2.2.6 Air Quality

2.2.6.1 Regulatory Setting

The Federal Clean Air Act (FCAA), as amended, is the primary federal law that governs air quality while the California Clean Air Act (CCAA) is its companion state law. These laws, and related regulations by the United States Environmental Protection Agency (EPA) and the California Air Resources Board (ARB), set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and state ambient air quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM)—which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM_{10}) and particles of 2.5 micrometers and smaller ($PM_{2.5}$)—and sulfur dioxide (SO_2). In addition, national and state standards exist for lead (PB), and state standards exist for visibility reducing particles, sulfates, hydrogen sulfide (H_2S), and vinyl chloride. The NAAQS and state standards are set at levels that protect public health with a margin of safety, and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition.

Federal air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act (NEPA). In addition to this environmental analysis, a parallel "Conformity" requirement under the FCAA also applies.

2.2.6.1.1 Conformity

The conformity requirement is based on FCAA Section 176(c), which prohibits the United States Department of Transportation (DOT) and other federal agencies from funding, authorizing, or approving plans, programs, or projects that do not conform to State Implementation Plan (SIP) for attaining the NAAQS. "Transportation Conformity" applies to highway and transit projects and takes place on two levels: the regional (or planning and programming) level and the project level. The proposed project must conform at both levels to be approved.

Conformity requirements apply only in nonattainment and "maintenance" (former nonattainment) areas for the NAAQS, and only for the specific NAAQS that are or were violated. EPA regulations at 40 Code of Federal Regulations (CFR) 93 govern the conformity process. Conformity requirements do not apply in unclassifiable/attainment areas for NAAQS and do not apply at all for state standards regardless of the status of the area.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the NAAQS for carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), and in some areas (although not in California), sulfur dioxide (SO_2). California has nonattainment or maintenance areas for all of these transportation-related "criteria pollutants" except SO_2, and also has a nonattainment area for lead (Pb); however, lead is not currently required by the FCAA to be covered in transportation conformity analysis. Regional conformity is based on emission analysis of Regional Transportation Plans (RTPs) and Federal Transportation Improvement Programs (FTIPs) that include all transportation projects planned for a region over a period of at least 20 years (for the RTP) and 4 years (for the FTIP). RTP and FTIP conformity uses travel demand and emission models to determine whether or not the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the FCAA and the

SIP are met. If the conformity analysis is successful, the Metropolitan Planning Organization (MPO), Federal Highway Administration (FHWA), and Federal Transit Administration (FTA) make the determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the FCAA. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained. If the design concept and scope and the "open-to-traffic" schedule of a proposed transportation project are the same as described in the RTP and FTIP, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

Project-level conformity is achieved by demonstrating that the project comes from a conforming RTP and TIP; the project has a design concept and scope[1] that has not changed significantly from those in the RTP and TIP; project analyses have used the latest planning assumptions and EPA-approved emissions models; and in PM areas, the project complies with any control measures in the SIP. Furthermore, additional analyses (known as hot-spot analyses) may be required for projects located in CO and PM nonattainment or maintenance areas to examine localized air quality impacts.

2.2.6.2 Affected Environment

Information in this section comes from the Air Quality Assessment for the project (August 2017). Detailed analytical methods, modeling files, and calculation worksheets can be found in the Air Quality Assessment.

2.2.6.2.1 Environmental Setting

The project site is located in the City of Los Alamitos, which is included in the South Coast Air Basin (Basin). The Basin is a 6,600-square mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties, in addition to the San Gorgonio Pass area of Riverside County. Its terrain and geographical location determine the distinctive climate of the Basin, as it is a coastal plain with connecting broad valleys and low hills. The Basin is characterized as having a "Mediterranean" climate (a semi-arid environment with mild winters, warm summers, and moderate rainfall). Air quality management in the Basin is under jurisdiction of the South Coast Air Quality Management District (SCAQMD).

The general region lies in the semi-permanent, high-pressure zone of the eastern Pacific. As a result, the climate is mild and tempered by cool sea breezes. The climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in the Basin is a function of the area's natural physical characteristics (weather and topography), as well as man-made influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and/or dispersion of pollutants throughout the Basin.

[1] "Design concept" means the type of facility that is proposed, such as a freeway or arterial highway. "Design scope" refers to those aspects of the project that would clearly affect capacity and thus any regional emissions analysis, such as the number of lanes and the length of the project.

2.2.6.2.2 Climate

The average annual temperature varies little throughout the Basin, and averages about 75 degrees Fahrenheit. However, with a less pronounced oceanic influence, the eastern inland portions of the Basin show greater variability in annual minimum and maximum temperatures. All portions of the Basin have had recorded temperatures over 100 degrees in recent years. January is usually the coldest month at all locations, while July and August are usually the hottest months of the year. Although the Basin has a semi-arid climate, the air near the surface is moist because of the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the Basin by off-shore winds, the ocean effect is dominant. Periods with heavy fog are frequent; low stratus clouds, occasionally referred to as "high fog," are a characteristic climate feature. Annual average relative humidity is 70 percent at the coast and 57 percent in the eastern part of the Basin. Precipitation in the Basin is typically 9 to 14 inches annually and is rarely in the form of snow or hail due to typically warm weather. The frequency and amount of rainfall is greater in the coastal areas of the Basin.

Within the project vicinity, the City of Los Alamitos experiences high temperatures of up to 111 degrees (°) Fahrenheit (F) during the month of September, and average low temperatures of 46 °F during the month of December. The City experiences the greatest amount of precipitation in the month of February.[2]

2.2.6.2.3 Attainment Status

Criteria pollutants are defined as those pollutants for which the federal and state governments have established ambient air quality standards, based on health criteria, for outdoor concentrations to protect public health and prevent degradation of the environment. The state and federal ambient air quality standards, and attainment statuses for all criteria pollutants are provided in Table 2.2.6-1, State and Federal Criteria Air Pollutant Standards, Effects, And Sources. As shown in Table 2.2.6-1, the Basin is an attainment area for CO, NO_2, and SO_2 for both state and federal standards. The Basin is a nonattainment area for O_3 and $PM_{2.5}$ under both state and federal standards. The Basin is nonattainment for PM_{10} under state standards and serious maintenance under federal standards; refer to Table 2.2.6-1.

