4.2 AIR QUALITY

This section analyzes the proposed project's temporary and long-term impacts to local and regional air quality. Greenhouse gas emissions are discussed in Section 4.4, *Greenhouse Gas Emissions*. This section uses data generated using the California Air Emissions Estimator Model (CalEEMod), which can be found in Appendix C.

4.2.1 Setting

The project site is located in the City of Long Beach, which is part of the South Coast Air Basin (Basin) and under the jurisdiction of the South Coast Air Quality Management District (SCAQMD).

a. Climate and Meteorology. Air quality in the Basin is affected by various emission sources (mobile and industry, etc.) as well as atmospheric conditions such as wind speed, wind direction, temperature, and rainfall, etc. The combination of topography, low mixing height, abundant sunshine, and emissions from the second largest urban area in the United States give the Basin the worst air pollution problem in the nation.

The majority of annual rainfall in the Basin occurs between November and April. Summer rainfall is minimal and is generally limited to scattered thunder showers in coastal regions and slightly heavier showers in the eastern portion of the Basin and along the coastal side of the mountains. The Long Beach WSCMO Station climatological station monitored precipitation from April 1958 to March 2013. Average monthly rainfall measured in Long Beach during that period varied from 2.90 inches in February to 0.42 inch or less between May and October, with an annual total of 12.01 inches.

The Basin experiences a persistent temperature inversion (increasing temperature with increasing altitude) as a result of the Pacific high. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer. This phenomenon is observed in mid to late afternoons on hot summer days. Winter inversions frequently break by midmorning.

The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversion or high wind speeds, ambient air pollutant concentrations are lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly onshore into Riverside and San Bernardino counties. In the winter, the greatest pollution problem is the accumulation of carbon monoxide (CO) and nitrogen oxides (NO_X) due to low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and NO_X to form photochemical smog.

b. Sensitive Receptors. Ambient air quality standards have been established to represent the levels of air quality considered sufficient, with an adequate margin of safety, to protect public health and welfare. They are designed to protect that segment of the public

most susceptible to respiratory distress, such as children under 14; the elderly over 65; persons engaged in strenuous work or exercise; and people with cardiovascular and chronic respiratory diseases. The majority of sensitive receptor locations are therefore, schools and hospitals. Sensitive receptors likely to be affected by air quality impacts associated with project construction include residential areas near the project site. The nearest existing residential sensitive receptors are located 100 feet north of the Third and Pacific Block proposed development, across Third Street. In addition, the proposed project's residential uses and library would be considered sensitive receptors. The First Congregational Church of Long Beach, located at 241 Cedar Avenue, is also a sensitive receptor and is located 85 feet west of the proposed construction area.

c. Air Pollution Regulation.

Federal Regulations/Standards. Pursuant to the federal Clean Air Act (CAA) of 1970, the U.S. Environmental Protection Agency (U.S. EPA) established national ambient air quality standards (NAAQS). The NAAQS were established for six major pollutants termed "criteria" pollutants, which are those pollutants for which the federal and State governments have established AAQS, or criteria, for outdoor concentrations in order to protect public health. The current AAQS plus the California standards (which are generally more stringent than federal standards) are shown in Table 4.2-1.

Table 4.2-1
Current Federal and State Ambient Air Quality Standards

Pollutant	Federal Standard	California Standard
Ozone	0.075 ppm (8-hr avg)	0.09 ppm (1-hr avg) 0.07 ppm (8-hr avg)
Carbon Monoxide	9.0 ppm (8-hr avg) 35.0 ppm (1-hr avg)	9.0 ppm (8-hr avg) 20.0 ppm (1-hr avg)
Nitrogen Dioxide	0.053 ppm (annual avg)	0.18 ppm (1-hr avg) 0.030 ppm (annual avg)
Sulfur Dioxide	0.14 ppm (24-hr avg) 0.075 ppm (1-hr avg)	0.04 ppm (24-hr avg) 0.25 ppm (1-hr avg)
Lead	1.5 $\mu g/m^3$ (3-month avg)	1.5 $\mu g/m^3$ (30-day avg)
Particulate Matter (PM_{10})	150 $\mu g/m^3$ (24-hr avg)	20 $\mu g/m^3$ (annual avg) 50 $\mu g/m^3$ (24-hr avg)
Particulate Matter ($PM_{2.5}$)	15 $\mu g/m^3$ (annual avg) 35 $\mu g/m^3$ (24-hr avg)	12 $\mu g/m^3$ (annual avg)

ppm= parts per million
$\mu g/m^3$ = micrograms per cubic meter
Source: California Air Resources Board, http://www.arb.ca.gov/research/aaqs/aaqs2.pdf, 2014.

The U.S. EPA uses data collected at permanent monitoring stations to classify regions as "attainment" or "nonattainment," depending on whether the regions met the requirements stated in the primary NAAQS. Nonattainment areas are imposed with additional restrictions as required by the U.S. EPA.

The U.S. EPA established new national air quality standards for ground-level ozone and fine particulate matter in 1997. On May 14, 1999, the Court of Appeals for the District of Columbia Circuit issued a decision ruling that the CAA, as applied in setting the new public health

standards for ozone and particulate matter, was unconstitutional and an improper delegation of legislative authority to the U.S. EPA. On February 27, 2001, the U.S. Supreme Court upheld the way the government sets air quality standards under the CAA. The Court unanimously rejected industry arguments that the U.S. EPA must consider financial costs as well as health benefits in writing standards. The justices also rejected arguments that the U.S. EPA took too much lawmaking power from Congress when it set tougher standards for ozone and soot in 1997. Nevertheless, the court dismissed the U.S. EPA's policy for implementing new ozone rules, saying that the agency ignored a section of the law that restricts its authority to enforce such rules.

In April 2003, the White House Office of Management and Budget (OMB) cleared the U.S. EPA to implement the 8-hour ground-level ozone standard. The U.S. EPA issued the proposed rule implementing the 8-hour ozone standard in April 2003. The U.S. EPA completed final 8-hour nonattainment status on April 15, 2004. The U.S. EPA revoked the 1-hour ozone standard on June 15, 2005, and lowered the 8-hour O_3 standard from 0.08 parts per million (ppm) to 0.075 ppm on April 1, 2008. The U.S. EPA issued the final $PM_{2.5}$ implementation rule in fall 2004. The U.S. EPA lowered the 24-hour $PM_{2.5}$ standard from 65 to 35 micrograms per cubic meter ($\mu g/m_3$) and revoked the annual PM_{10} standard on December 17, 2006. The U.S. EPA issued final designations for the 2006 24-hour $PM_{2.5}$ standard on December 12, 2008.

Descriptions of the criteria pollutants follow.

Ozone. O_3 (smog) is formed by photochemical reactions between oxides of nitrogen and reactive organic gases rather than being directly emitted. Ozone is a pungent, colorless gas typical of Southern California smog. Elevated ozone concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, the elderly, and young children. Ozone levels peak during summer and early fall. The entire Basin is designated as a nonattainment area for the State 1-hour and 8-hour ozone standards. The U.S. EPA has officially designated the status for the Basin regarding the 8-hour ozone standard as "Extreme." The Basin has until 2024 to attain the federal 8-hour O_3 standard.

Carbon Monoxide. CO is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. It is a colorless odorless gas that can cause dizziness, fatigue, and impairment to central nervous system functions. The entire Basin is in attainment for the State standards for CO. The Basin is designated as an "Attainment/Maintenance" area under the federal CO standards.

