APPENDIX 3.3-B: DRAFT FEDERAL GENERAL CONFORMITY DETERMINATION

California High-Speed Rail Authority

San Jose to Merced Project Section

Draft Federal General Conformity Determination

November 2021

CALIFORNIA High-Speed Rail Authority

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being or have been carried out by the State of California pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated July 23, 2019, and executed by the Federal Railroad Administration and the State of California.

EXECUTIVE SUMMARY

The California High-Speed Rail (HSR) system, proposed by the California High-Speed Rail Authority (Authority), will provide intercity, high-speed service on more than 800 miles of guideway throughout California, connecting the major population centers of Sacramento, the San Francisco Bay Area, the Central Valley, Los Angeles, the Inland Empire, Orange County, and San Diego. The San Jose to Central Valley Wye Project Extent (Project)[1], which is the focus of this General Conformity Determination, is a critical link connecting San Jose to the Central Valley portion of the HSR system at the Central Valley Wye in Merced County, which in turn connects to the portion of the system running north to Merced and south to Fresno and southern California.[2]

The General Conformity Rule, as codified in Title 40 Code of Federal Regulations Part 93, Subpart B, establishes the process by which federal agencies determine conformance of proposed projects that are federally funded or require federal approval with applicable air quality standards. This determination must demonstrate that a project would not cause or contribute to new violations of air quality standards, exacerbate existing violations, or interfere with timely attainment or required interim emissions reductions towards attainment.

This draft General Conformity Determination documents the FRA's finding that the Project complies with the General Conformity Rule and that it conforms to the purposes of the area's approved State Implementation Plan and is consistent with all applicable requirements. This draft General Conformity Determination is being issued for public review and comment. The draft General Conformity Determination is available for public review on FRA's docket at https://www.regulations.gov/, Docket FRA-2021-X. Compliance is demonstrated as follows:

- Operations of the Project would result in a reduction of regional emissions of all applicable air pollutants and would not cause a localized exceedance of an air quality standard.
- While emissions generated during construction of the Project would exceed the General Conformity thresholds for nitrogen oxides in the San Francisco Bay Area Air Basin and San Joaquin Valley Air Basin, these emission increases would be offset through a new agreement with BAAQMD and an existing Memorandum of Understanding and Voluntary Emission Reduction Agreement with the San Joaquin Valley Air Pollution Control District, respectively.

[1] The Project Section has been evaluated in three extents: from San Jose to the western limit of the Central Valley Wye; the Central Valley Wye itself; and from the northern limit of the Central Valley Wye to Merced (i.e., the northern portion of the Merced to Fresno Project Section).

[2] As part of its first phase, the California HSR System is planned as seven distinct sections from San Francisco in the north to Los Angeles and Anaheim in the south.

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ACRONYMS AND ABBREVIATIONS

AP-42	USEPA's AP-42 Compilation of Air Pollutant Emission Factors
APCD	air pollution control district
Authority	California High-Speed Rail Authority
BAAQMD	Bay Area Air Quality Management District
Bay Area	San Francisco Bay Area
C.F.R.	Code of Federal Regulations
CAA	Clean Air Act
CalEEMod	California Emissions Estimator Model
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CO	carbon monoxide
EIR	environmental impact report
EIS	environmental impact statement
EMFAC2017	EMission FACtors 2017
EMMA	Environmental Mitigation Management and Assessment system
FRA	Federal Railroad Administration's
Fresno to Bakersfield Final EIR/EIS	Fresno to Bakersfield Section Final EIR/EIS
g/L	grams per liter
GHG	greenhouse gas
HSIPR	High-Speed Intercity Passenger Rail
HSR	High-Speed Rail
I-	Interstate
IAMF	impact avoidance and minimization feature
MBARD	Monterey Bay Air Resources District
Merced to Fresno Final EIR/EIS	Merced to Fresno Section Final EIR/EIS
MOU	memorandum of understanding
mph	miles per hour
MPO	metropolitan planning organizations
NAAQS	national ambient air quality standards
NCCAB	North Central Coast Air Basin
NEPA	National Environmental Policy Act
NO_2	nitrogen dioxide
NO_X	nitrogen oxide
O_3	ozone
PM	particulate matter

PM_{10}	particulate matter less than or equal to 10 microns in diameter
$PM_{2.5}$	particulate matter less than or equal to 2.5 microns in diameter
Project	San Jose to Central Valley Wye Project Extent
Project Section	San Jose to Merced Project Section
ROD	record of decision
RSA	resource study area
SAFE	Safer Affordable Fuel-Efficient
SFBAAB	San Francisco Bay Area Air Basin
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO_X	sulfur oxide
SR	State Route
Statewide Program EIR/EIS	Final Program EIR/EIS for the Proposed California High-Speed Train System
tpy	tons per year
U.S.C.	United States Code
USEPA	U.S. Environmental Protection Agency
VERA	Voluntary Emissions Reduction Agreement
VMT	vehicle miles traveled
VOC	volatile organic compound

1 INTRODUCTION

This draft General Conformity Determination for the San Jose to Central Valley Wye Section of the California High-Speed Rail (HSR) System (Project) (a portion of the San Jose to Merced Project Section [Project Section]) and was prepared consistent with the implementing regulations of Section 176 of the Clean Air Act (CAA). Section 176(c)(1) of the CAA prohibits federal agencies from engaging in, supporting, or providing financial assistance for licensing, permitting or approving any activities that do not conform to an approved CAA implementation plan. That approved plan may be a federal, state, or tribal implementation plan.

The CAA defines nonattainment areas as geographic regions that have been designated as not meeting one or more of the national ambient air quality standards (NAAQS)The CAA requires that each state prepare a State Implementation Plan (SIP) A maintenance plan must be prepared for each former nonattainment area that subsequently demonstrated compliance with the standards. The SIP is a state's plan for how it will meet the NAAQS by the CAA deadlines established by the CAA.

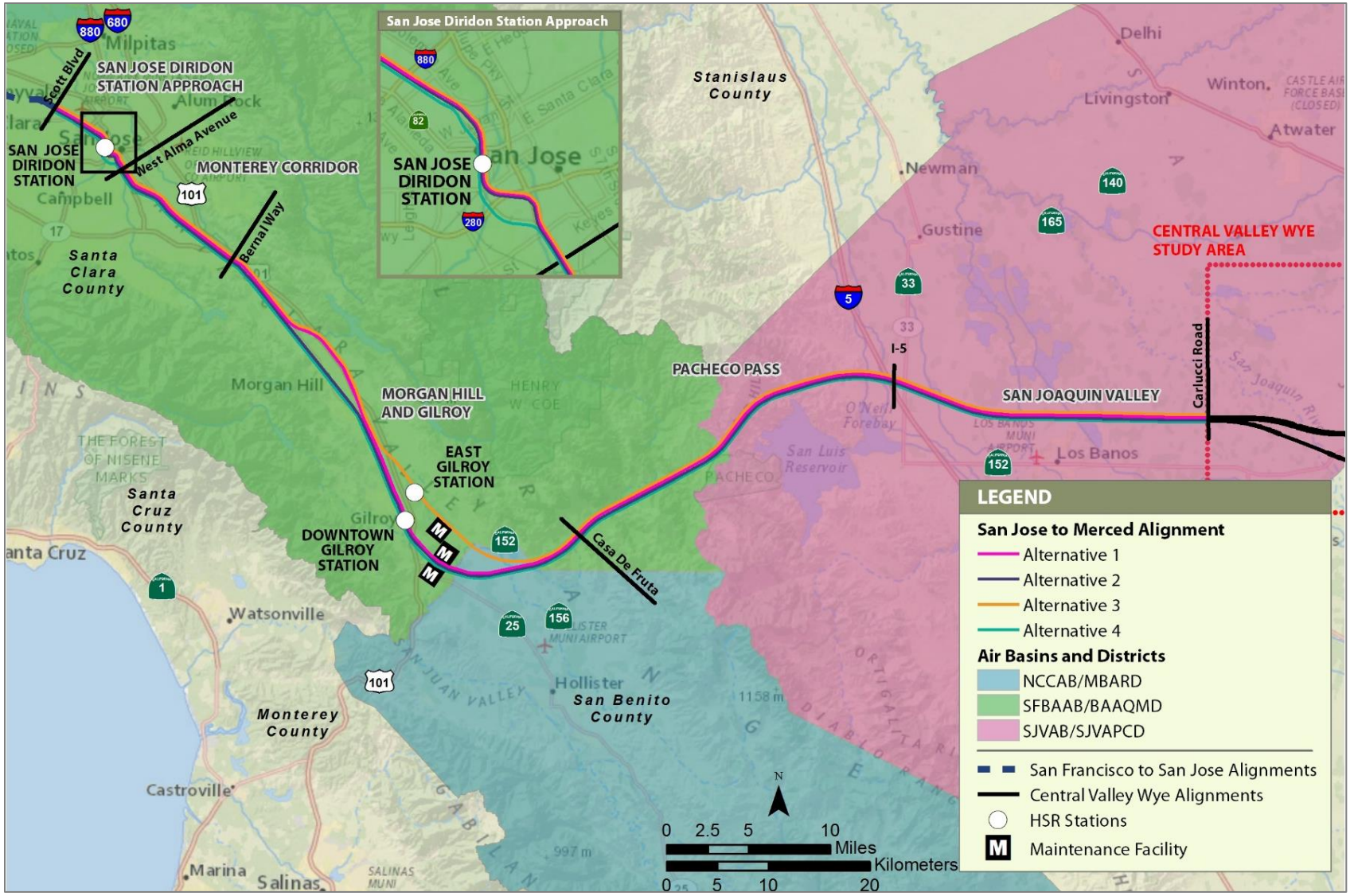
The General Conformity Rule is codified in Title 40 Code of Federal Regulations (C.F.R.)Conformity is defined as "upholding an implementation plan's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards." 40 C.F.R. Part 93 also establishes the process by which federal agencies determine conformity. This determination must demonstrate that the Project would not cause or contribute to new violations of air quality standards, exacerbate existing violations, or interfere with timely attainment or required interim emissions reductions towards attainment. Since the Project is receiving federal funds through grants from the Federal Railroad Administration (FRA), it is an action that may be subject to the General Conformity Rule.

FRA prepared this draft General Conformity Determination for public review and comment. The final General Conformity Determination will be published after the public comment period. Analysis used for preparation of the *San Jose to Merced Environmental Impact Report (EIR)/Environmental Impact Statement (EIS)* was also reviewed and, where appropriate, integrated into this draft General Conformity Determination.

1.1 Regulatory Status of Resource Study Area

In November 1993, the U.S. Environmental Protection Agency (USEPA) two sets of regulations to implement section 176(c) of the CAA. The final transportation conformity regulations were approved on November 24, 1993 to address transportation plans, programs, and projects developed, funded, or approved under title 23 United States Code (U.S.C.) or the Federal Transit Act, 49 U.S.C Section 1601 et seq. (40 C.F.R. § 93 Subpart A). These regulations have been revised several times since they were first issued. While the Transportation Conformity regulations do not apply to the Project, many of the transportation planning documents developed under those regulations are helpful in understanding the regional air quality and planning status of the resource study area (RSA)The final general conformity regulations were approved on November 30, 1993. Because of the federal funding and potential safety and other approvals, the Project is subject to the general conformity regulations. The final general conformity regulations were approved on November 30, 1993. Because of the federal funding and potential safety and other approvals, the Project is subject to the general conformity regulations.

The RSA for the Project is the San Francisco Bay Area Air Basin (SFBAAB) San Joaquin Valley Air Basin (SJVAB), and the North Central Coast Air Basin (NCCAB). Figure 1 shows the Project footprint as it is situated in the three air basins. Planning documents for pollutants for which the RSA is classified as federal nonattainment or maintenance are developed by the Bay Area Air Quality Management District (BAAQMD), Monterey Bay Air Resources District (MBARD), San Joaquin Valley Air Pollution Control District (SJVAPCD), and the California Air Resources Board (CARB) and approved by the USEPA. Table 1 lists the planning documents relevant to the Project's RSA.



