construction or expansion of additional facilities. The proposed project would have no impact.

NO IMPACT

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17 Transportation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	■	☐
b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	■	☐
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?	☐	☐	☐	■
d. Result in inadequate emergency access?	☐	☐	☐	■

a. Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Transit facilities in the project area include a bus stop across Seal beach Boulevard from the project site, which is served by Orange County Transportation Authority (OCTA) Routes 42, 42A, and 60; and a bus stop south of the site on Seal Beach Boulevard, which is served by OCTA Routes 42 and 42A. The proposed project would add hydrogen fueling facilities to the existing gasoline station on the project site and would not involve work at either bus stop. The proposed project would require no work within the travel lanes of Seal Beach Boulevard that could delay transit service. The proposed project would have no impact to transit.

Bicycle facilities in the project area include Class II bicycle lanes on either side of Seal Beach Boulevard and Westminster Boulevard adjacent to the project site. The proposed project would not involve work within these bicycle lanes. The proposed hydrogen fueling facilities would not be used by bicycles. Therefore, there would be no change in number of cyclists using bicycle facilities in the project area. The proposed project would have no impact to bicycle facilities.

Pedestrian facilities in the project area consist of sidewalks along the streets in the immediate vicinity of the project site. Crosswalks and pedestrian push buttons are located at the signalized intersection of Seal Beach Boulevard and Westminster Boulevard adjacent to the project site. The proposed project would not modify existing site access driveways and would not require temporary closure of sidewalks along the project site frontage. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Section 15064.3 of the CEQA Guidelines provides guidance on evaluating a project's transportation impacts. According to Section 15064.3, vehicle miles traveled (VMT) is generally the most appropriate measure of transportation impacts, with the exception of projects consisting of the addition of travel lanes to roadways. VMT refers to the amount and distance of automobile travel attributable to a project, regardless of the type of vehicle or number of occupants in a vehicle. Section 15064.3(b) establishes metrics and thresholds by which VMT can be evaluated for land use projects and transportation projects.

The proposed project would add hydrogen fueling facilities to an existing gasoline station. The hydrogen fueling facilities would be used exclusively by FCEVs. Based on trip generation information for similarly sized hydrogen fueling facilities at existing gas stations, the proposed project would generate eight vehicle trips during the AM peak hour (7 am to 9 am) and 12 vehicle trips during the PM peak hour (4 pm to 6 pm) (Hexagon Transportation Consultants, Inc. 2020). Peak hours are likely when the most FCEV trips to the project site would occur, as refueling would likely occur as an accessory stop to regional commutes in the area. Approximately 80 daily trips to the hydrogen fueling stations would occur.

It is expected that as the number of hydrogen-powered vehicles increases, the number of gasoline-powered vehicles will decrease proportionately. Therefore, total vehicle trips to gas stations could remain unchanged. In addition, the City of Seal Beach Transportation Analysis Guidelines (2020) states that small projects, which would generate fewer than 250 daily trips, meet the City's screening criteria for VMT analyses, and impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?

The proposed project would include minor modifications to the southwestern driveway to the site, such as new curb and gutter along the driveway. However, the location and travel pattern of the driveway would not be changed. The proposed project would not change traffic circulation patterns. The hydrogen fueling facilities would be used for FCEVs, which operate and travel at speeds consistent with conventional vehicles on roadways. The proposed project would have no impact.

NO IMPACT

d. Would the project result in inadequate emergency access?

The proposed project would change no emergency access routes and would maintain emergency vehicle access and adequate turning radius for emergency vehicles within the project site. There would be no impact.

NO IMPACT

18 Tribal Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a Public Resources Code Section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	☐	■	☐	☐
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	■	☐	☐

a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074 that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?

b. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074 that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1?

As an existing gasoline station that is within a shopping center, there are no known Tribal Cultural Resources within the project site. However, there are known Tribal Cultural Resources in the region, such as Native American villages. The Village of Puvungna is located approximately 1.0 mile north of the project site and is a sacred site of the Tongba nation and Acjachemen, who are the indigenous people around Los Angeles and Orange County. Two other prehistoric Native American villages are present to the south of the site. Given the distance between these villages and the project site, there is low potential for project construction activities to uncover associated Tribal Cultural Resources. Additionally, as described in Section 5, *Cultural Resources*, the project would involve construction within a fully developed and previously disturbed site. Construction of the existing gasoline station on the site required excavation and disturbed native soils, reducing the potential for subsurface cultural resources to remain intact on-site. For example, the existing gasoline station includes below ground storage tanks and pipeline trenches, which required excavations to greater depths than would be required for the proposed project. However, there is always possibility for intact resources or undocumented human remains or other Native American artifacts to be discovered during construction. If encountered, construction could damage or destroy these resources or remains. However, the project would be required to implement the mitigation measures listed in Section 5, *Cultural Resources*. These conditions require contacting the NAHC, as well as protecting resources in place until further evaluation and protection, as applicable, are implemented. With these measures, impacts would be less than significant.

Additionally, the City will complete request(s) for consultation with California Native American Tribes traditionally and culturally affiliated with the project area during the CEQA process. The request for consultation will be completed prior to potential adoption of this Initial Study-Mitigated Negative Declaration. The City will send notification letters to the California Native American Tribes that requested inclusion on the City's AB 52 notification list.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

19 Utilities and Service Systems

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	■	☐
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	■
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	■	☐
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	■	☐
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	■	☐

a. Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

The proposed project consists of hydrogen fueling facilities that would not require water to operate. Operation of the hydrogen fueling facilities would also not generate wastewater or change storm drainage patterns on site. No natural gas or telecommunication facilities would be required for the proposed project.

Electrical power would be necessary for operation of the proposed hydrogen fueling facilities. The project site has existing electrical facilities, as it currently operates as a convenience store and

gasoline station. Connections would be beneath existing asphalt concrete on the site. Therefore, the proposed project would have a less-than-significant impact.

LESS THAN SIGNIFICANT IMPACT

b. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

The proposed project consists of hydrogen fueling facilities for FCEVs. Refueling FCEVs would generate no demand for water. Therefore, the proposed project would have no impact.

NO IMPACT

c. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

The proposed project consists of hydrogen fueling facilities for FCEVs. The hydrogen fuel facilities, such as the fuel dispensers, would generate no wastewater. While stopped at the gasoline station, FCEV customers may choose to use restroom facilities at the existing convenience store on the site. The estimated 40 customers per day[3] when the project first becomes operational would not be a substantial generator of wastewater, as it would be only an incremental increase in the number of restroom visits. It is unlikely every customer using the hydrogen fueling facilities would utilize the restroom. As the popularity of FCEVs increases and more people utilize the proposed hydrogen fueling facilities, the net number of customers to the site would remain relatively consistent with existing conditions, as FCEVs would replace conventional cars. Accordingly, the proposed project would not generate wastewater in excess of existing treatment capacity. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

d. Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

e. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

The proposed project consists of hydrogen fueling facilities for FCEVs. Refueling FCEVs would generate no new sources of solid waste. However, while stopped at the gasoline station, FCEV customers may choose to discard small amounts of solid waste from their vehicles or from goods purchased in the existing convenience store on the site. However, the estimated 40 customers per day when the project first becomes operational would not be a substantial generator of solid waste.

As the popularity of FCEVs increases and more people utilize the proposed hydrogen fueling facilities, the net number of customers to the site would remain relatively consistent with existing conditions, as FCEVs would replace conventional cars. Accordingly, the proposed project would not generate solid waste in excess of state or local standards or the capacity of local infrastructure. The

[3] Based on average AM and PM peak hour volumes of 8 trips and 12 trips and daily trip generation of approximately 80 trips, indicating approximately 40 customers per day.

proposed project would comply with regulations related to solid waste. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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20 Wildfire

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	■
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	■
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	■
d. Expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	■

a. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

b. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

c. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

d. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslopes

or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

The project site is not in or near state responsibility areas or lands classified as very high fire hazard severity zones. The nearest state responsibility area or lands classified as very high fire hazard severity zones are approximately 10 miles northeast of the project site (California Department of Forestry & Fire Protection 2011). The project site is a developed gasoline station consisting primary of asphalt and structural concrete. Large open asphalt parking lots are adjacent to the north and west of the site, and relatively wide roadways are to the south and east. The project site is not adjacent to wildland fuels, such as forest, chaparral, or annual grasslands. Therefore, the proposed project would have a no impact.