Nitrogen Oxides. Nitrogen dioxide (NO_2), a reddish-brown gas, and nitric oxide (NO), a colorless odorless gas, is formed from fuel combustion under high temperature or pressure. These compounds are referred to as nitrogen oxides, or NO_X. NO_X is a primary component of the photochemical smog reaction. It also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition (i.e., acid rain). NO_2 decreases lung function and may reduce resistance to infection. The entire Basin is designated as nonattainment for the State NO_2 standard and as an "Attainment/Maintenance" area under the federal NO_2 standard.

Sulfur Dioxide. Sulfur dioxide (SO_2) is a colorless irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO_2 levels. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight. The entire Basin is in attainment for both federal and State SO_2 standards.

Lead. Lead is found in old paints and coatings, plumbing, and a variety of other materials. Once in the blood stream, lead can cause damage to the brain, nervous system, and other body systems. Children are highly susceptible to the effects of lead. The Los Angeles County portion of the Basin was re-designated as nonattainment for the State and federal standards for lead in 2010.

Particulate Matter. Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles (particulate matter less than 10 microns in diameter [PM_{10}]), derive from a variety of sources, including windblown dust and grinding operations. Fuel combustion and resultant exhaust from power plants and diesel buses and trucks are primarily responsible for fine particle ($PM_{2.5}$) levels. Fine particles can also be formed in the atmosphere through chemical reactions. PM_{10} can accumulate in the respiratory system and aggravate health problems such as asthma. The U.S. EPA's scientific review concluded that $PM_{2.5}$, which penetrates deeply into the lungs, is more likely than PM_{10} to contribute to the health effects listed in a number of recently published community epidemiological studies at concentrations that extend well below those allowed by the current PM_{10} standards. These health effects include premature death; increased hospital admissions and emergency room visits (primarily the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease (children and individuals with cardiopulmonary disease such as asthma); decreased lung functions (particularly in children and individuals with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms. The Basin is a nonattainment area for the State PM_{10} and $PM_{2.5}$ standards and a nonattainment area for the federal $PM_{2.5}$ standards. The Basin was redesignated as attainment/maintenance for the federal PM_{10} standard in 2013.

Reactive Organic Compounds. Reactive organic compounds (ROCs; also known as ROGs and volatile organic compounds [VOCs]) are formed from combustion of fuels and evaporation of organic solvents. ROCs are not defined criteria pollutants but are a prime component of the photochemical smog reaction. Consequently, ROCs accumulate in the atmosphere more quickly during the winter when sunlight is limited and photochemical reactions are slower.

Sulfates. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features. The entire Basin is in attainment for the State standard for sulfates.

Hydrogen Sulfide. Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas and can be emitted as the result of geothermal

energy exploitation. In 1984, a California Air Resources Board (CARB) committee concluded that the ambient standard for H_2S is adequate to protect public health and to significantly reduce odor annoyance. The state standard for outdoor levels of hydrogen sulfide is 30 parts per billion averaged over one hour (SCAQMD, 2015).The entire Basin is unclassified for the State standard for H_2S.

Visibility-Reducing Particles. Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size, and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt. The statewide standard is intended to limit the frequency and severity of visibility impairment due to regional haze. The entire Basin is unclassified for the State standard for visibility-reducing particles.

State Regulations/Standards. In 1967, the California Legislature passed the Mulford-Carrell Act, which combined two Department of Health bureaus (the Bureau of Air Sanitation and the Motor Vehicle Pollution Control Board) to establish the California Air Resources Board (CARB). The CARB coordinates and oversees both State and federal air pollution control programs in California. It also oversees activities of local air quality management agencies and maintains air quality monitoring stations throughout the State in conjunction with the U.S. EPA and local air districts. The CARB has divided the State into 15 air basins based on meteorological and topographical factors of air pollution.

The CARB identified particulate emissions from diesel-fueled engines (diesel particulate matter [DPM]) as toxic air contaminants (TACs) in August 1998. Following the identification process, CARB was required by law to determine whether there is a need for further control. In September 2000, the CARB adopted the Diesel Risk Reduction Plan (Diesel RRP), which recommends many control measures to reduce the risks associated with DPM and to achieve the goal of 85 percent DPM reduction by 2020.

California Green Building Code. California Green Buildings Standards Code (Cal Green Code) (California Code of Regulations [CCR], Title 24, Part 11) was adopted by the California Building Standards Commission in 2010 and became effective in January 2011. The Code applies to all new constructed residential, nonresidential, commercial, mixed-use, and State-owned facilities, as well as schools and hospitals. Cal Green Code is comprised of Mandatory Residential and Nonresidential Measures and more stringent Voluntary Measures (TIERs I and II).

Mandatory Measures are required to be implemented on all new construction projects and consist of a wide array of green measures concerning project site design, water use reduction, improvement of indoor air quality, and conservation of materials and resources. The Cal Green Building Code refers to Title 24, Part 6 compliance with respect to energy efficiency; however, it encourages 15 percent energy use reduction over that required in Part 6. Voluntary Measures are optional, more stringent measures may be used by jurisdictions to enhance their commitment towards green and sustainable design and achievement of Assembly Bill (AB) 32 goals. Under TIERs I and II, all new construction projects are required to reduce energy consumption by 15 percent and 30 percent, respectively, below the baseline required under the

California Energy Commission (CEC), as well as implement more stringent green measures than those required by mandatory code.

Local Regulations and Policies. Local regulations and policies related to air quality are described below.

Regional Air Quality Planning Framework. The 1976 Lewis Air Quality Management Act established the SCAQMD and other air districts throughout the State. The federal CAA Amendments of 1977 required that each state adopt an implementation plan outlining pollution control measures to attain the federal standards in nonattainment areas of the state. The CARB is responsible for incorporating air quality management plans for local air basins into a State Implementation Plan (SIP) for U.S. EPA approval. Significant authority for air quality control within the local air basins has been given to local air districts that regulate stationary source emissions and develop local nonattainment plans.

Regional Air Quality Management Plan. The SCAQMD and the Southern California Association of Governments (SCAG) are responsible for formulating and implementing the Air Quality Management Plan (AQMP) for the Basin. Every 3 years, the SCAQMD prepares a new AQMP, updating the previous plan and having a 20-year horizon. The SCAQMD adopted the Final 2012 AQMP on December 7, 2012 and forwarded it to the CARB for review in February 2013. The 2012 AQMP includes the new and changing federal requirements, implementation of new technology measures, and the continued development of economically sound, flexible compliance approaches.

Currently, the SCAQMD is initiating an early development process for the 2016 AQMP, which will be a comprehensive and integrated Plan primarily focused on addressing the ozone standards. The Plan will be a regional and multi-agency effort (SCAQMD, CARB, SCAG, and U.S. EPA). State and federal planning requirements include developing control strategies, attainment demonstrations, reasonable further progress, and maintenance plans. The 2016 AQMP will incorporate the latest scientific and technical information and planning assumptions, including the latest applicable growth assumptions, Regional Transportation Plan/Sustainable Communities Strategy, and updated emission inventory methodologies for various source categories.

SCAQMD Rules and Regulations. All projects are subject to SCAQMD rules and regulations in effect at the time of construction. Specific rules applicable to the construction anticipated under the Plan may include the following:

Rule 401 – Visible Emissions. A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than 3 minutes in any 1 hour that is as dark or darker in shade as that designated No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines.

Rule 403 – Fugitive Dust. This rule is intended to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (human-made) fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. Rule 403 applies to any activity or human-made condition capable of generating fugitive dust.

Rule 1113 – Architectural Coatings. No person shall apply or solicit the application of any architectural coating within the SCAQMD with VOC content in excess of the values specified in a table incorporated in the Rule.

