CALIFORNIA HIGH-SPEED TRAIN

Project Environmental Impact Report / Environmental Impact Statement

FINAL

Fresno to Bakersfield Section: General Conformity Determination

June 2014

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 California High-Speed Train Fresno to Bakersfield Section will comply with the General Conformity Rule provided that the nitrogen oxide (NOx) 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.

Joseph C. Szabo
Administrator
Federal Railroad Administration

6/27/14
Date

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 Fresno to Bakersfield HST Section ("Project" or "Federal Action"), which is the focus of this General Conformity Determination, is a critical link connecting the Bay Area and Merced to Fresno HST sections to the Bakersfield to Palmdale and Palmdale to Los Angeles HST sections.[1]

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. The Project may also receive FRA 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 18, 2014 concurrent with the publication of the Final Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) for the Fresno to Bakersfield Section of the California HST System. Copies of the draft General Conformity Determination were provided in hardcopy in the respository locations listed in Final EIR/EIS Chapter 9.0. The draft General Conformity Determination was also made available for publicreview onFRA'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 Fresno to Bakersfield 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). The Authority has committed to fully offset all construction emissions (to net zero) for every year of construction.

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

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1.0 Introduction

This document is the final General Conformity Determination for the Fresno to Bakersfield 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.

The draft General Conformity Determination was issued concurrently with the Fresno to Bakersfield Final Environmental Impact Report/Environmental Impact Statement (EIR/EIS) which complies with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), and this final General Conformity Determination is being published concurrent with the FRA ROD for the Federal Action. Because the analysis used for the Final EIR/EIS also generated the information necessary for the General Conformity Determination, specific analysis may be incorporated herein by reference.

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.

The study area for this final General Conformity Determination is the San Joaquin Valley Air Basin (SJVAB). 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 Ozone (O_3) Attainment Plan	On September 19, 2013, EPA approved San Joaquin Valley's 2013 Plan for the Revoked 1-Hour Ozone Standard. 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. The next plan will address EPA's 2008 8-hour ozone standard of 75 parts per billion (ppb). This 8-hour ozone plan is expected to be due to EPA in 2015/2016[a]
Particulate Matter, 10 microns or less in diameter (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]
Particulate Matter, 2.5 microns or less in diameter ($PM_{2.5}$) Attainment Plan	The SJVAPCD adopted the 2008 $PM_{2.5}$ Plan on April 30, 2008. This plan addresses EPA's annual $PM_{2.5}$ standard of 15 µg/m^3, which was established by EPA in 1997.[d] The California Air Resources Board (ARB) approved the District's 2012 $PM_{2.5}$ Plan at a public hearing on January 24, 2013. The plan, approved by the District Governing Board on December 20, 2012, will bring the Valley into attainment of EPA's 2006 $PM_{2.5}$ standard by the 2019 deadline, with most areas seeing attainment well before then.[e]
Carbon Monoxide (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.[f]

[a] SJVAPCD (2013).
[b] SJVAPCD (2007a).
[c] SJVAPCD (2007b).
[d] SJVAPCD (2008).
[e] SJVAPCD (2012).
[f] 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 Requiring Conformity Evaluation

In accordance with applicable General Conformity regulations and guidance, when a General Conformity Determination is necessary, the FRA conducts a General Conformity evaluation for the specific federal action associated with the preferred 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

3.1 California High Speed Train System

The Authority, a state governing board formed in 1996, is responsible for planning, designing, constructing, and operating the HST System. 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.

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.

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 NEPA, 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 in this final Conformity Determination.

In April 2012, FRA and the Authority published the Final EIR/EIS for the Merced to Fresno Section of the HST System. The Authority certified the EIR and adopted the project in May, while the FRA issued its Record of Decision (ROD) in September 2012. The Merced to Fresno Section is also within the SJVAB and a General Conformity Determination was prepared as part of the environmental process to comply with the CAA. It is worth noting that the Merced to Fresno General Conformity Determination includes the Authority's commitment to offset all emissions to net zero through a Voluntary Emissions Reduction Agreement (VERA) between the Authority and the SJVAPCD.

While FRA and the Authority consider the Fresno to Bakersfield section of the HST System independent of the other HST System sections for purposes of NEPA and CEQA analysis, certain construction activities within the Merced to Fresno Section, as well as within the future Bakersfield to Palmdale and San Jose to Merced Sections, may occur concurrently with Fresno to Bakersfield Section construction activities. Therefore, estimates of these cumulative emissions within the SJVAB have been presented in **Section 13.0** of this document. Although the Sacramento to Merced Section is not expected to be constructed concurrently with the Fresno to Bakersfield Section, estimates of the cumulative emissions of this section have also been included in **Section 13.0**. These future emissions estimates have been included in this document in the interest of the full disclosure of future construction emissions that may occur in the SJVAB from other sections of the HST Project; each of these sections will undergo separate conformity determinations at a later date.

3.2 California High Speed Train System – Fresno to Bakersfield Section

The purpose of the Fresno to Bakersfield Section of the HST System is to implement the California HST System between Fresno and Bakersfield, 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 Fresno to Bakersfield Section would be approximately 114 miles long, varying in length by only a few miles depending on the route alternatives selected. To comply with the Authority's guidance to use existing transportation corridors when feasible, the Fresno to Bakersfield HST Section would primarily be located adjacent to the existing BNSF Railway right-of-way. Alternative alignments are being considered where engineering constraints require deviation from the existing railroad corridor, and where necessary to avoid environmental and community impacts.

The Fresno to Bakersfield Section would cross both urban and rural lands and include a station in both Fresno and Bakersfield, a potential Kings/Tulare Regional Station in the vicinity of Hanford, a potential heavy maintenance facility (HMF), and power substations along the alignment. The HST alignment would be entirely grade-separated, meaning that crossings with roads, railroads, and other transportation facilities would be located at different heights (overpasses or underpasses) so that the HST would not interrupt nor interface with other modes of transportation. The HST right-of-way would also be fenced to prohibit public or vehicle access. The Project footprint would primarily consist of the train right-of-way, which would include both a northbound and southbound track in an area typically 120 feet wide. Additional right-of-way would be required to accommodate stations, multiple track at stations, maintenance facilities, and power substations.

The Fresno to Bakersfield Section would include at-grade, below-grade, and elevated track segments. The at-grade track would be laid on an earthen rail bed topped with rock ballast approximately 6 feet off the ground; fill and ballast for the rail bed would be obtained from permitted borrow sites and quarries. Below-grade track would be laid in an open or covered trench at a depth that would allow roadway and other grade-level uses above the track. Elevated track segments would span long sections of urban development or aerial roadway structures and consist of steel truss aerial structures with cast-in-place reinforced-concrete columns supporting the box girders and platforms. The height of elevated track sections would depend on the height of existing structures below, and would range from 40 to 80 feet. Columns would be spaced 60 to 120 feet apart.

The Project EIR/EIS for the Fresno to Bakersfield HST Section examines alternative alignments, stations, and HMF sites within the general BNSF Railway corridor. The BNSF Alternative most closely aligns with the preferred alignment identified in the Record of Decision (ROD) for the Statewide Program EIR/EIS. The alternative alignments that deviate from the BNSF Alternative were selected to avoid environmental, land use, or community issues identified for portions of the BNSF Alternative.

The following alignment alternatives were considered: The BNSF Alternative, the Hanford West Bypass 1 Alternative, the Hanford West Bypass 2 Alternative, the Corcoran Elevated Alternative, the Corcoran Bypass Alternative, the Allensworth Bypass Alternative, the Wasco-Shafter Bypass Alternative, the Bakersfield South Alternative, and the Bakersfield Hybrid Alternative. The following station alternatives were considered: the Fresno Station Alternatives (Mariposa and Kern), the Kings/Tulare Regional Station Alternatives (East and West), the Bakersfield Station Alternatives (North, South, and Hybrid).

It is estimated that construction of the Fresno Bakersfield Section of the HST System would take approximately ten years, with initiation of construction in 2014 and completion in 2023.

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. Three monitor stations in the vicinity of the HST alignment alternatives were selected for representative ambient monitored data; these are 4706 E. Drummond Street in Fresno, 310 North Church Street in Visalia, and 5558 California Avenue in Bakersfield. These stations monitor CO, O_3, NO_2, PM_{10}, and $PM_{2.5}$. 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 because of existing industrial and agricultural sources. Table 2 summarizes the results of ambient monitoring at the three stations from 2010 through 2012. A brief summary of the monitoring data includes the following:

- Monitored data from 2010 through 2012 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 stations for the years 2010 through 2012. 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.
- The PM_{10} values for the region exceed the state 24-hour PM_{10} standard for all stations for years 2010 through 2012.
- The $PM_{2.5}$ values for the region exceed the national 24-hour $PM_{2.5}$ standard for the two monitoring stations where $PM_{2.5}$ was measured (Visalia and Bakersfield) over the last 3 years. The national annual standard was exceeded at both of these monitoring stations in 2011.
- SO_2 values were not monitored at any of these monitoring stations.

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

Air Pollutant	Standard/Exceedance	4706 E. Drummond Street, Fresno			310 N. Church Street, Visalia			5558 California Avenue, Bakersfield		
		2010	2011	2012	2010	2011	2012	2010	2011	2012
Carbon Monoxide (CO)	Year Coverage	72%	97%	NM	NM	NM	NM	NM	NM	NM
	Max. 1-hour Concentration (ppm)	2.0	2.8	NM	NM	NM	NM	NM	NM	NM
	Max. 8-hour Concentration (ppm)	1.45	1.73	NM	NM	NM	NM	NM	NM	NM
	# Days>Federal 1-hour Std. of >35 ppm	0	0	NM	NM	NM	NM	NM	NM	NM
	# Days>Federal 8-hour Std. of >9 ppm	0	0	NM	NM	NM	NM	NM	NM	NM
	# Days>California 8-hour Std. of >9 ppm	0	0	NM	NM	NM	NM	NM	NM	NM
Ozone (O_3)	Year Coverage[a]	75%	97%	98%	100%	95%	99%	99%	98%	97%
	Max. 1-hour Concentration (ppm)	0.108	0.129	0.127	0.122	0.119	0.111	0.109	0.107	0.102
	Max. 8-hour Concentration (ppm)	0.091*	0.104*	0.108*	0.104*	0.083*	0.094*	0.097*	0.094*	0.095*
	# Days>Federal 8-hour Std. of >0.075 ppm	13	52	46	34	17	37	28	25	56
	# Days>California 1-hour Std. of >0.09 ppm	5	27	19	15	4	9	8	5	9
	# Days>California 8-hour Std. of >0.07 ppm	24	73	75	57	33	60	48	51	83
Nitrogen Dioxide (NO_2)	Year Coverage	55%	79%	87%	98%	91%	99%	99%	97%	95%
	Max. 1-hour Concentration (ppm)	0.062	0.069	0.070	0.077	0.058	0.061	0.079	0.064	0.064
	Annual Average (ppm)	N/A	N/A	0.013	0.013	0.012	0.012	0.014	0.015	0.015
	# Days>California 1-hour Std. of >0.18 ppm	0	0	0	0	0	0	0	0	0
Sulfur Dioxide (SO_2)	Year Coverage	NM	NM	NM	NM	NM	NM	NM	NM	NM
	Max. 24-hour Concentration (ppm)	NM	NM	NM	NM	NM	NM	NM	NM	NM
	Annual Average (ppm)	NM	NM	NM	NM	NM	NM	NM	NM	NM
	# Days>California 24-hour Std. of >0.04 ppm	NM	NM	NM	NM	NM	NM	NM	NM	NM
Respirable Particulate Matter (PM_{10})	Year Coverage	63%	100%	25%	100%	96%	98%	99%	89%	97%
	Max. 24-hour Concentration (µg/m^3)	68.1	86.1	114.0	90.8	78.1	75.7	86.0	97.4	99.6
	#Days>Fed. 24-hour Std. of >150 µg/m^3	0	0	0	0	0	0	0	0	0
	#Days>California 24-hour Std. of >50 µg/m^3	8	12	8	10	11	15	67	113	55
	Annual Average (µg/m^3)	26.9	31.4	42.9	33.8	33.4	37.3	32.3	36.6	40.4
Fine Particulate Matter ($PM_{2.5}$)	Year Coverage	NM	NM	NM	100%	96%	93%	88%	82%	94%
	Max. 24-hour Concentration (µg/m^3)	NM	NM	NM	59.8*	73.2*	76.2*	92.2*	80.3*	86.5*
	State Annual Average (µg/m^3)	NM	NM	NM	13.6	16.1	14.8	17.2	18.1	17.9
	#Days>Fed. 24-hour Std. of >35 µg/m^3	NM	NM	NM	3	9	7	26	30	22
	Annual Average (µg/m^3)	NM	NM	NM	13.5	16.0*	14.7	14.1	16.2*	13.0

[a] Coverage is for 8-hour standard
* Exceeds annual NAAQS
NM not monitored
N/A not available
> greater than
µg/m^3 micrograms per cubic meter
PM_{10} particulate matter smaller than or equal to 10 microns in diameter
$PM_{2.5}$ particulate matter smaller than or equal to 2.5 microns in diameter
ppm part(s) per million
Sources: CARB 2013a; USEPA 2013b.

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	10.7	36.1	56.9	13	7.5	7	6.7
Waste Disposal	2.7	0.5	0.2	0.1	0.4	0.1	0.1
Cleaning and Surface Coatings	16.1	0	0	-	0.1	0.1	0.1
Petroleum Production and Marketing	35.5	1.1	0.4	0.2	0.2	0.2	0.2
Industrial Processes	19.0	4	21.8	7.2	29.4	17.9	10.6
Total Stationary Sources	84.1	41.7	79.5	20.6	37.7	25.4	17.7
Stationary Sources Percentage of Total	14.1	2.6	14.9	76.6	6.5	7.5	13.2
Area-wide Sources							
Solvent Evaporation	59.2	-	-	-	-	-	-
Miscellaneous Processes	92.4	267.9	17.7	1.1	478.7	254.2	67.8
Total Area-wide Sources	151.6	267.9	17.7	1.1	478.7	254.2	67.8
Area-wide Sources Percentage of Total	25.4	16.5	3.3	4.1	83.2	75.4	50.6
Mobile Sources							
On-road Motor Vehicles	71.5	628.5	297.6	0.7	13.7	13.7	10.9
Other Mobile Sources	53.6	334.2	128.9	1.2	8.8	8.7	7.9
Total Mobile Sources	125.1	962.7	426.5	1.9	22.6	22.3	18.8
Mobile Sources Percentage of Total	21.0	59.4	79.8	7.1	3.9	6.6	14.0
Natural (Nonanthropogenic) Sources							
Natural Sources	235.2	347.5	10.6	3.3	36.6	35.2	29.8
Total Natural (Nonanthropogenic Sources)	235.2	347.5	10.6	3.3	36.6	35.2	29.8
Natural Sources Percentage of Total	39.5	21.5	2.0	12.3	6.4	10.4	22.2
Grand Total	**596.1**	**1,619.9**	**534.3**	**26.9**	**575.6**	**337.1**	**134.1**

Source: CARB 2013b.

In the SJVAPCD, mobile source emissions account for approximately 60% and 80% of the basin's CO and NO_x emissions, respectively. Area sources account for over 80% and over 25% of the basin's particulate matter 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 (or portions of counties within the study area) defined in the EIR/EIS for the HST Project and for this final General Conformity Determination is currently designated as extreme nonattainment for 8-hour ozone, nonattainment for particulate matter smaller than 2.5 microns ($PM_{2.5}$), and maintenance for particulate matter smaller than 10 microns (PM_{10}) and carbon monoxide (i.e., the Fresno and Bakersfield urbanized areas). The SJVAB is in attainment for all other pollutants. Therefore, conformity regulations would apply to these four 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

The Authority and FRA circulated the Draft EIR/EIS in August 2011 providing an analysis of nine Build alternatives and a No-Build alternative. Because of substantive comments received during the public and agency review of the Draft EIR/EIS, the Authority and FRA decided to reintroduce two alternative alignments west of Hanford (the Hanford West Bypass 1 and 2 Alternatives) that would be consistent with the preferred alternative identified in the Statewide Program EIR/EIS, and another alternative in Bakersfield (Bakersfield Hybrid Alternative) that would minimize impacts to residential and community facilities in the Bakersfield Metropolitan Area. As a result, the Authority and the FRA circulated a Revised Draft EIR/Supplemental Draft EIS in March 2012 providing an evaluation of these additional alternative alignments. The Final Fresno to Bakersfield EIR/EIS identifies potential environmental impacts of the Project, both adverse and beneficial, identifies appropriate measures to mitigate adverse impacts, and identifies the agencies' preferred alternative. The EIR/EIS was prepared to comply with both NEPA and CEQA.

The General Conformity regulations establish certain procedural requirements that must be followed when preparing a General Conformity evaluation and are similar but not identical to those for conducting an air quality impact analysis under NEPA regulations. NEPA requires that the air quality impacts of the 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 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 sections 3.3.2.1, 3.3.6.1, and 3.3.7.1 of the Final EIR/EIS.

In order to appropriately identify and offset, where necessary, the emissions resulting from the Fresno to Bakersfield section of the HST system, FRA is issuing this final General Conformity Determination. 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 Avoidance and Mitigation Measures to Reduce Emissions 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, avoid, and mitigate air quality impacts. These Project design features and mitigation measures will be required components of the Project They will be included in the Mitigation Monitoring and Enforcement Program which will be issued concurrently with FRA's ROD and would be enforceable commitments undertaken by the Authority. Construction of the Project is anticipated to occur through a design/build contract. The Authority will include all of the Project design features and mitigation measures into the construction contract, which will create binding and enforcement commitment to implement these design features and mitigation measures.

The Authority will be responsible for implementing and overseeing a mitigation monitoring program to ensure that the contractor meets all air quality design features and mitigation measures.

Project design features as part of the Project 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 implement appropriate measures to prevent carryout and trackout.
- Use of low- or super-compliant VOC (Clean Air) paints, coatings and industrial coatings that meet the regulatory limits in the South Coast Air Quality Management District Rule (Rule 1113).
- Stringent emission standards for mobile non-road diesel engines of almost all types using a tiered phase in of standards. (EPA Rule 40 C.F.R. Part 89, Control of Emissions from New and In-Use Non-road Compression-Ignition Engines)
- Significant reductions in emissions of NOx, particulate matter, and non-methane organic compounds using exhaust treatment on heavy-duty diesel engines manufactured in model year 2007 and later years. (CARB Rule 13 C.C.R. § 1956.8, California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles)

The following two additional mitigation measures were not assumed for the estimation of the base emission rates, as they will apply to the contractor's required reduction in emissions from those of CARB's Off-Road fleet inventory. 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 Off-Road 2011 Inventory model or 2007 OFFROAD model. 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. The draft General Conformity Determination was released for public and agency review pursuant to 40 CFR § 93.156, and this final General Conformity Determination is being published concurrent with the FRA ROD for the Federal Action.

The Authority identified the appropriate emission estimation techniques and planning assumptions in close consultation with the state entities charged with regulating air pollution in the San Joaquin Valley.

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 (see Final EIR/EIS, Section 3.2). 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)). Operational phase vehicular emission factors were estimated by using the CARB emission factor program, EMission FACtors 2011 (EMFAC2011), which is the emission model currently used in the preparation of the SIP (CARB 2013c). Parameters were set in EMFAC2011for each individual county to reflect conditions within each county, and statewide parameters were used to reflect statewide conditions.

Emissions from regional building demolition and construction of the at-grade rail segments, elevated rail segments, retained-fill rail segments, traction power substations, and industrial buildings at the HMF/MOWF and HST stations, including parking garages and platform facilities, were calculated using emission factors from CARB's OFFROAD 2011 and 2007 models (CARB 2011d). The OFFROAD 2011 model provides the latest emission factors for construction off-road equipment, and accounts for lower fleet population and growth factors as a result of the economic recession and updated load factors based on feedback from engine manufacturers. For emission rates not available in OFFROAD 2011, rates from OFFROAD 2007 were conservatively applied. The use of emission rates from the OFFROAD models reflects the recommendation of CARB to capture the latest off-road construction assumptions. OFFROAD 2011 default load factors (the ratio of average equipment horsepower utilized to maximum equipment horsepower) and useful life parameters were used for emission estimates. Mobile source emission burdens from worker trips and truck trips were calculated using VMT estimates and appropriate emission factors from EMFAC2011. Fugitive dust emissions from dirt and aggregate handling were calculated using emission factors derived from equations from USEPA's AP-42 (USEPA 2006b).

Construction exhaust emissions from equipment, fugitive dust emissions from earthmoving activities, and emissions from worker trips, deliveries, and material hauling were calculated and compiled in a spreadsheet tool specific to the HST Project for each year of construction. Mobile source emission burdens from worker trips and truck trips were calculated using VMT estimates and appropriate emission factors from EMFAC.

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, default settings were used. Calculations were performed for each year of construction for the Project between Fresno and Bakersfield.

Major activities were grouped into the following categories (described in more detail in Section 9.0 of this report):

- 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
- Fresno Station
- Bakersfield 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 attainment year specified in the SIP or if the SIP does not specify an attainment year, the latest attainment year possible under the CAA, and for maintenance areas, the farthest year for which emissions are projected in the approved maintenance plan; (2) the year during which the total of direct and indirect emissions for the 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 the Project have to be analyzed, 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 (the year 2015, as identified in 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, are described in more detail in **Section 10.0** of this report.

8.0 Applicability Analysis

The first step in a General Conformity evaluation is an analysis of whether the requirements apply to a proposed federal action in a nonattainment or a maintenance area. Unless exempted by the regulations or otherwise presumed to conform, a federal (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 portions of Fresno and Kern Counties: Maintenance Remaining Basin: Attainment
NO_2	Attainment
SO_2	Attainment
Source: EPA (2013c).	

Under federal designations, the SJVAB is currently classified as nonattainment for 8-hour O_3,[2] the 1997 $PM_{2.5}$ standard (annual standard of 15 micrograms/cubic meter [µg/m^3]) and the 2006 24-hour $PM_{2.5}$ standard (35 µg/m^3). The SJVAB is a maintenance area for PM_{10}, and the Fresno and Kern County Urbanized Areas are maintenance for CO. The SJVAB is in attainment for the NO_2 and SO_2 standards and unclassified for lead. As such, FRA is required to demonstrate project-level compliance with the General Conformity Rule for NO_x and VOCs , $PM_{2.5}$, PM_{10}, and CO if project-related emissions of these pollutants would exceed the General Conformity *de minimis* thresholds.

[2] 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 NOx in the presence of sunlight), its de minimis threshold is based on primary emissions of its precursor pollutants - NOx and VOCs. If the net emissions of either NOx or VOCs exceeds the de minimis applicability thresholds(EPA 1994), the Federal Action is subject to a general conformity evaluation for O_3.

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

- Actions that would result in no emissions increase or an increase in emissions that is clearly below the *de minimis* levels (40 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 than 2.5 Microns ($PM_{2.5}$)	100 tons per year	Nonattainment
Particulate Matter Smaller than 10 Microns (PM_{10})	100 tons per year	Maintenance
Carbon Monoxide (CO)	100 tons per year	Urban portions of Fresno and Kern Counties: Maintenance Remaining Basin: Attainment
Source: 40 CFR 93.153		

9.0 Construction Activities Considered

As shown in Section 3.3.6 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 Project would not cause or exacerbate a violation of the NAAQS for these pollutants. As such, no further analysis of the operational period emissions is necessary for this General Conformity determination. This Section 9.0 will focus on the emissions generated from the construction period emissions for the Fresno to Bakersfield Project.

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) 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 *Fresno to Bakersfield Section Air Quality Technical Report* for this Project (Authority and FRA 2014).[3]

[3] Available online at http://www.hsr.ca.gov/Programs/Environmental_Planning/index.html.

9.1 Mobilization

Mobilization would take approximately 4 months, beginning in April 2014 and ending in July 2014. Emissions associated with mobilization were calculated using OFFROAD 2011 emission factors. Fugitive dust from mobilization includes worker trips and construction equipment exhaust. Four main site areas were assumed for the Fresno to Bakersfield Section of the HST alignment.

9.2 Site Preparation

9.2.1 Demolition

Demolition of existing structures along the HST alignment and HST stations would occur in 2014. Demolition emissions were calculated using OFFROAD 2011 emissions factors. 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.

9.2.2 Land Grubbing

Land grubbing refers to the site preparation activities for the HST alignment construction. Emissions from land grubbing were estimated using the OFFROAD 2011 emission factors as well as a site-specific equipment list. Land grubbing was assumed to take place at four staging areas in 2014. Fugitive dust from land-grubbing activities includes that from worker trips, construction equipment exhaust, and truck-hauling exhaust.

9.3 Earth Moving

The earthmoving activities include grading, trenching, and cut/fill activities for the alignment construction. Earthmoving would occur at four locations from November 2014 to November 2016. The emissions associated with the earthmoving activities were estimated using OFFROAD 2011 emission factors as well as a site-specific equipment list. Fugitive dust from land-grubbing activities includes that from worker trips, construction equipment exhaust, and truck-hauling exhaust.

9.4 HST Alignment Construction

The HST alignment construction is expected to occur from 2014 to 2017, and includes the following construction phases and operation of a concrete batch plant:

- Constructing structures for the elevated rail.
- Laying elevated rail and at-grade rail.
- Constructing the retaining wall for the retained-fill rail.
- Laying retained-fill rail.

9.4.1 Rail Type and Alignment Alternatives

Three rail types (elevated, at-grade, and retained fill) for the worst case alternative were considered in this analysis. The worst case alternative is considered the “BNSF Alternative” because it is estimated to have the longest length of track. The length of the alignment for alternatives that deviate from the BNSF Alternative is comparable to the length of the equivalent section of the BNSF Alternative. Therefore, construction emissions from construction of the BNSF Alternative are expected to be similar to the construction emissions for the other alternatives. The BNSF Alternative is the only alignment analyzed for construction emissions and all alternatives are assumed to have the same construction emissions as the BNSF Alternative. Emissions were taken as the sum of the at-grade, elevated, and retained-fill emissions.

9.4.2 Concrete Batch Plants

Concrete would be required for construction of bridges used to support the elevated sections of the alignment, for construction of the station platform, 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. Fugitive dust emissions associated with the plants were estimated based on the total amount of concrete required and on emission factors from Chapter 11.12 of AP-42 (USEPA 2006a). Emissions from on-road truck trips associated with transporting material to and from the concrete batch plants were included in the analysis and are discussed below.

9.4.3 Material Hauling

Emissions from the exhaust of trucks used to haul material (including concrete slabs) to the construction site were calculated using heavy-duty truck emission factors from EMFAC2011 and anticipated travel distances of haul trucks within the San Joaquin Valley Air Basin (SJVAB).

As part of the NEPA and CEQA analysis, the Final EIR/EIS calculates the potential construction period emissions resulting from hauling ballast (i.e., generally, the rocks that lie under railroad ties and rails) materials from quarries outside of the San Joaquin Air Basin. In order to take a conservative approach to calculating potential construction emissions, the analysts ran five different scenarios using reasonable assumptions for delivery of the ballast materials (i.e. different configurations of delivery by train and diesel truck from different quarry sources in different air basins). Emissions from the exhaust of trucks used to deliver the ballast was calculated using the heavy-duty truck emission factors from EMFAC2011, rail emission factors from the USEPA document, Emission Factors for Locomotives (USEPA 2009c), and the travel distance by rail to the Project site were used to estimate rail emissions. This analysis resulted in at least one scenario that would not result in exceedance of any of the NAAQS thresholds in any of the surrounding air basins containing ballast-source quarries. This scenario relies on the delivery of ballast from sources closest to the Project and when those sources are exhausted then they are supplemented by the importation of ballast from outside the air basin by trucks (Fresno to Bakersfield Section Air Quality Technical Report, Appendix G, "Quarry and Ballast Hauling Memorandum" March 2012). It is not possible to conclude that the future construction contractor would select this scenario, because the difference in cost between the scenarios is not substantially different. However, because no one scenario is clearly superior from a cost perspective, it is reasonable to assume that the contractor might select this scenario especially because it relies on the delivery of ballast from sources closest to the Project.

While the information developed for the EIR/EIS helps agency decisionmakers understand a range of potential scenarios and resulting emissions, it is impossible to know the exact source or method of transportation for the ballast material and therefore FRA cannot determine, with certainty, whether those emissions would result in exceedance of the General Conformity thresholds. However, as a condition of project approval the Authority will ensure that the delivery of the ballast material will not result in exeedance of any of the conformity thresholds in surrounding air basins that are nonattainment or maintenance status. If this is not reasonably possible or is materially more costly, prior to engaging in any activity that would result in emissions that exceed conformity thresholds in a nonattainment or maintenance area in the surrounding air basins, the Authority will secure the production or generation of offsets necessary to achieve conformity. Because at this time it is not possible to determine whether the hauling activities will exceed the *de minimis* thresholds in neighboring air basins, this General Conformity Determination is not intended to address the general conformity requirements in those air basins. If necessary, FRA will take the appropriate steps to demonstrate conformity in neighboring air basin including the preparation of separate general conformity determinations, if required, to comply with the General Conformity Rule.

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 included. Paving activities were not considered because surface parking lots are not expected to be part of the construction; only parking structures with emissions captured during the building construction phase were included.

Construction of the Fresno HST station would begin in June 2017 and be completed by April 2020. Construction of the Bakersfield HST station would begin in June 2018 and be completed by April 2021. Construction of the Kings/Tulare Station would begin in June 2020 and be completed by April 2023. OFFROAD 2011 was used to estimate emissions from construction phases of the HST stations.

9.6 Maintenance of Way Facility Construction

Emissions associated with construction of the MOWF are expected as a result of mass site grading, asphalt paving, building construction, and architectural coatings. Emissions would also result from construction of the at-grade MOWF Access Guideway rail.

Construction of the MOWF would begin in May 2017 and be completed by the end of 2018. OFFROAD 2011 was used to estimate emissions from construction of the MOWF. Fugitive dust from construction of the MOWF includes that from worker trips, construction equipment exhaust, and truck-hauling exhaust. Emissions from track construction were estimated using the same approach described for the HST alignment construction.

9.7 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. OFFROAD 2011 was used to estimate emissions from constructing the HMF. Construction of the HMF facility would occur from approximately May 2017 to October 2018. Construction of the HMF track would occur from June 2018 to October 2018. Fugitive dust from construction of the HMF includes that from worker trips, construction equipment exhaust, and truck-hauling exhaust.

9.8 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.

A total of 17 power distribution station sites were analyzed for construction emissions using OFFROAD 2011 emission factors. The analysis assumed that station sites 1 through 15 would be constructed from October 2017 to May 2018, and the remaining two sites (16 and 17) would be constructed between October 2018 and May 2019. Fugitive dust from construction of the power distribution stations includes that from worker trips, construction equipment exhaust, and truck-hauling exhaust.

9.9 Roadway Construction

The HST alternatives would include construction easement, easement for columns within a state facility, or modification of overcrossings or interchanges. Based on Project-specific data, four staging areas for roadway construction were analyzed. Construction of roadway crossings would occur simultaneously at all

staging areas from November 2014 to November 2016. Fugitive dust from construction of the roadway crossings includes that from worker trips, construction equipment exhaust, and truck-hauling exhaust.

9.10 Demobilization

Demobilization (of the alignment construction) would occur at four different locations from October 2016 to January 2017 (Sites 1 and 2) and January 2017 to April 2017 (Sites 3 and 4). Emissions associated with demobilization were calculated using OFFROAD 2011. Fugitive dust from demobilization includes that from worker trips and construction equipment exhaust.

10.0 Estimated Emission Rates and Comparison to *De Minimis* Thresholds - Fresno-Bakersfield

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. As shown in the table, the annual construction emissions of the Fresno to Bakersfield Section would exceed the thresholds for NOx in the years 2014 through 2018, as well as in 2021, and for VOCs in the years 2014 through 2017. The maximum estimated annual values of each pollutant, by non-attainment or maintenance area, and the percent of the 2010 estimated emission rates in the SJVAB (see Table 3) for the Fresno to Bakersfield construction are as follows:

- NOx: 818 tpy (0.42%)
- VOCs: 43 tpy (0.02%)
- $PM_{2.5}$: 35 tpy (0.07%)
- PM_{10}: 75 tpy (0.06%)
- CO: 75 tpy – Fresno Maintenance Area (0.01%)
- CO: 65 tpy –Bakersfield (Kern County) Maintenance Area (0.01%)

For the Fresno to Bakersfield portion of the HST system, the lengths of the alignments for the alternatives that deviate from the BNSF Alternative are comparable to the lengths of the equivalent sections of the BNSF Alternative. Therefore, construction emissions from the construction of the BNSF Alternative are expected to be similar to the construction emissions of the other alternatives. The lengths of the Corcoran Elevated Alternative, the Corcoran Bypass Alternative, the Hanford West Bypass 1 Alternative, the Hanford West Bypass 2 Alternative, the Bakersfield Hybrid, and the Bakersfield South Alternative have the same lengths as the corresponding section of the at-grade and elevated alignments for the BNSF Alternative. The total alignment for the Wasco-Shafter Bypass Alternative is approximately 5% shorter than the total at-grade and elevated length of the corresponding section of the BNSF Alternative. All alternatives would have the same construction emissions for all Project components.

Table 6
Fresno to Bakersfield Annual Construction-phase Emissions

Pollutant		Emissions (Tons/Year)										Conformity Applicability Thresholds (tons/year)
		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
NO_x		**622.40**	**818.30**	**548.64**	**161.43**	**70.89**	4.17	1.95	**79.74**	0.53	0.19	10
VOCs		**24.01**	**42.78**	**33.82**	8.51	3.89	0.42	0.25	3.87	0.09	0.03	10
$PM_{2.5}$*		20.20	36.47	28.66	12.03	9.67	6.94	0.14	2.49	0.05	0.02	100
PM_{10}		51.44	75.12	62.43	15.79	14.90	8.63	2.95	4.33	0.13	0.08	100
CO**	Fresno	30.51	74.79	66.14	12.17	3.92	1.31	0.43	8.85	0.00	0.00	100
	Bakersfield	29.79	64.59	57.88	15.31	3.74	1.70	1.21	9.26	0.00	0.00	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 $PM_{2.5}$)
** Fresno and Bakersfield urbanized maintenance areas only

11.0 Regional Effects

As shown in Section 3.3-6 of the FEIS, the total 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). As such, 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 2014 through 2018, as well as in 2021;
- Annual estimated VOC emissions are greater than the applicability rate of 10 tons per year in years 2014 through 2016; and
- Annual estimated $PM_{2.5}$, PM_{10}, 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 during construction where the emissions would exceed the *de minimis* thresholds and do not meet any of the exceptions cited in 40 CFR § 93.154(c). This final Conformity Determination identified the Authority's commitment to reduce all NO_x and VOC emissions through emissions offsets using a VERA with the SJVAPCD, explained in **Section 12.2** below.

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 2018, as well as in 2021; and
- VOCs – because annual estimated emissions are greater than the applicability rate of 100 tons per year for years 2014 through 2016.

12.2 Compliance with Conformity Requirements

To support this final General Conformity 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 General Conformity regulations.

The offsets are anticipated to be accomplished through a VERA between the Authority and the SJVAPCD. The requirement for the VERA would be implemented as part of the Project as described in the mitigation measure from the Final EIR/EIS:

AQ-MM#4: Offset Project Construction Emissions Through an SJVAPCD VERA. This mitigation measure would address AQ Impact #1 (Common Regional Air Quality Impacts During Construction) that would exceed the GC applicability and CEQA emissions thresholds for VOC and NO_x, and the CEQA emission thresholds for PM_{10} and $PM_{2.5}$. The Authority and SJVAPCD will enter into a contractual agreement to mitigate (by offsetting) to net zero the project's actual emissions from construction equipment and vehicle exhaust emissions of VOC, NO_x, PM_{10}, and $PM_{2.5}$. The agreement will provide funds for the district's Emission Reduction Incentive Program19 (SJVAPCD 2011) to fund grants for projects that achieve emission reductions, with preference given to highly impacted communities, thus offsetting project-related impacts on air quality. Projects funded in the past include electrification of stationary internal combustion engines (such as agricultural irrigation pumps), replacing old heavy-duty trucks with new, cleaner, more efficient heavy-duty trucks, and replacement of old farm tractors. The mitigation is the offsets, but the VERA is one mechanism to accomplish the offsets. To lower overall cost, funding for the VERA program to cover estimated construction emissions for any funded construction phase will be provided at the beginning of the construction phase if feasible. At a minimum, funding shall be provided so that mitigation/offsets will occur in the year of impact, or as otherwise permitted by 40 C.F.R. Part 93 Section 93.163.
A VERA is an enforceable mitigation measure by which the Project proponent 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 on 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 Authority and FRA 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. Furthermore, 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 will be required as a condition of project implementation to fully offset construction emissions (to net zero) for every year of construction.

12.3 Consistency with Requirements and Milestones in Applicable SIP

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

12.3.1 Applicable Requirements from EPA

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

[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 Fresno to Bakersfield Draft EIR/EIS document and (c) telephone discussions with the SJVAPCD.

12.3.2 Applicable Requirements from CARB

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

12.3.3 Applicable Requirements from SJVAPCD

To support the attainment and maintenance of the NAAQS in the SJVAB, the SJVAPCD is primarily responsible for regulating emissions from stationary sources. As noted above, SJVAPCD develops and updates its Air Quality Management Plan (AQMP) regularly to support the California SIP. While the AQMP contains rules and regulations geared to attain and maintain the NAAQS, these rules and regulations also have the much more difficult goal of attaining and maintaining the California ambient air quality standards.

12.3.4 Consistency with Applicable Requirements for the Authority

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

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

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

These are appropriate EPA, CARB, and SJVAPCD rules which are standard practice and BMPs for construction in the SJVAPCD and include control of emissions, exhaust---such as:

- SJVAPCD Rule 2201, New and Modified Stationary Source Review; applies to new or modified stationary sources and requires that sources not increase emissions above the specified thresholds. If the post-project stationary source potential to emit equals or exceeds the offset threshold levels, offsets will be required (SJVAPCD 2008). Stationary sources at the station (such as natural gas heaters) would need to be permitted by the SJVAPCD and would have to comply with best available control technology (BACT) requirements. Many stationary sources would be associated with heavy maintenance facility (HMF) activities, such as exterior washing, welding, material storage, cleaning solvents, abrasive blasting, painting, oil/water separation, and wastewater treatment and combustion. Permits would need to be obtained for equipment associated with these activities from the SJVAPCD and would need to comply with BACT requirements.
- SJVAPCD Rule 2280, Portable Equipment Registration; requires portable equipment used at project sites for less than 6 consecutive months must be registered with SJVAPCD. The district will issue the registrations 30 days after the receipt of the application (SJVAPCD 1996).
- SJVAPCD Rule 2303, Mobile Source Emission Reduction Credits; The project may qualify for SJVAPCD vehicle emission reduction credits if it meets the specific requirements of Rule 2303 for any of the following categories (SJVAPCD 1994):
    - Low-Emission Transit Buses.

  - Zero-Emission Vehicles.
  - Retrofit Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles.
  - Retrofit Heavy-Duty Vehicles

- SJVAPCD Rule 4201 and Rule 4202, Particulate Matter Concentration and Emission Rates; applies to operations that emit or may emit dust, fumes, or total suspended particulate matter. Particulate emissions from the project must be less than the specified emissions limit (SJVAPCD 1992a, 1992b).
- SJVAPCD Rule 4301, Fuel Burning Equipment; limits the emissions from fuel-burning equipment whose primary purpose is to produce heat or power by indirect heat transfer. The project will comply with the emission limits (SJVAPCD 1992c).
- SJVAPCD Rule 8011, General Requirements–Fugitive Dust Emission Sources; applicable to outdoor fugitive dust sources. Operations, including construction operations, must control fugitive dust emissions in accordance with SJVAPCD Regulation VIII (SJVAPCD 2004a). According to Rule 8011, the SJVAPCD requires the implementation of control measures for fugitive dust emission sources. The project would also implement the mandatory control measures listed in Table 6-2 in the *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI) (SJVAPCD 2002) to reduce fugitive dust emissions. These measures are not considered mitigation measures because they are required by law.

  Many of the control measures required by the SJVAPCD are the same or similar to the control measures listed in the Statewide Program EIR/EIS. The SJVAPCD Rule 8011 requirements are listed below:

  - All disturbed areas, including storage piles, which are not being actively used for construction purposes, will be effectively stabilized for 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 for 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.
  - All materials are transported offsite 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.

- SJVAPCD Rule 9510, Indirect Source Review; applies to any transportation project in which construction emissions equal or exceed 2 tons of NO_x or PM_{10} per year. Construction of the HST alignment (specifically, onsite off-road construction exhaust emissions) would be subject to ISR. Accordingly, the Authority would have to submit an Air Impact Assessment (AIA) application to the SJVAPCD with commitments to reduce construction exhaust NO_x and PM_{10} emissions by 20% and 45%, respectively. According to SJVAPCD, if successful, AQ-MM#1 (use of cleaner-burning construction equipment) might, as a practical matter, satisfy these numerical reduction requirements; if not, AQ-MM#4 (offset project construction emissions through an SJVAPCD VERA) would satisfy the ISR requirements. Operation of the HST would be exempt under sections 4.1 and 4.2 of Rule 9510.

- SJVAPCD CEQA Guidelines; The SJVAPCD prepared the *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI) to assist lead agencies and project applicants in evaluating the potential air quality impacts of projects in the SJVAB (SJVAPCD 2002). The GAMAQI provides SJVAPCD-recommended procedures for evaluating potential air quality impacts during the CEQA environmental review process. The GAMAQI provides guidance on evaluating short-term (construction) and long-term (operational) air emissions. The GAMAQI is currently being updated, but the most recent version (2002) was used in this evaluation and contains guidance on the following:

    - Criteria and thresholds for determining whether a project may have a significant adverse air quality impact.