NO IMPACT

21 Mandatory Findings of Significance

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Does the project:				
a. Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	■	☐	☐
b. Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	■	☐
c. Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	■	☐

a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

As descried in Section 4, *Biological Resources*, the proposed project would have no impact on fish or wildlife or plant communities. This is because the project site is currently a gasoline station with a convenience store and auto shop. The site is part of a larger shopping center and adjacent to roadways.

As described in Section 5, *Cultural Resources*, the project site has been disturbed and developed in the past with the current gasoline station and associated uses. This development required ground disturbance and excavation. Therefore, the potential to encounter cultural resources during

excavation required for the proposed project is low. Standard mitigation measures for the unanticipated discovery of cultural resources (as described in Section 5, *Cultural Resources*) would be implemented in the event of encountering a resource and would reduce impacts to less than significant. Mitigation measures for cultural resources would also apply to Tribal Cultural Resources, if encountered during construction (as described in Section 18, Tribal Cultural Resources). Impacts to Tribal Cultural Resources would be reduced to less than significant with implementation of mitigation measures.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

The proposed project involves minimal construction disturbance at an existing gasoline station. As described throughout this document, impacts of construction would be less than significant either with or without mitigation. Operation of the project would involve minor increases in noise, generally limited to the project site and within surrounding roadways. There are two other known projects in the City of Seal Beach currently undergoing the review and approval process, including a new gas station at 490 Pacific Coast Highway and a new gas plant at the Hellman Ranch property. Both of these sites are located more than one mile from the project site; therefore, temporary construction impacts are not likely to cause cumulatively considerable impacts, should construction of these projects occur simultaneously. Additionally, the minor increases in traffic associated with operation of these projects would not result in a cumulative traffic impact, as the total combined trips generated on each roadway would be minimal, and mitigated as necessary in each project's environmental document. Therefore, impacts of the proposed project would not be cumulatively considerable. Impacts would be less than significant.

LESS THAN SIGNIFICANT IMPACT

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

In general, environment effects which can be adverse human beings are associated with air quality, hazards and hazardous materials, noise, and wildfire. As discussed in Section 3, *Air Quality*, the project would not conflict with an air quality plan, result in cumulatively considerable net increase in pollutants, or expose sensitive receptors to substantial concentrations of pollutants or odors.

A discussed in Section 9, *Hazards and Hazardous materials*, construction of the proposed project could result in additional hazardous materials routine transport; however, compliance with applicable federal, state, and local laws and regulations is required, which would ensure no adverse effects on human beings as a result. Additionally, although the site is located on two prior LUST cases, both cases are closed. Explosion or fire hazards would be reduced by required project design features, such as wall enclosures and property line setbacks, per NFPA 2 requirements. Therefore, impacts to humans from hazards and hazard materials would be less than significant.

As discussed in Section 13, *Noise*, neither construction nor operation the proposed project would result in substantial increases in ambient noise levels at the nearest sensitive receptors. Likewise, groundborne vibration generate during construction would not exceed FTA standards at the nearest

residence to the project site. Impacts to humans from noise and vibration would be less than significant.

The project site is not in or near state responsibility areas or lands classified as very high fire hazard severity zones. The nearest state responsibility area or lands classified as very high fire hazard severity zones are approximately 10 miles away from the project site (California Department of Forestry & Fire Protection 2011). The project site is a developed gasoline station consisting primary of asphalt and structural concrete. Large open asphalt parking lots are adjacent to the north and west of the site, and relatively wide roadways are to the south and east. The project site is not adjacent to wildland fuels, such as forest, chaparral, or annual grasslands. Therefore, the proposed project would have a less-than-significant impact on humans related to wildfire.

LESS THAN SIGNIFICANT IMPACT

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Appendix A

CalEEMod Output Files

Seal Beach Boulevard Hydrogen Fueling

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Gasoline/Service Station	2.00	Pump	0.01	282.35	0
Other Non-Asphalt Surfaces	1.20	1000sqft	0.03	1,200.00	0
Parking Lot	1.00	Space	0.01	400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	353.87	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Utility Intensity Factors modified per 2030 RPS

Land Use - 2 hydrogen pumps, 1,200 sf hydrogen equipment area, 1 ADA parking space

Construction Phase - Arch coating starts halfway through building construction

Grading - Cut/fill balanced on site

Demolition - Demo of existing trash enclosure area, measured via Google Earth

Vehicle Trips - Daily trips adjusted per similar facilities (40 trips per pump per day)

Energy Use - No new lighting in parking area

Water And Wastewater - Indoor water use reduced 20% per Title 24 standards

Construction Off-road Equipment Mitigation - per SCAQMD Rule 403

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	50.00
tblConstructionPhase	PhaseEndDate	9/20/2021	9/6/2021
tblConstructionPhase	PhaseStartDate	9/14/2021	6/29/2021
tblEnergyUse	LightingElect	0.35	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	353.87
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	168.56	40.00
tblVehicleTrips	SU_TR	168.56	40.00
tblVehicleTrips	WD_TR	168.56	40.00
tblWater	IndoorWaterUseRate	26,563.78	21,251.02

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					
2021	0.0533	0.5024	0.4793	7.7000e-004	2.9300e-003	0.0282	0.0312	9.3000e-004	0.0262	0.0272	0.0000	67.0253	67.0253	0.0187	0.0000	67.4916
Maximum	**0.0533**	**0.5024**	**0.4793**	**7.7000e-004**	**2.9300e-003**	**0.0282**	**0.0312**	**9.3000e-004**	**0.0262**	**0.0272**	**0.0000**	**67.0253**	**67.0253**	**0.0187**	**0.0000**	**67.4916**

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					
2021	0.0533	0.5024	0.4793	7.7000e-004	2.2800e-003	0.0282	0.0305	6.7000e-004	0.0262	0.0269	0.0000	67.0252	67.0252	0.0187	0.0000	67.4915
Maximum	**0.0533**	**0.5024**	**0.4793**	**7.7000e-004**	**2.2800e-003**	**0.0282**	**0.0305**	**6.7000e-004**	**0.0262**	**0.0269**	**0.0000**	**67.0252**	**67.0252**	**0.0187**	**0.0000**	**67.4915**

	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**	**22.18**	**0.00**	**2.09**	**27.96**	**0.00**	**0.92**	**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	4-1-2021	6-30-2021	0.2822	0.2822
2	7-1-2021	9-30-2021	0.2757	0.2757
		Highest	0.2822	0.2822

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	1.2800e-003	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.1000e-004
Energy	3.0000e-005	2.9000e-004	2.4000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.6979	0.6979	2.0000e-005	1.0000e-005	0.7011
Mobile	0.0151	0.0721	0.1066	2.9000e-004	0.0197	2.6000e-004	0.0199	5.2700e-003	2.4000e-004	5.5100e-003	0.0000	27.2497	27.2497	1.9000e-003	0.0000	27.2973
Waste						0.0000	0.0000		0.0000	0.0000	0.2192	0.0000	0.2192	0.0130	0.0000	0.5431
Water						0.0000	0.0000		0.0000	0.0000	6.7400e-003	0.0735	0.0802	7.0000e-004	2.0000e-005	0.1026
Total	**0.0164**	**0.0724**	**0.1069**	**2.9000e-004**	**0.0197**	**2.8000e-004**	**0.0199**	**5.2700e-003**	**2.6000e-004**	**5.5300e-003**	**0.2260**	**28.0211**	**28.2471**	**0.0156**	**3.0000e-005**	**28.6443**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.2800e-003	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.1000e-004
Energy	3.0000e-005	2.9000e-004	2.4000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.6979	0.6979	2.0000e-005	1.0000e-005	0.7011
Mobile	0.0151	0.0721	0.1066	2.9000e-004	0.0197	2.6000e-004	0.0199	5.2700e-003	2.4000e-004	5.5100e-003	0.0000	27.2497	27.2497	1.9000e-003	0.0000	27.2973
Waste						0.0000	0.0000		0.0000	0.0000	0.2192	0.0000	0.2192	0.0130	0.0000	0.5431
Water						0.0000	0.0000		0.0000	0.0000	6.7400e-003	0.0735	0.0802	7.0000e-004	2.0000e-005	0.1026
Total	**0.0164**	**0.0724**	**0.1069**	**2.9000e-004**	**0.0197**	**2.8000e-004**	**0.0199**	**5.2700e-003**	**2.6000e-004**	**5.5300e-003**	**0.2260**	**28.0211**	**28.2471**	**0.0156**	**3.0000e-005**	**28.6443**

