CALIFORNIA HIGH-SPEED TRAIN

Project Environmental Impact Report / Environmental Impact Statement

FINAL

Merced to Fresno Section: Federal General Conformity Determination

September 2012

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation
Federal Railroad Administration

Based on the results of the analyses provided in this document, I have determined that the Merced to Fresno Section Project of the California High-Speed Train System will comply with the General Conformity Rule provided that the nitrogen oxide (NO_x) and volatile organic compound (VOC) emissions caused by the construction of the HST Project, for at least the years or portions thereof when the conformity applicability thresholds for a severe ozone nonattainment area are exceeded, will be offset through a Voluntary Emission Offset Agreement with the San Joaquin Valley Air Pollution Control District.

9/18/12
Date

Joseph C. Szabo
Administrator
Federal Railroad Administration

Executive Summary

The California High-Speed Train (HST) System 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 Merced to Fresno HST Section ("Project" or "Federal Action"), which is the focus of this general conformity determination, is a critical link connecting the Bay Area HST sections to the Fresno to Bakersfield, Bakersfield to Palmdale, and Palmdale to Los Angeles HST sections.

The General Conformity rule, as codified in Title 40 Code of Federal Regulations (CFR) 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 Proposed Action 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. The California High-Speed Rail Authority (Authority), as the Project proponent, is receiving federal grant funds through the Federal Railroad Administration's (FRA) High-Speed Intercity Passenger Rail program, and the Project may also receive safety approvals. Because of the federal funding and potential safety approvals, and because construction-phase emissions (without mitigation) would exceed General Conformity emission thresholds, the Project is subject to the General Conformity rule.

This final General Conformity Determination documents 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. A draft General Conformity Determination was issued for public review and comment on April 20, 2012, and electronic copies were made available on FRA's website. This final General Conformity Determination was made based on the project design feature and mitigation measures that were described in Section 3.3.8 and 3.3.9 of the Merced to Fresno Section Final Environmental Impact Report/Environmental Impact Statement (Authority and FRA 2012a) and that will be implemented for the Project. This compliance is demonstrated herein as follows:

- The operation 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; and
- While emissions generated during the construction of the Project would exceed General Conformity thresholds for two pollutants, these emission increases would be off-set through a Voluntary Emission Reduction Agreement (VERA) with the San Joaquin Valley Air Pollution Control District (SJVAPCD).

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1.0 Introduction

This document is the final General Conformity Determination for the Merced to Fresno Section of the California High-Speed Train (HST) System ("Project" or "Federal Action") and is required by 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) for each nonattainment area, and a maintenance plan be prepared for each former non-attainment area that subsequently demonstrated compliance with the standards. The SIP is a state's plan for how it will meet the NAAQS by the deadlines established by the CAA.

The General Conformity rule is codified in Title 40 Code of Federal Regulations (CFR) Part 93, Subpart B, "Determining Conformity of General Federal Actions to State or Federal Implementation Plans." 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 CFR Part 93 also establishes the process by which federal agencies determine conformance of proposed projects that are federally funded or require federal approval. This determination must demonstrate that the Proposed Action 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 with the Federal Railroad Administration (FRA) and may also receive safety approvals from FRA, it is an action that may be subject to the general conformity rule.

1.1 Regulatory Status of Study Area

By way of background, in addition to the regulations covering the General Conformity rule, on November 24, 1993, the U.S. Environmental Protection Agency (EPA) promulgated final conformity regulations to address transportation plans, programs, and projects developed, funded or approved under title 23 U.S.C. or the Federal Transit Act, 49 U.S.C 1601 et seq (40 CFR Part 93 Subpart A). These regulations have been revised several times since they were first issued. While the transportation conformity regulations do not apply to this Project (see **Section 1.2**), many of the transportation planning documents developed under those regulations are helpful in understanding the regional air quality and planning status of the study area.

Planning documents for pollutants for which the study area is classified as a federal nonattainment or maintenance area are developed by the San Joaquin Valley Air Pollution Control District (SJVAPCD), and the California Air Resources Board (CARB), and approved by EPA. Figure 1 shows the project alignment as it is situated in the San Joaquin Valley Air Basin. Table 1 lists the planning documents relevant to the proposed Project's study area.

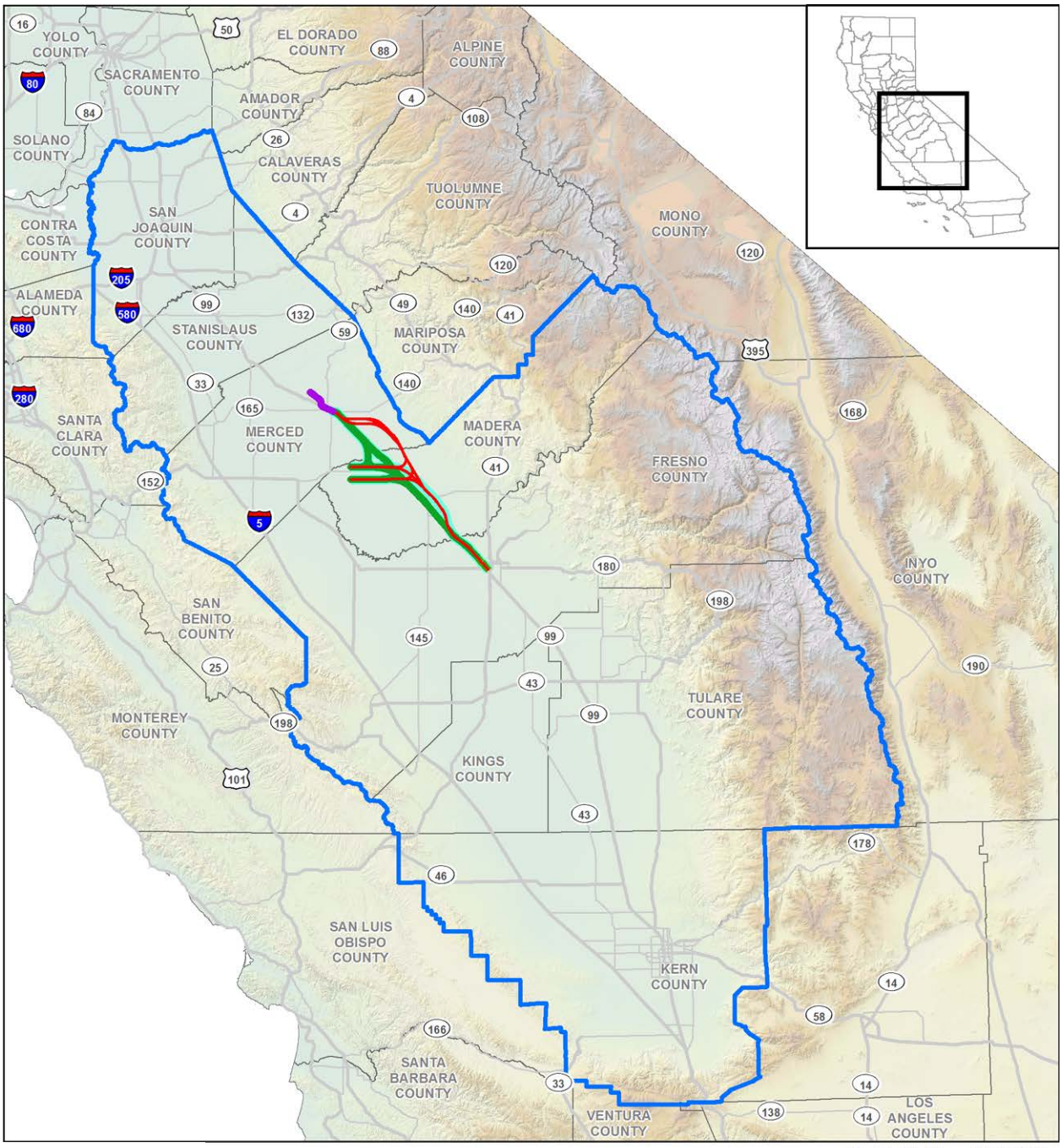

Figure 1
San Joaquin Valley Air Basin

Table 1
Planning Documents Relevant to Project's Study Area

Type of Plan	Status
1-Hour O_3 Attainment Plan	On March 8, 2010, EPA approved San Joaquin Valley's 2004 Extreme Ozone Plan for the 1-hour O_3 standard. However, effective June 15, 2005, EPA revoked the federal 1-hour O_3 standard for areas including the San Joaquin Valley Air Basin (SJVAB).[a]
8-Hour O_3 Attainment Plan	On May 5, 2010, EPA reclassified the 8-hour O_3 nonattainment status of San Joaquin Valley from "serious" to "extreme." The reclassification requires the state to incorporate more-stringent requirements, such as lower permitting thresholds and implementing reasonably available control technologies at more sources.[b] 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 particulate matter precursors throughout the San Joaquin Valley. On December 18, 2007, the SJVAPCD Governing Board adopted the plan with an amendment to extend the rule adoption schedule for organic waste operations. On January 8, 2009, EPA 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.[a]
PM_{10} Maintenance Plan	On September 25, 2008, EPA redesignated the San Joaquin Valley to attainment for the PM_{10} NAAQS and approved the 2007 PM_{10} Maintenance Plan.[c]
$PM_{2.5}$ Attainment Plan	The SJVAPCD Governing Board adopted the 2008 $PM_{2.5}$ Plan on May 22, 2008, following a public hearing. This plan includes measures to attain the 1997 and 2006 federal standards as well as the state standard.[d] EPA designated the SJVAB under the new $PM_{2.5}$ national standard on October 8, 2009, and state implementation plans for the 2006 $PM_{2.5}$ standards will be due to EPA within 3 years of final designation.
CO Maintenance Plan	On July 22, 2004, CARB approved an update to the SIP that shows how 10 areas, including the SJVAB, will maintain the CO standard through 2018. On November 30, 2005, EPA approved and promulgated the implementation plans and designation of areas for air quality purposes.[e]

[a] SJVAPCD (2010).
[b] SJVAPCD (2007a).
[c] SJVAPCD (2007b).
[d] SJVAPCD (2008).
[e] CARB (2004b); EPA (2005).

1.2 General Conformity Requirements

On November 30, 1993, EPA promulgated final general conformity regulations at 40 CFR 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 of 2010. The HST Project requires approval by FRA, and 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 1601 et seq., the General Conformity requirements are applicable, rather than transportation conformity. In general terms, unless a project is exempt under 40 CFR § 93.153(c) or is not on the agency's presumed–to-conform list pursuant to 40 CFR § 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.

The general conformity regulations incorporate a stepwise process, beginning with an applicability analysis. According to EPA's *General Conformity Guidance: Questions and Answers* (EPA 1994) (EPA Guidance), before any approval is given for a Federal Action to go forward, the federal agency must apply the applicability requirements found at 40 CFR § 93.153 to the Federal Action and/or determine on a pollutant-by-pollutant basis, whether a determination of general conformity is required. 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; and/or
- Where a facility has an emissions budget approved by the State or Tribe as part of the SIP or TIP, the federal agency determines that the emissions from the proposed action are within the budget (EPA 2010a).

The EPA Guidance states that the applicability analysis can be (but is not required to be) completed concurrently with any analysis required under the National Environmental Policy Act (NEPA). The applicability analysis for this Project is described in **Section 8.0**.

If through the applicability analysis process the responsible federal agency determines that the general conformity regulations do not apply to the Federal Action, no further analysis or documentation is required. If, however, the general conformity regulations do apply to the Federal Action, the responsible federal agency must conduct a conformity evaluation in accordance with the criteria and procedures in the implementing regulations; publish a draft determination of general conformity for public review; and then publish the final determination of general conformity.

To make a conformity determination, the federal agency must 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, or
- Fully offsetting the total direct and indirect emissions by reducing emissions of the same pollutant in the same nonattainment or maintenance area.

2.0 Description of the Federal Action

In accordance with applicable general conformity regulations and guidance, when a General Conformity Determination is necessary, the FRA is only required to conduct a general conformity evaluation for the specific federal action associated with the selected alternative for a project or program (EPA 1994), and FRA must issue a positive conformity determination before the federal action is approved. Each federal agency is responsible for determining conformity of those proposed actions over which it has jurisdiction. This final General Conformity Determination is related only to those activities included in the FRA's Federal Action pertaining to the HST Project, which is the Project's potential approval through a NEPA Record of Decision (ROD). The Project is described further in **Section 3.0** below.

