
4.2 - Air Quality

4.2.1 - Introduction

This section addresses the potential impacts of the Project on air quality. The analysis describes the existing conditions of the area in which the Project is located, a description of the pollutants of concern, the regulatory framework, and Project specific impacts. The impacts are addressed in terms of whether implementation of the Project would result in significant air quality emissions pertaining to the construction and implementation of Project elements.

4.2.2 - Existing Conditions

The project site is located just west of downtown Los Angeles in the South Coast Air Basin (Basin). Regional and local air quality is impacted by dominant airflows, topography, atmospheric inversions, location, season, and time of day. The quality of the air can be assessed by measuring the concentrations of certain air pollutants over time. The higher the concentration, the more effects may be observed. Air pollutants have different properties, health effects, and sources. The following is a brief summary of the pollutants of concern. A more detailed description is contained in the Air Quality Analysis Report.

- **Carbon monoxide (CO):** A colorless, odorless toxic gas produced by incomplete combustion of carbon-containing fuels (e.g., gasoline or diesel fuel).
- **Ozone:** A photochemical oxidant that is formed when reactive organic gases and oxides of nitrogen (both byproducts of internal combustion engines) react in the presence of ultraviolet sunlight. Ozone is an energetic combination of three oxygen atoms that, when it comes into contact with a surface, releases its force as chemical energy. When this happens to biological systems (i.e., the respiratory tract and plants), this energy can cause damage to sensitive tissues.
- **Oxides of nitrogen (NO_x):** NO_x is a mixture of nitric oxide and nitrogen dioxide in the atmosphere. Nitric oxide is formed as a byproduct of fuel combustion and quickly reacts with oxygen to form nitrogen dioxide. NO_x emissions contribute to the formation of ozone and particulate matter. Nitrogen dioxide is the only form of NO_x that exists at a level sufficient to cause public health concerns.
- **Sulfur dioxide and sulfates:** In California, sulfur is emitted during the combustion of petroleum-derived fuels (i.e., gasoline and diesel fuel) that contain sulfur. During combustion, sulfur is oxidized to sulfur dioxide (a colorless pungent gas). The sulfur dioxide is then converted to sulfate compounds in the atmosphere.
- **Lead:** Lead is a heavy metal that can accumulate in bone, soft tissue, and blood; can damage the kidneys, liver, and nervous system; and can result in learning disabilities, seizures, and

death. Lead concentrations once exceeded the state and national air quality standards by a wide margin, but have not exceeded state or national air quality standards in the area for at least 10 years. Lead is no longer an additive in gasoline, which is the main reason the concentration of lead in the air is low.

- **Suspended particulate matter (PM₁₀ and PM_{2.5}):** Particulate matter is a mixture of small particles that consists of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM₁₀ refers to particulate matter that is 10 microns or less in diameter (1 micron is one-millionth of a meter). PM_{2.5} refers to particulate matter that is 2.5 microns or less in diameter. Sources include road dust, diesel exhaust, erosion of soil, combustion particles (ashes and soot), and tire and brake abrasion.
- **Volatile organic compounds (VOCs):** VOCs are organic compounds that readily evaporate. Reactive organic gases (ROGs) consist of non-methane and oxygenated hydrocarbons. Although all VOCs are not necessarily ROGs, the terms are often interchanged. There are no state or national ambient air quality standards for VOCs; however, they are regulated because they are involved in chemical reactions that contribute to the formation of ozone. In addition, some hydrocarbon components classified as VOCs (i.e., benzene) are thought or known to be hazardous. Sources of VOCs include adhesives, solvents, paints, cooking, fuel, and combustion. VOCs can interfere with oxygen uptake and can cause coughing, sneezing, headaches, weakness, laryngitis, and bronchitis.
- **Diesel particulate matter (DPM):** Diesel exhaust is a mixture of many particles and gases that is produced when an engine burns diesel fuel. Many compounds found in diesel exhaust are carcinogenic. DPM includes the particles in diesel exhaust. Some of the health effects of DPM include eye, nose, and throat irritation as well as cough, nausea, and phlegm.
- **Visibility reducing particles** are suspended particulate matter. Visibility is the distance through the air that an object can be seen without the use of instrumental assistance. Visibility reducing particles are not assessed in this report; however, particulate matter is assessed.
- **Vinyl chloride** is a chlorinated hydrocarbon and a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride is a known carcinogen. The 24-hour state standard for vinyl chloride is 0.01 ppm. The Project is not expected to generate or be exposed to vinyl chloride because Project uses do not utilize the chemical processes that create this pollutant. Therefore, it is not assessed in this report.
- **Hydrogen sulfide** is a flammable, colorless, poisonous gas that smells like rotten eggs. It can irritate the eyes and respiratory tract and cause symptoms like headache, nausea, vomiting, and cough. The 1-hour state standard for hydrogen sulfide is 0.03 ppm. Sources include the

combustion of sulfur containing fuels (oil and coal) and organic matter that undergoes putrefaction. It is used in the production of heavy water for nuclear reactors, the manufacture of chemicals, in metallurgy, and as an analytical reagent. The Project is not expected to cause exposure to hydrogen sulfide because it will not generate hydrogen sulfide in any substantial quantity. Therefore, hydrogen sulfide is not assessed in this report.

4.2.3 - Regulatory Setting

Air pollutants are regulated at the national, state, and air basin level; each agency has a different degree of responsibility. The United States Environmental Protection Agency (U.S. EPA) regulates at the national level. The California Air Resources Board (CARB) regulates at the state level. The South Coast Air Quality Management District (SCAQMD) regulates at the air basin level.

The U.S. EPA handles global, international, national, and interstate air pollution issues and policies. The U.S. EPA sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans (SIP), provides research and guidance in air pollution programs, and sets national Ambient Air Quality Standards (AAQS), also known as federal standards. There are NAAQS for six common air pollutants, called criteria air pollutants, which were identified resulting from provisions of the Clean Air Act of 1970. The six criteria pollutants are ozone, particulate matter (PM₁₀ and PM_{2.5}), nitrogen dioxide, carbon monoxide (CO), lead, and sulfur dioxide. The national AAQS were set to protect the health of sensitive individuals; thus, the standards continue to change as more medical research is available regarding the health effects of the criteria pollutants.