	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

Seal Beach Boulevard Hydrogen Fueling - South Coast AQMD Air District, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/1/2021	4/14/2021	5	10	
2	Site Preparation	Site Preparation	4/15/2021	4/15/2021	5	1	
3	Grading	Grading	4/16/2021	4/19/2021	5	2	
4	Building Construction	Building Construction	4/20/2021	9/6/2021	5	100	
5	Paving	Paving	9/7/2021	9/13/2021	5	5	
6	Architectural Coating	Architectural Coating	6/29/2021	9/6/2021	5	50	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.04

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 424; Non-Residential Outdoor: 141; Striped Parking Area: 96 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	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	4	10.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	1.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.7000e-004	0.0000	1.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9800e-003	0.0363	0.0379	6.0000e-005		2.0400e-003	2.0400e-003		1.9400e-003	1.9400e-003	0.0000	5.2047	5.2047	9.7000e-004	0.0000	5.2289
Total	**3.9800e-003**	**0.0363**	**0.0379**	**6.0000e-005**	**1.7000e-004**	**2.0400e-003**	**2.2100e-003**	**3.0000e-005**	**1.9400e-003**	**1.9700e-003**	**0.0000**	**5.2047**	**5.2047**	**9.7000e-004**	**0.0000**	**5.2289**

3.2 Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	2.6000e-004	6.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0747	0.0747	1.0000e-005	0.0000	0.0748
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.5000e-004	1.7400e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4778	0.4778	1.0000e-005	0.0000	0.4782
Total	**2.2000e-004**	**4.1000e-004**	**1.8000e-003**	**1.0000e-005**	**5.7000e-004**	**0.0000**	**5.7000e-004**	**1.5000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5525**	**0.5525**	**2.0000e-005**	**0.0000**	**0.5530**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					8.0000e-005	0.0000	8.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9800e-003	0.0363	0.0379	6.0000e-005		2.0400e-003	2.0400e-003		1.9400e-003	1.9400e-003	0.0000	5.2047	5.2047	9.7000e-004	0.0000	5.2289
Total	**3.9800e-003**	**0.0363**	**0.0379**	**6.0000e-005**	**8.0000e-005**	**2.0400e-003**	**2.1200e-003**	**1.0000e-005**	**1.9400e-003**	**1.9500e-003**	**0.0000**	**5.2047**	**5.2047**	**9.7000e-004**	**0.0000**	**5.2289**

3.2 Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	2.6000e-004	6.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0747	0.0747	1.0000e-005	0.0000	0.0748
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.5000e-004	1.7400e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4778	0.4778	1.0000e-005	0.0000	0.4782
Total	**2.2000e-004**	**4.1000e-004**	**1.8000e-003**	**1.0000e-005**	**5.7000e-004**	**0.0000**	**5.7000e-004**	**1.5000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5525**	**0.5525**	**2.0000e-005**	**0.0000**	**0.5530**

3.3 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2000e-004	3.9100e-003	2.0100e-003	0.0000		1.5000e-004	1.5000e-004		1.4000e-004	1.4000e-004	0.0000	0.4276	0.4276	1.4000e-004	0.0000	0.4310
Total	**3.2000e-004**	**3.9100e-003**	**2.0100e-003**	**0.0000**	**2.7000e-004**	**1.5000e-004**	**4.2000e-004**	**3.0000e-005**	**1.4000e-004**	**1.7000e-004**	**0.0000**	**0.4276**	**0.4276**	**1.4000e-004**	**0.0000**	**0.4310**

3.3 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	9.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0239	0.0239	0.0000	0.0000	0.0239
Total	**1.0000e-005**	**1.0000e-005**	**9.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0239**	**0.0239**	**0.0000**	**0.0000**	**0.0239**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.2000e-004	0.0000	1.2000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.2000e-004	3.9100e-003	2.0100e-003	0.0000		1.5000e-004	1.5000e-004		1.4000e-004	1.4000e-004	0.0000	0.4276	0.4276	1.4000e-004	0.0000	0.4310
Total	**3.2000e-004**	**3.9100e-003**	**2.0100e-003**	**0.0000**	**1.2000e-004**	**1.5000e-004**	**2.7000e-004**	**1.0000e-005**	**1.4000e-004**	**1.5000e-004**	**0.0000**	**0.4276**	**0.4276**	**1.4000e-004**	**0.0000**	**0.4310**

3.3 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	9.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0239	0.0239	0.0000	0.0000	0.0239
Total	**1.0000e-005**	**1.0000e-005**	**9.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0239**	**0.0239**	**0.0000**	**0.0000**	**0.0239**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.0000e-004	7.2500e-003	7.5700e-003	1.0000e-005		4.1000e-004	4.1000e-004		3.9000e-004	3.9000e-004	0.0000	1.0409	1.0409	1.9000e-004	0.0000	1.0458
Total	**8.0000e-004**	**7.2500e-003**	**7.5700e-003**	**1.0000e-005**	**7.5000e-004**	**4.1000e-004**	**1.1600e-003**	**4.1000e-004**	**3.9000e-004**	**8.0000e-004**	**0.0000**	**1.0409**	**1.0409**	**1.9000e-004**	**0.0000**	**1.0458**

3.4 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.5000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0956	0.0956	0.0000	0.0000	0.0956
Total	**4.0000e-005**	**3.0000e-005**	**3.5000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0956**	**0.0956**	**0.0000**	**0.0000**	**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	tons/yr										MT/yr					
Fugitive Dust					3.4000e-004	0.0000	3.4000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.0000e-004	7.2500e-003	7.5700e-003	1.0000e-005		4.1000e-004	4.1000e-004		3.9000e-004	3.9000e-004	0.0000	1.0409	1.0409	1.9000e-004	0.0000	1.0458
Total	**8.0000e-004**	**7.2500e-003**	**7.5700e-003**	**1.0000e-005**	**3.4000e-004**	**4.1000e-004**	**7.5000e-004**	**1.9000e-004**	**3.9000e-004**	**5.8000e-004**	**0.0000**	**1.0409**	**1.0409**	**1.9000e-004**	**0.0000**	**1.0458**

3.4 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.5000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0956	0.0956	0.0000	0.0000	0.0956
Total	**4.0000e-005**	**3.0000e-005**	**3.5000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**1.1000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0956**	**0.0956**	**0.0000**	**0.0000**	**0.0956**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0388	0.3993	0.3632	5.7000e-004		0.0224	0.0224		0.0206	0.0206	0.0000	50.0410	50.0410	0.0162	0.0000	50.4456
Total	**0.0388**	**0.3993**	**0.3632**	**5.7000e-004**		**0.0224**	**0.0224**		**0.0206**	**0.0206**	**0.0000**	**50.0410**	**50.0410**	**0.0162**	**0.0000**	**50.4456**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.5000e-004	1.7400e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4778	0.4778	1.0000e-005	0.0000	0.4782
Total	**2.1000e-004**	**1.5000e-004**	**1.7400e-003**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**5.5000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.4778**	**0.4778**	**1.0000e-005**	**0.0000**	**0.4782**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0388	0.3993	0.3632	5.7000e-004		0.0224	0.0224		0.0206	0.0206	0.0000	50.0410	50.0410	0.0162	0.0000	50.4456
Total	**0.0388**	**0.3993**	**0.3632**	**5.7000e-004**		**0.0224**	**0.0224**		**0.0206**	**0.0206**	**0.0000**	**50.0410**	**50.0410**	**0.0162**	**0.0000**	**50.4456**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.5000e-004	1.7400e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4778	0.4778	1.0000e-005	0.0000	0.4782
Total	**2.1000e-004**	**1.5000e-004**	**1.7400e-003**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**5.5000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.4778**	**0.4778**	**1.0000e-005**	**0.0000**	**0.4782**

3.6 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.8000e-003	0.0168	0.0177	3.0000e-005		8.8000e-004	8.8000e-004		8.2000e-004	8.2000e-004	0.0000	2.3481	2.3481	6.8000e-004	0.0000	2.3652
Paving	1.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.8100e-003**	**0.0168**	**0.0177**	**3.0000e-005**		**8.8000e-004**	**8.8000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**2.3481**	**2.3481**	**6.8000e-004**	**0.0000**	**2.3652**

3.6 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.4000e-004	1.5700e-003	0.0000	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4301	0.4301	1.0000e-005	0.0000	0.4303
Total	**1.9000e-004**	**1.4000e-004**	**1.5700e-003**	**0.0000**	**4.9000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4301**	**0.4301**	**1.0000e-005**	**0.0000**	**0.4303**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.8000e-003	0.0168	0.0177	3.0000e-005		8.8000e-004	8.8000e-004		8.2000e-004	8.2000e-004	0.0000	2.3481	2.3481	6.8000e-004	0.0000	2.3652
Paving	1.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.8100e-003**	**0.0168**	**0.0177**	**3.0000e-005**		**8.8000e-004**	**8.8000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**2.3481**	**2.3481**	**6.8000e-004**	**0.0000**	**2.3652**