General conformity requirements only apply to federal actions proposed in nonattainment areas (i.e., areas where one or more NAAQS are not being achieved at the time of the proposed action and requiring SIP provisions to demonstrate how attainment will be achieved) and in maintenance areas (i.e., areas recently reclassified from nonattainment to attainment and requiring SIP provisions to demonstrate how attainment will be maintained).

3.0 California High Speed Train Project

The Authority, a state governing board formed in 1996, is responsible for planning, designing, constructing, and operating the HST Project. Its mandate is to develop a high-speed rail system connecting the state's major population centers and coordinating 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.

FRA is responsible for oversight and regulation of railroad safety and is also charged with the implementation of the High-Speed Intercity Passenger Rail (HSIPR) financial assistance program. As part of the HSIPR Program, FRA is providing partial funding for the environmental analysis and documentation required under both the NEPA and the CEQA and other related environmental laws. In this effort, FRA is the federal lead agency on the EIR/EIS for the HST System including the EIR/EIS for the Project. In addition, to its involvement in the environmental analysis and documentation, FRA is also providing partial funding for the final design and construction of the initial construction section of the HST System which includes activities analyzed as part of this Project.

The HST 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, the Central Valley, Los Angeles, the Inland Empire, Orange County, and San Diego. It will 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 fully grade-separated, dedicated guideway alignment.

The purpose of the Merced to Fresno Section of the HST Project is to implement the California HST System between Merced and Fresno, providing the public with electric-powered high-speed rail service that provides predictable and consistent travel times between major urban centers and connectivity to airports, mass transit systems, and the highway network in the south San Joaquin Valley, and to connect the northern and southern portions of the HST System. The approximately 65-mile-long corridor between Merced and Fresno is an essential part of the statewide HST System. The Merced to Fresno Section is the location where the HST would intersect and connect with the Bay Area and Sacramento branches of the HST System; it would provide a potential location for the heavy maintenance facility (HMF) where the HSTs would be assembled and maintained, it would also provide people in Merced and Fresno access to a new transportation mode and would contribute to increased mobility throughout California.

The Merced to Fresno Section includes HST stations in the cities of Merced and Fresno. These stations are this section's beginning and ending points, or project termini. If the Castle Commerce Center, located north of Merced, were selected from the five alternative sites for the project's HMF, the project's northern boundary would be north of Merced, at that HMF. Both the east-west connection to San Jose and into San Francisco and the HMFs are studied in the Merced to Fresno Section EIR/EIS, but the decisions on these portions of the project have been postponed until after the Fresno to Bakersfield and the San Jose to Merced Sections complete their environmental reviews.

There were three HST alignment alternatives proposed for the Merced to Fresno Section of the HST System: the UPRR/SR 99 Alternative, which would primarily parallel the UPRR railway; the BNSF Alternative, which would parallel the BNSF railway for a portion of the distance between Merced and Fresno; and the Hybrid Alternative, which combines features of the UPRR/SR 99 and BNSF alternatives. Each of these three alternatives included two different east-west design options, the Ave 24 Wye and the Ave 21 Wye, resulting in a total of six different alternative design options (UPRR/SR 99 Alternative with Ave 24 Wye, UPRR/SR 99 Alternative with Ave 21 Wye, BNSF Alternative with Ave 24 Wye, BNSF

Alternative with Ave 21 Wye, Hybrid Alternative with Ave 24 Wye, Hybrid Alternative with Ave 21 Wye).[1] The Hybrid Alternative is the Preferred Alternative.

It is estimated that construction of the Merced Fresno Section of the Project would take approximately eight years, with initiation of construction in 2013 and completion in 2022.

[1] A selection by the FRA and Authority of a wye will not occur as part of the initial Merced to Fresno Section rail alignment decision. A wye will be selected as part of a subsequent HST section, San Jose to Merced. A third wye option along State Route (SR) 152 likely will be added in the San Jose to Merced Section EIR/EIS, and associated General Conformity determination (should one be necessary). Because the scope of construction and the construction methods would be similar to the Ave 21 and Ave 24 wye options analyzed in this document, it is not expected that the SR152 wye would increase construction emissions over those covered by this General Conformity determination. If it is determined that emissions would differ, however, the SR 152 Wye will be covered in a General Conformity determination for the San Jose to Merced Section.

4.0 Air Quality Conditions in the Study Area

4.1 Meteorology and Climate

Air quality is affected by both 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 is located in the San Joaquin Valley Air Basin (SJVAB), which encompasses the southern two-thirds of California's Central Valley. The SJVAB is approximately 250 miles long and is shaped like a narrow bowl. The sides and southern boundary of the bowl are bordered by mountain ranges. The valley's weather conditions include frequent temperature inversions; long, hot summers; and stagnant, foggy winters, all of which are conducive to the formation and retention of air pollutants (SJVAPCD 2009).

The SJVAB is typically arid in the summer months with cool temperatures and prevalent tule fog (i.e., a dense ground fog) in the winter and fall. The average high temperature in the summer months is in the mid-90s and the average low in the winter is in the high 40s. January is typically the wettest month of the year with an average of about 2 inches of rain. Wind direction is typically from the northwest with average monthly wind speeds ranging from 4.7 mph to 8.3 mph (Western Regional Climate Center 2009).

4.2 Ambient Air Quality in the Study Area

CARB maintains ambient air monitoring stations for criteria pollutants throughout California. The stations closest to the HST alignment are the Merced Coffee, Madera Pump Yard, Fresno-Drummond, and Merced M Street monitoring stations. These stations monitor nitrogen dioxide (NO_2), ozone (O_3), particulate matter smaller than or equal to 10 microns in diameter (PM_{10}), carbon monoxide (CO), and particulate matter smaller than or equal to 2.5 microns in diameter ($PM_{2.5}$) but do not monitor sulfur dioxide (SO_2). The land uses in the region range from urban and residential to rural and agricultural and these stations represent these land use types. Air quality standards, primarily for O_3 and PM, have been exceeded in the SJVAB primarily because of existing industrial and agricultural sources. Table 2 summarizes the results of ambient monitoring at the three stations from 2007 through 2009.

A brief summary of the monitoring data includes the following:

- Monitored data from 2007 through 2009 do not exceed either the state or federal standards for CO or NO_2.
- O_3 values for the region exceed the state and the national 8-hour O_3 standards for all O_3 stations for years 2007 through 2009. O_3 values for the region also exceed the state 1-hour O_3 standard for all stations for every year in the past 3 years (EPA 2009a).
- The PM_{10} monitor is located in Fresno. The annual and the 24-hour state standards were exceeded multiple times for years 2007 through 2009. There were no exceedances of the federal 24-hour standard.

Table 2
Ambient Criteria Pollutant Concentration Data at Air Quality Monitoring Stations Closest to the Project

Air Pollutant	Standard/Exceedance	Merced Coffee Station			Madera Pump Yard Station			Fresno-Drummond Station			Merced M Street Station		
		2007	2008	2009	2007	2008	2009	2007	2008	2009	2007	2008	2009
Carbon Monoxide (CO)	Year coverage	NM	NM	NM	NM	NM	NM	97	94	95	NM	NM	NM
	Max. 1-hour concentration (ppm)	NM	NM	NM	NM	NM	NM	4.4	2.6	N/A	NM	NM	NM
	Max. 8-hour concentration (ppm)	NM	NM	NM	NM	NM	NM	2.37	2.14	1.95	NM	NM	NM
	# Days>federal 1-hour std. of >35 ppm	NM	NM	NM	NM	NM	NM	0	0	N/A	NM	NM	NM
	# Days>federal 8-hour std. of >9 ppm	NM	NM	NM	NM	NM	NM	0	0	0	NM	NM	NM
	# Days>California 8-hour std. of >9 ppm	NM	NM	NM	NM	NM	NM	0	0	0	NM	NM	NM
Ozone (O_3)	Year coverage[a]	99	97	100	98	88	92	95	100	98	NM	NM	NM
	Max. 1-hour concentration (ppm)	0.105	0.131	0.094	0.091	0.120	0.111	0.110	0.124	0.118	NM	NM	NM
	Max. 8-hour concentration (ppm)	0.096	0.120	0.083	0.083	0.107	0.096	0.092	0.112	0.101	NM	NM	NM
	# Days>federal 8-hour std. of >0.075 ppm	18	33	15	5	24	13	9	20	39	NM	NM	NM
	# Days>California 1-hour std. of >0.09 ppm	5	14	0	0	9	6	2	19	25	NM	NM	NM
	# Days>California 8-hour std. of >0.07 ppm	25	54	35	12	46	27	18	36	55	NM	NM	NM
Nitrogen Dioxide (NO_2)	Year coverage	98	96	95	99	97	97	95	98	98	NM	NM	NM
	Max. 1-hour concentration (ppm)	0.050	0.060	0.056	0.047	0.053	0.046	0.067	0.076	0.076	NM	NM	NM
	Annual average (ppm)	0.009	0.009	0.008	0.010	0.010	0.009	0.016	0.015	0.014	NM	NM	NM
	# Days>California 1-hour std. of >0.18 ppm	0	0	0	0	0	0	0	0	0	NM	NM	NM
Respirable Particulate Matter (PM_{10})	Year coverage	NM	NM	NM	NM	NM	NM	97	100	100	95	92	94
	Max. 24-hour concentration ($\mu g/m^3$)	NM	NM	NM	NM	NM	NM	93.0	99.5	84.0	69.0	76.8	65.1
	#Days>Fed. 24-hour std. of >150 $\mu g/m^3$	NM	NM	NM	NM	NM	NM	0	0	0	0	0	0
	#Days>California 24-hour std. of >50 $\mu g/m^3$	NM	NM	NM	NM	NM	NM	10	21	12	6	14	5
	Annual average ($\mu g/m^3$)	NM	NM	NM	NM	NM	NM	38.1	40.5	35.3	29.7	34.5	26.9

Air Pollutant	Standard/Exceedance	Merced Coffee Station			Madera Pump Yard Station			Fresno-Drummond Station			Merced M Street Station		
		2007	2008	2009	2007	2008	2009	2007	2008	2009	2007	2008	2009
Fine Particulate Matter ($PM_{2.5}$)	Year coverage	NM	NM	NM	NM	NM	NM	NM	NM	NM	95	97	95
	Max. 24-hour concentration (µg/m^3)	NM	NM	NM	NM	NM	NM	NM	NM	NM	81.6	54.0	53.3
	State annual average (µg/m^3)	NM	NM	NM	NM	NM	NM	NM	NM	NM	15.2	N/A	13.6
	#Days>fed. 24-hour std. of >35 µg/m^3	NM	NM	NM	NM	NM	NM	NM	NM	NM	17	9	8
	Annual average (µg/m^3)	NM	NM	NM	NM	NM	NM	NM	NM	NM	15.2	N/A	13.5

[a]Coverage is for an 8-hour standard.

µg/m^3 = micrograms per cubic meter
NM = not monitored
N/A = not available
> = greater than

Sources: CARB (2010a); EPA (2010b).

4.3 Study Area Emissions

CARB maintains an annual emission inventory for each county and air basin in the state. The inventory for the SJVAB consists of data submitted to CARB by SJVAPCD plus estimates for certain source categories, which are provided by CARB staff. The most recent published inventory data for the SJVAB is summarized in Table 3.

Table 3
2010 Estimated Annual Average Emissions for SJVAB (tons per day)

Source Category	VOCs	CO	NO_x	SO_x	PM	PM_{10}	$PM_{2.5}$
Stationary Sources							
Fuel Combustion	6.0	35.6	45.0	6.7	5.9	5.7	5.7
Waste Disposal	9.2	1.1	2.0	0.5	1.2	0.7	0.3
Cleaning and Surface Coatings	39.2	0.1	0.1	0.0	0.5	0.5	0.5
Petroleum Production and Marketing	33.1	8.9	4.3	6.2	4.0	2.6	2.2
Industrial Processes	19.5	2.4	4.6	2.7	24.0	14.4	6.7
Total Stationary Sources	107.0	48.1	56.0	16.1	35.6	24.0	15.4
Stationary Sources Percentage of Total	15.3	1.4	6.8	40.8	6.8	8.0	13.3
Area-wide Sources							
Solvent Evaporation	127.1	-	-	-	-	-	-
Miscellaneous Processes	15.5	111.3	25.8	0.9	424.4	214.9	52.1
Total Area-wide Sources	142.6	111.3	25.8	0.9	424.5	214.9	52.1
Area-wide Sources Percentage of Total	20.4	3.3	3.1	2.3	81.4	71.9	44.9
Mobile Sources							
On-road Motor Vehicles	210.8	2,115.8	450.3	2.1	25.2	24.9	17.9
Other Mobile Sources	150.8	974.2	287.8	18.9	19.1	18.5	16.4
Total Mobile Sources	361.6	3,090.0	738.2	21.0	44.3	43.4	34.4
Mobile Sources Percentage of Total	51.8	90.5	89.5	53.2	8.5	14.5	29.7
Natural (Nonanthropogenic) Sources							
Natural Sources	86.5	164.2	5.0	1.5	17.3	16.6	14.1
Total Natural (Nonanthropogenic Sources)	86.5	164.2	5.0	1.5	17.3	16.6	14.1
Natural Sources Percentage of Total	12.4	4.8	0.6	3.8	3.3	5.5	12.2
Grand Total	**697.7**	**3,413.5**	**825.0**	**39.5**	**521.7**	**298.9**	**115.9**

Source: CARB (2009).