Source: Authority 2017, CARB 2012

Figure 1 Resource Study Area Air Basins

Table 1 Planning Documents Relevant to the Resource Study Area

Plan	Status
San Francisco Bay Area Air Basin	
2001 San Francisco Bay Area Ozone Attainment Plan for the 1-Hour National Ozone Standard	In a March 30, 2001, *Federal Register* notice (66 Fed. Reg. 17379), the USEPA proposed to make a finding that the Bay Area has not attained the national 1-hour O_3 standard. The USEPA proposed partial approval and partial disapproval of the 1999 Ozone Attainment Plan. On August 28, 2001, the USEPA took final action on its March 2001 notice, triggering a CAA requirement that a new plan be submitted within 1 year of the effective date of the USEPA's final action. The revised 2001 Ozone Attainment Plan included the necessary changes to address the USEPA's disapproval of the prior plan. In addition, to address the requirements triggered by the USEPA's finding of failure to attain, the plan included a new emissions inventory and commitments to adopt and implement additional control measures to attain the standard by 2006, the attainment deadline. It also included additional contingency measures in the event the Bay Area did not attain the standard by 2006.
2017 Clean Air Plan	Although not a federal planning document, the Bay Area 2017 Spare the Air, Cool the Climate (Clean Air Plan) provided a comprehensive plan to improve Bay Area air quality and protect public health. The Clean Air Plan defined a control strategy that the BAAQMD and its partners is implementing to: (1) attain all state and national ambient air quality standards; (2) eliminate disparities among Bay Area communities in cancer health risk from toxic air contaminants; and (3) reduce GHG emissions to protect the climate.
North Central Coast Air Basin	
2005 Report on Attainment of the California Particulate Matter Standards in the Monterey Bay Region	Although not a federal planning document, the plan fulfilled the requirements of Senate Bill 656 to reduce public exposure to PM. The plan outlines readily available, feasible, and cost-effective control measures for PM within the MBARD.
2007 Federal Maintenance Plan for Maintaining the National Ozone Standard in the Monterey Bay Region	This plan presents the strategy for maintaining the NAAQS for O_3 in the NCCAB. The NCCAB attained the 8-hour NAAQS in 2014.
2012–2015 Air Quality Management Plan	Although not a federal planning document, the Air Quality Management Plan is prepared triennially by the MBARD to document the region's continued progress toward meeting the state 8-hour O_3 standard.
San Joaquin Valley Air Basin	
2007 PM_{10} Maintenance Plan and Request for Redesignation	On September 25, 2008, the USEPA redesignated the San Joaquin Valley to attainment for the PM_{10} NAAQS and approved the 2007 PM_{10} Maintenance Plan.
2007 8-Hour Ozone Plan	On May 5, 2010, the USEPA reclassified the 8-hour O_3 nonattainment status of the San Joaquin Valley from "serious" to "extreme." The reclassification required the state to incorporate more stringent requirements, such as lower permitting thresholds, and implement reasonably available control technologies at more sources. The 2007 8-hour Ozone Plan contained a comprehensive and exhaustive list of regulatory and incentive-based measures to reduce emissions of O_3 and PM precursors throughout the San Joaquin Valley. On December 18, 2007, the SJVAPCD Governing Board adopted the plan with an amendment to extend

Plan	Status
	the rule adoption schedule for organic waste operations. On January 8, 2009, the USEPA found that the motor vehicle budgets for 2008, 2020, and 2030 from the 2007 8-hour Ozone Plan were not adequate for transportation conformity purposes. The next plan will address the USEPA's 2008 8-hour O_3 standard of 75 parts per billion.
2013 Plan for the Revoked 1-Hour Ozone Standard	On September 19, 2013, the USEPA approved the San Joaquin Valley's 2013 Plan for the Revoked 1-Hour Ozone Standard. Effective June 15, 2005, the USEPA revoked the federal 1-hour O_3 standard for areas including the SJVAB.
2015 Plan for the 1997 $PM_{2.5}$ Standard	On April 30, 2008, the SJVAPCD adopted the 2008 $PM_{2.5}$ Plan satisfying all federal implementation requirements for the 1997 federal $PM_{2.5}$ standard. Per guidance from the USEPA, the plan addressed the 1997 $PM_{2.5}$ standard under Subpart 1 of federal CAA Title 1, Part D (Subpart 1). Subsequently, in 2013, the D.C. Circuit Court ruled that the USEPA erred by solely using CAA Subpart 1 in establishing its $PM_{2.5}$ implementation rule, without consideration of the PM-specific provisions in CAA Title 1, Part D, Subpart 4 (Subpart 4). In June 2014, the USEPA classified the SJVAB as a "moderate" nonattainment area under Subpart 4. The USEPA recently reclassified the Valley as "serious" nonattainment effective May 7, 2015. The 2015 $PM_{2.5}$ Plan addresses the federal mandates for a "serious" nonattainment area related to the 1997 $PM_{2.5}$ standard.
2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard	The 2016 Moderate Area Plan addresses the federal mandates for areas classified as "moderate" nonattainment for the 2012 $PM_{2.5}$ federal annual air quality standard of 12 micrograms per cubic meter
2016 Plan for the 2008 8-Hour Ozone Standard[1]	The District adopted the 2016 Plan for the 2008 8-Hour Ozone Standard in June 2016. This plan satisfies CAA requirements and ensures expeditious attainment of the 75 parts per billion 8-hour O_3 standard.
2018 $PM_{2.5}$ Plan	The 2018 $PM_{2.5}$ Plan provides a single integrated plan to attain the federal health-based 1997, 2006, and 2012 NAAQS. The plan builds upon comprehensive strategies already in place from previously adopted SJVAPCD attainment plans and measures.

Sources: BAAQMD 2001, 2017; MBUAPCD 2005, 2007, 2017; SJVAPCD 2007a, 2007b, 2013, 2015, 2016a, 2016b, 2018

BAAQMD = Bay Area Air Quality Management District
Bay Area = San Francisco Bay Area
CAA = Clean Air Act
CARB = California Air Resources Board
CO = carbon monoxide
GHG = greenhouse gases
MBARD = Monterey Bay Air Resources District
NAAQS = national ambient air quality standards
NCCAB = North Central Coast Air Basin
O_3 = ozone
PM_{10} = particulate matter 10 microns or less in diameter
$PM_{2.5}$ = particulate matter 2.5 microns or less in diameter
SFBAAB = San Francisco Bay Area Air Basin
SIP = State Implementation Plan
SJVAB = San Joaquin Valley Air Basin
SJVAPCD = San Joaquin Valley Air Pollution Control District
USEPA = U.S. Environmental Protection Agency

1.2 General Conformity Regulations

On November 30, 1993, the USEPA promulgated final General Conformity regulations at 40 C.F.R. Part 93 Subpart B for all federal activities except highways and transit programs covered by Transportation Conformity. The regulations in Subpart B were subsequently amended in March 2010. Because the Project will not be funded or require approval(s) under Title 23 U.S.C. or the Federal Transit Act, 49 U.S.C Section 1601 et seq., the General Conformity requirements are applicable, rather than Transportation Conformity. In general terms, unless a project is exempt under 40 C.F.R. Section 93.153(c) or is not on the agency's presumed-to-conform list pursuant to 40 C.F.R. Section 93.153(f), a General Conformity Determination is required where a federal action in a nonattainment or maintenance area causes an increase in the total of direct

and indirect emissions of the relevant criteria pollutants and precursor pollutants that are equal to or exceed certain *de minimis* rates.

During the applicability analysis, the federal agency determines the following:

- Whether the action will occur in a nonattainment or maintenance area
- Whether one or more of the specific exemptions apply to the action
- Whether the federal agency has included the action on its list of presumed-to-conform actions
- Whether the total direct and indirect emissions are below or above the *de minimis* levels
- Where a facility has an emissions budget approved by the state or tribe as part of the SIP or Tribal Implementation Plan, the federal agency determines that the emissions from the Project are within the budget

The USEPA Guidance states that the applicability analysis can be, but is not required to be, completed concurrently with any analysis required under NEPA. The applicability analysis for this Project is described in Section 8, Applicability Analysis. If after the applicability analysis, the Federal agency concludes it should conduct a conformity determination, it may demonstrate conformity by one or more of several prescribed methods. These methods include:

- Demonstrating that the direct and indirect emissions are specifically identified in the relevant implementation plan
- Obtaining a written statement from the entity responsible for the implementation plan that the total indirect and direct emissions from the action, along with other emissions in the area, will not exceed the total implementation plan emission budget
- Fully offsetting the total direct and indirect emissions by reducing emissions of the same pollutant in the same nonattainment or maintenance area

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2 CALIFORNIA HIGH-SPEED RAIL PROJECT

2.1 California High-Speed Rail System

The Authority, is responsible for planning, designing, constructing, and operating the HSR system. Its mandate is to develop an HSR system connecting the state's major population centers and coordinate with the state's existing transportation network, which includes intercity rail and bus lines, regional commuter rail lines, urban rail and bus transit lines, highways, and airports.

The HSR system will provide intercity, high-speed service on more than 800 miles of railroad throughout California, connecting the major population centers of Sacramento, the San Francisco Bay Area (Bay Area), the Central Valley, Los Angeles, the Inland Empire, Orange County, and San Diego. It would use state-of-the-art, electrically powered, high-speed, steel-wheel-on-steel-rail technology, including contemporary safety, signaling, and automated train-control systems, with trains capable of operating up to 220 miles per hour (mph) over a grade-separated, dedicated guideway alignment.

The FRA is responsible for oversight and regulation of railroad safety and implementation of the High-Speed Intercity Passenger Rail (HSIPR)As part of the HSIPR Program, the FRA is providing partial funding for the environmental analysis and documentation required under NEPA, CEQA, and other related environmental laws. Pursuant to U.S. Code Title 23 Section 327, under the NEPA Assignment Memorandum of Understanding between the FRA and the State of California, effective July 23, 2019, the Authority is the federal lead agency for environmental reviews for all Authority Phase 1 and Phase 2 California HSR System projects. The FRA performs Clean Air Act Conformity determinations and other federal approvals retained by the FRA under the NEPA Assignment Memorandum of Understanding.

In April 2012 and May 2014, respectively, the FRA and the Authority published the *Merced to Fresno Section Final EIR/EIS* (Merced to Fresno Final EIR/EIS) (Authority and FRA 2012)and *Fresno to Bakersfield Section Final EIR/EIS* (Fresno to Bakersfield Final EIR/EIS) (Authority and FRA 2014). The FRA issued the Record of Decision (ROD) for the Fresno to Bakersfield Project in June 2014. Both projects are within the SJVAB, and a General Conformity Determination was prepared as part of the environmental processes to comply with the CAA. The Merced to Fresno and Fresno to Bakersfield General Conformity Determinations include the Authority's commitment to offset all emissions to net zero through a Voluntary Emissions Reduction Agreement (VERA) between the Authority and the SJVAPCD. between the Authority and the SJVAPCD. Although the San Jose to Merced Project Section of the HSR system is independent of the other HSR system project sections for purposes of NEPA and CEQA analysis, certain construction activities may occur concurrently with construction activities for other project sections within the SFBAAB and SJVAB. Therefore, estimates of cumulative emissions, where available, have been presented in Section 13, Estimated Emission Rates and Comparison to *de minimis* Thresholds—Cumulative Analysis, of this document. These future emissions estimates have been included in this document in the interest of full disclosure of future construction emissions that may occur in the SFBAAB and SJVAB from other sections of the HSR system; each of these sections would undergo separate conformity determinations later.

2.2 California High-Speed Rail System—San Jose to Central Valley Wye Project Extent

The Project will provide HSR service between San Jose Diridon Station in downtown San Jose, with a Gilroy station in either downtown Gilroy or east Gilroy, and a station in downtown Merced. It will connect San Jose to the Central Valley portion of the HSR system at the Central Valley Wye in Merced County, which in turn would connect to the portion of the system running north to Merced and south to Fresno and southern California.

The Project is designed to allow trains to and from the Bay Area to transition smoothly from north-south to east-west travel with a minimum reduction in speed to achieve the Proposition 1A travel time requirement. Proposition 1A requires that the HSR system be designed to achieve a nonstop

service travel time of 2 hours and 10 minutes between San Jose and Los Angeles Union Station.[3] The Project follows existing transportation corridors to the extent feasible, as directed by Proposition 1A.[4]

The Project corridor is between Scott Boulevard and Carlucci Road and constitutes approximately 91 miles of the approximately 145-mile-long Project Section, which includes dedicated HSR track and systems, and station locations at San Jose Diridon and Gilroy; an MOWF in the Gilroy area, and an MOWS near Turner Island Road in the Central Valley. HSR stations at San Jose Diridon and Gilroy would support transit-oriented development, provide an interface with regional and local mass transit services, and provide connectivity to the South Bay and Central Valley highway network.[5] The Project begins at Scott Boulevard in Santa Clara. The HSR infrastructure and operations transition from the blended system between San Francisco and Santa Clara to a fully dedicated system north of the San Jose Diridon Station, either at Scott Boulevard in Santa Clara or near I-880; or, in the case of Alternative 4, the blended system extends to downtown Gilroy. The Project continues south and east from Gilroy, continuing east through the Pacheco Pass to the Central Valley to its end at Carlucci Road, the western limit of the Central Valley Wye.

The Project comprises the following five subsections:

- **San Jose Diridon Station Approach—**Extends approximately 6 miles from north of the San Jose Diridon Station at I-880 in San Jose or Scott Boulevard in Santa Clara to West Alma Avenue in San Jose. This subsection includes San Jose Diridon Station and overlaps the southern portion of the San Francisco to San Jose Project Section.
- **Monterey Corridor—**Extends approximately 9 miles from West Alma Avenue to Bernal Way in the community of South San Jose. This subsection is entirely within the city of San Jose.
- **Morgan Hill and Gilroy**—Extends 30–32 miles from Bernal Way in the community of South San Jose to Casa de Fruta Parkway/State Route (SR) 152 in the community of Casa de Fruta in Santa Clara County.
- **Pacheco Pass**—Extends approximately 25 miles from Casa de Fruta Parkway/SR 152 to I-5 in Merced County.
- **San Joaquin Valley**—Extends approximately 18 miles from I-5 to Carlucci Road in unincorporated Merced County.

The Authority has developed four end-to-end alternatives for the Project: Alternative 1, Alternative 2, Alternative 3, and Alternative 4. Each alternative consists of a variety of alignment and station options. It is estimated that construction of the Project would take approximately 7 years, with initiation of construction in 2022 and completion in 2028.

[3] Proposition 1A requires that the HSR system be designed to achieve a nonstop service travel time of 2 hours and 40 minutes between San Francisco and Los Angeles Union Station, including a 30-minute ride between San Francisco and San Jose (§ 2704.09(b)(4)).

[4] Proposition 1A requires that the HSR system be designed to operate on an alignment that follows existing transportation and utility corridors to the extent feasible (§ 2704.09(g)).

[5] *South Bay* refers to Santa Clara County.