3.6 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.4000e-004	1.5700e-003	0.0000	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4301	0.4301	1.0000e-005	0.0000	0.4303
Total	**1.9000e-004**	**1.4000e-004**	**1.5700e-003**	**0.0000**	**4.9000e-004**	**0.0000**	**5.0000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4301**	**0.4301**	**1.0000e-005**	**0.0000**	**0.4303**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.5300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.4700e-003	0.0382	0.0454	7.0000e-005		2.3500e-003	2.3500e-003		2.3500e-003	2.3500e-003	0.0000	6.3831	6.3831	4.4000e-004	0.0000	6.3941
Total	**7.0000e-003**	**0.0382**	**0.0454**	**7.0000e-005**		**2.3500e-003**	**2.3500e-003**		**2.3500e-003**	**2.3500e-003**	**0.0000**	**6.3831**	**6.3831**	**4.4000e-004**	**0.0000**	**6.3941**

3.7 Architectural Coating - 2021

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.5300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.4700e-003	0.0382	0.0454	7.0000e-005		2.3500e-003	2.3500e-003		2.3500e-003	2.3500e-003	0.0000	6.3831	6.3831	4.4000e-004	0.0000	6.3941
Total	**7.0000e-003**	**0.0382**	**0.0454**	**7.0000e-005**		**2.3500e-003**	**2.3500e-003**		**2.3500e-003**	**2.3500e-003**	**0.0000**	**6.3831**	**6.3831**	**4.4000e-004**	**0.0000**	**6.3941**

3.7 Architectural Coating - 2021

Mitigated Construction Off-Site

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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0151	0.0721	0.1066	2.9000e-004	0.0197	2.6000e-004	0.0199	5.2700e-003	2.4000e-004	5.5100e-003	0.0000	27.2497	27.2497	1.9000e-003	0.0000	27.2973
Unmitigated	0.0151	0.0721	0.1066	2.9000e-004	0.0197	2.6000e-004	0.0199	5.2700e-003	2.4000e-004	5.5100e-003	0.0000	27.2497	27.2497	1.9000e-003	0.0000	27.2973

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Gasoline/Service Station	80.00	80.00	80.00	51,743	51,743
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	80.00	80.00	80.00	51,743	51,743

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
Gasoline/Service Station	16.60	8.40	6.90	2.00	79.00	19.00	14	27	59
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Gasoline/Service Station	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Other Non-Asphalt Surfaces	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Parking Lot	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.3830	0.3830	2.0000e-005	0.0000	0.3843
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.3830	0.3830	2.0000e-005	0.0000	0.3843
NaturalGas Mitigated	3.0000e-005	2.9000e-004	2.4000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.3149	0.3149	1.0000e-005	1.0000e-005	0.3168
NaturalGas Unmitigated	3.0000e-005	2.9000e-004	2.4000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.3149	0.3149	1.0000e-005	1.0000e-005	0.3168

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					
Gasoline/Service Station	5901.11	3.0000e-005	2.9000e-004	2.4000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.3149	0.3149	1.0000e-005	1.0000e-005	0.3168
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**3.0000e-005**	**2.9000e-004**	**2.4000e-004**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.3149**	**0.3149**	**1.0000e-005**	**1.0000e-005**	**0.3168**

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					
Gasoline/Service Station	5901.11	3.0000e-005	2.9000e-004	2.4000e-004	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.3149	0.3149	1.0000e-005	1.0000e-005	0.3168
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**3.0000e-005**	**2.9000e-004**	**2.4000e-004**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.3149**	**0.3149**	**1.0000e-005**	**1.0000e-005**	**0.3168**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Gasoline/Service Station	2385.86	0.3830	2.0000e-005	0.0000	0.3843
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.3830**	**2.0000e-005**	**0.0000**	**0.3843**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Gasoline/Service Station	2385.86	0.3830	2.0000e-005	0.0000	0.3843
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.3830**	**2.0000e-005**	**0.0000**	**0.3843**

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	1.2800e-003	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.1000e-004
Unmitigated	1.2800e-003	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.1000e-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	tons/yr										MT/yr					
Architectural Coating	1.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.1000e-004
Total	**1.2700e-003**	**0.0000**	**5.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0000e-004**	**1.0000e-004**	**0.0000**	**0.0000**	**1.1000e-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	tons/yr										MT/yr					
Architectural Coating	1.5000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	5.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-004	1.0000e-004	0.0000	0.0000	1.1000e-004
Total	**1.2700e-003**	**0.0000**	**5.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0000e-004**	**1.0000e-004**	**0.0000**	**0.0000**	**1.1000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0802	7.0000e-004	2.0000e-005	0.1026
Unmitigated	0.0802	7.0000e-004	2.0000e-005	0.1026

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Gasoline/Service Station	0.021251 / 0.016281	0.0802	7.0000e-004	2.0000e-005	0.1026
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0802**	**7.0000e-004**	**2.0000e-005**	**0.1026**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Gasoline/Service Station	0.021251 / 0.016281	0.0802	7.0000e-004	2.0000e-005	0.1026
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0802**	**7.0000e-004**	**2.0000e-005**	**0.1026**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.2192	0.0130	0.0000	0.5431
Unmitigated	0.2192	0.0130	0.0000	0.5431

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Gasoline/Service Station	1.08	0.2192	0.0130	0.0000	0.5431
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.2192**	**0.0130**	**0.0000**	**0.5431**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Gasoline/Service Station	1.08	0.2192	0.0130	0.0000	0.5431
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**0.2192**	**0.0130**	**0.0000**	**0.5431**

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

Seal Beach Boulevard Hydrogen Fueling

South Coast AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Gasoline/Service Station	2.00	Pump	0.01	282.35	0
Other Non-Asphalt Surfaces	1.20	1000sqft	0.03	1,200.00	0
Parking Lot	1.00	Space	0.01	400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	353.87	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Utility Intensity Factors modified per 2030 RPS

Land Use - 2 hydrogen pumps, 1,200 sf hydrogen equipment area, 1 ADA parking space

Construction Phase - Arch coating starts halfway through building construction

Grading - Cut/fill balanced on site

Demolition - Demo of existing trash enclosure area, measured via Google Earth

Vehicle Trips - Daily trips adjusted per similar facilities (40 trips per pump per day)

Energy Use - No new lighting in parking area

Water And Wastewater - Indoor water use reduced 20% per Title 24 standards

Construction Off-road Equipment Mitigation - per SCAQMD Rule 403

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	50.00
tblConstructionPhase	PhaseEndDate	9/20/2021	9/6/2021
tblConstructionPhase	PhaseStartDate	9/14/2021	6/29/2021
tblEnergyUse	LightingElect	0.35	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	353.87
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	168.56	40.00
tblVehicleTrips	SU_TR	168.56	40.00
tblVehicleTrips	WD_TR	168.56	40.00
tblWater	IndoorWaterUseRate	26,563.78	21,251.02

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					
2021	1.0594	9.5146	9.1189	0.0145	0.8645	0.5417	1.2727	0.4434	0.5059	0.8328	0.0000	1,395.7379	1,395.7379	0.3764	0.0000	1,405.1482
Maximum	**1.0594**	**9.5146**	**9.1189**	**0.0145**	**0.8645**	**0.5417**	**1.2727**	**0.4434**	**0.5059**	**0.8328**	**0.0000**	**1,395.7379**	**1,395.7379**	**0.3764**	**0.0000**	**1,405.1482**

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					
2021	1.0594	9.5146	9.1189	0.0145	0.4505	0.5417	0.8587	0.2158	0.5059	0.6052	0.0000	1,395.7379	1,395.7379	0.3764	0.0000	1,405.1482
Maximum	**1.0594**	**9.5146**	**9.1189**	**0.0145**	**0.4505**	**0.5417**	**0.8587**	**0.2158**	**0.5059**	**0.6052**	**0.0000**	**1,395.7379**	**1,395.7379**	**0.3764**	**0.0000**	**1,405.1482**