    - Specific procedures and modeling protocols for quantifying and analyzing air quality impacts.

    - Methods to mitigate air quality impacts.

    - Information for use in air quality assessments and environmental documents that will be updated more frequently, such as air quality data, regulatory setting, climate, and topography.

    - EPA Rule 40 C.F.R. Part 89, Control of Emissions from New and In-Use Non-road Compression-Ignition Engines: requires stringent emission standards for mobile non-road diesel engines of almost all types using a tiered phase in of standards.

    - CARB Rule 13 C.C.R. § 1956.8, California Exhaust Emission Standards and Test Procedures for 1985 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles: requires significant reductions in emissions of NOx, particulate matter, and non-methane organic compounds using exhaust treatment on heavy-duty diesel engines manufactured in model year 2007 and later years.

13.0 Estimated Emission Rates and Comparison to *De Minimis* Thresholds – Cumulative Analysis

The study area for cumulative air quality impacts is the San Joaquin Valley Air Basin (SJVAB). While separate projects for purposes of planning the HST System, construction of the Fresno to Bakersfield Section would overlap with the construction period for the Merced to Fresno Section, thereby adding to the cumulative air quality impacts within the SJVAB. For purposes of full disclosure of the potential impacts, the cumulative emissions that could result from potential concurrent construction activities are presented here. As the analysis demonstrates, even where concurrent construction will occur there would be no new pollutants exceeding the de minimis thresholds. In addition, the Authority will be required as a condition of project implementation to fully offset to net zeroall construction period emissions for each year of construction..

The total annual estimated emissions generated within the SJVAB during construction of the Merced to Fresno Section are provided in Table 7. The total annual estimated emissions generated within the SJVAB during the construction of the combined Merced to Bakersfield sections (Merced to Fresno plus Fresno to Bakersfield) are provided in Table 8. As shown in this table, the combined annual construction emissions of the two sections would exceed the thresholds for NOx in the years 2014 through 2021 and VOCs in the years 2014 through 2017 and 2019.

These values are the peak on-site emissions during each analysis year plus maximum annual off-site emissions. The maximum estimated annual values of each pollutant, by non-attainment or maintenance area, and the percent of the 2010 estimated emission rates in the SJVAB (see Table 3) for the combined (Merced to Bakersfield) construction are as follows:

- NOx: 928 tpy (0.48%)
- VOCs: 54 tpy (0.02%)
- $PM_{2.5}$: 42 tpy (0.09%)
- PM_{10}: 84 tpy (0.07%)
- CO: 97 tpy – Fresno Maintenance Area (0.02%)
- CO: 65 tpy – Bakersfield (Kern County) Maintenance Area (0.01%)

For the Merced to Fresno segment of the HST system, 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 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.

Portions of the San Jose to Merced, Bakersfield to Palmdale and Sacramento to Merced sections of the HST would also be constructed within the SJVAB. It is possible that the schedule for construction of these sections could overlap with construction of the Merced to Fresno and Fresno to Bakersfield sections, contributing to the cumulative annual emissions totals of HST construction in the SJVAB. Construction emissions estimates of other sections in the SJVAB are provided in Tables 9 to 11. These estimates were developed based upon the comparison of track miles for those sections with the track miles for the Fresno to Bakersfield portion of the HST system.

Table 7
Merced to Fresno Annual Construction-phase Emissions

Pollutant	Emissions (Tons/Year)										Conformity Applicability Thresholds (tons/year)
	2014**	2015	2016	2017	2018	2019	2020	2021	2022	2023	
NO_x	**168.60**	**109.5**	**114.52**	**32.02**	**13.34**	**49.35**	**15.14**	7.36	3.96	0.00	10
VOCs	**15.11**	**11.07**	8.33	2.42	1.73	**10.83**	1.81	1.01	4.90	0.00	10
$PM_{2.5}$*	8.04	5.84	4.29	1.72	0.57	2.94	0.97	0.46	1.98	0.00	100
PM_{10}	13.15	8.79	5.51	3.86	0.83	6.13	1.89	0.61	8.89	0.00	100
CO (entire study area)	66.56	49.24	31.51	11.40	7.65	32.42	18.41	11.58	2.51	0.00	-
CO (maintenance area only)***	28.62	22.31	11.49	4.42	2.27	5.01	3.75	1.26	0.54	0.00	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 $PM_{2.5}$)
** 2014 emissions include the emissions estimated for 2013in the Merced to Fresno Final EIR/EIS since no construction activities occurred in 2013.
*** Only the Fresno Urbanized Area is a CO maintenance area, therefore only emissions in this area are subject to the conformity applicability thresholds

Table 8
Merced to Bakersfield (Merced to Fresno plus Fresno to Bakersfield) Annual Construction-phase Emissions

Pollutant		Emissions (Tons/Year)										Conformity Applicability Thresholds (tons/year)
		2014**	2015	2016	2017	2018	2019	2020	2021	2022	2023	
NO_x		**791.01**	**927.81**	**663.16**	**193.45**	**84.23**	**53.52**	**17.09**	**87.10**	4.49	0.19	10
VOCs		**39.12**	**53.86**	**42.14**	**10.92**	5.62	**11.25**	2.06	4.88	4.99	0.03	10
$PM_{2.5}$*		28.35	42.39	33.00	13.79	10.24	9.91	1.16	2.99	2.03	0.02	100
PM_{10}		64.58	83.92	67.94	19.65	15.73	14.76	4.84	4.93	9.02	0.08	100
CO***	Fresno	59.13	97.09	77.62	16.59	6.19	6.33	4.18	10.11	0.54	0.00	100
	Bakersfield	29.79	64.59	57.88	15.31	3.74	1.70	1.21	9.26	0.00	0.00	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 $PM_{2.5}$)
** 2014 emissions include the 2013 estimates from the Merced to Fresno Final EIR/EIS
*** Fresno and Bakersfield urbanized maintenance areas only

Table 9
Bakersfield to Palmdale in SJVAPCD – Estimates of Annual Construction-phase Emissions

Pollutant	Emissions (Tons/Year)					Conformity Applicability Thresholds (tons/year)
	2016	2017	2018	2019	2020	
NO_x	**89.09**	**89.09**	**89.09**	**89.09**	**89.09**	10
VOCs	4.54	4.54	4.54	4.54	4.54	10
$PM_{2.5}$*	4.50	4.50	4.50	4.50	4.50	100
PM_{10}	9.10	9.10	9.10	9.10	9.10	100
CO	32.80	32.80	32.80	32.80	32.80	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 $PM_{2.5}$)

Table 10
San Jose to Merced in SJVAPCD – Estimates of Annual Construction-phase Emissions

Pollutant	Emissions (Tons/Year)							Conformity Applicability Thresholds (tons/year)
	2019	2020	2021	2022	2023	2024	2025	
NO_x	**89.67**	**89.67**	**89.67**	**89.67**	**89.67**	**89.67**	**89.67**	10
VOCs	4.57	4.57	4.57	4.57	4.57	4.57	4.57	10
$PM_{2.5}$*	4.53	4.53	4.53	4.53	4.53	4.53	4.53	100
PM_{10}	9.16	9.16	9.16	9.16	9.16	9.16	9.16	100
CO	33.01	33.01	33.01	33.01	33.01	33.01	33.01	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 $PM_{2.5}$)

Table 11
Merced to Sacramento in SJVAPCD – Estimates of Annual Construction-phase Emissions

Pollutant	Emissions (Tons/Year)										Conformity Applicability Thresholds (tons/year)
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
NO_x	**190.33**	**190.33**	**190.33**	**190.33**	**190.33**	**190.33**	**190.33**	**190.33**	**190.33**	**190.33**	10
VOCs	9.70	9.70	9.70	9.70	9.70	9.70	9.70	9.70	9.70	9.70	10
$PM_{2.5}$*	9.62	9.62	9.62	9.62	9.62	9.62	9.62	9.62	9.62	9.62	100
PM_{10}	19.44	19.44	19.44	19.44	19.44	19.44	19.44	19.44	19.44	19.44	100
CO	70.07	70.07	70.07	70.07	70.07	70.07	70.07	70.07	70.07	70.07	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 $PM_{2.5}$)

14.0 Reporting and Public Comments

In developing the analysis underlying this final 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 demonstrating 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 as required by 40 CFR §§93.155 and 93.156. FRA provided copies of the draft General Conformity Determination to the appropriate regional offices of EPA, CARB, and SJVAPCD for a 30-day review. In addition, electronic copies were made available on FRA's website and notices were placed in a daily newspaper of general circulation announcing the availability of the draft General Conformity Determination and requesting written public comments during a 30-day period.

As a result of that 30-day public review and comment period, FRA received 14 comments on the draft General Conformity Determination. Two of the comments, from EPA, requested that wording be added to this final General Conformity Document regarding the Authority's plans to fully offset all construction emissions for every year of construction and the issue of conformity determinations for neighboring air basins. All comments and responses received on the draft General Conformity Determination are included in Appendix B.

14.1 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."

15.0 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 is located in an area that is designated as an extreme nonattainment area for the 8-hour ozone standard, nonattainment for $PM_{2.5}$, and a (partial) maintenance area for PM_{10} and CO. The FRA conducted the General Conformity evaluation following all regulatory criteria and procedures and in coordination with EPA, SJVAPCD, 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.

16.0 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

June 24, 2014

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 Fresno to Bakersfield High Speed Train Project - Relation to General Conformity

Dear Mr. Valenstein:

The California High-Speed Rail Authority (Authority) Board of Directors on May 7, 2014, and the San Joaquin Valley Air Pollution Control District (District) Governing Board on June 19, 2014, approved a Memorandum of Understanding (MOU) between the two agencies. The MOU commits the Authority to offset its project construction emissions of NOx, ROG/VOC, PM10 and PM2.5 to net zero within District boundaries, which boundaries include all of the Fresno to Bakersfield High-Speed Rail (HSR) Section (FB Section). The MOU commits the District to source, secure and implement the offsets with Authority/project funding. The Authority's MOU approval authorizes up to $35 million these offsets, which amount the Authority estimates is more than enough to fund offsets for all Authority construction within District boundaries. I have attached a copy of the MOU, which the Authority and District have signed.

The MOU contains general broad commitments, to be implemented in a series of detailed agreements called Voluntary Emissions Reduction Agreements (VERA). As HSR construction within District boundaries proceeds, a detailed VERA (or amendment to a VERA) will be executed and implemented. The first HSR construction, expected to commence this summer, is in the southern portion of the previously-approved Merced to Fresno Section – in an area roughly between Madera and downtown Fresno. The Authority and District have approved and executed a VERA to cover this Madera-to-Fresno portion. MOU section 1.iii states that its mutual commitments to offset HSR construction emissions will be implemented through VERAs substantially in the form of the Madera-to-Fresno VERA. The Authority and District will amend this Madera-to-Fresno VERA and/or prepare and execute a substantially similar separate VERA(s) prior to commencing construction in the FB Section. I attach a copy of the Madera to Fresno VERA, signed by the Authority and District.

The MOU, and VERA(s) to be implemented in the FB Section, implement an air quality mitigation measure that was included in the FB Section Project EIR/EIS document and to which the Authority committed itself in its project approval actions taken on May 7, 2014. That measure is Air Quality Mitigation Measure #4 (AQ-MM#4), which states:

AQ-MM#4: Offset Project Construction Emissions through a SJVAPCD Voluntary Emission Reduction Agreement (VERA). This mitigation measure would address AQ Impact #1 (Common Regional Air Quality Impacts During Construction) that would exceed the GC applicability and CEQA emissions thresholds for VOC and NOx, and the CEQA emission thresholds for PM10 and PM2.5. The Authority and SJVAPCD will enter into a contractual agreement to mitigate (by offsetting) to net zero the project's actual emissions from construction equipment and vehicle exhaust emissions of VOC, NOx, PM10, and PM2.5. The agreement will provide funds for the district's Emission Reduction Incentive Program (SJVAPCD 2011) to fund grants for projects that achieve emission reductions, with preference given to highly impacted communities, thus offsetting project-related impacts on air quality. Projects funded in the past include electrification of stationary internal combustion engines (such as agricultural irrigation pumps), replacing old heavy-duty trucks with new, cleaner, more efficient heavy-duty trucks, and replacement of old farm tractors. The mitigation is the offsets, but the VERA is one mechanism to accomplish the offsets. To lower overall cost, funding for the VERA program to cover estimated construction emissions for any funded construction phase will be provided at the beginning of the construction phase if feasible. At a minimum, funding shall be provided so that mitigation/offsets will occur in the year of impact, or as otherwise permitted by 40 C.F.R. Part 93 Section 93.163.

Essentially, AQ-MM#4 (implemented by the MOU and VERAs) commits the Authority to offset to net zero its criteria pollutant emissions from construction. The project would pay the District the actual cost of causing local emitters of criteria pollutants 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. This approach has proven very successful in the past with the District's existing programs.

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 committed – via AQ-MM#4 and the MOU – to implement the offset program.

If you have any questions or need more information, please contact me, Mark McLoughlin, Director of Environmental Services, at (916) 403-6934 or mark.mcloughlin@hsr.ca.gov.

Sincerely,

Mark A. McLoughlin
Director of Environmental Services

Enclosure:
(1) Memorandum of Understanding, California High-Speed Rail Authority and San Joaquin Valley Unified Air pollution Control District
(2) Agreement HSR14-12 (the Madera to Fresno VERA) between the California High-Speed Rail Authority and San Joaquin Valley Unified Air pollution Control District

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding ("MOU") is entered into by the California High-Speed Rail Authority ("Authority") and the San Joaquin Valley Unified Air Pollution Control District ("District"). Authority and District are collectively referred to herein as the "Parties" with each being a "Party".

RECITALS

WHEREAS, District is an air pollution control district formed by the counties of Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus and Tulare, and the Valley portion of Kern, pursuant to California Health and Safety Code section 40150, et seq.; and

WHEREAS, District is responsible for developing and implementing air quality control measures within the District Boundaries as depicted in Exhibit A ("District Boundaries" or "San Joaquin Valley Air Basin") attached hereto and incorporated herein, including air quality control measures for stationary sources, transportation sources, and indirect sources; and

WHEREAS, despite the best efforts of District, air quality within District Boundaries remains impaired such that the San Joaquin Valley Air Basin is not in attainment of federal Clean Air Act standards for ozone and its precursors NOx and VOCs (extreme nonattainment) and PM2.5 and is in Attainment/Maintenance status for PM10 (NOx, VOC, PM10 and PM2.5 collectively, "Criteria Pollutants"); and

WHEREAS, emissions of Criteria Pollutants from the Authority's planned high-speed rail construction within District Boundaries would exacerbate that non-attainment status and could threaten that Attainment/Maintenance status; and

WHEREAS, the San Joaquin Valley Air Basin is unique meteorologically in that it is surrounded on three sides by mountain ranges, including to the west which significantly limits the ability of ocean weather patterns and winds to refresh air in the basin; and

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WHEREAS, the Authority, in partnership with the Federal Railroad Administration ("FRA"), is developing a high-speed train system ("HST System"), which includes construction of guide-way segments, and ancillary facilities such as a Heavy Maintenance Facility, stations, and overpasses for California pursuant to the California High-Speed Rail Act (Public Utilities Code section 18500 *et seq.*) ("Rail Act") and the Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century (codified at Streets and Highways Code section 2704 *et seq.*) ("Bond Act") that would serve the San Francisco Bay Area, Sacramento, Central Valley, Los Angeles and San Diego through various station-to-station segments ("Segments") (as depicted in Exhibit B); and

WHEREAS, the HST System includes segments or portions thereof that will be constructed, if and when funding can be secured, within the boundaries of the San Joaquin Valley ("SJV") including the following: Merced to San Jose (portion), Merced to Fresno (all), Fresno to Bakersfield (all), Bakersfield to Palmdale (portion), and Sacramento to Merced (portion), collectively referred to as "HST SJV District Portion"; and

WHEREAS, the Authority completed Program-level Environmental Impact Statements/Reports ("EIS/EIR") in 2005, 2008, 2010 and 2012 pursuant to the National Environmental Policy Act ("NEPA") and California Environmental Quality Act ("CEQA") evaluating impacts of the HST System, and selecting preferred route corridors; and

WHEREAS, a project level Final EIS/EIR ("MF FEIR") for the Merced to Fresno Segment ("MF Segment") was approved and certified via Resolution 12-19 ("MF FEIR Resolution") and the MF Segment approved and CEQA findings made via Resolution 12-20 ("MF Segment Resolution") by the Authority's Board of Directors in May 2012 and FRA's associated Record of Decision ("ROD") issued on September 2012; and

WHEREAS, construction of a portion of the MF Segment (from approximately Madera to downtown Fresno) is anticipated to commence in 2014 with connections to the San Francisco Bay Area and Los Angeles Basin expected after year 2028; and

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WHEREAS, the Authority found in the MF FEIR and MF FEIR Resolution that construction of the MF Segment would cause significant air quality impacts from construction emissions of Criteria Pollutants because the San Joaquin Valley Air Basin is in non-attainment for Criteria Pollutants; and

WHEREAS, the Authority has included in the MF Segment Resolution, and in the Draft EIR/EIS for the Fresno-Bakersfield Segment (and anticipates so including in the draft environmental documents for other Segments of the HST SJV District Portion) various requirements and mitigation measures to reduce significant construction emissions associated with the HST SJV District Portion (such as using the cleanest construction and hauling fleet as reasonably practicable, as detailed in MF FEIR AQ-MM#1 and #2); and

WHEREAS, nevertheless, Criteria Pollutant(s) emitted during HST construction within the District Boundaries would still exacerbate and/or threaten the existing non-attainment and maintenance status for Criteria Pollutants within the District Boundaries; and

WHEREAS, during the public process leading up to the MF FEIR, the District recommended in writing that the Authority enter into a Voluntary Emission Reduction Agreement ("VERA") with the District as an additional mitigation measure (because of the emissions offsets VERA implementation would achieve) for construction emission impacts the MF FEIR concluded would occur in the MF Segment; and

WHEREAS, the MF Segment Resolution committed the Authority to entering into a VERA with the District for the MF Segment as a mitigation measure to accomplish net-zero MF Segment construction emissions of Criteria Pollutants because of the San Joaquin Air Basin's difficult air quality challenge (*i.e.*, its non-attainment status), which VERA now has been drafted for the funded Madera-to-Fresno portion of the MF Segment and is near ready for execution ("Madera-to-Fresno VERA"); and

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WHEREAS, the Authority understands that any significant HST construction emissions air quality impacts from Criteria Pollutants within the District Boundaries could be mitigated through various measures, including emissions offsets to net zero through entry into VERAs, which approach would address the District's view that any net HST construction emissions of Criteria Pollutants within the District Boundaries are impacts that must be fully mitigated; and

WHEREAS, the District has developed Incentive Programs around several core principles, including cost-effectiveness, integrity, effective program administration, excellent customer service, the efficient use of District resources, fiscal transparency and public accountability; and

WHEREAS, the District's Incentive Programs involve the District using monies (such as grant funds and project-proponent-provided monies via a VERA) to fund (usually on a percentage basis) the purchase and use by third parties of newer equipment that emits fewer Criteria Pollutants to replace older, less-clean-burning equipment (such as farm tractors), which the District administers through Individual Incentive Program Funding Agreements ("IIPFAs"); and

WHEREAS, the District's IIPFAs require the user of the new equipment to use the new equipment for a minimum number of hours (based on the user's historical use of the replaced equipment) over a specified number of years, and require permanent destruction of the replaced equipment; and

WHEREAS, the IIPFAs, because of their requirements, result in reductions of Criteria Pollutants that get assigned to the project proponent providing the funding to offset emissions by that project proponent ("Criteria Pollutant VERA Offsets"); and

WHEREAS, the Criteria Pollutant VERA Offsets, because of the requirements of and protections in the IIPFAs, are secured and certified to the Authority by the District ("Secured Criteria Pollutant VERA Offsets") upon execution of each IIPFA; and

WHEREAS, the District's Incentive Programs are regularly audited by independent outside agencies including professional accountancy corporations on

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behalf of the federal government, the California Air Resources Board ("ARB"), the California Department of Finance and the California Bureau of State Audits; and

WHEREAS, the District has determined that with appropriate funding from Authority, the District can source, secure and certify Criteria Pollutant VERA Offsets as necessary for construction of the HST SJV District Portion.

AGREEMENT

NOW THEREFORE, the Authority and the District hereby agree as follows:

1. **Offset of Construction Emissions of Criteria Pollutants**

(i) The Authority shall fully offset all HST SJV District Portion-related HST construction emissions from Criteria Pollutants by achieving surplus, quantifiable and enforceable emissions reductions of Criteria Pollutants.

(ii) For the purpose of this MOU, "fully offset" or "net zero" means that the total amount of all Criteria Pollutants emission reductions secured by the offset reduction measures is equal to, or greater than, the total amount of actual Criteria Pollutant HST construction emissions within the HST SJV District Portion, minus the projected emissions of Criteria Pollutants that would have occurred in the locations of the HST District Portion construction in the absence of HST construction as may be feasible and technically calculable for specific facilities HST might replace (as individual VERAs may include). "Surplus" emission reductions are reductions that are not otherwise required by existing laws or regulations.

(iii) In order to fully offset such construction-related air emissions from the HST SJV District Portion, upon each Segment in the HST SJV District Portion having been approved for construction by the Authority and any applicable state or federal entity, having secured funding for construction, and having approved or certified associated environmental review reports and/or statements as required by applicable law ("Certified Environmental Document"), the Authority and District shall enter into a VERA substantially in the form of the Madera-to-Fresno VERA to cover the portion of the Segment approved and funded for construction within District Boundaries prior to

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the commencement of construction of said portion. Notwithstanding the above, nothing in this MOU shall prevent the Authority from commencing any construction if, despite the Authority's best efforts, timely entry into the associated VERA did not occur; in such event, the Parties shall work cooperatively to accomplish entry into the VERA in time for emissions offsets to occur in a timely manner to satisfy applicable law such as contemporaneous offset timing requirements established by the U.S. Environmental Protection Agency for general conformity.

2. **VERA Implementation**

(i) Upon entering into a VERA, the Authority shall provide the District with a meaningful amount of Air Quality Mitigation Funds (as a deposit) as may be specified in each VERA, which the District shall place in a District trust or escrow account until committed in an executed and Authority-approved IIPFA. Such Funds are intended to fund equipment replacement and/or retrofit to achieve Criteria Pollutant VERA Offsets and to fund the District's administrative expenses to implement the VERA, as may be specified in each VERA. The Authority acknowledges that the District will require availability of a meaningful amount of such Funds prior to soliciting and negotiating IIPFAs to accomplish Criteria Pollutant VERA Offsets on the Authority's behalf as part of any individual VERA. The District acknowledges that construction of the HST SJV District Portion is not fully funded, and future funding sources and availability can affect how individual VERAs get funded and the provisions and terms in such VERAs. The total estimated amount of Air Quality Mitigation Funds necessary for each VERA are based on (a) the total tonnage of Criteria Pollutants estimated to be emitted during the HST construction covered by each VERA, as estimated within a Certified Environmental Document or some subsequent estimate based on more then-up-to-date construction information and (b) District's cost per ton per the then-applicable rate contained in District Rule 9510 as set forth in each VERA.

(ii) Upon receipt of a meaningful amount of such Funds as relates to an individual VERA and upon the Authority's written notice to proceed from its Contract

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Manager to the District based on relative certainty of a likely construction start date for the HST construction covered by the relevant VERA, the District will commence negotiating and executing (after Authority limited review and approval) and funding (from the Funds in trust/escrow) IIPFAs to achieve Secured Criteria Pollutant VERA Offsets on behalf of the Authority in a timely manner to satisfy applicable law or general conformity regulations requiring emission reductions to be achieved contemporaneous to the actual emissions to be offset. The Authority will continue to fund the trust/escrow account, and District will continue to negotiate and execute additional IIPFAs to create additional Secured Criteria Pollutant VERA Offsets until sufficient Secured Criteria Pollutant VERA Offsets have been funded to accomplish full offset to net zero for that VERA.

(iii) Upon execution of each IIPFA, District shall issue to the Authority a Secured Criteria Pollutant VERA Offsets Receipt, by which the District ensures to the Authority that such associated offsets listed in the Receipt have been secured with no further involvement or funding by the Authority.

(iv) Through periodic reporting to each other, the Authority will monitor the actual emissions resulting from construction and the District will monitor and match such actual emissions to the total offsets stated in Secured Criteria Pollutant VERA Offsets Receipts issued to date. The District shall certify in writing to the Authority when the total Secured Criteria Pollutant VERA Offsets listed in all Receipts issued fully offset the actual construction emissions of Criteria Pollutant(s) from the HST Segment portion covered by the associated VERA.

3. **Refunds**

When total offsets stated in Secured Criteria Pollutant VERA Offsets Receipts equal or exceed total actual construction emissions of Criteria Pollutants for the HST construction covered in a VERA, the District shall, upon Authority written request, refund the Authority any remaining Air Quality Mitigation Funds which are not

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encumbered through IIPFAs. The District shall have a reasonable period of time to refund the unencumbered Air Quality Mitigation Funds.

4. **Transfer of Segment Excess Emission Reductions**

If total offsets stated in Secured Criteria Pollutant VERA Offsets Receipts exceed total construction emissions of Criteria Pollutants for the HST construction covered in a VERA, the Authority shall be credited with such excess emission ("VERA Excess Emission Reduction" or "Excess"). Such VERA Excess Emission Reductions shall be transferred to any other then-existing or future Authority-District VERA. If there is no existing VERA and likely will not be a future VERA in time for the Authority to get value for the Excess, the Authority may transfer the Excess to a third-party developer.

5. **District Rule 9510-Indirect Source Review**

Authority acknowledges that it is required to comply with all applicable laws that may be in effect as the HST SJV District Portion is implemented, such as the District's current Rule 9510 (including its requirement to submit an Air Impact Assessment Application). The Authority acknowledges that it is subject to all applicable provisions of District Rule 9510 that are in effect at the time of submitting an Air Impact Assessment Application, but the District anticipates that Criteria Pollutant Offsets to be accomplished through VERAs as contemplated by this MOU will satisfy the emissions reductions requirements of current Rule 9510.

6. **Term of MOU**

This MOU shall be effective upon the date it is signed. The Parties acknowledge that construction of the HST SJV District Portion could span one or more decades. The Parties agree to work cooperatively together over that time period to evaluate any amendments necessary to this MOU to reflect any relevant circumstances that may change, including but not limited to changing state and federal law requirements related to air quality, changes (positive or negative) in the Clean Air Act attainment status of the San Joaquin Air Basin for Criteria Pollutants or other pollutants, changing and evolving HST funding, and changing state and federal law requirements related to

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the HST System. This MOU shall be terminated by its terms when total offsets stated in Secured Criteria Pollutant VERA Offsets Receipts equal or exceed total actual construction emissions of Criteria Pollutants for the HST SJV District Portion.

7. **Exhibits**. The Exhibits to this MOU are fully incorporated and are a part of this MOU, and are:

A. District Boundaries Map

B. HST System and Segment Map

8. **Miscellaneous.** The Recitals set forth above are hereby incorporated into the terms of this MOU. Counterpart and facsimile/computer image signatures shall be treated as originals. Notices under this MOU shall be given in writing to the persons and addresses listed in the then-most-current VERA. This MOU contains all understandings between the Parties as to the matters covered herein and incorporates, integrates and supersedes any different or other oral or written understandings between the Parties as to the matters covered herein. This MOU was prepared equally by both Parties.

IN WITNESS WHEREOF, the Authority and District have executed this MOU and agree that it shall be effective as of the date first written above.

AUTHORITY

High Speed Rail Authority

Jeff Morales
Chief Executive Officer

DISTRICT

San Joaquin Valley Unified Air Pollution Control District

Hub Walsh
Governing Board Chair

Recommended for approval:
San Joaquin Valley Unified Air Pollution Control District

Seyed Sadredin
Executive Director/APCO

Approved as to legal form:

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San Joaquin Valley Unified Air Pollution Control District

Annette Ballatore-Williamson
Interim District Counsel

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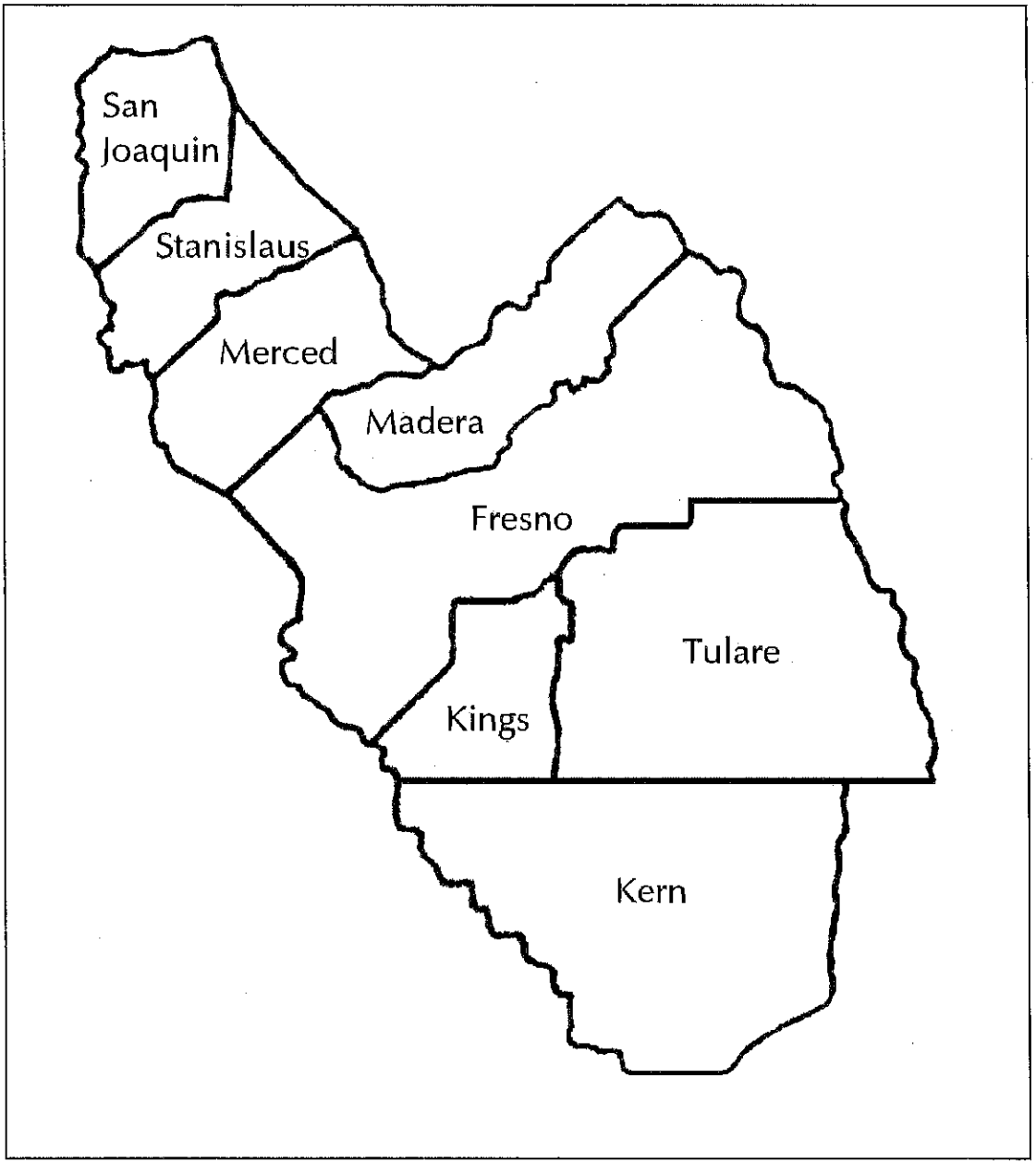
EXHIBIT A: District Boundaries/San Joaquin Valley Air Basin



SJVUAPCD
1990 E. Gettysburg
Fresno, CA 93726
(559) 230-6000

EXHIBIT B: Segments/Corridors of the HST System

SJVUAPCD
1990 E. Gettysburg
Fresno, CA 93726
(559) 230-6000

STANDARD AGREEMENT

STD. 213 (NEW 06/03)

AGREEMENT NUMBER
HSR14-12
REGISTRATION NUMBER

1. This Agreement is entered into between the State Agency and the Contractor named below

STATE AGENCY'S NAME
California High-Speed Rail Authority

CONTRACTOR'S NAME
San Joaquin Valley Unified Air Pollution Control District

2. The term of this Agreement is: June 1, 2014 (or upon DGS approval, whichever is later) through July 31, 2028.

3. The maximum amount of this Agreement is: $ 1,705,472 ("Agreement Funding Maximum").
One Million, Seven Hundred and Five Thousand, Four Hundred and Seventy-Two Dollars

4. The parties agree to comply with the terms and conditions of the following exhibits which are by this reference made a part of the Agreement:

Exhibit A – Scope of Work and its Attachments A-1 to A-8 (Attachment A-4 includes a budget)	39	Pages
Exhibit B – Budget Detail and Payment Provisions	1	Page
Exhibit C – General Terms and Conditions	4	Pages
Exhibit D – Special Terms and Conditions	3	Pages
Exhibit E – Supplemental Terms and Conditions for Contracts Using Federal Funds	7	Pages

IN WITNESS WHEREOF, this Agreement has been executed by parties hereto (additional signatures on following page).

CONTRACTOR

CONTRACTOR'S NAME *(If other than an individual, state whether a corporation, partnership, etc.)*
San Joaquin Valley Unified Air Pollution Control District

BY *(Authorized Signature)*
Hub Walsh

DATE SIGNED *(Do not type)*
6/20/14

PRINTED NAME AND TITLE OF PERSON SIGNING
Hub Walsh, Governing Board Chair

ADDRESS
1990 E. Gettysburg Avenue, Fresno, CA 93726

STATE OF CALIFORNIA

AGENCY NAME
California High-Speed Rail Authority

BY *(Authorized Signature)*
Jeff Morales

DATE SIGNED *(Do not type)*
5.29.14

PRINTED NAME AND TITLE OF PERSON SIGNING
Jeff Morales, Chief Executive Officer

ADDRESS
770 L Street, Suite 800, Sacramento, CA 95814

California Department of General Services Use Only

☐ Exempt per:

ADDITIONAL SIGNATURE PAGE FOR VERA BETWEEN CALIFORNIA HIGH-SPEED RAIL AUTHORITY AND SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT FOR CONSTRUCTION PACKAGE 1A/1B (MADERA TO FRESNO)
June 2014
HSRA AGREEMENT NUMBER: HSR14-12
DISTRICT AGREEMENT NUMBER: 20140105

The following authorized representatives of the District, by their signatures, recommend and approve this Agreement for execution by the District's Governing Board. ***Recommended for approval:***

San Joaquin Valley Unified Air Pollution Control District

Seyed Sadredin
Executive Director/APCO

Date: JUN 16 2014

Approved as to legal form:
San Joaquin Valley Unified Air Pollution Control District

Annette Ballatore-Williamson
District Counsel

Date: JUN 16 2014

Approved as to accounting form:
San Joaquin Valley Unified Air Pollution Control District

Mehri Barati
Director of Administrative Services

Date: JUN 17 2014

EXHIBIT A
SCOPE OF WORK

VOLUNTARY EMISSION REDUCTION AGREEMENT (District No. 20140105) FOR THE MADERA-FRESNO PORTION OF THE MERCED-FRESNO HIGH SPEED RAIL SEGMENT

This Voluntary Emission Reduction Agreement ("Agreement" or "VERA") is entered into between the CALIFORNIA HIGH-SPEED RAIL AUTHORITY ("Authority") and the SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT ("District" or "Contractor"). Authority and District are each a "Party" and collectively are the "Parties". As used herein, "Agreement" or "VERA" includes the Standard Agreement cover page (STD 213), this Exhibit A (Scope of Work) and Exhibits B to E inclusive.

RECITALS

WHEREAS, District is an air pollution control district formed by the counties of Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus and Tulare, and the Valley portion of Kern, pursuant to California Health and Safety Code section 40150, et seq.; and

WHEREAS, District is responsible for developing and implementing air quality control measures within the District Boundaries as depicted in Attachment A-1 ("District Boundaries") attached hereto and incorporated herein, including air quality control measures for stationary sources, transportation sources, and indirect sources; and

WHEREAS, the Authority, in partnership with the Federal Railroad Administration ("FRA"), is developing an electrified high-speed train ("HST") system ("System"), which includes construction of guide-way segments, and ancillary facilities such as maintenance facilities, electrical overhead catenary, stations, and overpasses for California pursuant to the California High-Speed Rail Act (Public Utilities Code section 18500 *et seq.*) ("Rail Act") and the Safe, Reliable High-Speed Passenger Train Bond

EXHIBIT A
SCOPE OF WORK

Act for the 21st Century (codified at Streets and Highways Code section 2704 *et seq.*) ("Bond Act") that would serve the San Francisco Bay Area, Sacramento, Central Valley, Los Angeles and San Diego (as depicted in Attachment A-2); and

WHEREAS, the System includes segments (or portions thereof) that will be constructed within the San Joaquin Valley ("SJV") District Boundaries including the following: Merced to San Jose, Merced to Fresno, Fresno to Bakersfield, Bakersfield to Palmdale, and Sacramento to Merced collectively referred to as "HST SJV District Portion"; and

WHEREAS, in 2014 the Parties anticipate entering into a Memorandum of Understanding to establish the process to fully mitigate (by offsetting to net zero) emissions from construction of the HST SJV District Portion; and

WHEREAS, the Authority completed Program-level Environmental Impact Statements/Reports (EIS/EIR) in 2005, 2008, 2010 and 2012 pursuant to the National Environmental Policy Act ("NEPA") and California Environmental Quality Act ("CEQA") evaluating impacts of the System, and selecting preferred route corridors; and

WHEREAS, a project level Final EIS/EIR ("MF FEIR") for the Merced to Fresno Segment ("MF Segment") was certified via Resolution 12-19 ("MF FEIR Resolution") and the MF Segment was approved and CEQA findings made via Resolution 12-20 ("MF Segment Resolution") by the Authority's Board of Directors in May 2012 and FRA's associated Record of Decision ("ROD") issued in September 2012; and

WHEREAS, during the public process leading up to the MF FEIR, the District recommended in writing that the Authority enter this VERA with the District as a mitigation measure for construction emissions (because of the offsets it would achieve); and

EXHIBIT A
SCOPE OF WORK

WHEREAS, construction of a portion of the MF Segment (grade separations, track bed and track bed structures from approximately Madera to downtown Fresno; rails, electrification and stations will be part of a future construction package(s)) is anticipated to commence in 2014 (known as Construction Package 1A/1B or "CP 1A/1B"), and the Authority has not secured funding to construct north of Madera; and

WHEREAS, despite incorporation of various requirements and mitigation measures (i.e., using the cleanest construction and hauling fleet as reasonably practicable, as detailed in MF FEIR AQ-MM#1 and #2) to reduce the construction emissions associated with the MF Segment, the Authority concluded in its MF Segment Resolution that construction would nevertheless still cause significant cumulative impacts on air quality within the District Boundaries because of the existing nonattainment status or maintenance status for Criteria Pollutants (extreme nonattainment, in the case of ozone precursors Oxides of Nitrogen ("NOx") and Volatile Organic Compounds ("VOCs")); and

WHEREAS, the Authority in the MF Segment Resolution committed to fully mitigate) cumulative air quality impacts of the MF Segment resulting from construction for VOC, NOx, Particulate Matter of 10 microns or less in size ("PM10") and Particulate Matter of 2.5 microns or less in size ("PM2.5") (the "Offset Obligation"), collectively referred to as "Criteria Pollutants", by offsetting Criteria Pollutants collectively in the aggregate to net zero; and

WHEREAS, the Authority determined the Offset Obligation was feasible because of the District's representations to the Authority about its expertise and its ability to partner with the Authority to implement the Offset Obligation at the Offset Cost Schedule set forth in Table 1; and

EXHIBIT A
SCOPE OF WORK

WHEREAS, the Authority in the MF Segment Resolution committed to causing the emissions offsets to occur within one year of the associated emission to be offset, or longer as permitted by 40 Code of Federal Regulations Part 93 Section 93.163 ("Offset Timing Requirement"); and

WHEREAS, the District has developed Incentive Programs around several core principles, including cost-effectiveness, integrity, effective program administration, excellent customer service, the efficient use of District resources, fiscal transparency and public accountability; and

WHEREAS, the District's Incentive Programs involve the District using monies (such as project-proponent-provided monies) to fund (usually on a percentage basis) the purchase and use by third parties of newer equipment that emits fewer Criteria Pollutants to replace older, less-clean-burning equipment (such as farm tractors), which the District administers through Individual Incentive Program Funding Agreements; and

WHEREAS, the District's Individual Incentive Program Funding Agreements require the user of the new equipment to use the new equipment for a minimum number of hours (based on the user's historical use of the replaced equipment) over a specified number of years, with penalties and remedies for failure to so use the equipment including potentially having to return the funds for redeployment, and require permanent destruction of the replaced equipment; and

WHEREAS, the Individual Incentive Program Funding Agreements, because of their requirements, result in reductions of Criteria Pollutants that get assigned to the project proponent providing the funding (the Authority, in this case) to offset emissions by that project proponent ("Criteria Pollutant VERA Offsets"); and

EXHIBIT A
SCOPE OF WORK

WHEREAS, the Criteria Pollutant VERA Offsets, because of the requirements of and protections in the Individual Incentive Program Funding Agreements, are generated and become secured upon execution of each Individual Incentive Program Funding Agreement; and

WHEREAS, the District's Incentive Programs are regularly audited by independent outside agencies including professional accountancy corporations on behalf of the federal government, the California Air Resources Board (ARB), the California Department of Finance and the California Bureau of State Audits ("Successful Audit History"); and

WHEREAS, the District has determined that with appropriate funding from Authority, the District can generate and certify Criteria Pollutant VERA Offsets to fully offset the CP 1A/1B portion of the MF Segment ("CP 1A/1B Portion") construction emissions of Criteria Pollutants; and

WHEREAS, District has a history of successfully implementing at least eleven agreements similar to this VERA at an average cost-effectiveness per ton of $7,911, and has never to date needed to request a project proponent in any of those VERAs or any other VERA to provide funds beyond the original total funds estimate (including administrative fee) and deposit.