CARB has overall responsibility for statewide air quality maintenance and air pollution prevention. The SIP for the State of California is administered by CARB. A SIP is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain national AAQS. CARB also administers California AAQS, or state standards, for the ten air pollutants designated in the California Clean Air Act. The ten state air pollutants are visibility reducing particulates, hydrogen sulfide, sulfates, vinyl chloride, and the six criteria pollutants.

The air pollution control agency for the basin is the SCAQMD. SCAQMD is responsible for controlling emissions primarily from stationary sources. SCAQMD maintains air quality monitoring stations throughout the basin. SCAQMD, in coordination with the Southern California Association of Governments, is also responsible for developing, updating, and implementing the Air Quality Management Plan (AQMP) for the basin. An AQMP is a plan prepared by an air pollution control district for a county or region designated as a nonattainment area for bringing the area into compliance with the requirements of the national and/or California ambient air quality standards. (Air basins where ambient air quality standards are exceeded are referred to as “nonattainment” areas.)

The current AQMP for the Basin is the 2007 AQMP, which was adopted by the SCAQMD on June 1, 2007. On July 13, 2007, the SCAQMD Board adopted 2007 Final AQMP Transportation Conformity

Budgets and directed the Executive Officer to forward them to CARB for its approval and subsequent submittal to the U.S. EPA. On September 27, 2007, CARB adopted the State Strategy for the 2007 State Implementation Plan (SIP) and the 2007 AQMP as part of the SIP.

The 2007 AQMP incorporates significant new emissions inventories, ambient measurements, scientific data, control strategies, and air quality modeling. The 2007 AQMP outlines a detailed strategy for meeting the federal health-based standards for PM_{2.5} by 2015 and 8-hour ozone by 2024 while accounting for and accommodating future expected growth. Most of the reductions will be from mobile sources, which is currently responsible for about 75 percent of all smog and particulate forming emissions. The 2007 AQMP includes 37 control measures proposed for adoption by the SCAQMD, including measures to reduce emissions from new commercial and residential developments, more reductions from industrial facilities, and reductions from wood-burning fireplaces and restaurant charbroilers.

Ambient Air Quality Standards

The national and state AAQS are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. The health effects of a pollutant are a function of the dose of the pollutant, the length of exposure, the pollutant's properties, and the body's ability to excrete the pollutant. Table 4.2-1 identifies the current state and national standards, as well as the relevant effects.

Monitoring Data

Meteorology acts on the emissions released into the atmosphere to produce pollutant concentrations. These airborne pollutant concentrations are measured throughout California at air quality monitoring sites. Existing levels of ambient air quality and historical trends and projections of air quality in the Project area are best documented from measurements made near the Project site. The Project is within Source Receptor Area 1. The air quality monitoring station closest to the site is the Central Los Angeles Station located 1.5 miles east of MacArthur Park on North Main Street in the downtown area.

The Air Quality Analysis Report summarizes 2004–2006 published monitoring data. The data shows that the federal standards for ozone and small particulate matter (PM_{2.5}) were violated over the past three years at the nearest air monitoring station. The State standard for ozone for a 1-hour average was violated eight times in 2006 at the Central LA station, and the State standard for PM₁₀ during a 24-hour period and as an annual average was violated 3-5 times in the last 3 years. The data suggests that in general, the air quality is poor near the Project.

Table 4.2-1: Ambient Air Quality Standards

Air Pollutant	Averaging Time	California Standard	National Standard	Most Relevant Effects
Ozone	1 hour	0.09 ppm	—	(a) Pulmonary function decrements and localized lung edema in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) 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; (e) Vegetation damage; (f) Property damage
	8 hours	0.070 ppm	0.08 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) impairment of central nervous system functions; (d) possible increased risk to fetuses
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO₂)	1 hour	0.18 ppm*	—	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; (c) contribution to atmospheric discoloration
	Mean	0.030 ppm*	0.053 ppm	
Sulfur Dioxide (SO₂)	1 hour	0.25 ppm	—	Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma
	24 hours	0.04 ppm	0.14 ppm	
	Mean	—	0.030 ppm	
Particulate Matter (PM₁₀)	24 hours	50 µg/m ³	150 µg/m ³	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) declines in pulmonary function growth in children; (c) increased risk of premature death from heart or lung diseases in the elderly
	Mean	20 µg/m ³	—	
Particulate Matter (PM_{2.5})	24 hours	—	35 µg/m ³	
	Mean	12 µg/m ³	15 µg/m ³	
Sulfates	24 hours	25 µg/m ³	—	(a) Decrease in ventilatory function; (b) aggravation of asthmatic symptoms; (c) aggravation of cardio-pulmonary disease; (d) vegetation damage; (e) degradation of visibility; (f) property damage
Lead	30-day	1.5 µg/m ³	—	(a) Learning disabilities; (b) impairment of blood formation and nerve conduction
	Quarter	—	1.5 µg/m ³	
<p>Abbreviations: ppm = parts per million µg/m³ = micrograms per cubic meter Mean = Annual Arithmetic Mean 30-day = 30-day average Quarter = Calendar quarter * The nitrogen dioxide ambient air quality standard was amended on February 22, 2007. These changes become effective after regulatory changes are submitted and approved by the Office of Administrative Law. Source: California Air Resources Board, Ambient Air Quality Standards, 2007 (CARB 2007).</p>				

Attainment Status

Air basins where ambient air quality standards are exceeded are designated as “nonattainment” areas. If standards are met, the area is designated as an “attainment” area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered “unclassified.” Federal nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. The basin is designated as nonattainment for the state and federal ozone, PM₁₀, and PM_{2.5} standards (USEPA 2007b).

Greenhouse Gases

Atmospheric greenhouse gases play a critical role in Earth’s radiation budget by trapping infrared radiation emitted from the surface, which otherwise would have escaped to space. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate. However, greenhouse gases emitted by human related activities are believed to be responsible for an enhancement of the greenhouse effect, which have led to changes in the Earth’s natural climate, known as global warming or global climate change. Human related activities are associated with the industrial/manufacturing, utilities, transportation, residential, and agricultural sectors.

Climate change may have serious consequences on regions throughout the world. In California, climate change may result in loss of snow-pack, increased risk of large wildfires, and reductions in the quality and quantity of certain agricultural products (California Climate Change Center 2006).

Greenhouse gases have varying global warming potentials, or the potential of a gas to contribute to global warming; it is based on a reference scale with carbon dioxide at one. The following is a brief description of select greenhouse gases.