	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**	**47.89**	**0.00**	**32.53**	**51.32**	**0.00**	**27.33**	**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	7.0400e-003	0.0000	4.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		9.2000e-004	9.2000e-004	0.0000		9.8000e-004
Energy	1.7000e-004	1.5900e-003	1.3300e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		1.9021	1.9021	4.0000e-005	3.0000e-005	1.9134
Mobile	0.0915	0.3935	0.5709	1.6800e-003	0.1100	1.3900e-003	0.1114	0.0294	1.3000e-003	0.0307		171.8512	171.8512	0.0112		172.1318
Total	**0.0987**	**0.3951**	**0.5726**	**1.6900e-003**	**0.1100**	**1.5100e-003**	**0.1115**	**0.0294**	**1.4200e-003**	**0.0309**		**173.7542**	**173.7542**	**0.0113**	**3.0000e-005**	**174.0462**

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	7.0400e-003	0.0000	4.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		9.2000e-004	9.2000e-004	0.0000		9.8000e-004
Energy	1.7000e-004	1.5900e-003	1.3300e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		1.9021	1.9021	4.0000e-005	3.0000e-005	1.9134
Mobile	0.0915	0.3935	0.5709	1.6800e-003	0.1100	1.3900e-003	0.1114	0.0294	1.3000e-003	0.0307		171.8512	171.8512	0.0112		172.1318
Total	**0.0987**	**0.3951**	**0.5726**	**1.6900e-003**	**0.1100**	**1.5100e-003**	**0.1115**	**0.0294**	**1.4200e-003**	**0.0309**		**173.7542**	**173.7542**	**0.0113**	**3.0000e-005**	**174.0462**

	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	Demolition	Demolition	4/1/2021	4/14/2021	5	10	
2	Site Preparation	Site Preparation	4/15/2021	4/15/2021	5	1	
3	Grading	Grading	4/16/2021	4/19/2021	5	2	
4	Building Construction	Building Construction	4/20/2021	9/6/2021	5	100	
5	Paving	Paving	9/7/2021	9/13/2021	5	5	
6	Architectural Coating	Architectural Coating	6/29/2021	9/6/2021	5	50	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.04

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 424; Non-Residential Outdoor: 141; Striped Parking Area: 96 (Architectural Coating – sqft)

OffRoad Equipment

Seal Beach Boulevard Hydrogen Fueling - South Coast AQMD Air District, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	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	4	10.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	1.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2021

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					0.0335	0.0000	0.0335	5.0700e-003	0.0000	5.0700e-003			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886		1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.0335**	**0.4073**	**0.4408**	**5.0700e-003**	**0.3886**	**0.3937**		**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

3.2 Demolition - 2021

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	1.4500e-003	0.0506	0.0107	1.5000e-004	3.4900e-003	1.6000e-004	3.6500e-003	9.6000e-004	1.5000e-004	1.1100e-003		16.5908	16.5908	1.1100e-003		16.6185
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0422	0.0274	0.3767	1.1100e-003	0.1118	8.2000e-004	0.1126	0.0296	7.6000e-004	0.0304		110.7403	110.7403	2.9800e-003		110.8148
Total	**0.0437**	**0.0780**	**0.3874**	**1.2600e-003**	**0.1153**	**9.8000e-004**	**0.1163**	**0.0306**	**9.1000e-004**	**0.0315**		**127.3311**	**127.3311**	**4.0900e-003**		**127.4332**

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					0.0151	0.0000	0.0151	2.2800e-003	0.0000	2.2800e-003			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886	0.0000	1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.0151**	**0.4073**	**0.4224**	**2.2800e-003**	**0.3886**	**0.3909**	**0.0000**	**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

3.2 Demolition - 2021

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	1.4500e-003	0.0506	0.0107	1.5000e-004	3.4900e-003	1.6000e-004	3.6500e-003	9.6000e-004	1.5000e-004	1.1100e-003		16.5908	16.5908	1.1100e-003		16.6185
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0422	0.0274	0.3767	1.1100e-003	0.1118	8.2000e-004	0.1126	0.0296	7.6000e-004	0.0304		110.7403	110.7403	2.9800e-003		110.8148
Total	**0.0437**	**0.0780**	**0.3874**	**1.2600e-003**	**0.1153**	**9.8000e-004**	**0.1163**	**0.0306**	**9.1000e-004**	**0.0315**		**127.3311**	**127.3311**	**4.0900e-003**		**127.4332**

3.3 Site Preparation - 2021

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					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.6403	7.8204	4.0274	9.7300e-003		0.2995	0.2995		0.2755	0.2755		942.5842	942.5842	0.3049		950.2055
Total	**0.6403**	**7.8204**	**4.0274**	**9.7300e-003**	**0.5303**	**0.2995**	**0.8297**	**0.0573**	**0.2755**	**0.3328**		**942.5842**	**942.5842**	**0.3049**		**950.2055**

3.3 Site Preparation - 2021

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		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		0.0000	0.0000	0.0000		0.0000
Worker	0.0211	0.0137	0.1884	5.6000e-004	0.0559	4.1000e-004	0.0563	0.0148	3.8000e-004	0.0152		55.3702	55.3702	1.4900e-003		55.4074
Total	**0.0211**	**0.0137**	**0.1884**	**5.6000e-004**	**0.0559**	**4.1000e-004**	**0.0563**	**0.0148**	**3.8000e-004**	**0.0152**		**55.3702**	**55.3702**	**1.4900e-003**		**55.4074**

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					0.2386	0.0000	0.2386	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	0.6403	7.8204	4.0274	9.7300e-003		0.2995	0.2995		0.2755	0.2755	0.0000	942.5842	942.5842	0.3049		950.2055
Total	**0.6403**	**7.8204**	**4.0274**	**9.7300e-003**	**0.2386**	**0.2995**	**0.5381**	**0.0258**	**0.2755**	**0.3013**	**0.0000**	**942.5842**	**942.5842**	**0.3049**		**950.2055**

3.3 Site Preparation - 2021

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		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		0.0000	0.0000	0.0000		0.0000
Worker	0.0211	0.0137	0.1884	5.6000e-004	0.0559	4.1000e-004	0.0563	0.0148	3.8000e-004	0.0152		55.3702	55.3702	1.4900e-003		55.4074
Total	**0.0211**	**0.0137**	**0.1884**	**5.6000e-004**	**0.0559**	**4.1000e-004**	**0.0563**	**0.0148**	**3.8000e-004**	**0.0152**		**55.3702**	**55.3702**	**1.4900e-003**		**55.4074**

3.4 Grading - 2021

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					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886		1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.7528**	**0.4073**	**1.1601**	**0.4138**	**0.3886**	**0.8024**		**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

3.4 Grading - 2021

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		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		0.0000	0.0000	0.0000		0.0000
Worker	0.0422	0.0274	0.3767	1.1100e-003	0.1118	8.2000e-004	0.1126	0.0296	7.6000e-004	0.0304		110.7403	110.7403	2.9800e-003		110.8148
Total	**0.0422**	**0.0274**	**0.3767**	**1.1100e-003**	**0.1118**	**8.2000e-004**	**0.1126**	**0.0296**	**7.6000e-004**	**0.0304**		**110.7403**	**110.7403**	**2.9800e-003**		**110.8148**

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					0.3387	0.0000	0.3387	0.1862	0.0000	0.1862			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886	0.0000	1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.3387**	**0.4073**	**0.7461**	**0.1862**	**0.3886**	**0.5748**	**0.0000**	**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

3.4 Grading - 2021

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		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		0.0000	0.0000	0.0000		0.0000
Worker	0.0422	0.0274	0.3767	1.1100e-003	0.1118	8.2000e-004	0.1126	0.0296	7.6000e-004	0.0304		110.7403	110.7403	2.9800e-003		110.8148
Total	**0.0422**	**0.0274**	**0.3767**	**1.1100e-003**	**0.1118**	**8.2000e-004**	**0.1126**	**0.0296**	**7.6000e-004**	**0.0304**		**110.7403**	**110.7403**	**2.9800e-003**		**110.8148**

3.5 Building Construction - 2021

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	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117		1,103.2158	1,103.2158	0.3568		1,112.1358
Total	**0.7750**	**7.9850**	**7.2637**	**0.0114**		**0.4475**	**0.4475**		**0.4117**	**0.4117**		**1,103.2158**	**1,103.2158**	**0.3568**		**1,112.1358**

3.5 Building Construction - 2021

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		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		0.0000	0.0000	0.0000		0.0000
Worker	4.2200e-003	2.7400e-003	0.0377	1.1000e-004	0.0112	8.0000e-005	0.0113	2.9600e-003	8.0000e-005	3.0400e-003		11.0740	11.0740	3.0000e-004		11.0815
Total	**4.2200e-003**	**2.7400e-003**	**0.0377**	**1.1000e-004**	**0.0112**	**8.0000e-005**	**0.0113**	**2.9600e-003**	**8.0000e-005**	**3.0400e-003**		**11.0740**	**11.0740**	**3.0000e-004**		**11.0815**