2.2.6.2.4 Transportation Conformity Rule

The EPA, in conjunction with the DOT, established the Transportation Conformity Rule on November 30, 1993. The rule implements the FCAA conformity provision, which mandates that the federal government not engage, support, or provide financial assistance for licensing or permitting, or approve any activity not conforming to an approved FCAA implementation plan. Transportation Conformity Regulations apply to all programs and projects requiring funding or approval from the DOT, the FHWA, the FTA, or the MPO. The Transportation Conformity Rule applies to highways and mass transit, while the General Conformity Rule applies to all other actions.

[2] The Weather Channel, Monthly Averages for Los Alamitos, accessed May 2, 2017. https://weather.com/weather/monthly/l/USCA0635:1:US.

Table 2.2.6-1: State and Federal Criteria Air Pollutant Standards, Effects, and Sources

Pollutant	Averaging Time	State[1] Standard	Federal[2] Standard	Principal Health and Atmospheric Effects	Typical Sources	State Project Area Attainment Status	Federal Project Area Attainment Status
Ozone (O_3)	1 hour	0.09 ppm[3]	--- [4]	High concentrations irritate lungs. Long-term exposure may cause lung tissue damage and cancer. Long-term exposure damages plant materials and reduces crop productivity. Precursor organic compounds include many known toxic air contaminants. Biogenic VOC may also contribute.	Low-altitude ozone is almost entirely formed from reactive organic gases/volatile organic compounds (ROG or VOC) and nitrogen oxides (NOx) in the presence of sunlight and heat. Common precursor emitters include motor vehicles and other internal combustion engines, solvent evaporation, boilers, furnaces, and industrial processes.	Nonattainment	Extreme Nonattainment
	8 hours	0.070 ppm	0.070 ppm (4^{th} highest in 3 years)				
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	CO interferes with the transfer of oxygen to the blood and deprives sensitive tissues of oxygen. CO also is a minor precursor for photochemical ozone. Colorless, odorless.	Combustion sources, especially gasoline-powered engines and motor vehicles. CO is the traditional signature pollutant for on-road mobile sources at the local and neighborhood scale.	Attainment	Attainment/Serious Maintenance
	8 hours	9.0 ppm [1]	9 ppm				
	8 hours (Lake Tahoe)	6 ppm	---				
Respirable Particulate Matter (PM_{10})[5]	24 hours	50 µg/m^3 [6]	150 µg/m^3 (expected number of days above standard < or equal to 1)	Irritates eyes and respiratory tract. Decreases lung capacity. Associated with increased cancer and mortality. Contributes to haze and reduced visibility. Includes some toxic air contaminants. Many toxic & other aerosol and solid compounds are part of PM_{10}.	Dust- and fume-producing industrial and agricultural operations; combustion smoke & vehicle exhaust; atmospheric chemical reactions; construction and other dust-producing activities; unpaved road dust and re-entrained paved road dust; natural sources.	Nonattainment	Attainment/Serious Maintenance
	Annual	20 µg/m^3	--- [5]				
Fine Particulate Matter ($PM_{2.5}$)[5]	24 hours	---	35 µg/m^3	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and produces surface soiling. Most diesel exhaust particulate matter – a toxic air contaminant – is in the $PM_{2.5}$ size range. Many toxic & other aerosol and solid compounds are part of $PM_{2.5}$.	Combustion including motor vehicles, other mobile sources, and industrial activities; residential and agricultural burning; also formed through atmospheric chemical and photochemical reactions involving other pollutants including NOx, sulfur oxides (SOx), ammonia, and ROG.	Nonattainment	Moderate Nonattainment
	Annual	12 µg/m^3	12.0 µg/m^3				
	24 hours (conformity process[7])	---	65 µg/m^3				
	Secondary Standard (annual; also for conformity process[5])	---	15 µg/m^3 (98^{th} percentile over 3 years)				
Nitrogen Dioxide (NO_2)	1 hour	0.18 ppm	0.100 ppm[8]	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown. Contributes to acid rain & nitrate contamination of stormwater. Part of the "NOx" group of ozone precursors.	Motor vehicles and other mobile or portable engines, especially diesel; refineries; industrial operations.	Attainment	Attainment/ Maintenance
	Annual	0.030 ppm	0.053 ppm				

Table 2.2.6-1: State and Federal Criteria Air Pollutant Standards, Effects, and Sources [continued]

Pollutant	Averaging Time	State[1] Standard	Federal[2] Standard	Principal Health and Atmospheric Effects	Typical Sources	State Project Area Attainment Status	Federal Project Area Attainment Status
Sulfur Dioxide (SO_2)	1 hour	0.25 ppm	0.075 ppm[9] (99th percentile over 3 years)	Irritates respiratory tract; injures lung tissue. Can yellow plant leaves. Destructive to marble, iron, steel. Contributes to acid rain. Limits visibility.	Fuel combustion (especially coal and high-sulfur oil), chemical plants, sulfur recovery plants, metal processing; some natural sources like active volcanoes. Limited contribution possible from heavy-duty diesel vehicles if ultra-low sulfur fuel not used.	Attainment	Unclassified/ Attainment
	3 hours	---	0.5 ppm[10]				
	24 hours	0.04 ppm	0.14 ppm (for certain areas)				
	Annual	---	0.030 ppm (for certain areas)				
Lead (Pb)[11]	Monthly	1.5 µg/m^3	---	Disturbs gastrointestinal system. Causes anemia, kidney disease, and neuromuscular and neurological dysfunction. Also, a toxic air contaminant and water pollutant.	Lead-based industrial processes like battery production and smelters. Lead paint, leaded gasoline. Aerially deposited lead from older gasoline use may exist in soils along major roads.	Attainment	Attainment
	Calendar Quarter	---	1.5 µg/m^3 (for certain areas)				
	Rolling 3-month average	---	0.15 µg/m^3 [12]				
Sulfate	24 hours	25 µg/m^3	---	Premature mortality and respiratory effects. Contributes to acid rain. Some toxic air contaminants attach to sulfate aerosol particles.	Industrial processes, refineries and oil fields, mines, natural sources like volcanic areas, salt-covered dry lakes, and large sulfide rock areas.	Attainment	N/A
Hydrogen Sulfide (H_2S)	1 hour	0.03 ppm	---	Colorless, flammable, poisonous. Respiratory irritant. Neurological damage and premature death. Headache, nausea. Strong odor.	Industrial processes such as: refineries and oil fields, asphalt plants, livestock operations, sewage treatment plants, and mines. Some natural sources like volcanic areas and hot springs.	Unclassified	N/A
Visibility Reducing Particles (VRP)	8 hours	Visibility of 10 miles or more (Tahoe: 30 miles) at relative humidity less than 70%	---	Reduces visibility. Produces haze. NOTE: not directly related to the Regional Haze program under the Federal Clean Air Act, which is oriented primarily toward visibility issues in National Parks and other "Class I" areas. However, some issues and measurement methods are similar.	See particulate matter above. May be related more to aerosols than to solid particles.	Unclassified	N/A
Vinyl Chloride[11]	24 hours	0.01 ppm	---	Neurological effects, liver damage, cancer. Also considered a toxic air contaminant.	Industrial processes	Attainment	N/A

Adapted from Sonoma-Marin Narrows Draft EIR and California ARB Air Quality Standards chart (http://www.arb.ca.gov/research/aaqs/aaqs2.pdf).