3 AIR QUALITY CONDITIONS IN THE RESOURCE STUDY AREA

3.1 Meteorology and Climate

Air quality is affected by the rate and location of pollutant emissions and by meteorological conditions that influence movement and dispersal of pollutants in the atmosphere. Atmospheric conditions, such as wind speed, wind direction, and air temperature gradients, along with local topography, provide the link between air pollutant emissions and local air quality levels.

Elevation and topography can affect localized air quality. The Project extent crosses the SFBAAB, NCCAB, and SJVAB. Within the SFBAAB, temperatures in the Santa Clara Valley are warm on summer days and cool on summer nights, and winter temperatures are mild. Winds in the valley are greatly influenced by the terrain, resulting in a prevailing flow that roughly parallels the valley's northwest-southeast axis. Within the NCCAB, the semi-permanent high-pressure cell in the eastern Pacific, known as the Pacific High, is the basic controlling factor in the climate. The generally northwest-southeast orientation of mountainous ridges tends to restrict and channel the summer onshore air currents. In the fall and winter, the surface winds become weak, which can lead to pollutant transport from the SFBAAB and SJVAPCD into the NCAAB. Within the SJVAB, summer temperatures often exceed 100 degrees Fahrenheit, and the surrounding mountain ranges restrict air movement through and out of the valley. Air pollutants often tend to collect, leading to higher concentrations of emitted pollutants.

3.2 Ambient Air Quality in the Resource Study Area

The CARB maintains ambient air monitoring stations for criteria pollutants throughout California. There are three monitoring stations in the vicinity of the HSR alignment alternatives in Santa Clara County, and one relevant monitoring station in both San Benito and Merced Counties. These stations provide representative ambient criteria pollutant concentrations. The addresses and distances of the stations to the HSR alignment are summarized below.

- San Jose—Jackson Street (156B Jackson Street, San Jose, CA 95110): Approximately 1 mile northeast.
- San Martin—Murphy Avenue (13030 Murphy Ave., San Martin, CA 95046): Approximately 0.25 mile east.
- Gilroy—9th Street (9th and Princeville, Gilroy, CA 95020): Approximately 0.5 mile west.
- Hollister—Fairview Road (1979 Fairview Rd., Hollister, CA 95023): Approximately 9 miles south.
- Merced—S. Coffee Avenue (385 S. Coffee Avenue, Merced, CA 95340): Approximately 18 miles northeast.

Table 2 summarizes the results of ambient monitoring at these stations for the most recent 3 years of available data. Some stations only monitor ozone (O_3), whereas others monitor carbon monoxide (CO), nitrogen dioxide (NO_2), and particulate matter less than or equal to 10 microns in diameter (PM_{10})and PM less than or equal to 2.5 microns in diameter ($PM_{2.5}$).

Between 2016 and 2018, monitored CO, sulfur dioxide (SO_2) NO_2 concentrations did not exceed any federal or state standards at any of the stations that reported monitoring data for these pollutants. However, the state and federal standards for O_3, PM_{10}, and $PM_{2.5}$ were exceeded at one or more stations that reported monitoring data for these pollutants. Using violations of the ambient air quality standards as a proxy for air quality, O_3 and PM conditions tend to be poorest in the vicinity of the eastern portion of the Project in Merced County, with air quality improving westward toward the SFBAAB.

3.3 Resource Study Area Emissions

The CARB maintains an annual emission inventory for each county and air basin in the state. The inventories for Santa Clara, San Benito, and Merced Counties consist of data submitted to CARB

by the local air districts plus estimates for certain source categories, which are provided by CARB staff.

The most recent published inventory data for Santa Clara, San Benito, and Merced Counties is summarized in Table 3. Based on the 2012 air pollutant inventory data, except for San Benito County, mobile source emissions represent most of the volatile organic compounds (VOC), NO_X, and CO emissions. In San Benito County, area sources represent most VOC emissions, and mobile source emissions represent the majority of NO_X and CO. Area sources represent the majority of PM_{10} and $PM_{2.5}$ emissions in all three counties.

Table 2 Ambient Criteria Pollutant Concentration Data at Air Quality Monitoring Stations along the Project Extent

Pollutant and Standards	San Jose—Jackson Street			San Martin—Murphy Avenue			Gilroy—9th Street			Hollister—Fairview Road			Merced—S. Coffee Avenue		
	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
Ozone (O_3) [a]															
Maximum 1-hour concentration (ppm)	0.087	0.121	0.078	0.096	0.096	0.092	0.079	0.096	0.097	0.073	0.078	0.077	0.097	0.093	0.104
Maximum 8-hour concentration (ppm)	0.066	0.098	0.061	0.071	0.086	0.080	0.070	0.084	0.065	0.060	0.072	0.063	0.086	0.084	0.082
Number of days standard exceeded[1]															
CAAQS 1-hour (>0.09 ppm)	0	3	0	1	1	0	0	1	1	0	0	0	2	0	4
NAAQS 8-hour (>0.070 ppm)	0	4	0	1	3	1	0	1	0	0	1	0	28	16	21
CAAQS 8-hour (>0.070 ppm)	0	4	0	1	3	1	0	1	0	0	1	0	29	17	23
Carbon Monoxide (CO) [b]															
Maximum 8-hour concentration (ppm)	1.4	1.8	2.1	Station does not monitor CO			Station does not monitor CO			Station does not monitor CO			Station does not monitor CO		
Maximum 1-hour concentration (ppm)	1.9	2.1	2.5												
Number of days standard exceeded[1]															
NAAQS 8-hour (≥9 ppm)	0	0	0												
CAAQS 8-hour (≥9.0 ppm)	0	0	0												
NAAQS 1-hour (≥35 ppm)	0	0	0												
CAAQS 1-hour (≥20 ppm)	0	0	0												
Nitrogen Dioxide (NO_2) [a]															
National maximum 1-hour concentration (ppm)	51.1	67.5	86.1	Station does not monitor NO_2			Station does not monitor NO_2			Station does not monitor NO_2			35.4	38.9	45.8
State maximum 1-hour concentration (ppm)	51	67	86										35	38	45
State annual average concentration (ppm)	11	N/A	12										6	7	7
Number of days standard exceeded															
NAAQS 1-hour (98th Percentile>0.100 ppm)	0	0	0										0	0	0
CAAQS 1-hour (0.18 ppm)	0	0	0										0	0	0
Annual standard exceeded?															
NAAQS annual (>0.053 ppm)	No	No	No										No	No	No
CAAQS annual (>0.030 ppm)	No	No	No										No	No	No
Particulate Matter (PM_{10})[2, a]															
National[3] maximum 24-hour concentration (mg/m^3)	40.0	69.4	155.8	Station does not monitor PM_{10}			Station does not monitor PM_{10}			44.3	80.9	95.9	Station does not monitor PM_{10}		
National[3] second-highest 24-hour concentration (mg/m^3)	35.2	67.3	115.4							43.2	74.7	84.1			
State[4] maximum 24-hour concentration (mg/m^3)	41.0	69.8	121.8							N/A	N/A	N/A			
State[4] second-highest 24-hour concentration (mg/m^3)	37.5	67.6	118.5							N/A	N/A	N/A			
National annual average concentration (mg/m^3)	17.5	20.7	23.0							16.5	19.6	20.4			
State annual average concentration (mg/m^3)[5]	18.3	21.3	23.1							N/A	N/A	N/A			

Pollutant and Standards	San Jose—Jackson Street			San Martin—Murphy Avenue			Gilroy—9th Street			Hollister—Fairview Road			Merced—S. Coffee Avenue		
	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
Number of days standard exceeded[1]															
NAAQS 24-hour (>150 mg/m^3)[6]	0	0	3							0	0	0			
CAAQS 24-hour (>50 mg/m^3)[6]	0	19	12							N/A	N/A	N/A			
Annual standard exceeded?															
CAAQS annual (>20 mg/m^3)	No	Yes	Yes							N/A	N/A	N/A			
Particulate Matter ($PM_{2.5}$)[a]															
National[3] maximum 24-hour concentration (mg/m^3)	22.6	49.7	133.9				16.0	48.4	97.5	20.4	42.0	52.7	43.0	69.3	88.2
National[3] second-highest 24-hour concentration (mg/m^3)	21.8	46.5	130.5				15.8	40.7	84.0	17.2	34.3	49.4	43.0	60.6	81.7
State[4] maximum 24-hour concentration (mg/m^3)	22.7	49.7	133.9				16.0	48.4	97.5	20.4	42.0	52.7	43.0	69.3	88.2
State[4] second-highest 24-hour concentration (mg/m^3)	21.8	46.5	130.5				15.3	40.7	84.0	17.2	34.3	49.4	43.0	60.6	81.7
National annual average concentration (mg/m^3)	8.3	9.5	12.7				5.6	5.4	7.7	4.3	5.0	7.1	11.9	13.2	15.1
State annual average concentration (mg/m^3)[5]	8.4	N/A	12.9	Station does not monitor $PM_{2.5}$			N/A	N/A	7.9	N/A	5.1	7.2	11.9	13.2	15.1
Number of days standard exceeded[1]															
NAAQS 24-hour (>35 mg/m^3)	0	6	16				0	2	13	0	1	11	5	19	21
Annual standard exceeded?															
NAAQS annual (>12.0 mg/m^3)	No	No	Yes				No	No	No	No	No	No	No	Yes	Yes
CAAQS annual (>12 mg/m^3)	No	No	Yes				No	No	No	No	No	No	No	Yes	Yes
Sulfur Dioxide (SO_2)															
Maximum 1-hour concentration (ppm)	0.0018	0.0036	0.0069	Station does not monitor SO_2			Station does not monitor SO_2			Station does not monitor SO_2			Station does not monitor SO_2		
Number of days standard exceeded[1]															
NAAQS 1-hour (>0.0075 ppm)	0	0	0												
CAAQS 1-hour (>0.25 ppb)	0	0	0												

Sources: [a] CARB 2020 [b] USEPA 2020

[1] An exceedance of a standard is not necessarily a violation because of the regulatory definition of a violation.

[2] National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.

[3] State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, state statistics are based on California-approved samplers.

[4] Measurements usually are collected every 6 days.

[5] State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than national criteria.

[6] Mathematical estimate of how many days' concentrations would have been measured as higher than the level of the standard had each day been monitored. Values have been rounded.

CAAQS = California ambient air quality standards

mg/m^3 = milligrams per cubic meter

NAAQS = national ambient air quality standards

ppm = parts per million

> = greater than

N/A = not applicable or there was insufficient or no data available to determine the value

Table 3 Estimated Annual Average Emissions for Santa Clara, San Benito, and Merced Counties (2012 data published in 2017) (tons per day)

Source Category	Santa Clara County						San Benito County						Merced County					
	VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Stationary Sources																		
Fuel Combustion	1	7	10	3	1	1	<1	<1	1	0	<1	<1	<1	2	2	<1	<1	<1
Waste Disposal	1	<1	<1	<1	<1	<1	<1	0	0	0	0	0	2	<1	<1	<1	0	0
Cleaning and Surface Coatings	7	0	0	0	0	0	<1	0	0	0	<1	<1	1	0	0	0	<1	<1
Petroleum Production & Marketing	2	0	0	0	0	0	<1	0	0	0	0	0	<1	0	0	0	0	0
Industrial Processes	2	<1	1	<1	1	1	<1	<1	<1	0	1	<1	2	<1	<1	<1	1	<1
Area-Wide Sources																		
Solvent Evaporation	15	0	0	0	0	0	1	0	0	0	0	0	4	0	0	0	0	0
Miscellaneous Processes	2	15	3	<1	14	4	1	2	<1	<1	6	1	18	5	1	<1	26	5
Mobile Sources																		
On-Road Motor Vehicles	17	133	34	<1	3	1	1	8	5	0	<1	<1	4	30	18	<1	1	1
Other Mobile Sources	9	81	12	<1	1	1	<1	3	1	0	<1	<1	2	12	8	<1	<1	<1
Grand Total (all sources)	**55**	**238**	**61**	**3**	**20**	**7**	**4**	**13**	**6**	**0**	**8**	**1**	**32**	**48**	**29**	<1	**29**	**6**

Source: CARB 2017
CO = carbon monoxide
NO_X = nitrogen oxide
$PM_{2.5}$ = particulate matter smaller than or equal to 2.5 microns in diameter
PM_{10} = particulate matter smaller than or equal to 10 microns in diameter
VOC = violate organic compounds
SO_X = sulfur oxide

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4 RELATIONSHIP TO NEPA

The *San Jose to Merced Section Draft EIR/EIS* identifies potential environmental impacts of the Project, both adverse and beneficial, identifies appropriate measures to mitigate adverse impacts, and identifies the agencies' preferred alternative. The EIR/EIS was prepared to comply with both NEPA and CEQA.

The General Conformity regulations establish certain procedural requirements that must be followed when preparing a General Conformity evaluation and are similar, but not identical, to those for conducting an air quality impact analysis under NEPA regulations. NEPA requires that the air quality impacts of the Project's implementation be analyzed and disclosed. For purposes of NEPA, the air quality impacts of the Project were determined by identifying the Project's associated incremental emissions and air pollutant concentrations and comparing them, respectively, to emissions thresholds and to the CAAQS and NAAQS. The air quality impacts of the Project under future Plus Project conditions were also compared in the Draft EIR/EIS to the future No Project conditions for NEPA purposes, and they were compared to existing conditions. The General Conformity Determination process and proposed general findings are discussed in Sections 3.3.4.4, 3.3.6.1, and 3.3.8 of the EIR/EIS.