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	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117	0.0000	1,103.2158	1,103.2158	0.3568		1,112.1358
Total	**0.7750**	**7.9850**	**7.2637**	**0.0114**		**0.4475**	**0.4475**		**0.4117**	**0.4117**	**0.0000**	**1,103.2158**	**1,103.2158**	**0.3568**		**1,112.1358**

3.5 Building Construction - 2021

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		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		0.0000	0.0000	0.0000		0.0000
Worker	4.2200e-003	2.7400e-003	0.0377	1.1000e-004	0.0112	8.0000e-005	0.0113	2.9600e-003	8.0000e-005	3.0400e-003		11.0740	11.0740	3.0000e-004		11.0815
Total	**4.2200e-003**	**2.7400e-003**	**0.0377**	**1.1000e-004**	**0.0112**	**8.0000e-005**	**0.0113**	**2.9600e-003**	**8.0000e-005**	**3.0400e-003**		**11.0740**	**11.0740**	**3.0000e-004**		**11.0815**

3.6 Paving - 2021

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	0.7214	6.7178	7.0899	0.0113		0.3534	0.3534		0.3286	0.3286		1,035.3425	1,035.3425	0.3016		1,042.8818
Paving	5.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7266**	**6.7178**	**7.0899**	**0.0113**		**0.3534**	**0.3534**		**0.3286**	**0.3286**		**1,035.3425**	**1,035.3425**	**0.3016**		**1,042.8818**

3.6 Paving - 2021

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		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		0.0000	0.0000	0.0000		0.0000
Worker	0.0760	0.0493	0.6781	2.0000e-003	0.2012	1.4800e-003	0.2027	0.0534	1.3600e-003	0.0547		199.3326	199.3326	5.3600e-003		199.4666
Total	**0.0760**	**0.0493**	**0.6781**	**2.0000e-003**	**0.2012**	**1.4800e-003**	**0.2027**	**0.0534**	**1.3600e-003**	**0.0547**		**199.3326**	**199.3326**	**5.3600e-003**		**199.4666**

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	0.7214	6.7178	7.0899	0.0113		0.3534	0.3534		0.3286	0.3286	0.0000	1,035.3425	1,035.3425	0.3016		1,042.8818
Paving	5.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7266**	**6.7178**	**7.0899**	**0.0113**		**0.3534**	**0.3534**		**0.3286**	**0.3286**	**0.0000**	**1,035.3425**	**1,035.3425**	**0.3016**		**1,042.8818**

3.6 Paving - 2021

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		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		0.0000	0.0000	0.0000		0.0000
Worker	0.0760	0.0493	0.6781	2.0000e-003	0.2012	1.4800e-003	0.2027	0.0534	1.3600e-003	0.0547		199.3326	199.3326	5.3600e-003		199.4666
Total	**0.0760**	**0.0493**	**0.6781**	**2.0000e-003**	**0.2012**	**1.4800e-003**	**0.2027**	**0.0534**	**1.3600e-003**	**0.0547**		**199.3326**	**199.3326**	**5.3600e-003**		**199.4666**

3.7 Architectural Coating - 2021

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	0.0613					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**0.2802**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

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		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		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		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**		**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	0.0613					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**0.2802**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

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		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		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		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**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0915	0.3935	0.5709	1.6800e-003	0.1100	1.3900e-003	0.1114	0.0294	1.3000e-003	0.0307		171.8512	171.8512	0.0112		172.1318
Unmitigated	0.0915	0.3935	0.5709	1.6800e-003	0.1100	1.3900e-003	0.1114	0.0294	1.3000e-003	0.0307		171.8512	171.8512	0.0112		172.1318

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Gasoline/Service Station	80.00	80.00	80.00	51,743	51,743
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	80.00	80.00	80.00	51,743	51,743

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
Gasoline/Service Station	16.60	8.40	6.90	2.00	79.00	19.00	14	27	59
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Gasoline/Service Station	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Other Non-Asphalt Surfaces	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Parking Lot	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.7000e-004	1.5900e-003	1.3300e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		1.9021	1.9021	4.0000e-005	3.0000e-005	1.9134
NaturalGas Unmitigated	1.7000e-004	1.5900e-003	1.3300e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		1.9021	1.9021	4.0000e-005	3.0000e-005	1.9134

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					
Gasoline/Service Station	16.1674	1.7000e-004	1.5900e-003	1.3300e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		1.9021	1.9021	4.0000e-005	3.0000e-005	1.9134
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.7000e-004**	**1.5900e-003**	**1.3300e-003**	**1.0000e-005**		**1.2000e-004**	**1.2000e-004**		**1.2000e-004**	**1.2000e-004**		**1.9021**	**1.9021**	**4.0000e-005**	**3.0000e-005**	**1.9134**

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					
Gasoline/Service Station	0.0161674	1.7000e-004	1.5900e-003	1.3300e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		1.9021	1.9021	4.0000e-005	3.0000e-005	1.9134
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.7000e-004**	**1.5900e-003**	**1.3300e-003**	**1.0000e-005**		**1.2000e-004**	**1.2000e-004**		**1.2000e-004**	**1.2000e-004**		**1.9021**	**1.9021**	**4.0000e-005**	**3.0000e-005**	**1.9134**

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	7.0400e-003	0.0000	4.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		9.2000e-004	9.2000e-004	0.0000		9.8000e-004
Unmitigated	7.0400e-003	0.0000	4.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		9.2000e-004	9.2000e-004	0.0000		9.8000e-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	8.4000e-004					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.1600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-005	0.0000	4.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		9.2000e-004	9.2000e-004	0.0000		9.8000e-004
Total	**7.0400e-003**	**0.0000**	**4.3000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**9.2000e-004**	**9.2000e-004**	**0.0000**		**9.8000e-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	8.4000e-004					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.1600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-005	0.0000	4.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		9.2000e-004	9.2000e-004	0.0000		9.8000e-004
Total	**7.0400e-003**	**0.0000**	**4.3000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**9.2000e-004**	**9.2000e-004**	**0.0000**		**9.8000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

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

Seal Beach Boulevard Hydrogen Fueling

South Coast AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Gasoline/Service Station	2.00	Pump	0.01	282.35	0
Other Non-Asphalt Surfaces	1.20	1000sqft	0.03	1,200.00	0
Parking Lot	1.00	Space	0.01	400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2022
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	353.87	**CH4 Intensity (lb/MWhr)**	0.015	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Utility Intensity Factors modified per 2030 RPS

Land Use - 2 hydrogen pumps, 1,200 sf hydrogen equipment area, 1 ADA parking space

Construction Phase - Arch coating starts halfway through building construction

Grading - Cut/fill balanced on site

Demolition - Demo of existing trash enclosure area, measured via Google Earth

Vehicle Trips - Daily trips adjusted per similar facilities (40 trips per pump per day)

Energy Use - No new lighting in parking area

Water And Wastewater - Indoor water use reduced 20% per Title 24 standards

Construction Off-road Equipment Mitigation - per SCAQMD Rule 403

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	5.00	50.00
tblConstructionPhase	PhaseEndDate	9/20/2021	9/6/2021
tblConstructionPhase	PhaseStartDate	9/14/2021	6/29/2021
tblEnergyUse	LightingElect	0.35	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.015
tblProjectCharacteristics	CO2IntensityFactor	702.44	353.87
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleTrips	ST_TR	168.56	40.00
tblVehicleTrips	SU_TR	168.56	40.00
tblVehicleTrips	WD_TR	168.56	40.00
tblWater	IndoorWaterUseRate	26,563.78	21,251.02

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					
2021	1.0598	9.5148	9.1151	0.0145	0.8645	0.5417	1.2727	0.4434	0.5059	0.8328	0.0000	1,395.0205	1,395.0205	0.3764	0.0000	1,404.4304
Maximum	**1.0598**	**9.5148**	**9.1151**	**0.0145**	**0.8645**	**0.5417**	**1.2727**	**0.4434**	**0.5059**	**0.8328**	**0.0000**	**1,395.0205**	**1,395.0205**	**0.3764**	**0.0000**	**1,404.4304**