Greenhouse Gases and Climate Change: Greenhouse gases do not have concentration standards for that purpose. Conformity requirements do not apply to greenhouse gases.

1. State standards are "not to exceed" or "not to be equaled or exceeded" unless stated otherwise.
2. Federal standards are "not to exceed more than once a year" or as described above.
3. ppm = parts per million
4. Prior to 6/2005, the 1-hour ozone NAAQS was 0.12 ppm. Emission budgets for 1-hour ozone are still be in use in some areas where 8-hour ozone emission budgets have not been developed, such as the S.F. Bay Area.
5. Annual PM_{10} NAAQS revoked October 2006; was 50 µg/m^3. 24-hr. $PM_{2.5}$ NAAQS tightened October 2006; was 65 µg/m^3. Annual $PM_{2.5}$ NAAQS tightened from 15 µg/m^3 to 12 µg/m^3 December 2012 and secondary annual standard set at 15 µg/m^3.
6. µg/m^3 = micrograms per cubic meter
7. The 65 µg/m^3 $PM_{2.5}$ (24-hr) NAAQS was not revoked when the 35 µg/m^3 NAAQS was promulgated in 2006. The 15 µg/m^3 annual $PM_{2.5}$ standard was not revoked when the 12 µg/m^3 standard was promulgated in 2012. The 0.08 ppm 1997 ozone standard is revoked FOR CONFORMITY PURPOSES ONLY when area designations for the 2008 0.75 ppm standard become effective for conformity use (7/20/2013). Conformity requirements apply for all NAAQS, including revoked NAAQS, until emission budgets for newer NAAQS are found adequate, SIP amendments for the newer NAAQS are approved with an emission budget, EPA specifically revokes conformity requirements for an older standard, or the area becomes attainment/unclassified. SIP-approved emission budgets remain in force indefinitely unless explicitly replaced or eliminated by a subsequent approved SIP amendment. During the "Interim" period prior to availability of emission budgets, conformity tests may include some combination of build vs. no build, build vs. baseline, or compliance with prior emission budgets for the same pollutant.
8. Final 1-hour NO_2 NAAQS published in the Federal Register on 2/9/2010, effective 3/9/2010. Initial area designation for California (2012) was attainment/unclassifiable throughout. Project-level hot spot analysis requirements do not currently exist. Near-road monitoring starting in 2013 may cause re-designation to nonattainment in some areas after 2016.
9. EPA finalized a 1-hour SO_2 standard of 75 ppb (parts per billion [thousand million]) in June 2010. Nonattainment areas have not yet been designated as of 9/2012.
10. Secondary standard, set to protect public welfare rather than health. Conformity and environmental analysis address both primary and secondary NAAQS.
11. The ARB has identified vinyl chloride and the particulate matter fraction of diesel exhaust as toxic air contaminants. Diesel exhaust particulate matter is part of PM_{10} and, in larger proportion, $PM_{2.5}$. Both the ARB and U.S. EPA have identified lead and various organic compounds that are precursors to ozone and $PM_{2.5}$ as toxic air contaminants. There are no exposure criteria for adverse health effect due to toxic air contaminants, and control requirements may apply at ambient concentrations below any criteria levels specified above for these pollutants or the general categories of pollutants to which they belong.
12. Lead NAAQS are not considered in Transportation Conformity analysis.

It should be noted that the Transportation Conformity Rule distinguishes between metropolitan and rural areas since metropolitan areas have MPO's, which are specifically charged with determining conformity under the FCAA. The MPO is responsible for transportation planning, including the development of federally required metropolitan transportation plans and transportation improvement programs (TIPs) and determining conformity of such plans and TIPs. Transportation projects in rural areas are not included in MPO plans and TIPs. However, there are two types of rural areas for the purposes of the transportation conformity program, and the conformity requirements in these two types of rural areas are different. These two types of rural areas are defined as Isolated and Donut Areas.[3]

The Transportation Conformity Rule has been amended several times since 1993 to address updates to the NAAQS and revise conformity provisions and procedures. Enacted in August 2005, the Safe, Accountable, Flexible, Efficient Transportation Act: A Legacy for Users (SAFETEA-LU) authorizes funding of the nation's transportation infrastructure and made several changes to the conformity portion of the FCAA. SAFETEA-LU was superseded by the Moving Ahead for Progress in the 21st Century Act (MAP-21), which was enacted on July 6, 2012. MAP-21 governs the use of federal funds for transportation investments. Additionally, the Fixing America's Surface Transportation Act (FAST Act) was enacted on December 4, 2015 and builds on the changes made by MAP-21. The FAST Act provides long-term funding certainty for surface transportation infrastructure planning and investment. It authorizes $305 billion over fiscal years 2016 through 2020 for highway, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, and research, technology, and statistics programs. The FAST Act also maintains a focus on safety, keeps intact the established structure of the various highway-related programs managed by FHWA, continues efforts to streamline project delivery, and provides a dedicated source of federal funding for freight projects.

2.2.6.2.5 Sensitive Receptors

Sensitive populations (sensitive receptors) are more susceptible to the effects of air pollution than the general population. Sensitive receptors that are in proximity to localized sources of toxics and CO are of particular concern. According to the SCAQMD, a sensitive receptor is a person in the population who is particularly susceptible to health effects due to exposure to an air contaminant. Land uses considered sensitive receptors include residences, motels/hotels, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. The closest sensitive receptors to the proposed project include residential uses that are along the southeastern border of the project site, parallel to I-605.