City of Long Beach General Plan. The Air Quality Element (1996) of the Long Beach General Plan includes goals and polices related to air quality. The following goals and policies are applicable to the proposed project:

- ***Goal 6:*** *Minimize particulate emissions from the construction and operation of roads and buildings, from mobile sources, and from the transportation, handling and storage of materials.*
- ***Policy 6.1:*** *Control Dust. Further reduce particulate emissions from roads, parking lots, construction sites, unpaved alleys, and port operations and related uses.*
- ***Goal 7:*** *Reduce emissions through reduced energy consumption.*
- ***Policy 7.1:*** *Energy Conservation. Reduce energy consumption through conservation improvements and requirements.*

d. Current Air Quality. The SCAQMD, together with the CARB, maintains ambient air quality monitoring stations in the Basin. The air quality monitoring station closest to the site is the South Long Beach station (located at 1305 East Pacific Coast Highway), and its air quality trends are representative of the ambient air quality in the project area. The pollutants monitored at this station are PM_{10} and $PM_{2.5}$. Data for CO, O_3, NO_2, and SO_2 is from the second nearest station (North Long Beach, located at 3648 North Long Beach Boulevard) to the project site. Table 4.2-2 summarizes the ambient air quality levels measured at these stations between 2012-2014.

The pollutants that exceeded thresholds during the monitoring period were O_3, PM_{10} and $PM_{2.5}$. TheO_3 standard was exceeded one time in 2013; the PM_{10} standard was exceeded 1 time in 2012 and 2013 and twice in 2014; the PM2.5 standard was exceeded four times in 2012, one time in 2013, and two times in 2014

Table 4.2-2
Ambient Air Quality Data

Pollutant	2012	2013	2014
Ozone, ppm - Worst Hour	0.084	0.092	*
Number of days of State exceedances – 8 hour average (>0.07 ppm)	0	1	*
Carbon Monoxide, ppm - Worst 8 Hours	2.17	*	*
Number of days of State/Federal exceedances (>9.0 ppm)	0	0	0
Nitrogen Dioxide, ppm - Worst Hour	77.2	66.9	*
Number of days of State exceedances (>0.18 ppm)	0	0	0
Sulfur Dioxide, ppm – Worst Hour	0.003	0.001	*
Number of days of State exceedances (>0.04 ppm)	*	*	*
Particulate Matter <10 microns, $\mu g/m^3$ Worst 24 Hours	54	54	59
Number of samples of State exceedances (>50 $\mu g/m^3$)	1	1	2
Number of samples of Federal exceedances (>150 $\mu g/m^3$)	0	0	0
Particulate Matter <2.5 microns, $\mu g/m^3$ Worst 24 Hours	59.1	42.9	61.9
Number of samples of Federal exceedances (>35 $\mu g/m^3$)	4	1	2

Source: CARB, Annual Air Quality Data Summaries available at http://www.arb.ca.gov

- *Particulate Matter (<10 and <2.5) data from South Long Beach station.*
- *Ozone, Carbon Monoxide, Nitrogen Dioxide, and Sulfur Dioxide data taken from North Long Beach station.*

** Insufficient data available to determine the value*

4.2.2 Previous Environmental Review

The Long Beach Downtown Plan EIR (the "Downtown Plan EIR") examined the air quality setting of the project region and the potential impacts resulting from development under the Downtown Plan. The Downtown Plan EIR concluded that the Downtown Plan would not increase the allowable density in the Downtown area; therefore, operational emissions associated with land use development on the site, including vehicle trip generation, was accounted for in the AQMP. However, it was also determined that construction and operational area- and mobile-source emissions from implementation of the Downtown Plan would result in or substantially contribute to emissions concentrations that exceed the national or California standards causing significant and unavoidable impacts.

The proposed project is within the parameters and growth forecasts of the Downtown Plan and would generate short-term air pollutant emissions associated with construction, as well as long-term operations, which would contribute to the significant and unavoidable impacts determined in the Downtown Plan EIR. Emissions have the potential to contribute to an existing project air quality violation or result in a cumulatively considerable net increase of criteria pollutants for which the region is in non-attainment.

Construction of the proposed project would be subject to Downtown Plan EIR Mitigation Measure AQ-1(a), which requires all heavy-duty (50 horsepower [hp] or more) offroad vehicles to be used during construction must implement Enhanced Exhaust Control Practices. Mitigation Measure AQ-1(b) requires individual projects within 1,500 feet of existing and proposed sensitive receptors to undergo project-specific construction-related air quality analysis. The project would also be subject to Mitigation Measure AQ-1(c), which requires individual projects to include specific provisions, such as temporary traffic controls as well as the use of 2010 or newer diesel trucks to reduce construction-related air quality impacts.

The project would also be subject to Downtown Plan EIR Mitigation Measure AQ-2 to reduce operational emissions. Mitigation Measure AQ-2 requires implementation of ride-share programs, development of secure bicycle parking areas, exceedance of Title 24 energy efficiency standards by 20 percent, inclusion of such measures as solar panels to achieve an additional 25 percent reduction in electricity use, and restrictions on diesel truck idling.

The Downtown Plan EIR determined that impacts from local mobile-source CO emissions associated with implementation of the proposed Downtown Plan would be less than significant. In addition, the Downtown Plan EIR determined that implementation of the Downtown Plan could result in the exposure of receptors to short- and long-term emissions of Toxic Air Contaminants (TACs) from onsite and offsite stationary and mobile sources. Impacts associated with the Port of Long Beach and offsite stationary sources were determined to be significant and unavoidable, while impacts related to short-term construction, long-term onsite stationary sources, and offsite mobile-sources were determined to be less than significant. The proposed project would be subject to the same general mitigation measures identified in the Downtown Plan EIR, specifically AQ-4(a) and AQ-4(b), which require location of TAC emitters away from existing and proposed onsite, sensitive receptors; implementation of idle-reduction strategies for diesel trucks; posting of signs; installation of high efficiency filter systems and mechanical ventilation systems in all proposed residences; and other measures specific to both TAC generators and TAC receptors to reduce risks to sensitive receptors. Development of the proposed project would potentially be subject to a component of Mitigation Measure AQ-4(a) that requires a project-level health risk assessment (HRA) for commercial land uses generating more than 100 trucks per day, or 40 trucks equipped with transportation refrigeration units (TRUs), within 1,000 feet of sensitive receptors.

The project includes the demolition of the former Long Beach Courthouse. The Long Beach Courthouse Demolition Project was studied in a Draft EIR (SCH# 2014051003) that was circulated in October and November of 2014, but was not certified. The Long Beach Courthouse Demolition Project Draft EIR determined that impacts related to construction emissions exceeding SCAQMD's daily regional and localized construction thresholds would be less than significant with implementation of mitigation involving the development and implementation of an Air Quality Safety Plan, if the demolition occurs by implosion. The Long Beach Courthouse Demolition Project Draft EIR also determined that impacts related to TAC emissions would be less than significant with implementation of mitigation involving the development and implementation of an Air Quality Safety Plan, if the demolition occurs by implosion.