To appropriately document the identification and offset, where necessary, of the emissions resulting from the Project, the FRA is issuing this draft General Conformity Determination. The Authority has entered into a memorandum of understanding (MOU) with the SJVAPCD that establishes the framework for fully mitigating to net-zero construction emissions of NOx, volatile organic compounds (VOC), PM_{10}, and $PM_{2.5}$. For the SFBAAB and in coordination with the BAAQMD, the Authority will commit to purchase of additional offsets to net all criteria pollutant emissions to levels that are below the General Conformity de minimis level for each calendar year that exceedances occur. Refer to Section 11.2, Compliance with Conformity Requirements, for details on the Authority's commitments.

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5 PROJECT FEATURES TO REDUCE EMISSIONS

To reduce impacts on the environment, the construction of the Project will include Project features to avoid and minimize impacts on air quality. These Project features will be included in the Mitigation Monitoring and Enforcement Program, which would be issued concurrently with the Final EIR/EIS and ROD for the Project and are enforceable commitments undertaken by the Authority. Construction of the Project is anticipated to occur through contract. The Authority will include all Project features in the construction contract, which would create binding and enforceable commitments to implement.

The Authority would be responsible for implementing and overseeing a mitigation monitoring program so the contractor meets all air quality design features.

Project design features as part of the Project include the following:

AQ-IAMF#1: Fugitive Dust Emissions

During construction, the Contractor shall employ the following measures to minimize and control fugitive dust emissions. The Contractor shall prepare a fugitive dust control plan for each distinct construction segment. At a minimum, the plan shall describe how each measure will be employed and identify an individual responsible for ensuring implementation. At a minimum, the plan shall address the following components unless alternative measures are approved by the applicable air quality management district.

- Cover all vehicle loads transported on public roads to limit visible dust emissions, and maintain at least 6 inches of freeboard space from the top of the container or truck bed.
- Clean all trucks and equipment before exiting the construction site using an appropriate cleaning station that does not allow runoff to leave the site or mud to be carried on tires off the site.
- Water exposed surfaces and unpaved roads at a minimum three times daily with adequate volume to result in wetting the top 1 inch of soil while avoiding overland flow. Rain events may sufficiently wet the top 1 inch of soil to alleviate the need to manually apply water.
- Limit vehicle travel speed on unpaved roads to 15 miles per hour (mph).
- Suspend any dust-generating activities when average wind speed exceeds 25 mph.
- Stabilize all disturbed areas, including storage piles that are not being used on a daily basis for construction purposes, by using water, a chemical stabilizer/suppressant, or hydro mulch or by covering with a tarp or other suitable cover or vegetative ground cover. In areas adjacent to organic farms, the Authority will use nonchemical means of dust suppression.
- Stabilize all on-site unpaved roads and off-site unpaved access roads using water or a chemical stabilizer/suppressant. In areas adjacent to organic farms, the Authority will use nonchemical means of dust suppression.
- Apply water to or presoak all areas where land clearing, grubbing, scraping, excavation, land leveling, grading, cut-and-fill, and demolition activities are carried out.
- For buildings up to six stories tall, wet all exterior surfaces of buildings during demolition.
- Limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at a minimum of once daily, using a vacuum type sweeper.
- After the addition of materials to or the removal of materials from the surface or outdoor storage piles, apply sufficient water or a chemical stabilizer/suppressant.

AQ-IAMF#2: Selection of Coatings

During construction, the contractor will use:

- Low–volatile organic compound (VOC) paint that contains less than 10 percent of VOC contents (VOC, 10%).
- Super-compliant or Clean Air paint that has a lower VOC content than that required by Bay Area Air Quality Management District Regulation 8, Rule 3, Monterey Bay Unified Air Pollution Control District Rule 426, and San Joaquin Valley Unified Air Pollution Control District Rule 4601, when available. If not available, the contractor will document the lack of availability, recommend alternative measure(s) to comply with Regulation 8, Rule 3, Rule 426, and Rule 4601 or disclose absence of measure(s) for full compliance, and obtain concurrence from the Authority.

AQ-IAMF#3: Renewable Diesel

During construction, the Contractor will use renewable diesel fuel to minimize and control exhaust emissions from all heavy-duty diesel-fueled construction diesel equipment and on-road diesel trucks. Renewable diesel must meet the most recent ASTM D975 specification for Ultra Low Sulfur Diesel and have a carbon intensity no greater than 50% of diesel with the lowest carbon intensity among petroleum fuels sold in California. The Contractor will provide the Authority with monthly and annual reports, through the Environmental Mitigation Management and Application (EMMA) system, of renewable diesel purchase records and equipment and vehicle fuel consumption. Exemptions to use traditional diesel can be made where renewable diesel is not available from suppliers within 200 miles of the project site. The construction contract must identify the quantity of traditional diesel purchased and fully document the availability and price of renewable diesel to meet project demand.

AQ-IAMF#4: Reduce Criteria Exhaust Emissions from Construction Equipment

Prior to issuance of construction contracts, the Authority will incorporate the following construction equipment exhaust emissions requirements into the contract specifications:

- All heavy-duty off-road construction diesel equipment used during the construction phase will meet Tier 4 engine requirements.
- A copy of each unit's certified tier specification and any required CARB or air pollution control district operating permit will be made available to the Authority at the time of mobilization of each piece of equipment.
- The contractor will keep a written record (supported by equipment-hour meters where available) of equipment usage during project construction for each piece of equipment.
- The contractor will provide the Authority with monthly reports of equipment operating hours (through the Environmental Mitigation Management and Assessment [EMMA] system) and annual reports documenting compliance.

AQ-IAMF#5: Reduce Criteria Exhaust Emissions from On-Road Construction Equipment

Prior to issuance of construction contracts, the Authority will incorporate the following material-hauling truck fleet mix requirements into the contract specifications:

- All diesel on-road trucks used to haul construction materials, including fill, ballast, rail ties, and steel, shall use a model year 2010 or newer engine.
- The contractor will provide documentation to the Authority of efforts to secure such a fleet mix.
- The contractor will keep a written record of equipment usage during Project construction for each piece of equipment and provide the Authority with monthly reports of vehicle miles traveled (VMT) (through EMMA) and annual reports documenting compliance.

AQ-IAMF#6: Reduce the Potential Impact of Concrete Batch Plants

Prior to construction of any concrete batch plant, the contractor will provide the Authority with a technical memorandum documenting consistency with the Authority's concrete batch plant siting criteria and utilization of typical control measures. Concrete batch plants will be sited at least 1,000 feet from sensitive receptors, including places such as daycare centers, hospitals, senior care facilities, residences, parks, and other areas where people may congregate. The concrete batch plant will implement typical control measures to reduce fugitive dust such as water sprays, enclosures, hoods, curtains, shrouds, movable and telescoping chutes, central dust collection systems, and other suitable technology, to reduce emissions to be equivalent to the USEPA AP-42 controlled emission factors for concrete batch plants. The contractor will provide to the Authority documentation that each batch plant meets this standard during operation.

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6 REGULATORY PROCEDURES

The General Conformity regulations establish certain procedural requirements that must be followed when preparing a General Conformity evaluation. The procedures required for the General Conformity evaluation are similar, but not identical, to those for conducting an air quality impact analysis pursuant to NEPA. This draft General Conformity Determination is being released for public and agency review pursuant to 40 C.F.R. Section 93.156, and the final General Conformity Determination will be published concurrently with the ROD for the Project.

The Authority identified the appropriate emission estimation techniques and planning assumptions in close consultation with the state entities charged with regulating air pollution in the SFBAAB, NCCAB, and SJVAB.

6.1 Use of Latest Planning Assumptions

The General Conformity regulations require the use of the latest planning assumptions for the area encompassing the Project, derived from the estimates of population, employment, travel, and congestion most recently approved by the area's metropolitan planning organizations (MPO)C.F.R. § 93.159(a)).

The emission estimation techniques, which were slightly different from those used in establishing the applicable SIP emissions budgets, have been approved by the BAAQMD, MBARD, and SJVAPCD. The traffic data used in the air quality analysis are based on the level of ridership as presented in *Connecting and Transforming California, 2016 Business Plan* (2016 Business Plan) (Authority 2016).[6] Further, the traffic data are consistent with the most recent estimates made by the MPOs for traffic volume growth rates, including forecast changes in VMT and vehicle hours traveled. The MPO developed these estimates from their traffic assignment models based on current and future population, employment, and travel and congestion information. These assumptions are consistent with those in the current conformity determinations for the regional transportation plans and transportation improvement programs.

6.2 Use of Latest Emission Estimation Techniques

The General Conformity regulations require the use of the latest and most accurate emission estimation techniques available, unless such techniques are inappropriate (40 C.F.R. § 93.159(b)). Emissions from construction activities were calculated using a combination of emission factors and methodologies from the California Emissions Estimator Model (CalEEMod2, the CARB's EMFAC2017 model, and the USEPA's AP-42 Compilation of Air Pollutant Emission Factors (AP-42) based on Project-specific construction data (e.g., schedule, equipment, truck volumes) provided by the Project design team (Scholz pers. comm.). CalEEMod provides the latest emission factors for construction off-road equipment. It accounts for lower fleet population and growth factors because of the economic recession and updated load factors based on feedback from engine manufacturers. The use of emission rates from CalEEMod reflects the recommendation of the CARB to capture the latest off-road construction assumptions. CalEEMod default load factors (the ratio of average equipment horsepower utilized to maximum equipment horsepower) and useful life parameters were used for emission estimates. CalEEMod default load factors (the ratio of average equipment horsepower utilized to maximum equipment horsepower) and useful life parameters were used for emission estimates.

Construction exhaust emissions from equipment; fugitive dust emissions from earthmoving activities; and emissions from worker trips, deliveries, and material hauling were calculated and

[6] As described in Volume 2, Appendix 3.3-C, Changes to Project Benefits Based on 2018 Business Plan of the EIR/EIS, the Authority Board adopted the 2018 Business Plan on May 15, 2018. The 2018 Business Plan assumes an opening year of 2033 for Phase 1 and presents different ridership forecasts for 2029 and 2040 than were assumed in this EIR/EIS. Under the 2018 Business Plan ridership forecasts, the HSR project would achieve the same benefits described in this section, but they would occur at different times and may be less than those presented in Section 3.3.6, Environmental Consequences. Nonetheless, HSR would ultimately afford a more energy-efficient choice for personal travel that would help alleviate highway congestion, provide greater capacity for goods movement, and reduce criteria pollutant and GHG emissions.

compiled in a spreadsheet tool specific to the Project for each year of construction. Mobile source emission burdens from worker trips and truck trips were calculated using VMT estimates and appropriate emission factors from EMFAC2017. Fugitive dust from re-entrained road dust was calculated using emission factors from USEPA's AP-42, Sections 13.2.1 and 13.2.2. Refer to Chapter 9, Construction Activities Considered, for further detail on the emissions estimation techniques.

6.3 Major Construction-Phase Activities

Project-specific data, including construction equipment lists and the construction schedule, were used for the analysis. Calculations were performed for each year of construction for the Project using default emission factors, as described further in Section 9, Construction Activities Considered.

Major activities were grouped into the following categories:

- Viaduct
- Embankment
- At grade
- Trench
- Tunnel
- Cut and fill

Construction activities associated with each component included demolition, excavation, utilities, roadwork, concrete forming, and other rail work. Each of these activities was considered to evaluate the regional and localized air quality effects during the construction phase. Analysts also quantified emissions from reconductoring approximately 11.1 miles of the existing single-circuit Spring to Llagas and Green Valley to Llagas 115-kilovolt power lines. Refer to Section 9, Construction Activities Considered, for further detail on the construction schedule.

6.4 Emission Scenarios

The General Conformity regulations require that the evaluation reflect certain emission scenarios (40 C.F.R. § 93.159(d)). Specifically, these scenarios generally include the evaluation of direct and indirect emissions from the Project for the following years: (1) for nonattainment areas, the attainment year specified in the SIP, or if the SIP does not specify an attainment year, the latest attainment year possible under the CAA, and for maintenance areas, the farthest year for which emissions are projected in the approved maintenance plan; (2) the year during which the total of direct and indirect emissions for the Project are projected to be the greatest on an annual basis; and (3) any year for which the applicable SIP specifies an emissions budget. Both the operational and construction phases of the Project must be analyzed, and the following applies to the Project:

- Emissions generated during the operational phase of the Project would meet the emission requirements for the years associated with Items 1 and 3 because the emissions generated during the operational phase would be less than those emitted in the No Project scenario. In addition, microscale analyses conducted for the EIR/EIS demonstrate that the operational phase of the Project would not cause or exacerbate a violation of the NAAQS for all applicable pollutants (see Draft EIR/EIS, Section 3.3.6.1).
- Emissions generated during the Project's construction phase, which would include the year with the greatest amount of total direct and indirect emissions (2025, as identified in Item 2), may be subject to General Conformity regulations because they would increase regional emission rates and, as such, have the potential to cause or exacerbate an exceedance of the NAAQS. Therefore, analyses were conducted to estimate the amounts of emissions that would be generated during the construction phase (for comparison with the General Conformity applicability rates) and the potential impacts of these emissions on local air quality levels. Emissions generated at the construction sites (e.g., tailpipe emissions from the on-site heavy-duty diesel equipment and fugitive dust emissions generated by vehicles traveling within the construction sites) and on the area's roadways by vehicles traveling to and from

these sites (by vehicles transporting materials and the workers traveling to and from work) were considered.

- Air quality dispersion modeling would be required for this conformity analysis to estimate the Project's localized impacts on PM concentrations if the annual emissions of the pollutants generated during construction were to exceed the General Conformity *de minimis* thresholds.

Annual emissions were estimated for each year of the Project's construction period. These emissions, which are the maximum values for the Project, are described in more detail in Section 10, Estimated Emission Rates and Comparison to *de minimis* Thresholds, of this report.