2.2.6.2.6 Local Ambient Air Quality

The SCAQMD operates several air quality monitoring stations throughout the Basin. The project site is located within Source Receptor Area (SRA) 17 (Central Orange County). The communities within an SRA are expected to have similar climatology and subsequently, similar ambient air pollutant concentrations. The Anaheim-Pampas Lane Monitoring Station is the closest monitoring station within SRA 17 and Orange County to the site (approximately 8.4 miles east). The data collected at this station is considered to be representative of the air quality experienced on-site. Air quality data from 2012 to 2016 is provided in Table 2.2.6-2, Local Air Quality Levels.

[3] Refer to §93.101 of the Transportation Conformity Rule.

2.2.6.2.7 Mobile Source Air Toxics

In addition to the criteria air pollutants addressed by NAAQS, EPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., drycleaners), and stationary sources (e.g., factories or refineries). Mobile Source Air Toxics (MSATs) are a subset of the 188 air toxics defined by the Federal Clean Air Act. The MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

Table 2.2.6-2: Local Air Quality Levels

Pollutant	Primary Standard		Year	Maximum Concentration[1]	Number of Days State/Federal Std. Exceeded
	California	Federal			
Carbon Monoxide (CO)[2] (1-hour)	20 ppm for 1 hour	35 ppm for 1 hour	2012	2.96 ppm	0/0
			2013	3.36	0/0
			2014	3.05	0/0
			2015	3.07	0/0
			2016	2.61	0/0
Ozone (O_3) [2] (1-Hour)	0.09 ppm for 1 hour	N/A[5]	2012	0.079 ppm	0/0
			2013	0.084	0/0
			2014	0.111	2/0
			2015	0.100	1/0
			2016	0.103	2/0
Ozone (O_3) [2] (8-Hour)	0.070 ppm for 8 hours	0.070 ppm for 8 hours	2012	0.067 ppm	0/0
			2013	0.070	0/0
			2014	0.081	NM/6
			2015	0.080	NM/1
			2016	0.074	NM/4
Nitrogen Dioxide (NO_X) [2] (1-Hour)	0.18 ppm for 1 hour	0.100 ppm for 1 hour	2012	0.067 ppm	0/0
			2013	0.082	0/0
			2014	0.076	0/0
			2015	0.059	0/0
			2016	0.064	0/0
Particulate Matter (PM_{10}) [2, 3, 4] (24-Hour)	50 µg/m^3 for 24 hours	150 µg/m^3 for 24 hours	2012	48.5 µg/m^3	0/0
			2013	77.0	1/0
			2014	85.0	2/0
			2015	59.0	2/0
			2016	49.0	NM/0
Fine Particulate Matter ($PM_{2.5}$) [2, 4] (24-Hour)	No Separate State Standard	35 µg/m^3 for 24 hours	2012	54.0 µg/m^3	NM/4
			2013	47.7	NM/1
			2014	46.5	NM/4
			2015	53.8	NM/3
			2016	32.0	NM/0

ppm = parts per million
µg/m^3 = micrograms per cubic meter
NM = Not Measured
PM_{10} = particulate matter 10 microns in diameter or less
$PM_{2.5}$ = particulate matter 2.5 microns in diameter or less
NA = Not Applicable

Notes:
1. Maximum concentration is measured over the same period as the California Standard.
2. Measurements taken at the Anaheim – Pampas Lane Monitoring Station located at 1630 Pampas Lane, Anaheim, California 92802.
3. PM_{10} exceedances are based on State thresholds established prior to amendments adopted on June 20, 2002.
4. PM_{10} and $PM_{2.5}$ exceedances are derived from the number of samples exceeded, not days.
5. The Federal standard was revoked in June 2005.

Source: California Air Resources Board, *ADAM Air Quality Data Statistics*, http://www.arb.ca.gov/adam/welcome.html.

The EPA issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources, 66 FR 17229 (March 29, 2001). This rule was issued under the authority in Section 202 of the Federal Clean Air Act. In its rule, the EPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline (RFG) program, its national low emission vehicle (NLEV) standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and its proposed heavy duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. Even if vehicle miles traveled (VMT) increases by 45 percent as assumed between years 2010 and 2050 (refer to Exhibit 8 [VMT vs. MSAT Emissions]), FHWA projects would reduce on-highway emissions by an average of 72 percent. Thus, the EPA concluded that no further motor vehicle emissions standards or fuel standards were necessary to control MSATs.

The EPA is preparing a subsequent rule under the authority of Section 202(l) of the Federal Clean Air Act that would address these issues and make adjustments to the primary and secondary MSATs. Depending on the specific project circumstances, FHWA has identified three tiers of analysis:

- No analysis for projects with no potential for meaningful MSAT effects;
- Qualitative analysis for projects with low potential MSAT effects; or
- Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

According to the Air Quality Assessment prepared for the proposed project, the project would fall into the second category above, and the qualitative analysis was performed.

2.2.6.2.8 Naturally Occurring Asbestos

Chrysotile and amphibole asbestos (such as tremolite) occur naturally in certain geologic settings in California, most commonly in association with ultramafic rocks and along associated faults. Asbestos is a known carcinogen and inhalation of asbestos may result in the development of lung cancer or mesothelioma. The asbestos contents of many manufactured products have been regulated in the United States for a number of years. For example, the California Air Resources Board (CARB) has regulated the amount of asbestos in crushed serpentinite used in surfacing applications, such as for gravel on unpaved roads, since 1990. In 1998, new concerns were raised about possible health hazards from activities that disturb rocks and soil containing asbestos and may result in the generation of asbestos laden dust. These concerns recently lead CARB to revise their asbestos limit for crushed serpentinite and ultramafic rock in surfacing applications from 5 percent to less than 0.25 percent, and to adopt a new rule requiring best practices dust control measures for activities that disturb rock and soil containing naturally occurring asbestos (NOA).

NOA in bedrock is typically associated with serpentine and peridotite deposits. Note that during demolition activities, the likelihood of encountering structural asbestos is low due to the nature of the demolished materials. The material would consist primarily of concrete. Therefore, the potential for NOA to be present within the project limits is considered to be low. Furthermore, prior to the commencement of construction, qualified geologists would further examine the soils and makeup of the existing structure. Should the project geologist encounter asbestos during the analysis, proper steps shall be executed to handle the materials.