As stated in the Downtown Plan EIR, project construction activities associated with the development of onsite land uses could result in odorous emissions from diesel exhaust

generated by construction equipment. However, because of the temporary nature of these emissions and the highly diffusive properties of diesel exhaust, nearby receptors would not be affected by diesel exhaust odors associated with project construction and the impact related to the Downtown Plan was determined to be less than significant. Downtown Plan EIR Mitigation Measure AQ-6 includes measures to control exposure of sensitive receptors to operational odorous emissions. Mitigation Measure AQ-6 requires the City to consider the odor-producing potential of land uses when reviewing development proposals; implementation of odor-control devices to mitigate the exposure of receptors to objectionable odors, where necessary; siting of loading docks and delivery areas away from sensitive receptors; and posting of signage in loading docks stating that diesel-powered delivery trucks must be shut off when not in in use for longer than five minutes. The proposed project would occur within the 25-year buildout assessed in the Downtown Plan EIR and would not include any uses expected to generate odors outside of what was considered in the Downtown Plan EIR.

4.2.3 Impact Analysis

a. Methodology and Significance Thresholds.

Methodology. The air quality analysis conforms to the methodologies recommended in the SCAQMD's *CEQA Air Quality Handbook* (1993). The handbook includes thresholds for emissions associated with both construction and operation of proposed projects.

The SCAQMD's current guidelines, included in its *CEQA Air Quality Handbook*, were adhered to in the assessment of potential short- and long-term air quality impacts of the proposed project. However, the air quality models identified in the *CEQA Air Quality Handbook* are outdated; therefore, CalEEMod Version 2013.2.2 was used to estimate regional air pollutant emissions associated with project construction and operation. Modeling assumed demolition would occur by traditional methods, as it is not possible to model demolition by implosion in CalEEMod.

Construction is expected to occur in phases over approximately seven years beginning in 2016. The project includes demolition of the former Long Beach Courthouse, City Hall, and the Main Library. A total disturbance area of 15.87 acres split between the project components based on the project site plans was assumed in the model to calculate construction emissions. Grading operations would disturb an area of approximately nine acres and result in approximately 380,000 cubic yards (cy) of export and 68,200 cy of import. Due to construction phasing, the project cannot use 68,200 cy of export as fill. Construction is expected to occur over four phases based on the applicant-provided construction schedule. Phase 1 would span January 2016 to November 2019 and includes demolition of the former Courthouse, grading, construction of City Hall, the Port Building, the new Library, Civic Block parking garage and associated architectural coating and paving. Phase 1 also includes the grading and construction of the residential building and parking garage within the Third and Pacific Block. Phase 2 would span April 2017 to December 2017 and includes architectural coating and paving for the residential building within the Third and Pacific Block. Phase 3 would span July 2019 to March 2020 and includes demolition of the existing Main Library, and grading and construction of Lincoln Park. Phase 4 would span January 2020 to July 2022 and includes demolition of the existing City Hall and grading and construction of the Center Block components, including associated architectural coating and paving.

Modeling assumed compliance with SCAQMD Fugitive Dust Rule 403, SCAQMD Architectural Coating Rule 1113, and Downtown Plan EIR Mitigation Measures AQ-1(a), AQ-1(b), AQ-1(c), AQ-2, GHG-1(b), and GHG-2(b) discussed in "Previous Environmental Review" and Section 4.4, *Greenhouse Gas Emissions and Climate Change*. Complete results from CalEEMod and assumptions can be viewed in Appendix B. All other values utilized in the modeling were based on applicable SCAQMD defaults for the Basin.

Both temporary construction emissions and long-term operation emissions were calculated using CalEEMod. The estimate of total daily trips associated with the proposed project and existing uses was based on the Traffic Impact Analysis prepared by Linscott, Law, and Greenspan, Engineers (LLG) in June 2015 and was calculated and extrapolated to derive total annual mileage in CalEEMod. Both construction and long-term emissions were analyzed based on the regional thresholds established by the SCAQMD and published in the *CEQA Air Quality Handbook*.

Thresholds. Pursuant to the *State CEQA Guidelines*, air quality impacts related to the proposed project would be significant if the project would:

a) *Conflict with or obstruct implementation of the applicable air quality plan;*
b) *Violate any air quality standard or contribute substantially to an existing or projected air quality violation;*
c) *Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);*
d) *Expose sensitive receptors to substantial pollutant concentrations; or*
e) *Create objectionable odors affecting a substantial number of people.*

As discussed in the Initial Study prepared for the project (Appendix A), onsite development would not generate objectionable odors that would affect a substantial number of people. No heavy industrial, agricultural or other uses typically associated with objectionable odors are proposed. Therefore, it is unlikely that the proposed project would generate objectionable odors affecting a substantial number of people. Consequently, threshold (e) related to objectionable odors is not discussed below.

Air Quality Management Plan Consistency. Criteria for determining consistency with the SCAQMD's AQMP are defined in Chapter 12, Section 12.2 and Section 12.3 of the SCAQMD's *CEQA Air Quality Handbook*, and include the following:

- *The project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.*
- *The proposed project will not exceed the assumptions in the AQMP based on the year of project buildout.*

Construction Emission Thresholds. The SCAQMD has developed specific numeric thresholds that apply to projects within the Basin. The SCAQMD currently recommends that impacts associated with projects with construction-related mass daily emissions that exceed any of the following emissions thresholds should be considered significant:

- *75 pounds per day of ROG*
- *100 pounds per day of NO_x*
- *550 pounds per day of CO*
- *150 pounds per day of SO_x*
- *150 pounds per day of PM_{10}*
- *55 pounds per day of $PM_{2.5}$*

Operational Emission Thresholds. The SCAQMD has also established the following significance thresholds for project operations within the Basin:

- *55 pounds per day of ROG*
- *55 pounds per day of NO_X*
- *550 pounds per day of CO*
- *150 pounds per day of SO_X*
- *150 pounds per day of PM_{10}*
- *55 pounds per day of $PM_{2.5}$*

Localized Significance Thresholds. In addition to the above 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, distance to the sensitive receptor and other factors. 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, 2003). As such, LSTs for operational emissions do not apply to onsite operational emissions as the majority of emissions would be generated by cars on the roadways.

LSTs have been developed for emissions within areas up to five acres in size, with air pollutant modeling recommended for activity within larger areas. The SCAQMD provides lookup tables for project sites that measure one, two, or five acres. The project area measures approximately 16 acres and is located in Source Receptor Area 4 (SRA-4) (SCAQMD, 2003). Based on the estimated construction schedule, it is assumed that construction activity at the project site would generally occur within a five-acre area at any one time. The applicable LSTs for construction on a five acre site in SRA-4 are shown in Table 4.2-3. According to the SCAQMD's publication, *Final Localized Significant (LST) Thresholds Methodology*, the use of LSTs is voluntary, to be implemented at the discretion of local agencies.

LSTs are provided for receptors at a distance of 25 to 500 meters from the project site boundary. As described above, the nearest existing sensitive receptor is approximately 100 feet, or 30 meters, from the project site boundary; however, the project's proposed library would be located adjacent to on-going construction. The residential components of the project are concentrated on the Third and Pacific Block, which is located approximately 300 feet north of where construction on the remainder of the project site would occur, and on Center Block,

operation of which would occur after all other components are constructed. Therefore, the proposed library would be the only sensitive receptor that would be located adjacent to project construction. According to the SCAQMD's LST methodology, projects with boundaries located closer than 25 meters to the nearest receptor should use the LSTs for receptors located at 25 meters.

Table 4.2-3
SCAQMD LSTs for Emissions in SRA-4

Pollutant	Allowable emissions as a function of receptor distance in meters from a five-acre site (lbs/day)				
	25	**50**	**100**	**200**	**500**
Gradual conversion of NO_x to NO_2	123	118	126	141	179
CO	1,530	1,982	2,613	4,184	10,198
PM_{10}	14	42	58	92	191
$PM_{2.5}$	8	10	18	39	120

Source: SCAQMD, website: http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/appendix-c-mass-rate-lst-look-up-tables.pdf?sfvrsn=2. Accessed: June 2015.

b. Project Impacts and Mitigation Measures.