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					
2021	1.0598	9.5148	9.1151	0.0145	0.4505	0.5417	0.8587	0.2158	0.5059	0.6052	0.0000	1,395.0205	1,395.0205	0.3764	0.0000	1,404.4304
Maximum	**1.0598**	**9.5148**	**9.1151**	**0.0145**	**0.4505**	**0.5417**	**0.8587**	**0.2158**	**0.5059**	**0.6052**	**0.0000**	**1,395.0205**	**1,395.0205**	**0.3764**	**0.0000**	**1,404.4304**

	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**	**47.89**	**0.00**	**32.53**	**51.32**	**0.00**	**27.33**	**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	7.0400e-003	0.0000	4.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		9.2000e-004	9.2000e-004	0.0000		9.8000e-004
Energy	1.7000e-004	1.5900e-003	1.3300e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		1.9021	1.9021	4.0000e-005	3.0000e-005	1.9134
Mobile	0.0860	0.3895	0.5915	1.5800e-003	0.1100	1.4200e-003	0.1115	0.0294	1.3300e-003	0.0308		161.1775	161.1775	0.0119		161.4744
Total	**0.0932**	**0.3911**	**0.5932**	**1.5900e-003**	**0.1100**	**1.5400e-003**	**0.1116**	**0.0294**	**1.4500e-003**	**0.0309**		**163.0805**	**163.0805**	**0.0119**	**3.0000e-005**	**163.3887**

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	7.0400e-003	0.0000	4.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		9.2000e-004	9.2000e-004	0.0000		9.8000e-004
Energy	1.7000e-004	1.5900e-003	1.3300e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		1.9021	1.9021	4.0000e-005	3.0000e-005	1.9134
Mobile	0.0860	0.3895	0.5915	1.5800e-003	0.1100	1.4200e-003	0.1115	0.0294	1.3300e-003	0.0308		161.1775	161.1775	0.0119		161.4744
Total	**0.0932**	**0.3911**	**0.5932**	**1.5900e-003**	**0.1100**	**1.5400e-003**	**0.1116**	**0.0294**	**1.4500e-003**	**0.0309**		**163.0805**	**163.0805**	**0.0119**	**3.0000e-005**	**163.3887**

	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	Demolition	Demolition	4/1/2021	4/14/2021	5	10	
2	Site Preparation	Site Preparation	4/15/2021	4/15/2021	5	1	
3	Grading	Grading	4/16/2021	4/19/2021	5	2	
4	Building Construction	Building Construction	4/20/2021	9/6/2021	5	100	
5	Paving	Paving	9/7/2021	9/13/2021	5	5	
6	Architectural Coating	Architectural Coating	6/29/2021	9/6/2021	5	50	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.04

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 424; Non-Residential Outdoor: 141; Striped Parking Area: 96 (Architectural Coating – sqft)

OffRoad Equipment

Seal Beach Boulevard Hydrogen Fueling - South Coast AQMD Air District, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	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	4	10.00	0.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	1.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	0.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2021

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					0.0335	0.0000	0.0335	5.0700e-003	0.0000	5.0700e-003			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886		1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.0335**	**0.4073**	**0.4408**	**5.0700e-003**	**0.3886**	**0.3937**		**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

3.2 Demolition - 2021

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	1.4900e-003	0.0512	0.0115	1.5000e-004	3.4900e-003	1.6000e-004	3.6500e-003	9.6000e-004	1.5000e-004	1.1100e-003		16.2839	16.2839	1.1500e-003		16.3128
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0461	0.0300	0.3385	1.0400e-003	0.1118	8.2000e-004	0.1126	0.0296	7.6000e-004	0.0304		103.5668	103.5668	2.7800e-003		103.6362
Total	**0.0476**	**0.0812**	**0.3500**	**1.1900e-003**	**0.1153**	**9.8000e-004**	**0.1163**	**0.0306**	**9.1000e-004**	**0.0315**		**119.8507**	**119.8507**	**3.9300e-003**		**119.9489**

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					0.0151	0.0000	0.0151	2.2800e-003	0.0000	2.2800e-003			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886	0.0000	1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.0151**	**0.4073**	**0.4224**	**2.2800e-003**	**0.3886**	**0.3909**	**0.0000**	**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

3.2 Demolition - 2021

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	1.4900e-003	0.0512	0.0115	1.5000e-004	3.4900e-003	1.6000e-004	3.6500e-003	9.6000e-004	1.5000e-004	1.1100e-003		16.2839	16.2839	1.1500e-003		16.3128
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0461	0.0300	0.3385	1.0400e-003	0.1118	8.2000e-004	0.1126	0.0296	7.6000e-004	0.0304		103.5668	103.5668	2.7800e-003		103.6362
Total	**0.0476**	**0.0812**	**0.3500**	**1.1900e-003**	**0.1153**	**9.8000e-004**	**0.1163**	**0.0306**	**9.1000e-004**	**0.0315**		**119.8507**	**119.8507**	**3.9300e-003**		**119.9489**

3.3 Site Preparation - 2021

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					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.6403	7.8204	4.0274	9.7300e-003		0.2995	0.2995		0.2755	0.2755		942.5842	942.5842	0.3049		950.2055
Total	**0.6403**	**7.8204**	**4.0274**	**9.7300e-003**	**0.5303**	**0.2995**	**0.8297**	**0.0573**	**0.2755**	**0.3328**		**942.5842**	**942.5842**	**0.3049**		**950.2055**

3.3 Site Preparation - 2021

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		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		0.0000	0.0000	0.0000		0.0000
Worker	0.0231	0.0150	0.1693	5.2000e-004	0.0559	4.1000e-004	0.0563	0.0148	3.8000e-004	0.0152		51.7834	51.7834	1.3900e-003		51.8181
Total	**0.0231**	**0.0150**	**0.1693**	**5.2000e-004**	**0.0559**	**4.1000e-004**	**0.0563**	**0.0148**	**3.8000e-004**	**0.0152**		**51.7834**	**51.7834**	**1.3900e-003**		**51.8181**

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					0.2386	0.0000	0.2386	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	0.6403	7.8204	4.0274	9.7300e-003		0.2995	0.2995		0.2755	0.2755	0.0000	942.5842	942.5842	0.3049		950.2055
Total	**0.6403**	**7.8204**	**4.0274**	**9.7300e-003**	**0.2386**	**0.2995**	**0.5381**	**0.0258**	**0.2755**	**0.3013**	**0.0000**	**942.5842**	**942.5842**	**0.3049**		**950.2055**

3.3 Site Preparation - 2021

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		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		0.0000	0.0000	0.0000		0.0000
Worker	0.0231	0.0150	0.1693	5.2000e-004	0.0559	4.1000e-004	0.0563	0.0148	3.8000e-004	0.0152		51.7834	51.7834	1.3900e-003		51.8181
Total	**0.0231**	**0.0150**	**0.1693**	**5.2000e-004**	**0.0559**	**4.1000e-004**	**0.0563**	**0.0148**	**3.8000e-004**	**0.0152**		**51.7834**	**51.7834**	**1.3900e-003**		**51.8181**

3.4 Grading - 2021

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					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886		1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.7528**	**0.4073**	**1.1601**	**0.4138**	**0.3886**	**0.8024**		**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

3.4 Grading - 2021

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		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		0.0000	0.0000	0.0000		0.0000
Worker	0.0461	0.0300	0.3385	1.0400e-003	0.1118	8.2000e-004	0.1126	0.0296	7.6000e-004	0.0304		103.5668	103.5668	2.7800e-003		103.6362
Total	**0.0461**	**0.0300**	**0.3385**	**1.0400e-003**	**0.1118**	**8.2000e-004**	**0.1126**	**0.0296**	**7.6000e-004**	**0.0304**		**103.5668**	**103.5668**	**2.7800e-003**		**103.6362**

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					0.3387	0.0000	0.3387	0.1862	0.0000	0.1862			0.0000			0.0000
Off-Road	0.7965	7.2530	7.5691	0.0120		0.4073	0.4073		0.3886	0.3886	0.0000	1,147.4338	1,147.4338	0.2138		1,152.7797
Total	**0.7965**	**7.2530**	**7.5691**	**0.0120**	**0.3387**	**0.4073**	**0.7461**	**0.1862**	**0.3886**	**0.5748**	**0.0000**	**1,147.4338**	**1,147.4338**	**0.2138**		**1,152.7797**

3.4 Grading - 2021

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		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		0.0000	0.0000	0.0000		0.0000
Worker	0.0461	0.0300	0.3385	1.0400e-003	0.1118	8.2000e-004	0.1126	0.0296	7.6000e-004	0.0304		103.5668	103.5668	2.7800e-003		103.6362
Total	**0.0461**	**0.0300**	**0.3385**	**1.0400e-003**	**0.1118**	**8.2000e-004**	**0.1126**	**0.0296**	**7.6000e-004**	**0.0304**		**103.5668**	**103.5668**	**2.7800e-003**		**103.6362**