- Carbon dioxide (CO₂) is an odorless, colorless natural greenhouse gas. Carbon dioxide is emitted from natural and anthropogenic sources. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, gasoline, oil, natural gas, and wood.
- Methane is a flammable greenhouse gas. A natural source of methane is from the anaerobic decay of organic matter. Geological deposits, known as natural gas fields, also contain methane, which is extracted for fuel. Other sources are from landfills, fermentation of manure, and ruminants such as cattle. Methane’s global warming potential is 21.
- Nitrous oxide, also known as laughing gas, is a colorless greenhouse gas. Nitrous oxide is produced by microbial processes in soil and water, including those reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. Nitrous oxide’s global warming potential is 310.

- Hydrofluorocarbons (HFCs) are synthetic chemicals that are used as a substitute for CFCs. Of all the greenhouse gases, HFCs are one of three groups (the other two are perfluorocarbons and sulfur hexafluoride) with the highest global warming potentials. HFCs are human-made for applications such as air conditioners and refrigerants.
- Perfluorocarbons (PFCs) have stable molecular structures and do not break down through the chemical processes in the lower atmosphere; therefore, PFCs have long atmospheric lifetimes, between 10,000 and 50,000 years. The two main sources of PFCs are primary aluminum production and semiconductor manufacture. It is not anticipated that the Project would emit PFCs.
- Sulfur hexafluoride (SF₆) is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It has the highest global warming potential of any gas evaluated. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection. It is not anticipated that the Project would emit SF₆.

Climate change is a result of greenhouse gases emitted all around the world from sources such as the combustion of fuel for transportation and electricity, cement manufacture, and refrigerant emissions. The State of California has recently enacted key legislation in an effort to reduce its contribution to climate change, as discussed below.

The Governor issued Executive Order S 3-05 which set the following greenhouse gas emission reduction targets: by 2010, reduce greenhouse gas emissions to 2000 levels; by 2020, reduce greenhouse gas emissions to 1990 levels; and by 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels. To meet these targets, the state Climate Action Team prepared a report to the Governor in 2006 that contains recommendations and strategies to help ensure the targets in Executive Order S-3-05 are met (2006 CAT Report).

In 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006, which likewise seeks to reduce greenhouse gas emissions in California. Greenhouse gases, as defined under AB 32, include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. AB 32 requires that greenhouse gases emitted in California be reduced to 1990 levels by the year 2020. CARB is the state agency charged with monitoring and regulating sources of greenhouse gas emissions. AB 32 requires CARB to adopt and implement a list of discrete and early action greenhouse gas reduction measures, which was completed in October 2007. AB 32 also requires that by January 1, 2008, CARB must determine what the statewide greenhouse gas emissions level was in 1990, and it must approve a statewide greenhouse gas emissions limit so it may be applied to the 2020 benchmark. CARB published a draft 1990 greenhouse gas emissions level of 427 million metric tons of carbon dioxide equivalent on November 16, 2007, which was approved by CARB on December 6, 2007.

Senate Bill (SB) 97 was passed in August 2007. SB 97 indicates that before July 1, 2009, the Office of Planning and Research (OPR) shall prepare, develop, and transmit guidelines to the Resources Agency for purposes of mitigating the effects of greenhouse gas emissions. SB 97 also indicates that before January 1, 2010, the Resources Agency shall certify and adopt guidelines prepared and developed by the OPR. SB 97 is especially important in the CEQA context, as OPR and the Resources Agency are the state entities responsible for adopting and updating the CEQA Guidelines. Again, however, SB 97 does not anticipate that OPR and the Resource Agency will develop the required guidelines for greenhouse gas mitigation until the middle of 2009.

CARB has not identified a significance threshold for greenhouse gases to use in CEQA documents. In addition, no air district in California has generated a significance threshold pertaining to GHG. The State has identified a goal to reduce statewide emissions to 1990 levels by the year 2020 through the adoption of AB 32. It is recognized that there is no simple test to determine if a single project would advance toward or away from this goal. Because greenhouse gases are global, a project that shifts the location of where someone lives or works, by itself, may or may not contribute new greenhouse gases. For example, if a person were to move from Southern California to Northern California, it is not conclusive that this would result in generation of more greenhouse gases globally. In fact, if a person moves from one location—where they have long commutes and a land use pattern that requires substantial energy use, to a project that promotes shorter and fewer vehicle trips, more walking, and less energy use—it could be argued that the new project would result in a reduction in generation of global greenhouse gases.

Sensitive Receptors

The potential for adverse air quality impacts increases as the distance between the source of emissions and members of the public decreases. Impacts on sensitive receptors are of particular concern. Sensitive receptors are defined as facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Hospitals, schools, convalescent facilities, and residential areas are examples of sensitive receptors. Commercial and industrial facilities are not included in the definition because employees do not typically remain onsite for 24 hours. However, when assessing the impact of pollutants with 1-hour or 8-hour standards (such as nitrogen dioxide and carbon monoxide), commercial and/or industrial facilities are considered sensitive receptors. The park is surrounded by commercial and light industrial uses, with residential further away to the west, north and south. A former hotel just west of the park is currently in the process of being converted to loft apartments. The closest primary health care facilities to the park are the Saint Vincent Medical Center located a quarter mile north of the park at the northwest corner of 3rd and Alvarado, and Good Samaritan Hospital located 0.6 miles east of the park on the northeast corner of Wilshire and Witmer. Other than the potential for future loft apartments in the former hotel, there are no residential, institutional, or congregate care facilities in the immediate vicinity of the park; however, the park itself could be considered a sensitive receptor as it is frequently used by children and the elderly.

4.2.4 - Thresholds of Significance

According to the CEQA Guidelines' Appendix G, Environmental Checklist, to determine whether impacts to air quality are significant environmental effects, the following questions are analyzed and evaluated:

Where available, the significance criteria established by the applicable air quality management or air pollution control district (in this case, the SCAQMD) may be relied upon to make the following determinations.

The *L.A. CEQA Thresholds Guide* (Sections B.1 through B.5) states that a project would normally have a significant air quality impact if it 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 non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?
- d.) Expose sensitive receptors to substantial pollutant concentrations?
- e.) Create objectionable odors affecting a substantial number of people?