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7 APPLICABILITY ANALYSIS

The first step in a General Conformity evaluation is an analysis of whether the requirements apply to a proposed federal action in a nonattainment or a maintenance area. Unless exempted by the regulations or otherwise presumed to conform, a Federal action requires a General Conformity Determination for each pollutant where the total of direct and indirect emissions caused by the Project would equal or exceed an annual *de minimis* emission rate.

7.1 Attainment Status of Resource Study Area

The USEPA designates each county (or portions of counties) within California as attainment, maintenance, or nonattainment based on the area's ability to maintain ambient air concentrations below the air quality standards. Areas are designated as attainment if ambient air concentrations of a criteria pollutant are below the ambient standards. Areas are designated as nonattainment if ambient air concentrations are above the ambient standards. Areas previously designated as nonattainment that subsequently demonstrated compliance with the standards are designated as maintenance. Table 4 summarizes the attainment status of the SFBAAB, NCCAB, and SJVAB with regard to the NAAQS and CAAQS.

Table 4 Federal Attainment Status of the SFBAAB, NCCAB, and SJVAB

Pollutant	SFBAAB	NCCAB	SJVAB
O_3	Marginal Nonattainment	Attainment	Extreme Nonattainment
PM_{10}	Attainment	Attainment	Serious Maintenance
$PM_{2.5}$	Moderate Nonattainment	Attainment	Serious/Moderate Nonattainment[1]
CO	Attainment	Attainment	Attainment
NO_2	Attainment	Attainment	Attainment
SO_2	Attainment	Attainment	Attainment

Source: USEPA 2018
CO = carbon monoxide
NCCAB = North Central Coast Air Basin
NO_2 = nitrogen dioxide
O_3 = ozone
$PM_{2.5}$ = particulate matter smaller than or equal to 2.5 microns in diameter
PM_{10} = particulate matter smaller than or equal to 10 microns in diameter
SFBAAB = San Francisco Bay Area Air Basin
SJVAB = San Joaquin Valley Air Basin
SO_2 = sulfur dioxide
[1] The SJVAB is serious nonattainment for the 2006 $PM_{2.5}$ standard and moderate nonattainment for the 2012 $PM_{2.5}$ standard.

Under federal designations, the RSA is currently designated as extreme and marginal nonattainment for 8-hour O_3[7] in the SJVAB and SFBAAB, respectively; moderate/serious nonattainment for $PM_{2.5}$ in the SFBAAB and SJVAB; and maintenance for PM_{10} in the SJVAB. As such, the FRA is required to demonstrate project-level compliance with the General Conformity Rule for NO_X and VOCs (O_3 precursors), $PM_{2.5}$, PM_{10}, and SO_2 ($PM_{2.5}$ precursor[8]), if Project-related emissions of these pollutants in the SFBAAB or SJVAB would exceed the General Conformity *de minimis* thresholds.

[7] It should be noted that because O_3 is a secondary pollutant (i.e., it is not emitted directly into the atmosphere, but is formed in the atmosphere from the photochemical reactions of VOCs and NO_X in the presence of sunlight), its *de minimis* threshold is based on primary emissions of its precursor pollutants, NO_X and VOCs. If the net emissions of either NO_X or VOCs exceeds the *de minimis* applicability thresholds (USEPA 1994), the Project is subject to a general conformity evaluation for O_3.

[8] Ammonia is also a precursor to $PM_{2.5}$. However, neither construction nor operation of the Project would result in material emissions of ammonia.

As shown in Table 4, the portion of the RSA in the NCCAB is in attainment for all criteria pollutants. As outlined in Section III.A of the General Conformity Rule, “only actions which cause emissions in designated nonattainment and maintenance areas are subject to the regulations.” As such, a General Conformity analysis is not required for the portion of the Project within the NCCAB. There are no applicable *de minimis* thresholds, and no further discussion of Project activities in the NCCAB is provided in this General Conformity Determination.

7.2 Exemptions from General Conformity Requirements

As noted previously, the General Conformity requirements apply to a federal action if the net Project emissions equal or exceed certain *de minimis* emission rates. The only exceptions to this applicability criterion are if the activity is on the federal agency’s presumed-to-conform list (40 C.F.R. § 93.153(f)), meets the narrow exemption for federal actions in response to an emergency or disaster (40 C.F.R. § 93.153(e)), or is one of the following topical exemptions:

- Actions that would result in no emissions increase or an increase in emissions that is clearly below the *de minimis* levels (40 C.F.R. § 93.153(c)(2)). Examples include administrative actions and routine maintenance and repair.
- Actions where the emissions are not reasonably foreseeable (40 C.F.R. § 93.153(c)(3))
- Actions which implement a decision to conduct or carry out a conforming program (40 C.F.R. § 93.153 (c)(4))
- Actions which include major new or modified sources requiring a permit under the New Source Review program (40 C.F.R. § 93.153(d)(1))
- Actions in response to emergencies or natural disasters (40 C.F.R. § 93.153(d)(2))
- Actions which include air quality research not harming the environment (40 C.F.R. § 93.153(d)(3))
- Actions which include modifications to existing sources to enable compliance with applicable environmental requirements (40 C.F.R. § 93.153(d)(4))
- Actions which include emissions from remedial measures carried out under the Comprehensive Environmental Response, Compensation and Liability Act that comply with other applicable requirements (40 C.F.R. § 93.153(d)(5)).

However, the Project does not meet any of the exemption categories described above. In addition, the FRA has not established a presumed-to-conform list of activities at the time of this evaluation, and the Project does not meet the requirements of 40 C.F.R. Section 93.153(e).

7.3 Applicability for Project

After determining that the Project is not otherwise exempt, the applicability of the General Conformity requirements to the Project is evaluated by comparing the total of direct and indirect emissions for the calendar year of greatest emissions to the General Conformity *de minimis* thresholds. Where the total of direct and indirect emissions attributable to the Project is found to be below the *de minimis* emission rates for a pollutant, that pollutant is excluded from General Conformity requirements, and no further analysis is required. However, when the emissions of an applicable pollutant are at or above a *de minimis* threshold, that pollutant must undergo a General Conformity evaluation.

7.4 *De Minimis* Emission Rates

The General Conformity requirements would apply to the Project for each pollutant for which the total of direct and indirect emissions caused by the Project equal or exceed the *de minimis* emission rates shown in Table 5. These emission rates are expressed in units of tons per year (tpy) for the Project in each air basin for the calendar year. The applicable threshold levels for the pollutants for which General Conformity is required in the RSA are shown in Table 5.

Table 5 *De Minimis* Rates for Determining Applicability of General Conformity Requirements to Federal Actions

Air Basin	Annual Air Pollutant Emissions in Tons per Year					
	VOC	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_2
San Francisco Bay Area Air Basin[1]	100	100	None	None	100	100
San Joaquin Valley Air Basin[2]	10	10	None	100	70	70
North Central Coast Air Basin[3]	None	None	None	None	None	None

Source: 40 C.F.R. Section 93.153
CO = carbon monoxide
NO_X = oxides of nitrogen
O_3 = ozone
$PM_{2.5}$ = particulate matter 2.5 microns in diameter or less
PM_{10} = particulate matter 10 microns in diameter or less
VOC = violate organic compounds
SO_2 = sulfur dioxide
[1] The General Conformity *de minimis* thresholds for criteria pollutants are based on the federal attainment status of the RSA in the SFBAAB. The RSA is considered a marginal nonattainment area for the O_3 NAAQS and a moderate nonattainment area for the $PM_{2.5}$ NAAQS. Although the RSA is in attainment for SO_2, because SO_2 is a precursor for $PM_{2.5}$, the $PM_{2.5}$ General Conformity *de minimis* thresholds are used.
[2] The General Conformity *de minimis* thresholds for criteria pollutants are based on the federal attainment status of the RSA in the SJVAB. The RSA is considered an extreme nonattainment area for the O_3 NAAQS, a serious/moderate nonattainment area for the $PM_{2.5}$ NAAQS, and a serious maintenance area for the PM_{10} NAAQS. Although the RSA is in attainment for SO_2, because SO_2 is a precursor for $PM_{2.5}$, the $PM_{2.5}$ General Conformity *de minimis* thresholds are used. For $PM_{2.5}$ and SO_2, the *de minimis* threshold for projects located in serious nonattainment areas are used because this threshold is lower than the 100 tons per year threshold for projects exclusively in moderate nonattainment areas.
[3] The NCCAB is in attainment for all criteria pollutants (see Table 4).

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8 CONSTRUCTION ACTIVITIES CONSIDERED

As shown in Section 3.3.6.1 of the Draft EIR/EIS, the results of the regional analyses conducted for the Project demonstrate that emissions generated during the operational phase would be less than those emitted in the No Project and existing conditions scenarios and that the microscale analyses demonstrate that the Project would not cause or exacerbate a violation of the NAAQS for these pollutants. As such, no further analysis of the operational period emissions is necessary for this General Conformity Determination. This section focuses on the emissions generated from the construction period emissions for the Project.

The analysis conducted for the EIR/EIS to estimate potential air quality impacts caused by on-site (e.g., demolition activities, construction equipment operations, and truck movements) and off-site (e.g., motor vehicle traffic effects because of truck trips) construction-phase activities included the following:

- Estimation of emissions generated by the construction activities (e.g., deconstruction, concrete and steel construction), including fugitive dust emissions and emissions released from diesel-powered equipment and trucks based on the hours of operation of each piece of equipment[9]
- Identification of heavily traveled truck routes to estimate the cumulative effects of on-site construction activity emissions and off-site traffic emissions
- An on-site dispersion modeling analysis of the major construction areas
- An off-site dispersion modeling analysis of the roadway intersections and interchanges adjacent to the construction areas, using traffic data that include construction-related vehicles and background traffic
- A comparison of the on-site and off-site modeling results to the applicable NAAQS for the applicable pollutants

Emission rates for these activities were estimated based on the following:

- The number of hours per day and duration of each construction activity
- The number and type of construction equipment to be used
- HP and utilization rates (hours per day) for each piece of equipment
- The quantities of construction/demolition material produced and removed from each site
- The number of truck trips needed to remove construction and demolition material and to bring the supply materials to each site

The following is a discussion of the construction analysis methodology. A full list of assumptions can be found in the EIR/EIS, Appendix C to the *San Jose to Merced Project Section Air Quality and Greenhouse Gases Technical Report* (Authority and FRA 2019).

8.1 Models and Methods for Emissions Modeling

Construction of the Project would generate emissions of VOC, NO_X, CO, sulfur oxide (SO_X) PM_{10}, and $PM_{2.5}$. Emissions would originate from off-road equipment exhaust, employee and haul truck vehicle exhaust (on-road vehicles) site grading and earth movement, concrete batching, demolition, paving, architectural coating, and helicopters (for reconductoring work). These emissions would be temporary (i.e., limited to the construction period) and would cease when construction activities are complete.

[9] It is possible changes in VMT, speeds, or idle times resulting from traffic detours during construction could result in additional emissions. However, it is unknown to what extent motorists will change their driving patterns as a result of traffic detours and impediments, and, as such, it would be speculative to quantify the impact of temporary roadway restrictions on criteria pollutant emissions.

Combustion exhaust, fugitive dust (PM_{10} and $PM_{2.5}$), and fugitive off-gassing (VOCs) were estimated using a combination of emission factors and methodologies from CalEEMod, version 2016.3.2; the CARB's EMFAC2017 model, and the USEPA's AP-42 Compilation of Air Pollutant Emission Factors based on Project-specific construction data (e.g., schedule, equipment, truck volumes) provided by the Project design team (Scholz pers. comm.).

- **Off-road equipment**—Emission factors for off-road construction equipment (e.g., loaders, graders, bulldozers) were obtained from the CalEEMod (version 2016.3.2) User's Guide appendix, which provides values per unit of activity (in grams per horsepower-hour) by calendar year (Trinity Consultants 2016. Analysts estimated criteria pollutants by multiplying the CalEEMod emission factors by the equipment inventory provided by the Project engineering team (Scholz pers. comm.).
- **On-road vehicles**—On-road vehicles (e.g., pickup trucks, flatbed trucks) would be required for material and equipment hauling, on-site crew and material movement, and employee commuting. The analysis estimated exhaust emissions from on-road vehicles using the EMFAC2017 emissions model and activity data (miles traveled per day) provided by the Project engineering team (Scholz pers. comm.). Emission factors for haul trucks are based on aggregated-speed emission rates for EMFAC's T7 Single vehicle category. Factors for on-site dump, water, boom, and concrete trucks were based on 5 mph emission rates for the T6 Heavy category. Factors for employee commute vehicles were based on a weighted average for all vehicle speeds for EMFAC's light-duty automobile/light-duty truck vehicle categories. CARB's (2019) Safer Affordable Fuel-Efficient [SAFE] Vehicles Rule adjustment factors were applied to the emission factors for gasoline-powered vehicles. Fugitive re-entrained road dust emissions were estimated using the USEPA's *Compilation of Air Pollutant Emission Factors* (AP-42), Sections 13.2.1 and 13.2.2 (USEPA 2006, 2011).
- **Site grading and earth movement**—Fugitive dust emissions from earth movement (e.g., site grading, bulldozing, and truck loading) were quantified using emission factors from CalEEMod and USEPA (1998) AP-42cut-and-fill material were provided by the Project engineering team (Scholz pers. comm.).
- **Concrete batching**—Fugitive dust emissions from concrete batching at the three new temporary batch plants were quantified using emission factors from BAAQMD's (2016) Permit Handbook and USEPA's AP-42. Daily and annual batch quantities (cubic yards) were provided by the Project engineering team (Scholz pers. comm
- **Demolition**—Fugitive dust emissions from building demolition were based on the anticipated amount of square feet to be demolished and calculation method from the CalEEMod User's Guide (Trinity Consultants 2016).
- **Paving**—Fugitive VOC emissions associated with paving were calculated using activity data (e.g., square feet paved) provided by the Project engineer and the CalEEMod default emission factor of 2.62 pounds of VOC per acre paved (Scholz pers. comm.).
- **Architectural coating**—Fugitive VOC emissions associated with architectural coatings of the stations were calculated using activity data (e.g., square feet coated) provided by the Project engineering team and methods contained in the CalEEMod User's Guide (Scholz pers. comm.). Emissions calculations assume a VOC content of 150 grams per liter (g/L), consistent with BAAQMD's Regulation 8, Rule 3, Section 301.
- **Helicopters**—Helicopters would be required for the reconductoring work. Exhaust emissions were calculated using emission factors and assumptions derived from a review of guidance manuals published by USEPA (1978) The Climate Registry (2018).