In the SJVAPCD, mobile source emissions account for over 60% of the basin's CO and NO_x emission inventory. Area sources account for over 80% and over 50% of the basin's particulate and total VOC emissions, respectively, and stationary sources account for over 70% of the basin's sulfur oxides (SO_X) emissions.

4.4 Project Study Area Designations

The study area defined in the EIR/EIS for the HST Project and for this final General Conformity Determination is currently designated as severe nonattainment for ozone, nonattainment for particulate matter smaller than 2.5 microns ($PM_{2.5}$) and maintenance for CO. It is designated as attainment for all the other pollutants. Therefore, conformity regulations would apply to these three pollutants if the annual emissions of these pollutants generated by the proposed Project were to exceed the general conformity *de minimis* thresholds. As such, annual emissions of these pollutants generated by the proposed Project in the entire SJVAB were compared to these thresholds.

5.0 Relationship to NEPA

A Draft EIR/EIS was published for public review and comment in August 2011 providing an analysis of three Build alternatives and a No-Build alternative. The Final EIR/EIS was published in April 2012. The Final 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 be sufficient for purposes of CEQA also.

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 proposed 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 state and national ambient air quality standards. The air quality impacts of the HST Project under future Build conditions were also compared in the Final EIR/EIS to the future No-Build conditions for NEPA purposes (they were also compared to existing conditions). The General Conformity Determination process and general findings are discussed in the Final EIR/EIS.

FRA and the Authority recently published a Revised Draft EIR/Supplemental Draft EIR/EIS for the Fresno to Bakersfield Section of the HST System. Subject to the final agency decision, the Fresno to Bakersfield Section will begin at the terminus of the Merced to Fresno Section at the Downtown Fresno HST Station and continue south, ending at a Bakersfield HST Station. This Revised Draft EIR/Supplemental Draft EIS was published in July 2012. The Fresno to Bakersfield Section is also within the SJVAB and if necessary a General Conformity Determination will be prepared as part of the environmental process to comply with the CAA. However, the Fresno to Bakersfield Section will not be approved or implemented until FRA and the Authority have issued a Final EIR/EIS and the subsequent decision documents. Once approved, certain construction activities within the Fresno to Bakersfield Section may occur concurrently with Merced to Fresno Section construction activities. As such, and in order to appropriately identify and offset, where necessary, the emissions occurring in the SJVAB, FRA will issue a draft General Conformity Determination covering the potential emissions from both sections of the HST System from Merced to Bakersfield as part of the Fresno to Bakersfield Section EIR/EIS process. As noted above, in the interim, no construction work on the Fresno to Bakersfield Section may occur until the associated Authority and FRA decision documents are issued; therefore, there will be no increase in emissions as a result of construction activities. The Authority has entered into discussions with the SJVAPCD to offset any emissions, as necessary, resulting from the Fresno to Bakersfield Section through the same Voluntary Emission Reduction Agreement (VERA) agreement as described in **Section 12.2**.

6.0 Emission Reduction Measures to Be Incorporated in the Project

In order to reduce impacts on the environment and as required by NEPA and CEQA, the construction of the Project will include project design features and mitigation measures (Section 3.3.8 and 3.3.9 of the EIR/EIS) that will be implemented as part of the Project to minimize air quality impacts. These mitigation measures will be required components of the Project. They are included in the Mitigation Monitoring and Enforcement Program included with FRA's ROD and will therefore be enforceable commitments undertaken by the Authority. Construction of the Project is anticipated to occur through a design/build contract. The selected contractor will be bound under the terms of the construction contract to implement these mitigation measures. The Authority will be responsible for implementing and overseeing a mitigation monitoring program to ensure that the contractor meets all air quality mitigation measures for ozone precursors (i.e., nitrogen oxides [NO_x] and volatile organic compounds [VOCs]), and particulate matter.

Project design features include the following:

- Trucks would be covered to reduce significant fugitive dust emissions while hauling soil and other similar material.
- All trucks and equipment will be washed before exiting the construction site.
- Exposed surfaces and unpaved roads would be watered three times daily.
- Vehicle travel speed on unpaved roads would be reduced to 15 miles per hour (mph).
- Any dust generation activities will be suspended when wind speed exceed 25 mph.
- All disturbed areas, including storage piles that are not being actively utilized for construction purposes, will be effectively stabilized of dust emissions using water or a chemical stabilizer/suppressant, or covered with a tarp or other suitable cover or vegetative ground cover.
- All onsite unpaved roads and offsite unpaved access roads will be effectively stabilized of dust emissions using water or a chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut and fill, and demolition activities will be effectively controlled of fugitive dust emissions by utilizing an application of water or by presoaking. With the demolition of buildings up to six stories in height, all exterior surfaces of the building will be wetted during demolition.
- When materials are transported offsite, all material will be covered or effectively wetted to limit visible dust emissions, and at least 6 inches of freeboard space from the top of the container will be maintained.
- All operations will limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, piles will be effectively stabilized of fugitive dust emissions utilizing sufficient water or a chemical stabilizer/suppressant.
- Within urban areas, trackout will be immediately removed when it extends 50 or more feet from the site and at the end of each workday.
- Any site with 150 or more vehicle trips per day will prevent carryout and trackout.

- Use of low-VOC paint that contains less than 10% of VOC contents. A Super-compliant or Clean Air paint that has a lower a VOC content than those required by South Coast AQMD Rule 1113, will also be used when available.

The following are two additional mitigation measures that may be included but were not assumed for the estimation of emission rates at this time because their implementation is uncertain. Prior to the initiation of construction (i.e., after a contractor has been selected), the use of these measures will be revisited, and if feasible, implemented. The implementation of these measures may result in the need for fewer emission offsets (see **Section 12**) to comply with general conformity requirements.

- **AQ-MM#1: Reduce Criteria Exhaust Emissions from Construction Equipment –** This mitigation measure will apply to heavy-duty construction equipment used during the construction phase. All off-road construction diesel equipment will use the cleanest reasonably available equipment (including newer equipment and/or tailpipe retrofits), but in no case less clean than the average fleet mix as set forth in CARB's Non-Road 2007 database. The contractor will document efforts it undertook to locate newer equipment (such as, in order of priority, Tier 4, Tier 3 or Tier 2 equipment) and/or tailpipe retrofit equivalents. Contractor shall provide documentation of such efforts, including correspondence with at least two construction equipment rental companies. A copy of each unit's certified tier specification and any required CARB or SJVAPCD operating permit will be made available at the time of mobilization of each piece of equipment. Contractor shall keep a written record (supported by equipment hours meters where available) of equipment usage during project construction for each piece of equipment.

- **AQ-MM#2: Reduce Criteria Exhaust Emissions from On-Road Construction Vehicles –** This mitigation measure would apply to on-road trucks used to haul construction materials, including fill, ballast, rail ties, and steel. Material hauling trucks would consist of an average fleet mix of equipment model year 2010 or newer, to the extent reasonably practicable. Contractor shall provide documentation of efforts to secure such fleet mix. Contractor shall keep a written record of equipment usage during project construction for each piece of equipment.

7.0 Regulatory Procedures

The general conformity regulations establish certain procedural requirements that must be followed when preparing a general conformity evaluation. This section addresses the major applicable procedural issues and specifies how these requirements are met for the evaluation of the Federal Action. 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 regulations. It is anticipated, however, that the Final General Conformity Determination will be published concurrent with the FRA ROD for the Federal Action. This General Conformity Determination is being released for public and agency review pursuant to 40 CFR § 93.156.

7.1 Use of Latest Planning Assumptions

The general conformity regulations require the use of the latest planning assumptions for the area encompassing the federal action, derived from the estimates of population, employment, travel, and congestion most recently approved by the area's MPOs (40 CFR § 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 SJVAPCD. The traffic data used in the air quality analysis (see Final EIR/EIS, Section 3.2) are consistent with the most recent estimates made by the MPOs for traffic volume growth rates, including forecast changes in vehicle miles traveled (VMT) and vehicle hours traveled (VHT). 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 region's Transportation Plan and TIP.

7.2 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 CFR § 93.159(b)). Vehicular emission factors were estimated by using the CARB emission factor program, EMission FACtors 2007 (EMFAC2007), which is the emission model used in the preparation of the SIP. Parameters were set in the program for each individual county to reflect conditions within each county, and statewide parameters were used to reflect statewide conditions.

Pollutant emissions from building demolition and construction of the at-grade rail segments, elevated rail segments, retained fill rail segments, transaction power substations, industrial buildings at the heavy maintenance facility and HST stations, including parking garages and platform facilities, were calculated using the URBanEMISsions (URBEMIS) 2007 model (see Air Quality Technical Report, Section 7.10. URBEMIS2007 uses emission factor data for off-road equipment based on data from the OFFROAD 2007 and EMFAC2007 models. Project-specific load factors (the ratio of average equipment horsepower utilized to maximum equipment horsepower) were input into the URBEMIS2007 program to account for updated load factor data from CARB's Off-Road/Nonroad 2011 database.[2] An adjustment was also made to account for an error built into URBEMIS2007's application of load factor data; failure to make the adjustment would otherwise result in under-reporting emissions.

[2] See http://www.arb.ca.gov/regact/2010/offroadlsi10/offroadappd.pdf (Table D-7 of ARB's Appendix D at this website) (CARB 2010b). These factors represent the latest information regarding construction equipment *usage*; the Final EIR/EIS calculations account for this latest information. The ARB updates also included updates to the average industry equipment *age* (see pages D-18 to D-25 of ARB's Appendix D), generally concluding that the average equipment age is newer/cleaner than then-existing ARB databases contained. Because of time pressures and modeling complexities, the construction emissions estimates in the Final EIR/EIS do not account for the newer/cleaner equipment. Doing so would reduce the emission levels presented by a small amount, likely less than 10%.

7.3 Major Construction-Phase Activities

Project-specific data, including construction equipment lists and the construction schedule, were used for construction associated with the alignment/guideway. Where project-specific data were not available, URBEMIS2007 default settings were used. Calculations were performed for each year of construction.

Major activities were grouped into the following categories:

- Mobilization
- Site preparation including demolition, land clearing, and grubbing
- Earth-moving
- Roadway crossings
- Elevated structures
- Track laying – elevated, at-grade and retained fill
- Traction power supply station
- Switching station
- Paralleling station
- HMF – including demolition, building, and track construction
- Merced station
- Fresno station
- Hauling emissions – including truck and rail

7.4 Emission Scenarios

The general conformity regulations require that the evaluation reflect certain emission scenarios (40 CFR §93.159(d)). Specifically, these scenarios generally include the evaluation of the direct and indirect emissions from a proposed Project for the following years: (1) for nonattainment areas, the year mandated in the CAA for attainment 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 Federal Action 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 a project have to be considered, and the following applies to the proposed Project.

- Emissions generated during the operational phase of the HST would meet the emission requirements for the years associated with Items 1 and 3 because the emissions generated during the operational phase of the proposed Project would be less than those emitted in the No-Build scenario (see Final EIR/EIS Section 3.3). In addition, microscale analyses conducted for the EIR/EIS demonstrate that the operational phase of the HST would not cause or exacerbate a violation of the NAAQS for all applicable pollutants (see Final EIR/EIS, Section 3.3.6.3).