SCAQMD Thresholds

The following regional significance thresholds have been established by SCAQMD. Projects in the Basin region with construction-related emissions any of these thresholds should be considered significant:

Pollutant	Construction (pounds per day)	Operation (pounds per day)
Oxides of Nitrogen (NO _x)	100	55
Volatile Organic Compounds (VOC)	75	55
Particulate Matter (PM ₁₀)	150	150
Particulate Matter (PM _{2.5})	55	55
Oxides of Sulfur (SO _x)	150	150
Carbon Monoxide (CO)	550	550
Source: South Coast Air Quality Management District, 2006 (SCAQMD 2006b).		

The SCAQMD Governing Board adopted a methodology for calculating localized air quality impacts through localized significance thresholds (LSTs). LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable state or national ambient air quality standard. The LSTs are developed based on the ambient concentrations of that pollutant for each source receptor area and are applicable to NO_x, CO, PM₁₀, and PM_{2.5}.

To provide a screening level LST analysis for emissions generated during construction, LSTs were obtained from the look-up tables in the SCAQMD Final LST Methodology (SCAQMD 2003 and SCAQMD 2006) for a 5-acre project in Source Receptor Area 1. The distance to the nearest sensitive receptor was assumed to be 25 meters. The LSTs are as follows:

- NO_x - 242 pounds per day;
- CO - 1279 pounds per day;
- PM₁₀ - 16 pounds per day; and
- PM_{2.5} - 8 pounds per day.

SCAQMD Rules

SCAQMD Rule 403 governs the emission of fugitive dust. Compliance with this rule is achieved through application of standard best management practices (BMPs) in construction and operation activities, such as application of water or chemical stabilizers to disturbed soils, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 miles per hour (mph), sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph, and establishing permanent stabilizing ground cover on finished sites. Rule 403 also requires projects that disturb over 100 acres of soil or moves 10,000 cubic yards per day of materials to submit to the SCAQMD a Fugitive Dust Control Plan.

SCAQMD Rule 1108 governs the sale, use, and manufacturing of asphalt and limits the Volatile Organic Compound (VOC) content in asphalt in the Basin. Although this rule does not directly apply to the Project, it does dictate the VOC content in asphalt available during construction.

SCAQMD Rule 1113 governs the sale, use, and manufacturing of architectural coatings and limits the VOC content in paints and paint solvents. Although this rule does not directly apply to the Project, it does dictate the VOC content of paints available for use during the construction of the buildings.

4.2.5 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the Project and provides mitigation measures where appropriate.

Construction Emissions

Impact AIR-1: The Proposed Project would result in emissions of criteria pollutants during construction.

Impact Analysis

Short-term impacts will include fugitive dust and other particulate matter, as well as exhaust emissions generated by earthmoving activities and operation of grading equipment during site preparation. Construction emissions are caused by onsite or offsite activities. Onsite emissions principally consist of exhaust emissions (NO_x, SO_x, CO, VOC, PM₁₀, and PM_{2.5}) from heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM₁₀) from disturbed soil. During the finishing phase, paving operations and application of architectural coatings will release VOC emissions. Offsite emissions are caused by motor vehicle exhaust from delivery vehicles, as well as worker traffic, but also include road dust (PM₁₀). Construction emission can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions.

Expected improvements include the following.

- Installation of six 40-foot light poles with state-of-the-art field lights and eight 30-foot security lights;
- Replacement of dirt and grass in the soccer field section of the park with artificial turf and interconnecting concrete and natural walkways;
- Development of a new children's play area with a resilient surface;
- Renovations to the existing recreation center in the old Signal Building (approximately 14,500 square feet);
- Replacement the existing boat house with a new building for the same use (2,100 square feet);
- Installation of new park furniture and outdoor exercise equipment around the soccer field and play area;
- Irrigation and landscaping; and
- The placement of a new monument in the park honoring Oscar Romero, a San Salvadorean catholic priest.

No information was available about the Project's construction fleet at the time of this writing, so the construction fleet was estimated based on the author's experience to estimate "worst case" emissions. The construction emission analysis was performed using the URBEMIS2007 emissions inventory model. It was assumed for purposes of this analysis that all of the above activities would occur on one day, although this is unlikely.

It should be noted that the URBEMIS program recommended by SCAQMD to estimate Project emission impacts calculates emissions of reactive organic gases (ROGs) rather than VOCs, but these are considered equivalent for the purposes of this analysis.

Unmitigated estimated short-term emissions are shown in Table 4.2-2 and are compared with the SCAQMD regional and localized thresholds. The evaluation of localized impacts determines the potential of the Project to violate any air quality standard, contribute substantially to an existing or projected air quality violation or expose sensitive receptors to substantial pollutant concentrations. This analysis indicates that PM₁₀ and PM_{2.5} may exceed SCAQMD localized daily thresholds. The primary source of PM₁₀ and PM_{2.5} is from fugitive dust during grading. Therefore, without mitigation, the Project would result in a potentially significant impact.

Table 4.2-2: Estimated Short-Term Emissions (Unmitigated)

Phase	Emissions (pounds per day)						
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}	CO ₂
Demolition of boat house	4.7	40.7	19.1	0.0	3.8	2.2	4315.0
Grading of all areas	3.4	29.2	15.1	0.0	51.5	11.8	2702.9
Renovation, construction of boat house, etc.	1.5	10.4	12.5	0.0	0.7	0.6	1742.5
Painting/Coating	15.5	0.0	0.2	0.0	0.0	0.0	22.5
Total	25.1	80.3	46.9	0.0	56.0	14.6	8782.9
SCAQMD Regional Significance Threshold	75	100	550	150	150	55	**
Significant Regional Impact?	No	No	No	No	No	No	**
SCAQMD Localized Significance Threshold	*	242	1279	*	16	8	**
Significant Localized Impact?	*	No	No	*	Yes	Yes	**
Notes: * No threshold ** Refer to Impact AIR-9. ROG = reactive organic gases NO _x = nitrous oxides CO = carbon monoxide SO _x = sulfur oxides PM ₁₀ and PM _{2.5} = particulate matter CO ₂ = carbon dioxide Source: Air Quality Analysis (see Appendix B).							

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AIR-1a During construction of the proposed improvements, the City shall utilize best management practices to control dust during construction, and shall include:

- Application of water on disturbed soils a minimum of two times per day;
- Using track-out prevention devices at construction site access points;
- Stabilizing construction area exit points (i.e., if vehicles travel offsite);
- Reducing speed on unpaved roads to less than 15 mph;
- A maximum of five acres per day shall be actively graded;
- Apply soil stabilizers to inactive areas;
- Covering haul vehicles that travel offsite; and
- Replanting disturbed areas as soon as practical and other measures, as deemed appropriate for the site, to control fugitive dust.