AGREEMENT

1. **Offset of Emissions of Criteria Pollutants during Construction for CP 1A/1B Portion and Cost Estimate**

i. For CP 1A/1B, the Authority shall fully offset its actual construction emissions of Criteria Pollutants, which offsets the District shall provide and guarantee through the Authority's funding of and the District execution and implementation of

EXHIBIT A
SCOPE OF WORK

Individual Incentive Program Funding Agreements ("IIPFA") that achieve surplus, quantifiable and enforceable emissions reductions.

ii. For the purpose of this Agreement, "fully offset" or "net zero" means that the aggregate sum of all Criteria Pollutants emission reductions achieved by the IIPFAs is equal to, or greater than, the aggregate sum of actual Criteria Pollutant emissions from construction of the CP 1A/1B Portion, meaning excess offset of one Criteria Pollutant is credited against emissions of other Criteria Pollutants. "Surplus" emission reductions are reductions that are not otherwise required by existing laws or regulations.

iii. CP 1A/1B extends approximately from the intersection of Avenue 17 and the Burlington Northern Santa Fe ("BNSF") rail line in Madera to the intersection of Santa Clara Street and the Union Pacific rail line in downtown Fresno, as shown in Attachment A-3. Estimated construction emissions of Criteria Pollutants, by year by pollutant, for CP 1A/1B are set forth in Attachment A-4 ("CP 1A/1B Criteria Pollutants Estimate"), which reflect implementation of AQ-MM#1 and #2 (contractor's use of a cleaner fleet). Based on the District's current estimated cost-per-ton, plus the District's four percent (4%) administrative cost overhead ("District Overhead") to procure offsets and to implement this Agreement, as specified in Section 2.1, and the CP 1A/1B Criteria Pollutants Estimate, achieving Criteria Pollutant VERA Offsets for CP 1A/1B to net zero will cost approximately $1,364,377 ("CP 1A/1B Offset Cost Estimate"), as also shown in Attachment A-4. This is only an estimate; the actual cost to fully offset CP 1A/1B may be higher or lower depending upon a number of factors which cannot be precisely determined now, including but not limited to the evolving market price to accomplish offsets and the actual pace and sequencing of construction. Accordingly, the Authority agrees to provide funds up to $1,705,472 ("Agreement Funding Maximum") (which is

EXHIBIT A
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the above amount plus twenty-five percent (25%); any additional amount would require an amendment to this VERA) to fully offset its actual CP 1A/1B construction emissions of Criteria Pollutants, subject to the District's obligations to secure those offsets on the Authority's behalf in a cost-effective manner as required by Paragraph 2.1.

iv. The Authority at any time may submit to the District a Revised CP 1A/1B Criteria Pollutants Estimate to reflect then-current information about construction timing, sequencing and equipment. The Authority and District shall work closely after submission to review and revise as necessary to allow District approval in writing within 30 days of submission; the CP 1A/1B Offset Cost Estimate shall be adjusted accordingly, upon such approval, via Operating Memorandum pursuant to Paragraph 16.ii.

2. Emissions Offsets Funding

2.1 Offset Cost Per Ton

Offset cost estimates under this VERA are based on the District's cost per ton set forth below in Table 1 (Offset Cost Schedule).

Table 1 Offset Cost Schedule

Criteria Pollutants	Cost $/ton
NOx or VOC/ROG	$9,350
PM10 (which includes PM2.5)	$9,011

These per-ton costs are not a guarantee and only an estimate, but the District shall use every reasonable effort to accomplish average per-ton costs, calculated as of its execution of the last IIPFA under this VERA, no higher than these Table 1 costs, as Table 1 might be modified per this Paragraph 2.1. The Table 1 per-ton costs derive from District Rule 9510 (Indirect Source Review) and are subject to change through the

EXHIBIT A
SCOPE OF WORK

District's formal public procedures for amending these rules. Consistent with District Rule 3180 (Administrative Fees for Indirect Source Review), the total offset cost estimates shall include (which is included in Attachment A-4) an administrative cost equal to four percent (4%) of the offset cost estimate. Any changes to District Rule 3180 or 9510 will be conducted through the District's formal public procedures and process for amending these rules.

District shall provide written notice (via email and mail) to the Authority of any pending Rule 3180/9510 cost per ton change at least fifteen (15) days prior to any District approval of or decision on such pending change. The results of that change shall be memorialized via Operating Memorandum pursuant to Paragraph 16.ii.

2.2 Air Quality Cost per Ton

Revisions to the CP 1A/1B Offset Cost Estimate (as contemplated in Paragraphs 1 and 3.2) shall be based on Table 1 or the average cost-effectiveness the District then projects it will accomplish for this VERA (based on the IIPFAs then executed to date under this VERA), if the District concludes after consulting with the Authority that the projected cost-effectiveness will be different than Table 1 (as Table 1 might be modified per Paragraph 2.1).

2.3 Payment of Funds for Criteria Pollutant VERA Offsets

i. Within fifteen (15) days after this VERA has been entered into by the Authority and the District, and then approved by the California Department of General Services ("DGS"), the District shall send to the Authority an Initial Invoice in the form of Attachment A-5, or in another form as the Authority may reasonably request.

ii. Within one hundred twenty (120) days after the Authority receives the Initial Invoice from the District or DGS has approved this VERA, whichever is later, the

EXHIBIT A
SCOPE OF WORK

Authority shall deposit with the District initial funds in the amount of five-hundred thousand dollars ($500,000) ("Initial Deposit"), or a greater amount if the parties so agree via Operating Memorandum pursuant to Paragraph 16.ii, as initial funding towards the CP 1A/1B Offset Cost Estimate. This initial deposit and each subsequent deposit are collectively referred to herein as "Deposits" with each being a "Deposit".

iii. The District will place each Deposit into a District-held but segregated High Speed Rail Offset Funding Trust Account. Deposits will be used to fund Individual Incentive Program Funding Agreements. Deposits in the High Speed Rail Offset Funding Trust Account are held by the District in trust for the Authority and are the property of the Authority until moved to the District's Committed High Speed Rail Offsets Funds Account under Paragraph 2.4. This High Speed Rail Offset Funding Trust Account shall serve all Authority VERAs as the Authority replenishes it in accordance with Paragraph 2.4.

2.4 Individual Incentive Program Funding Agreements; Secured Criteria Pollutant VERA Offsets Receipt; Trust Account Replenishment

i. Upon the Authority's submission to District of the Initial Deposit (and upon the Authority's written notice to proceed from its Contract Manager to the District based on relative certainty of a likely construction start date) and upon each Authority additional Deposit, the District is obligated to use Deposits to enter into IIPFAs to achieve Criteria Pollutant VERA Offsets for construction of the CP 1A/1B Portion on behalf of the Authority to the extent required under this Agreement. District shall use diligent efforts to negotiate and prepare draft Individual Incentive Program Funding Agreements with the owners and/or operators of the pollution source equipment ("IIPFA Equipment User") within District Boundaries, as identified by the District's Incentive

EXHIBIT A
SCOPE OF WORK

Programs (such Agreements may not involve retrofit of existing equipment or facilities). District shall use reasonable efforts, balanced with other requirements of this VERA, to prioritize owners and/or operators of pollution source equipment that will lead to generation of Criteria Pollutant VERA Offsets located as close as possible geographically to the location of the CP 1A/1B construction.

ii. IIPFAs shall include the following: (a) the business address of the IIPFA Equipment User; (b) the Tax Identification Number of the IIPFA Equipment User; (c) the location(s) where the funded equipment is anticipated to be used; (d) replaced equipment disposal requirement; (e) description of replaced and new equipment; (f) minimum annual usage requirement for new equipment; and (g) the Authority named as an intended third-party beneficiary if the Authority so requests and the District so agrees. The Parties may adjust the preceding IIPFA content requirements via Operating Memorandum (pursuant to Paragraph 16.ii) if necessary to improve VERA implementation, provided such adjustments will allow the Authority to meet its auditing and reporting requirements.

iii. The District shall provide each negotiated draft IIPFA to the Authority via e-mail prior to District execution, together with a draft Criteria Pollutant VERA Offsets Receipt (defined in Paragraph 2.4.v. below) specifying clearly the amount of Criteria Pollutant VERA Offsets, by pollutant by year, the IIPFA will provide, how much such Criteria Pollutant VERA Offsets will cost out of the Deposit funds (including District Overhead), and the per-ton-by-pollutant cost, for review by the Authority within five (5) business days. Authority's review is limited to ensuring each IIPFA and associated draft Criteria Pollutant VERA Offsets Receipt (a) identifies the quantity of Criteria Pollutant reductions of which type are generated by the IIPFA in each year and associated costs

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(so the Authority knows exactly what it is paying for at what cost) and (b) meets the requirements in Paragraph 2.4 (sub-sections ii and iii) of this VERA for what IIPFAs and Criteria Pollutant VERA Offsets Receipts must contain.

iv. Upon full execution of an Authority-approved IIPFA, District may move funds equal to that shown in the associated draft Criteria Pollutant VERA Offset Receipt, including District Overhead which is to compensate the District for its staff time and other administrative costs to implement the IIPFA on behalf of the Authority. The Authority acknowledges that District has provided historical and auditable documentation to the Authority demonstrating that 4% is a reasonable approximation of the District's costs to implement agreements such as this VERA and IIPFAs; District agrees to provide any further of such documentation during the term of this VERA if the Authority reasonably concludes that such further documentation is necessary to satisfy any future audits or the FRA.

v. Within ten (10) days after full execution of each Authority-approved IIPFA, District shall provide a copy of that IIPFA and a Criteria Pollutant VERA Offsets Receipt (in the form of Attachment A-6, or in another form as the Authority may reasonably request) to the Authority specifying the amount of Criteria Pollutant VERA Offsets, by pollutant by year, secured by the IIPFA ("Secured Criteria Pollutant VERA Offsets"), how much such Criteria Pollutant VERA Offsets cost out of the Deposit funds (including the District Overhead), and the per-ton-by-pollutant cost. Thereafter, the District is obligated to implement each IIPFA and to ensure, at no further cost to and no further involvement by the Authority, that associated Secured Criteria Pollutants VERA Offsets are generated as set forth in the associated Criteria Pollutant VERA Offsets Receipt; should such generation fail as to any IIPFA and associated Criteria Pollutant VERA

EXHIBIT A
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Offsets Receipt, the District shall take whatever steps are required (including but not limited to entering into additional IIPFAs, and funding them at no cost to the Authority) to ensure that substitute emissions reductions occur equivalent in amount to the associated Criteria Pollutant VERA Offsets Receipt, and in a timing manner that allows the Offset Timing Requirement to be met for actual Criteria Pollutant Emissions from CP 1A/1B construction.

vi. The District shall keep detailed records of the generation of Secured Criteria Pollutants VERA Offsets over the life of the performances required under the associated IIPFA, consistent with District's record-keeping practices that have led to its Successful Audit History; District shall make such records available to the Authority and/or FRA for review upon request and shall keep such records for fifteen (15) years.

vii. Upon receiving any Criteria Pollutant VERA Offsets Receipt, the Authority shall have no more than sixty (60) days to replenish the High Speed Rail Offset Funding Trust Account in the amount of that Receipt until total Deposits equal the CP 1A/1B Offset Cost Estimate as it may by then have been adjusted pursuant to Paragraphs 1(iv) or 3.2(i). The District acknowledges that this sixty-day requirement is dependent upon the Authority receiving the required replenishment amount from FRA as reimbursement to the Authority of the Criteria Pollutant VERA Offsets Receipt amount. This subsection is not a limit on the Authority's obligations set forth in Paragraph 1.

viii. The District shall use every reasonable effort initially to match the Secured Criteria Pollutant VERA Offsets to the by-pollutant-by-year CP 1A/1B Criteria Pollutants Estimate listed in Attachment A-4 (as it may get revised per Paragraph 1(iv)) to satisfy the Offset Timing Requirement on a 1:1 basis (not the higher offset ratios permitted by the Offset Timing Requirement), and shall adjust those efforts over time as reasonably

EXHIBIT A
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possible (including by delaying execution of further IIPFAs if Criteria Pollutant VERA Offsets production get too far ahead temporally of actual emissions) to reflect actual emissions of Criteria Pollutants, as reported in accordance with Paragraph 3.2. The District shall advise the Authority in writing, as soon as the District recognizes and before executing any additional IIPFAs, if it reasonably determines that the 1:1 standard cannot be met, in which case the Parties shall meet and confer to develop an implementation strategy to ensure the timing and amounts of emissions reductions occur at a minimum as specified by the Offset Timing Requirement.

3. Segment Related Construction Emissions

3.1 Actual Construction Emissions Assessment

i. Commencing at first to occur of excavation, grading, demolition, construction-vehicle travel on paved or unpaved surfaces creating vehicle exhaust, any of which occurs for the sole purpose of constructing (but not designing) the CP 1A/1B Portion ("Construction"), the Authority shall start collecting detailed daily Construction information to determine the actual Criteria Pollutant Construction emissions for the CP 1A/1B Portion. To determine the actual Criteria Pollutant Construction emissions for that Portion (for inclusion in the Construction Report required by Section 3.1.iii), the Authority shall use the California Emissions Estimator Model (CalEEMod), or any substitute computer model or analysis approved by the District (such as a spreadsheet containing hand calculations using the most current emission factors for quantifying actual construction emissions). The District and Authority shall agree in writing upon, via Operating Memorandum pursuant to Paragraph 16.ii, the date Construction started so as to fix subsequent reporting deadlines.

EXHIBIT A
SCOPE OF WORK

ii. Construction information shall include emission sources associated with the on-site and off-site construction activities. For on-site construction activities, the Authority shall collect data for all off-road equipment by equipment type, engine horsepower, engine model year, and total daily hours of operation for each construction activity (i.e., site preparation, grading, paving, demolition, etc.). For off-site construction activities, the Authority shall collect all vehicle trips by general category of activity (employee and vendor travel or materials delivery), by vehicle type (i.e., auto, light-duty truck, heavy duty truck) and their associated total vehicle miles. The on-site and off-site construction activities will be monitored by the Authority, as presented in Attachment A-7 ("Construction Reporting Detail Information"). Records of the construction information shall be kept by the Authority for fifteen (15) years and made available to the District upon request.

iii. The Authority shall submit to the District a Construction Report within sixty (60) days starting at the end of every three (3) month period (or other frequency, as the Parties may agree in writing via Operating Memorandum pursuant to Paragraph 16.ii) following the start of Construction, and within sixty (60) days of any termination pursuant to Section 5A.ii. The Construction Report, as outlined in Attachment A-8, shall be based on the Construction Reporting Detail Information collected during every three (3) month period and any other information or data as the Parties may agree to via Operating Memorandum pursuant to Paragraph 16.ii. The District shall evaluate the Construction Report and provide its review in the Emission Reduction Status Report in accordance with Paragraph 3.2. Upon completion of the entire CP 1A/1B Construction activities that generate material amounts of Criteria Pollutants, but no later than sixty (60) days after the Authority's issuance to its CP 1A/1B contractor of Certificate of Final Acceptance,

EXHIBIT A
SCOPE OF WORK

the Authority shall submit to the District a Final Construction Report summarizing all actual Construction related Criteria Pollutant emissions for CP 1A/1B.

3.2 Emission Reduction Status Reporting

i. Upon the District's receipt of the Construction Report, the District shall have sixty (60) days to prepare and submit to the Authority an Emission Reduction Status Report ("Status Report"). This Status Report shall compare the Secured Criteria Pollutant VERA Offsets to date to the emissions of Criteria Pollutants in the CP 1A/1B Construction Reports to date. The Status Report also shall identify the average cost-effectiveness (in dollars per Criteria Pollutant per ton) based on the IIPFAs then executed to date under this VERA. Based on the foregoing in this Paragraph 3.2.i, the Status Report shall identify whether the then-current CP 1A/1B Offset Cost Estimate is accurate and if not accurate shall propose a re-adjustment as necessary for the Authority's review and consideration for approval within thirty (30) days. The Status Report also shall provide an accounting of (a) the High Speed Rail Offset Funding Trust Account, (b) the Committed High Speed Rail Offsets Funds Account (listing the IIPFA associated with each funds commitment entry) and (c) funds actually paid out from the Committed High Speed Rail Offsets Funds Account (listing the IIPFA associated with each pay out and the associated Secured Criteria Pollutant Offset amount). The District agrees to meet telephonically or in person with the Authority if the Authority has any questions related to any Status Report.

ii. When the total Secured Criteria Pollutant VERA Offsets equal or exceed the total emissions of Criteria Pollutants reported in Construction Reports through the Final Construction Report for CP 1A/1B, the District shall issue a Final Status Report so verifying. Excess offsets achieved shall be handled pursuant to Paragraph 3.4. Any

EXHIBIT A
SCOPE OF WORK

funds then remaining in the High Speed Rail Offset Funding Trust Account associated with CP 1A/1B shall be returned to the Authority by the District within thirty (30) days of issuing the Final Status Report, unless otherwise agreed to in writing by the Authority.

3.3. MF Segment Construction Phases after CP 1A/1B

Construction within the MF Segment beyond CP 1A/1B will be handled via amendment to this VERA or via a separate VERA, as the Parties subsequently may agree in such amendment or separate VERA.

3.4. Disposition of Excess Secured Criteria Pollutants VERA Offsets

i. If total Secured Criteria Pollutant VERA Offsets exceed the total actual emissions of Criteria Pollutants reported in Construction Reports through the Final Construction Report for CP 1A/1B ("CP 1A/1B Excess Secured VERA Offsets"), as reported in the Final Status Report, such CP 1A/1B Excess Secured VERA Offsets can be transferred to any other Authority construction within District Boundaries; use of such transfers must comply with the Offset Timing Requirement. Such transfer shall be deemed effective fifteen (15) days after Authority written notification to the District of such transfer. If other Authority construction is not available to receive the benefit of such a transfer, the Authority may transfer the CP 1A/1B Excess Secured VERA Offsets to a third-party development project in the District Boundaries unless then-applicable law prohibits such a transfer.

ii. If CP 1A/1B construction gets de-funded, halted or suspended for whatever reason for a predicted material amount of time, and if total Secured Criteria Pollutant VERA Offsets exceed the total emissions of Criteria Pollutants for CP 1A/1B construction up to the construction halt or de-fund date, the District shall not enter any further IIPFAs for CP 1A/1B and the Authority may transfer the excess Secured Criteria

EXHIBIT A
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Pollutant VERA Offsets to other Authority construction or to a third-party development project(s) in the District Boundaries. In addition, District shall apply any funds then in the High Speed Rail Offset Funding Trust Account for CP 1A/1B to any then-active other Authority-District VERA(s); if there are none, then the District shall return to the Authority (if the Authority so requests) any such funds. Prior to re-starting CP 1A/1B construction, the Authority shall deposit with the District funds equivalent to the transferred Secured Criteria Pollutant VERA Offsets plus any amount returned to the Authority (or applied to non-CP 1A/1B Authority construction) out of the High Speed Rail Offset Funding Trust Account pursuant to the preceding sentence.

4. District Rule 9510 (Indirect Source Review) Requirement

Authority acknowledges that it is required to comply with Rule 9510. The Authority has submitted, and the District has approved, an Air Impact Assessment ("AIA") Application, consistent with District Rule 9510 (Indirect Source Review) requirements. The Authority acknowledges that it is subject to all applicable provisions of District Rule 9510 that are in effect at the time of submitting an Air Impact Assessment Application.

5. Subsequent Litigation, Legislation and/or Administrative Action / Credit to the Authority

In the event that despite this Agreement, Authority is required as a result of a final judgment or District Approved Settlement (as defined below) in any third-party litigation, to pay monies in addition to the monies to be paid by Authority pursuant to this VERA, then District shall acknowledge and credit Authority with any additional emission reduction achieved to offset MF Segment construction emissions that will result from Authority's payment of such additional monies. For purposes of this Paragraph, a

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"District Approved Settlement" shall mean a settlement of a lawsuit filed pursuant to CEQA, NEPA or other applicable environmental law which (i) provides for Authority's payment of monies in exchange for a dismissal of such lawsuit, (ii) provides for the use of such monies by the petitioner in such lawsuit in such a manner as to mitigate adverse air quality impacts of the MF Segment, and (iii) is approved in writing by District. The District shall have no authority to commit the Authority's money in any settlement of a third-party lawsuit without the Authority's consent, and the District shall have no authority over the Authority's ability or decision to settle or terms of settlement; the District's role is limited to evaluating any settlement for credit-giving purposes as stated above.

5A. Term of Agreement

i. This Agreement shall be effective upon the date fully executed and approved by the California Department of General Services, and shall terminate automatically upon the first to occur of (1) July 31, 2028, or (2) generation of all emissions reductions secured by the Secured Criteria Pollutant VERA Offsets required under this VERA, at which time the District shall so inform the Authority in writing.

ii. At any time prior to the events listed in Paragraph 5A.i, for any reason notwithstanding anything to the contrary in this VERA, but only after the Parties complete dispute resolution under Paragraph 6, either Party may by written notice to the other Party ("Termination Notice") terminate this Agreement; termination shall be effective upon the date the receiving party receives the Termination Notice and shall release the Parties from all VERA obligations to each other except as provided below and elsewhere in this Agreement. District shall refund to the Authority any funds in the High Speed Rail Offset Funding Trust Account associated with CP 1A/1B construction

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as of the date the District receives (or sends) the Termination Notice. Notwithstanding termination by Termination Notice by either Party or because the VERA end date of July 31, 2028, has been reached, District's obligations to oversee implementation of IIPFAs, to ensure that Secured Criteria Pollutants VERA Offsets are generated as set forth in Criteria Pollutant VERA Offsets Receipts, and to keep detailed records of the generation of Secured Criteria Pollutants VERA Offsets over the life of the IIPFAs, as required by Paragraph 2.4, shall remain effective for as long as necessary to ensure generation of all emissions reductions secured by the Secured Criteria Pollutant VERA Offsets regardless of termination by any means. In the event the Authority terminates this Agreement (unless the Authority terminates because the District materially breaches this Agreement or because funding for the construction of the CP 1A/1B Portion is deleted or cancelled), or in the event the District terminates this Agreement because the Agreement Funding Maximum is not increased via VERA amendment despite the Parties' agreement that additional funding is necessary to satisfy the emissions-offset purposes of this VERA, the Authority shall consult with the District as the Authority develops a feasible alternative strategy to comply with the remainder of its Offset Obligation, which alternative strategy the Authority shall use best efforts to develop within ninety (90) days of such termination and regarding which the Authority thereafter shall obtain District's approval (which approval shall not be unreasonably withheld), which consultation and approval requirement shall survive such termination.

6. Dispute Resolution

In the event a dispute arises between the Parties about any provision in this Agreement or the implementation of this Agreement that cannot be resolved through

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discussions between the Parties or their authorized representatives, the following steps shall be taken.

i. The Executive Officer of the Party alleging a dispute shall send a letter to the other Party's Executive Officer outlining the dispute and the action desired. The receiving Party shall respond in writing within twenty-one (21) days. Should either Party request, the Executive Officers shall meet by telephone or in person.

ii. If despite Executive Officer communications the Parties cannot resolve the dispute, the Parties shall mediate the dispute in good faith if one Party so requests in writing. Mediation shall be conducted by JAMS mediation services (or a substitute, if the Parties mutually agree) in Sacramento by a mediator mutually selected by the Parties. The Parties shall use their best efforts to schedule the mediation to take place no later than two (2) months after the date mediation is requested, subject to mediator availability. The Parties shall share equally the costs of mediation as invoiced by JAMS or substitute (unless the Parties agree otherwise on a case-by-case basis), but shall bear their own attorney's fees.

iii. If mediation does not resolve the dispute, either Party may commence litigation in a court of competent jurisdiction, subject to the provisions of Paragraph 19.

iv. Should the dispute be of an urgent nature, the aggrieved Party may commence litigation without first completing mediation. In such case, the Parties shall mediate and litigate concurrently, with mediation occurring pursuant to Paragraph 6.ii.

v. The Parties shall continue to perform their obligations under this VERA during the dispute resolution process, unless the dispute at issue would prejudice one Party if that Party continued to perform a particular obligation; in such case, the Parties shall attempt to make arrangements, including contingencies as necessary, to allow the

EXHIBIT A
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Party to continue to perform the obligation during dispute resolution to allow the Party to perform the obligation in question without risk of prejudice.

7. Representations, Covenants and Warranties

7.1. The Authority's Representations, Covenants and Warranties.

The Authority represents, covenants and warrants to District, as of the date of this Agreement, as follows:

i. The undersigned representative(s) of the Authority are duly authorized to execute, deliver and perform this Agreement, and upon the Authority's execution and delivery of this Agreement, this Agreement will have been duly authorized by the Authority.

ii. Upon execution and delivery of this Agreement by the Authority, the Authority's obligations under this Agreement shall, subject to Legislative appropriation and availability of funds and review and approval by the California Department of General Services, be legal, valid and binding obligations of the Authority, duly enforceable at law and in equity in accordance with the terms and conditions of this Agreement.

iii. There is no lawsuit, legal action, arbitration, legal or administrative proceeding, legislative, quasi-legislative or administrative action or claim existing, pending, threatened or anticipated which would render all or any portion of this Agreement invalid, void or unenforceable in accordance with the terms and conditions thereof, with the exception of pending and anticipated legal proceedings that could lead to suspension or stoppage of CP 1A/1B construction and/or its funding which would suspend or stop the Authority's ability and need to fund emissions offsets for that suspended or stopped construction.

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iv. Other than the execution and delivery of this Agreement by the undersigned representatives of Authority, and approval by the Board of Directors of the Authority (if and as required by Authority rules and delegations) and approval by DGS, there are no approvals, consents, confirmations, proceedings, or other actions required by Authority or any third party, entity or agency in order to enter into and carry out the terms, conditions and intent of the parties with respect to this Agreement, except as provided in Paragraph 7.1.ii.

v. Upon the approval of this Agreement by the Authority, the Chief Executive Officer of the Authority, or equivalent representative, or a delegee of such officer, has the authority to approve, deliver, verify, acknowledge and/or accept any communication, notice, notification, verification, and/or other document to be issued by Authority as reasonably necessary to implement, and if consistent with, the terms and conditions of this Agreement, without further approval of the Board of Directors of the Authority. This Section 7.1.v is a statement of existing authority, and does not grant any new or expanded authority.

7.2. District's Representations, Covenants and Warranties

District represents, covenants and warrants to the Authority, as of the date of this Agreement, as follows:

i. The undersigned representatives of District are duly authorized to execute, deliver and perform this Agreement, and upon District's execution and delivery of this Agreement, this Agreement will have been duly authorized by District.

ii. Upon execution and delivery of this Agreement by District, District's obligations under this Agreement shall be legal, valid and binding obligations of District,

EXHIBIT A
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duly enforceable at law and in equity in accordance with the terms and conditions of this Agreement.

iii. There is no lawsuit, legal action, arbitration, legal or administrative proceeding, legislative, quasi-legislative or administrative action or claim existing, pending, threatened or anticipated which would render all or any portion of this Agreement invalid, void or unenforceable in accordance with the terms and conditions thereof.

iv. Other than the execution and delivery of this Agreement by the undersigned representatives of District, and approval by the Governing Board of the District, there are no approvals, consents, confirmations, proceedings, or other actions required by District or any third party, entity or agency in order to enter into and carry out the terms, conditions and intent of the parties (except DGS approval per Paragraph 7.1.iv) with respect to this Agreement, except IIPFA Equipment User approval of IIPFAs.

v. The monies paid by the Authority under this Agreement shall be sufficient to ensure that the emission reduction contemplated by this Agreement shall occur, and District shall utilize such monies in such a manner as to ensure that such emission reductions shall occur.

vi. Upon the approval of this Agreement by the governing board of District, the Air Pollution Control Officer of District, or equivalent representative, or a delegee of such officer, shall have the authority to approve, deliver, verify, acknowledge and/or accept any communication, notice, notification, verification, and/or other document to be issued by District as reasonably necessary to implement, and if consistent with, the terms and conditions of this Agreement, without further approval of the Governing Board of District.

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8. Indemnification

i. The Authority agrees to indemnify, defend and hold harmless District for, from and in connection with any third party claims, losses and/or liabilities arising from or in connection with Authority's performance under this Agreement, excluding only such claims, losses and/or liabilities which result from or are in connection with District's sole negligence, act or omission.

ii. The District agrees to indemnify, defend and hold harmless the Authority, and its officers, agents and employees, for, from and in connection with any third party claims, losses and/or liabilities arising from or in connection with any IIPFA or equipment funded by it or the District's failure to perform its obligations under this Agreement, excluding only such claims, losses and/or liabilities which result from or are in connection with the Authority's sole negligence, act or omission.

9. Inurement

The Authority's rights and obligations under this Agreement, or applicable portions thereof, shall inure to the benefit of and be binding upon any government agency that may succeed to the Authority's responsibilities for the HST System construction work covered by this VERA. Upon any such succession, the rights and obligations of the Authority under this Agreement shall be transferred to the transferee thereof, and the Authority shall thereupon be released by District from all obligations and liabilities so assigned, except for such obligations and liabilities arising prior to such succession.

10. Assignment and Subcontracting

i. Neither Party shall have the right to assign all or any part of its rights and/or obligations under this Agreement without the other Party's written consent, which consent shall not be unreasonably withheld. In the event the other Party does give

EXHIBIT A
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consent to any such assignment, the other Party, the third party assignee and the assigning Party shall enter into an amendment and novation of this Agreement which acknowledges the assignment and conforms the various provisions of this Agreement as may be required to be conformed in order to provide to the assignee the rights and benefits of this Agreement as if such assignee and its project were the original party and project contemplated in this Agreement.

ii. Neither Party may satisfy its obligations under this Agreement via a subcontract. IIPFAs are not subcontracts.

11. Recitals Incorporated

The recitals set forth hereinabove are hereby incorporated into this Agreement and acknowledged, agreed to and adopted by the Parties to this Agreement.

12. Further Assurances

The Authority and District agree to execute and deliver any documents and/or perform any acts which are reasonably necessary in order to carry out the intent of the parties with respect to this Agreement.

13. No Joint Venture or Partnership

District and the Authority agree that nothing contained in this Agreement or in any document executed in connection with this Agreement shall be construed as making District and the Authority joint venturers or partners.

14. Notices

Any notices or communications relating to this Agreement shall be given in writing and shall be deemed sufficiently given and served for all purposes when delivered, if (a) in person, (b) by facsimile or electronic mail (with the original delivered by other means set forth in this paragraph), (c) by generally recognized overnight

EXHIBIT A
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courier or (d) by United States Mail, postage prepaid, to the respective addresses set forth below, or to such other addresses as the Parties may designate from time to time by providing written notice of the change to the other Party.

THE AUTHORITY	**DISTRICT**
Mark McLoughlin Director of Env. Services 770 L Street, Suite 800 Sacramento, CA 95814 Ph: (916) 403-6934 Fax: (916) 322-0827 E-mail: mark.mcloughlin@hsr.ca.gov And Contract Manager 770 L Street, Suite 800 Sacramento, CA 95814 (916) 403-6934 Fax: (916) 322-0827	Seyed Sadredin Executive Director/APCO 1990 E. Gettysburg Avenue Fresno, CA 93726 Ph: (559) 230-6000 Fax: (559) 230-6061 E-mail: seyed.sadredin@valleyair.org

15. Entire Agreement

The terms of this Agreement, together with all attached exhibits, are intended by the parties as the complete and final expression of their agreement with respect to such terms and exhibits and may not be contradicted by evidence of any prior or contemporaneous agreement. This Agreement specifically supersedes any prior written or oral agreements between the parties with respect to the subject matter of this Agreement.

16. Amendments and Waivers

i. No addition to or modification of this Agreement shall be effective unless set forth in writing, signed by the Party against whom the addition or modification is

EXHIBIT A
SCOPE OF WORK

sought to be enforced, and approved by the District's and Authority's respective governing boards if and as required by applicable law and then-extant Executive Officer delegations of authority. The Party benefited by any condition or obligation may waive the same, but such waiver shall not be enforceable by another Party unless made in writing and signed by the waiving Party.

ii. The Parties shall use Operating Memoranda, which shall be signed by both Parties, to formalize agreement as to matters which this Agreement requires or allows use of Operating Memoranda, or as to other matters where implementation detail requires further elaboration but is consistent with this Agreement.

17. Invalidity of Provisions

If any provision of this Agreement as applied to either Party or to any circumstance shall be adjudged by a court of competent jurisdiction to be void or unenforceable for any reason, the same shall in no way affect (to the maximum extent permissible by law) any other provision of this Agreement, the application of any such provision under circumstances different from those adjudicated by the court, or the validity or enforceability of this Agreement as a whole. The parties further agree to replace any such invalid, illegal or unenforceable portion with a valid and enforceable provision, which will achieve, to the maximum extent legally possible, the economic, business or other purposes of the invalid, illegal or unenforceable.

18. Construction

Unless otherwise indicated, all paragraph references are to the paragraph of this Agreement and all references to days are to calendar days (unless otherwise specified). Whenever, under the terms of this Agreement the time for performance of a covenant or condition falls upon a Saturday, Sunday or California state holiday, the time for

EXHIBIT A
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performance shall be extended to the next business day. The headings used in this Agreement are provided for convenience only and this Agreement shall be interpreted without reference to any headings. Wherever required by the context, the singular shall include the plural and vice versa, and the masculine gender shall include the feminine or neuter genders, or vice versa. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Facsimile or scanned (.pdf, .jpeg, etc.) images of signatures shall be treated as originals. The language in all parts of this Agreement shall be construed as a whole in accordance with its fair meaning, and shall not be construed against any Party solely by virtue of the fact that such Party or its counsel was primarily responsible for its preparation.

19. Governing Law

The rights and obligations of the parties and the interpretation and performance of this Agreement shall be governed in all respects by the laws of the State of California.

20. No Third-party Beneficiaries

Nothing in this Agreement, express or implied, is intended to confer any rights or remedies under or by reason of this Agreement on any person other than the parties to it and their respective permitted successors and assigns, nor is anything in this Agreement intended to relieve or discharge any obligation of any third person to any Party hereto or give any third person any right of subrogation or action over or against any Party to this Agreement.

21. Attachments

The attachments to this Exhibit A Scope of Work shall be deemed to be a part of this Agreement and are fully incorporated herein by reference. All capitalized terms

EXHIBIT A
SCOPE OF WORK

used in the attachments and not defined therein shall have the meaning as defined herein. The attachments are:

A-1: District Boundaries

A-2: High Speed Rail Segments Map

A-3: Construction Package 1A/1B Map

A-4: CP 1A/1B Criteria Pollutants Estimate and Cost

A-5: Initial Deposit Invoice

A-6: Criteria Pollutant Offset Receipt

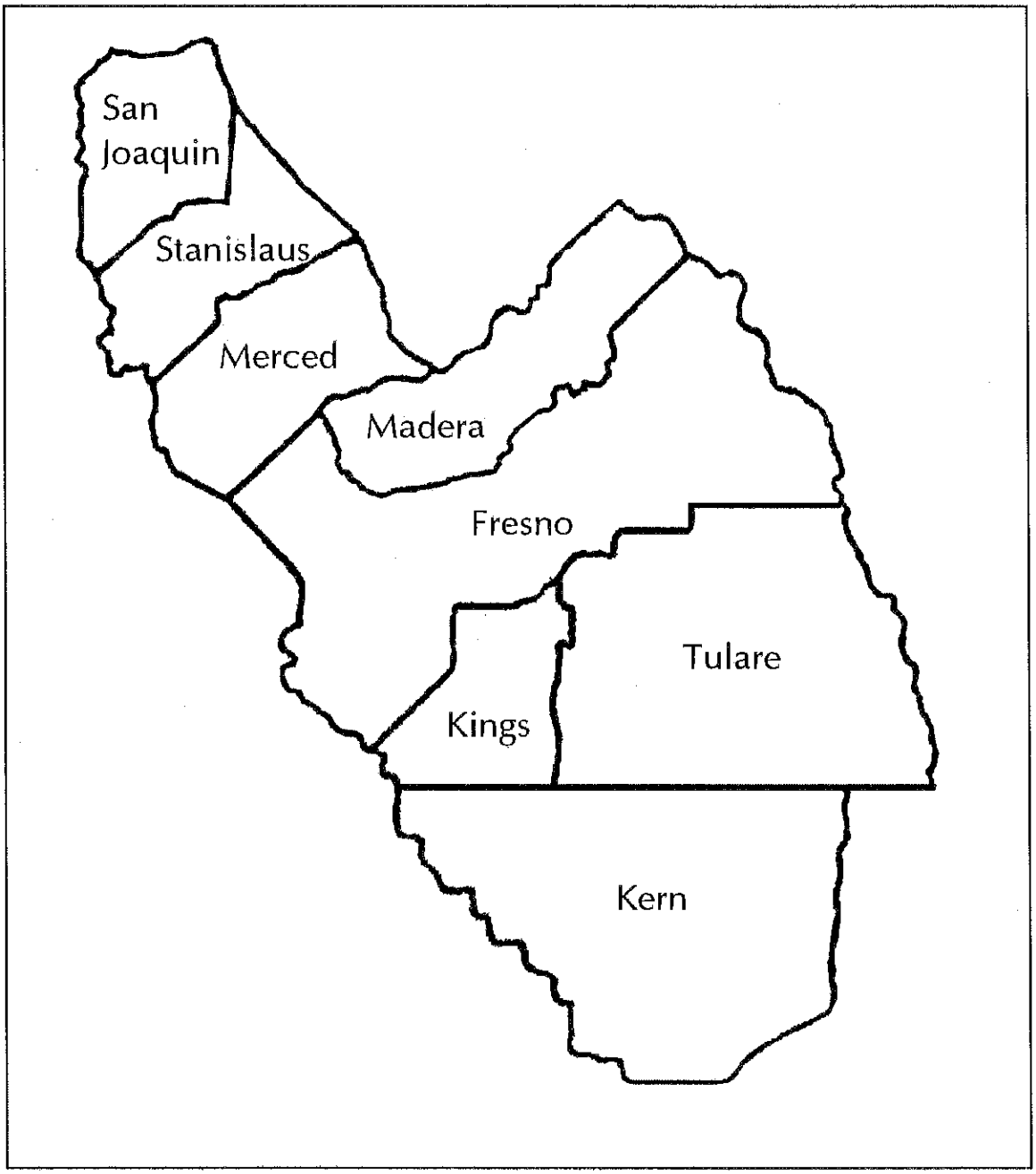
A-7: Construction Reporting Detail Information

A-8: Construction Report Format

22. Force Majeure

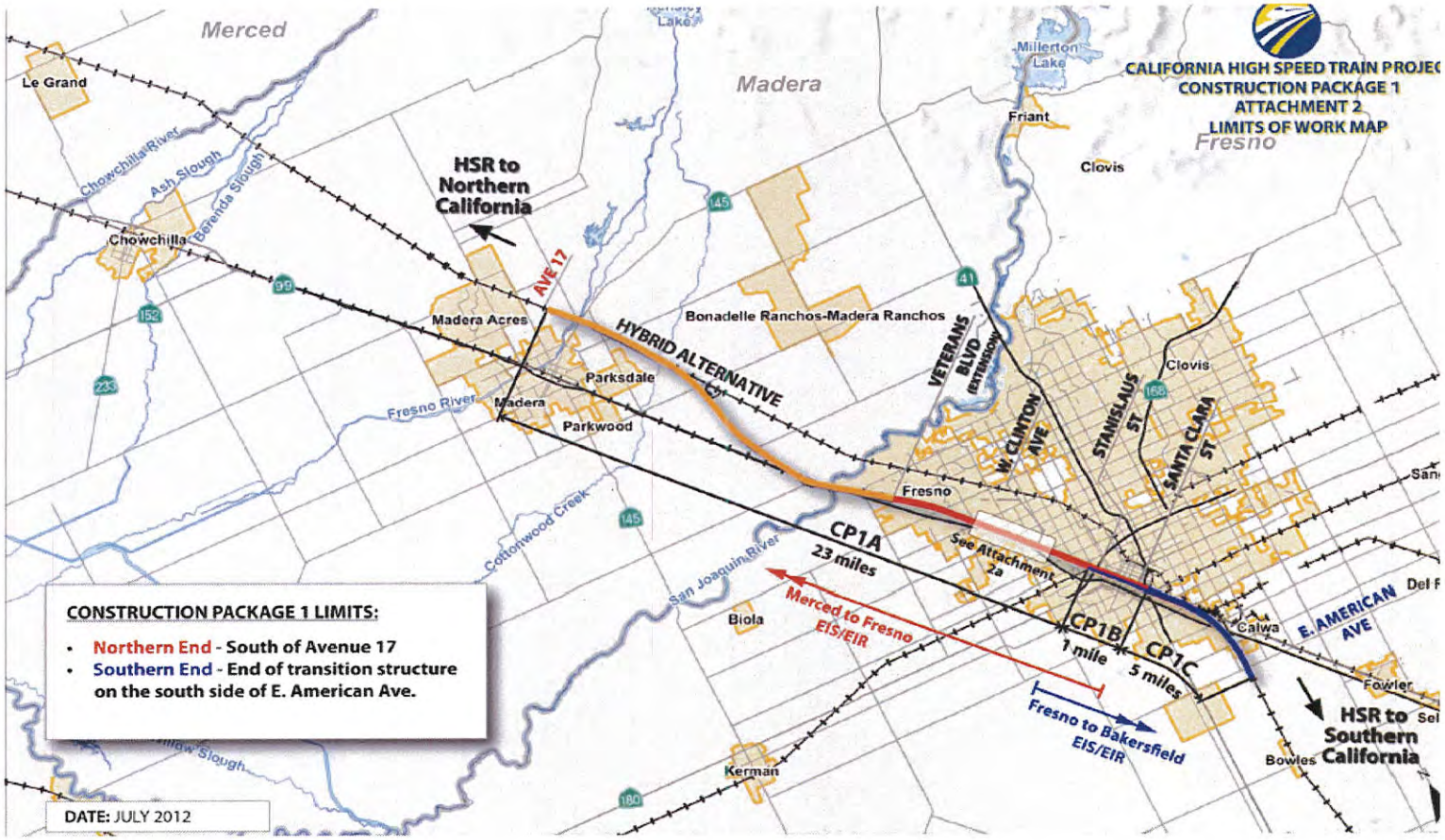
The time within which any Party shall be required to perform under this Agreement shall be extended on a day-per-day basis for each day during which such performance is prevented or delayed by reason of events reasonably outside of the control of the performing Party, including, without limitation, acts of God, events of destruction, acts of war, civil insurrection, strikes, shortages, non-Party governmental delays, non-Party moratoria, civil litigation and the like, and/or delays caused by the other Party's act or omission.