- Emissions generated during HST's construction phase, which would include the year with the greatest amount of total direct and indirect emissions (Item 2), may be subject to general conformity regulations because they will increase regional emission rates and, as such, have the potential to cause or exacerbate an exceedance of an 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 $PM_{2.5}$ and CO 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 proposed Project's construction period. These emissions, which are the maximum values for the project Preferred Alternative, are described in more detail in **Section 10.0** of this report.

8.0 Applicability Analysis

As stated previously, 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 (non-Transportation) action requires a General Conformity Determination for each pollutant where the total of direct and indirect emissions caused by the federal action would equal or exceed an annual *de minimis* emission rate.

8.1 Attainment Status of Project Area

EPA 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 shows the designation status of the SJVAB for each criteria pollutant.

Table 4
Federal Attainment Status

Pollutant	Federal Classification
O_3	Nonattainment (Extreme)
PM_{10}	Maintenance
$PM_{2.5}$	Nonattainment
CO	Urban portion of Fresno County: Maintenance Remaining basin: Attainment
NO_2	Attainment
SO_2	Attainment
Source: EPA (2010c).	

Under federal designations, the SJVAB is currently classified as nonattainment for 8-hour O_3, the 1997 $PM_{2.5}$ standard (annual standard of 15 micrograms/cubic meter [$\mu g/m^3$] and 24-hour standard of 65 $\mu g/m^3$), and the 2006 24-hour $PM_{2.5}$ standard (35 $\mu g/m^3$). The SJVAB is a maintenance area for PM_{10}, and the Fresno Urbanized Area is a maintenance area for CO. The SJVAB is in attainment for the NO_2 and SO_2, and unclassified for lead. As such, FRA is required to demonstrate project-level compliance with the general conformity rule for NO_x and VOCs (e.g., ozone precursors), $PM_{2.5}$, and CO if project-related emissions of these pollutants would exceed the general conformity *de minimis* thresholds.

8.2 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 the topical exemptions summarized below, or if the activity is on the federal agency's presumed-to-conform list (40 CFR § 93.153(f)) or meets the narrow exemption for federal actions in response to an emergency or disaster (40 CFR § 93.153(e)).

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

However, the Project does not meet any of these exempt categories. In addition, 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 CFR § 93.153(e).

8.3 Applicability for Federal Action

After determining that the Project is not otherwise exempt, the applicability of the general conformity requirements to the Federal Action was 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 Federal Action were 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.

8.4 *De minimis* Emission Rates

The general conformity requirements will apply to the Federal Action for each pollutant for which the total of direct and indirect emissions caused by the Federal Action equal or exceed the *de minimis* emission rates shown below. These emission rates are expressed in units of tons per year (tpy) and are compared to the total of direct and indirect emissions caused by the Project for the calendar year during which the net emissions are expected to be the greatest. The applicable threshold levels for the pollutants for which general conformity is required in the project area are shown in Table 5.

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

Pollutant	Applicability Threshold	Attainment Status
Nitrogen Oxides (NO_x)	10 tons per year	Nonattainment (Extreme)
Volatile Organic Compounds (VOCs)	10 tons per year	
Particulate Matter Smaller the 2.5 Microns ($PM_{2.5}$)	100 tons per year	Nonattainment
Carbon Monoxide (CO)	100 tons per year	Urban portion of Fresno: Maintenance Remaining Basin: Attainment
Source: 40 CFR 93.153		

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 VOC and NO_x in the presence of sunlight), its *de minimis* emission rate 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* emission rate for O_3 (EPA 1994), the Federal Action is subject to a general conformity evaluation for O_3.

9.0 Construction Activities Considered

As shown in Section 3.3 of the Final EIR/EIS, the results of the regional analyses conducted for the proposed Project demonstrate that emissions generated during the operational phase would be less than those emitted in the No-Build and existing conditions scenarios and that the microscale analyses demonstrate that the preferred alternative would not cause or exacerbate a violation of the NAAQS for these pollutants. As such, emissions generated during HST's construction phase are the only emissions subject to this general conformity determination.

The analysis conducted for the Final 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 due to truck trips and ramp closures) 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;
- 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/interchanges adjacent to the construction areas using traffic data that include construction-related vehicles and background traffic; and
- 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;
- Horsepower (HP) and utilization rates (hours per day) for each piece of equipment;
- The quantities of construction/demolition material produced and removed from each site; and
- The number of truck trips needed to remove construction/demolition material, and to bring the supply materials to each site.

The following is a discussion of the major activities considered, the timing of these activities, and the procedures used to estimate emission rates.

A full description of construction analysis methodology can be found in Section 6.8 of the *Merced to Fresno Section Air Quality Technical Report* for this project (Authority and FRA 2012b).[3]

[3] Available online at http://cahighspeedrail.ca.gov/final-eir-m-f.aspx.

9.1 Mobilization

Mobilization would take approximately 4 months, beginning in March 2013. Emissions associated with mobilization were calculated using URBEMIS2007 for a site-specific land use category with properties similar to those of an industrial park. Mobilization emissions were estimated using the Mass Site Grading Phase in URBEMIS2007; fugitive dust emissions from mobilization would be negligible because of the minimal disturbance necessary at the construction sites. Two mobilization staging areas are anticipated for the Merced to Fresno Section of the HST alignment.

9.2 Site Preparation

9.2.1 Demolition

Demolition of existing structures along the HST alignment and HST stations is expected to start in July 2013. The majority of demolition would occur in 2014 and 2015, with demolition activities concluding at the end of 2017. Demolition emissions were calculated using URBEMIS2007. In addition to the fugitive dust emissions resulting from the destruction of existing buildings, emissions were estimated for worker trips, construction equipment exhaust, and truck hauling exhaust. Activity data for the demolition of buildings were based on site surveys. Only the option with the maximum demolition-related emissions was included in the total emissions estimate.

The General Heavy-Industry land use category in URBEMIS2007 was used to model the demolition activities. The maximum daily volume of buildings to be demolished was estimated using the total area provided and the approximate duration of construction activities.

9.2.2 Land Grubbing

Land grubbing refers to the site preparation activities for the HST alignment construction and would coincide with demolition activities. Emissions were estimated using the URBEMIS2007 default parameters for the Light-Industry land use category together with the Mass Site Grading option and a site-specific equipment list.

The construction areas used in URBEMIS2007 were the total areas to be cleared based on the length of the alignment. Although the track widths vary along the alignment, it was conservatively assumed that a width of 120 feet would be graded along the entire length of the alignment. This width accounts for the widest portion of the alignment (four tracks wide) plus a buffer area on each side. It was estimated that the maximum graded area would be 0.5 acre per day (Valsecchi 2010). The URBEMIS2007 default fugitive dust emission factor for grading (20 pounds per acre per day) was used to estimate fugitive dust emissions from land grubbing activities.

9.3 Earth Moving

The earth moving activities include grading, trenching, and cut/fill activities for the alignment construction. The emissions associated with the earth moving activities were estimated using URMBEMIS2007 default parameters for the Light-Industry land use category as well as site-specific equipment.

The construction area used in URBEMIS2007 was the total area to be cleared based on the length of the alignment. Although the track widths vary along the alignment, it was conservatively assumed that a width of 120 feet would be graded along the entire length of the alignment. This width accounts for the widest portion of the alignment (four tracks wide) plus a buffer on each side. It was estimated that the maximum graded area would be 0.5 acre per day (Valsecchi 2010).

The default fugitive dust emissions from cut/fill activities were estimated based on the total quantity of cut and fill material of the onsite excavation and offsite hauling.

9.4 HST Alignment Construction

The HST alignment construction is expected to occur from 2014 to 2016, and includes the following construction phases and operation of a concrete batch plant:

- Constructing structures for the elevated track
- Laying elevated track, laying at-grade track
- Constructing the retaining wall for the retained fill track
- Laying retained fill track

9.4.1 Track Type and Alignment Alternatives

Three track types (elevated, at-grade, and retained fill), three HST alignment alternatives (UPRR/SR 99, BNSF, and Hybrid), and the HMF track were considered in the EIR/EIS analysis. The HST alignment alternatives differed in their total length, location, width, and percent at-grade/elevated/retained fill. The UPRR/SR 99, BNSF, and Hybrid alternatives had two options based on the construction of a wye. The Ave 24 Wye and Ave 21 Wye options were included in the alignment construction calculations by incorporating the length of each wye into the total length of the alignment. Emissions associated with the HMF track were estimated using the same approach as for the alignment alternatives.

Construction of the Preferred Alternative (the Hybrid Alternative) was conservatively based upon the longest possible design option (i.e., the Ave 21 Wye). Alignment construction of the at-grade track, elevated track and retained fill would take place in 2015 and 2016.

9.4.2 Concrete Batch Plants

Concrete would be required for construction of bridges used to support the elevated sections of the alignment, a slab base on certain of those elevated structures and for construction of the retaining wall used to support the retained fill sections of the alignment. To provide enough onsite concrete, it was estimated that three batch plants would operate in the project area during construction of the alignment sections. Because the locations of the concrete batch plants are unknown, emissions were estimated based on the total amount of concrete required (independent of the number of concrete batch plants) and emission factors from AP-42 Chapter 11.12 – Concrete Batching (EPA 2006). Emissions from on-road truck trips associated with transporting material to and from the concrete batch plants were also included.

The HST Project would also include the relocation and expansion of freeway segments, local roads, and overpasses and reconstruction of several intersections. Fugitive dust and exhaust emissions from these activities were estimated using the default equipment list and construction schedules from the Sacramento Roadway Construction Emissions Model (SMAQMD 2009) and URBEMIS2007.

9.4.3 Material Hauling

Emissions from the exhaust of trucks used to haul material to the construction site were calculated using heavy-duty truck emission factors from EMFAC2007 and anticipated travel distances of haul trucks within the SJVAB. Ballast and sub-ballast materials could potentially be hauled by rail within the air basin. Rail emission factors from EPA document *Emission Factors for Locomotives* (EPA 2009b) and the travel distance by rail to the project site were used to estimate rail emissions.

Ballast materials could potentially be transported from locations outside of SJVAB. For the regional emission analysis, emissions from ballast material-hauling were calculated using the distance traveled

within the SJVAB. Emissions from ballast material-hauling by trucks and locomotives outside the SJVAB were estimated based on the travel distances and transportation method (by rail or by truck) from the locations where ballast materials would be available. Rail emission factors using EPA guidelines found in *Emission Factors for Locomotives* (EPA 2009b) were used to estimate the locomotive emissions. Other construction materials would likely be delivered from supply facilities within the SJVAB.

Five potential quarries that provide ballast material were identified. Of these, three quarries, including Napa Quarry, Lake Herman Quarry, San Rafael Rock Quarry, were included in the evaluation because of their proximity to the project construction site. These three quarries are all located within 70 miles of the SJVAB border and would have material available for the project construction. The Bangor Rock Quarry Site A was included in the evaluation because it is located within 100 miles of the SJVAB border. In addition, this quarry would have material available for the project needs in quantities that exceed the material quantities available at the closest quarries. The other quarry, Kaiser Eagle Mountain Quarry, which is located 350 miles by rail (250 miles by road) from the border of the SJVAB, was analyzed because the annual production rate at this quarry was sufficient to meet construction material requirements.

This analysis was based on the largest amount of ballast needed for the project for a worst-case year. It was assumed that the material would be transferred either by diesel truck from the quarry to rail (if there was no rail head onsite) and then by rail to the border of SJVAB, entirely by rail to the border of the SJVAB (if there was a rail head onsite), or by diesel truck from the quarry to the border of the SJVAB. Emissions could potentially occur in several air basins and air districts outside SJVAB. Detailed analysis of each scenario is presented in Appendix H of the *Merced to Fresno Section Air Quality Technical Report* (Authority and FRA 2012b).

9.5 Train Station Construction

Emissions from HST station construction would be a result of mass site grading, building construction, and architectural coatings. Where applicable, emissions resulting from worker trips, vendor trips, and construction equipment exhaust were also included. Paving activities were not considered because surface parking lots are not expected as part of the construction; only parking structures with emissions captured during the building construction phase were included.

Construction of the HST stations would begin in 2019 and be completed by the summer of 2022. URBEMIS2007 was used to estimate emissions from construction phases of the HST stations. The Light-Industry land use category in URBEMIS was used for construction of the station buildings, parking structure, platforms, bridges, and columns.