MM AIR-1b If construction activities will limit traffic or access along adjacent streets, the City shall prepare a Construction Traffic Control Plan (CTCP), which will be reviewed and approved by the City Transportation Department. The CTCP will describe in detail safe detours around Project construction sites and provide temporary traffic control (i.e., flag person) during construction-related, truck-hauling activities, if needed.

MM AIR-1c During construction of the proposed improvements, construction equipment shall be properly maintained at an offsite location and includes proper tuning and timing of engines. Equipment maintenance records and equipment design specification data sheets shall be kept onsite during construction.

MM AIR-1d During construction of the proposed improvements, all contractors will be advised not to idle construction equipment on the site for more than 5 minutes.

MM AIR-1e During construction of the proposed improvements, onsite electrical hook ups shall be provided for electric construction tools including saws, drills and compressors, to eliminate the need for diesel powered electric generators.

Level of Significance After Mitigation

Less than significant impact. As shown in Table 4.2-3, emissions do not exceed the regional or localized significance thresholds after mitigation.

Table 4.2-3: Estimated Short-Term Emissions (Mitigated)

Phase	Emissions (pounds per day)						
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}	CO ₂
Demolition of boat house	4.7	40.7	19.1	0.0	3.8	2.2	4,315.0
Grading of all areas	3.2	29.2	15.1	0.0	5.0	2.1	2,702.9
Renovation, construction of boat house, etc.	1.5	10.4	12.5	0.0	0.7	0.6	1,742.5
Painting/Coating	15.5	0.0	0.2	0.0	0.0	0.0	22.5
Total	24.9	80.3	46.9	0.0	9.5	4.9	8,782.9
SCAQMD Regional Significance Threshold	75	100	550.	150	150	55	**
Significant Regional Impact?	No	No	No	No	No	No	**
SCAQMD Localized Significance Threshold	*	242	1279	*	16	8	**
Significant Localized Impact?	*	No	No	*	No	No	**
Notes: * No localized threshold ** See Impact AIR-9 ROG = reactive organic gases NO _x = nitrous oxides CO = carbon monoxide SO _x = sulfur oxides PM10 and PM2.5 = particulate matter CO ₂ = carbon dioxide Source: Air Quality Analysis (MBA 2008).							

Construction Emissions - Toxic Air Contaminants

Impact AIR-2: Construction activities would not expose construction workers or the public to substantial amounts of toxic air pollutants.

Impact Analysis

There are no indications that the site contains hazardous materials or surface or subsurface soils containing hazardous materials that could generate toxic air contaminants (TACs). This conclusion is supported by the data and analysis in Section 4.6, *Hazards and Hazardous Materials*, as well as soil data from the previous excavations conducted onsite outlined in Section 4.5, *Geology, Soils, and Seismicity*. Two potential TACs associated with demolition activities, asbestos and lead-based paint, are addressed in Section 4.6, *Hazards and Hazardous Materials*.

The construction equipment would emit diesel particulate matter, which is a carcinogen. However, the diesel particulate matter emissions are short term in nature. Determination of risk from diesel particulate matter is considered over a 70-year exposure time. Additionally, the nearest sensitive receptors (residences) would be located over a quarter mile from the Project site. Therefore, considering the dispersion of the emissions and the short time frame, exposure to diesel particulate matter is anticipated to be less than significant.

Therefore, TAC emissions would not be substantial enough to be considered a significant health risk. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

The measures identified in AIR-1 will effectively reduce emissions from diesel equipment onsite. Therefore, no additional mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Operational Emissions

Impact AIR-3: The Proposed Project would result in emissions of criteria pollutants during operations.

Impact Analysis

Operational, or long-term, emissions occur over the life of the Project. Operational emissions include mobile and area source emissions. Mobile emissions refer to the emissions from the increase in mobile vehicle trips that the improvements would generate. Area source emissions are from gasoline-powered landscape equipment and architectural coating maintenance (painting).

Mobile and area source emissions were estimated using URBEMIS2007 (version 9.2). For the purposes of this analysis, it was assumed the park would generate approximately 100 additional trips from the Project features (i.e., soccer field, children’s play area, walkways, etc). The soccer field is already in regular use, but adding artificial turf and lighting will extent its use into the night and throughout the year. The park has limited vehicular parking but does have bike racks and ready access to the Metro Redline subway (i.e., a station just east of the park). Therefore, park users will continue to walk, bicycle, and use transit to access the park rather than drive individual vehicles.

The estimated mobile and area emissions are displayed in Table 4.2-4 and Table 4.2-5 for summer and winter, respectively. The data indicates that long-term emissions from Project improvements would not exceed the applicable SCAQMD thresholds of significance. Mitigation is therefore not required to further reduce these emissions.

Table 4.2-4: Estimated Long-Term Emissions (Unmitigated, Summer)

Source	Emissions (pounds per day)						
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}	CO ₂
Mobile vehicles	0.9	1.3	10.9	0.0	1.6	0.3	931.8
Area source	0.3	0.0	1.6	0.0	0.0	0.0	2.8
Total	1.2	1.3	12.5	0.0	1.6	0.3	934.6
Significance Threshold	55	55	550	150	150	55	None
Significant Impact?	No	No	No	No	No	No	*
VOC = volatile organic compounds NO _x = nitrous oxides CO = carbon monoxide SO _x = sulfur oxides PM ₁₀ and PM _{2.5} = particulate matter CO ₂ = carbon dioxide Source: Air Quality Analysis, MBA 2008. * Refer to Impact AIR-9.							

Table 4.2-5: Estimated Long-Term Emissions (Unmitigated, Winter)

Source	Emissions (pounds per day)						
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}	CO ₂
Mobile vehicles	1.0	1.6	10.8	0.0	1.6	0.3	847.3
Area source	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total	1.1	1.6	10.8	0.0	1.6	0.3	847.3
Significance Threshold	55	55	550	150	150	55	None
Significant Impact?	No	No	No	No	No	No	*
VOC = volatile organic compounds NO _x = nitrous oxides CO = carbon monoxide SO _x = sulfur oxides PM ₁₀ and PM _{2.5} = particulate matter CO ₂ = carbon dioxide Source: Air Quality Analysis, MBA 2008. * Refer to Impact AIR-9.							