Threshold	*Conflict with or obstruct implementation of the applicable air quality plan.*

Impact AQ-1 The proposed project would not directly or indirectly generate population growth beyond that anticipated in the Downtown Plan EIR and AQMP forecasts. Impacts relating to AQMP consistency are, therefore, Class III, *less than significant*.

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 2012 AQMP, the most recent AQMP adopted by the SCAQMD, incorporates local city general plans and the SCAG Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) socioeconomic forecast projections of regional population, housing and employment growth. The growth assumptions used in the AQMP are based on SCAG growth forecasts. Therefore, if the proposed project would not facilitate growth exceeding SCAG forecasts, then the project would be consistent with the assumptions in the AQMP (SCAG, 2012a).

As shown in Table 4.2-1, the RTP/SCS population growth forecast for Long Beach is 491,000 in 2020 and 534,100 in 2035 (SCAG, 2012b). SCAG's forecasts that Long Beach will have 175,600 housing units in 2020 and 188,900 housing units in 2035. SCAG estimates citywide employment for Long Beach at 176,000 jobs in 2020 and 184,800 jobs in 2035 (SCAG, 2012b).

Table 4.2-4
SCAG Population, Housing, Employment Forecasts for Long Beach

Year	Population	Housing	Employment
2020	491,000	175,600	176,000
2035	534,100	188,900	184,800

Source: SCAG, 2012b Adopted Growth Forecast

Long Beach currently has an estimated population of 470,292 (California Department of Finance, 2014). The proposed project would accommodate up to 780 new residential units within Long Beach. The City has approximately 2.82 persons per household (California Department of Finance, 2014). Development of the proposed project would therefore accommodate an estimated 2,200 residents (780 dwelling units x 2.82 people/dwelling unit). Based on this average, the project would add an estimated 2,200 residents, for a total City population of 472,492 residents (California Department of Finance, 2014). The 2,200 new residents would increase the City's population by 0.5%. The increase is well within the 63,808 residents forecast by SCAG to be added to the City between 2014 and 2035 (see Table 4.2-4). Direct population growth associated with the proposed project is therefore within SCAG's growth forecasts.

The City currently exceeds the 2020 SCAG forecast for housing with approximately 176,417 housing units (California Department of Finance, 2014). SCAG's housing forecast for Long Beach is 188,900 in 2035 (SCAG, 2012b). Housing units are expected to increase in the City by approximately 12,483 between 2014 and 2035. The project's proposed 780 units would account for approximately 6.2 percent of housing growth between 2014 and 2035 and would not exceed SCAG housing forecasts for 2035.

The project's commercial components would generate jobs onsite. As shown in Table 4.2-5, the proposed hotel, retail, and restaurant uses would accommodate an estimated 365 jobs. The Port Building, City Hall, and library would accommodate existing jobs that would simply be relocated to the new facilities.

Table 4.2-5
New Employees Accommodated by Proposed Project

Land Use	Area (sf)	Area (acres)	Employees per Acre	Total Employees
Retail	32,000	0.73	18.86	14
Restaurant[1]	8,000	0.18	25.76	5
Hotel	290,400	6.67	51.91	346
			Total[2]	**365**

Source: Table C-1, Range of Employment Densities (Employees Per Acre) by County (Southern California Association of Governments (SCAG), Employment Density Study Summary Report, October 31, 2001).
[1] Employee rate for "Other Retail/Services" in SCAG Table C-1 was used, as "Restaurant" is not listed.

SCAG estimated employment (jobs) in the City to be 168,100 in 2008. SCAG's employment growth forecast for Long Beach is 184,800 in 2035 (SCAG, 2012b). Therefore, jobs are expected to increase in the City by approximately 16,700 between 2008 and 2035. Consequently, the employment increase generated by the proposed project would account for approximately 2.2 percent of job growth between 2008 and 2035 and would not exceed SCAG employment forecasts.

The Downtown Plan EIR concluded that the Downtown Plan would not increase the allowable density in the Downtown area and therefore operational emissions associated with land use development on the site, including vehicle trip generation, were accounted for in the AQMP. As shown in Table 3-3 in Section 3, *Environmental Setting*, buildout of the Downtown Plan is expected to generate approximately 5,000 housing units. Implementation of the Downtown Plan is expected to generate 14,500 residents and approximately 5,200 jobs. The proposed project would account for approximately 15.6 percent of the housing units, 15.2 percent of the population increase, and 7 percent of the jobs anticipated in the Downtown Plan EIR. As such, the assumptions in the RTP/SCS about growth in the Downtown Plan Area and the City accommodates housing and population growth on the project site. Therefore, the project does would not conflict with the growth assumptions in the AQMP.

Mitigation Measures. Impacts would be less than significant and no mitigation measures would be required.

Level of Significance After Mitigation. Impacts related to AQMP consistency would be less than significant without mitigation.

Threshold	*Violate any air quality standard or contribute substantially to an existing or projected air quality violation;*
Threshold	*Expose sensitive receptors to substantial pollutant concentrations.*

Impact AQ-2 **Onsite construction activity would generate temporary emissions. The Downtown Plan EIR determined that construction emissions associated with buildout of the Downtown Plan would result in Class I, significant and unavoidable impacts. The proposed project would contribute to this impact; however, project emissions would not exceed SCAQMD regional thresholds or LSTs. However, if demolition occurs by implosion, the project would result in significant impacts related to localized PM_{10} emissions and asbestos exposure without additional mitigation. Impacts would, therefore, be Class II, *less than significant with mitigation.***

Project construction would generate temporary air pollutant emissions. These impacts are associated with fugitive dust (PM_{10} and $PM_{2.5}$) and exhaust emissions from heavy construction vehicles, in addition to ROG that would be released during the drying phase upon application of architectural coatings. Construction would generally consist of grading, construction of the proposed buildings, paving, and architectural coating.

The grading phase would involve the greatest concentration of heavy equipment use and the highest potential for fugitive dust emissions. This analysis assumes that 380,000 cubic yards of soil would be exported off-site and 68,200 cubic yards would be imported and both would be phased throughout the seven year construction schedule.

The project would be required to 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 South Coast Air 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~~ all phases of construction.

1. ***Minimization of Disturbance.*** *Construction contractors should minimize the area disturbed by clearing, grading, earth moving, or excavation operations to prevent excessive amounts of dust.*
2. ***Soil Treatment.*** *Construction contractors should 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 two times daily, preferably in the late morning and after work is done for the day.*
3. ***Soil Stabilization.*** *Construction contractors should monitor all graded and/or excavated inactive areas of the construction site at least weekly for dust stabilization. Soil stabilization methods, such as water and roll compaction, and environmentally safe dust control materials, shall be applied to portions of the construction site that are inactive for over four days. If no further grading or excavation operations are planned for the area, the area shall be seeded and watered until landscape growth is evident, or periodically treated with environmentally safe dust suppressants, to prevent excessive fugitive dust.*
4. ***Grading During High Winds.*** *Construction contractors should 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).*
5. ***Street Sweeping.*** *Construction contractors should 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.*

Construction emissions modeling for grading, building construction, paving, and application of architectural coatings is based on the overall scope of the proposed development and construction phasing, which is expected to begin in 2016 and extend through 2022. In addition to SCAQMD Rule 403 requirements, emissions modeling also accounts for the use of low-VOC paint (150 g/L for nonflat coatings) as required by SCAQMD Rule 1113 and Downtown Plan EIR Mitigation Measure AQ-1(c).