3.5 Building Construction - 2021

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	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117		1,103.2158	1,103.2158	0.3568		1,112.1358
Total	**0.7750**	**7.9850**	**7.2637**	**0.0114**		**0.4475**	**0.4475**		**0.4117**	**0.4117**		**1,103.2158**	**1,103.2158**	**0.3568**		**1,112.1358**

3.5 Building Construction - 2021

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		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		0.0000	0.0000	0.0000		0.0000
Worker	4.6100e-003	3.0000e-003	0.0339	1.0000e-004	0.0112	8.0000e-005	0.0113	2.9600e-003	8.0000e-005	3.0400e-003		10.3567	10.3567	2.8000e-004		10.3636
Total	**4.6100e-003**	**3.0000e-003**	**0.0339**	**1.0000e-004**	**0.0112**	**8.0000e-005**	**0.0113**	**2.9600e-003**	**8.0000e-005**	**3.0400e-003**		**10.3567**	**10.3567**	**2.8000e-004**		**10.3636**

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	0.7750	7.9850	7.2637	0.0114		0.4475	0.4475		0.4117	0.4117	0.0000	1,103.2158	1,103.2158	0.3568		1,112.1358
Total	**0.7750**	**7.9850**	**7.2637**	**0.0114**		**0.4475**	**0.4475**		**0.4117**	**0.4117**	**0.0000**	**1,103.2158**	**1,103.2158**	**0.3568**		**1,112.1358**

3.5 Building Construction - 2021

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		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		0.0000	0.0000	0.0000		0.0000
Worker	4.6100e-003	3.0000e-003	0.0339	1.0000e-004	0.0112	8.0000e-005	0.0113	2.9600e-003	8.0000e-005	3.0400e-003		10.3567	10.3567	2.8000e-004		10.3636
Total	**4.6100e-003**	**3.0000e-003**	**0.0339**	**1.0000e-004**	**0.0112**	**8.0000e-005**	**0.0113**	**2.9600e-003**	**8.0000e-005**	**3.0400e-003**		**10.3567**	**10.3567**	**2.8000e-004**		**10.3636**

3.6 Paving - 2021

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	0.7214	6.7178	7.0899	0.0113		0.3534	0.3534		0.3286	0.3286		1,035.3425	1,035.3425	0.3016		1,042.8818
Paving	5.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7266**	**6.7178**	**7.0899**	**0.0113**		**0.3534**	**0.3534**		**0.3286**	**0.3286**		**1,035.3425**	**1,035.3425**	**0.3016**		**1,042.8818**

3.6 Paving - 2021

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		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		0.0000	0.0000	0.0000		0.0000
Worker	0.0830	0.0539	0.6094	1.8700e-003	0.2012	1.4800e-003	0.2027	0.0534	1.3600e-003	0.0547		186.4202	186.4202	5.0000e-003		186.5451
Total	**0.0830**	**0.0539**	**0.6094**	**1.8700e-003**	**0.2012**	**1.4800e-003**	**0.2027**	**0.0534**	**1.3600e-003**	**0.0547**		**186.4202**	**186.4202**	**5.0000e-003**		**186.5451**

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	0.7214	6.7178	7.0899	0.0113		0.3534	0.3534		0.3286	0.3286	0.0000	1,035.3425	1,035.3425	0.3016		1,042.8818
Paving	5.2400e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.7266**	**6.7178**	**7.0899**	**0.0113**		**0.3534**	**0.3534**		**0.3286**	**0.3286**	**0.0000**	**1,035.3425**	**1,035.3425**	**0.3016**		**1,042.8818**

3.6 Paving - 2021

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		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		0.0000	0.0000	0.0000		0.0000
Worker	0.0830	0.0539	0.6094	1.8700e-003	0.2012	1.4800e-003	0.2027	0.0534	1.3600e-003	0.0547		186.4202	186.4202	5.0000e-003		186.5451
Total	**0.0830**	**0.0539**	**0.6094**	**1.8700e-003**	**0.2012**	**1.4800e-003**	**0.2027**	**0.0534**	**1.3600e-003**	**0.0547**		**186.4202**	**186.4202**	**5.0000e-003**		**186.5451**

3.7 Architectural Coating - 2021

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	0.0613					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**0.2802**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

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		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		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		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**		**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	0.0613					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**0.2802**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

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		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		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		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**		**0.0000**	**0.0000**	**0.0000**		**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0860	0.3895	0.5915	1.5800e-003	0.1100	1.4200e-003	0.1115	0.0294	1.3300e-003	0.0308		161.1775	161.1775	0.0119		161.4744
Unmitigated	0.0860	0.3895	0.5915	1.5800e-003	0.1100	1.4200e-003	0.1115	0.0294	1.3300e-003	0.0308		161.1775	161.1775	0.0119		161.4744

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Gasoline/Service Station	80.00	80.00	80.00	51,743	51,743
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	80.00	80.00	80.00	51,743	51,743

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
Gasoline/Service Station	16.60	8.40	6.90	2.00	79.00	19.00	14	27	59
Other Non-Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Gasoline/Service Station	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Other Non-Asphalt Surfaces	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896
Parking Lot	0.549559	0.042893	0.201564	0.118533	0.015569	0.005846	0.021394	0.034255	0.002099	0.001828	0.004855	0.000709	0.000896

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.7000e-004	1.5900e-003	1.3300e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		1.9021	1.9021	4.0000e-005	3.0000e-005	1.9134
NaturalGas Unmitigated	1.7000e-004	1.5900e-003	1.3300e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		1.9021	1.9021	4.0000e-005	3.0000e-005	1.9134

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					
Gasoline/Service Station	16.1674	1.7000e-004	1.5900e-003	1.3300e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		1.9021	1.9021	4.0000e-005	3.0000e-005	1.9134
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.7000e-004**	**1.5900e-003**	**1.3300e-003**	**1.0000e-005**		**1.2000e-004**	**1.2000e-004**		**1.2000e-004**	**1.2000e-004**		**1.9021**	**1.9021**	**4.0000e-005**	**3.0000e-005**	**1.9134**

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					
Gasoline/Service Station	0.0161674	1.7000e-004	1.5900e-003	1.3300e-003	1.0000e-005		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004		1.9021	1.9021	4.0000e-005	3.0000e-005	1.9134
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.7000e-004**	**1.5900e-003**	**1.3300e-003**	**1.0000e-005**		**1.2000e-004**	**1.2000e-004**		**1.2000e-004**	**1.2000e-004**		**1.9021**	**1.9021**	**4.0000e-005**	**3.0000e-005**	**1.9134**

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	7.0400e-003	0.0000	4.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		9.2000e-004	9.2000e-004	0.0000		9.8000e-004
Unmitigated	7.0400e-003	0.0000	4.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		9.2000e-004	9.2000e-004	0.0000		9.8000e-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	8.4000e-004					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.1600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-005	0.0000	4.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		9.2000e-004	9.2000e-004	0.0000		9.8000e-004
Total	**7.0400e-003**	**0.0000**	**4.3000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**9.2000e-004**	**9.2000e-004**	**0.0000**		**9.8000e-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	8.4000e-004					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	6.1600e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.0000e-005	0.0000	4.3000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		9.2000e-004	9.2000e-004	0.0000		9.8000e-004
Total	**7.0400e-003**	**0.0000**	**4.3000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**9.2000e-004**	**9.2000e-004**	**0.0000**		**9.8000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

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

Appendix B

RCNM Calculations

Roadway Construction Noise Model (RCNM),Version 1.1

Report dat ########
Case Descı Seal Beach Hydrogen Facility - Grading

---- Receptor #1 ----

Descriptio	Land Use	Baselines (dBA) Daytime	Evening	Night
Residence	Residentia	65	65	65

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	525	0
Dozer	No	40		81.7	525	0
Concrete Saw	No	20		89.6	525	0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	57.1	53.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	61.2	57.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Saw	69.2	62.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	69.2	63.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Descriptio	Land Use	Baselines (dBA) Daytime	Evening	Night
Commerci	Commerci	65	65	65

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	75	0
Dozer	No	40		81.7	75	0

Concrete Saw	No	20	89.6	75	0

	Calculated (dBA)		Results						Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night							
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq						
Backhoe	74	70.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A						
Dozer	78.1	74.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A						
Concrete Saw	86.1	79.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A						
Total	86.1	80.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A						

*Calculated Lmax is the Loudest value.