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

None required.

Level of Significance After Mitigation

Less than significant impact.

Carbon Monoxide Hot Spots

Impact AIR-4: The Proposed Project would not create carbon monoxide hot spots that would exceed federal or State concentration standards.

Impact Analysis

Carbon monoxide from mobile sources is the main pollutant of local concern and correlates to traffic volume, speed, and delay. Carbon monoxide emissions disperse quickly under normal meteorological conditions but can reach unhealthy levels with more stagnant meteorological conditions. High concentrations of CO are often found near signalized intersections or roadway segments operating at poor levels of service (LOS E or worse) during peak-hour traffic.

The significance of project-related CO impacts is generally based on guidance presented in the CO Protocol prepared by the University of California, Davis, Institute of Transportation Studies. The CO Protocol presents a series of criteria that are used to determine the significance of impacts. Following the flow chart in Figure 3 in the CO Protocol, the Project is in a CO attainment area, so the next step is to determine if the Project would worsen air quality. According to Section 4.7.1 in the CO Protocol, the following questions are posed to determine if a project would worsen air quality:

- Does the Project increase the percentage of vehicles operating in cold start by 2 percent?
Analysis: As shown in Table 4.2-6, the Project does not increase the percentage of vehicles by more than 2 percent.
- Does that project increase traffic volumes by 5 percent? Analysis: As shown in Table 4.2-6, the Project does not increase traffic by more than 5 percent.
- Does the Project reduce average speed (within a range of 3 to 50 mph)? Analysis: It is not anticipated that the Project will reduce the average speed by a significant amount.

In summary, the Project would not worsen air quality and no further analysis is needed according to the CO Protocol.

Table 4.2-6: Traffic Information

Roadway Segment	Existing Traffic (ADT)	LOS	Project Traffic (%/ADT)
W. 6 th Street	32,387	D	0.3%
Wilshire Boulevard	27,906	B	0.4%
W. 7 th Street	35,112	D	0.3%
Alvarado Street	25,678	B	0.4%
S. Park View Drive	10,420	A	1.0%
Source: EIR, Table 4.10-2			

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Cumulative Air Quality Impacts

Impact AIR-5:	The Proposed Project would not 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 (including releasing emissions, which exceed quantitative thresholds for ozone precursors).
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Impact Analysis

In accordance with CEQA Guidelines 15130(b), this analysis of cumulative impacts incorporates a summary of projections. The following tiered approach is to assess cumulative air quality impacts.

1. Consistency with the regional thresholds for non attainment pollutants;
2. Project consistency with existing air quality plans; and
3. Assessment of the cumulative health effects of the pollutants.

Regional Analysis

If an area is in nonattainment for a criteria pollutant, then the background concentration of that pollutant has historically been over the ambient air quality standard. It follows that if a project exceeds the regional threshold for that non attainment pollutant, then it would result in a cumulatively considerable net increase of that pollutant and result in a significant cumulative impact.

The South Coast Air Basin is in non-attainment for PM₁₀, PM_{2.5}, and ozone. Therefore, if a project exceeds the regional thresholds for PM₁₀ or PM_{2.5}, then it contributes to a cumulatively considerable impact for those pollutants. Additionally, if the Project exceeds the regional threshold for NO_x or VOC, then it follows that the Project would contribute to a cumulatively considerable impact for ozone.

The regional significance analysis of construction and operational emissions demonstrated that the emissions do not exceed the regional significance thresholds.

Plan Approach

The geographic scope for cumulative air quality impacts is the South Coast Air Basin because that is the area in which the air pollutants generated by the sources within the basin circulate and are often trapped. The SCAQMD is required to prepare and maintain an AQMP and a State Implementation Plan to document the strategies and measures to be undertaken to reach attainment of ambient air quality standards. While the SCAQMD does not have direct authority over land use decisions, it was

recognized that changes in land use and circulation planning were necessary to maintain clean air. The SCAQMD evaluated the entire basin when it developed the AQMP.

According to the analysis contained in Impact AIR-6, the Project is not consistent with the most recent AQMP without mitigation. Therefore, the Project presents a significant impact according to this criterion.

Cumulative Health Impacts

The basin is in non-attainment for ozone, PM₁₀, and PM_{2.5}, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (i.e., elderly, children, and the sick). Therefore, when the concentration of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population experience health effects as described above. However, the health effects are a factor of the dose-response curve. Concentration of the pollutant in the air (dose), the length of time exposed, and the response of the individual are factors involved in severity and nature of health impacts. If a significant health impact results from project emissions, it does not mean that 100 percent of the population would experience health effects.

The regional analysis of construction emissions indicates that emissions do not exceed the regional significance thresholds. Therefore, the Project would not significantly contribute to cumulative health impacts from air pollutants.

Level of Significance Before Mitigation

Potentially significant impact over the short-term (i.e., during construction).

Mitigation Measures

Refer to Mitigation Measures AIR-1a through AIR-1e.

Level of Significance After Mitigation

Less than significant impact. Mitigation would allow the Project to be consistent with the AQMP.

Air Quality Management Plan Consistency

Impact AIR-6:	The Proposed Project not conflict with or obstruct implementation of the applicable air quality plan.
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Impact Analysis

The CEQA Guidelines indicate that a significant impact would occur if the Proposed Project would conflict with or obstruct implementation of the applicable air quality plan. This assessment will use the following criteria for determining project consistency with the current AQMP.

Project's Contribution to Air Quality Violations

According to the SCAQMD, a project is consistent with the AQMP if it 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 timely attainment of air quality standards or the interim emission reductions specified in the AQMP (SCAQMD 1993, Page 12-3).

According to Impact AIR-1, the Project would exceed the localized significance thresholds during construction for PM_{10} and $PM_{2.5}$ without mitigation. Without mitigation, the Project has the potential to contribute to air quality violations in the immediate area of the Project. Therefore, the Project does not meet this first criteria for consistency with the AQMP.

Control Measures

The next criterion is compliance with the control measures in the 2003 AQMP and the 2007 AQMP. The project will comply with all of the SCAQMD's applicable rules and regulations. Therefore, the Project complies with this criterion.