8.2 Ballast and Subballast Hauling

Ballast and subballast materials could be transported from multiple quarry locations throughout Northern California and the Central Valley. Analysts estimated emissions from ballast and subballast material hauling by trucks and locomotives based on the travel distances and

transportation method (by rail or by truck) from the locations where ballast materials would be available. Analysts used heavy-duty truck emission factors (T7 Single) from EMFAC2017 to estimate emissions from haul trucks and rail emission factors from the USEPA (2009 to estimate the locomotive emissions. to estimate the locomotive emissions.

Analysts identified up to 11 potential quarries that could provide ballast material. All quarries are within the SFBAAB, MBARD, and SJVAPCD, with the furthest quarry located 37 rail miles and 89 highway miles from the Project footprint. Ballast and subballast quantities for the Project were provided by the Project engineering team and distributed equally among the identified quarries (Scholz pers. comm.). Scenario 1 assumed ballast and subballast would be hauled to the Project footprint using a combination of trucks and locomotives, and Scenario 2 assumed ballast and subballast would be hauled to the Project footprint using only trucks.

8.3 Annual Emissions Estimates

As discussed in Section 7.3, Major Construction-Phase Activities, up to six construction activities (viaduct, embankment, at grade, trench, tunnel, and large cut and fill) would be constructed, depending on the subsection and alternative. The analysis assumes that each component would be constructed over multiple phases between 2022 and 2028.[10]

8.4 Emissions by Air Basin

Activities occurring within the SFBAAB and SJVAB were quantified and analyzed separately to compare emissions to appropriate *de minimis* thresholds. Emissions generated by construction of subsections that would occur exclusively within one air basin (e.g., San Jose Diridon Station Approach in the SFBAAB) were wholly assigned to that air basin. Emissions estimates for alternatives that span more than one air district were apportioned based on the location of construction activity. For example, construction of the Pacheco Pass Subsection would occur in both the SFBAAB and SJVAB. Accordingly, the emissions estimates were apportioned to the SFBAAB and SJVAB based on the number of rail miles constructed within each air basin. Table 6 summarizes the location of each subsection and the air basin scaling factors used in the analysis, as appropriate. All reconductoring work would occur in the SFBAAB.

[10] Construction is expected to take place later than the dates assumed in the air quality analysis. The construction emissions estimates are therefore conservative, as future emissions rates will be lower due to the implementation of cleaner and newer equipment.

Table 6 Track Miles and Construction Scaling Factors by Air Basin

Subsection	Alternative 1		Alternative 2		Alternative 3		Alternative 4	
	SFBAAB	SJVAB	SFBAAB	SJVAB	SFBAAB	SJVAB	SFBAAB	SJVAB
Constructed Rail Miles								
San Jose Diridon Station Approach	3	0	3	0	3	0	3	0
Monterey Corridor	4	0	4	0	4	0	4	0
Morgan Hill and Gilroy	14	0	14	0	13	0	14	0
Pacheco Pass	5	7	5	7	5	7	5	7
San Joaquin Valley	0	9	0	9	0	9	0	9
Emission Scaling Factors								
San Jose Diridon Station Approach	100%	0%	100%	0%	100%	0%	100%	0%
Monterey Corridor	100%	0%	100%	0%	100%	0%	100%	0%
Morgan Hill and Gilroy	85%[1]	0%	85%[1]	0%	87%[1]	0%	85%[1]	0%
Pacheco Pass	43%	57%	43%	57%	43%	57%	43%	57%
San Joaquin Valley	0%	100%	0%	100%	0%	100%	0%	100%

Sources: Authority 2017; CARB 2012
SFBAAB = San Francisco Bay Area Air Basin
SJVAB = San Joaquin Valley Air Basin
[1] The remaining 13–15 percent of track miles would be constructed in the NCCAB. However, as discussed in Section 8.1, Attainment Status of Resource Study Area, the portion of the RSA in the NCAAB is in attainment for all criteria pollutants. As such, a general conformity analysis is not required, and no further discussion of Project activities in the NCCAB is provided in this General Conformity Determination.

8.5 Project Design Features

The Authority has developed IAMFs to reduce air quality effects. Because IAMFs are included as part of the Project design, they are not considered mitigation, and are included as part of the Project construction emissions estimate. Specifically, the following emissions benefits achieved by AQ-IAMF#1 through AQ-IAMF#6 were assumed in the modeling. estimate. Specifically, the following emissions benefits achieved by AQ-IAMF#1 through AQ-IAMF#6 were assumed in the modeling.

- Fugitive dust reductions from earthmoving best management practices (AQ-IAMF#1) (Countess Environmental 2006).
  - PM from ground disturbance (i.e., scraping and grading activities), 75 percent (BAAQMD 2017a)
  - PM from unpaved vehicle travel (i.e., re-entrained road dust), 75 percent[11]
  - PM from demolition, 36 percent (Countess Environmental 2006)
- VOC reductions (93 percent) from application of architectural coatings (AQ-IAMF#2).[12]
- Criteria pollutant and greenhouse gas (GHG) Lovegrove and Tadross 2017))
  - CO, 10 percent (Tier 2 tunneling equipment)
  - NO_X, 10 percent (Tier 2 tunneling equipment)
  - PM, 30 percent (all engines)
- Criteria pollutant and GHG reductions from use of Tier 4 off-road engines (AQ-IAMF#4). Emissions reductions vary by pollutant and equipment type. Emissions were modeled using Tier 4 emission rates from CalEEMod.
- Criteria pollutant and GHG reductions from use of model year 2010 or newer on-road engines in heavy-duty, diesel powered trucks (AQ-IAMF#5). Emissions reductions vary by pollutant, analysis year, and air basin. Emissions were modeled using emission rates for model year 2010 or newer engines derived from the CARB's EMFAC2017 model. The emissions rates for model year 2010 and newer engines reflect implementation of EPA's December 2000 Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements.
- Fugitive dust reductions from implementation of typical control measures at new concrete batch plants, such as water sprays, enclosures, and hoods (AQ-IAMF#6). Emissions were modeled using USEPA AP-42 controlled emission factors for concrete batch plants

[11] Among other controls, this IAMF requires watering unpaved roads three times daily and limiting vehicle speeds. The 75 percent efficacy is based on a 55 percent reduction for watering and a 44 percent reduction for vehicle speed limits (1-(.55*.44)) = 0.75% (Countess Environmental 2006).

[12] Assumes an uncontrolled VOC content of 150 g/L per BAAQMD Regulation 8, Rule 3, Section 301 and a controlled VOC content of 10 g/L per AQ-IAMF#2.

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9 ESTIMATED EMISSION RATES AND COMPARISON TO *DE MINIMIS* THRESHOLDS

Total annual estimated emissions generated within the SFBAAB and SJVAB during the construction period, as presented in the EIR/EIS, are provided in Tables 7 and 8. These values are the peak on-site emissions during each analysis year, plus maximum annual off-site emissions. The modeling accounts for implementation of AQ-IAMF#1 through AQ-IAMF#6 and reflects the impact of the SAFE Vehicle Rule (CARB 2019Emissions for each Project alternative, including the Preferred Alternative 4, are presented and analyzed in this General Conformity Determination.

As shown in the tables, annual construction emissions of all Project alternatives would exceed the General Conformity *de minimis* threshold in the SJVAB for NO_X for all years of construction between 2022 and 2028. NOx emissions would also exceed the General Conformity *de minimis* threshold in the SFBAAB in 2024 under Alternatives 1 and 3, and between 2023 and 2025 under Alternatives 2 and 4. All other pollutants would be below applicable *de minimis* thresholds.

Table 7 San Jose to Central Valley Wye Annual Construction Emissions in the SFBAAB (tons per year)[1]

Alternative/Year [2]	VOC	NO_X	CO	SO_2[3]	PM_{10}	$PM_{2.5}$
Alternative 1						
2022	4	50	145	<1	28	6
2023	6	79	200	1	46	10
2024	7	**106 ***	245	1	66	15
2025	6	85	205	1	49	11
2026	3	37	89	<1	18	4
2027	2	35	53	<1	12	3
2028	1	11	28	<1	3	1
Alternative 2						
2022	6	76	192	1	41	10
2023	7	**118 ***	255	1	67	16
2024	9	**155 ***	304	1	93	21
2025	7	**112 ***	241	1	63	15
2026	4	56	125	<1	29	7
2027	3	69	76	<1	29	6
2028	1	14	38	<1	5	1
Alternative 3						
2022	5	51	173	<1	27	6
2023	7	89	244	1	50	11
2024	8	**114 ***	293	1	69	15
2025	7	85	233	1	47	11
2026	3	41	116	<1	19	4
2027	2	41	54	<1	15	3
2028	1	12	30	<1	4	1
Alternative 4						
2022	5	77	177	1	47	11
2023	7	**113 ***	222	1	70	17
2024	8	**156 ***	272	1	95	23
2025	7	**139 ***	241	1	79	19
2026	3	62	109	<1	34	8
2027	3	84	70	<1	37	7
2028	1	13	29	<1	5	1
De minimis threshold	100	100	-	100	-	100

Sources: Trinity Consultants 2016; USEPA 1998, 2006, 2009, 2011; BAAQMD 2016; The Climate Registry 2018; Scholz pers. comm.
Exceedances of the *de minimis* thresholds are shown in **bolded underline with an asterisk (*)**.

CO = carbon monoxide
NO_X = oxides of nitrogen
PG&E = Pacific Gas and Electric Company
$PM_{2.5}$ = particulate matter 2.5 microns in diameter or less
PM_{10} = particulate matter 10 microns in diameter or less
SFBAAB = San Francisco Bay Area Air Basin
SO_2 = sulfur dioxide
VOC = volatile organic compound

[1] Emissions results include implementation of air quality IAMFs, as described in Section 6.
[2] Construction is expected to take place later than the dates assumed in the air quality analysis. The construction emissions estimates are therefore conservative, as future emissions rates will be lower due to the implementation of cleaner and newer equipment.
[3] Although the RSA is in attainment for SO_2, because SO_2 is a precursor for $PM_{2.5}$, the $PM_{2.5}$ General Conformity *de minimis* thresholds are used.

Table 8 San Jose to Central Valley Wye Annual Construction Emissions in the SJVAB (tons per year)[1]

Alternative/Year [2]	VOC	NO_X	CO	SO_2[3]	PM_{10}	$PM_{2.5}$
Alternatives 1, 2, 3, or 4[5]						
2022	6	**42 ***	218	1	18	5
2023	6	**55 ***	226	1	24	6
2024	6	**56 ***	220	1	23	5
2025	6	**54 ***	209	1	21	5
2026	4	**45 ***	131	<1	17	4
2027	2	**50 ***	49	<1	17	3
2028	1	**10 ***	22	<1	2	1
De minimis threshold	10	10	-	70	100	70

Sources: Trinity Consultants 2016; USEPA 1998, 2006, 2009, 2011; BAAQMD 2016; The Climate Registry 2018; Scholz pers. comm.
Exceedances of the *de minimis* thresholds are shown in **bolded underline with an asterisk (*)**.

CO = carbon monoxide
NO_X = oxides of nitrogen
$PM_{2.5}$ = particulate matter 2.5 microns in diameter or less
PM_{10} = particulate matter 10 microns in diameter or less
SJVAB = San Joaquin Valley Air Basin
SO_2 = sulfur dioxide
VOC = volatile organic compound

[1] Emissions results include implementation of air quality IAMFs, as described in Section 6.
[2] Construction is expected to take place later than the dates assumed in the air quality analysis. The construction emissions estimates are therefore conservative, as future emissions rates will be lower due to the implementation of cleaner and newer equipment.
[3] Although the RSA is in attainment for SO_2, because SO_2 is a precursor for $PM_{2.5}$, the $PM_{2.5}$ General Conformity *de minimis* thresholds are used.
[4] Construction activities and associated emissions are the same among the four alternatives in the SJVAB.

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10 REGIONAL EFFECTS

As shown in Section 3.3.6.1 of the Draft EIR/EIS, the total regional emissions for all applicable pollutants are lower during the operations phase of the Project than under No Project conditions (and would therefore not exceed the *de minimis* emission thresholds). As such, only emissions generated during the construction phase were compared to the conformity threshold levels to determine conformity compliance. As shown in Tables 7 and 8, construction-phase emissions, compared to the General Conformity applicability rates, are as follows:

- Annual estimated NO_X emissions in the SJVAB are greater than the applicability rate of 10 tpy for all years of construction between 2022 and 2028 for all Project alternatives with implementation of IAMFs.
- Annual estimated NO_X emissions in the SFBAAB are greater than the applicability rate of 100 tpy in 2024 under Alternatives 1 and 3 and for all years of construction between 2023 and 2025 under Alternatives 2 and 4 with implementation of IAMFs.
- Annual estimated VOC, CO, SO_2, PM_{10}, and $PM_{2.5}$ emissions are less than the applicability rates in the SFBAAB and SJVAB with implementation of IAMFs.