9.6 Heavy Maintenance Facility Construction

Emissions associated with construction of the HMF are expected as a result of mass site grading, asphalt paving, building construction, and architectural coatings. Emissions would also result from construction of the HMF Access Guideway rail. The General Heavy-Industry land use category was assumed in URBEMIS2007 modeling to estimate the emissions from HMF construction.

Construction of the HMF facility would occur from approximately July 2018 to the end of 2019. Construction of the HMF track would occur from December 2018 to May 2019.

9.7 Power Distribution Station Construction

Emissions associated with construction of the traction power substations, switching stations, and paralleling stations would be from mass site grading, building construction, and architectural coatings. Paving activities were not considered because these stations would not have paved areas and access roads would be covered with gravel.

The emissions from power distribution station construction were calculated using default parameters in URBEMIS2007 with the Light-Industry land use category. Two traction power substations, three switching stations, and four paralleling stations would be included in the Preferred Alternative. For simplicity, only one of each station type was modeled in URBEMIS2007; the resulting emissions were multiplied by the number of stations to be constructed. Construction of power distribution stations is expected to occur after September 2017.

The URBEMIS2007 default number of construction equipment items was based on the total acres of building construction. The URBEMIS2007 default equipment list was used for the traction power substations; however, for the switching and paralleling stations, the default list was overwritten with the default equipment list for 1 acre of building construction, taken from Appendix H of the URBEMIS2007 User's Guide, because otherwise, given their small size, the default number of equipment items used would be zero.

9.8 Roadway Construction

The HST Project would include the relocation and expansion of freeway segments, local roads, and overpasses, and reconstruction of several intersections. Based on project-specific data, a simplified construction schedule was used to estimate construction emissions from four roadway project scenarios, and URBEMIS2007 was used to estimate the emissions from each scenario. The representative project roadway length for each scenario was estimated by averaging all anticipated project roadway lengths within that designated scenario.

To estimate construction emissions, the roadway projects were grouped by county, by size, and by inclusion in the RTPs (i.e., projects included in the RTPs were grouped together, and projects not included in the RTPs were also grouped together). Projects not listed in the RTPs and occurring only as a result of the HST were included in the annual construction emissions for the project.

9.9 Demobilization

Demobilization would occur for approximately one month in 2017 and one month in 2022. Emissions associated with demobilization were calculated using URBEMIS2007, using a site-specific land use category with properties similar to an industrial park. The land use area entered into URBEMIS2007 was conservatively estimated based on the longest alignment footprint. While construction activities were represented using a mass site grading phase, fugitive dust emissions during demobilization were presumed negligible because of minimal surface disturbance associated with this activity.

10.0 Estimated Emission Rates and Comparison to *De Minimis* Thresholds

Total annual estimated emissions generated within the SJVAB during the proposed Project's construction period, as presented in the HST Final EIR/EIS, are provided in Table 6. These values are the peak on-site emissions during each analysis year plus maximum annual off-site emissions. The maximum estimated values of VOCs (12.14 tpy) and NO_x (128.76 tpy) are approximately 0.005% and 0.04%, respectively, of the 2010 estimated emission rates in the SJVAB (see Table 3).

Construction emission rates were estimated in the EIR/EIS for each of the six alternatives/options previously under consideration for the Merced to Fresno Section. However, only those values associated with the Preferred Alternative are included in this Conformity Determination. These values are compared with the general conformity applicability threshold values. These values represent the Preferred Alternative with the Avenue 21 wye option, because that option has the highest estimated emissions. If the Avenue 24 wye option is selected, the estimated emission rates will be lower than those presented in this determination.

Table 6
Total Annual Construction-phase Emissions

Pollutant	Emissions (Tons/Year)										Conformity Applicability Thresholds (tons/year)
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
NO_x	**39.85**	**128.76**	**109.51**	**114.52**	**32.02**	**13.34**	**49.35**	**15.14**	7.36	3.96	10
VOCs	2.97	**12.14**	**11.07**	8.33	2.42	1.73	**10.83**	1.81	1.01	4.90	10
$PM_{2.5}$*	1.71	6.33	5.84	4.29	1.72	0.57	2.94	0.97	0.46	1.98	100
CO	14.11	52.45	49.24	31.51	11.40	7.65	32.42	18.41	11.58	2.51	100

Note: **Bold** values exceed applicability thresholds

* Includes sulfur dioxide emission rates as a partial precursor to $PM_{2.5}$ (i.e., it was conservatively assumed that 100% of SO_2 emissions becomes $PM_{2.5}$)

11.0 Regional Effects

As the regional emissions for all of the applicable pollutants are lower during the operations phase of the HST Project than under No-Build conditions (and will therefore not exceed the *de minimis* emission thresholds), only emissions generated during the construction phase were compared to the conformity threshold levels to determine conformity compliance. As shown in Table 6, construction-phase emissions, compared to the general conformity applicability rates, are as follows:

- Annual estimated NO_x emissions are greater than the applicability rate of 10 tons per year in years 2013 through 2020;
- Annual estimated VOC emissions are greater than the applicability rate of 10 tons per year in years 2014, 2015, and 2019; and
- Annual estimated $PM_{2.5}$ and CO emissions are less than the applicability rate of 100 tons per year in all years.

As such, a General Conformity Determination is required for this project for NO_x and VOCs for the years indicated. This determination, which is being published coincident with the ROD for the Project, includes a commitment from the FRA/Authority to reduce all NO_x and VOC emissions through emissions offsets using a VERA with the SJVAPCD, explained in **Section 12.2** below.

No additional analyses are required for the other pollutants.

12.0 General Conformity Evaluation

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

12.1 Conformity Requirements of Proposed Project

Based on the results shown in Table 6, conformity determinations are required for construction-phase emissions for:

- NO_x – because annual estimated emissions are greater than the applicability rate of 10 tons per year for years 2014 through 2020; and
- VOCs – because annual estimated emissions are greater than the applicability rate of 100 tons per year for years 2014, 2015, and 2019.

12.2 Compliance with Conformity Requirements

To support the general conformity compliance determination, the FRA demonstrates herein that the emissions of NO_x and VOCs (a precursor to O_3) caused by the construction of the proposed Project will not result in an increase in regional NO_x and VOC emissions. This will be achieved by off-setting the NO_x and VOC emissions generated by the construction of the HST in a manner consistent with the applicable general conformity regulations.

The offsets will be accomplished through a VERA between the Authority, the project proponent, and the SJVAPCD. The requirement for the VERA would be imposed on the project through the following mitigation measure from the Final EIR/EIS:

> **AQ-MM#4: Offset Project Construction Emissions through a SJVAPCD Voluntary Emission Reduction Agreement (VERA).** The Authority and SJVAPCD will enter into a contractual agreement to mitigate the project's emissions by providing funds for the district's Emission Reduction Incentive Program (SJVAPCD 2011) to fund grants for projects that achieve emission reductions, thus offsetting project-related impacts on air quality. The project will commit to reduce construction emissions for NO_x and VOC through the VERA program.

A VERA is a mitigation measure by which the project proponent (the Authority, in this case, in partnership with the FRA) will provide pound-for-pound offsets of emissions that exceed general conformity thresholds through a process that develops, funds, and implements emissions reduction projects, with the SJVAPCD serving role of administrator of the emissions reduction projects and verifier of the successful mitigation effort.

To implement a VERA, the Authority and the SJVAPCD enter into a contractual agreement in which the proponent agrees to mitigate the project's emissions (NO_x and VOCs, in this case) by providing funds for the SJVAPCD's Emission Reduction Incentive Program to fund grants for projects that achieve emission reductions, thus offsetting project-related impacts on air quality. The SJVAPCD is obligated under the VERA to seek and implement such reductions, using the project proponent's funds. The types of projects that have been used in the past to achieve such reductions include electrification of stationary internal combustion engines (such as agricultural irrigations pumps); replacing old trucks with new, cleaner, more efficient trucks; and a host of other emissions-reducing projects.

In implementing a VERA, the SJVAPCD verifies the actual emission reductions that have been achieved as a result of completed grant contracts, monitors the emission reduction projects, and ensures the enforceability of achieved reductions. The initial agreement is generally based on the projected maximum

emissions that exceed thresholds as calculated by a District-approved Air Quality Impact Assessment and/or the project's EIR/EIS; the agreement then requires the proponent to deposit funds sufficient to offset those maximum emissions exceedances. However, because the goal is to mitigate actual emissions, the District has designed adequate flexibility into these agreements such that the final mitigation is based actual emissions related to the project, based on actual equipment used, hours of operation, etc. that the proponent tracks and reports to SJVAPCD during construction. After the project is mitigated, the District certifies to the lead agency that the mitigation is completed. Thus, a VERA provides the lead agency with an enforceable mitigation measure that will result in emissions exceedances being fully offset.

According to the SJVAPCD, since 2005 the SJVAPCD has entered into seventeen VERAs with project proponents and achieved 1,393 tons of NO_x and PM_{10} reductions per year. It is the SJVAPCD's experience that implementation of a VERA is a feasible mitigation measure which effectively achieves actual emission reductions, mitigating the project to a net-zero air quality impact.

The Authority is negotiating a VERA with the SJVAPCD. Final approval and execution of the VERA by the Authority and the SJVAPCD is expected approximately concurrent with final approval of this general conformity determination. The SJVAPCD has stated that it is certain that there are enough emissions reductions projects within its air basin to fully offset the project's NO_x and VOC exceedances.[4] The Authority has provided FRA with a written commitment to offset the emissions through the VERA agreement with the SJVAPCD, which is included in Appendix A.

[4] The information in this general conformity determination regarding the VERA and the SJVAPCD's Grant Incentives Program comes from (a) www.valleyair.org/Grant_Programs/GrantPrograms.htm, (b) the SJVAPCD's October 12, 2011 comment letter on the Merced to Fresno Draft EIR/EIS document and (c) telephone discussions with the SJVAPCD.

13.0 Reporting and Public Comments

In developing the analysis underlying this general conformity determination, FRA and the Authority have consulted extensively with the SJVAPCD on a variety of technical and modeling issues. The Authority has also consulted with EPA and CARB on the overall approach to general conformity. To support a decision concerning the Federal Action, FRA issued a draft General Conformity Determination for public and agency review for a 30-day period. FRA made the draft General Conformity Determination available to the public consistent with 40 CFR § 93.156. Copies of the draft General Conformity Determination were made available on both FRA's and the Authority's websites. FRA also provided copies of the draft General Conformity Determination to the appropriate regional offices of EPA, CARB, and SJVAPCD for a 30-day review.

As a result of that 30-day public review and comment period, FRA received only one comment on the draft General Conformity Determination. The comment was from EPA and is included in Appendix B. EPA's comment letter, received on May 1, 2012, acknowledges the coordination between EPA, SJVAPCD, and the Authority regarding CAA general conformity requirements. EPA requested that this coordination continue in order to finalize the General Conformity Determination for the San Joaquin Valley Air Basin portion of the project and recommended that the finalization process and details of the VERA be included in the ROD. FRA and the Authority are committed to continuing this coordination, and AQ-MM#4 requiring the Authority to negotiate and implement the VERA is included as a mitigation commitment in the ROD.

13.1 Reevaluation of General Conformity

The general conformity regulations state that the status of a specific conformity determination lapses 5 years after the date of public notification for the final general conformity determination, unless the action has been completed or a continuous program has been commenced to implement the action (40 CFR § 93.157(a)). Because the Federal Action (i.e., FRA issuance of a ROD to construct the California HST Project) envisions a construction period extending more than 5 years, the final General Conformity Determination will remain active as a "continuous program."

14.0 Findings and Conclusions

As part of the environmental review of the proposed Project, FRA conducted a general conformity evaluation pursuant to 40 CFR Part 93 Subpart B. The general conformity regulations apply at this time to this Federal Action because the project area is located in an area that is designated as a severe nonattainment area for the 8-hour ozone standard, nonattainment for $PM_{2.5}$, and a (partial) maintenance area for CO. The FRA conducted the general conformity evaluation following all regulatory criteria and procedures and in coordination with EPA, SJVPCD, and CARB. As a result of this review, the FRA concluded, based on the fact that project-generated emissions will either be fully offset (for construction phase) or less than zero (for operational phase), that the proposed Project's emissions can be accommodated in the State Implementation (SIP) for the SJVAB. FRA has determined that the proposed Project as designed will conform to the approved SIP, based on:

A commitment from the Authority that construction-phase NO_x and VOC emissions will be offset consistent with the applicable federal regulations through a VERA with the SJVAPCD;

- The Authority and the SJVAPCD will enter into a contractual agreement to mitigate the project's NO_x and VOC emissions by providing funds for the SJVAPCD's Emission Reduction Incentive Program to fund grants for projects that achieve the necessary emission reductions;
- The SJVAPCD will seek and implement the necessary emission reduction measures, using Authority funds; and
- The SJVAPCD will serve in the role of administrator of the emissions reduction projects and verifier of the successful mitigation effort.