Table 4.2-6 shows estimated maximum daily emissions for each year of construction. The highest daily emissions would be in 2016 and 2017, during which demolition, grading, building, and architectural coating are expected to occur for the Civic Block, Third and Pacific Block and for the new library. With compliance with SCAQMD Fugitive Dust Rule 403, SCAQMD Architectural Coating Rule 1113, and Downtown Plan EIR Mitigation Measure AQ-1(a), AQ-1(b), AQ-1(c), and GHG-1(b), construction emissions would not exceed SCAQMD regional thresholds for any criteria pollutant during any of the seven years of construction.

Table 4.2-6
Estimated Construction Maximum
Daily Air Pollutant Emissions (lbs/day)

Year	Emissions (lbs/day)					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
2016	10.7	66.0	181.8	0.4	20.6	6.9
2017	33.3	60.7	172.1	0.4	23.8	7.6
2018	42.9	36.2	142.5	0.4	18.3	5.3
2019	42.3	63.8	168.2	0.4	21.3	7.2
2020	9.6	63.8	170.0	0.4	22.0	7.4
2021	64.2	25.3	108.2	0.3	18.0	5.1
2022	63.9	23.4	104.2	0.3	18.0	5.1
Maximum lbs/day[1]	**64.2**	**66.0**	**181.8**	**0.4**	**23.8**	**7.6**
SCAQMD Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Source: SCAQMD LST Spreadsheet for a 5-acre site and CalEEMod; see Appendix B for calculations and assumptions. Assumed compliance with SCAQMD Fugitive Dust Rule 403, SCAQMD Architectural Coating Rule 1113, and Downtown Plan EIR Mitigation Measure AQ-1(a), AQ-1(b), AQ-1(c), and GHG-1(b).
1. Maximum daily emissions include onsite and offsite emissions.

LSTs only apply to those emissions generated by onsite construction activities, such as emissions from onsite grading, and do not apply to offsite mobile emissions. The LST for sensitive receptors 25 meters from the project site were used to illustrate the closest receptor, which is the project's proposed library that would be located adjacent to ongoing construction. As indicated in Table 4.2-7, with compliance with SCAQMD Fugitive Dust Rule 403, SCAQMD Architectural Coating Rule 1113, and Downtown Plan EIR Mitigation Measure AQ-1(a), AQ-1(b), AQ-1(c), and GHG-1(b), emissions generated by temporary construction activities would be below LSTs for NOx, CO, PM_{10} and $PM_{2.5}$.

Table 4.2-7
Estimated Construction Maximum Onsite
Daily Air Pollutant Emissions (lbs/day)

Year	Onsite Emissions (lbs/day)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
2016	0.8	3.3	34.8	0.1	2.8	1.5
2017	24.5	3.3	34.8	0.1	2.8	1.5
2018	34.7	2.2	17.4	<0.1	<0.1	<0.1
2019	34.7	3.3	34.8	0.1	2.8	1.5
2020	0.8	3.3	34.8	0.1	2.8	1.5
2021	57.6	2.2	17.4	<0.1	<0.1	<0.1
2022	57.6	2.2	17.4	<0.1	<0.1	<0.1
Maximum Onsite lbs/day[1]	**234.7**	**3.3**	**34.8**	**0.1**	**2.8**	**1.5**
Local Significance Thresholds[2] (LSTs)	*n/a*	*123*	*1,530*	*n/a*	*14*	*8*
Threshold Exceeded?	**n/a**	**No**	**No**	**n/a**	**No**	**No**

Source: SCAQMD LST Spreadsheet for a 5-acre site and CalEEMod; see Appendix B for calculations and assumptions. Assumed compliance with SCAQMD Fugitive Dust Rule 403, SCAQMD Architectural Coating Rule 1113, and Downtown Plan EIR Mitigation Measure AQ-1(a), AQ-1(b), AQ-1(c, and GHG-1(b)).
1. Maximum daily onsite emissions from construction phases.
2. LSTs are for a five-acre project in SRA-4 within a distance of 25 meters from the site boundary

As indicated in Table 4.2-6 and Table 4.2-7, demolition during any phase of the project would not result in emissions that exceed SCAQMD regional or localized thresholds. However, the Long Beach Courthouse Demolition Project Draft EIR determined that because emissions during demolition by implosion could vary substantially depending on wind conditions, building materials, and the amount of explosive material involved, demolition of the former Courthouse, if done by implosion, could substantially increase downwind concentrations of PM_{10}, potentially exceeding SCAQMD's LSTs. In addition, considering the age of the former Courthouse, potentially hazardous materials such as asbestos-containing materials and surfaces painted with lead-based paint may be present. Because any exposure to asbestos is considered hazardous, the Long Beach Courthouse Demolition Project Draft EIR determined that demolition by implosion could result in a significant impact related to asbestos exposure.

The proposed project would include demolition of the former Courthouse, City Hall, and the Main Library. Due to the age of City Hall and the Main Library, all of which could potentially contain asbestos-containing materials and surfaces painted with lead-based paint. Because demolition could occur by implosion, impacts related to asbestos exposure and PM_{10} would be potentially significant.

Mitigation Measures. The following mitigation measure is required to reduce localized exposure to emissions of particulate matter and asbestos, if existing buildings are demolished by implosion.

AQ-2 **Air Quality Safety Plan.** If demolition occurs by implosion, the City shall approve an Air Quality Safety Plan that protects public health. The Plan shall be prepared with and approved by the South Coast Air Quality Management District. Public safety measures include:

- *A radius around the project site in which the public is prevented from being outdoors;*
- *Advanced notification of potential particulate matter and asbestos exposure to all land uses within 1,000 feet of the project site;*
- *Notice that windows should be closed at all buildings within the safety radius during the implosion until the City has provided notice that particulate matter and asbestos concentrations have reached background concentrations;*
- *Air quality monitoring during the day of the implosion to confirm when particulate matter and asbestos concentrations have reached background concentrations.*

Significance After Mitigation. Mitigation Measure AQ-2 would ensure that the public would not be exposed to significant particulate matter and asbestos concentrations. A safety radius preventing outside activity would be kept in place until air monitoring demonstrates that concentrations do not exceed pre-implosion background concentrations. Therefore, the proposed project would result in a less than significant impact related to particulate matter and asbestos exposure.

Threshold	*Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).*

Impact AQ-3 **Operation of the proposed project would generate air pollutant emissions in the long-term. Emissions would not exceed SCAQMD operational significance thresholds for any criteria pollutants, except ROG. The Downtown Plan EIR determined that operational emissions associated with buildout of the Downtown Plan would result in a Class I, significant and unavoidable impact. The proposed project would contribute to this impact and would be a Class I, *significant and unavoidable* impact.**

Long-term air pollutant emissions are those associated with stationary sources and mobile sources involving any project-related changes. The proposed project would result in an increase in both stationary and mobile source emissions. Stationary source emissions would come from additional natural gas consumption for onsite buildings and electrical demand. Mobile source emissions would come from project-related vehicle trips. Project-related vehicle trips are largely

dependent on the number of residences. The net increase in long-term operational emissions associated with the proposed project, calculated using CalEEMod, is shown in Table 4.2-8. The net increase of NO_X, CO, SO_2, PM_{10}, and $PM_{2.5}$ would be less than the corresponding SCAQMD daily emission thresholds. However, the net increase of ROG emissions would exceed the SCAQMD daily emissions threshold. Therefore, project-related long-term impacts to regional air quality would be significant.