ATTACHMENT A-1
DISTRICT BOUNDARIES



ATTACHMENT A-2
HIGH SPEED RAIL SEGMENTS MAP

ATTACHMENT A-3
CONSTRUCTION PACKAGE 1A/1B MAP



ATTACHMENT A-4

CP 1A/1B OFFSET COST ESTIMATE

Pollutant	ROG/VOC	NOx	PM10*
Tons to be Reduced - 2014	1.66	24.13	2.89
Tons to be Reduced – 2015	2.67	38.81	5.37
Tons to be Reduced – 2016	1.86	27.63	3.20
Tons to be Reduced – 2017	1.85	27.62	3.15
Tons to be Reduced – 2018 to 2022	0.00	0.00	0.00
Total for CP 1A/1B	8.04	118.19	14.61
Cost per ton ($/Ton)	$ 9,350.00	$ 9,350.00	$ 9,011.00
Emission Offset Funds	$75,174	$1,105,077	$131,651
4% Administrative Cost (District Overhead)	$3,007	$44,203	$5,266
CP1A/1B Offset Cost Estimate (including District Overhead)	$1,364,377		
Agreement Funding Maximum	$1,705,472		
***PM2.5 is included in PM10**			

ATTACHMENT A-5

INITIAL DEPOSIT INVOICE

INVOICE
San Joaquin Air Pollution Control District

Bill to Address
California High-Speed Rail Authority
770 L Street, Suite 800
Sacramento, CA 95814

Attn:

Invoice Date:
Invoice No.:

Project No:
Contract No:

For Initial Deposit as required by section 2.3 of the VERA Agreement _____ (District number) and _____ (Authority number)

Construction Emissions Offsets

Total Contract Value	$	-
Current Invoice		
Initial Deposit Amount		
Total Amount Due	$	-
Contract Authorization Remaining	$	-

_____
(Name/Title of person authorized to sign invoice)

Please Remit Payment to :
(San Joaquin Valley Air Pollution Control District)
(Address or other Bank Information)

ATTACHMENT A-6

CRITERIA POLLUTANT VERA OFFSETS RECEIPT

[On attached two (2) pages]

INVOICE

San Joaquin Valley Air Pollution Control District

Bill to Address
California High-Speed Rail Authority
770 L Street, Suite 800
Sacramento, CA 95814

Attn:

Invoice Date:
Invoice No.:

Project No:
Contract No:

For Emissions Reductions Secured and Certified as Detailed in the Attached, under the Voluntary Emissions Reduction Agreement _____ (District number) and _____ (Authority number)

Total Contract Authorization Amount	$
Previous Invoices Total	$
Current Invoice (including 4% administrative cost)	$ -
Total all invoices	$
Total Contract Authorization Remaining	$ -

_____
(Name/Title of person authorized to sign invoice)

Please Remit Payment to :

San Joaquin Valley Air Pollution Control District
(Address or other Bank information)

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

CRITERIA POLLUTANT VERA OFFSET RECEIPT

THIS RECEIPT IS PRESENTED TO CALIFORNIA HIGH-SPEED RAIL AUTHORITY CERTIFYING THE EMISSION REDUCTIONS LISTED BELOW HAVE BEEN SECURED THROUGH THIS AGREEMENT.

CALIFORNIA High-Speed Rail Authority

HSR14-

AGREEMENT NUMBER	TOTAL PROJECT COST (INCLUDING ADMINISTRATIVE COST)	REPLACED EQUIPMENT TYPE	NEW EQUIPMENT TYPE	COST EFFECTIVENESS ($/TONS)
C-21000	$20,800.00	AGRICULTURAL TRACTOR	AGRICULTURAL TRACTOR	$3,291.51

YEAR	NOx REDUCTIONS (TONS)	PM_{10} REDUCTIONS (TONS) *	VOC REDUCTIONS (TONS)	TOTAL REDUCTIONS (TONS)
2014	2.65	0.15	0.43	3.23
2015	2.65	0.15	0.43	3.23
2016	2.65	0.15	0.43	3.23
2017	2.65	0.15	0.43	3.23
2018	2.65	0.15	0.43	3.23
2019	2.65	0.15	0.43	3.23
2020	2.65	0.15	0.43	3.23
2021	2.65	0.15	0.43	3.23
2022	2.65	0.15	0.43	3.23
2023	2.65	0.15	0.43	3.23
TOTAL	*26.5*	*1.50*	*4.30*	*32.3*

* $PM_{2.5}$ IS INCLUDED IN PM_{10}

ATTACHMENT A-7

CONSTRUCTION REPORTING INFORMATION

Contractor's Daily Record (From Authority's Environmental Mitigation Management and Assessment (EMMA) system)

- **Equipment (On- or Off-road)**
- **Serial Number**
- **Make, Model, Model Year**
- **Rated Horsepower**
- **Load Factor**
- **Fuel Type**
- **Hours Operated**
- **Construction Activity**

ATTACHMENT A-8
CONSTRUCTION REPORT FORMAT

On-site Sources (off-road equipment)

Step 1:

High Speed Rail Authority (HSRA) is to collect the following information associated with actual construction by construction activities: On-site off-road equipment, engine horsepower, engine model year, and total hours of operation by equipment type.

Step 2:

Upon completing step 1, HSRA is to quantify the actual construction emissions and prepare a Construction Report with the following content:

- Project Description and Location. Identify the following:
  - VERA Number 20140105/ Indirect Source Review (ISR) project number 20130103
  - Project/Segment Name (i.e - High Speed Rail project - Merced to Fresno; Fresno to Madera)
  - 3-month Reporting Period Evaluated
  - Date of Report
  - Construction Package Number (e.g.: CP1A)

- On-site Actual Construction Criteria Pollutants Emissions (NOx, VOC, PM10, PM2.5) in pounds
  - By equipment type
  - By model year
  - By horsepower

- Description of methodology used for the construction analysis (e.g.: CalEEMod, hand calculation with emission factors, etc.)

Off-site Sources (i.e. vehicles)

Step 1:

The Authority is to collect the following information associated with actual construction by construction activities: vehicle types (i.e – light auto, heavy duty trucks, etc, All construction vehicle trips, and associated total vehicle miles traveled by vehicle type.) by trip activity (i.e.: hauling, employee trips, etc.)

Step 2:

Upon completing step 1, HSRA is to quantify the actual construction emissions and include in the Construction Report with the following content:

- Project Description and Location. Identify the following:
  - VERA number 20140105
  - Project/Segment Name (i.e - High Speed Rail project - Merced to Fresno; Fresno to Madera)
  - 3-month Reporting Period Evaluated
  - Date of Report
  - Construction Package Number (e.g.: CP1A)

- Off-site Actual Construction Criteria Pollutants Emissions (i.e.: NOx, VOC, PM10, PM2.5) in pounds by type of trips:
  - Employee trips: VMT by vehicle model year
  - Hauling trips: VMT by vehicle model year
  - Delivery trips: VMT by vehicle model year

- Description of methodology used for the construction analysis (e.g.: CalEEMod, hand calculation with emission factors, etc.)

EXHIBIT B
BUDGET DETAIL AND PAYMENT PROVISIONS

A. FUNDING REQUIREMENTS/BUDGET CONTINGENCY CLAUSES

1. It is mutually agreed that if the Legislature's Budget Act, Congressional Budget Act, of the current year (if amended or repealed) and/or any subsequent years covered under this Agreement does not appropriate sufficient funds for commencing pursuit of work under this contract, this Agreement may be terminated in accordance with Section 5A.ii. of Exhibit A of this Agreement.

2. In addition, this Agreement is subject to any additional restrictions, limitations, conditions or any statute enacted by Congress or State Legislature that may affect the provisions, terms or funding of this Agreement in any manner.

3. If funding for any fiscal year is reduced or deleted by the Legislature's Budget Act or a Congressional Budget Act for purposes of this Agreement, the Authority shall have the option to terminate the Agreement in accordance with Section 5A.ii. of this Agreement, or to otherwise offer an Agreement Amendment to the Contractor in accordance with Section 16 of the Agreement to reflect the reduced amount.

B. INVOICING

1. Criteria Pollutant VERA Offsets Receipts shall include the Authority's Agreement number listed on the front page of this Agreement and shall be processed in accordance with Exhibit A, except that the Contractor shall send two copies of each such Receipt (in addition to what is required in Exhibit A) to:

California High-Speed Rail Authority
Attention: Financial Operations Section
770 L Street, Suite 800
Sacramento, CA 95814

EXHIBIT C
GENERAL TERMS AND CONDITIONS

EXHIBIT C

GENERAL TERMS AND CONDITIONS

1. APPROVAL: This Agreement is of no force or effect until signed by both parties and approved by the Department of General Services, if required. Contractor may not commence performance until such approval has been obtained.

2. AMENDMENT: No amendment or variation of the terms of this Agreement shall be valid unless made in writing, signed by the parties and approved as required. No oral understanding or Agreement not incorporated in the Agreement is binding on any of the parties.

3. ASSIGNMENT: This Agreement is not assignable by the Contractor, either in whole or in part, without the consent of the State in the form of a formal written amendment.

4. AUDIT: Contractor agrees that the awarding department, the Department of General Services, the Bureau of State Audits, or their designated representative shall have the right to review and to copy any records and supporting documentation pertaining to the performance of this Agreement. Contractor agrees to maintain such records for possible audit for a minimum of three (3) years after final payment, unless a longer period of records retention is stipulated. Contractor agrees to allow the auditor(s) access to such records during normal business hours and to allow interviews of any employees who might reasonably have information related to such records. Further, Contractor agrees to include a similar right of the State to audit records and interview staff in any subcontract and/or IIPFA related to performance of this Agreement. (Gov. Code §8546.7, Pub. Contract Code §10115 et seq., CCR Title 2, Section 1896).

5. INDEMNIFICATION: See Section 8 of Exhibit A.

6. DISPUTES: Contractor shall continue with the responsibilities under this Agreement during any dispute.

7. TERMINATION FOR CAUSE: The Authority may terminate this Agreement in accordance with Section 5A.ii.

8. INDEPENDENT CONTRACTOR: Contractor, and the agents and employees of Contractor, in the performance of this Agreement, shall act in an independent capacity and not as officers or employees or agents of the State.

9. RECYCLING CERTIFICATION: Not applicable because this Agreement does not involve the sale of products, materials, goods or supplies to the Authority.

10. NON-DISCRIMINATION CLAUSE: During the performance of this Agreement, Contractor and its subcontractors and/or IIPFA Equipment Users shall not unlawfully discriminate, harass, or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, physical disability (including HIV and AIDS),

EXHIBIT C
GENERAL TERMS AND CONDITIONS

mental disability, medical condition (e.g., cancer), age (over 40), marital status, denial of family care leave and denial of pregnancy disability leave. Contractor and subcontractors and/or IIPFA Equipment Users shall insure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment. Contractor and subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Gov. Code §12990 (a-f) et seq.) and the applicable regulations promulgated thereunder (California Code of Regulations, Title 2, Section 7285 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code Section 12990 (a-f), set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations, are incorporated into this Agreement by reference and made a part hereof as if set forth in full. Contractor and its subcontractors and/or IIPFA Equipment Users shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement.

Contractor shall include the nondiscrimination and compliance provisions of this clause in all subcontracts and/or IIPFAs.

11. CERTIFICATION CLAUSES: The CONTRACTOR CERTIFICATION CLAUSES contained in the document CCC 307 are hereby incorporated by reference and made a part of this Agreement by this reference as if attached hereto.

12. TIMELINESS: Time is of the essence in this Agreement.

13. COMPENSATION: The consideration to be paid Contractor, as provided herein, shall be in compensation for all of Contractor's expenses incurred in the performance hereof, including travel, per diem, and taxes, unless otherwise expressly so provided.

14. GOVERNING LAW: This contract is governed by and shall be interpreted in accordance with the laws of the State of California.

15. ANTITRUST CLAIMS: The Contractor by signing this agreement hereby certifies that if these services or goods are obtained by means of a competitive bid, the Contractor shall comply with the requirements of the Government Codes Sections set out below.

a. The Government Code Chapter on Antitrust claims contains the following definitions:

1) "Public purchase" means a purchase by means of competitive bids of goods, services, or materials by the State or any of its political subdivisions or public agencies on whose behalf the Attorney General may bring an action pursuant to subdivision (c) of Section 16750 of the Business and Professions Code.
2) "Public purchasing body" means the State or the subdivision or agency making a public purchase. Government Code Section 4550.

b. In submitting a bid to a public purchasing body, the bidder offers and agrees that if the bid is accepted, it will assign to the purchasing body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the

EXHIBIT C
GENERAL TERMS AND CONDITIONS

Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, materials, or services by the bidder for sale to the purchasing body pursuant to the bid. Such assignment shall be made and become effective at the time the purchasing body tenders final payment to the bidder. Government Code Section 4552.

c. If an awarding body or public purchasing body receives, either through judgment or settlement, a monetary recovery for a cause of action assigned under this chapter, the assignor shall be entitled to receive reimbursement for actual legal costs incurred and may, upon demand, recover from the public body any portion of the recovery, including treble damages, attributable to overcharges that were paid by the assignor but were not paid by the public body as part of the bid price, less the expenses incurred in obtaining that portion of the recovery. Government Code Section 4553.

d. Upon demand in writing by the assignor, the assignee shall, within one year from such demand, reassign the cause of action assigned under this part if the assignor has been or may have been injured by the violation of law for which the cause of action arose and (a) the assignee has not been injured thereby, or (b) the assignee declines to file a court action for the cause of action. See Government Code Section 4554.

16. CHILD SUPPORT COMPLIANCE ACT: For any Agreement in excess of $100,000, the contractor acknowledges in accordance with Public Contract Code 7110, that:

a. The contractor recognizes the importance of child and family support obligations and shall fully comply with all applicable state and federal laws relating to child and family support enforcement, including, but not limited to, disclosure of information and compliance with earnings assignment orders, as provided in Chapter 8 (commencing with section 5200) of Part 5 of Division 9 of the Family Code; and

b. The contractor, to the best of its knowledge is fully complying with the earnings assignment orders of all employees and is providing the names of all new employees to the New Hire Registry maintained by the California Employment Development Department.

17. UNENFORCEABLE PROVISION: In the event that any provision of this Agreement is unenforceable or held to be unenforceable, then the parties agree that all other provisions of this Agreement have force and effect and shall not be affected thereby.

18. PRIORITY HIRING CONSIDERATIONS: If this Contract includes services in excess of $200,000, the Contractor shall give priority consideration in filling vacancies in positions funded by the Contract to qualified recipients of aid under Welfare and Institutions Code Section 11200 in accordance with Pub. Contract Code §10353.

19. SMALL BUSINESS PARTICIPATION AND DVBE PARTICIPATION REPORTING REQUIREMENTS:

EXHIBIT C
GENERAL TERMS AND CONDITIONS

a. If for this Contract Contractor made a commitment to achieve small business participation, then Contractor must within 60 days of receiving final payment under this Contract (or within such other time period as may be specified elsewhere in this Contract) report to the awarding department the actual percentage of small business participation that was achieved. (Govt. Code § 14841.)

b. If for this Contract Contractor made a commitment to achieve disabled veteran business enterprise (DVBE) participation, then Contractor must within 60 days of receiving final payment under this Contract (or within such other time period as may be specified elsewhere in this Contract) certify in a report to the awarding department: (1) the total amount the prime Contractor received under the Contract; (2) the name and address of the DVBE(s) that participated in the performance of the Contract; (3) the amount each DVBE received from the prime Contractor; (4) that all payments under the Contract have been made to the DVBE; and (5) the actual percentage of DVBE participation that was achieved. A person or entity that knowingly provides false information shall be subject to a civil penalty for each violation. (Mil. & Vets. Code § 999.5(d); Govt. Code § 14841.)

20. LOSS LEADER:
If this contract involves the furnishing of equipment, materials, or supplies then the following statement is incorporated: It is unlawful for any person engaged in business within this state to sell or use any article or product as a "loss leader" as defined in Section 17030 of the Business and Professions Code. (PCC 10344(e).)

EXHIBIT D
SPECIAL TERMS AND CONDITIONS

1. AMENDMENT (CHANGE IN TERMS)

No amendment or variation of the terms of this agreement shall be valid unless made in writing, signed by the parties, and approved as required. No oral understanding or agreement not incorporated in agreement is binding on any of the parties.

The DISTRICT shall only commence work covered by an amendment after the amendment is executed and notification to proceed has been provided in writing by the AUTHORITY's Contract Manager.

2. DISPUTES

The Parties shall continue with their respective responsibilities under this Agreement during any work dispute.

3. DISTRICT'S DELIVERABLES UNDER EARLY TERMINATION

Upon termination, the DISTRICT shall provide all project-related documents and correspondence required as part of the Scope of Work (Exhibit A). Project-related documents shall include all documents that are in complete and final form and which have been accepted as complete by the AUTHORITY, or documents in draft and/or incomplete form for those deliverables, which are in progress by the DISTRICT and have not been accepted as complete.

4. RETENTION OF RECORD/AUDITS

For the purpose of determining compliance with Public Contract Code Section 10115, et seq. and Title 21, California Code of Regulations, Chapter 21, Section 2500 et seq., when applicable, and other matters connected with the performance of the Agreement pursuant to Government Code Section 8546.7, the DISTRICT, IIPFA Equipment Users, and the AUTHORITY shall maintain all books, documents, papers, accounting records, and other evidence pertaining to the performance of the Agreement, including but not limited to, the costs of administering the Agreement. All parties shall make such materials available at their respective offices at all reasonable times during the Agreement period and for three (3) years from the date of expenditure under this Agreement. The AUTHORITY, the State Auditor, or any duly authorized representative having jurisdiction under any laws or regulations shall have access to any books, records, and documents of the DISTRICT that are pertinent to the Agreement for audits, examinations, excerpts, and transactions, and copies thereof shall be furnished if requested.

Any IIPFA in excess of $25,000.00, entered into as a result of this Agreement, shall contain all the provisions of this clause.

EXHIBIT D
SPECIAL TERMS AND CONDITIONS

5. AUDIT REVIEW PROCEDURES

Any dispute concerning a question of fact arising under an interim or post audit of this Agreement that is not disposed of by agreement shall be reviewed by the Contract Manager.

Not later than 30 days after issuance of an interim or final audit report, the DISTRICT may request a review by the Contract Manager of unresolved audit issues. The request for review will be submitted in writing to the Authority's Chief Executive Officer (CEO). The request must contain detailed information of the factors involved in the dispute as well as justifications for reversal. A meeting by the CEO will be scheduled if the Contract Manager concurs that further review is warranted. After the meeting, the Contract Manager will make recommendations to the CEO who will make the final decision for the AUTHORITY. The final decision will be made within three (3) months of receipt of the notification of dispute.

Neither the pendency of a dispute nor its consideration by AUTHORITY will excuse the DISTRICT from full and timely performance, in accordance with the terms of this clause.

6. IIPFAs

Nothing contained in this Agreement or otherwise, shall create any obligation of the Authority or State flowing or owing to any IIPFA Equipment User

7. CONFIDENTIALITY OF DATA

The parties acknowledge that this Agreement is subject to the California Public Records Act (Govt. Code Section 6250 et seq.), California Government Code Section 11019.9; and California Civil Code Section 1798 et seq. However, all financial, statistical, personal, technical, or other data and information relative to the AUTHORITY's operations, which is designated confidential by the AUTHORITY and made available to the DISTRICT in order to carry out this Agreement, shall be protected by the DISTRICT from unauthorized use and disclosure.

8. STATEMENT OF COMPLIANCE

The DISTRICT's signature affixed herein and dated shall constitute a certification under penalty of perjury under the laws of the State of California that the DISTRICT has, unless exempt, complied with the nondiscrimination program requirements of Government Code Section 12990 and Title 2, California Code of Regulations, Section 8103.

9. CONFLICT OF INTEREST

The DISTRICT hereby certifies that it does not now have nor shall it acquire any financial or business interest that would conflict with the performance of services under this Agreement.

10. REBATES, KICKBACKS OR OTHER UNLAWFUL CONSIDERATION

The DISTRICT warrants that this Agreement was not obtained or secured through rebates, kickbacks or other unlawful consideration either promised or paid to any AUTHORITY

EXHIBIT D
SPECIAL TERMS AND CONDITIONS

agency employee. For breach or violation of this warranty, the AUTHORITY shall have the right, in its discretion, to terminate this Agreement without liability, to pay only for the value of the work actually performed, or to deduct from this Agreement price or otherwise recover the full amount of such rebate, kickback or other unlawful consideration.

11. PROHIBITION OF EXPENDING STATE FUNDS FOR LOBBYING

The DISTRICT certifies, to the best of his or her knowledge and belief, that:

- No State appropriated funds have been paid or will be paid, by or on behalf of the DISTRICT, to any person for influencing or attempting to influence an officer or employee of any State agency, a Member of the State Legislature or United States Congress, an officer or employee of the Legislature or Congress, or any employee of a Member of the Legislature or Congress in connection with the awarding of any State agreement, the making of any State grant, the making of any State, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any State agreement, grant, loan, or cooperative agreement.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000.00 and not more than $100,000.00 for each such failure.

EXHIBIT E
CONDITIONS FOR CONTRACTS RECEIVING FEDERAL FUNDING AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009 (ARRA)

A. FEDERAL REQUIREMENTS

The Contractor understands that the Authority has received Federal funding from FRA that will be used to fund this Agreement. Accordingly, Contractor acknowledges that applicable federal laws, regulations, policies and related administrative practices, including as they may change over the life of this VERA, will govern the administration of that funding, which could affect this VERA and its requirements, whether or not they are specifically referenced herein. The Contractor shall ensure its IIPFAs include specific notice that Federal law requirements, regulations and policies may change and could affect reporting and other requirements of the IIPFA but would not affect funding in any IIPFA.

The Contractor shall not perform any act, fail to perform any act, or refuse to comply with any reasonable Authority requests, which would cause the Authority to be in violation of FRA requirements.

B. ACCESS REQUIREMENTS FOR INDIVIDUALS WITH DISABILITIES

The Contractor agrees to comply with all applicable requirements regarding Access for Individuals with Disabilities contained in the Americans with Disabilities Act of 1990 (ADA), as amended, 42 U.S.C. §§ 12101 et seq.; and Section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. § 794 ("Nondiscrimination under Federal grants and programs"). Contractor shall ensure IIPFAs include requirements to so comply.

C. ENVIRONMENTAL REQUIREMENTS

The Contractor and IIPFA Equipment Users shall comply with all applicable environmental requirements and regulations, as follows:

The Contractor will conduct work under this Agreement in compliance with the following laws, as modified from time to time, all of which are incorporated herein by reference:

1. Section 114 of the Clean Air Act, 42 U.S.C. 7414, and section 308 of the Federal Water Pollution Control Act, 33 U.S.C. 1318, and all regulations issued thereunder.

2. The Contractor certifies that no facilities that will be used to perform work under this Agreement are listed on the List of Violating Facilities maintained by the U.S. Environmental Protection Agency ("EPA"). The Contractor will notify the Authority as soon as it or any IIPFA Equipment User receives any communication from the EPA indicating that any facility which will be used to perform work pursuant to this Agreement is under consideration to be listed on the EPA's List of Violating Facilities; provided, however, that the Contractor's duty of notification hereunder shall extend only to those communications of which it is aware.

D. ENERGY CONSERVATION

EXHIBIT E
CONDITIONS FOR CONTRACTS RECEIVING FEDERAL FUNDING AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009 (ARRA)

The Contractor agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in the State energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. 6421 et seq.).

E. FRAUD AND FALSE OR FRAUDULENT STATEMENTS, AND RELATED ACTS

1. The Contractor acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986 (6 C.F.R. 13), as amended, 31 U.S.C. § 3801 et seq., and USDOT regulations Program Fraud Civil Remedies (49 C.F.R. Part 31), apply to its actions under this Agreement. Upon execution of this Agreement, the Contractor certifies or affirms the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the Agreement and or the FRA assisted project for which this Agreement is being made. In addition to other penalties that may be applicable, the Contractor further acknowledges that if it makes or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 as cited above on the Contractor to the extent the Federal Government deems appropriate.

2. The Contractor also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under a contract connected with a project that is financed in whole or in part with Federal assistance originally awarded by FRA, the Government reserves the right to impose the penalties of 18 U.S.C. § 1001 and 49 U.S.C. § 5307 (n)(1) on the Contractor, to the extent the Federal Government deems appropriate.

3. The Contractor agrees to include the above two paragraphs in each IIPFA. It is further agreed that the paragraphs shall not be modified, except to identify the IIPFA Equipment User who will be subject to the provisions.

F. NO OBLIGATION BY THE FEDERAL GOVERNMENT

1. The Authority and the Contractor acknowledge and agree that, notwithstanding any concurrence by the federal government in or approval of this Agreement, absent the express written consent by the federal government, the federal government is not a party to this Agreement and shall not be subject to any obligations or liabilities to the Contractor or any IIPFA Equipment User.

2. The Contractor agrees to include the above paragraph in each IIPFA financed in whole or in part with federal assistance provided by FRA. It is further agreed that the paragraph shall not be modified, except to identify the IIPFA Equipment User who will be subject to its provisions.

G. DEBARMENT AND SUSPENSION

EXHIBIT E
CONDITIONS FOR CONTRACTS RECEIVING FEDERAL FUNDING
AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009 (ARRA)

1. This Contract is a covered transaction for purposes of 2 C.F.R. 1200. As such, the Contractor is required to comply with applicable provisions of Executive Orders Nos. 12549 and 12689, "Debarment and Suspension," 31 U.S.C. § 6101 note, and U.S. DOT regulations, "Non-procurement Suspension and Debarment," 2 C.F.R. Part 1200, which adopt and supplement the provisions of U.S. Office of Management and Budget (U.S. OMB) "Guidelines to Agencies on Government-wide Debarment and Suspension (Non-procurement)," 2 C.F.R. Part 180.

2. To the extent required by the aforementioned U.S. DOT regulations and U.S. OMB guidance, the Contractor must verify that each IIPFA Equipment User is not excluded or disqualified in accordance with said regulations by going to https://www.sam.gov/portal/public/SAM/ and using the Search Records function to search by party name to see if that party is Excluded. .

H. CIVIL RIGHTS

The following requirements apply to the Contract:

1. NONDISCRIMINATION

In accordance with Title VI of the Civil Rights Act, as amended; 42 U.S.C. § 2000d, Section 303 of the Age Discrimination Act of 1975, as amended; 42 U.S.C. § 6102, Section 202 of the Americans with Disabilities Act of 1990; 42 U.S.C. § 12132; and 49 U.S.C. § 306, the Contractor agrees that it will not discriminate against any individual because of race, color, religion, national origin, sex, age or disability in any activities leading up to or in performance of the Contract. In addition, the Contractor agrees to comply with applicable federal implementing regulations and other implementing requirements that FRA may issue.

2. EQUAL EMPLOYMENT OPPORTUNITY

The following equal employment opportunity requirements apply to the Contract:

3. RACE, COLOR, RELIGION, NATIONAL ORIGIN, SEX

In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. § 2000e, the Contractor agrees to comply with all applicable equal opportunity requirements of U.S. Department of Labor (U.S. DOL) regulations, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor," including 41 C.F.R 60 et seq. (which implements Executive Order No. 11246, "Equal Employment Opportunity," as amended by Executive Order No. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," 42 U.S.C. § 2000e note), and with any applicable federal statutes, executive orders, regulations, and federal policies that may in the future affect activities undertaken to implement this Agreement. The Contractor agrees to take affirmative action to ensure that applicants are employed, and that employees are

EXHIBIT E
CONDITIONS FOR CONTRACTS RECEIVING FEDERAL FUNDING
AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009 (ARRA)

treated during employment, without regard to their race, color, religion, national origin, sex, or age. Such action shall include the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the Contractor agrees to comply with any implementing requirements FRA may issue.

AGE

In accordance with Section 4 of the Age Discrimination in Employment Act of 1967, as amended, 29 U.S.C. § 623, the Contractor agrees to refrain from discrimination against present and prospective employees for reason of age. In addition, the Contractor agrees to comply with any implementing requirements FRA may issue.

DISABILITIES

In accordance with Section 102 of the Americans with Disabilities Act, as amended, 42 U.S.C. § 12112, the Contractor agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 C.F.R Part 1630, pertaining to employment of persons with disabilities. In addition, the Contractor agrees to comply with any implementing requirements FRA may issue.

The Contractor also agrees not to discriminate on the basis of drug abuse, in accordance with the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, alcohol abuse, in accordance with the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, and to comply with Sections 523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§ 290 dd-3 and 290 ee-3), as amended, relating to confidentiality of alcohol and drug abuse patient records. In addition, the Contractor agrees to comply with applicable federal implementing regulations and other implementing requirements that FRA may issue.

EXHIBIT E
CONDITIONS FOR CONTRACTS RECEIVING FEDERAL FUNDING AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009 (ARRA)

I. ACCESS TO AND INSPECTION OF RECORDS

1. The Contractor agrees to provide the Authority, the Secretary of the U.S. Department of Transportation, the FRA Administrator, the Comptroller General of the United States, the appropriate Inspector General appointed under Section 3 or 8G of the United States Inspector General Act of 1978, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this Agreement for the purposes of making audits, examinations, excerpts, and transcriptions.

2. The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed, and to permit interview by any of the foregoing parties of any officer or employee of Contractor.

3. The Contractor agrees to maintain all books, records, accounts, and reports required under this Agreement for a period of not less than seven years after the date of termination or expiration of this Agreement, except in the event of litigation or settlement of claims arising from the performance of this Agreement, in which case the Contractor agrees to maintain same until the Authority, the FRA Administrator, the Comptroller General, or any of their duly authorized representatives, have disposed of all such litigation, appeals, claims or exceptions related thereto. Reference 49 C.F.R. § 18.39(i)(11); see also ARRA Sections 902, 1514 and 1515.

J. DISADVANTAGED BUSINESS ENTERPRISES

1. The Authority encourages the Contractor to utilize small business concerns owned and controlled by socially and economically disadvantaged individuals (as that term is defined for certain USDOT agencies in Title VI) in carrying out this Agreement.

2. The Contractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this Contract. The Contractor shall carry out applicable requirements of Title VI in the administration of this Agreement. Failure by the Contractor to carry out these requirements is a material breach of this Agreement, which may result in the termination of this Agreement or such other remedy as the Authority deems appropriate.

EXHIBIT E
CONDITIONS FOR CONTRACTS RECEIVING FEDERAL FUNDING AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009 (ARRA)

K. **ARRA-Funded Project**

Funding for this Agreement has been provided through the American Recovery and Reinvestment Act (ARRA) of 2009, Pub. L. 111-5. Contractor and IIPFA Equipment Users are subject to audit by appropriate federal or State entities.

L. **Recovery of Misspent Funds**

The Contractor agrees that if the Contractor or any IIPFA Equipment User uses any funds provided through this Agreement for purposes other than as required by this Agreement, the Authority may recover misspent funds following an audit. This provision is in addition to all other remedies available to the Authority under all applicable state and federal laws.

M. **Prohibition on Use of ARRA Funds**

The Contractor agrees in accordance with ARRA, Provision 1604, that none of the funds made available under this contract may be used for any casino or other gambling establishment, aquarium, zoo, golf course, or swimming pools.

N. **Whistleblower Protection**

The Contractor agrees that it shall comply with Section 1553 of the ARRA, which prohibits all non-federal contractors, including the State, and all contractors of the State, from discharging, demoting or otherwise discriminating against an employee for disclosures by the employee that the employee reasonably believes are evidence of any of the following:

1. Gross mismanagement of a contract relating to ARRA funds
2. A gross waste of ARRA funds
3. A substantial and specific danger to public health or safety related to the implementation or use of ARRA funds
4. An abuse of authority related to implementation or use of ARRA funds
5. A violation of law, rule, or regulation related to an agency contract (including the competition for or negotiation of a contract) awarded or issued relating to ARRA funds

The Contractor agrees that it shall post notice of the rights and remedies available to employees under Section 1553 of Title XV of Division A of the ARRA.

O. **False Claims Act**

The Contractor agrees that it shall promptly notify the Authority and shall refer to an appropriate federal inspector general any credible evidence that a principal, employee,

EXHIBIT E
CONDITIONS FOR CONTRACTS RECEIVING FEDERAL FUNDING
AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009 (ARRA)

agent, IIPFA Equipment User or other person has committed a false claim under the False Claims Act (31 U.S.C. §3729 et seq.) or has committed a criminal or civil violation of laws pertaining to fraud, conflict of interest, bribery, gratuity, or similar misconduct involving ARRA funds.

P. **Reporting Requirements**

Pursuant to Section 1512(c) and other sections of the ARRA, the Authority must submit periodic reports to FRA about how ARRA funds are being spent, where, by whom, on what, etc. The Authority reasonably believes that the information required from the District set forth in Exhibit A, such as the information IIPFAs and the District's quarterly Status Reports must contain, will enable the Authority to meets its ARRA reporting requirements to FRA.

However, the District agrees to provide any additional information related to this Agreement and its implementation that the Authority needs to satisfy its reporting obligations to FRA under ARRA. The Authority agrees to compensate the District, if the District so requests, for any material additional time the District must spend (beyond the activities the District is required to perform under this Agreement absent the need to collect and report such additional information) to provide such additional information, at the District's staff-time rates the District then is charging similarly-situated third parties for its services (the District must document those rates and the additional time spent).

Appendix B

Draft General Conformity Determination Comments and Reponses

CHATTEN-BROWN & CARSTENS

TELEPHONE: (310) 798-2400
FACSIMILE: (310) 798-2402

2200 PACIFIC COAST HIGHWAY
SUITE 318
HERMOSA BEACH, CALIFORNIA 90254

E-mail: DPC@CBCEARTHLAW.COM

May 23, 2014

Ms. Stephanie Perez-Arrieta,
Environmental Protection Specialist,
Office of Railroad Policy and Development,
Federal Railroad Administration, US DOT
1200 New Jersey Avenue SE, MS-20
Washington DC 20590

RE: Objection to Draft General Conformity Determination, Section 4(f) Evaluation, and Final Environmental Impact for Fresno to Bakersfield Segment of High Speed Train System

Dear Ms. Perez-Arrieta:

On behalf of Citizens for California High Speed Rail Accountability (CCHSRA), Kings County and the Kings County Farm Bureau, we object to Draft General Conformity Determination, Section 4(f) Evaluation, and Final Environmental Impact for Fresno to Bakersfield Segment of High Speed Train System. We reiterate the comments that our clients have made before, most recently by letter dated May 5, 2014 from the Holder Law Group sent to Mr. David Valenstein of your agency.

Attached to this letter are two documents that we received recently that are relevant to the Section 4(f) Evaluation and the Draft General Conformity Determination. The first is a May 16, 2014 letter from the California High Speed Rail Authority to Mr. Mark Nechodom, Director of the California Department of Conservation. It sets forth in detail the parcels that would be impacted by the proposed segment. However, the maps attached to this letter had not been disclosed to the public before in the EIS or elsewhere. Therefore, we ask that you ensure these are properly circulated and reviewed before considering making a decision.

Second, we attach the May 6, 2014 application for Indirect Source Review (ISR). It discloses the amount of fill dirt that will be needed is more than twice what was disclosed and analyzed in the Final EIR/EIS. It is 24,000,000 cubic yards of imported soil is disclosed on the second page of the attachment B, whereas the EIS stated only "11,300,000 cubic yards of fill" would be required. This extreme discrepancy should be corrected in the EIS and the EIS recirculated for public review and comment.

Thank you for your consideration. Please contact me if you have any questions.

Sincerely,

Douglas P. Carstens

Attachments as stated.

EXHIBIT A

CALIFORNIA
High-Speed Rail Authority

CC: BOS
County Counsel

Kings County
Administration
RECEIVED
MAY 22 2014
1400 W. Lacey Blvd.
Hanford, CA 93230

May 16, 2014

Mr. Mark Nechodom, Director
California Department of Conservation
c/o Division of Land Resource Protection
801 K Street, MS 18-01
Sacramento, CA 95814

Subject: Notice of Public Acquisition of Williamson Act Lands for the Fresno to Bakersfield Section of the California High-Speed Rail Project

Dear Mr. Nechodom:

This letter follows up on the previous California High-Speed Rail Authority (Authority) correspondence dated September 21, 2012 regarding compliance with the Williamson Act for the California High-Speed Rail Project. That correspondence addressed Williamson Act lands that would potentially be acquired for all the project alternatives addressed in the Revised Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement (EIR/EIS) for the Fresno to Bakersfield project section.

Since that time, the Federal Railroad Administration (FRA) and the Authority identified a Preferred Alternative, which includes portions of the BNSF Alternative in combination with the Corcoran Bypass, Allensworth Bypass, and the Bakersfield Hybrid alternatives (as shown in Attachment A) and prepared a Final EIR/EIS. The Authority's Board of Directors certified the EIR/EIS and adopted a project. Pursuant to Government Code Section 51291(b), this letter is to notify you that the Authority will require lands under Williamson Act and Farmland Security Zone (FSZ) contracts for the Preferred Alternative.

The Authority recognizes the important state policy of preserving California's agricultural land and the legal requirement to make certain findings for public acquisition of Williamson Act lands. We appreciate the efforts made by the Department of Conservation to work with the Authority on developing this project in a manner that minimizes impacts on agricultural lands and complies with the Williamson Act. The Authority Board of Directors certified the Final EIR on May 7, 2014 and made the required finding under Government Code Section 51292 based on the information summarized in this letter. As further detailed in Chapter 7 and Section 3.14 of the Final EIR/EIS, the selection of a preferred alternative was not based on a lower cost of acquiring agricultural land, and the Authority will mitigate its impacts on agricultural land. It intends to do so by entering into further agreements with the Department of Conservation for farmland preservation.

The Fresno to Bakersfield project is shown in the project vicinity maps in Attachment A. The project extends from Fresno to Bakersfield and includes the Mariposa site for the Fresno station, as selected under the Merced to Fresno Section, as well as the Kings/Tulare Regional Station–East Alternative and the Bakersfield Station–Hybrid Alternative. The Fresno to Bakersfield Section EIR/EIS process did not include the selection of a Heavy Maintenance Facility (HMF)

site. The Authority and Federal Railroad Administration (FRA) anticipate considering the HMF sites evaluated in the Merced to Fresno Final EIR/EIS along with the five HMF sites evaluated in this Final EIR/EIS prior to making a determination on one or more preferred sites. For this reason, this notification includes only those contracts affected by the alignment and stations for the Fresno to Bakersfield Section.

The Authority has identified a total of 320 parcels (1,866 acres) of protected farmland potentially affected by the Pproject: 275 (1,515 acres) are Williamson Act parcels and 45 (351 acres) are FSZ land. Attachment B provides summary tables of the acres of protected farmland permanently converted as a result of the project. In addition, Attachment B includes the results of an analysis of farmland severance, which shows parcels that may lose their protected status because they would no longer meet minimum size requirements. Attachment C provides updated maps to supplement the maps we provided in the prior submittal. These maps show the characteristics of the affected parcels and adjacent land along the project route. In some areas, changes in the project have occurred as a result of small realignments and roadway overpass expansions. These changes have resulted in the inclusion of 27 new contracts that were not previously identified and are provided in Attachment D.

Thank you for considering this matter. If you have any questions, please contact Bryan Porter, Senior Environmental Planning Manager, at 916-324-1541.