Therefore, a General Conformity Determination is required for the Project for NO_X for the years during construction when the emissions would exceed the *de minimis* thresholds in the SFBAAB and SJVAB and do not meet any of the exceptions cited in 40 C.F.R. Section 93.154(c).

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11 GENERAL CONFORMITY EVALUATION

For federal actions subject to a General Conformity evaluation, the regulations delineate several ways an agency can demonstrate conformity (40 C.F.R. § 93.158). This section summarizes the findings that were used to make the determination for the Project.

11.1 Conformity Requirements of Project

Based on the results shown in Tables 7 and 8, conformity determinations are required for construction-phase emissions for NO_X because annual estimated emissions are greater than the applicability rates of 100 tpy in the SFBAAB and 10 tpy in the SJVAB.

11.2 Compliance with Conformity Requirements

NO_X (a precursor to O_3) emissions caused by the construction of the Project would not result in an increase in regional NO_X emissions in the SFBAAB or SJVAB because exceedances would be mitigated by offsets. This would be achieved by additional on-site controls and offsetting remaining NO_X emissions generated by the construction of the Project in a manner consistent with the General Conformity regulations.

The requirements for offsets (as described below) would be implemented as part of the Project and will be included in the mitigation measures in the Final EIR/EIS. Any required offsets are anticipated to be accomplished by entering into an agreement with BAAQMD and project-level VERA with the SJVAPCD. The requirement for the VERA (as described below) would be implemented as part of the project and will be included in the mitigation measures in the Final EIR/EIS:

AQ-MM#1: Implement Additional On-Site Emissions Controls to Reduce Fugitive Dust

During construction, the contractor shall employ the following measures to minimize and control fugitive dust emissions:

- Where feasible, install wind breaks (e.g., dust curtains, plastic tarps, solid fencing) on the average dominant windward side(s) of station construction areas. For purposes of implementation, chain-link fencing with added landscape mesh fabric adequately qualifies as solid fencing.
- Post a publicly visible sign with the telephone number and person to contact at the Authority regarding dust complaints. This person shall respond and take corrective action within 48 hours. The phone number for the local air district shall also be visible to ensure compliance with applicable regulations.

AQ-MM#2: Construction Emissions Reductions – Requirements for use of Zero Emission (ZE) and/or Near Zero Emission (NZE) Vehicles and off-road equipment

This mitigation measure will reduce the impact of construction emissions from Project

This mitigation measure will reduce the impact of construction emissions from project-related on-road vehicles and off-road equipment.

The Authority and all project construction contractors shall require that a minimum of 25 percent, with a goal of 100 percent, of all light-duty on-road vehicles (e.g., passenger cars, light-duty trucks) associated with the project (e.g., on-site vehicles, contractor vehicles) use ZE or NZE technology.

The Authority and all project construction contractors shall have the goal that a minimum of 25 percent of all heavy-duty on-road vehicles (e.g., for hauling, material delivery and soil import/export) associated with the project use ZE or NZE technology.

The Authority and all project construction contractors shall have the goal that a minimum of 10 percent of off-road construction equipment use ZE or NZE vehicles.

If local or state regulations mandate a faster transition to using ZE and/or NZE vehicles at the time of construction, the more stringent regulations will be applied. For example, Executive Order (EO) N-79-20, issued by California Governor Newsom September 23, 2020, currently states the following:

- Light duty and passenger car sales be 100 percent ZE vehicles by 2035
- Full transition to ZE short haul/drayage trucks by 2035
- Full transition to ZE heavy-duty long-haul trucks, where feasible, by 2045
- Full transition to ZE off-road equipment by 2035, where feasible.

The project will have a goal of surpassing the requirements of these or other future regulations as a mitigation measure.

AQ-MM#3: Offset Project Construction Emissions in the San Francisco Bay Area Air Basin

Prior to issuance of construction contracts, the Authority will conduct an air quality analysis that evaluates the conditions that exist at that time. If the analysis determines that there will be exceedances of the VOC or NOx thresholds, even after the application of the mitigation in AQ-MM#2, the Authority will enter into an agreement with BAAQMD to reduce VOC and NO_X to the required levels by acquiring offsets. The required levels in the SFBAAB are as follows:

1. For emissions in excess of the General Conformity *de minimis* thresholds (NO_X): net zero.
2. For emissions not in excess of *de minimis* thresholds but above the BAAQMD's daily emission thresholds (VOC and NO_X): below the appropriate CEQA threshold levels.

The mitigation offset fee amount will be determined at the time of mitigation to fund one or more emissions reduction projects within the SFBAAB. The offset fee will be determined by the Authority and BAAQMD based on the type of projects that present appropriate emission reduction opportunities. These funds may be spent to reduce either VOC or NO_X emissions ("O_3 precursors"). Documentation of payment will be provided to the Authority or its designated representative.

The agreement will include details regarding the annual calculation of required offsets the Authority must achieve, funds to be paid, administrative fee, and the timing of the emissions reductions projects. Acceptance of this fee by BAAQMD will serve as an acknowledgment and commitment by BAAQMD to: (1) implement an emissions reduction project(s) within a timeframe to be determined based on the type of project(s) selected after receipt of the mitigation fee designed to achieve the emission reduction objectives; and (2) provide documentation to the Authority or its designated representative describing the project(s) funded by the mitigation fee, including the amount of emissions reduced (tons per year) in the SFBAAB from the emissions reduction project(s). To qualify under this mitigation measure, the specific emissions reduction project(s) must result in emission reductions in the SFBAAB that are real, surplus, quantifiable, enforceable, and will not otherwise be achieved through compliance with existing regulatory requirements or any other legal requirement. Pursuant to 40 C.F.R. Section 93.163(a), the necessary reductions must be achieved (contracted and delivered) by the applicable year in question. Funding will need to be received by BAAQMD prior to contracting with participants and should allow enough time to receive and process applications to fund and implement off-site reduction projects prior to commencement of project activities being reduced. This will roughly equate to 1 year prior to the required mitigation; additional lead time may be necessary depending on the level of off-site emission reductions required for a specific year.

This mitigation measure will be effective in offsetting emissions generated during project construction through the funding of emission-reduction projects. It is BAAQMD's experience that emissions offsets are feasible mitigation that effectively achieves actual emission reductions (Kirk 2018).

The implementation of this mitigation measure will not be expected to affect air quality in the BAAQMD because purchasing emissions offsets will not result in any physical change to the environment, and therefore will not result in other secondary environmental impacts. In addition to

VOC and NO_X, the implementation of emission-reduction projects could result in reductions of other criteria pollutants and/or GHGs. However, this will be a secondary effect of this mitigation measure and is not a required outcome to mitigate any impacts of the project.

AQ-MM#4: Offset Project Construction Emissions in the San Joaquin Valley Air Basin

On June 19, 2014, the SJVAPCD and the Authority entered an MOU that establishes the framework for fully mitigating to net-zero construction emissions of NOx, VOC, PM_{10}, and $PM_{2.5}$ from the entire HSR project within the SJVAB (Authority and SJVUAPCD 2014). Emissions generated by construction of the portion of the project within the SJVAB are subject to this MOU and, therefore, must be offset to net zero. Pursuant to the MOU, the Authority and the SJVAPCD will enter into a Voluntary Emissions Reduction Agreement (VERA) to cover the portion of the project approved and funded for construction within the SJVAB. The project-level VERA must be executed prior to commencement of construction and the mitigation fees and offsets delivered and achieved according to the requirements of the VERA and MOU.

This mitigation measure will be effective in offsetting emissions generated during construction of the project through the funding of emission-reduction projects. It is SJVAPCD's experience that implementation of a VERA is feasible mitigation that effectively achieves actual emission reductions. Based on the performance of current incentive programs and reasonably foreseeable future growth, the SJVAPCD has confirmed that enough emissions reduction credits will be available to offset emissions generated by the project for all years in excess of the SJVAPCD's thresholds and the General Conformity *de minimis* threshold (Authority and SJVUAPCD 2014).

The implementation of this mitigation measure will not be expected to affect air quality in the SJVAPCD because purchasing emissions offsets will not result in any physical change to the environment, and therefore will not result in other secondary environmental impacts. In addition to NO_X and PM_{10}, the implementation of emission-reduction projects could result in reductions of other criteria pollutants, GHGs, or both. However, this will be a secondary effect of this mitigation measure and is not a required outcome to mitigate any impacts of the project.

11.3 Consistency with Requirements and Milestones in Applicable SIP

The General Conformity regulations state that notwithstanding the other requirements of the rule, a federal action may not be determined to conform unless the total of direct and indirect emissions from the federal action is in compliance or consistent with all relevant requirements and milestones in the applicable SIP (40 C.F.R. § 93.158(c)). This includes, but is not limited to, such issues as reasonable further progress schedules, assumptions specified in the attainment or maintenance demonstration, prohibitions, numerical emission limits, and work practice standards. This section briefly addresses how the construction emissions for the Project were assessed for SIP consistency for this evaluation.

11.3.1 Applicable Requirements from U.S. Environmental Protection Agency

The USEPA promulgates requirements to support the goals of the CAA with respect to the NAAQS. Typically, these requirements take the form of rules regulating emissions from significant new sources, including emission standards for major stationary point sources and classes of mobile sources, as well as permitting requirements for new major stationary point sources. Since states have the primary responsibility for implementation and enforcement of requirements under the CAA and can impose stricter limitations than the USEPA, the USEPA requirements often serve as guidance to the states in formulating their air quality management strategies.

11.3.2 Applicable Requirements from California Air Resources Board

In California, to support the attainment and maintenance of the NAAQS, the CARB is primarily responsible for regulating emissions from mobile sources. In fact, the USEPA has delegated authority to the CARB to establish emission standards for on-road and some non-road vehicles separate from the USEPA vehicle emission standards, although the CARB is preempted by the CAA from regulating emissions from many non-road mobile sources, including marine craft. Emission standards for preempted equipment can only be set by the USEPA.

11.3.3 Applicable Requirements from Bay Area Air Quality Management District and San Joaquin Valley Air Pollution Control District

To support the attainment and maintenance of the NAAQS in the SFBAAB and SJVAB, the BAAQMD and SJVAPCD have primarily been responsible for regulating emissions from stationary sources. As noted above, the BAAQMD and SJVAPCD develop and update their air quality management plans regularly to support the California SIP. While the plans contain rules and regulations geared to attain and maintain the NAAQS, these rules and regulations also have the much more difficult goal of attaining and maintaining the CAAQS.

11.3.4 Consistency with Applicable Requirements for the California High-Speed Rail Authority

The Authority already complies with, and will continue to comply with, a myriad of rules and regulations implemented and enforced by federal, state, regional, and local agencies to protect and enhance ambient air quality in the SFBAAB and SJVAB.

In particular, because of the long persistence of challenges to attain the ambient air quality standards in the SFBAAB and SJVAB, the rules and regulations promulgated by the CARB, BAAQMD, and SJVAPCD are among the most stringent in the U.S.

The Authority will continue to comply with all existing applicable air quality regulatory requirements for activities over which it has direct control and would meet in a timely manner all regulatory requirements that become applicable in the future.

These are appropriate USEPA, CARB, BAAQMD, and SJVAPCD rules which are standard practices and best management practices for construction in the BAAQMD and SJVAPCD, including control of emissions and exhaust:

- **BAAQMD Regulation 2, Rule 2 (New Source Review)**—This rule contains requirements for Best Available Control Technology and emission offsets.
- **BAAQMD Regulation 2, Rule 5 (New Source Review of Toxic Air Contaminates)**—This rule outlines guidance for evaluating TAC emissions and their potential health risks.
- **BAAQMD Regulation 6, Rule 1 (Particulate Matter)**—This rule restricts emissions of PM darker than No. 1 on the Ringlemann Chart to less than 3 minutes in any 1 hour.
- **BAAQMD Regulation 6, Rule 6 (Prohibition of Trackout)**—This rule limits the quantity of PM in the atmosphere through control of trackout of solid materials onto paved public roads outside the boundaries of Large Bulk Material Sites, Large Construction Sites, and Large Disturbed Surface sites including landfills.
- **BAAQMD Regulation 7 (Odorous Substances)**—This regulation establishes general odor limitations on odorous substances and specific emission limitations on certain odorous compounds.
- **BAAQMD Regulation 8, Rule 3 (Architectural Coatings)**—This rule limits the quantity of VOC in architectural coatings.
- **BAAQMD Regulation 9, Rule 6 (Nitrogen Oxides Emission from Natural Gas–Fired Boilers and Water Heaters)**—This rule limits emissions of NO_X generated by natural gas–fired boilers.
- **BAAQMD Regulation 9, Rule 8 (Stationary Internal Combustion Engines)**—This rule limits emissions of NO_X and CO from stationary internal combustion engines of more than 50 horsepower.
- **BAAQMD Regulation 11, Rule 2 (Asbestos Demolition, Renovation, and Manufacturing)**—This rule controls emissions of asbestos to the atmosphere during demolition, renovation, milling, and manufacturing and establishes appropriate waste disposal procedures.