2.2.6.3 Environmental Consequences

2.2.6.3.1 Short-Term Construction Impacts

The project proposes two build alternatives anticipated to commence in 2033; Alternative 2 would be constructed over approximately12 months, in contrast to Alternative 3, which would be constructed over approximately 18 months. As a result, project construction would not last more than five years and is considered temporary. Project construction would result in temporary emissions of CO, NO_X, ROG, $PM_{2.5}$, and PM_{10}. Stationary or mobile powered on-site construction equipment typically include trucks, tractors, signal boards, excavators, backhoes, concrete saws, crushing and/or processing equipment, graders, scrapers, trenchers, pavers, and other paving equipment. Based on the relatively minor amount of daily work trips required for project construction, construction worker trips are not anticipated to significantly contribute to or affect traffic flow on local roadways and are therefore not considered significant.

Table 2.2.6-3, Estimated Daily Construction Emissions, depicts the estimated daily emissions associated with each construction phase for Build (Alternatives 2 and 3) conditions. The emissions were estimated based on the assumptions described above and using the Roadway Construction Emissions Model (RCEM) (Version 8.1.0) developed by the Sacramento Metropolitan Air Quality Management District (SMAQMD). The emissions modeling is based on a conservative assumption of 500 cubic yards (CY) of earthwork per day for Alternative 2 and cut and fill site balancing for Alternative 3. RCEM model defaults for construction equipment were utilized; however, for the grubbing/land clearing, grading/excavation, and paving phases, additional equipment was assumed to provide a conservative analysis. It is noted that the main difference between Alternative 2 and Alternative 3 is the removal of the southbound loop on-ramp and the widening of the southbound direct on-ramp, which would allow for cut and fill site balancing.

Table 2.2.6-3: Estimated Daily Construction Emissions

Construction Phase	Pollutant (pounds/day)[1]				
	ROG	CO	NO_X	PM_{10}[2, 3]	$PM_{2.5}$[2, 3]
Alternative 2					
Grubbing/Land Clearing	1.35	15.17	12.17	80.55	17.12
Grading/Excavation	6.70	70.50	60.85	82.77	19.12
Drainage/Utilities/Sub-Grade	4.69	54.93	41.37	81.84	18.33
Paving	1.65	25.86	15.41	0.77	0.67
Maximum	*6.70*	*70.50*	*60.85*	*82.77*	*19.12*
Alternative 3					
Grubbing/Land Clearing	2.13	23.95	17.63	80.77	17.32
Grading/Excavation	6.92	71.95	62.68	82.84	19.18
Drainage/Utilities/Sub-Grade	2.20	25.80	19.43	80.86	17.43
Paving	0.00	0.00	0.00	0.00	0.00
Maximum	*6.92*	*71.95*	*62.68*	*82.84*	*19.18*

ROG = reactive organic gases; NO_X = nitrogen oxides; CO = carbon monoxide; PM_{10} = particulate matter up to 10 microns; $PM_{2.5}$ = particulate matter up to 2.5 microns

Notes:
1. Emissions were calculated using the Roadway Construction Emissions Model (RCEM) (Version 8.1.0) developed by the Sacramento Metropolitan Air Quality Management District (SMAQMD).
2. PM_{10} and $PM_{2.5}$ estimates assume control of fugitive dust from watering and associated dust control measures.
3. Emissions include the sum of exhaust and fugitive dust.

RCEM is a data-entry spreadsheet that utilizes various sources to estimate construction emissions, including OFFROAD and EMFAC2014. RCEM is recommended by Caltrans and the SCAQMD as it is specifically developed to estimate emissions associated with roadway construction projects since the default equipment, activities, and typical phasing are different than those of land use development projects and building construction projects. The RCEM phasing assumptions were used to allocate the project specific construction equipment to the specific phases. The methodologies and assumptions used in RCEM are appropriate for road construction projects, including new road construction, road widening and bridge or overpass construction.

Short-term impacts to air quality would occur during demolition, grading/trenching, new pavement construction, and the restriping phase. Construction of the proposed project is anticipated to commence in 2033 for a maximum duration of up to 18 months. As part of the project, all construction vehicles and equipment would be required to be equipped with the state-mandated emission control devices, and a range of dust control measures would be implemented (PF-AQ-1). After construction of the proposed project is complete, all construction-related impacts would cease. As such, effects related to short term air quality would not be adverse.

In addition, construction activities will not last for more than 18 months at one general location, so construction-related emissions do not need to be included in regional and project-level conformity analysis (40 CFR 93.123(c)(5)).

PF-AQ-1 **Construction Emissions Reduction.** The contractor will comply with all applicable laws and regulations related to air quality, including air quality management district regulations and local ordinances, as follows:

- Water or dust palliative will be applied to the site and equipment as often as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a “no visible dust” criterion either at the point of emissions or at the right-of-way line, depending on local regulations.
- Soil binder will be spread on any unpaved roads used for construction purposes, and on all project construction parking areas.
- Trucks will be washed as they leave the right-of-way as necessary to control fugitive dust emissions.
- Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by California Code of Regulations Title 17, Section 93114.
- A dust control plan will be developed documenting sprinkling, temporary paving, speed limits, and timely revegetation of disturbed slopes as needed to minimize construction impacts to existing communities.
- Equipment and materials storage sites will be located as far away from residential and park uses as practicable. Construction areas will be kept clean and orderly.

- Track-out reduction measures, such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic, will be used.

- All transported loads of soils and wet materials will be covered before transport, or adequate freeboard (space from the top of the material to the top of the truck) will be provided to minimize emission of dust (particulate matter) during transportation.

- Dust and mud that are deposited on paved, public roads due to construction activity and traffic will be promptly and regularly removed to decrease particulate matter.

- To the extent feasible, construction traffic will be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.

- Mulch will be installed or vegetation planted as soon as practical after grading to reduce windblown particulate in the area.

2.2.6.3.2 Regional Conformity

The project is listed in the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016-2040 RTP/SCS): A Plan for Mobility, Accessibility, Sustainability and a High Quality of Life (adopted April 2016) (RTP ID 2M0719) financially constrained Regional Transportation Plan, which was adopted by the Southern California Association of Governments (SCAG) on April 7, 2016, and FHWA and FTA made a regional conformity determination finding on June 1 and 2, 2016. The project is also included in SCAG's financially constrained 2017 Federal Transportation Improvement Program (2017 FTIP). The SCAG 2017 FTIP, was determined to conform by FHWA and FTA on December 16, 2016. The design concept and scope of the Build Alternatives is consistent with the project description in the 2016-2040 RTP/SCS and the 2017 FTIP, and the "open to traffic" assumptions of SCAG's regional emissions analysis.