Sincerely,

Mark A. McLoughlin
Deputy Director, Environmental Planning
California High Speed Rail Authority

Enclosures:
Attachment A – Figures
Attachment B – Summary Impact Tables
Attachment C – Site Maps
Attachment D – New Contracts

cc: John M. Lowrie, Program Manager, Williamson Act Program, Dept. of Conservation
John Navarrette, County Administrative Officer, Fresno County
Larry Spikes, County Administrative Officer, Kings County
Jean M. Rousseau, County Administrative Officer, Tulare County
John Nilon, County Administrative Officer, Kern County

Attachment A

Figures

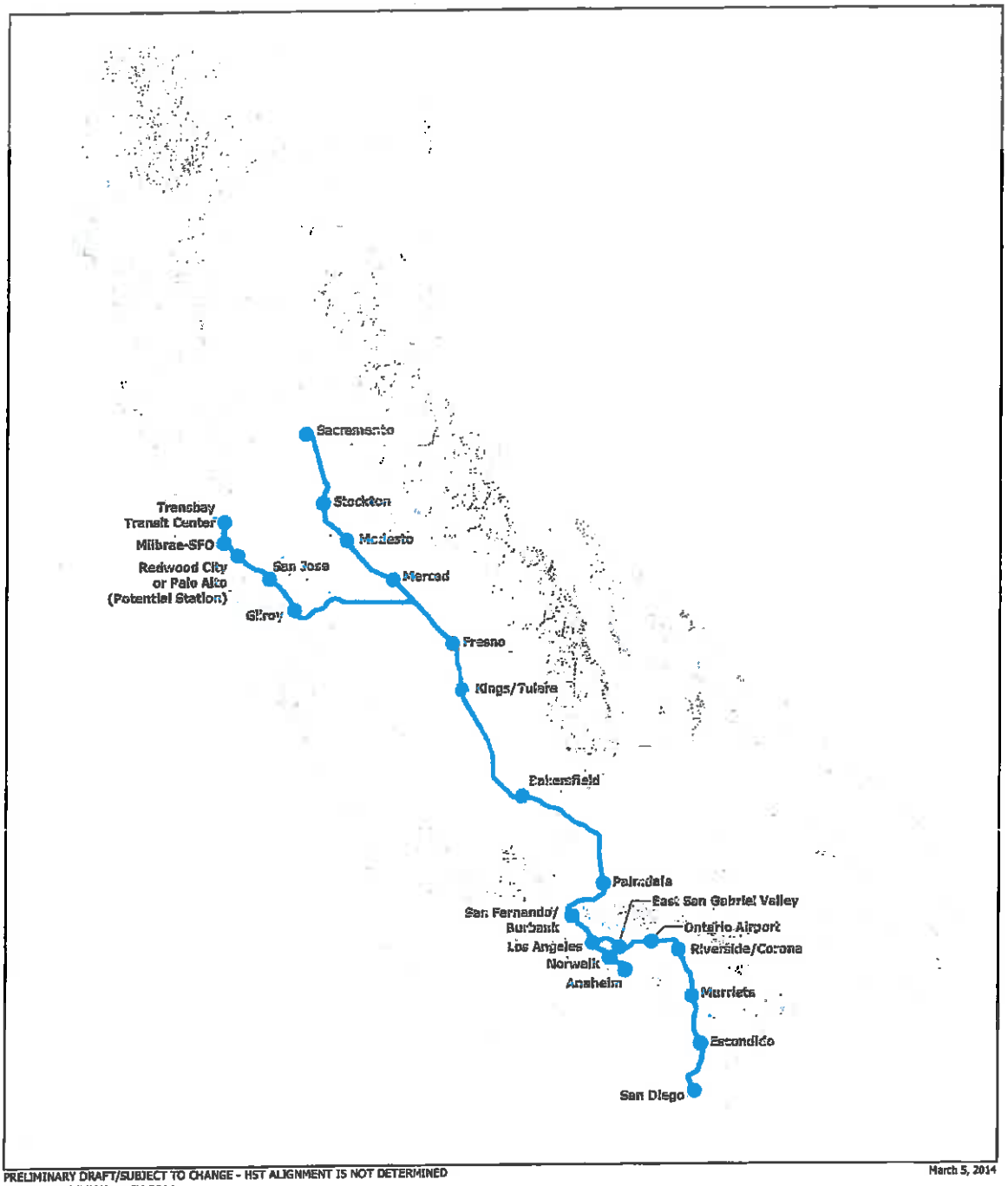
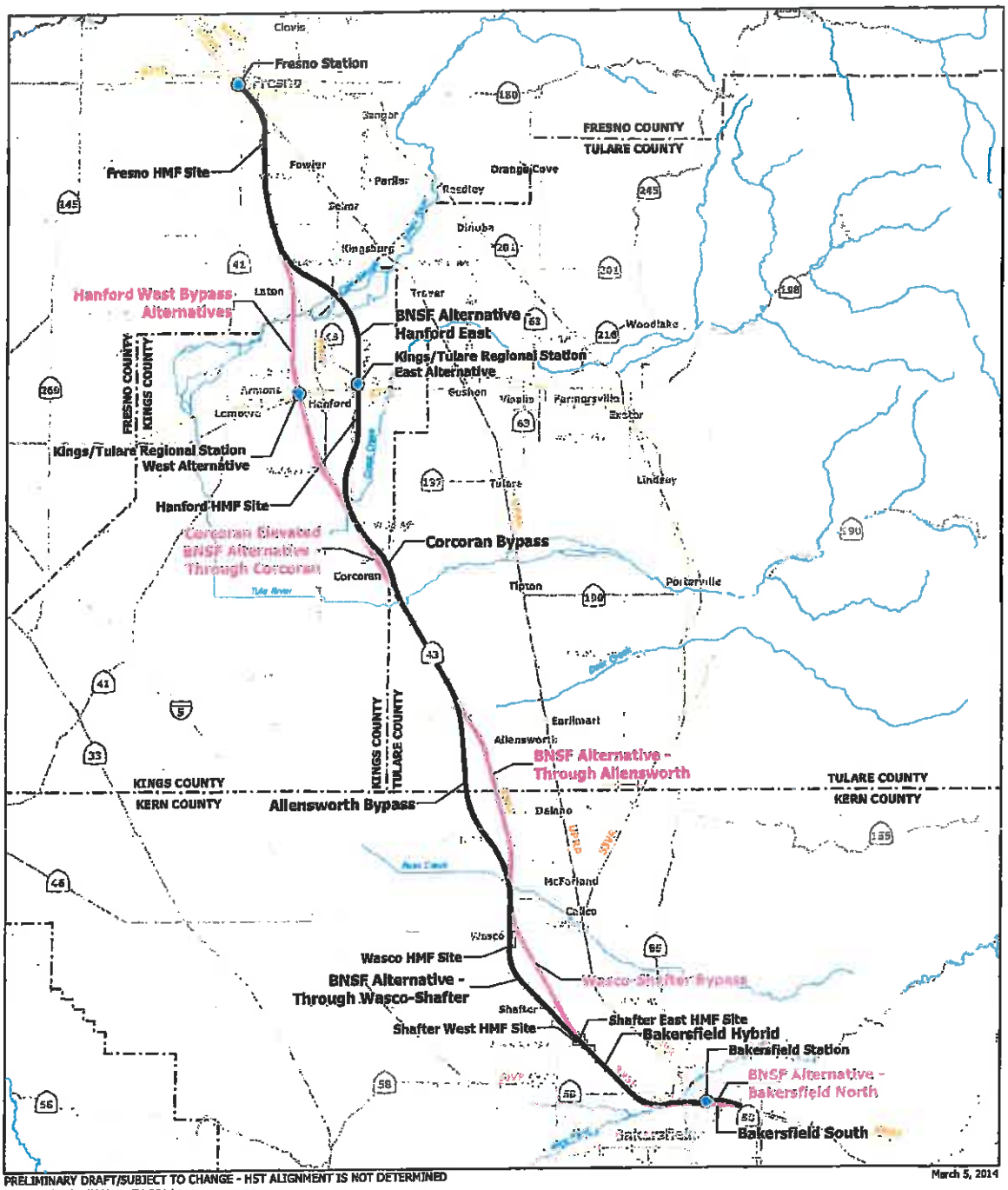


Figure 1
Fresno to Bakersfield HST Section



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HST ALIGNMENT IS NOT DETERMINED
Source: URS/HMM/Arup JV, 2014.

March 5, 2014

- Station
- Proposed Preferred Alternative
- Alternative alignment
- Potential heavy maintenance facility (HMF)
- Stream
- Existing rail line
- Community/Urban area
- County boundary

N

0 5 10 Miles

0 10 20 Kilometers

Figure 2
Vicinity Map
Fresno to Bakersfield Section
High-Speed Train Project

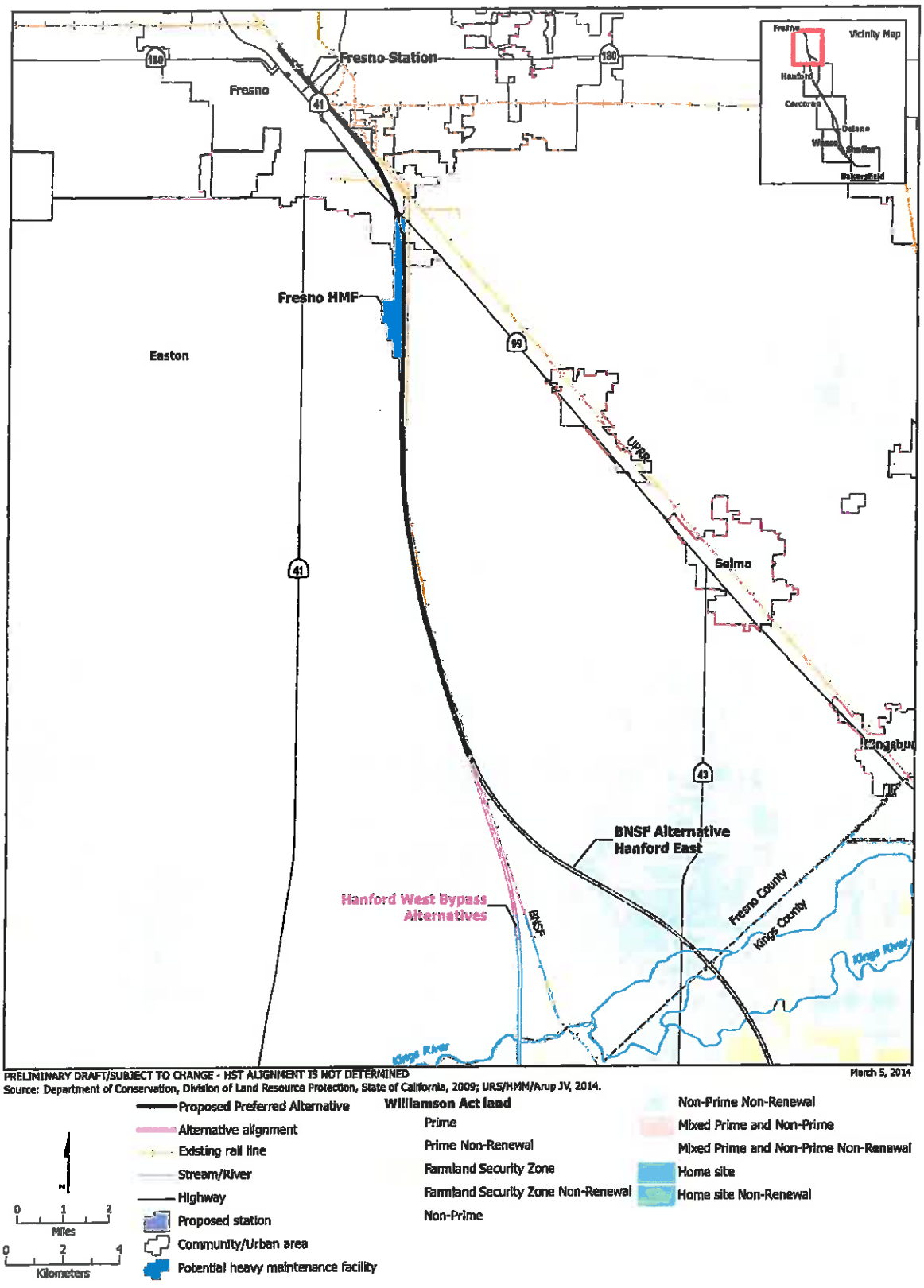


Figure 3
Fresno area:
Williamson Act lands
within the project study area

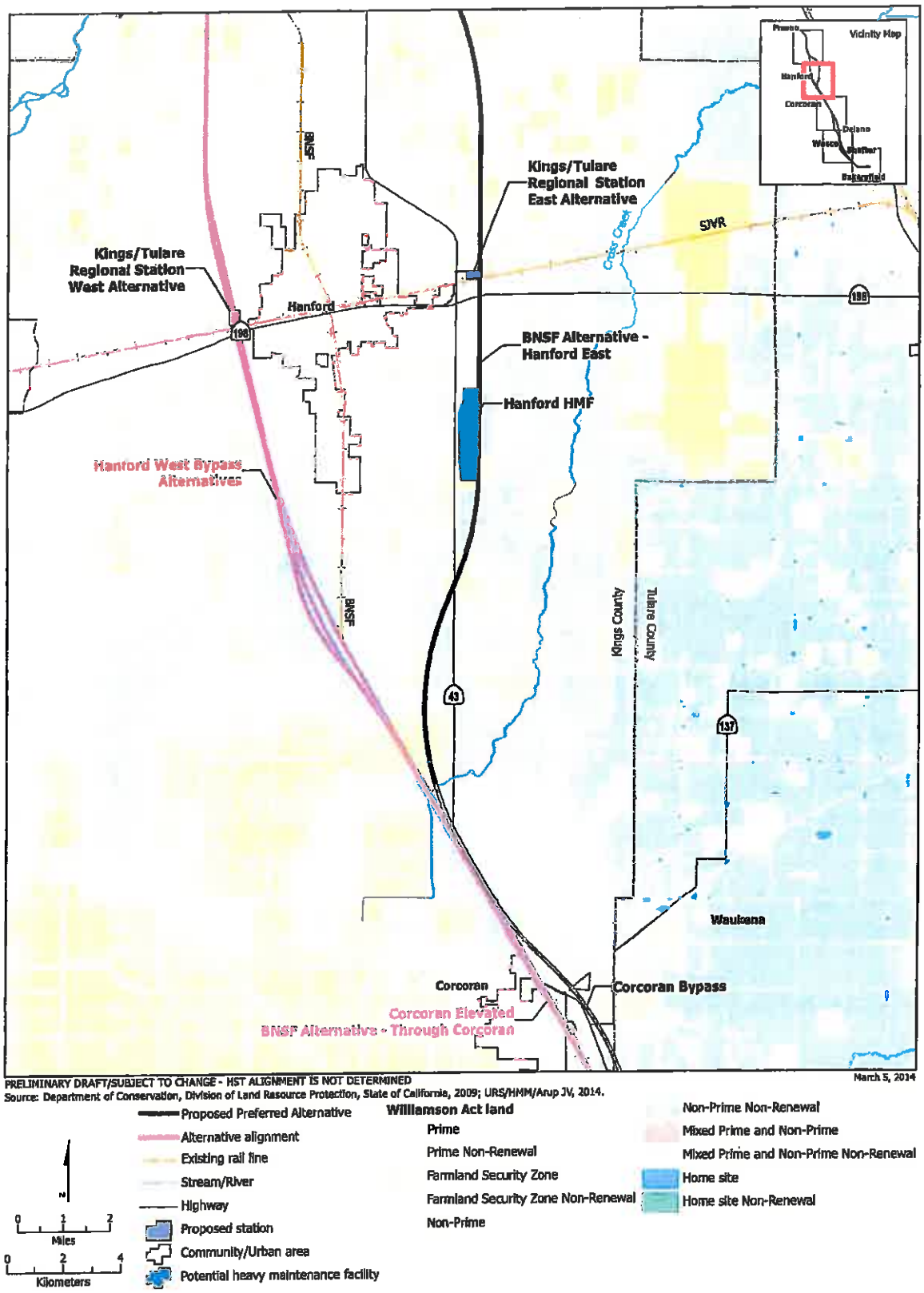


Figure 4
Hanford area:
Williamson Act lands
within the project study area

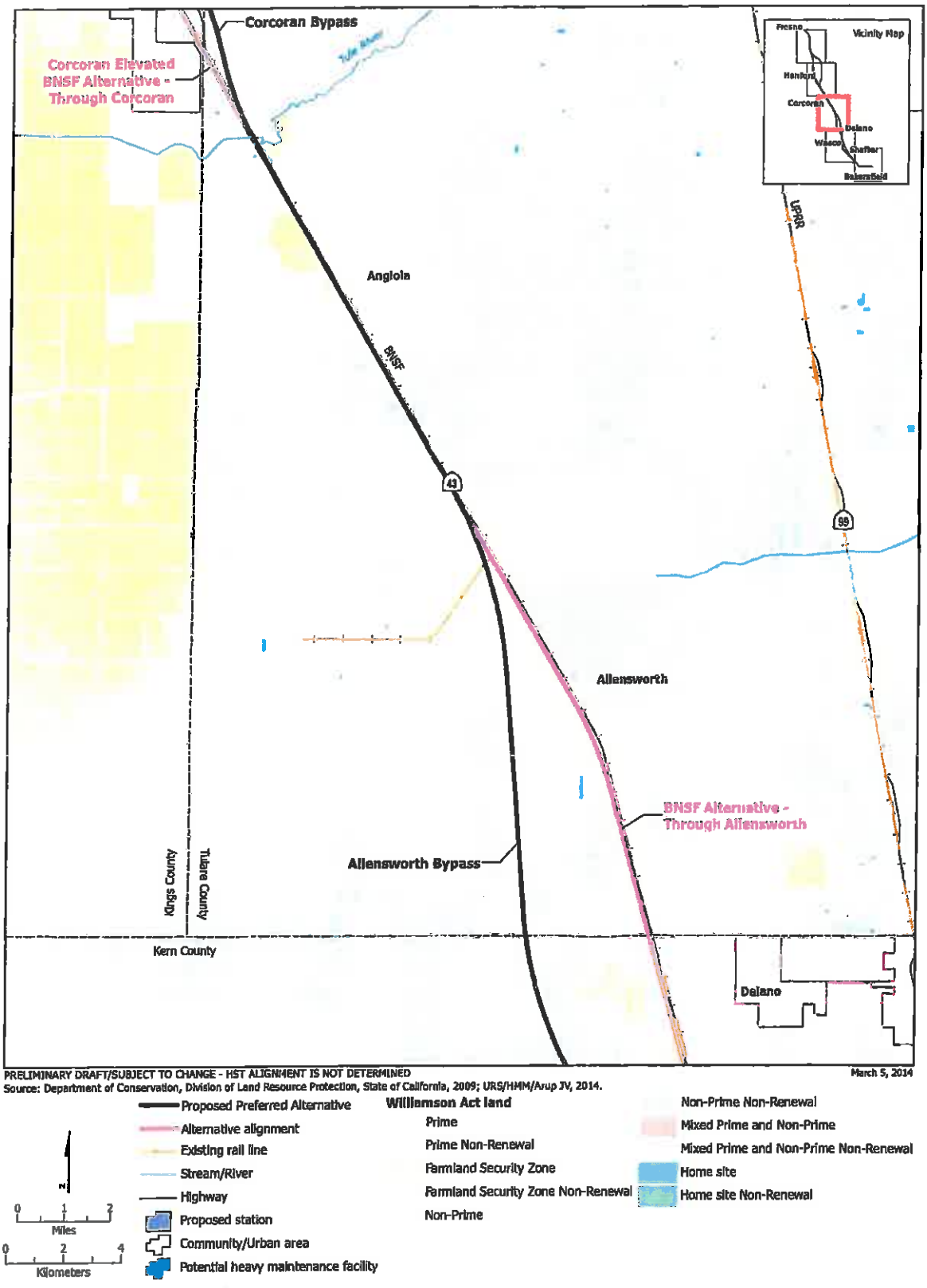


Figure 5
Allensworth area:
Williamson Act lands
within the project study area

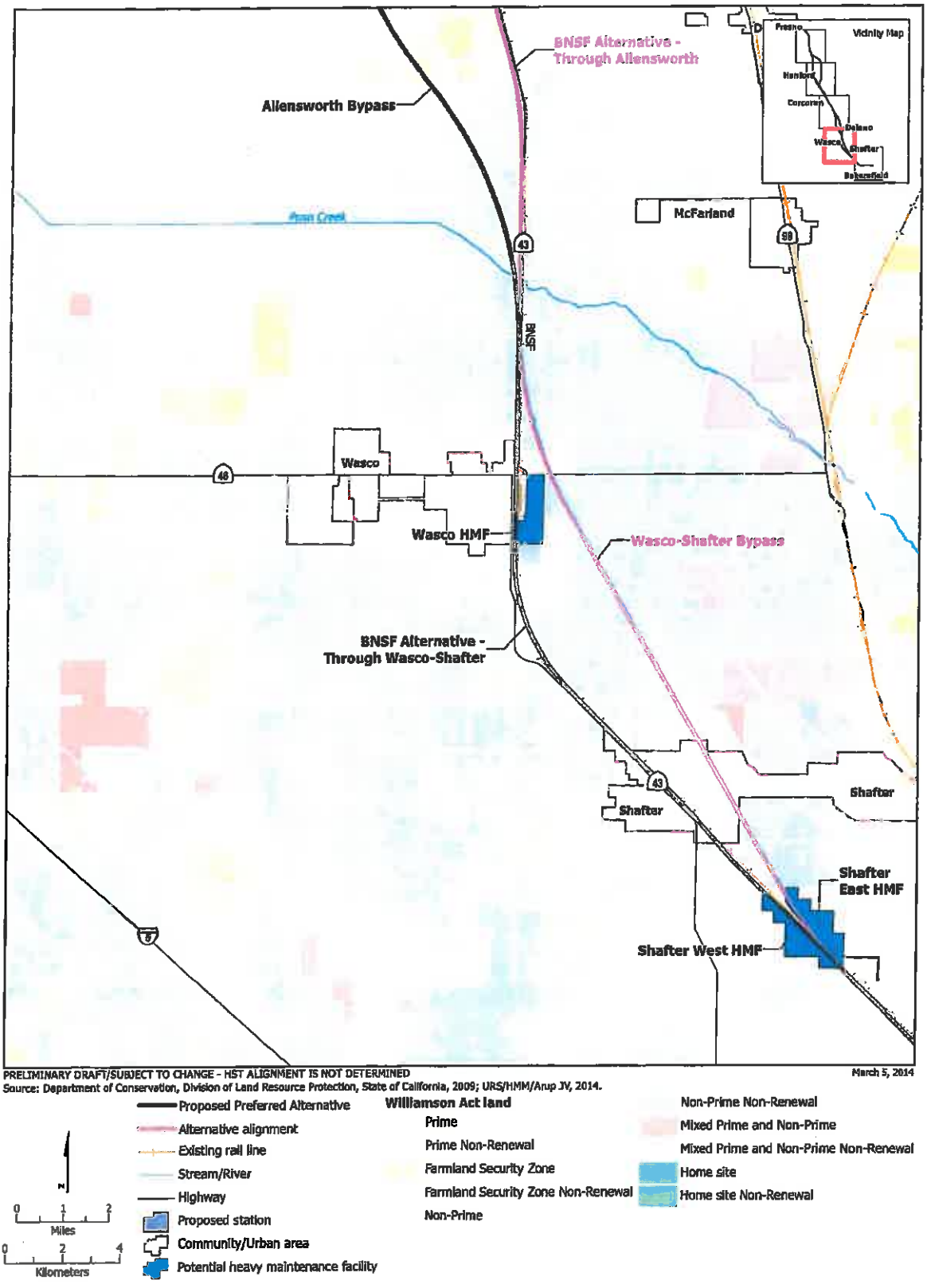


Figure 6
Wasco-Shafter area:
Williamson Act lands
within the project study area

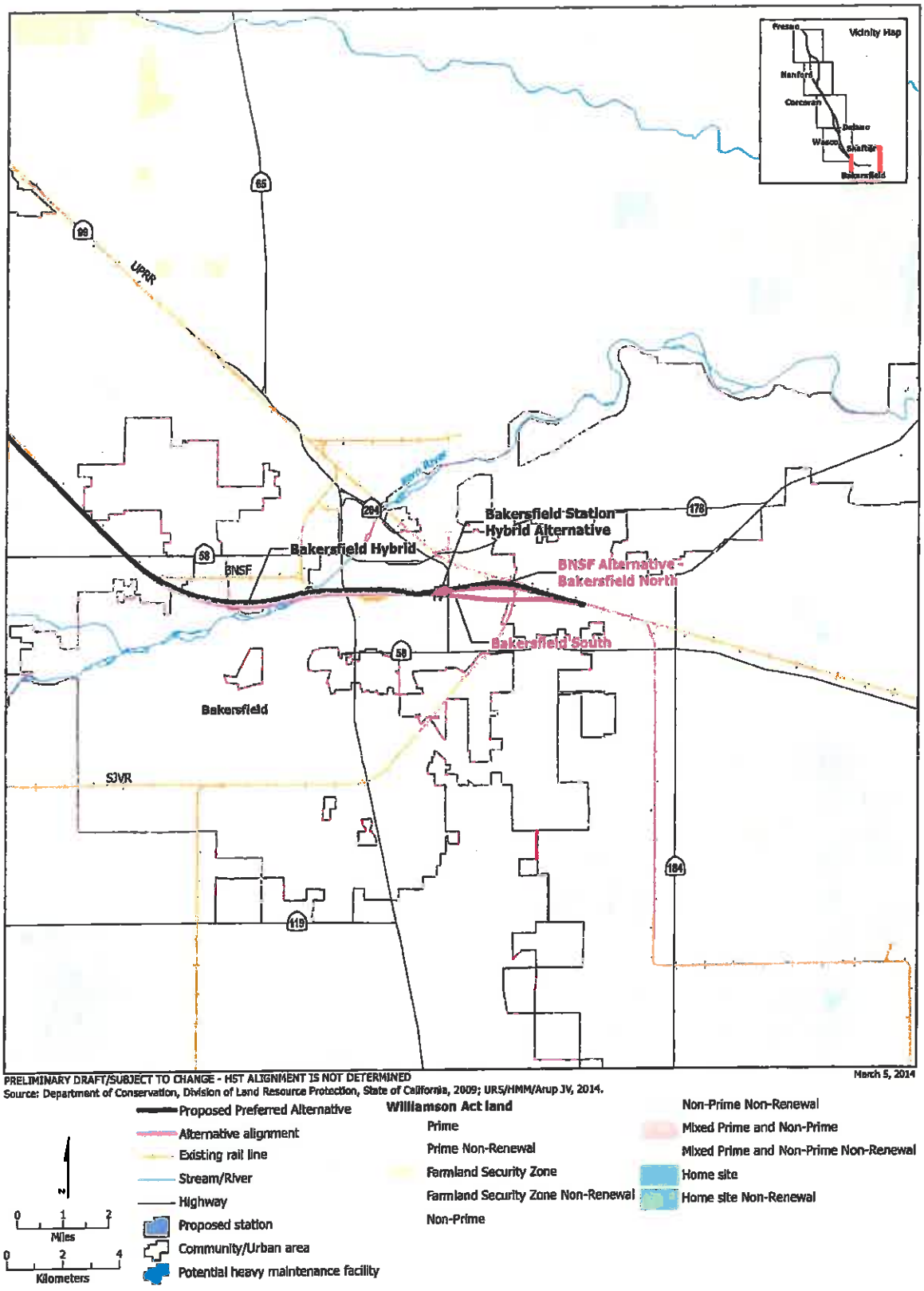


Figure 7
Bakersfield area:
Williamson Act lands
within the project study area

Attachment B

Summary Impact Tables

Table B-1
Acres of Protected Farmland Potentially Converted by the Preferred Alternative

Region	Williamson Act Land Acres[a]		FSZ Land Acres[a]
	Prime[b]	Non-Prime	
Fresno County	348	0	0
Kings County	440	10	291
Tulare County	185	71	50
Kern County	453	8	10
Total	**1,426**	**89**	**351**

[a] Acreages are rounded to the nearest whole number. The acreages listed do not include farmland under nonrenewable Williamson Act contracts.
[b] Prime farmland is defined using the Department of Conservation's Williamson Act "Prime Agricultural Land" designation where enrolled land must meet certain economic or production criteria.
FSZ = Farmland Security Zone

Table B-2
Parcels of Protected Farmland Potentially Converted by the Preferred Alternative

Region	Williamson Act Land Acres[a]		FSZ Land Acres[a]
	Prime[b]	Non-Prime	
Fresno County	73	0	0
Kings County	87	1	40
Tulare County	33	10	3
Kern County	70	1	2
Total	**263**	**12**	**45**

[a] Acreages are rounded to the nearest whole number. The acreages listed do not include farmland under nonrenewable Williamson Act contracts.
[b] Prime farmland is defined using the Department of Conservation's Williamson Act "Prime Agricultural Land" designation where enrolled land must meet certain economic or production criteria.
FSZ = Farmland Security Zone

Table B-3

Protected Farmland Potentially Losing Williamson Act and FSZ Status as a result of the Preferred Alternative

Region	Williamson Act Land Acres[a]		FSZ Land Acres[a]
	Prime	Non-Prime	
Fresno County	90	0	0
Kings County	0	0	4
Tulare County	10	33	0
Kern County	19	0	0
Total	**119**	**33**	**4**

[a] Acreages are rounded to the nearest whole number. The acreages listed do not include farmland under nonrenewable Williamson Act contracts.

Note: Government Code §51222 defines acceptable agricultural land for a Williamson Act contract as being at least 10 acres in size for prime agricultural land and at least 40 acres in size for non-prime agricultural land. Each county may enforce different minimum acreage requirements for Williamson Act land in its jurisdiction. The requirement for prime agricultural land in Fresno County is 18 acres, 10 acres in Kings County, 10 acres in Tulare County, and 20 acres in Kern County. These counties all have a minimum 40-acre requirement for non-prime agricultural land.

FSZ = Farmland Security Zone

Current Design

Section 106 Team Site
(Free Floating)

Environmental Site

EIR/EIS Methods Library –
Contains all documentation
regardless of document status

EIRDocs Library –
Contains all conference and Presentations

Environmental Compliance Library
Contains all compliance documentation
stored in several content types

Environmental Documents Library
Contains all migrated documentation
Stored in the old ProjectSolve
structure

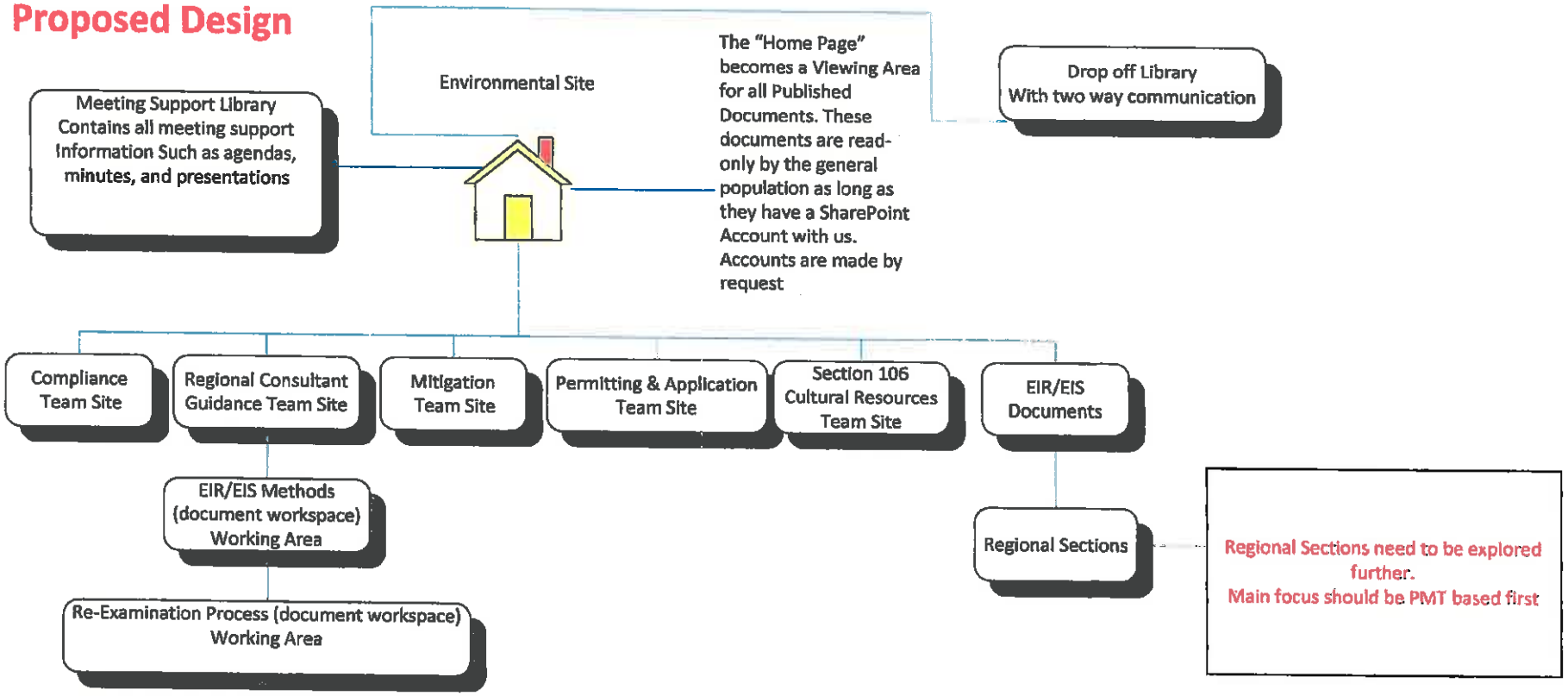
Meeting Support Library
Contains all meeting support
information Such as agendas,
minutes, and presentations

Calendar – Not being used at this point

Permitting and Mitigation Library –
A new library that was created
but is not being used correctly.

Permitting and Application Library –
A new library that was created
but is not being used yet
after a decision to split Permits and
applications into a logical group

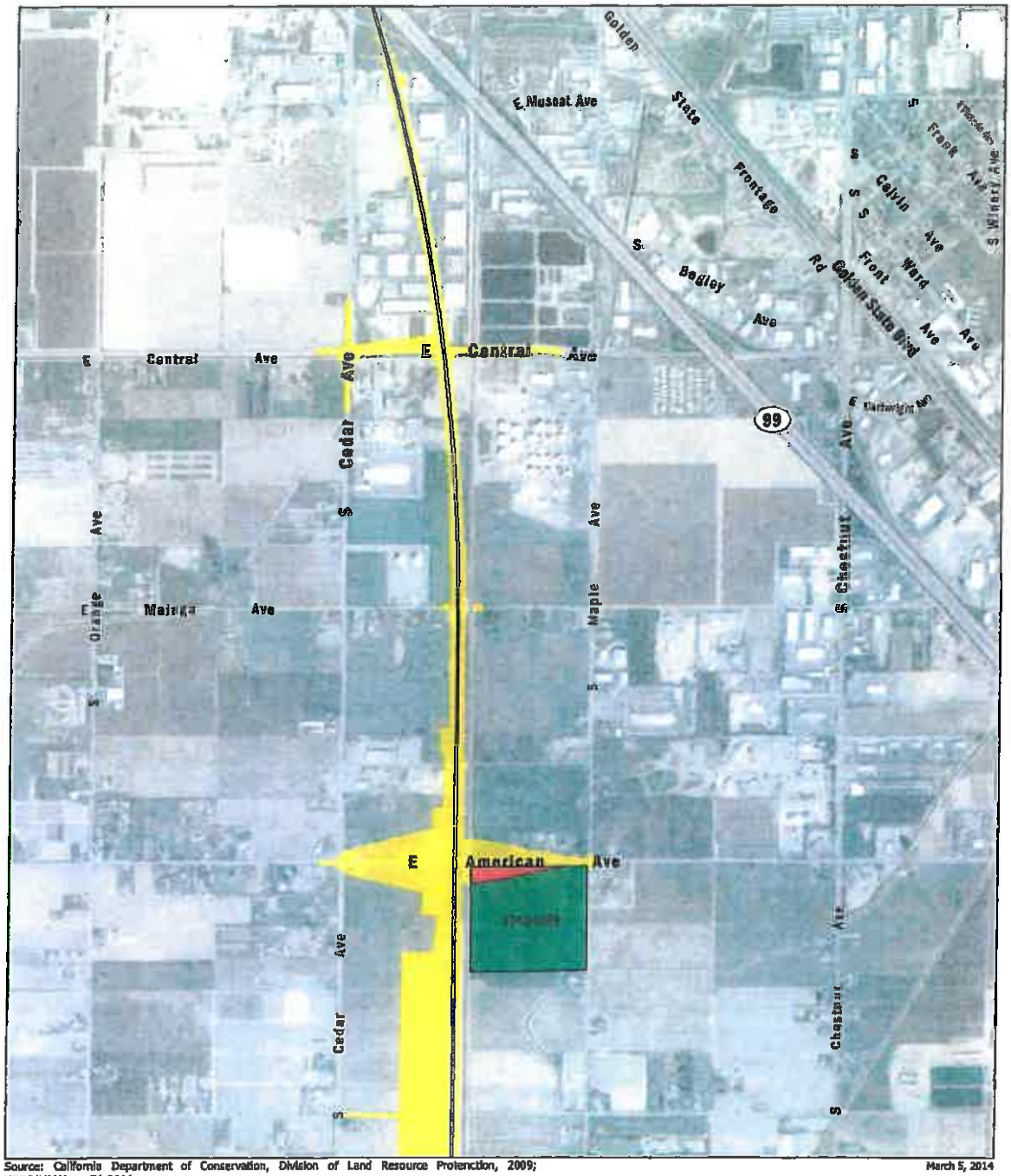
Proposed Design



Attachment C

Site Maps

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



Source: California Department of Conservation, Division of Land Resource Protection, 2009; URS/HMM/Arup JV, 2014.