Compliance with the SCAQMD Regional Thresholds

Although there is no known guidance that correlates AQMP consistency with the SCAQMD regional thresholds, it is common to use the thresholds in assessing AQMP compliance. As shown in Impact AIR-1 and AIR-3, the Project would not violate the SCAQMD regional significance thresholds. Therefore, the Project complies with this criterion.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Refer to Mitigation Measures AIR-1a through AIR-1e.

Level of Significance After Mitigation

Less than significant impact. Mitigation reduces emissions during construction to below the localized significance thresholds.

Sensitive Receptors

Impact AIR-7: **The Proposed Project would not expose sensitive receptors to substantial pollutant concentrations or violate any air quality standard or contribute substantially to an existing or projected air quality violation.**

Impact Analysis

The sensitive receptors of most concern as they relate to the Project are existing residential neighborhoods approximately a quarter mile to the north, west, and south. Additionally, there may be people utilizing the park during the construction.

The localized construction analysis uses thresholds that represent the maximum emissions for a project that will not cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, and are developed based on the ambient concentrations of that pollutant for each source receptor area. If the project results in emissions under those thresholds, it follows that the project would not cause or contribute to an exceedance of the standard. If the project

causes an exceedance of the standard, it follows that there could be resulting health effects because the standards were set to protect the health of sensitive individuals. As discussed in AIR-1, the localized construction analysis demonstrated that without mitigation, the Project may exceed the localized threshold for PM₁₀ and PM_{2.5}. Therefore, during grading, the Project may expose sensitive receptors to substantial pollutant concentrations of PM₁₀ and PM_{2.5} without mitigation.

As discussed in Impact AIR-2, project construction activities would be of temporary duration and would not have the potential to expose sensitive receptors to substantial concentrations of toxic air contaminants.

Operational activities associated with the Project would result in no regular truck deliveries by diesel-powered tractor-trailers, although the Signal and Boat House Buildings may receive occasional deliveries or pick-ups from trucks. Infrequent deliveries to these buildings might occur at different times during the day and would not be expected to occur more than five times in a given day. In addition, State law prohibits the idling of diesel trucks for more than 5 minutes in loading areas. Because of the infrequent number and distribution of deliveries throughout a given day, the distance between park-related air pollutant sources and the closest residential receptor, and the prohibition on extended idling, operational emissions of diesel particulate matter would not expose sensitive emissions of hazardous materials. Impacts would be less than significant.

A CO hotspot analysis is the appropriate tool to determine if project emissions of CO during operation would exceed ambient air quality standards. The main source of air pollutant emissions during operation are from offsite motor vehicles traveling through the park on Wilshire Boulevard and on the roads surrounding the Project. As discussed in Impact AIR-4, the Project would not significantly worsen air quality. Therefore, according to this criterion, air pollutant emissions during operation would result in a less than significant impact.

The CARB Air Quality and Land Use Handbook contains recommendations that will “help keep California’s children and other vulnerable populations out of harm’s way with respect to nearby sources of air pollution” (CARB 2005), including recommendations for distances between sensitive receptors and certain land uses. CARB recommends avoiding new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. Epidemiological studies indicate that the distance from the roadway and truck traffic densities were key factors in the correlation of health effects, particularly in children. Roads adjacent to the Project assessed in the traffic study do not exceed a volume of 50,000 vehicles per day; therefore, the Project complies with this recommendation.

CARB recommends avoiding new sensitive land uses within 300 feet of a large fueling station (a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gas dispensing facilities. The project is not within 300 feet of a fueling station; therefore, the Project complies with this recommendation.

CARB recommends avoiding siting new sensitive land uses within 300 feet of any dry cleaning operation that uses perchloroethylene. For operations with two or more machines, CARB recommends a buffer of 500 feet. For operations with three or more machines, CARB recommends consultation with the local air district. The project is not near a dry cleaning operation; therefore, the Project complies with this recommendation.

In summary, the Project has the potential to expose sensitive receptors to substantial PM₁₀ and PM_{2.5} pollutant concentrations during grading.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Refer to Mitigation Measures AIR-1a through AIR-1e.

Level of Significance After Mitigation

Less than significant impact. Mitigation reduces localized impacts during grading to below the appropriate thresholds and therefore would not expose sensitive receptors to substantial pollutant concentrations.

Objectionable Odors

Impact AIR-8: **The Proposed Project would not generate objectionable odors that would affect a substantial number of people.**

Impact Analysis

The Proposed Project would construct a soccer field, children's playground, and renovated offices and other uses at the Signal and Boathouse buildings. None of these uses would generate substantial odors (e.g., agriculture). Odors may be apparent in and around dumpsters and other refuse collection facilities; however, these facilities would be located away from publicly accessible areas, and odors would be localized in a manner that would not affect a substantial number of people. Therefore, potential odor impacts created by the Project would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Climate Change

Impact AIR-9: Greenhouse gas emissions from the Project would not significantly hinder or delay California’s ability to meet the reduction targets contained in AB 32.

Project Level Impact Analysis

While neither the California Appendix G Guidelines nor any judicial decision, CEQA regulation, or statute require an evaluation of a project’s impact on greenhouse gases, consistent with the public policy rationale underlying AB 32, this section does, in fact, fully analyze the Project’s impacts on greenhouse gas emissions.

There are no project-level thresholds to measure the significance of a project’s impact on global climate change. Thus, a standard CEQA “significance” determination is difficult to make in this context. Nevertheless, the following two-part approach is used to address greenhouse gas thresholds and assess the significance of the Project’s contribution to global climate change.

1. Inventory: An inventory of greenhouse gas emissions generated by the Project will be presented for informational purposes.
2. Compliance with Strategies: Project compliance with the current California strategies to reduce greenhouse gases will be assessed.

Construction Inventory

The project would emit greenhouse gases from combustion of fuels from worker vehicles and construction equipment. The project emissions of carbon dioxide from project construction are shown in Table 4.2-7 below. Emissions of nitrous oxide and methane are negligible. As shown in Table 4.2-7, construction would emit approximately 223.7 tons of carbon dioxide or 202.9 metric tons of carbon dioxide equivalent (MTCO₂e).

Table 4.2-7: Construction Greenhouse Gas Emissions

Activity	Carbon Dioxide Emissions (tons)	MTCO ₂ e* Per Year
Demolition	15.1	13.7
Grading	75.9	68.9
Building	132.4	120.1
Coating	0.3	0.3
Total	223.7	202.9
Source: Air Quality Analysis Report, Appendix B. * Metric tons of carbon dioxide equivalent converted from tons of carbon dioxide by multiplying by 0.9072 .		