Table 4.2-8
Long-Term Operational Emissions (lbs/day)

Emission Source	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Project Emissions						
Area	61.4	0.7	64.8	<0.1	0.4	0.4
Energy	0.7	6.3	5.1	<0.1	0.6	0.6
Mobile	53.1	99.4	589.9	2.0	133.7	37.4
Total Project Emissions	**115.2**	**106.3**	**521.1**	**1.3**	**89.4**	**25.6**
Existing Emissions						
Area	18.2	<0.1	<0.1	<0.1	<0.1	<0.1
Energy	0.2	1.5	1.3	<0.1	0.1	0.1
Mobile	35.0	78.5	323.7	0.6	55.3	15.7
Total Existing Emissions	**53.4**	**80.1**	**325.1**	**0.6**	**55.4**	**15.8**
Net Emissions (Project – Existing)	***61.8***	***26.2***	***196***	***0.7***	***34***	***9.8***
SCAQMD Thresholds	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	*Yes*	*No*	*No*	*No*	*No*	*No*

Source: See Appendix B for CalEEMod calculations. Assumed compliance with SCAQMD's Healthy Hearths Initiative Rule 445 and Architectural Coating Rule 1113,and Downtown Plan EIR Mitigation Measure AQ-2 and GHG-2(b).
Note: Totals may not add up due to rounding.

Mitigation Measures. The following mitigation measures are required to reduce emissions of ROG during operation of the proposed project to the maximum extent feasible.

AQ-3(a) **Low-VOC Paint.** The project applicant shall require all development operator(s) to use low-VOC paint on all interior and exterior surfaces. Paint should not exceed 50 g/L for all interior surfaces and exterior surfaces.

AQ-3(b) **Barbecue Outlets.** Provide electric and propane barbecue outlets in all residential outdoor areas.

Significance After Mitigation. As shown in Table 4.2-9, implementation of Mitigation Measure AQ-3(a) would reduce ROG emissions to the maximum extent feasible. Mitigation Measure AQ-3(b) would further reduce ROG emissions, however, it is not possible to quantify reductions with CalEEMod. ~~However, p~~Project-related long-term impacts to regional air quality would remain significant and unavoidable.

Table 4.2-9
Long-Term Operational Emissions (lbs/day) with Mitigation Measure AQ-3

Emission Source	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Project Emissions						
Area	**56.9**	0.7	64.8	<0.1	0.4	0.4
Energy	**0.7**	6.3	5.1	<0.1	0.6	0.6
Mobile	**53.1**	99.4	589.9	2.0	133.7	37.4
Total Project Emissions	**110.7**	**106.3**	**521.1**	**1.3**	**89.4**	**25.6**
Existing Emissions						
Area	18.2	<0.1	<0.1	<0.1	<0.1	<0.1
Energy	0.2	1.5	1.3	<0.1	0.1	0.1
Mobile	35.0	78.5	323.7	0.6	55.3	15.7
Total Existing Emissions	**53.4**	**80.1**	**325.1**	**0.6**	**55.4**	**15.8**
Net Emissions (Project – Existing)	***57.3***	***26.2***	***196***	***0.7***	***34***	***9.8***
SCAQMD Thresholds	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	*Yes*	*No*	*No*	*No*	*No*	*No*

Source: See Appendix B for CalEEMod calculations. Assumed compliance with SCAQMD's Healthy Hearths Initiative Rule 445 and Architectural Coating Rule 1113,and Downtown Plan EIR Mitigation Measure AQ-2 and GHG-2(b).
Note: Totals may not add up due to rounding.

Threshold	*Expose sensitive receptors to substantial pollutant concentrations.*

Impact AQ-4 **Project traffic would generate CO emissions that have the potential to create high concentrations of CO, or CO hotspots. However, project traffic would not cause the level of service (LOS) of an intersection to change to E or F, nor would it increase the volume to capacity ratio (V/C) by two percent or more for intersections rated D or worse. Therefore, localized air quality impacts related to CO hotspots would be Class III, *less than significant*.**

Areas with high vehicle density, such as congested intersections, have the potential to create high concentrations of CO, known as CO hotspots. A project's localized air quality impact is considered significant if CO emissions create a hotspot where either the California one-hour standard of 20 ppm or the federal and state eight-hour standard of 9.0 ppm is exceeded. This typically occurs at severely congested intersections (level of service [LOS] E or worse). Pursuant to SCAQMD guidance, a CO hotspot analysis should be conducted for intersections where the proposed project would have a significant impact at a signalized intersection, causing the LOS to change to E or F, or when the volume to capacity ratio (V/C) increases by two percent or more as a result of a proposed project for intersections rated D or worse (SCAQMD, 2003). As discussed in Section 4.6, *Transportation and Traffic*, local intersections currently operate at LOS C or better during peak hours (Shane Green, LLG, personal communication, June 2015). Under cumulative conditions in 2020, when portions of the project would be operational, one intersection (Magnolia Avenue at Ocean Boulevard) would operate at LOS D. The proposed project is forecast to result in a net increase of 671 vehicle trips during the a.m. peak hour and a net increase of 552 vehicles trips during the p.m. peak hour (Shane Green, LLG, personal communication, June 2015). Under cumulative conditions in year 2020, the addition of project traffic would not cause the LOS of any intersections to change to E or F, nor would it increase the V/C by two percent or more at an intersection rated as LOS D under existing conditions. In addition, as shown in Table 4.2-8, project operational CO emissions are well below SCAQMD regional thresholds. Therefore, the proposed project would not result in a CO hotspot and impacts would be less than significant.

Mitigation Measures. Mitigation would not be required since impacts would be less than significant.

Significance After Mitigation. Impacts would be less than significant without mitigation.

Threshold	*Expose sensitive receptors to substantial pollutant concentrations.*

Impact AQ-5 **The Downtown Plan EIR determined that implementation of the Downtown Plan could result in exposure of receptors to short- and long-term emissions of toxic air contaminants (TACs) from onsite and offsite stationary and mobile sources. Impacts from Port of Long Beach and offsite stationary sources, and onsite mobile sources were determined by the Downtown Plan EIR to be Class I, significant and unavoidable. Operation of the proposed project would increase mobile source emissions of TACs in the Downtown Plan Area, however, fewer than 100 trucks and 40 trucks equipped with transportation refrigeration units (TRUs) per day would be accommodated by the proposed project. Therefore, impacts from mobile source emissions of TACs would be Class III, *less than significant*; however, because the project would place residential uses within the Downtown Plan Area, impacts from Port of Long Beach and offsite stationary sources would remain Class I, *significant and unavoidable*.**

Within the Downtown Plan Area, mobile sources of TAC emissions would be associated with the operation of diesel-powered delivery trucks at loading docks and delivery areas of commercial land uses. Some sensitive land uses within the project area could be located within 100 feet of commercial uses. Operational activities that require the use of diesel-fueled vehicles, such as delivery areas or loading docks, could expose nearby sensitive receptors to diesel PM emissions. The diesel PM emissions generated by these uses would be produced primarily at discrete locations on a regular basis. Idling trucks at these locations, including Transportation Refrigeration Units (TRUs), could result in the exposure of nearby residents to increased diesel PM levels on a recurring basis.