2.2.6.3.3 Project Level Conformity

Nonattainment/maintenance areas are subject to the Transportation Conformity Rule, which requires local transportation and air quality officials to coordinate planning to ensure that transportation projects such as road construction do not affect an area's ability to reach its clean air goals. The Basin is an attainment area for CO, NO_2, and SO_2 for both state and federal standards. The Basin is a nonattainment area for O_3 and $PM_{2.5}$ under both state and federal standards. The Basin is nonattainment for PM_{10} under state standards and serious maintenance under federal standards; refer to Table 2.2.6-1.

An Air Quality Conformity Analysis (AQCA) was prepared for the project and submitted to the FHWA on July 11, 2018. The FHWA issued their Conformity Determination on August 6, 2018. The FHWA Conformity Determination is provided in Chapter 4.0, Comments and Coordination.

2.2.6.3.4 Particulate Matter Hot-Spot Analysis

A hot-spot analysis is required in nonattainment and maintenance areas for CO, PM_{10}, and $PM_{2.5}$. Transportation conformity requirements become effective one year after an area is

designated as nonattainment. A hot-spot analysis is required for a project of air quality concern (POAQC). The Build Alternatives are within a maintenance area for federal PM_{10} standards and nonattainment area for federal $PM_{2.5}$ standards. Therefore, per 40 CFR Part 93, analyses are required for conformity purposes. However, the EPA does not require hot-spot analyses (either qualitative or quantitative) for those that are not listed in Section 93.123(b)(1) as a POAQC. A hot-spot analysis is defined in 40 CFR 93.101 as an estimation of likely future localized pollutant concentrations resulting from a new transportation project and a comparison of those concentrations to the relevant air quality standard. A hot-spot analysis assesses the air quality impacts on a scale smaller than an entire nonattainment or maintenance area, including, for example, congested roadway intersections and highways or transit terminals. Such an analysis is a means of demonstrating that a transportation project meets FCAA conformity requirements to support state and local air quality goals with respect to potential localized air quality impacts.

The following criteria are directly associated with 40 CFR 93.123(b)(1). The associated discussions address why the proposed project does not qualify as a POAQC:

i. New or expanded highway projects that have a significant number of or significant increase in diesel vehicles.

Table 2.2.6-4, Opening Year (2035) Build Alternative and No-Build Alternative Traffic Volumes, depicts the Opening Year Build Alternative and No-Build Alternative traffic volumes along each segment within the project limits. It should be noted that the project would not increase roadway capacity; therefore, the Build and No-Build volumes would be the same. As depicted in Table 2.2.6-4, existing annual average daily traffic (AADT) volumes range from 1,400 to 93,900, which include truck volumes that range from 28 to 1,878 AADT.

Table 2.2.6-4: Opening Year (2035) Build Alternative and No-Build Alternative Traffic Volumes

Segment	Total AADT[1,2]	Truck AADT[2,3]	Truck Percent Change
I-605 Southbound			
North of Off-Ramp	84,900	1,698	0%
South of Westbound Off-Ramp	78,000	1,560	0%
South of Eastbound Collector Road Off-Ramp	69,100	1,382	0%
South of On-Ramp	78,300	1,566	0%
Off-Ramp to Westbound Katella Avenue	7,000	140	0%
Off-Ramp to Collector Road (Eastbound Katella Avenue)	8,700	174	0%
Off-Ramp to Eastbound Katella Avenue	8,700	174	0%
On-Ramp from Katella Avenue	15,900	318	0%
Collector Road South of Westbound Katella Avenue On-Ramp	15,900	318	0%
Collector Road South of Eastbound Katella Avenue Off-Ramp	7,400	148	0%
I-605 Northbound			
South of Off-Ramp	78,000	1,560	0%
South of On-Ramp	67,500	1,350	0%
North of On-Ramp	93,900	1,878	0%
Off-Ramp to Katella Avenue	10,000	200	0%
Off-Ramp to Eastbound Katella Avenue	8,700	174	0%
Off-Ramp to Westbound Katella Avenue	1,400	28	0%
On-Ramp from Eastbound Katella Avenue	2,500	50	0%
On-Ramp from Westbound Katella Avenue	13,100	262	0%
On-Ramp from Katella Avenue	15,600	312	0%

Table 2.2.6-4: Opening Year (2035) Build Alternative and No-Build Alternative Traffic Volumes [continued]

Segment	Total AADT[1,2]	Truck AADT[2,3]	Truck Percent Change
Katella Avenue Eastbound			
On-Ramp to Southbound I-605	8,400	168	0%
West of Southbound On-Ramp	26,000	520	0%
West of Southbound Off-Ramp	17,300	346	0%
West of Northbound Off-Ramp	25,800	516	0%
East of Northbound Off-Ramp	40,200	804	0%
Katella Avenue Westbound			
On-Ramp to Southbound I-605	7,400	148	0%
East of On-Ramp	36,500	730	0%
West of NB On-Ramp	23,300	466	0%
West of NB Off-Ramp	24,600	492	0%
West of SB On-Ramp	17,200	344	0%
West of SB Off-Ramp	25,600	512	0%

Notes:
1. Traffic data provided by Iteris, Inc., March 2, 2017.
2. Daily traffic volumes are for both Build and No-Build scenario, as the project would not increase roadway capacity.
3. Trucks account for two percent of the total daily traffic volumes throughout the study area.

The project proposes to improve I-605 and Katella Avenue interchange to improve interchange traffic operations and improve pedestrian and bicycle facilities within the interchange area. The existing I-605 mainline would not be modified, with the exception of the northbound No. 4 lane at the northbound exit ramp. It would be restriped from a through lane to a through lane/ramp exit option. Katella Avenue would be widened and lane geometries would be modified to provide full standard lanes and shoulders through the interchange and to tie in with proposed ramp improvements. Proposed modifications to the northbound ramps and Katella Avenue east of the northbound ramps are similar in both Build Alternatives. It is noted that the main difference between Alternative 2 and Alternative 3 is the removal of the southbound loop on-ramp and the widening of the southbound direct on-ramp, which would not affect traffic volumes.