March 5, 2014

Williamson Act parcel
- Parcel area impacted by footprint
- Farmland Security Zone
- Non-Prime
- Prime
- *Labeled as APN

- Proposed Preferred Alternative
- Proposed Preferred Alternative footprint
- Agricultural parcel boundary
- Uneconomic portion of agricultural parcel
- County boundary

N

0 1,000 2,000 Feet

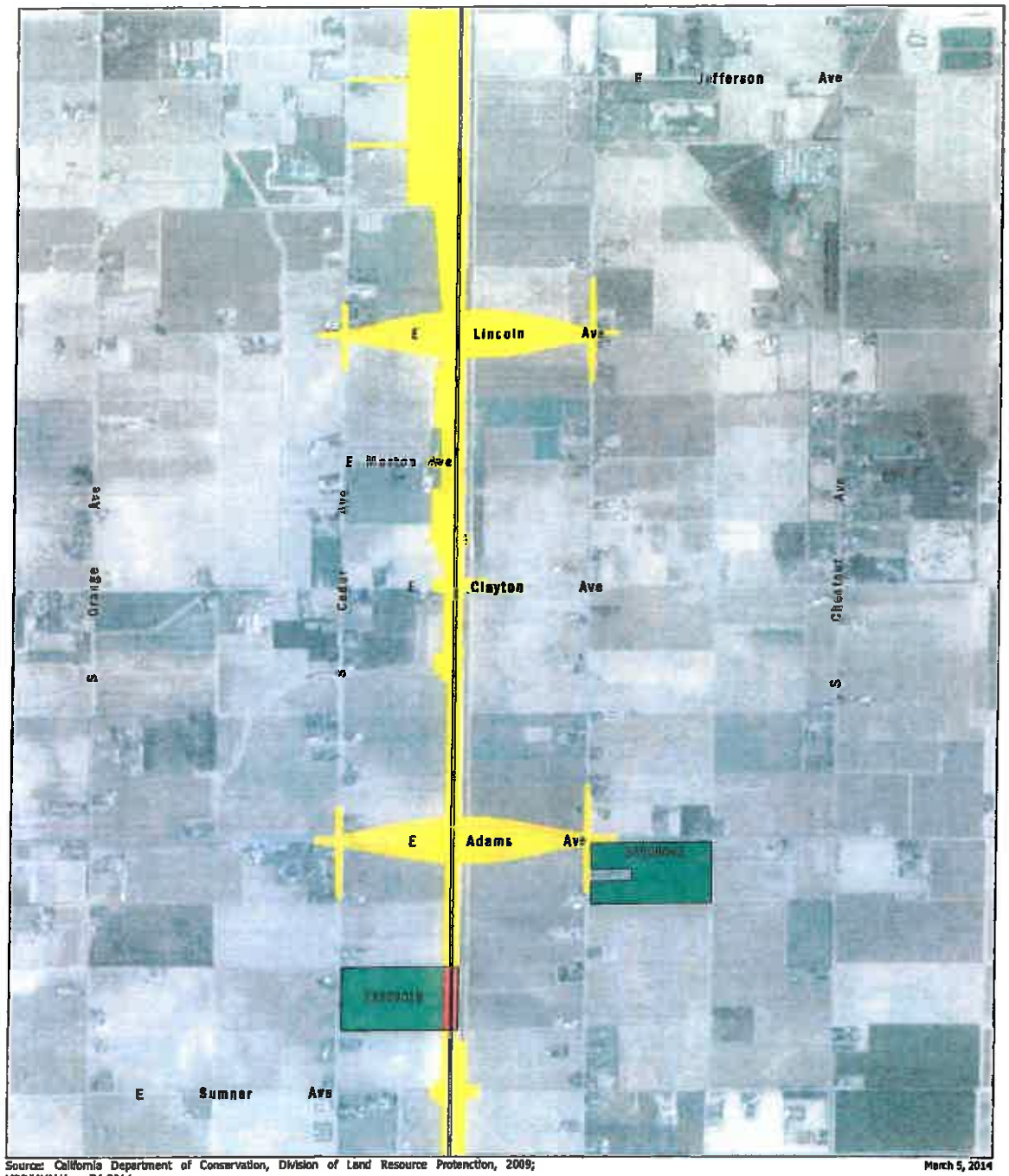
0 400 800 Meters

Fresno to Bakersfield Williamson Act and Farmland Security Contracts
Page 1 of 52
County: FRESNO

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



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N

0 1,000 2,000 Feet

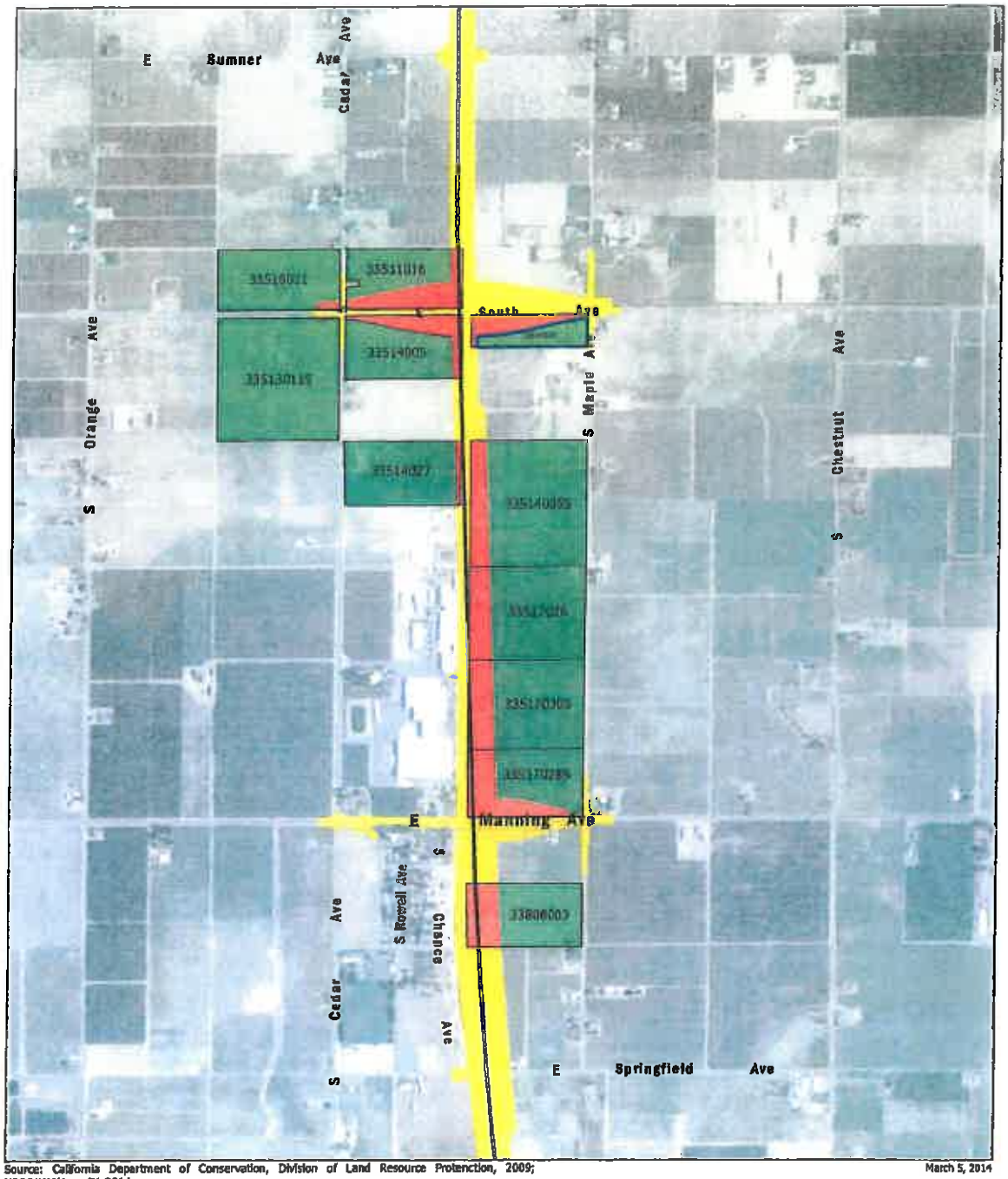
0 400 800 Meters

Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
Page 2 of 52
County: FRESNO

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



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N

0 1,000 2,000 Feet

0 400 800 Meters

Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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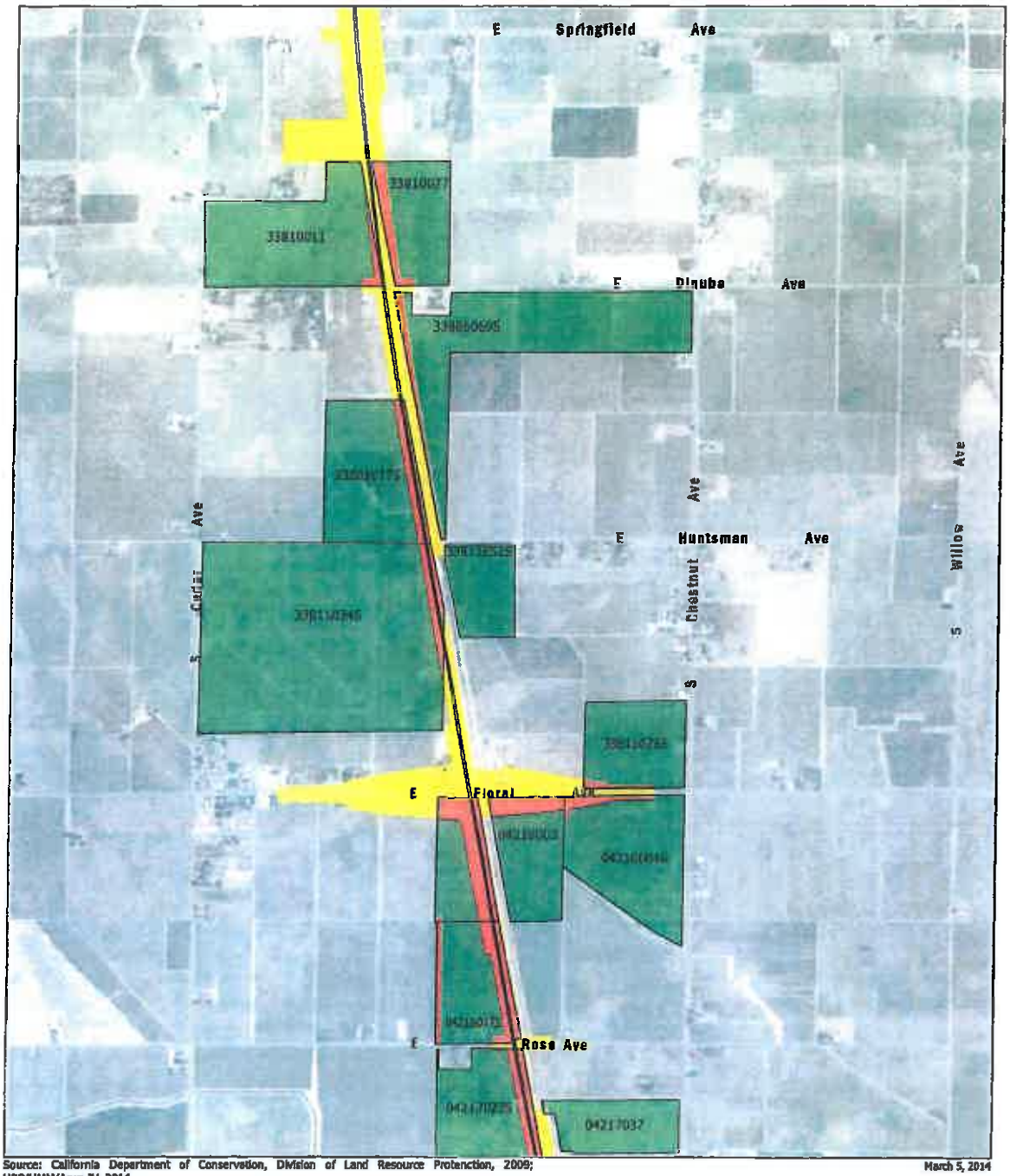
County: FRESNO

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



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0 1,000 2,000 Feet

0 400 800 Meters

Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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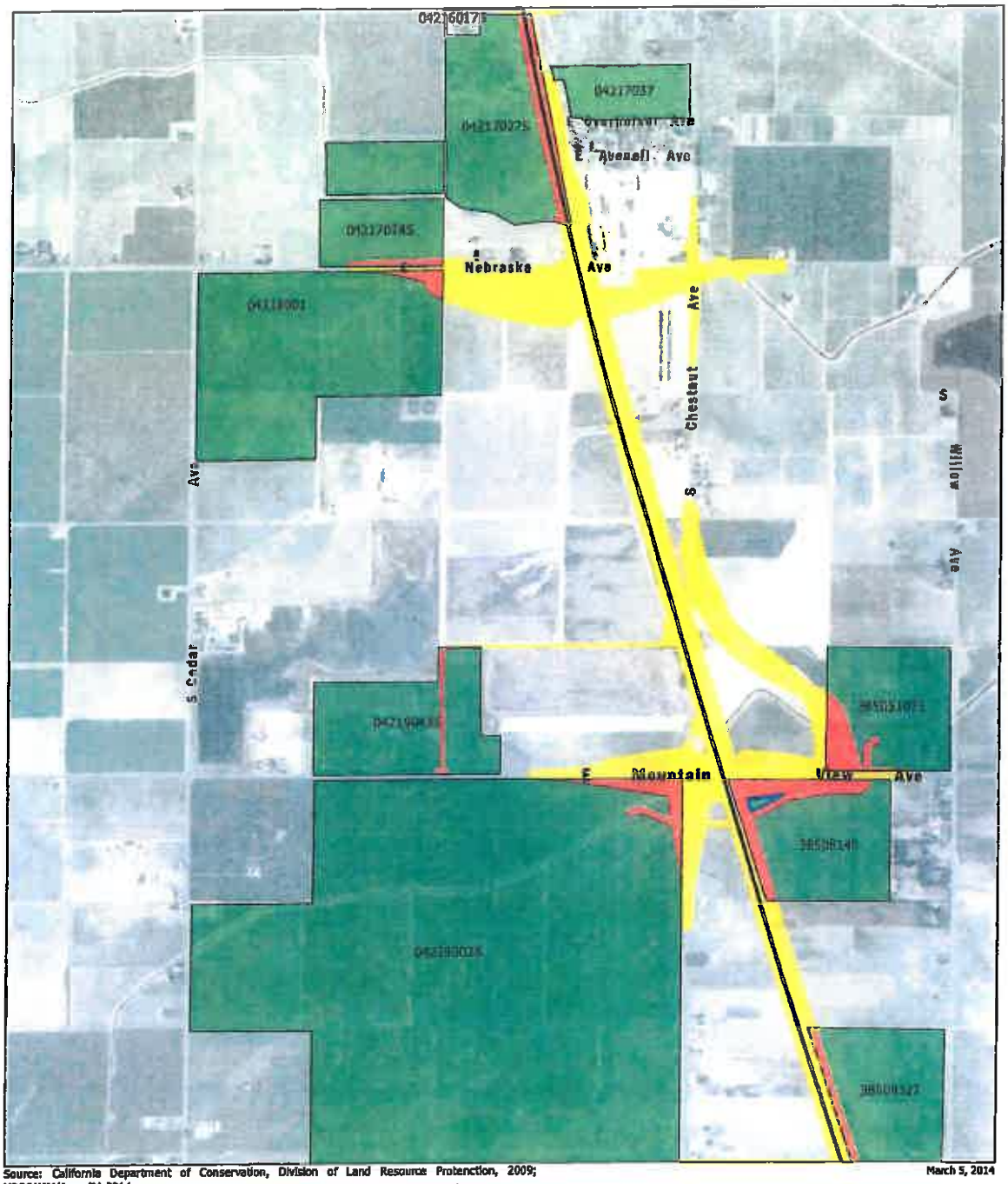
County: FRESNO

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



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0 1,000 2,000 Feet

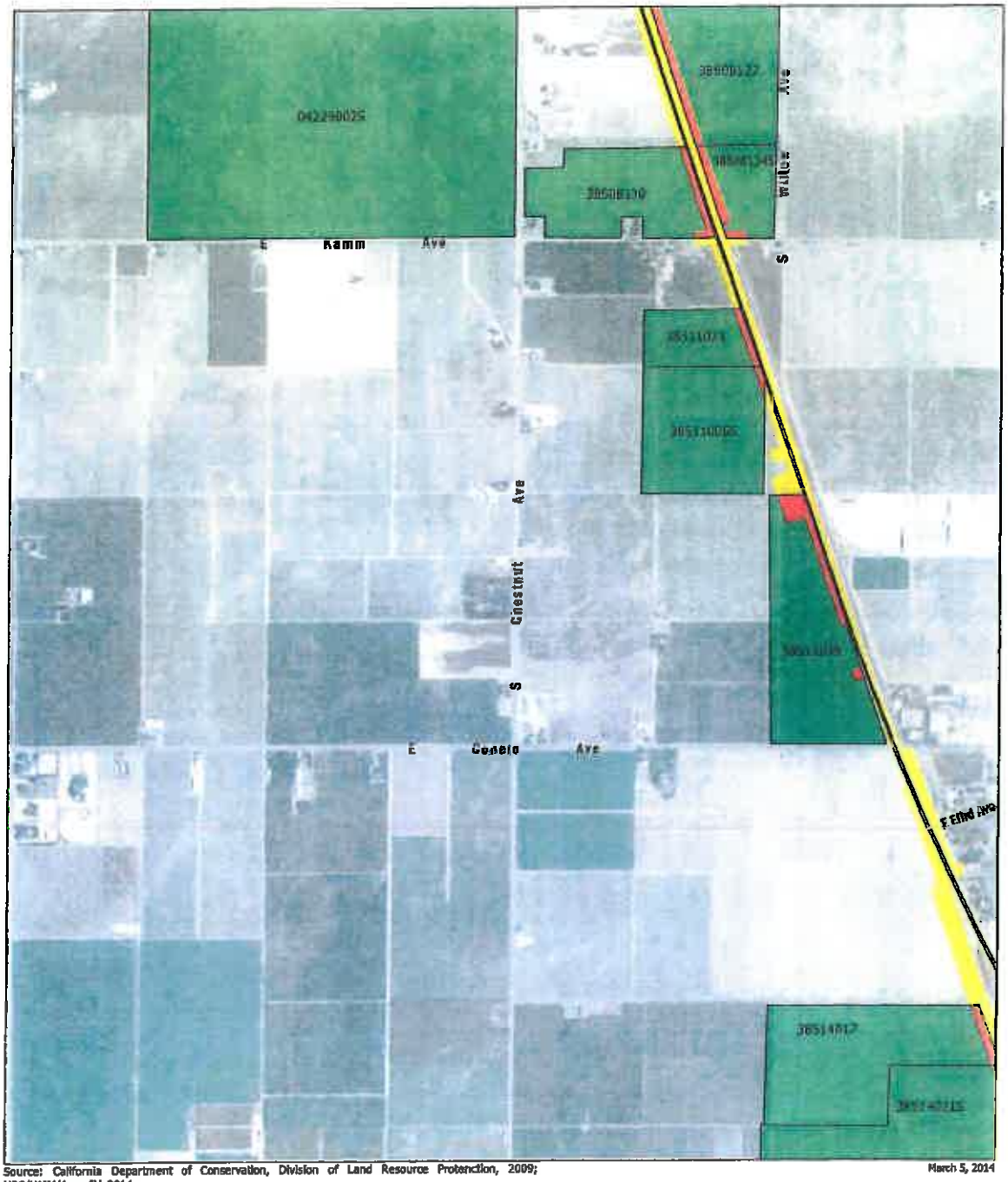
0 400 800 Meters

Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
Page 5 of 52
County: FRESNO

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



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N

0 1,000 2,000 Feet

0 400 800 Meters

Fresno to Bakersfield Williamson Act and Farmland Security Contracts
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County: FRESNO

CALIFORNIA High-Speed Rail Authority

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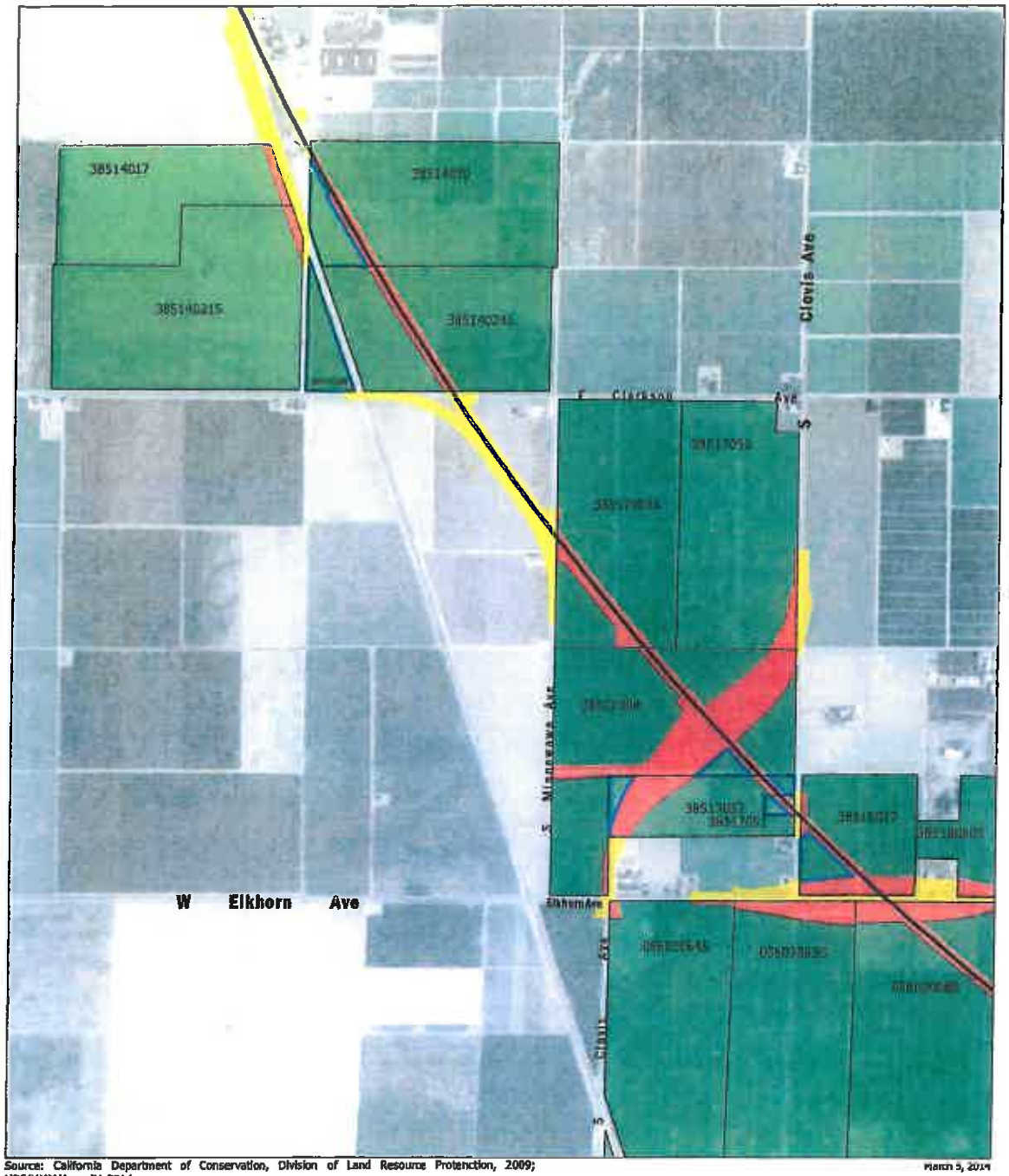
CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



Source: California Department of Conservation, Division of Land Resource Protection, 2009; URS/HMM/Arup JV, 2014.

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0 1,000 2,000 Feet
0 400 800 Meters

Fresno to Bakersfield Williamson Act and Farmland Security Contracts
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County: FRESNO

CALIFORNIA High-Speed Rail Authority
U.S. Department of Transportation Federal Railroad Administration

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0 1,000 2,000 Feet
0 400 800 Meters

Fresno to Bakersfield
Williamson Act and
Farmland Security Contracts
Page 8 of 52
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CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD

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March 5, 2014

N

0 1,000 2,000
Feet

0 400 800
Meters

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Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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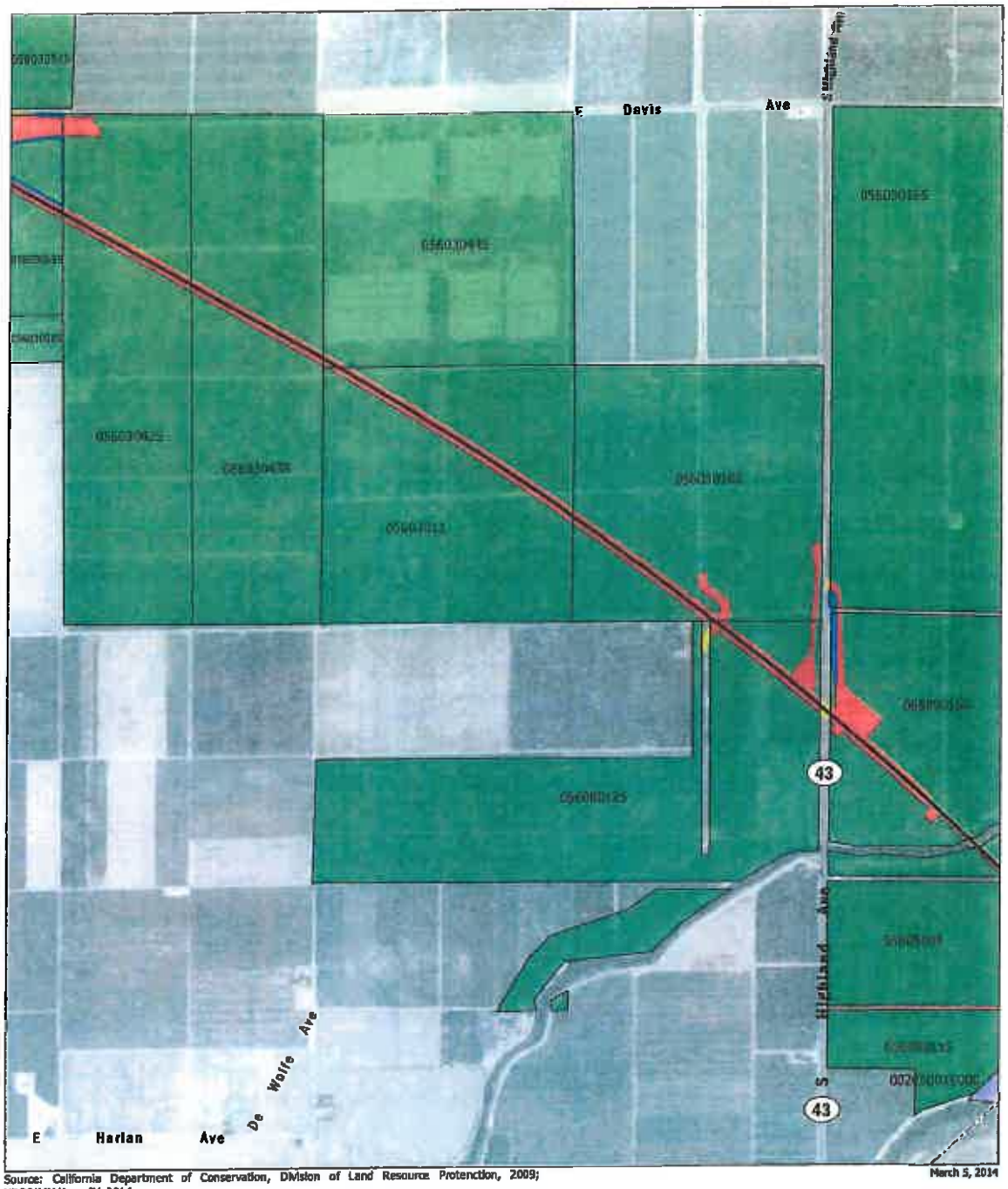
County: FRESNO

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



Source: California Department of Conservation, Division of Land Resource Protection, 2009; URS/HMM/Arup JV, 2014.

March 5, 2014

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N

0 1,000 2,000 Feet

0 400 800 Meters

Fresno to Bakersfield
Williamson Act and
Farmland Security Contracts
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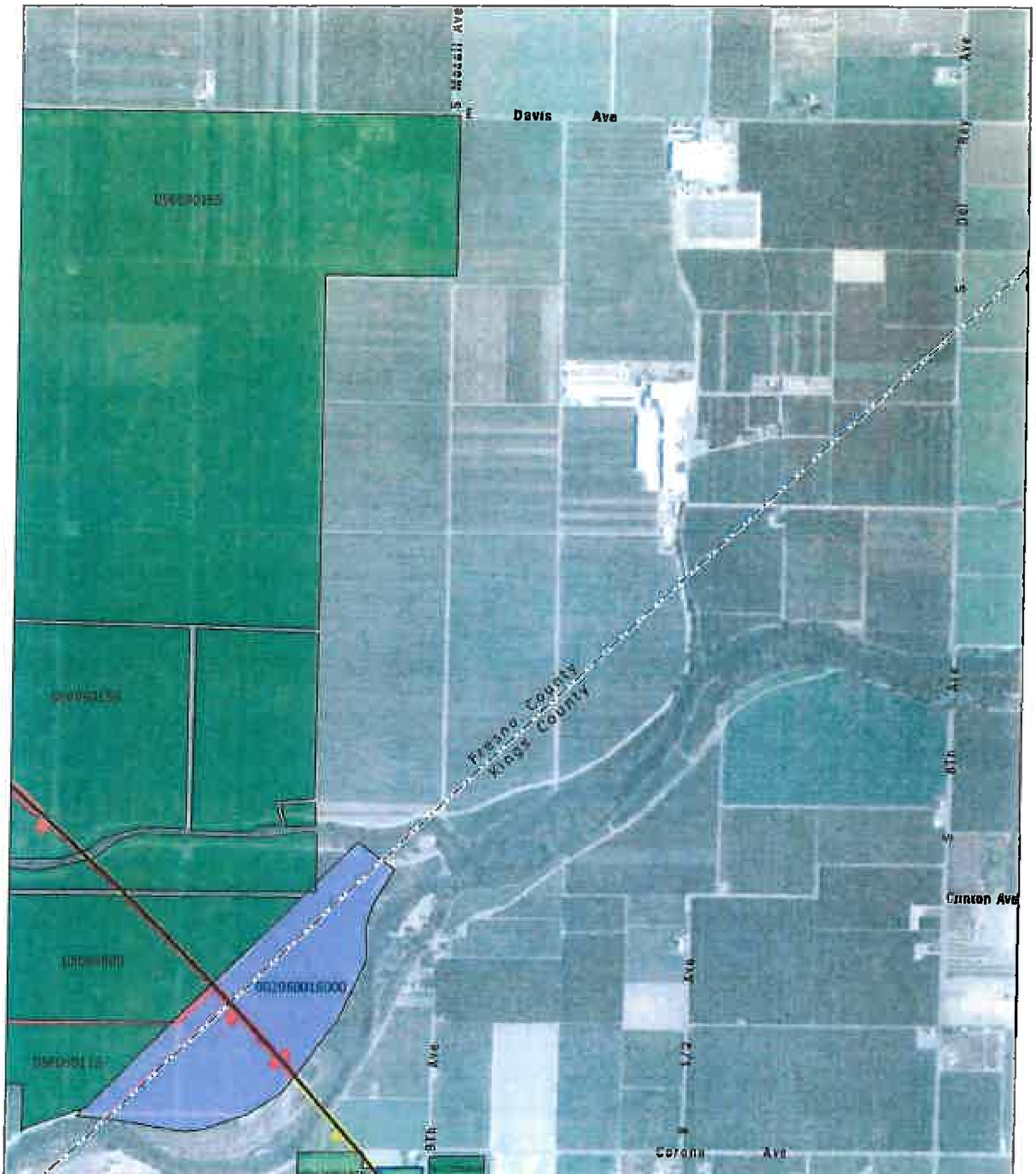
County: FRESNO

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration



Source: California Department of Conservation, Division of Land Resource Protection, 2009; URS/HMM/Arup JV, 2014.

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N

0 1,000 2,000
Feet

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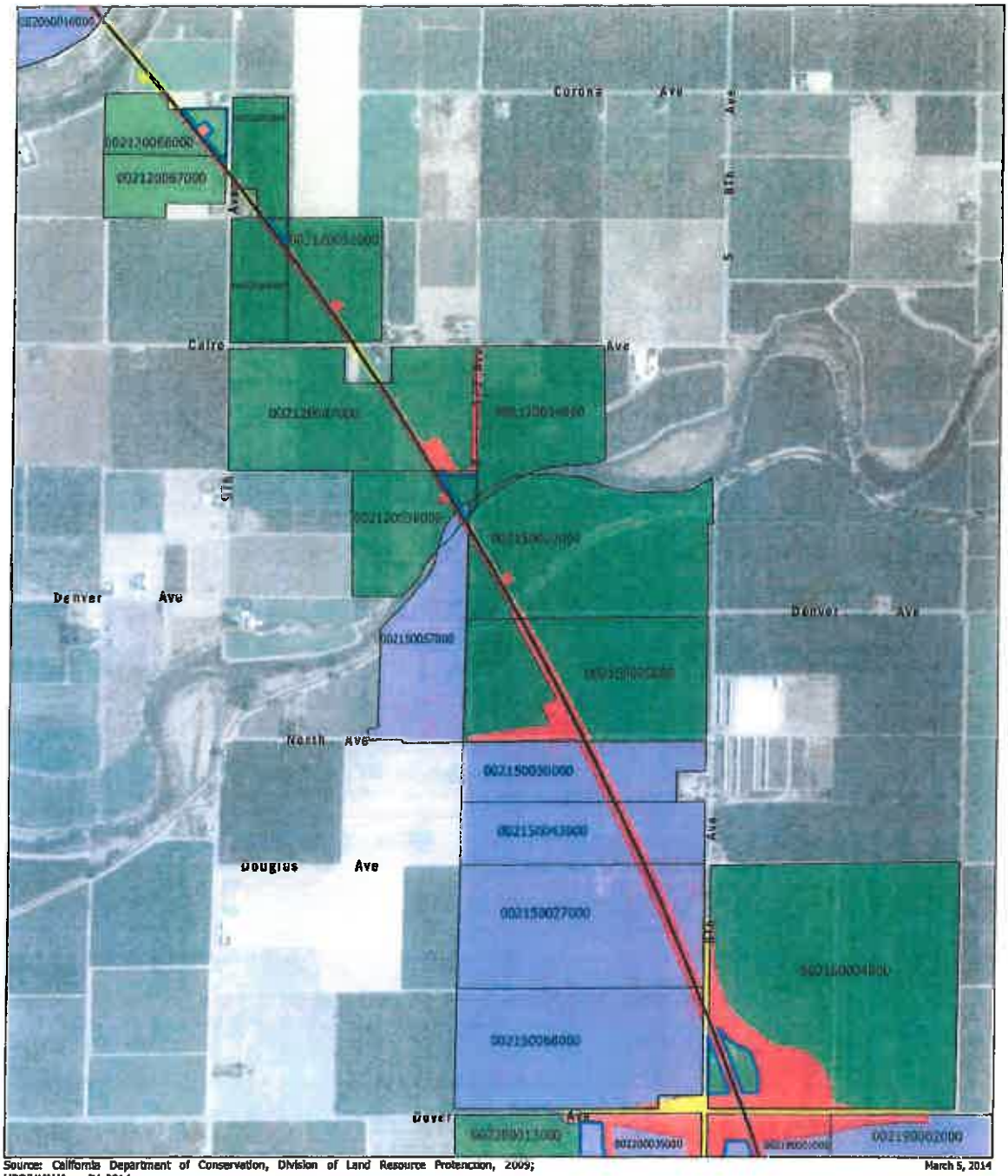
Meters

Fresno to Bakersfield Williamson Act and Farmland Security Contracts

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



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0 1,000 2,000 Feet
0 400 800 Meters

Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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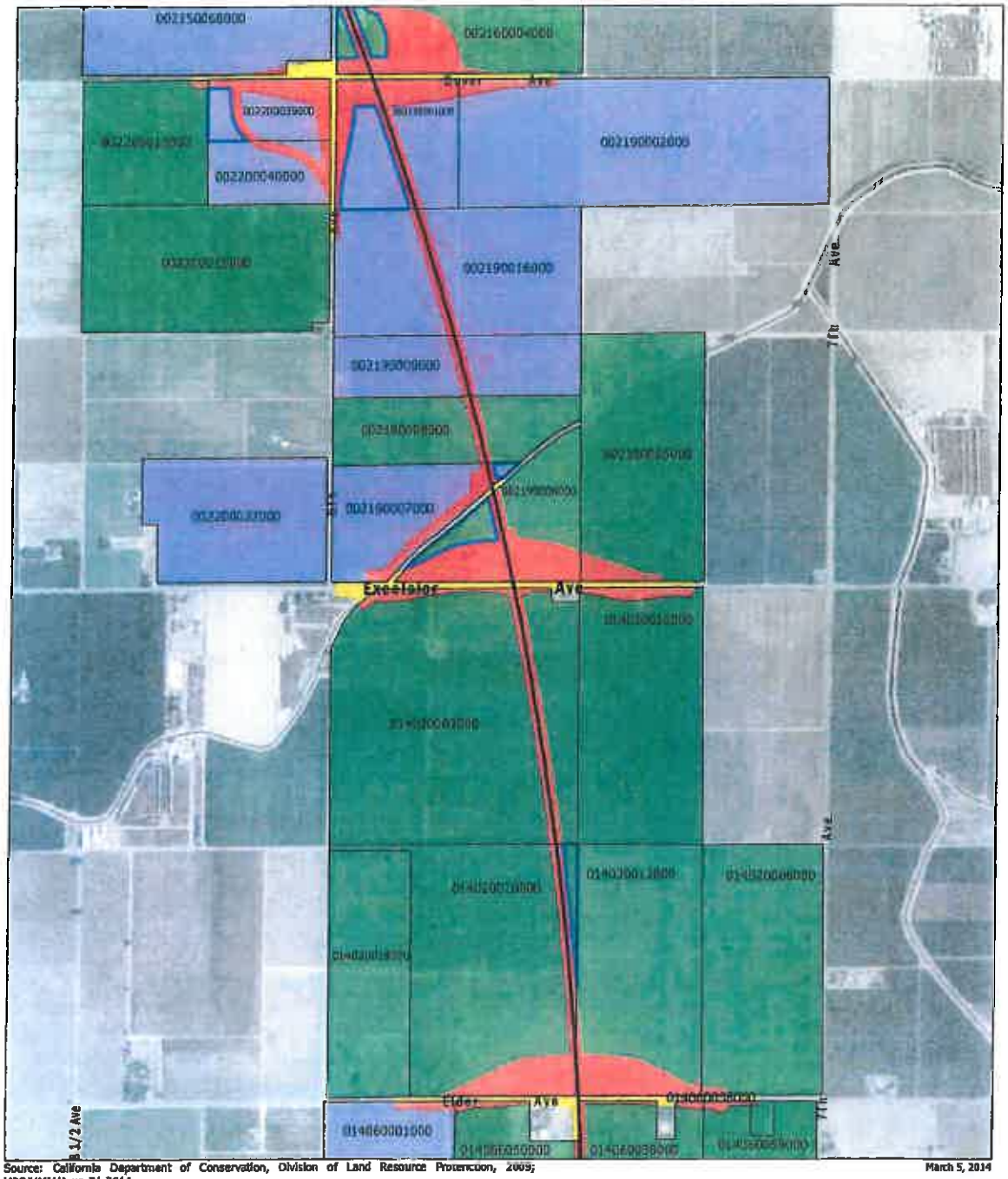
CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



Source: California Department of Conservation, Division of Land Resource Protection, 2009; URS/HMM/Arup JV, 2014.

March 5, 2014

N

0 1,000 2,000 Feet

0 400 800 Meters

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Fresno to Bakersfield Williamson Act and Farmland Security Contracts
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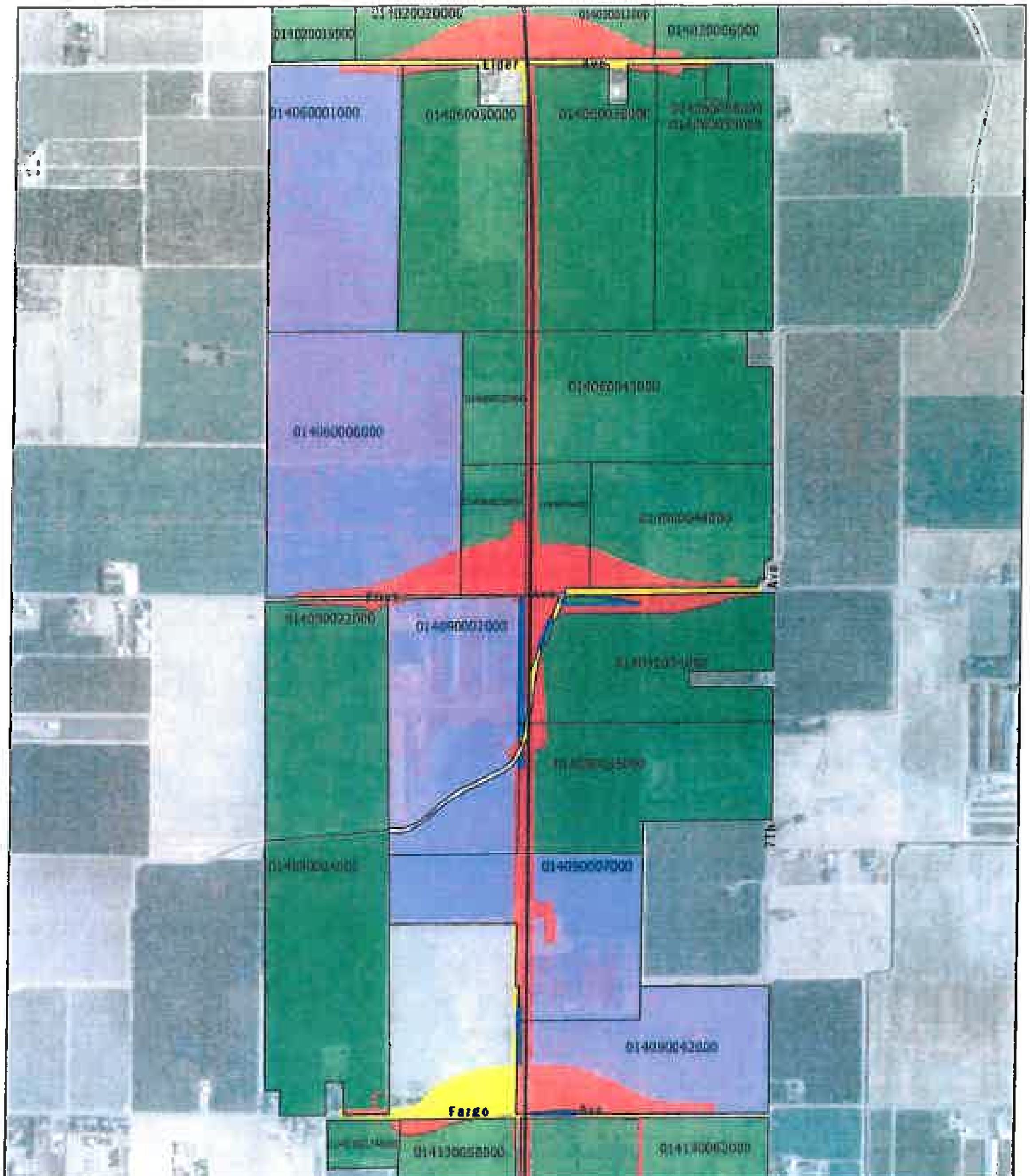
CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration



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N

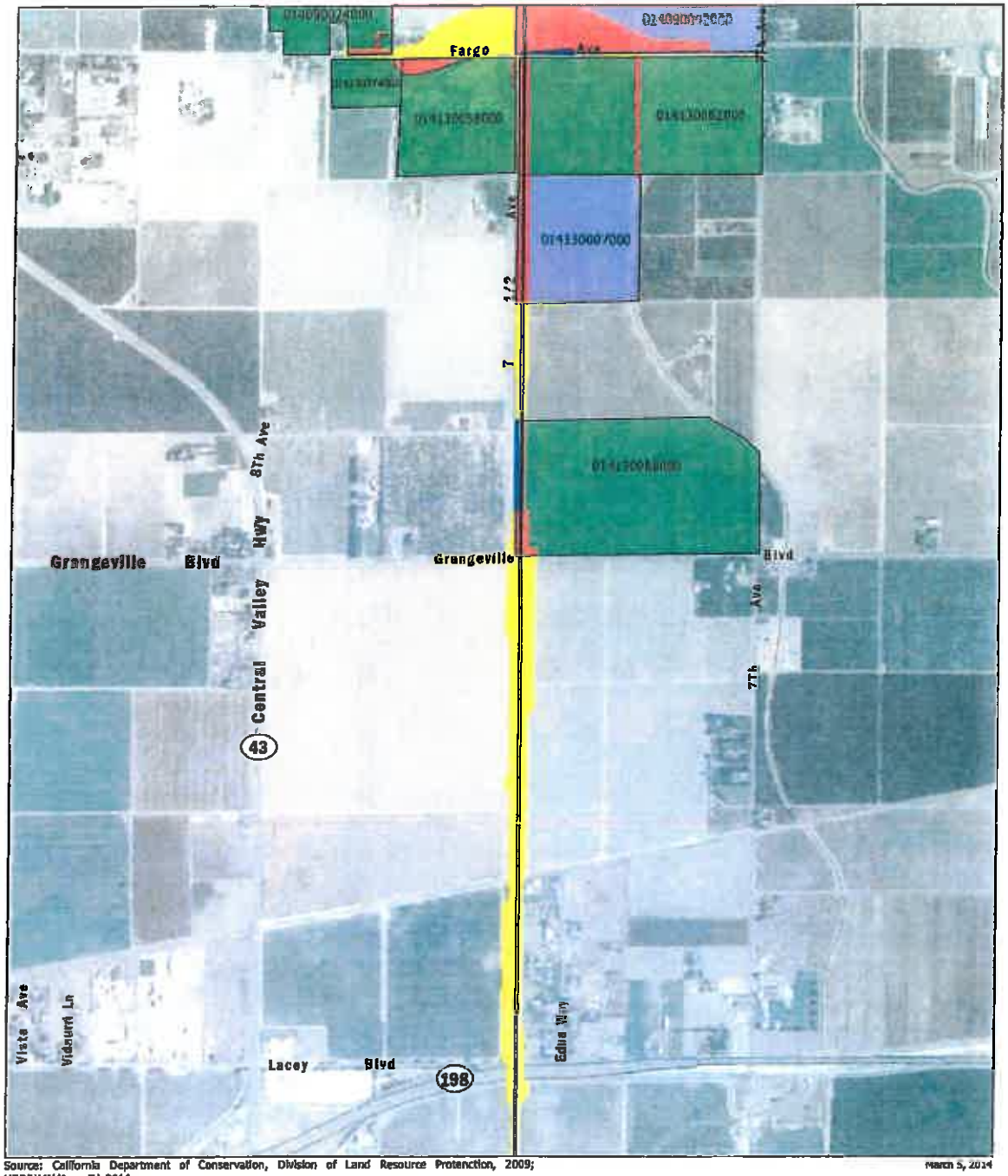
0 1,000 2,000
Feet

0 400 800
Meters

Fresno to Bakersfield
Williamson Act and
Farmland Security Contracts

County: KINGS

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



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N

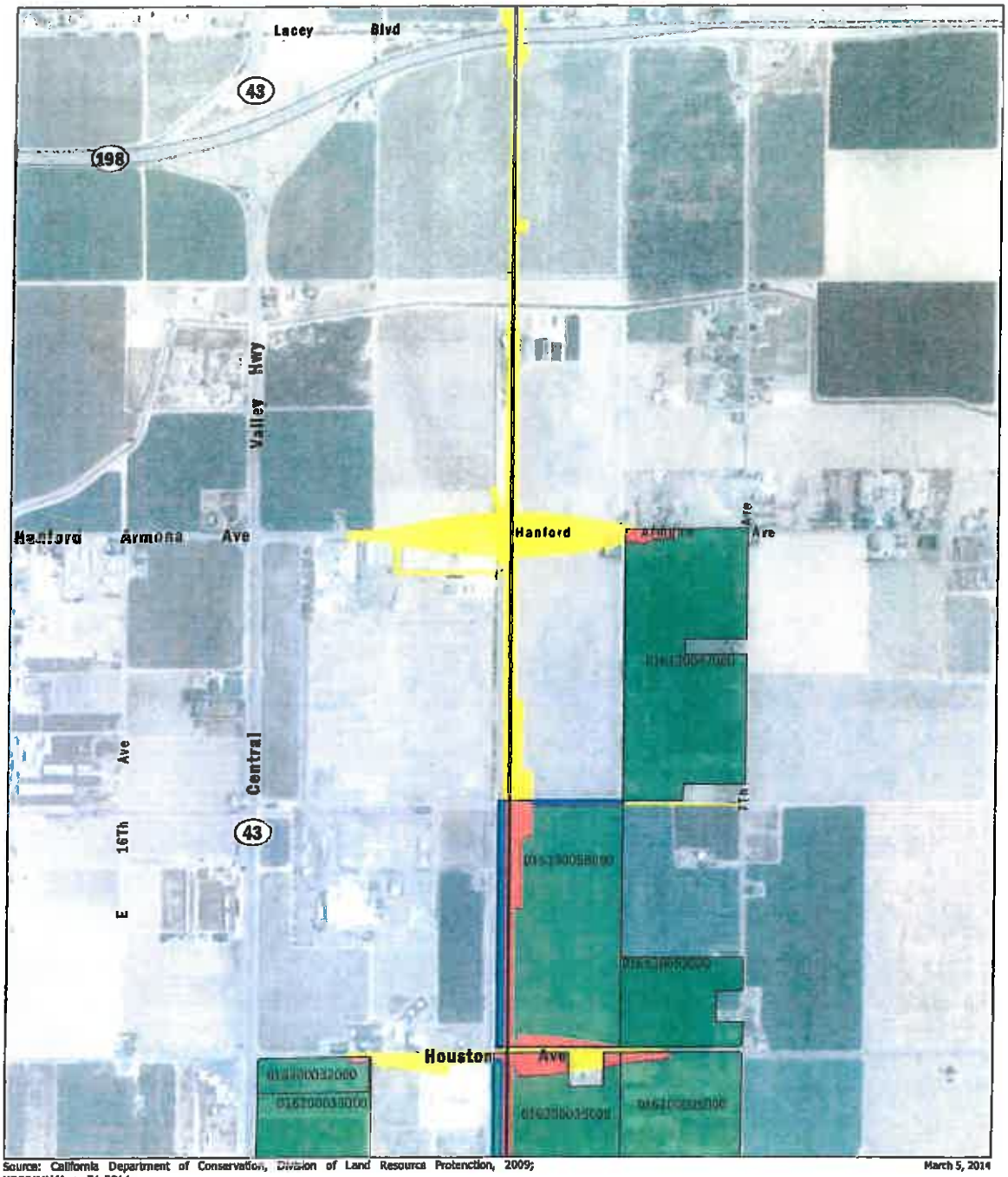
0 1,000 2,000 Feet

0 400 800 Meters

Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
Page 15 of 52
County: KINGS

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration



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N

0 1,000 2,000 Feet

0 400 800 Meters

Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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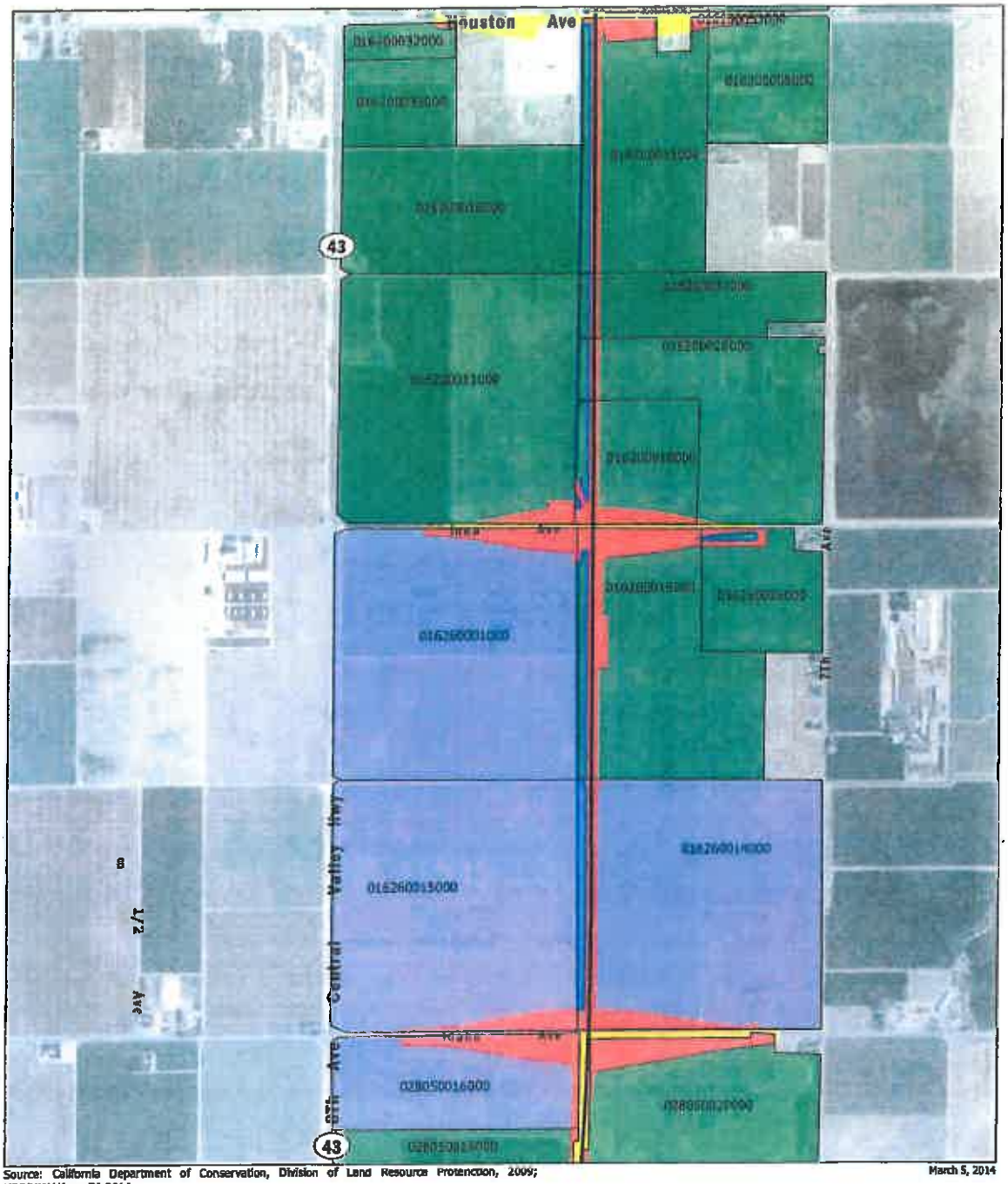
CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



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N

0 1,000 2,000 Feet

0 400 800 Meters

Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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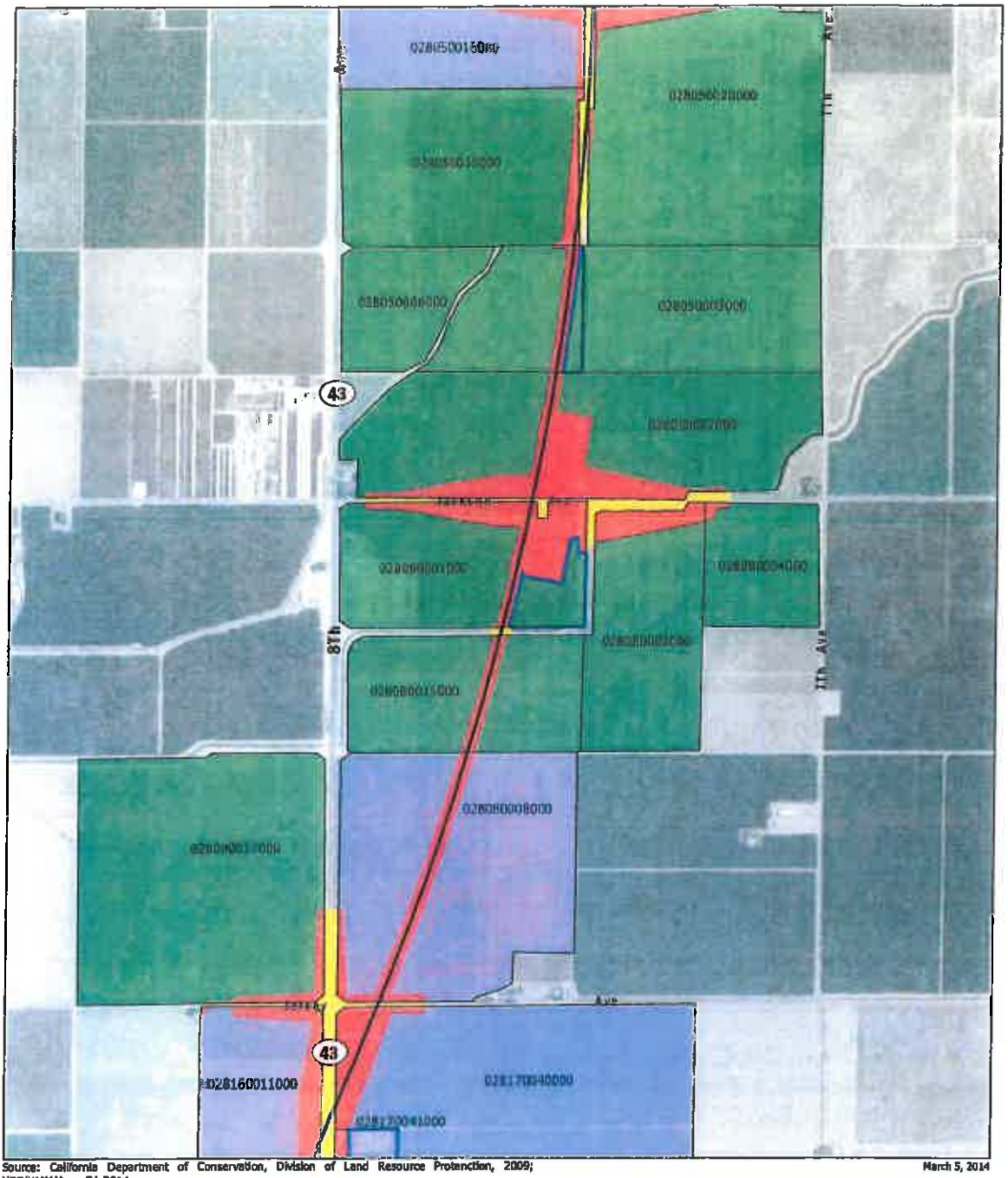
CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



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N

0 1,000 2,000 Feet

0 400 800 Meters

Fresno to Bakersfield Williamson Act and Farmland Security Contracts

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD

Source: California Department of Conservation, Division of Land Resource Protection, 2009; URS/HMM/Arup JV, 2014.

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0 1,000 2,000 Feet

0 400 800 Meters

Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
Page 19 of 52
County: KINGS

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

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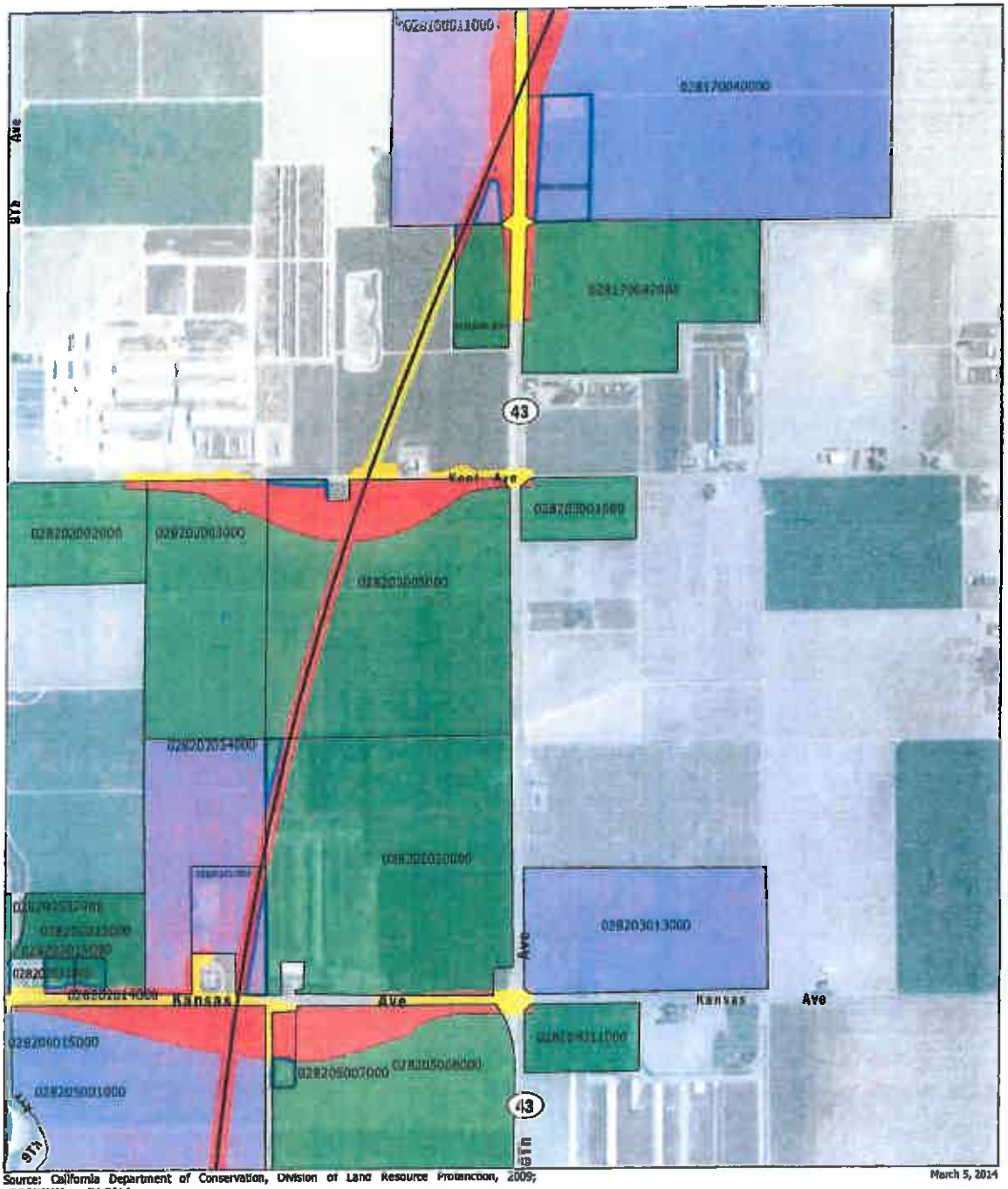

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N

0 1,000 2,000 Feet

0 400 800 Meters

Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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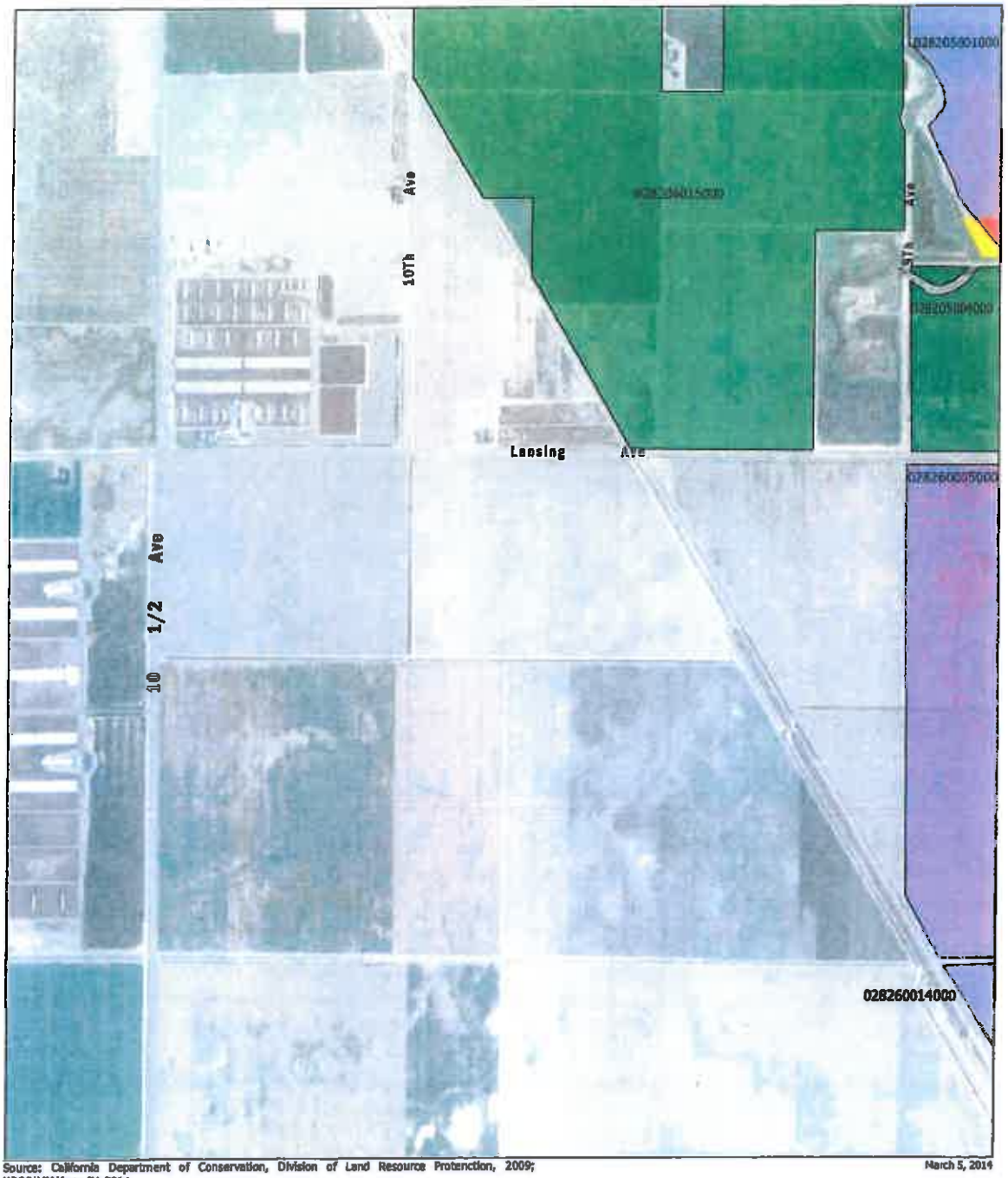
County: KINGS

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



Source: California Department of Conservation, Division of Land Resource Protection, 2009; URS/HMM/Arup JV, 2014.

March 5, 2014

Williamson Act parcel
- Parcel area impacted by footprint
- Farmland Security Zone
- Non-Prime
- Prime
- *Labeled as APN

- Proposed Preferred Alternative
- Proposed Preferred Alternative footprint
- Agricultural parcel boundary
- Uneconomic portion of agricultural parcel
- County boundary

N

0 1,000 2,000 Feet

0 400 800 Meters

Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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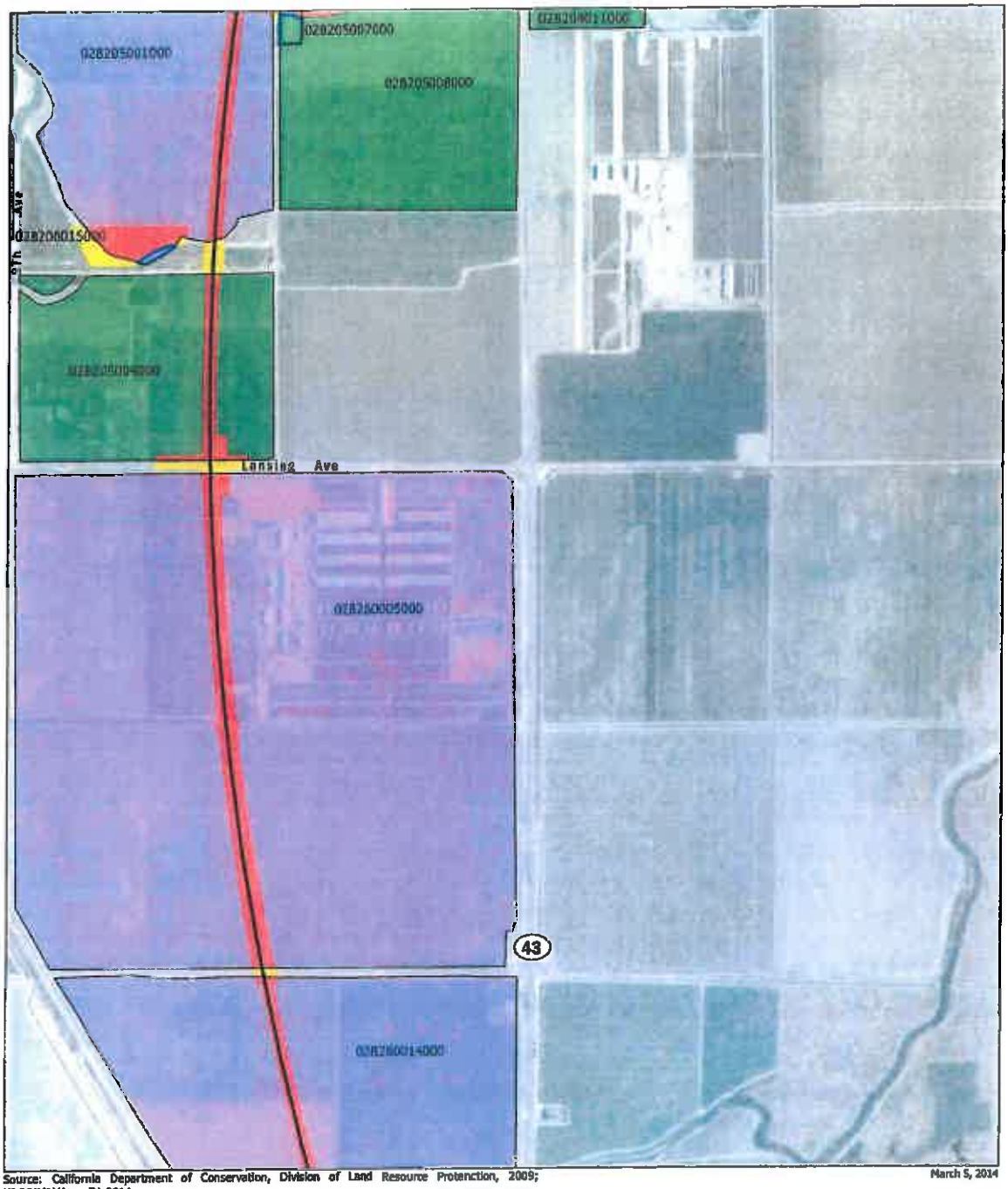
County: KINGS

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



Source: California Department of Conservation, Division of Land Resource Protection, 2009; URS/HMM/Arup JV, 2014.

March 5, 2014

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- County boundary

N

0 1,000 2,000 Feet

0 400 800 Meters

Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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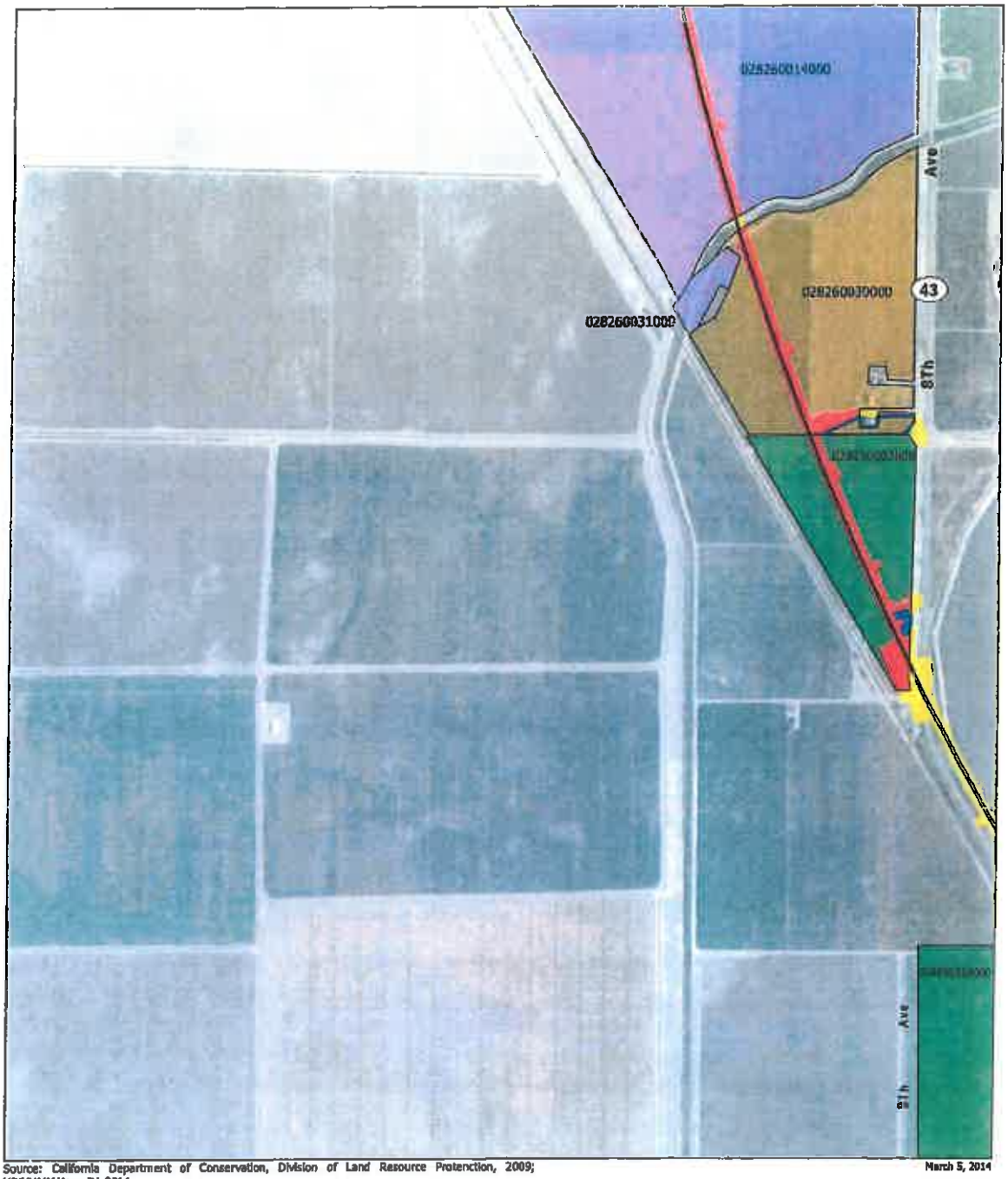
County: KINGS

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



Source: California Department of Conservation, Division of Land Resource Protection, 2009; URS/HNM/Arup JV, 2014.

March 5, 2014

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N

0 1,000 2,000 Feet

0 400 800 Meters

Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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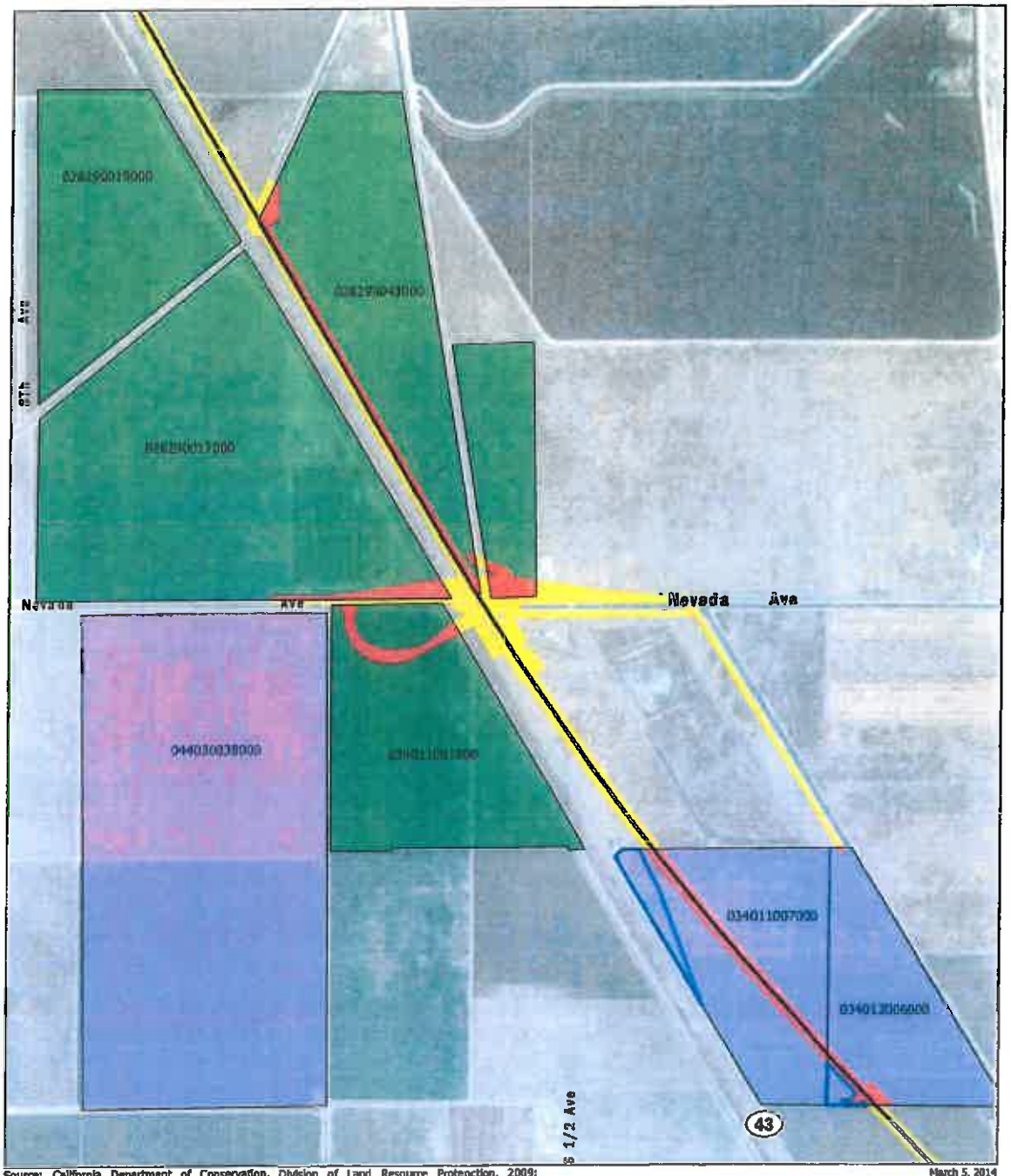
County: KINGS

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



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March 5, 2014

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0 1,000 2,000 Feet
0 400 800 Meters

Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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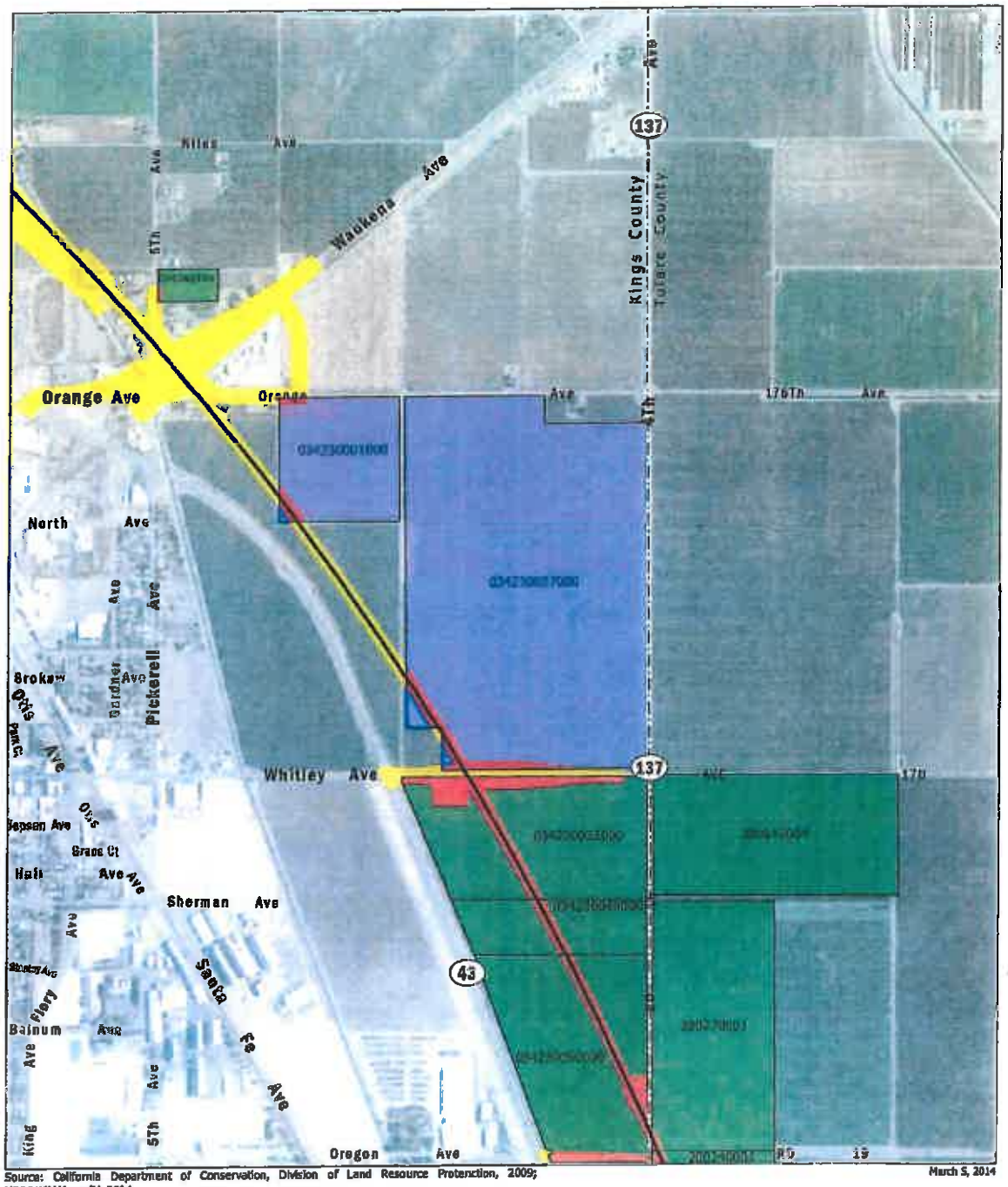
County: KINGS

CALIFORNIA High-Speed Rail Authority
U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



Source: California Department of Conservation, Division of Land Resource Protection, 2009; URS/HMM/Arup JV, 2014.