The California Air Resources Board's (CARB's) *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) recommends avoiding the siting of new commercial trucking facilities that accommodate more than 100 trucks per day, or 40 trucks equipped with TRUs, within 1,000 feet of sensitive receptors. The types of tenants that would occupy commercial spaces and the number of trucks that would visit these facilities on any given day was not known at the time the Downtown Plan was analyzed in the Downtown Plan EIR. However, it was anticipated that the types of commercial uses proposed for the Downtown Plan Area would not involve large-scale trucking operations. For the purposes of the Downtown Plan, it was not anticipated that the combination of commercial land uses proposed in the Downtown Plan Area would exceed these screening limits.

Nonetheless, Downtown Plan EIR Mitigation Measure AQ-4(a) requires a project-level health risk assessment (HRA) for commercial land uses that accommodate more than 100 trucks per day, or 40 trucks equipped with TRUs, within 1,000 feet of sensitive receptors. The project site is within 1,000 feet of sensitive receptors and includes proposed sensitive receptors. In addition, the proposed project includes commercial components, such as proposed hotel, retail, and restaurant uses, as well as residential, library, and government office land uses.

Linscott, Law, and Greenspan, Engineers estimates that approximately 0.5 percent of residential vehicle trips would be truck trips and one percent of the remaining project vehicle trips would be truck trips (Shane Green, LLG, personal communication, June 2015). Based on these estimates, the project would accommodate approximately 84 trucks per day (see Table 4.2-10). Assuming that all truck trips to the restaurant are by trucks equipped with TRUs, the project would accommodate approximately 5 trucks with TRUs per day. Based on these conservative estimates, the proposed project would accommodate fewer than 100 trucks per day and fewer than 40 trucks with TRUs per day; therefore, the project's impact on mobile source TAC emissions would be less than significant and a project-level HRA is not warranted.

Table 4.2-10
Estimated Project Truck Trips

Land Use	Daily Trips	Truck Trip Percentage	Total Truck Trips (Inbound/Outbound)	Total Trucks[1]
Third and Pacific Block				
Residential	1,176	0.5%	6	3
Civic Block				
City Hall	2,793	1%	28	14
Port Building	2,554	1%	26	13
Lincoln Park and New Library Block				
Main Library	3,533	1%	35	18
Lincoln Park	111	1%	1	1
Center Block				
Residential	2,821	0.5%	14	7
Hotel	1,552	1%	16	8
Retail	3,076	1%	31	15
Restaurant	966	1%	10	5
			Total Truck Trips	84

Source: LLG, Traffic Impact Analysis, June 2015 (see Appendix E)
1. Total trucks include one inbound and one outbound trip. Therefore, total trucks equal total truck trips divided by two.

The Downtown Plan EIR determined that the cumulative carcinogenic risk in the Downtown Plan Area, including risk from emissions sources at the Port of Long Beach and other TAC sources in the surrounding area, would exceed SCAQMD's recommended threshold for sensitive receptors (maximum incremental risk of ten per one million population or a 0.00001 probability). To provide a perspective on risk, the American Cancer Society (2007) reports that in the U.S., men have a one in two chance (0.5 probability) and women about one in three chance (0.3) probability of developing cancer during a lifetime, with one in four deaths (0.23) in the U.S. attributed to cancer. Given this background carcinogenic risk level in the general population, application of a ten per one million excess risk limit means that the contribution from a toxic hazard should not cause the resultant cancer risk for the exposed population to exceed 0.50001 for men and 0.33334 for women. The cumulative carcinogenic risk in the Downtown Plan Area ranges from 1,201 to 2,904 potential cases per one million population (0.01201 to 0.02904 probability).

Although TAC emissions from the Port of Long Beach would be reduced over time with implementation of the San Pedro Bay Ports Clean Air Action Plan, the Downtown Plan EIR determined that the siting of residential uses within the Downtown Plan Area would result in a significant and unavoidable impact with regard to exposure of sensitive receptors to TAC emission sources.

In order to reduce exposure of sensitive receptors to operational emissions of TACs, the proposed project would be subject to Downtown Plan EIR Mitigation Measure AQ-4(a), which requires loading docks to be located away from existing and proposed onsite sensitive receptors; the use of idle-reduction strategies, such as electrification of truck parking, for proposed commercial uses that may host diesel trucks; and signage in all loading dock areas to indicate that diesel-powered delivery trucks must be shut off when not in use for longer than five minutes on the premises. The proposed project would also be required to implement Downtown Plan EIR Mitigation Measure AQ-4(b), which includes installation of mechanical ventilation systems and filter systems with high Minimum Efficiency Reporting Value (MERV) ratings for removal of small particles (such as 0.3 micron) at all air intake points in proposed residential units to reduce exposure to TACs. Filters with a MERV rating of 16 are capable of removing parcels 0.3 micron in size and have efficiency rates exceeding 95 percent. In addition, Downtown Plan EIR Mitigation Measure AQ-4(b) requires installation of heating, ventilation, and air conditioning (HVAC) systems to maintain all residential units under positive pressure at all times, as well as the development of on-going education and maintenance plans for the HVAC filtration systems. Downtown Plan EIR Mitigation Measure AQ-4(b) also requires, to the extent feasible, sensitive receptors to be located as far from the Port of Long Beach as possible.

The cumulative carcinogenic risk calculated in the Downtown Plan EIR for the Downtown Plan Area (1,201 to 2,904 potential cases per one million population) is based on exposure to outdoor air 24 hours per day, but the U.S. EPA Exposure Factors Handbook indicates that the recommended daily activity pattern includes 16.4 hours per day (approximately 68 percent) spent inside and 2 hours per day (approximately 8 percent) spent outside (Volume III, Table 15-176 Summary of Recommended Values for Activity Factors). The remaining daily time is spent offsite (approximately 23 percent). Assuming that 32 percent of time not spent indoors is spent in the Downtown Plan Area, implementation of Downtown Plan EIR Mitigation Measure AQ-4(b)'s high efficiency air filter systems would reduce cumulative carcinogenic risk by nearly 68 percent; that is cumulative carcinogenic risk would be approximately 817 to 1,975 potential cases per one million population (68 percent of 1,201 to 2,904 potential cases per one million population). Nonetheless, this rate would exceed SCAQMD's recommended threshold for sensitive receptors (maximum incremental risk of ten per one million population or a 0.00001 probability).

Mitigation Measures. Downtown Plan EIR Mitigation Measures AQ-4(a) and AQ-4(b) would reduce project impacts related to exposing sensitive receptors to TAC emissions from the Port of Long Beach and other sources to the maximum extent feasible.

Significance After Mitigation. Implementation of Downtown Plan EIR Mitigation Measures AQ-4(a) and AQ-4(b) would reduce concentrations of TACs that proposed sensitive receptors would be exposed to for time spent indoors. Implementation of the above mitigation measures would also disclose to those considering residing on the project site the potential risks involved with residing in the Downtown Plan Area. The mitigation would not reduce exposure of sensitive receptors to substantial pollutant concentrations for time spent outdoors. Mitigation measures would reduce impacts to the maximum extent feasible; however, the project would expose sensitive receptors to TAC emissions from the Port of Long Beach and other TAC sources and would remain significant and unavoidable.

c. Cumulative Impacts. The South Coast Air Basin is a non-attainment area for the federal standards for ozone, $PM_{2.5}$ and lead and the state standards for ozone, PM_{10}, $PM_{2.5}$, NO_2 and lead. Any growth within the Los Angeles metropolitan area would contribute to existing exceedances of ambient air quality standards when taken as a whole with existing development. The Downtown Plan EIR determined that implementation of the Downtown Plan would result in direct significant and unavoidable cumulative air quality impacts. As development of the project site was anticipated in the Downtown Plan EIR, the proposed project would contribute to the Downtown Plan's cumulative air quality impacts and would be significant and unavoidable.