As stated above, the project would not increase roadway capacity and therefore consist of the same Opening Year Build Alternative and No-Build Alternative traffic volumes. The truck volumes, ranging from 28 to 1,878 AADT, would remain below 10,000 AADT on all segments. In addition, because the project would not increase roadway capacity, all truck change percentages would remain at zero percent. Therefore, the proposed improvements would not directly generate new heavy truck trips in the project area.

ii. Projects affecting intersections that are Level of Service (LOS) D, E, or F with a significant number of diesel vehicles, or those that will change to LOS, D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project.

The Build Alternatives do not affect intersections that are at LOS D, E, or F with a significant number of diesel vehicles. Based on the traffic data in Table 2.2.6-4, the Build Alternatives would not result in change to traffic volumes, vehicle mix, or other factors that would cause an increase in emissions.

Table 2.2.6-5, Existing, Opening Year (2035), and Horizon Year (2055) Level of Service, summarizes the existing, Opening Year, and Horizon Year LOS within the project area

under Build and No-Build conditions. As shown in Table 2.2.6-5, LOS would generally worsen in the p.m. peak hour (i.e. delay would increase) in the future years. However, LOS would remain acceptable (LOS D or better) during the p.m. peak hour.

Table 2.2.6-5: Existing, Opening Year (2035), and Horizon Year (2055) Level of Service

Study Intersection	Existing LOS[1]		Opening Year and Horizon Year LOS[1,2]					
	AM	PM	No-Build		Alt 2[2]		Alt 3[3]	
			AM	PM	AM	PM	AM	PM
I-605 Northbound Ramp Intersection	A	A	A	C	A	B	A	C
I-605 Southbound Ramp Intersection	-	-	-	-	-	-	B	C

Notes:
1. LOS data provided by Iteris, Inc., February 14, 2017.
2. Opening Year and Horizon Year LOS would be the same, as the project would not increase roadway capacity under either scenario.
3. Changes in LOS among alternatives due to geometric changes in the number of lanes.

iii. New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location.

The Build Alternatives do not involve new bus or rail terminals or transfer points with a significant number of diesel vehicles congregating at a single location.

iv. Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location.

The Build Alternatives do not involve expanded bus or rail terminals or transfer points with a significant number of diesel vehicles congregating at a single location.

v. Projects in or affecting locations, areas, or categories of sites that are identified in the $PM_{2.5}$ and PM_{10} applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

The Build Alternatives are consistent with SCAG RTP and FTIP (RTP ID 2M0719 and FTIP ID ORA170005) and is intended to meet the traffic needs in the area based on local land use plans.

EPA's March 2006 guidance document, Transportation Guidance for Qualitative Hot-spot Analysis in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas, references a two-step criteria to identify "a significant volume of diesel truck traffic." The first criterion is facilities with greater than 125,000 ADT volumes. If the first criterion is met, the second criterion is that 8 percent or more of said traffic volumes (i.e., 10,000 vehicles or more) are diesel truck traffic volumes. As discussed above, truck volumes would not exceed 10,000 AADT on segments.

As demonstrated above, the Build Alternatives would not involve an increase in diesel truck traffic, as truck volumes would remain the same (under 10,000 AADT), and is in compliance with the RTP/FTIP. Additionally, the Build Alternatives would improve overall performance, improve freeway access and arterial connection, and improve interchange traffic operations within the project limits. Therefore, the project meets the FCAA requirements and is not a project of air quality concern under 40 CFR 93.123(b)(1) and would not cause or contribute to a violation of NAAQS for $PM_{2.5}$. Therefore, this project would not be considered a POAQC under 40 CFR 93.123(b)(1).

2.2.6.3.5 Mobile Source Operational Emissions

Existing, Opening Year, and Horizon Year emissions in the project area were calculated using emissions factors from the latest version of CT-EMFAC (version 6.0). CT-EMFAC was first developed by University of California, Davis (UC Davis) with support from Caltrans and CARB. Versions 3.0 and later were developed by Sonoma Technology, Inc. with permission from UC Davis and with support from Caltrans and San Diego Association of Governments. Five mile per hour (mph) VMT speed bin data was provided by Iteris and include the project study area VMT for the following categories: freeway mainline, ramps, arterials, and HOV lanes. Each category contains VMT from a range of 0 to 70 mph for the AM hour, PM hour, midday period, and night period. Each VMT speed bin value was multiplied by emissions factors from CT-EMFAC, AP-42 (re-entrained dust emissions[4]), and EMFAC2014 (brake and tire wear emissions[5]), and then added together to get the total for each pollutant (ROG, NO_X, CO, PM_{10}, and $PM_{2.5}$). Emissions factors are in grams per day, which were converted to pounds per day (453.59 grams per pound).

Table 2.2.6-6, Study Area Daily Vehicle Emissions in Relation to Daily Vehicle Miles Traveled, depicts daily mobile source emissions in the study area and daily VMT associated with existing conditions, as well as Build and No-Build conditions in the design year. Table 2.2.6-6 provides the emissions that occur from vehicles on the I-605 freeway mainline, HOV lanes, ramps, and the arterials in the surrounding area/project study area. As indicated in Table 2.2.6-6, ROG, NO_X, and CO emissions would decrease in future years despite anticipated increases in VMT from growth. These decreases are attributed to improvements in vehicle emissions over time. PM emissions (both PM_{10} and $PM_{2.5}$) would only increase slightly despite a significant increase in VMT over existing conditions. PM emissions are composed of exhaust, brake- and tire-wear, and re-entrained road dust emissions. Although exhaust emissions would decrease in the future due to improvements in engine and emission control technologies, re-entrained road dust emissions make up a higher fraction of PM. As such, PM emissions become a stronger function of VMT and vehicle distribution. As shown in Table 2.2.6-6, the project's PM emissions would decrease (ranging from -5.88 to -3.03 percent) when compared to No-Build scenarios.