Therefore, FRA herewith concludes that the proposed Project, as designed, conforms to the purpose of the approved SIP and is consistent with all applicable requirements.

15.0 References

40 CFR Part 93 Subpart A. *Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Laws.*

40 CFR Part 93 Subpart B. *Determining Conformity of General Federal Actions to State or Federal Implementation Plans.*

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APPENDIX A

Emissions Offset Commitment

CALIFORNIA
High-Speed Rail Authority

August 13, 2012

Mr. David Valenstein, Division Chief
Environment and Systems Planning
Office of Passenger and Freight Programs
USDOT Federal Railroad Administration
1200 New Jersey Avenue SE, MS-20, W38-314
Washington, DC 20590

Re: Approach to Mitigation/Offset of Construction Air Quality Impacts of Merced to Fresno High Speed Rail Segment – Relation to General Conformity

Dear Mr. Valenstein:

On May 3, 2012, the Board of the California High Speed Rail Authority ("Authority") certified the Merced to Fresno HSR segment EIR/EIS under CEQA,[1] adopted associated findings regarding potential environmental impacts and mitigation, and approved two station locations and what the EIR/EIS describes as the Hybrid Alignment Alternative. The adopted findings and project approval contained important and significant commitments regarding mitigation and offset of construction emissions of certain criteria pollutants. I am writing to summarize those commitments, as they relate to the Federal Railroad Administration's ("FRA") pending General Conformity ("GC") Determination under the federal Clean Air Act.

The most important commitment, as relevant to the pending GC Determination, is to Air Quality Mitigation Measure #4 ("AQ-MM#4"), which states:

> AQ-MM#4: Offset Project Construction Emissions through a SJVAPCD Voluntary Emissions Reduction Agreement (VERA). This mitigation measure would address AQ IMPACT #1 (Regional Impacts – Construction of the HST would exceed the CEQA emissions threshold for VOC and NOX). The Authority and SJVAPCD will enter into a contractual agreement to mitigate (by offsetting) to net zero the project's actual emissions that exceed thresholds by providing funds for the district's Emission Reduction Incentive Program (SJVAPCD, 2011) to fund grants for projects that achieve emission reductions, thus offsetting project-related impacts on air quality. The project will reduce actual construction emissions for VOC and NOX that exceed significance/ General Conformity thresholds through the VERA program. To lower overall cost, funding for the VERA program, to cover estimated construction emissions for any funded construction phase, shall be provided at the beginning of the construction phase. At a minimum, mitigation/offsets shall occur in the year of impact, or as otherwise permitted by 40 CFR Part 93 Section 93.163.

[1] CEQA is the California Environmental Quality Act, contained in California Public Resources Code section 21000 *et seq.*

Essentially, AQ-MM#4 commits the Authority to offset to net zero its criteria pollutant emissions from construction that exceed GC thresholds.[2] The vehicle to accomplish the offsets is the VERA between the Authority and the San Joaquin Valley Air Pollution Control District (District). Under the VERA, the project would pay the District the estimated cost of causing local emitters of VOC and NOX to emit less. This would be achieved by the local emitters using the funds to purchase new and cleaner-burning equipment to replace older and less-clean-burning equipment, or through equipment retrofit. This approach has proven successful in the past.

In identifying the VERA as the appropriate method to offset construction emissions, the Authority consulted with the District and the California Air Resources Board (CARB). During this consultation, the District assured the Authority that the VERA program could deliver the full amount of offsets required by the project. Based on this assurance, the Authority commits to implementing the VERA program once the required agreement is executed.

The VERA program is described in more detail in the District's October 2011 letter to the Authority (attached; see pages 4-5). The Authority has prepared a draft VERA and provided it to the District; the parties are currently working towards finalizing and approving it later this year. As the VERA is the method to offset emissions, no construction work will begin until it is executed.

AQ-MM#4 is an enforceable commitment by the Authority under CEQA. The Board imposed it as a condition of its approval of the Merced to Fresno Hybrid Alignment Alternative. This was done in Section 4 of Resolution 12-20, which the Board adopted on May 3, 2012. Incorporating mitigation measures into conditions of approval is sufficient under CEQA to demonstrate that the measures are enforceable. *See* California Public Resources Code section 21081.6(b). The Authority also understands that the VERA agreement will be a condition of FRA's Record of Decision.

Please let us know if you have any further questions about these matters.

Sincerely,

Mark McLoughlin
Interim Deputy Director, Environmental Planning

Attachment: October 12, 2011 letter from SJVAPCD to Authority

cc: Tom Fellenz, Authority General Counsel

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[2] Through its commitments to mitigation under cumulative impacts under CEQA, the Authority is actually committing to more construction air quality mitigation than is required under General Conformity Clean Air Act rules.

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

October 12, 2011

California High-Speed Rail Authority
Merced to Fresno Draft EIR/EIS Comments
770 L Street, Suite 800
Sacramento, CA 95814

Project: California High-Speed Train
Merced to Fresno Section
Draft Environmental Impact Statement

District CEQA Reference No: 20110301

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the Draft Environmental Impact Statement (DEIS) for the project referenced above consisting of the Merced to Fresno Section of the proposed California High-Speed Train (HST) system, and commends the Authority on a high-quality assessment of potential environmental risks of the California HST project. The District is supportive of a California HST system that is based on thoughtful design and implementation aimed at offering low emissions commute and travel options to the residents of the San Joaquin Valley. The potential for the HST system to reduce emissions from motor vehicle traffic in the Valley may be significant. The District does offer the following comments to further improve and complete the DEIS:

General Comments

The San Joaquin Valley Air Pollution Control District is responsible for air quality in eight counties in California's Central Valley: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare, and the San Joaquin Valley Air Basin portion of Kern. Air quality in the San Joaquin Valley (SJV) has steadily improved over the past 15 years and continues to do so through the District's adoption of new Rules, State Implementation Plans, and the support and participation of stakeholders, businesses, and the public. The subject project and its companion project, the Fresno to Bakersfield Section, have the potential to impact air quality in all eight counties.

Seyed Sadredin
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www.valleyair.org www.healthyairliving.com

Air pollution sources can be divided into two general categories, stationary sources and mobile sources. The District has achieved maximum cost-effective emission reductions from stationary sources and as a result mobile sources now produce about 80% of the Valley's smog-forming emissions. Thus, achieving significant reductions in mobile source emissions within the SJV is critical to District achieving attainment of state and federal air standards. If properly implemented, the HST could be a key component of the District's efforts to reduce the air quality impacts caused by vehicle miles traveled within the SJV.

Based on staff's review of the Environmental Impact Statement (EIS), the District believes that the environmental document likely understates construction-related impacts on air quality within the SJV and has not discussed all feasible mitigation measures for those impacts. However, we have significant experience in administering effective and feasible off-site mitigation programs that significantly or completely mitigate air pollution emissions from large projects, and we are offering to provide our expertise and assistance in this area.

Construction Related Impacts on Air Quality

As discussed below, construction related exhaust emissions are potentially understated:

a) Tier 4 construction equipment: The analysis of construction equipment exhaust emissions assumes that all construction equipment will meet Tier 4 emissions standards. This assumption is inconsistent with the proposed mitigation measure which allows the use of Tier 3 engines if the contractor has documented that Tier 4 equipment or emissions retrofit is not available.

   Based on the District's experience in providing funding to replace older, more polluting, off-road equipment, Tier 4 equipment is not widely available and retrofitting older equipment to achieve Tier 4 emissions standards is frequently not feasible. During the early consultation phase of developing the environmental document, the District expressed concerns about this assumption. The District recommended that if the assessment was not revised, the document should be amended to include an enforceable mitigation measure ensuring that, on a fleet-wide basis, equipment used would meet Tier 4 emissions standards. The proposed mitigation measure fails to meet that objective.

   The District again recommends that the analysis be revised to reflect a realistic fleet-wide emissions target. The District further recommends that mitigation measures be revised to include enforceable conditions, ensuring construction exhaust emissions will be reduced or mitigated to the extent feasible. One approach is to require off-site mitigation of project emissions through a Voluntary Emissions Reduction Agreement, which is explained in more detail in the mitigation section below.

b) Emissions Model: Construction emissions may be further understated because construction emissions were quantified using URBEMIS. During the early

consultation phase, the District had advised that URBEMIS was not the most appropriate model to use for this complex construction project. In brief, URBEMIS was developed for estimating emissions from typical residential and commercial development projects. Construction of railways to support a high speed train involves activities that are not intrinsic to URBEMIS. Furthermore, URBEMIS has been demonstrated to produce lower estimates of construction exhaust emissions, as compared to a more recently developed model, the California Air Pollution Control Officers' Association's "California Emissions Estimation Model" (CalEEMod). However, like URBEMIS, CalEEMod is designed to model emissions from residential and commercial developments, not large scale linear construction projects like railroads. The District recommends that the rail construction analysis be conducted using a more suitable model. The District suggests the Sacramento Metropolitan Air Quality Management District's "Construction Mitigation Calculator," which incorporates the latest heavy duty equipment emissions factors approved by the California Air Resources Board, and should more accurately characterize emissions from the construction of a railway.

Heavy Maintenance Facility – Health Risk Assessment:

The District's review of the health risk assessment (HRA) for the Heavy Maintenance Facility (HMF) concludes that the scenario that was modeled may not adequately correspond to actual conditions of the eventual location in terms of critical HRA parameters, such as prevailing winds and locations of sensitive receptors. As a result, the HRA may over-state, or under-state, the associated risk. Because specific site conditions are currently unknown, the District recommends that an enforceable mitigation measure be made a condition of project approval that would require a site-specific health risk assessment to be performed prior to actual site selection and that all air related health impacts be reduced or mitigated to below the District's thresholds of significance.

Stationary sources at the HMF will be subject to District air permits. As such, the District will be a responsible agency for the project. To ensure that the health risk assessment is adequate for District permitting and approval processes, the District recommends that the project proponent contact the District to review the proposed modeling methodology prior to preparing the final HRA modeling.

Mitigation of Project Related Impacts on Air Quality:

Based on the existing air impact assessment, mitigated construction related emissions of NOx, VOC, and PM10 combined over the eight year construction period, were estimated as follows:

	Annual Average	**Total project**
Merced to Fresno:	230 tons/year	1,900 tons
Fresno to Bakersfield:	670 tons/year	5,400 tons
Total:	**900 tons/year**	**7,300 tons**

These emissions exceed the District's thresholds of significance of 10 tons NOx per year, 10 tons VOC per year, and 15 tons PM10 per year. For significant environmental impacts, the California Environmental Quality Act (CEQA) requires lead agencies to implement all feasible mitigation measures.

As discussed above, the DEIS' proposed mitigation measures are not sufficiently enforceable to ensure that project related impacts on air quality will be reduced consistent with projected impacts. More importantly, the document concludes that, even with all feasible mitigation, the project will continue to have significant impacts. The District disagrees with the conclusion that all feasible mitigations have been explored. Specifically, the DEIS fails to discuss off-site mitigation measures such as Voluntary Emission Reduction Agreements (VERAs) as a means of mitigating project specific impacts on air quality to a less-than-significant level.

A VERA is a mitigation measure by which the project proponent provides pound-for-pound mitigation of emissions increases through a process that develops, funds, and implements emission reduction projects, with the District serving a role of administrator of the emissions reduction projects and verifier of the successful mitigation effort.

To implement a VERA, the project proponent and the District enter into a contractual agreement in which the developer agrees to mitigate the project's emissions by providing funds for the District's Emission Reduction Incentive Program to fund grants for projects that achieve emission reductions, thus offsetting project related impacts on air quality. The types of projects that have been used in the past to achieve such reductions include electrification of stationary internal combustion engines (such as agricultural irrigation pumps), replacing old trucks with new, cleaner, more efficient trucks, and a host of other emissions-reducing projects.