- **SJVAPCD Rule 2010 (Permits Required)—**This rule requires any person constructing, altering, replacing or operating any source operation which emits, may emit, or may reduce emissions to obtain an Authority to Construct or a Permit to Operate.
- **SJVAPCD Rule 2201 (New and Modified Stationary Source Review)**—This rule requires that sources not increase emissions above the specified thresholds.
- **SJVAPCD Rule 2280 (Portable Equipment Registration)**—This rule requires portable equipment used at project sites for less than 6 consecutive months be registered with the SJVAPCD.
- **SJVAPCD Rule 4002 (National Emission Standards for Hazardous Air Pollutants)**—This rule incorporates by reference the National Emission Standards for Hazardous Air Pollutants from Part 61, Chapter I, Subchapter C, Title 40, Code of Federal Regulations (CFR) and the National Emission Standards for Hazardous Air Pollutants for Source Categories from Part 63, Chapter I, Subchapter C, Title 40, Code of Federal Regulations (CFR).
- **SJVAPCD Rule 4102 (Nuisance)**—This rule prohibits discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such person or the public or which cause or have a natural tendency to cause injury or damage to business or property.
- **SJVAPCD Rule 4201 and Rule 4202 (Particulate Matter Concentration and Emission Rates)**—These rules provide PM emission limits for sources operating within the district.
- **SJVAPCD Rule 4301 (Fuel-Burning Equipment)**—This rule limits the emissions from fuel-burning equipment whose primary purpose is to produce heat or power by indirect heat transfer.
- **SJVAPCD Rule 4601 (Architectural Coatings)**—This rule limits VOC emissions from architectural coatings.
- **SJVAPCD Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving, and Maintenance Operations)**—This rule limits VOC emissions by restricting the application and manufacturing of certain types of asphalt for paving and maintenance operations.
- **SJVAPCD Rule 8011 (General Requirements—Fugitive Dust Emission Sources)**—This rule outlines requirements for implementation of control measures for fugitive dust emission sources.
- **SJVAPCD Rule 9510 (Indirect Source Review)**—This rule outlines mitigation requirements for construction and operations emissions that exceed certain thresholds. The rule applies to any transportation project in which construction emissions equal or exceed 2 tons of NO_X or PM_{10} per year. Projects subject to Rule 9510 must submit an Air Impact Assessment application to the SJVAPCD prior to construction.
- **BAAQMD and SJVAPCD CEQA Guidelines—**The BAAQMD and SJVAPCD prepared their *Air Quality Guidelines* and *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI), respectively, to assist lead agencies and project applicants in evaluating the potential air quality impacts of projects in the SFBAAB and SJVAB (BAAQMD 2017b; SJVAPCD 2015). The Air Quality Guidelines and GAMAQI provide BAAQMD- and SJVAPCD-recommended procedures for evaluating potential air quality impacts during the CEQA environmental review process. The documents provide guidance on evaluating short-term (construction) and long-term (operational) air emissions. The Air Quality Guidelines and GAMAQI used in this evaluation contain guidance on the following:
  - Criteria and thresholds for determining whether a project may have a significant adverse air quality impact
  - Specific procedures and modeling protocols for quantifying and analyzing air quality impacts

- Methods to mitigate air quality impacts
- Information for use in air quality assessments and environmental documents that will be updated more frequently, such as air quality data, regulatory setting, climate, and topography
- USEPA Rule 40 C.F.R. Part 89, Control of Emissions from New and In-Use Nonroad Compression-Ignition Engines: requires stringent emission standards for mobile nonroad diesel engines of almost all types using a tiered phase-in of standards
- CARB Rule 13 California Code of Regulations Section 1956.8, California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles: requires significant reductions in emissions of NO_X, PM, and nonmethane organic compounds using exhaust treatment on heavy-duty diesel engines manufactured in model year 2007 and later years.

12 ESTIMATED EMISSION RATES AND COMPARISON TO *DE MINIMIS* THRESHOLDS—CUMULATIVE ANALYSIS

The RSA for cumulative air quality impacts is the SFBAAB and SJVAB. While these are separate projects for purposes of planning the HSR system, construction of the Project would overlap with the construction period for the following other HSR sections[13]:

- San Francisco to San Jose, construction in the SFBAAB between 2022 and 2025
- Merced to Fresno, construction in the SJVAB in 2022
- Central Valley Wye, construction in the SJVAB in 2022 and material hauling in the SFBAAB in 2022
- Fresno to Bakersfield, construction in the SJVAB between 2022 and 2023
- Bakersfield to Palmdale, construction in the SJVAB between 2022 and 2025

Overlapping construction activities could add to cumulative air quality impacts within the SFBAAB and SJVAB. For purposes of full disclosure of the potential impacts, the cumulative emissions that could result from potential concurrent construction activities are presented in Tables 9 and 10. As the analysis demonstrates, concurrent construction could result in exceedances of the NO_X General Conformity *de minimis* threshold in the SFBAAB and VOC and NO_X General Conformity *de minimis* thresholds in the SJVAB. As previously discussed, the Authority has already entered into an MOU with the SJVAPCD that will offset all emissions of VOC, NO_x, and PM generated in the SJVAB by construction of the High Speed Rail Project to net zero. Pursuant to AQ-MM#-3, the Authority will enter into an agreement with BAAQMD to offset VOC and NOx emissions from construction of the Project in excess of the federal *de minimis* thresholds to net zero, if there will be exceedances of the VOC or NOx thresholds as determined by an analysis to be conducted prior to the issuance of construction contracts.

The Merced to Sacramento Project would also generate emissions in the SJVAB. However, this section would not be completed until Phase 2, which is after the mandated Los Angeles to San Francisco line. It is likely construction activities would therefore take place after this Project is completed (i.e., after 2028).

[13] The analysis assumed that Project construction would take place from 2022 to 2028, and that construction of other HSR project sections would occur according to the schedules presented in their respective environmental documents.

Table 9 Overlapping HSR System Construction Emissions in the SFBAAB (tons per year)

Year[1]	VOC	NOx	CO	SO_2[2]	PM_{10}	$PM_{2.5}$
2022						
JM[3,4]	6	77	192	1	47	11
FJ[3,5]	5	99	136	1	134	30
CVY	1	31	9	<1	1	1
Total	*11*	***207 ****	*337*	*1*	*182*	*43*
2023						
JM[3,4]	7	**118 ***	255	1	70	17
FJ[3,5]	4	91	117	<1	117	27
CVY	0	0	0	0	0	0
Total	*10*	***209 ****	*372*	*1*	*187*	*44*
2024						
JM[3,4]	9	**156 ***	304	1	95	23
FJ[3,5]	3	80	105	<1	106	24
CVY	0	0	0	0	0	0
Total	*12*	***237 ****	*409*	*1*	*202*	*46*
2025						
JM[3,4]	7	**139 ***	241	1	79	19
FJ[3,5]	4	96	132	<1	102	23
CVY	0	0	0	0	0	0
Total	*12*	***235 ****	*372*	*1*	*181*	*42*
De minimis threshold	100	100	-	100	-	100

Source: See Table 7 in Section 10.0; Authority and FRA 2017a

Exceedances of the *de minimis* thresholds are shown in **bolded underline with an asterisk (*)**.

CO = carbon monoxide
CVY = Central Valley Wye
FJ = San Francisco to San Jose
IAMF = impact avoidance and minimization feature
JM = San Jose to Merced
NO_X = oxides of nitrogen
$PM_{2.5}$ = particulate matter 2.5 microns in diameter or less
PM_{10} = particulate matter 10 microns in diameter or less
RSA = resource study area
SO_2 = sulfur dioxide
VOC = volatile organic compound

[1] The analysis assumed that Project construction would take place from 2022 to 2028, and that construction of other HSR project sections would occur according to the schedules presented in their respective environmental documents.
[2] Although the RSA is in attainment for SO_2, because SO_2 is a precursor for $PM_{2.5}$, the $PM_{2.5}$ General Conformity *de minimis* thresholds are used.
[3] Emissions results include implementation of air quality IAMFs, as described in Section 6.
[4] Presents the highest emissions estimate that would occur under any of the four alternatives.
[5] Presents emissions under Alternative B, which is the alternative with the greatest emissions in the SFBAAB.

Table 10 Overlapping HSR System Construction Emissions in the SJVAB (tons per year)

Year[1]	VOC	NOx	CO	SO_2[2]	PM_{10}	$PM_{2.5}$
2022						
JM[3,4]	6	**42 ***	218	1	18	5
B-P[5]	**11 ***	**103 ***	87	1	10	5
F-B[5]	<1	1	1	<1	<1	<1
M-F[5]	5	4	3	<1	9	2
CVY[5]	2	44	20	<1	2	2
Total[6]	***25 ****	***194 ****	*330*	*2*	*39*	*13*
2023						
JM[3,4]	6	**55 ***	226	1	24	6
B-P[5]	8	**70 ***	66	1	9	4
F-B[5]	<1	<1	<1	<1	<1	<1
M-F[5]	0	0	0	0	0	0
CVY[5]	0	0	0	0	0	0
Total[6]	***14 ****	***125 ****	*292*	*2*	*33*	*10*
2024						
JM[3,4]	6	**56 ***	220	1	23	5
B-P[5]	6	**50 ***	50	1	6	3
F-B[5]	0	0	0	0	0	0
M-F[5]	0	0	0	0	0	0
CVY[5]	0	0	0	0	0	0
Total[6]	***12 ****	***106 ****	*270*	*2*	*29*	*8*
2025						
JM[3,4]	6	**54 ***	209	1	21	5
B-P[5]	2	**10 ***	11	1	1	1
F-B[5]	0	0	0	0	0	0
M-F[5]	0	0	0	0	0	0
CVY[5]	0	0	0	0	0	0
Total[6]	*8*	***64 ****	*220*	*2*	*22*	*6*
De minimis threshold	10	10	-	70	100	70

Source: See Table 8 in Section 10; Authority and FRA 2012, Authority and FRA 2017a, Authority and FRA 2014b, Authority and FRA 2017b
Exceedances of the *de minimis* thresholds are shown in **bolded underline with an asterisk (*)**.
B-P = Bakersfield to Palmdale
CO = carbon monoxide
CVY = Central Valley Wye
F-B = Fresno to Bakersfield
IAMF = impact avoidance and minimization feature
JM = San Jose to Merced

M-F = Merced to Fresno
NO_X = oxides of nitrogen
$PM_{2.5}$ = particulate matter 2.5 microns in diameter or less
PM_{10} = particulate matter 10 microns in diameter or less
RSA = resource study area
SO_2 = sulfur dioxide
VOC = volatile organic compound
[1] The analysis assumed that Project construction would take place from 2022 to 2028, and that construction of other HSR project sections would occur according to the schedules presented in their respective environmental documents.
[2] Although the RSA is in attainment for SO_2, because SO_2 is a precursor for $PM_{2.5}$, the $PM_{2.5}$ General Conformity *de minimis* thresholds are used.
[3] Emissions results include implementation of air quality IAMFs, as described in Section 6.
[4] Refer to Table 8 in Section 10.
[5] The highest annual emissions for each pollutant among the analyzed alternatives is presented.
[6] Totals may not add due to rounding.

13 REPORTING AND PUBLIC COMMENTS

To support a decision concerning the Project, the FRA is issuing this draft General Conformity Determination for a 30-day public ad agency review. In developing the analysis underlying this general conformity determination, the Authority has consulted extensively with the BAAQMD and SJVAPCD on a variety of technical and modeling issues. The Authority has also consulted with the USEPA and CARB on the overall approach to demonstrating general conformity.

The FRA has provided copies of the draft General Conformity Determination to the appropriate regional offices of the USEPA, CARB, BAAQMD, and SJVAPCD for a 30-day review. The FRA will also issue a notice in the *Federal Register* announcing the availability of the draft general conformity determination and requesting written public comments during a 30-day period. This draft conformity determination will be made available on FRA's docket at https://www.regulations.gov/, Docket FRA-2021-X.

Any comments on the draft General Conformity Determination will be included in the Final EIR/EIS for the Project and will be addressed in the Final General Conformity Determination.

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14 FINDINGS AND CONCLUSIONS

FRA conducted a General Conformity evaluation consistent with 40 C.F.R. Part 93 Subpart B. The General Conformity regulations apply at this time to this Project because the Project is in an area that is designated as either nonattainment or maintenance for the 8-hour O_3, 24-hour $PM_{2.5}$, and 24-hour PM_{10} standards. The FRA conducted the General Conformity evaluation consistent with all regulatory criteria and procedures and following the Authority's coordination with the USEPA, BAAQMD, SJVAPCD, and CARB. As a result of this review, the FRA concluded, because Project-generated emissions would either be fully offset (for construction phase) or less than zero (for operational phase), that the Project's emissions can be accommodated in the SIP for the SFBAAB and SJVAB. The FRA has determined that the Project as designed would conform to the approved SIP based on the following:

- The Authority would commit that construction-phase NO_X emissions would be offset consistent with the applicable federal regulations by entering into an agreement with BAAQMD and through the Authority's existing commitments in its June 2014 MOU and VERA with the SJVAPCD, respectively.
- The Authority, BAAQMD, and SJVAPCD would enter into a contractual agreement to mitigate the Project's NO_X emissions by providing funds to BAAQMD's and SJVAPCD's to fund grants for projects that achieve the necessary emission reductions.
- BAAQMD and SJVAPCD would seek and implement the necessary emission reduction measures, using Authority funds.
- BAAQMD and SJVAPCD would serve as administrators of the emissions reduction projects and verifiers of the successful mitigation effort.

Therefore, the FRA intends to issue a final determination that concludes that the Project, as designed, conforms to the purpose of the approved SIP and is consistent with all applicable requirements.

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ATTACHMENT A: LETTERS OF AGREEMENT WITH BAAQMD

To be added to the Final Federal General Conformity Determination.