Table 2.2.6-6: Study Area Daily Vehicle Emissions in Relation to Daily Vehicle Miles Traveled

Emissions Source	Daily VMT	Pounds per Day				
		ROG	NO_X	CO	PM_{10}	$PM_{2.5}$
Existing Conditions	454,161	52	268	1,382	114	31
Opening Year (2035) Emissions						
2035 No-Build Alternative	535,644	19	50	446	131	34
Alternative 2	535,644	19	50	446	131	34
- Net Change from No-Build to Build Alternative	0	0	0	0	0	0
- Percent Change from 2035 No-Build Alternative	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Alternative 3	514,249	18	47	422	126	32
- Net Change from No-Build to Build Alternative	-21,395	-1	-3	-24	-5	-2
- Percent Change from 2035 No-Build Alternative	*-4.16%*	*-5.26%*	*-6.00%*	*-5.38%*	*-3.82%*	*-5.88%*
Horizon Year (2055) Emissions						
2055 No-Build Alternative	538,476	18	41	391	132	33
Alternatives 2	538,476	18	41	391	132	33
- Net Change from No-Build to Build Alternative	0	0	0	0	0	0
- Percent Change from 2055 No-Build Alternative	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Alternative 3	516,823	17	38	370	126	32
- Net Change from No-Build to Build Alternative	-21,653	-1	-3	-21	-6	-1
- Percent Change from 2055 No-Build Alternative	*-4.19%*	*-5.56%*	*-7.32%*	*-5.37%*	*-4.55%*	*-3.03%*

Source: Traffic data provided by Iteris and Fehr and Peers, March 24, 2017. Emissions rates from CT-EMFAC and EMFAC2014.

[4] Re-entrained dust (as a fraction of total PM mass) is calculated using the U.S. EPA AP-42 methodology.

[5] Estimated using EMFAC2014 (project level).

Table 2.2.6-7, Vehicle Hours Traveled Summary, depicts the daily vehicle hours traveled (VHT) associated with existing conditions as well as Build (Alternatives 2 and 3) and No-Build conditions in the design year. When compared to No-Build conditions, VHT would slightly decrease for Alternative 2 and increase for Alternative 3 during the AM Peak Hour; refer to Table 2.2.6-7. Additionally, the PM Peak Hour VHT decreases from the No-Build scenario for both Alternatives 2 and 3. Overall, the project would improve travel time in the project area by improving operating efficiency at the interchange.

Table 2.2.6-7: Vehicle Hours Traveled Summary

Scenario	Vehicle Hours Traveled	
	AM Peak Hour	PM Peak Hour
Existing	350,853	419,073
No-Build	498,106	821,990
Alternative 2	488,067	675,455
Alternative 3	635,776	762,718

Source: Vehicle miles traveled data and vehicle hours traveled data provided by Iteris, and Fehr and Peers, May 2017.

2.2.6.3.6 Carbon Monoxide

A hot-spot analysis is required in nonattainment and maintenance areas for CO, PM_{10}, and $PM_{2.5}$. In California, the procedures of the local analysis for CO are modified pursuant to 40 CFR 93.123(a)(1) of the Transportation Conformity Rule. The Transportation Project-Level Carbon Monoxide Protocol (CO Protocol) developed by the Institute of Transportation Studies at the University of California Davis was used to provide the CO quantitative analysis on this project. The CO Protocol outlines the procedure for performing a CO analysis, which was approved by David P. Howekamp, Director of the Air Division of the EPA Region IX, in October 1997. The EPA deemed the CO Protocol as an acceptable option to the mandated quantitative analysis. The CO Protocol incorporates 40 CFR 93.115 through 93.117, and 40 CFR 93.126 through 93.128 into its rules and procedures. As discussed in the Air Quality Assessment, the CO screening analysis concluded that implementation of either Build Alternative would improve interchange efficiency and overall travel time due to overall improvements in VHT during build conditions. Additionally, the Build Alternatives do not involve parking lots, and therefore would not increase the number of vehicles operating in cold start mode. As a result, the Build Alternatives have sufficiently addressed the carbon monoxide impact and no further analysis is needed.

2.2.6.3.7 Interagency Consultation

Because the project is located within a nonattainment area for federal $PM_{2.5}$ and maintenance for federal PM_{10}, analyses are required for conformity purposes per 40 CFR Part 93. A qualitative hot-spot analysis is defined in 40 CFR 93.101 as an estimation of likely future localized pollutant concentrations resulting from a new transportation project and a comparison of those concentrations to the relevant air quality standard. A hot-spot analysis assesses the air quality impacts on a scale smaller than an entire nonattainment or maintenance area, including, for example, congested roadway intersections and highways or transit terminals. Such an analysis is a means of demonstrating that a transportation project meets FCAA conformity requirements to support state and local air quality goals with respect to potential localized air quality impacts.

Pursuant to the interagency consultation requirement of 40 CFR 93.105 (c)(1)(i), the project completed interagency coordination via SCAG's Transportation Conformity Working Group (TCWG), at a meeting on March 28, 2017. At this meeting, the TCWG confirmed that the proposed project is not a POAQC. Therefore, the proposed project would not be considered a POAQC under 40 CFR 93.126 (b)(1), as it would not create a new or worsen an existing $PM_{2.5}$ violation. A copy of TCWG's determination in this regard is included in Appendix C, Transportation Conformity Working Group Determination.

2.2.6.3.8 Mobile Source Air Toxics

As discussed in the Air Quality Assessment, the Build Alternatives would improve vehicular traffic and circulation and would not create a facility that is likely to meaningfully increase MSATs, as the project would not add substantial new vehicular capacity to a freeway or other roadways. As a result, a qualitative analysis in the Air Quality Assessment determined that under all project Build Alternatives in the design year, it is expected there would be reduced MSAT emissions in the immediate area of the project, relative to the No-Build Alternative, due to the reduced VMT associated with more direct routing, and due to EPA's MSAT reduction programs.

2.2.6.3.9 Naturally Occurring Asbestos

The California Geological Survey Geological Map Index was searched for available geological maps, which cover the project study area and surrounding areas. These geological maps indicate geological formations, which are overlaid on a topographic map. Some maps focus on specific issues (i.e., bedrock, sedimentary rocks, etc.), while others may identify artificial fills (including landfills). Geological maps can be effective in estimating permeability and other factors that influence the spread of contamination. According to the California Geological Survey (formerly the California Division of Mines and Geology [CDMG]) document entitled A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos Report (August 2000), the proposed project is not located in an area where NOA is likely to be present.

2.2.6.4 Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measures are required with adherence to the project feature described above.

2.2.6.5 Climate Change

Neither the United States Environmental Protection Agency (U.S. EPA) nor the Federal Highway Administration (FHWA) has issued explicit guidance or methods to conduct project-level greenhouse gas analysis. FHWA emphasizes concepts of resilience and sustainability in highway planning, project development, design, operations, and maintenance. Because there have been requirements set forth in California legislation and executive orders on climate change, the issue is addressed in the California Environmental Quality Act (CEQA) chapter of this document. The CEQA analysis may be used to inform the National Environmental Policy Act (NEPA) determination for the project.

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