In implementing a VERA, the District verifies the actual emission reductions that have been achieved as a result of completed grant contracts, monitors the emission reduction projects, and ensures the enforceability of achieved reductions. The initial agreement is generally based on the projected maximum emissions increases as calculated by a District-approved "Air Quality Impact Assessment," and contains the corresponding maximum fiscal obligation. However, because the goal is to mitigate actual emissions, the District has designed adequate flexibility into these agreements such that the final mitigation is based actual emissions related to the project, based on actual equipment used, hours of operation, etc. After the project is mitigated, the District certifies to the lead agency that the mitigation is completed, providing the lead agency with an enforceable mitigation measure demonstrating that there is no significant air quality impact from the project.

Since 2005, the District has entered into seventeen VERAs with project developers and achieved 1,393 tons of NOx and PM10 reductions per year. It is the District's experience that implementation of a VERA is a feasible mitigation measure which effectively achieves actual emission reductions, potentially mitigating the project to a

net-zero air quality impact. Because the DEIS failed to discuss this feasible mitigation measure, the document fails to meet the CEQA requirement of discussion and implementation of all feasible mitigation measures, so we strongly recommend that a discussion of VERAs be included in the final EIS.

In conclusion, the District recommends that the California High-Speed Rail Authority contact the District and work collaboratively to reduce and mitigate project specific impacts on air quality to a less-than-significant level by developing a VERA as discussed above. If you have any questions or require further information, please contact me or Arnaud Marjollet, Permit Services Manager at (559) 230-6000.

Sincerely,

for David Warner
Director of Permit Services

DW: db

APPENDIX B

Draft General Conformity Determination Comment

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

MAY 0 1 2012

David Valenstein
Federal Railroad Administration
1200 New Jersey Avenue, SE
Mail Stop 20, W38-219
Washington, DC 20590

Tom Fellenz
California High Speed Rail Authority
770 L Street, Suite 800
Sacramento, CA 95814

Subject: Final Environmental Impact Statement for the California High-Speed Rail System, Merced to Fresno Section

Dear Mr. Valenstein and Mr. Fellenz:

Thank you for the opportunity to review the Final Environmental Impact Statement (FEIS) for the Merced to Fresno Section of the High-Speed Rail (HSR) System in California, which was shared with U.S. Environmental Protection Agency (EPA) on April 18, 2012. We completed our review pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), Section 309 of the Clean Air Act, and Section 404 of the Clean Water Act.

EPA has worked closely with Federal Railroad Administration (FRA) and California High-Speed Rail Authority (CHSRA) through the programmatic environmental analysis, as well as through intensive early coordination at the project level. Project level coordination was guided by specific decision checkpoints, which are defined in an agreement signed between EPA, U.S. Army Corps of Engineers, FRA, and CHSRA (*Integrated National Environmental Policy Act and Clean Water Act Section 404 Memorandum of Understanding (NEPA/404 MOU)*). We appreciate the opportunity to engage in early coordination, and we believe that it will continue to lead to efficient resolution of potential issues and strengthened environmental documents as the environmental analysis of the statewide HSR system continues.

For the Merced to Fresno portion of the HSR system, EPA provided recommendations through a formal comment letter (October 13, 2011) following our review of the Draft Environmental Impact Statement (DEIS). We again provided recommendations via a March 28, 2012 comment letter following our review of the Administrative FEIS. We appreciate the responsiveness to multiple recommendations provided by our agency throughout the coordination and commenting process to date. Through this letter, we note remaining concerns that were not addressed in the FEIS and can be addressed in the Record of Decision (ROD) by documenting commitments for the final design and construction phase. The enclosure to this letter provides additional description of EPA's remaining recommendations, which include, but are not limited to, the following:

- Air Quality Impacts
  - Continue to work with the San Joaquin Valley Air District and EPA to finalize the general conformity determination for the San Joaquin Air Basin portion of the project.
  - Provide commitments for identified air quality mitigation measures to reduce construction and operational emissions to the greatest extent.

- Aquatic Resource Impacts
  - Commit to avoidance and minimization measures identified by FRA and CHSRA during the NEPA/404 MOU process and checkpoints.
  - Commit to a set of low impact development measures to retain, infiltrate, and treat stormwater runoff from all features of the HSR project.

- Planning and Growth Related Impacts
  - Commit to continue partnering with the Cities of Fresno and Merced to promote strong station-area planning in order to maximize economic, community and environmental benefits from the project.
  - Recognize the planning efforts that are needed at urban edges of station-cities and neighboring communities in order to prevent unplanned HSR induced growth, and commit to partnering and providing support to promote good planning.
  - Commit to assess which agricultural lands outside of Fresno and Merced are most at risk of experiencing HSR induced development pressures, and commit to promote placement of conservation easements in those locations.
  - Commit to partner with local and regional transit providers to develop connectivity plans and implement measures to increase transit access to HSR.

More information on the above items and additional recommendations are provided in the detailed comments section enclosed within this letter. EPA recognizes the potential environmental benefits, including reduced vehicle emissions, which an alternative transportation choice like HSR can provide if planned well. In addition to being a cleaner transportation option, we understand that a well-planned HSR system can serve as an important catalyst for improved regional connectivity and strengthened economic centers. We are committed to continued coordination with FRA and HSRA as the environmental review process for the entire statewide HSR system continues. In addition, we appreciate our ongoing partnership with FRA, CHSRA, U.S. Housing and Urban Development, Federal Transit Administration, and California Strategic Growth Council under the *Memorandum of Understanding for Achieving an Environmentally Sustainable HSR System for California*, signed in September 2011. We encourage FRA and CHSRA to continue to collaborate with EPA on best practices for maximizing environmental, economic, and community benefits from this project, while also identifying opportunities to avoid, minimize, and mitigate adverse impacts.

We appreciate the opportunity to review the Merced to Fresno FEIS and we would appreciate the opportunity to discuss our comments prior to release of the ROD. When ROD is signed, please send a copy to the address above (mail code: CED-2). If you have any questions, please contact me at 415-972-

3843 or Connell Dunning, the lead reviewer for this project, at 415-947-4161 or dunning.connell@epa.gov.

Sincerely,

for

Enrique Manzanilla, Director
Communities and Ecosystems Division

Enclosures: EPA's Detailed Comments

Cc via email:

Mark A. McLoughlin, ICF International
Colonel Michael C. Wehr, U.S. Army Corps of Engineers
Leslie Rogers, Federal Transit Administration
Ophelia B. Basgal, U.S. Department of Housing and Urban Development
Dan Russell, U.S. Fish and Wildlife Service
Robert Tse, U.S. Department of Agriculture
Michelle Banonis, U.S. Bureau of Reclamation
Ken Alex, Governor's Office of Planning and Research
Heather Fargo, Strategic Growth Council
Matt Rodriguez, California EPA
Kurt Karperos, California Air Resources Board
Seyed Sadredin, San Joaquin Valley Air Pollution Control District
Traci Stevens, Business Transportation and Housing
Garth Fernandez, California Department of Transportation
Diana Dooley, California Health and Human Services
John Laird, California Natural Resources
Julie Vance, California Department of Fish and Game
Brian R. Leahy, California Department of Conservation
Paul Romero, California Department of Water Resources
Bill Orme, State Water Resources Control Board
Mayor William Spriggs, City of Merced
Mayor Ashley Swearengin, City of Fresno

EPA'S DETAILED COMMENTS ON THE FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE CALIFORNIA HIGH-SPEED RAIL SYSTEM, MERCED TO FRESNO SECTION MAY 1, 2012

1. AIR QUALITY

EPA understands that California High Speed Rail Authority (CHSRA) is currently coordinating with the San Joaquin Valley Air Pollution Control District (SJVAPCD) and California Air Resources Board (CARB) regarding Clean Air Act general conformity requirements, including a Voluntary Emissions Reduction Agreement (VERA) for the high speed rail (HSR) system.

Recommendations for the Record of Decision (ROD):

- EPA recommends that FRA and HSR continue to work with the SJVAPCD and EPA to finalize the general conformity determination for the San Joaquin Air Basin (SJAB) portion of the project. Describe the process for finalizing the general conformity determination in the ROD and clarify that emissions from any interim use of the new tracks will be accounted for in final emissions inventories.
- Include details of the Voluntary Emissions Reduction Agreement (VERA), including specific incentives and strategies for focusing emissions reductions proximate to actual impact locations in order to focus mitigating measures to those communities most impacted.

EPA is supportive of the many project design features and mitigation measures identified in Section 3.3.8 and 3.3.9 of the Final Environmental Impact Statement (FEIS) to reduce air quality impacts. It is stated in the FEIS that a site specific Health Risk Assessment (HRA) for the Heavy Maintenance Facility (HMF) will be conducted once a final HMF site is chosen. EPA continues to recommend that an analysis of health risk be used to help inform the choice of where to site the HMF.

Recommendations for the ROD:

- Provide commitments for the project design features and mitigation measures identified in the FEIS to ensure that air quality impacts from construction and operation of the HSR system are mitigated to the greatest extent possible.
- Provide details regarding any future health risk analysis that will be conducted prior to selecting a site for the HMF and how this analysis will be made available to the public.

2. AQUATIC RESOURCES and CLEAN WATER ACT

Developing a Final Mitigation Plan for Clean Water Act (CWA) Section 404 should be a key priority for FRA and CHSRA, as it will help avoid potential delays during project permitting. EPA will continue to work with the U.S. Army Corps of Engineers (Corps) to provide guidance to FRA and CHSRA to reduce uncertainty to the maximum extent practicable and provide substantive comments on the development of a Final Mitigation Plan.

During future CWA Section 404 permitting coordination, we recommend continued use of the approved Watershed Approach. Specifically, the Conditional Rapid Assessment Method (CRAM) and Watershed Evaluation Report (WER) (submitted during Checkpoint C of the NEPA/404 MOU process) provided information to fully describe the location, condition and context of the impacted landscape. The analysis showed approximately 1/3 of vernal pools and other non-riverine wetlands, and ¼ of riverine wetlands along the HSR alignments were in good

condition. We note that these results were not described in the FEIS; however this information will assist in 1) providing context to the current and impacted resource conditions, 2) disclosing the project's mitigation needs, and 3) providing assurances that those needs will be met.

Recommendations for the ROD:

- Commit to and describe measures to avoid and minimize impacts to waters of the U.S., (including additional avoidance measures proposed in Chapter 5 of the NEPA/404 MOU Checkpoint C Summary Report) and provide a summary of proposed compensatory mitigation for unavoidable impacts.
- Disclose the project's mitigation needs and provide assurances that those needs will be met. Provide a summary of key findings and analyses conducted during the California Rapid Assessment Method (CRAM) and Watershed Evaluation Report (WER) in order to provide context to the determination of mitigation needs.

EPA appreciates the additional discussion of best management practices and low impact development (LID) measures provided in the Storm Water Management Report and recommends that specific LID commitments to be implemented throughout the HSR system be identified in the ROD.

Recommendations for the ROD:

- Identify commitments for LID measures to be used during construction and post construction stages of the project to retain infiltrate and treat stormwater runoff from all features of the HSR project.

3. SPECIAL STATUS SPECIES AND WILDLIFE MOVEMENT

EPA appreciates information added to the FEIS on San Joaquin River crossing design options and predicted impacts, such as impacts on Essential Fish Habitats and special-status fish species. Additionally we appreciate the discussion of Wildlife Crossing structures provided in Section 2.4.2.1 of the FEIS. We encourage CHSRA and FRA to continue to work with resource agencies as designs are further developed to ensure appropriate avoidance, wildlife crossings, and mitigation measures are developed to address project impacts.

Recommendations for the ROD:

- Include a commitment for FRA and CHSRA to continue coordination with Fish and Wildlife Service (FWS) and California Department of Fish and Game (CDFG) throughout the project timeline.
- Commit to specific FWS- and CDFG-approved design measures that: 1) remove wildlife movement barriers, 2) enhance use of wildlife corridors, and 3) provide crossings with suitable habitat, topography, light, and openness to accommodate multiple species, as well as other mitigation measures to address impacts that cannot be avoided.

4. REGIONAL AND LOCAL INDUCED GROWTH, LAND USE, AND PLANNING

EPA is supportive of FRA and CHSRA's vision for HSR station areas that stimulate infill development in city centers, are pedestrian friendly, well connected via multiple transportation options, and provide easy access to goods, services, and jobs. The vision and form of HSR-induced development outlined in the FEIS is only likely to occur if major investments in

planning, changes to land uses, and coordination among housing, transportation, business and many other sectors first take place. We recognize FRA and CHSRA's station-area planning grant program as a critical step toward achieving this vision. We also applaud FRA and CHSRA's strong partnerships with the Cities of Fresno and Merced on HSR station-area planning. Based on information provided in the FEIS, however, we strongly suggest that additional commitments are needed from FRA and CHSRA in the ROD in order to prevent significant unplanned, low-density HSR induced growth. In addition, the public should be informed of the range of potential growth scenarios that could occur to increase awareness of potential outcomes and the importance of local planning decisions.