Operation Inventory

During operation of the Project, greenhouse gas emissions would result from motor vehicles (cars and small trucks visiting the Project site) and increased emissions due to increased landscaping. The

Project may also use more electricity from the increased lighting, which may result in negligible indirect emissions from the generation of electricity. The Project would emit approximately 165 tons of carbon dioxide, or 150 MTCO₂e per year from mobile vehicles that would access the site. The project would also emit approximately one MTCO₂e per year from landscape emissions, for a total of 151 MTCO₂e per year.

Compliance with State Strategies

To assess compliance with California strategies to reduce greenhouse gas emissions, two main documents will be used. The first is the 2006 Climate Action Team Report to Governor Schwarzenegger (2006 CAT Report) and the second is the CARB's early action measures for AB 32.

One of the greenhouse gas emission reduction targets proposed through Executive Order S-3-05 by California Governor Arnold Schwarzenegger is to reduce the state's greenhouse gas emissions to 1990 levels by 2020. AB 32 sets a mandatory requirement to achieve the same reduction.

The 2006 CAT Report is not in response to AB 32; however, the 2006 CAT Report introduces strategies that can be implemented by the CARB and other California agencies to reduce California's emissions to 1990 levels by 2020, which is the same target for AB 32. In addition, the 2006 CAT Report is consistent with the intent of AB 32. AB 32 contains a timeline for development and approval of strategies to reduce state emissions. The bulk of the strategies are not yet developed. Therefore, in the absence of climate change thresholds and standards, the strategies published for Executive Order S-3-05 are used for this analysis because it contains the most complete list of strategies as of the date of this analysis.

As discussed in detail in the Air Quality Analysis, the Project is consistent with the applicable strategies with mitigation.

Greenhouse Gas Reduction Opportunities

There are several voluntary greenhouse gas reduction opportunities that the Project can participate in, as discussed below.

The Leadership in Energy and Environmental Design (LEED) for Existing Buildings Rating System helps building operators maximize operational efficiency and minimize environmental impacts. LEED for Existing Buildings addresses cleaning and maintenance issues (including chemical use), recycling programs, exterior maintenance programs, and systems upgrades. If the Project were to participate in the LEED rating system, it would reduce the building's energy and water use, improve the indoor environment, and identify operational inefficiencies. It would be efficient to instigate this LEED certification now, while the building is undergoing renovation, because it would be easier to change practices while the renovation process is occurring.

By reducing energy use, the Project could reduce existing indirect emissions associated with electricity generation. By reducing water use, the Project could reduce existing indirect emissions associated with the electricity required to pump water to the Project.

Summary

This project would be revitalizing MacArthur Park, which could prevent nearby residents from seeking out other recreational locations farther away from home. The project is going to improve the facilities at the park and provide more recreational opportunities for the nearby community. Therefore, it is anticipated that the Project may actually reduce vehicle miles traveled and therefore greenhouse gas emissions. The emissions from the Project are inconsequential or negligible relative to the global amount of greenhouse gases being emitted, and project-level emissions will be reduced to the extent practical by the other proposed mitigation measures. The project complies with state strategies to reduce greenhouse gas emissions to 1990 levels by the year 2020. In summary, the Project results in a less than significant impact to climate change.

Impacts to Project from Climate Change

AB 32 indicates that “the potential effects of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snow pack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidence of infections, disease, asthma, and other health-related problems” (State of California 2006, AB 32, section 38501(a)).

The California Climate Change Center (2006) published a report that assesses the risks of climate change to California. The following is a summary of the potential risks to California from that report:

- A reduction in the Sierra snow pack could result a reduction in hydropower, which comprises about 15 percent of California’s in-state electricity production.
- A reduction in the Sierra snow pack could result in a loss of winter recreation from insufficient snow for skiing and snowboarding.
- A decrease in water supply could also negatively impact the food supply that depends on that water for use.
- Climate change could also increase temperatures, leading to decreased supply of certain agricultural products such as wine, fruit, nuts, and milk. California farmers may also have to face increasing threats from pests and pathogens.
- Climate change could also result in increasing wildfires. If temperatures rise into the medium range, the risk of fires in California could increase as much as 55 percent.
- Climate change could result in plant and animal species relocating to cooler more habitable “up slope” locations.

- Climate change could negatively affect the health and productivity of California's forests. The productivity of mixed conifer forests is expected to diminish as much as 18 percent by the end of the century.
- A rise in sea levels could result in increased coastal floods and shrinking beaches.

Essentially, the main problems associated with climate change to the Project are from water shortages and increased fire hazards. The Project is not in a region susceptible to wildland fire impacts. Additionally, the Project is proposing to install artificial turf, which would reduce the quantity of water needed as opposed to live grass. Additional mitigation as contained below would reduce water use. Therefore, secondary impacts to the Project from climate change are less than significant.

Cumulative Impacts

It is anticipated that the Project would result in a less than significant cumulative impact. The project-level impact is less than significant. In addition, the Project would be providing additional recreational uses, which may reduce vehicle miles traveled by providing a local park with desired amenities.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

Mitigation measures contained throughout the EIR and project design features related to air quality and energy conservation will help reduce the Project's and existing emissions of greenhouse gases. The following measures will also reduce the Project's contribution to greenhouse gases.

- MM AIR-9a** The City shall install energy efficient lighting with electronic timing controls to limit unnecessary lighting. These controls may include keyed or remote control to allow the lights to be turned off when the soccer field is not being used.
- MM AIR-9b** During construction, the City shall reuse or recycle construction waste where feasible and shall reuse or recycle a minimum of 50 percent of the waste.
- MM AIR-9c** The City shall plant drought tolerant trees where practical to replace trees that are removed as part of the Project.
- MM AIR-9d** The City shall install irrigation control devices to prevent watering of non-plant surfaces and to control the quantity of water used. The irrigation system shall be maintained and inspected at least once per year to make sure that system devices are working properly and watering appropriate areas.
- MM AIR-9e** The City shall apply the Leadership in Energy and Environmental Design (LEED) Green Building Rating System for Existing Buildings: Operations & Maintenance

Rating System requirements to the building(s) to be renovated as long as they do not conflict with the City's applicable historical preservation requirements.

Level of Significance After Mitigation

Less than significant impact.