While EPA is very supportive of FRA and CHSRA's efforts on station-area planning, we again strongly suggest that a parallel planning process to protect against unplanned development is needed at urban edges (i.e. county level) and neighboring communities that are likely to experience HSR induced growth. This parallel process could consist of partnering with local and regional governments, state agencies or non-profit organizations while CHSRA is finalizing design and construction for the HSR project. FRA and CHSRA have already committed to partner with the Department of Conservation to establish and purchase agricultural conservation easements. FRA and CHSRA can maximize the benefits from this effort by working to place easements in areas most at risk from HSR induced growth.

New information added to the FEIS on SB375 and Sustainable Communities Strategies provides a more comprehensive understanding of efforts to achieve well-planned, efficient development patterns that best serve communities. EPA urges FRA and CHSRA to commit to continue to partner with station-cities to support local planning efforts, and to form new partnerships to protect against induced growth at urban edges and neighboring communities. In addition, we encourage commitments to coordinate with local and regional transit agencies to promote connectivity with HSR. While the FEIS appears to assume that HSR stations will attract well-coordinated, relatively denser, infill development, this assumption should be supported with strong commitments, documented and memorialized through the environmental planning process, from FRA and CHSRA.

Recommendations for ROD:

- Discuss the potential uncertainty in future induced growth projections and provide a range of potential impacts that the region could experience, with reference to location, pattern, timing, and intensity of growth. Identify any connections to local planning efforts and the role local decision-making will play in determining the location of future HSR-induced growth (already urbanized areas, adjacent agriculture land, or other greenfields, for example).
- Commit to continued coordination with station cities throughout the design and construction phases of the project to assist with development of planning documents, land use regulations, and municipal policies that encourage higher density, mixed-use, transit-oriented development around stations.
- Commit to coordinate throughout the design and construction phases with non-station communities that may experience development pressure due to access to HSR. Support efforts to develop planning documents, land use regulations, and municipal development policies to inhibit low-density development in these areas.

- Develop and commit to criteria (such as proximity to stations and maintenance facilities) and commit to use the criteria for future identification of agricultural and rural lands most vulnerable to HSR induced growth impacts.
- Commit to working with the California State Department of Conservation and/or local land trusts to facilitate identification of potential conservation areas and support of future easements as a means to mitigate potential unplanned growth patterns.
- Commit to promote and support agricultural land conservation easements for high quality agricultural land most at risk for conversion due to the project as a means to mitigate potential induced growth impacts.
- Commit to collaborate with local transit agencies and transportation authorities to develop transit connectivity plans for HSR station areas and neighboring communities where high HSR ridership is expected. Specifically, commit to coordinate with Fresno Area Express, Merced County Association of Governments, and Yosemite Area Regional Transportation System.
- In order to achieve stations that are multi-modal hubs, commit to:
    - Partner with local and regional transportation agencies to facilitate easy transfers between transit and HSR, such as shared ticketing and wayfinding.
    - Design stations to be pedestrian and bicycle-friendly by incorporating features such as bike lockers, changing rooms, and showers.
    - Coordinate with car share organizations and promoting use of shared vehicles at HSR stations to provide an additional alternative to private car use.
    - Work with local jurisdictions on planning for parking and following the Urban Design Guidelines (prepared by CHSRA) and best practices.
    - Minimize the number of parking spaces to the greatest extent possible at stations in order to facilitate the use of transit, construct multi-level parking structures as opposed to large expansive parking lots, and promote programs to phase down the number of parking spaces over time.
    - Avoid surrounding HSR stations with parking lots and creating a barrier effect (as depicted in Figure 2-42b if the FEIS).
- Commit to augmenting CHSRA's "HSR Station Area Development: General Principles and Guidelines" document and "Urban Design Guidelines" document so that they include equity, and guidelines for promoting equity, as a key principle.
- Commit to working with cities and other stakeholders to help promote the integration of an appropriate percentage of low-income housing into station-area developments. The Response to Comments states that low-income housing will be addressed by other entities.

5. ENVIRONMENTAL JUSTICE AND COMMUNITY IMPACTS

EPA appreciates the revisions to the environmental justice analysis, including the addition of a clearly defined reference community, following EPA's comments on the DEIS. We recommend further disclosure of information and additional commitments in order to more fully address environmental justice and community impacts. This information may also help address issues related to compliance with Title VI of Civil Rights for CHSRA as recipient of federal funds.

Recommendations for ROD:

- Revisit conclusions regarding whether disproportionate impacts would occur for the categories where the FEIS states that disproportionate impacts would not occur because impacts would be the same among all populations. Since nearly all populations in the project area are communities of concern, it seems that all populations being affected the same might also mean that "impacts would be predominately borne by communities of concern." This would fulfill FRA and CHSRA's stated criteria for defining disproportionate impacts. Include any changes to conclusions regarding environmental justice impacts along with mitigation in the ROD.
- Provide estimates of the duration of construction activities that would take place within each potentially impacted community.
- In order to more fully disclose impacts, include a table that displays residential and business displacements "by community" and then totaled for each alternative, following the example of Table 3.12-9 from the Fresno to Bakersfield DEIS.
- Augment MM-SO#2 to commit to focusing business relocation efforts of neighborhood-serving businesses within their existing neighborhoods to minimize impacts to community cohesion to the extent possible and when properly zoned parcels are available or can be made available.
- Commit to conducting community workshops in all significantly affected areas to obtain input and identify mitigation measures for residents whose property would not be taken, but whose community would be substantially altered by construction of HSR facilities, including loss of neighbors. Follow the example of commitments made for the areas northeast of Hanford and Corcoran on page 3.12-83 of the Fresno to Bakersfield DEIS.

6. HEAVY MAINTENANCE FACILITY

EPA understands that analysis and decisions related to the final siting of the Heavy Maintenance Facility (HMF) will be included in the San Jose to Merced environmental review process. Please consider the following when assessing HMF siting.

Recommendations for the ROD:

- Response to Comments states that HMFs will be assessed in a future environmental document. In the ROD, clarify which document will assess HMFs, how public input will be gathered, and how a decision will be made.
- Commit to the consideration of significant impacts to sensitive receptors in the future analysis and selection of the HMF site.
- Include as a criteria in the decision-making for siting the HMF the estimated cancer risk and the Respiratory Hazard Index.

7. COMPENSATION FOR IMPACTS TO AGRICULTURAL IMPACTS

As FRA and CHSRA are finalizing the strategy for compensating for the loss of farmland and farming operations, EPA suggests that the methodology be tailored to address specific agricultural issues.

Recommendations for ROD:

- Include a robust description of the compensation strategy that will be used for farmland, including, 1) how it was developed; 2) how it calculates the present value of lost future earnings; 3) how it assesses the decreased efficiency of operations on remaining land (e.g. due to smaller field sizes, etc.); and 4) assumptions used regarding land staying in the same cropping system and/or changing to systems more amenable to smaller sites, such as truck farming for local consumption.
- In the description of the compensation strategy, include a land valuation methodology that accurately assesses which parcels will be deemed "non-economic", including 1) assumptions for analysis; 2) source of data used; 3) factors that were considered (beyond connectivity to other farmland, as stated); and 4) the specific role of agricultural specialists in making determinations.

8. ENERGY

EPA supports CHSRA's commitment to 100% renewable energy and facilities with net-zero energy usage, as well as the addition of text to the FEIS describing CHSRA's ongoing partnership with National Renewable Energy Laboratory and EPA on developing a renewable energy strategy.

Recommendations for ROD:

- Commit to promote siting of renewable energy infrastructure on contaminated and underutilized lands over pristine lands if FRA and CHSRA have a role in influencing where the source of energy for powering the trains will come from. RE-Powering America's Lands Initiative has a mapping tool that allows users to see contaminated lands by location (http://www.epa.gov/renewableenergyland/mapping_tool.htm.)
- Commit to coordinate with local farming stakeholders to consider linking farming with the need to secure renewable energy to power the project. For example, coordinated site of wind turbines, bio-digesters, and other technologies might benefit both farmers and the CHSRA.

9. CUMULATIVE IMPACTS - CHARACTERIZATION OF SIGNIFICANCE

EPA appreciates changes made to the FEIS in the "NEPA Impacts Summary" sections of Sections 3.12 through 3.18. These sections now clearly indicate whether impacts would be considered significant under NEPA. Although the Response to Comments states that Section 3.19 has also been revised, significance determinations do not appear to be included for cumulative impacts.

Recommendation for ROD:

- Provide a summary identifying whether the anticipated cumulative impacts of the proposed project are significant, as defined by Council on Environmental Quality in 40 CFR Part 1508.27.

10. SUSTAINABILITY PARTNERSHIP, POLICIES, AND PRACTICES

EPA recognizes the many ongoing efforts by FRA and CHSRA to achieve an environmentally sustainable HSR system, including partnering with EPA and others to promote best practices.

We note that several of our comments were addressed in the Response to Comments (response #774-26); however, those responses were not included as commitments in the FEIS. We recommend that all commitments identified in the Response to Comments be included in the ROD. In addition, as applicable, include the following commitments as elements of the Environmental Management System or relevant guidance documents.

Recommendations for ROD:

- Commit to continue to work with the HUD/DOT/EPA Partnership for Sustainable Communities and the State of California Strategic Growth Council under the *Memorandum of Understanding for Achieving an Environmentally Sustainable High-Speed Train System in California* (Sustainability MOU).
- Commit to implement an Environmental Management System (EMS). The Response to Comments (response #774-26) states that an EMS will be implemented, but a commitment does not appear to be in the environmental document.
- Commit to incorporate specific language on preferred qualifications and practices in Request for Qualifications and Request for Proposals to help ensure that contractors have the necessary expertise and develop appropriate proposals to design, construct, and operate the HSR system in a sustainable manner, in line with CHSRA's stated goals. EPA appreciates that the Response to Comments states that this is being addressed (response #774-26). It does not, however, appear to be included in the FEIS.
- Commit to analyze the strengths and feasibility of obtaining LEED certification at the Platinum Level for HSR facilities, including stations and maintenance facilities.
- Commit to exceed CALGreen standards in priority areas by meeting "optional" standards, including: pollutant control, indoor air quality, renewable energy, energy and water conservation, low impact development, and designated parking for fuel efficient/electric vehicles.
- Commit to provide information on green building practices when working with local jurisdictions on station-area development. In addition, encouraging third party certification (such as LEED for Homes and Build it Green) and goals to exceed CALGreen requirements by meeting "optional" standards.
- Commit to provide technical assistance for green building in station areas. Incorporate green building principles into FRA and CHSRA's ongoing grant program to support station-area development and related guidance documents (i.e. Urban Design Guidelines).
- Commit to encourage and assist local jurisdictions in designing for adaptability and reuse in station areas to increase flexibility to meet future community needs. This is especially critical for any parking features which may become unnecessary after transit connectivity is developed. For guidance, see Public Architecture, Design for Reuse Primer, http://www.publicarchitecture.org/reuse/, and Lifecycle Building Challenge Resources, http://www.lifecyclebuilding.org/resources.php.
- Commit to work with local jurisdictions to obtain LEED for Neighborhood Development (LEED-ND) Certification for station areas. LEED-ND certification provides independent, third-party verification that a building or neighborhood development project is located and designed to meet high levels of environmentally responsible, sustainable development.

11. CONSISTENCY ACROSS HSR PROJECT SECTIONS

Through our concurrent review of separate environmental documents for Merced to Fresno and Fresno to Bakersfield HSR sections, EPA identified impact categories where methodologies for analysis appear to vary. While regional differences will require adjustments to impact methodologies, EPA continues to recommend consistency in the analysis when applied to various HSR Project Sections. Sections where inconsistencies were noted include hazardous materials, HMF operational noise, cumulative noise impacts, and environmental justice.

Recommendations for the ROD:

- Confirm that methodologies and resulting conclusions and decision-making processes are being applied consistently across the multiple HSR sections. EPA is available to assist with reviewing template methodologies upfront to increase efficiency of the overall environmental review process.