March 5, 2014

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0 1,000 2,000 Feet
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Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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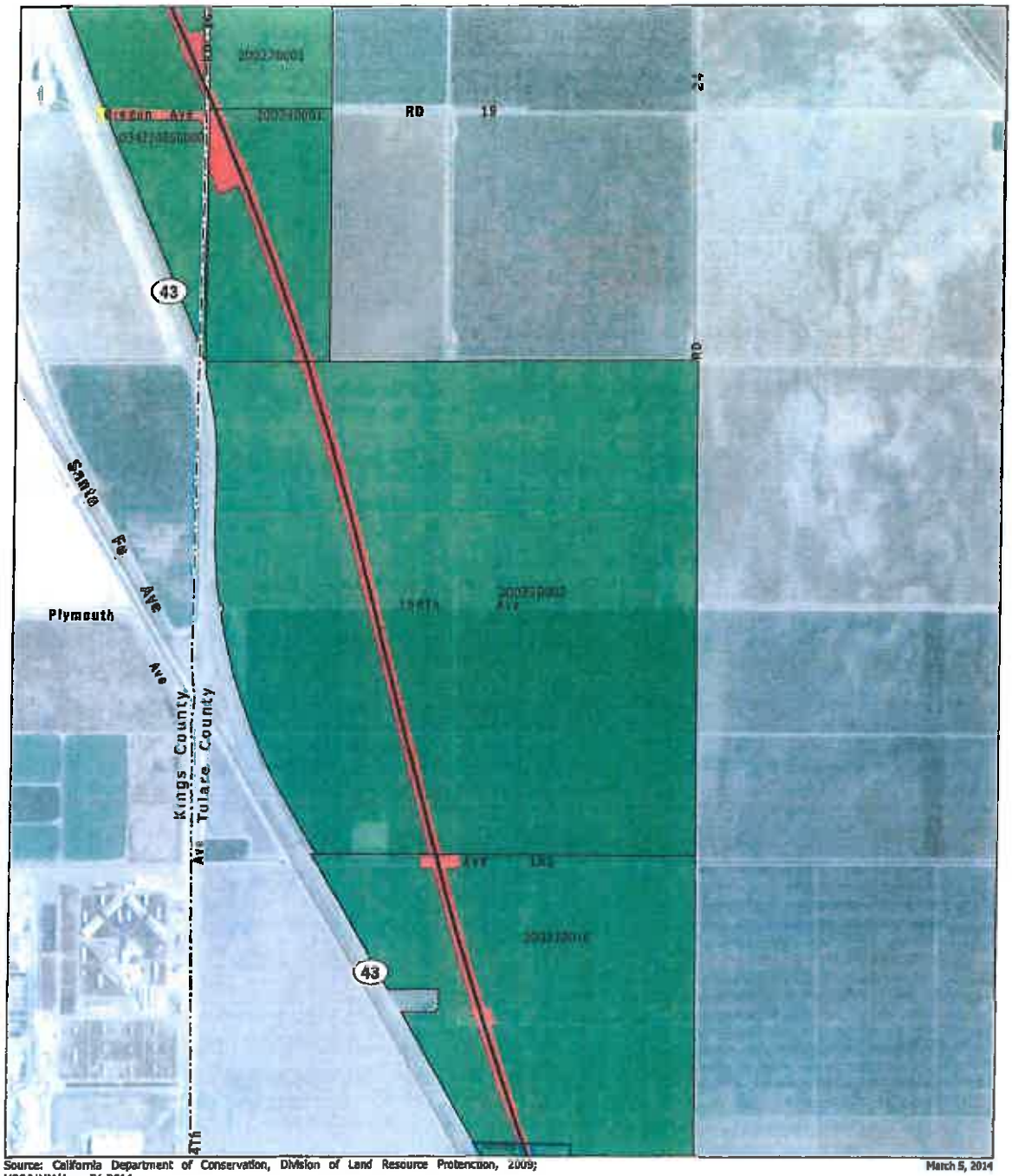
County: KINGS/TULARE

CALIFORNIA High-Speed Rail Authority
U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



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0 1,000 2,000 Feet

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Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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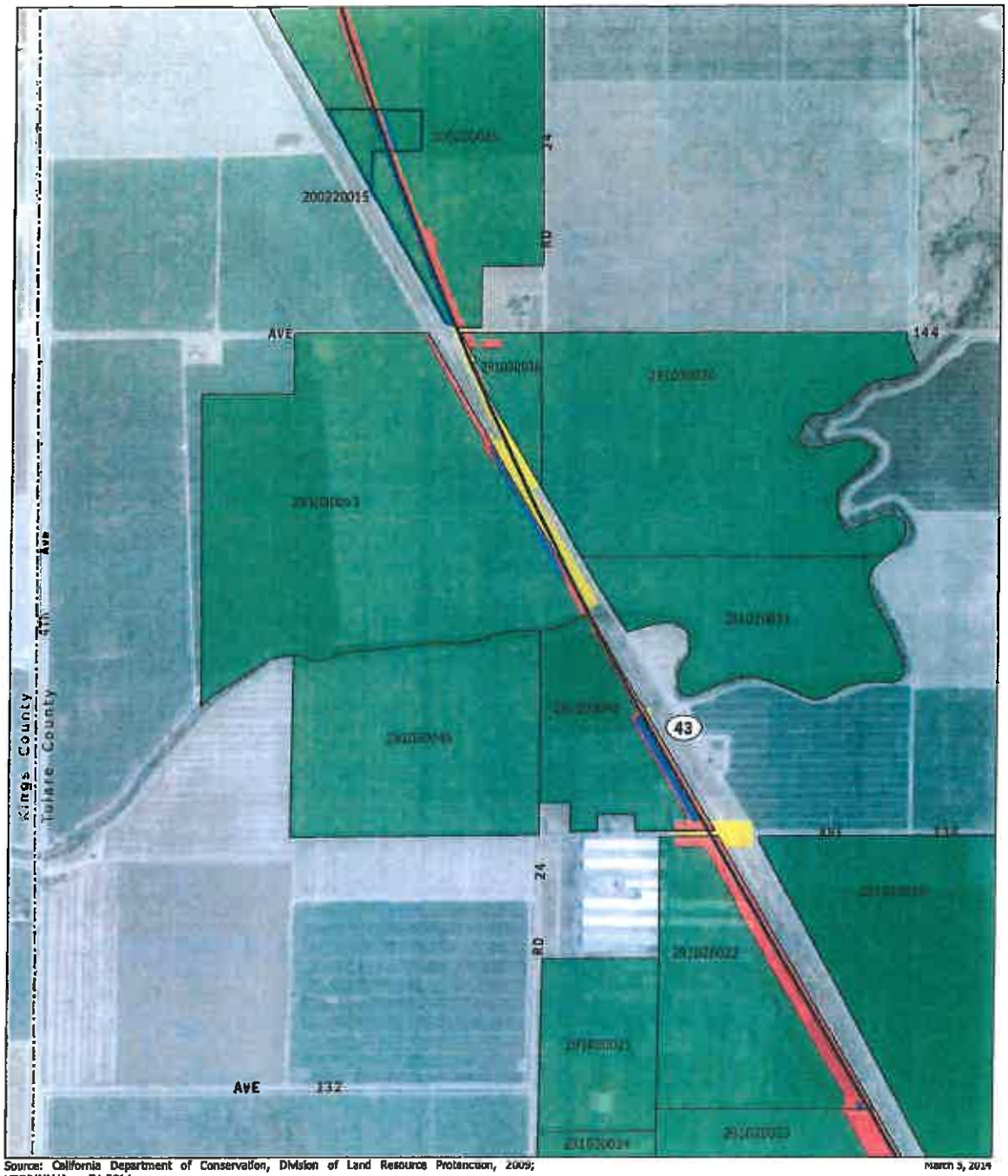
County: KINGS/TULARE

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



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Fresno to Bakersfield Williamson Act and Farmland Security Contracts

County: TULARE

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

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Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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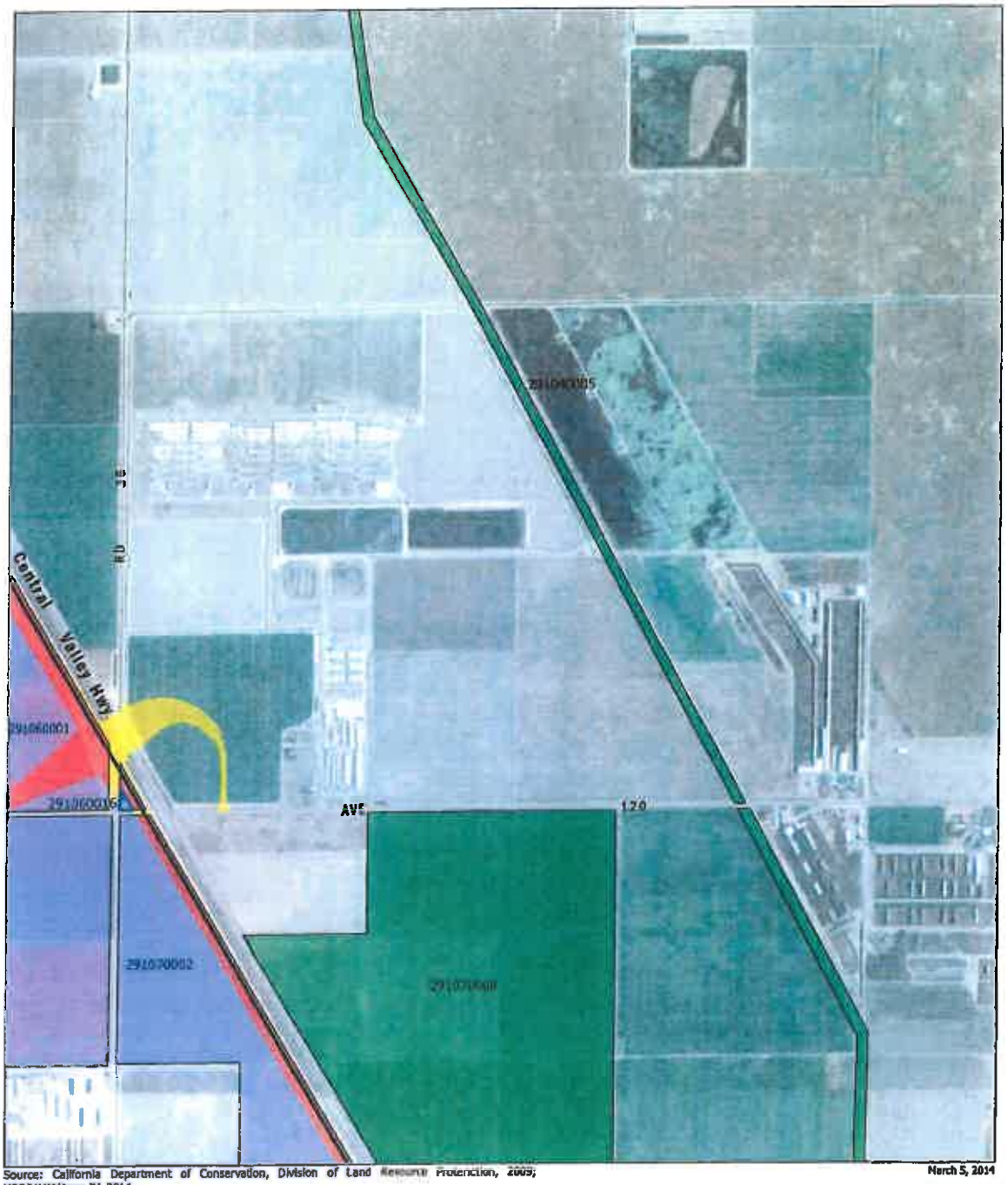
County: TULARE

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



Source: California Department of Conservation, Division of Land Resource Protection, 2005; URS/HMM/Arup JV, 2014.

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Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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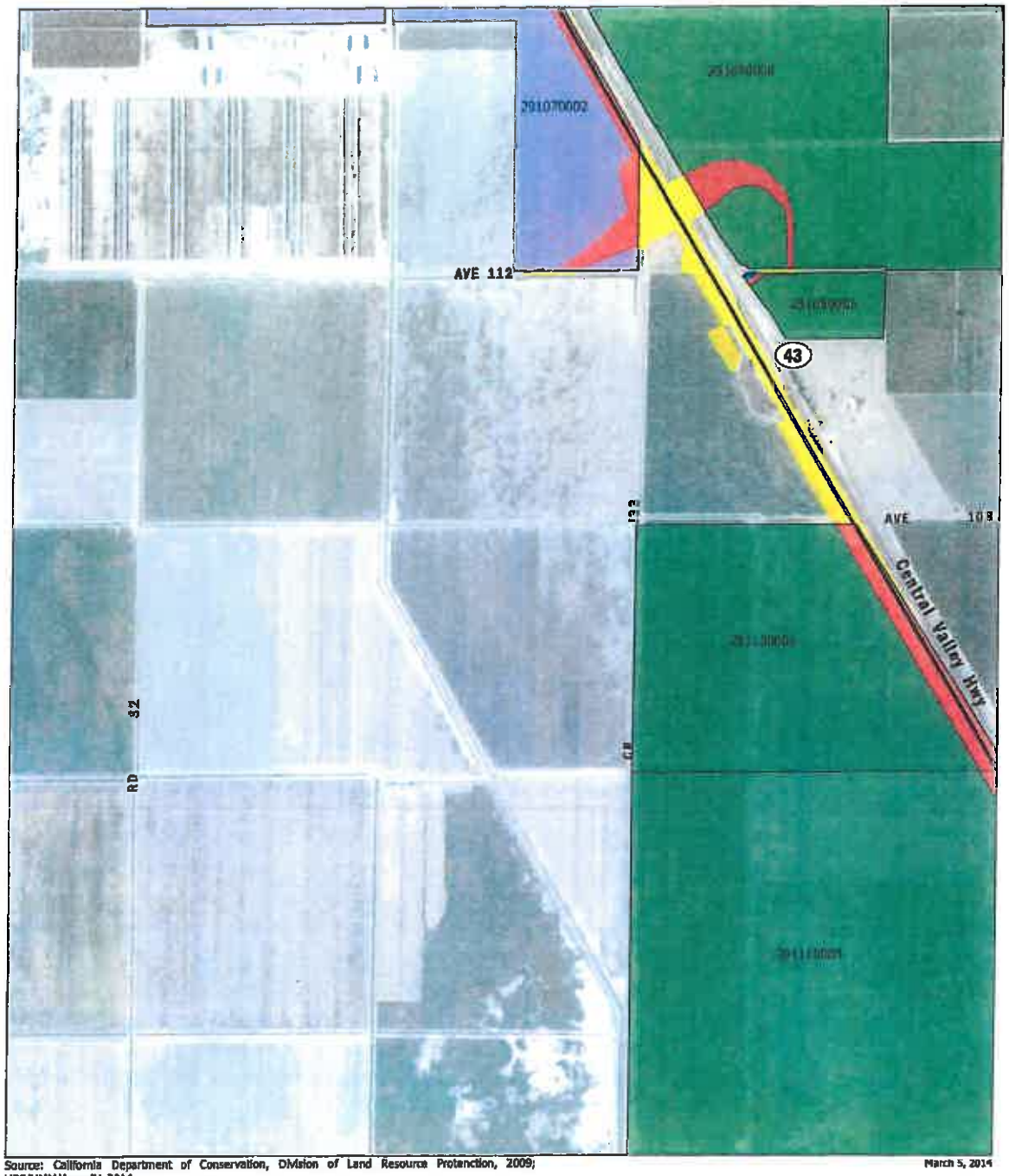
County: TULARE

CALIFORNIA High-Speed Rail Authority
U.S. Department of Transportation Federal Railroad Administration



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Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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County: TULARE

Source: California Department of Conservation, Division of Land Resource Protection, 2009; URS/HMM/Arup JV, 2014.

March 5, 2014

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Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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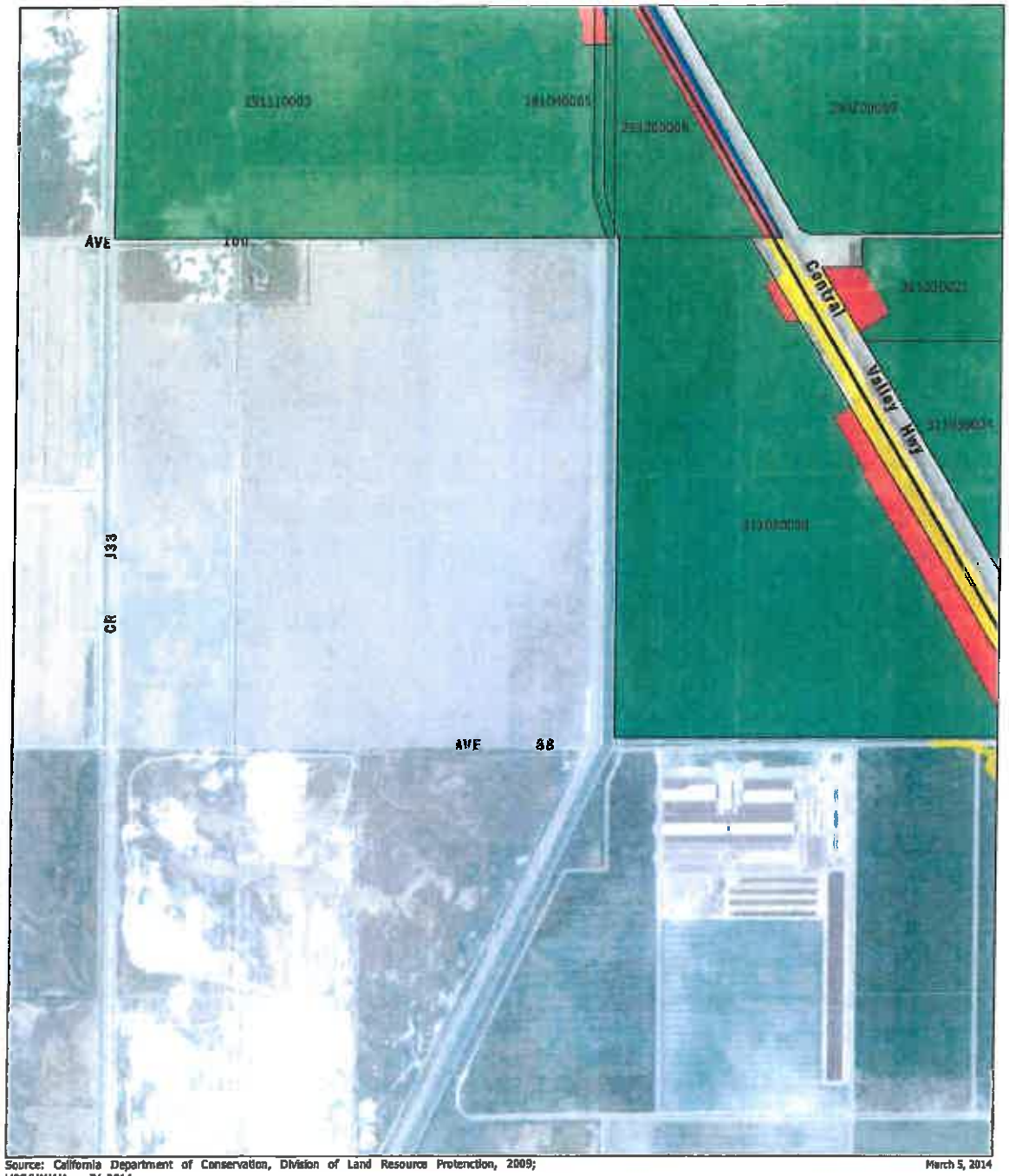
County: TULARE

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



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March 5, 2014

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Fresno to Bakersfield Williamson Act and Farmland Security Contracts
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CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD

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0 1,000 2,000 Feet
0 400 800 Meters

Fresno to Bakersfield Williamson Act and Farmland Security Contracts
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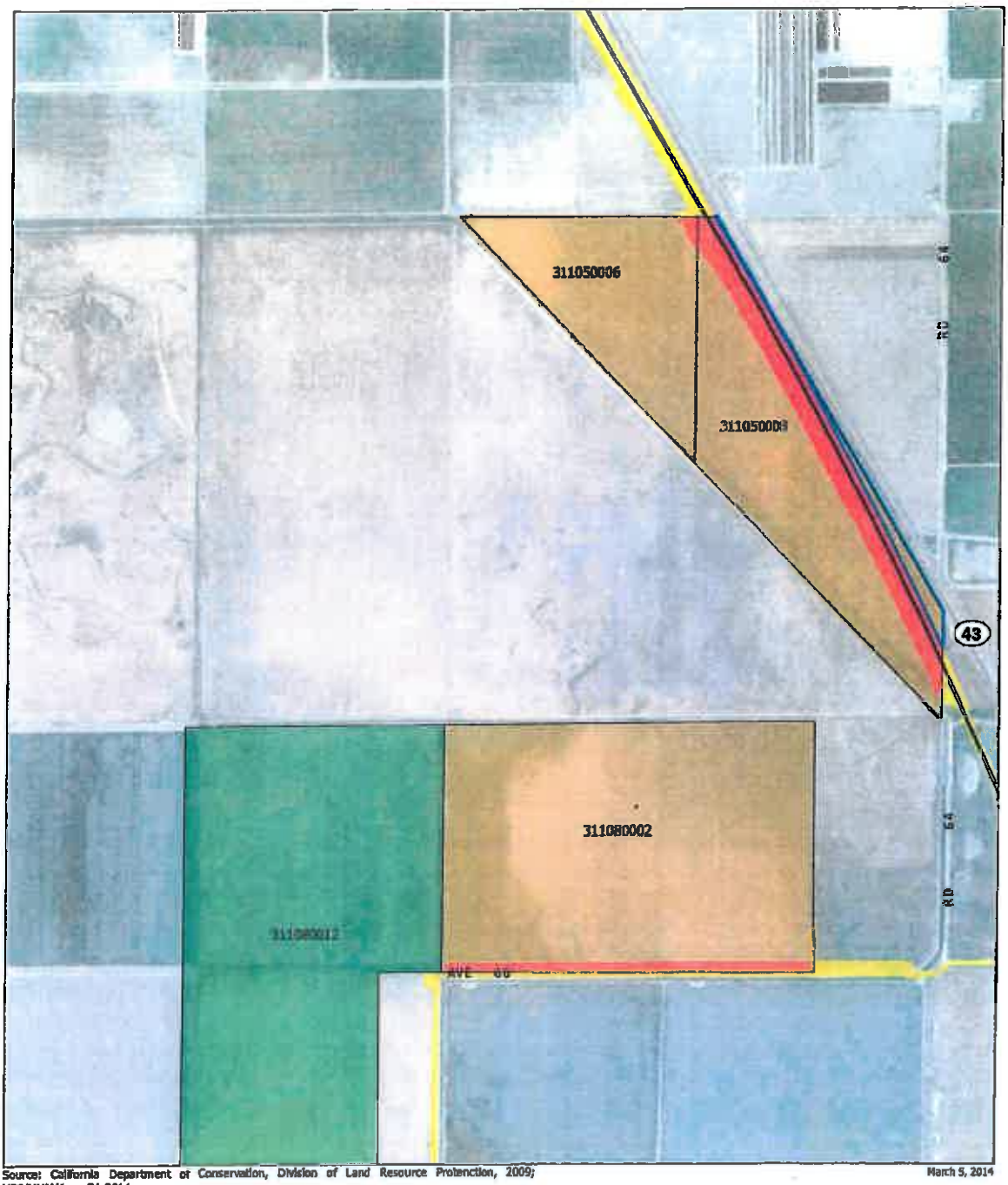
County: TULARE

CALIFORNIA High-Speed Rail Authority
U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



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March 5, 2014

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Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD

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0 1,000 2,000 Feet

0 400 800 Meters

Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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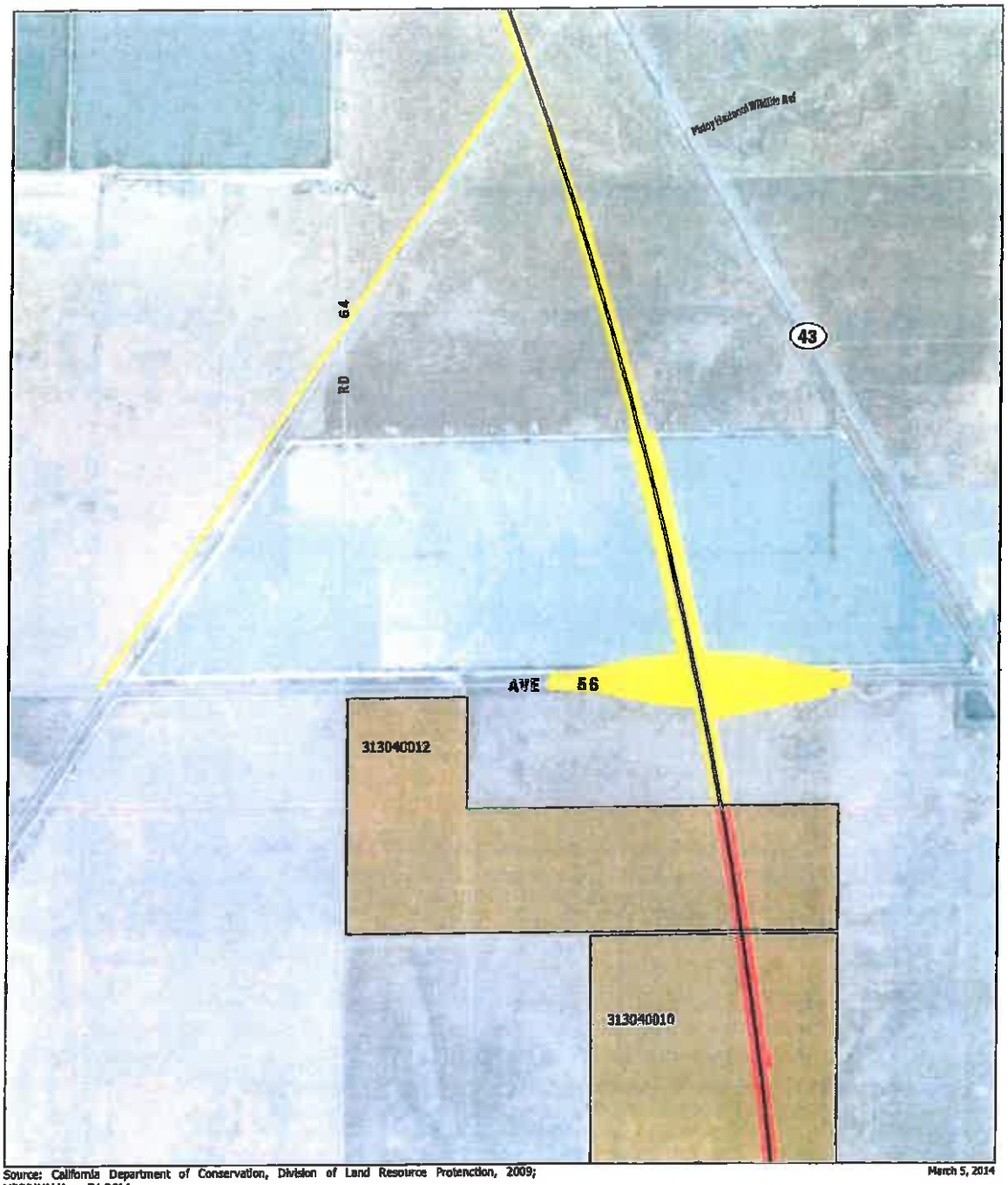
County: TULARE

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



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N

0 1,000 2,000 Feet

0 400 800 Meters

Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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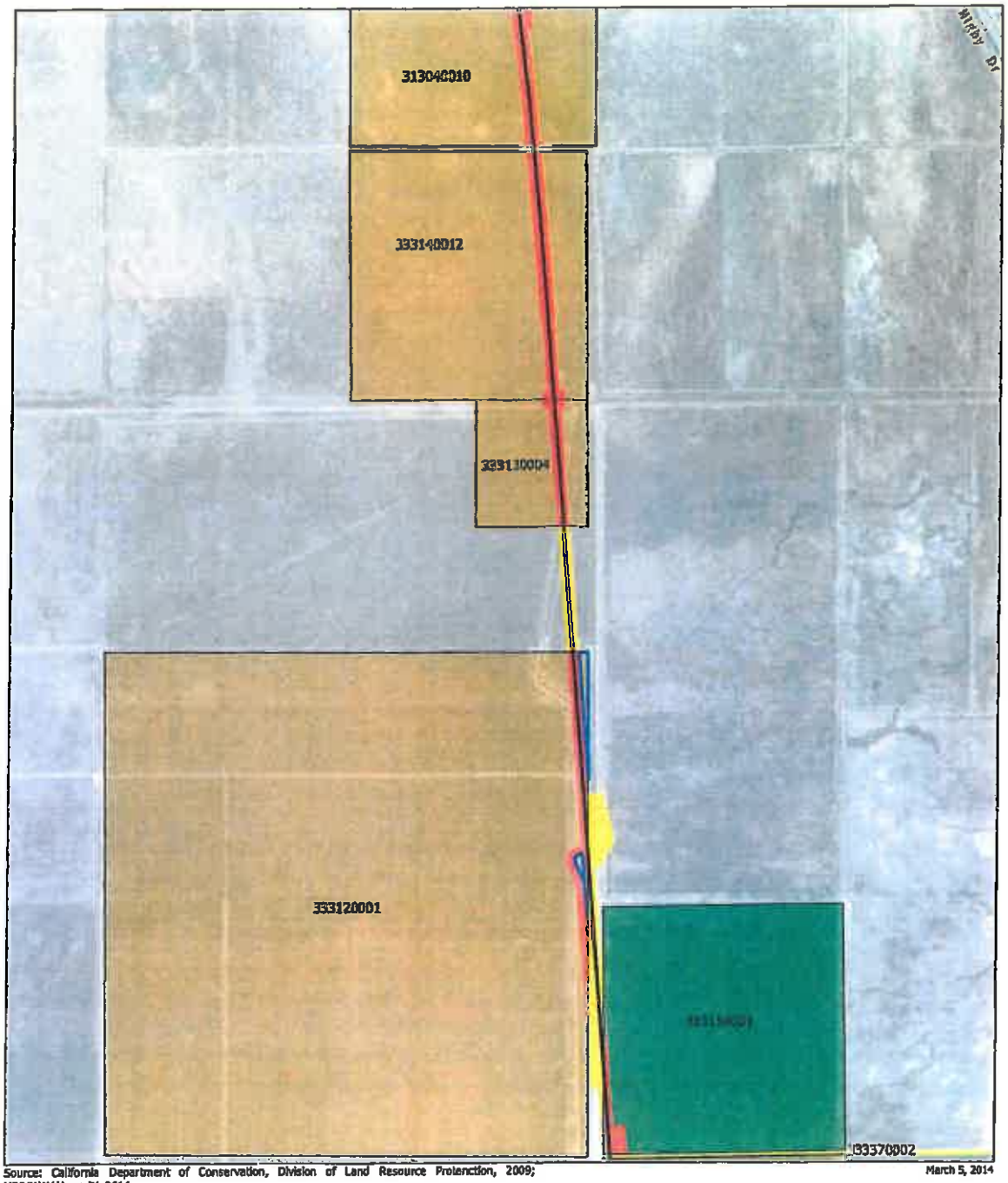
County: TULARE

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



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N

0 1,000 2,000 Feet

0 400 800 Meters

Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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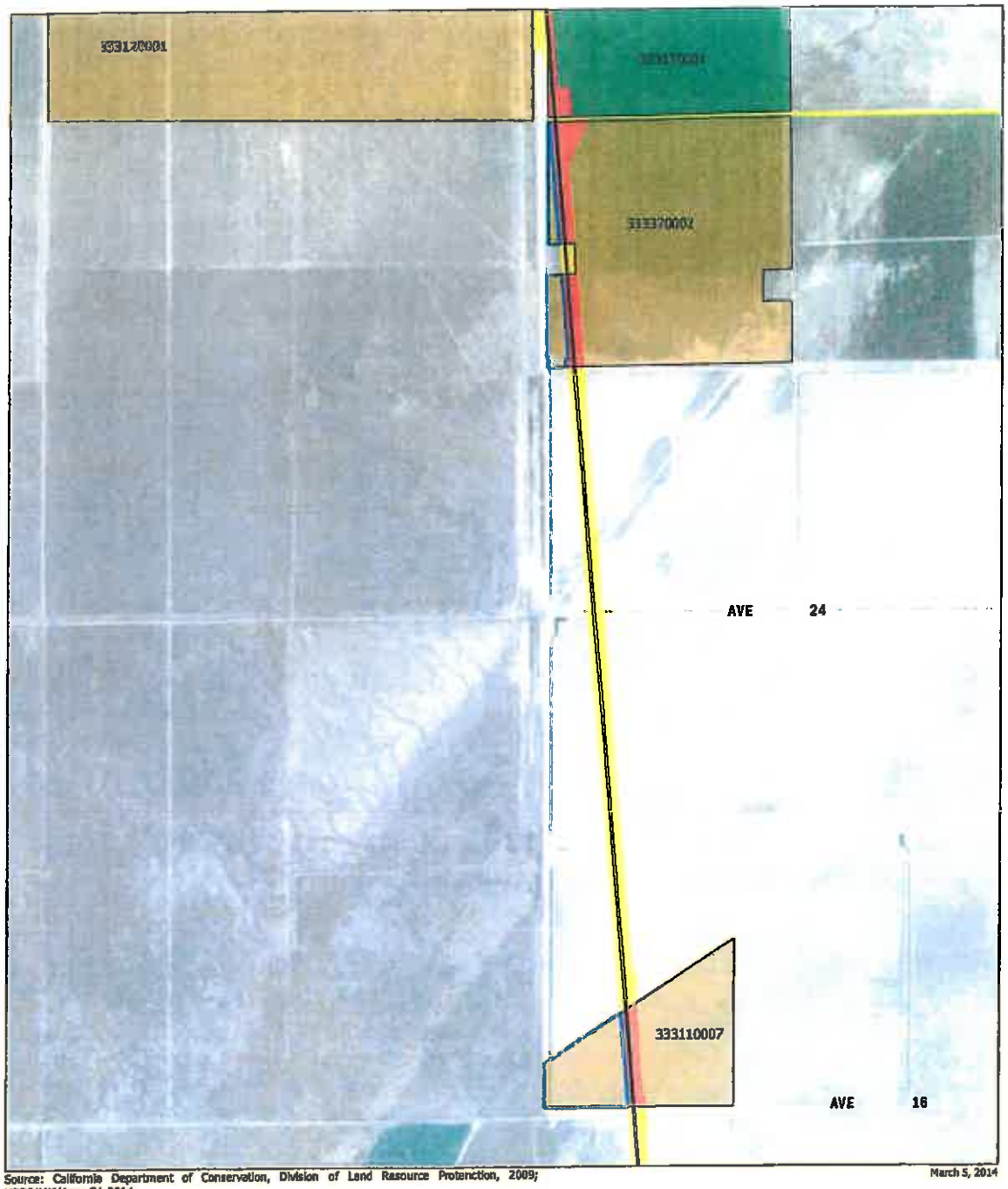
County: TULARE

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



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Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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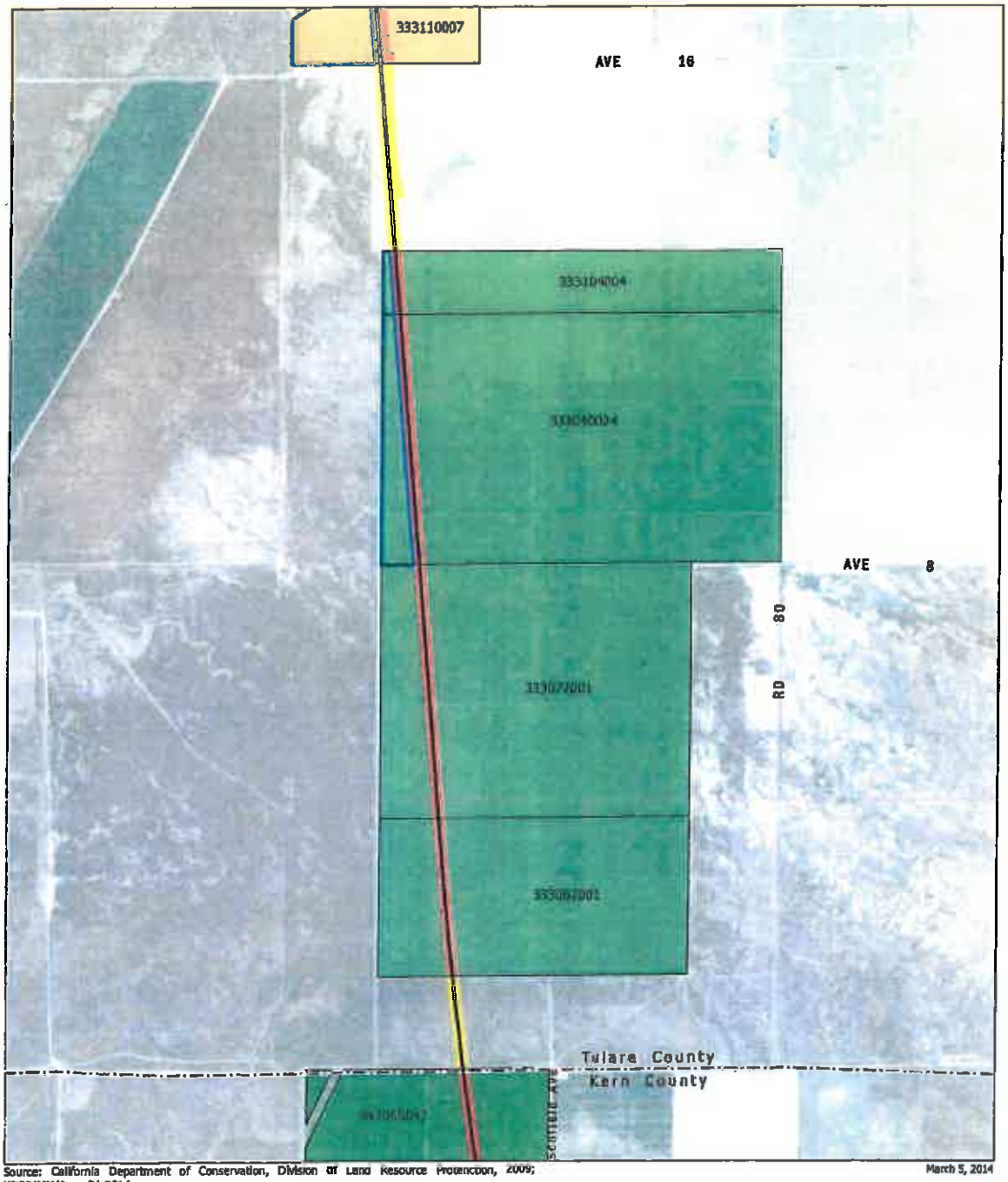
County: TULARE

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



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Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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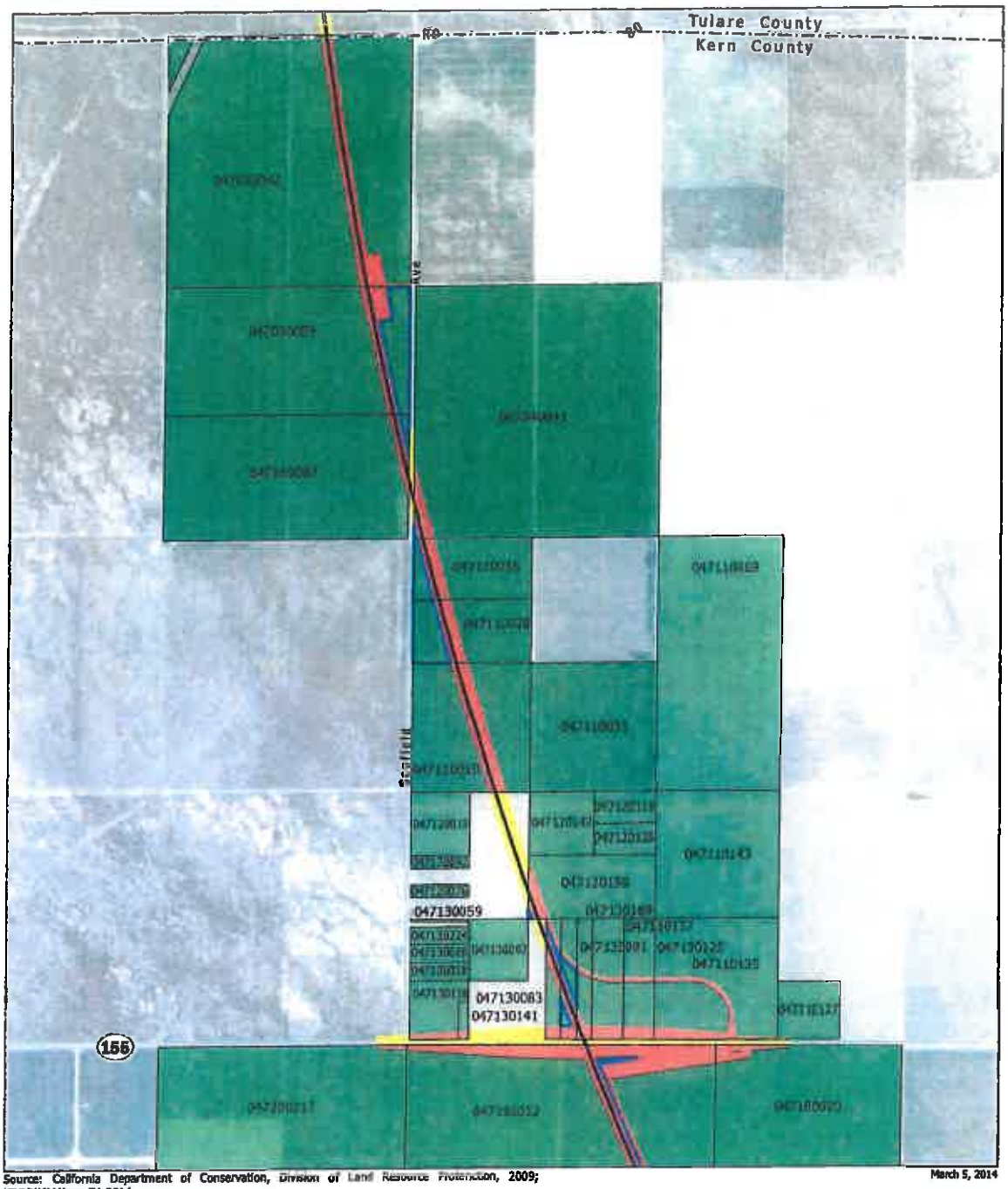
County: TULARE

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



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Fresno to Bakersfield Williamson Act and Farmland Security Contracts
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CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD

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0 1,000 2,000 Feet
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Fresno to Bakersfield
Williamson Act and
Farmland Security Contracts
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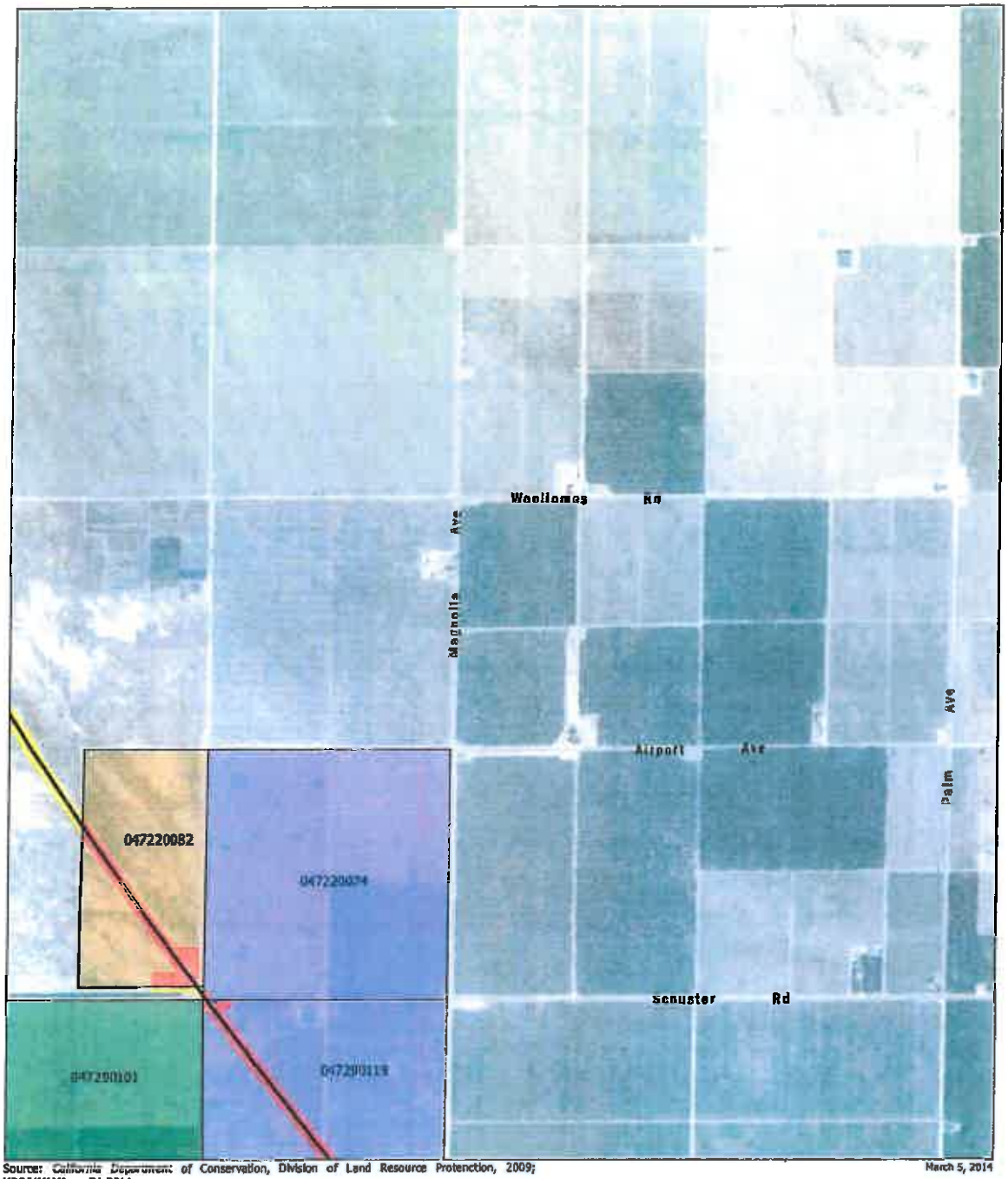
County: KERN

CALIFORNIA High-Speed Rail Authority
U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



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Fresno to Bakersfield Williamson Act and Farmland Security Contracts
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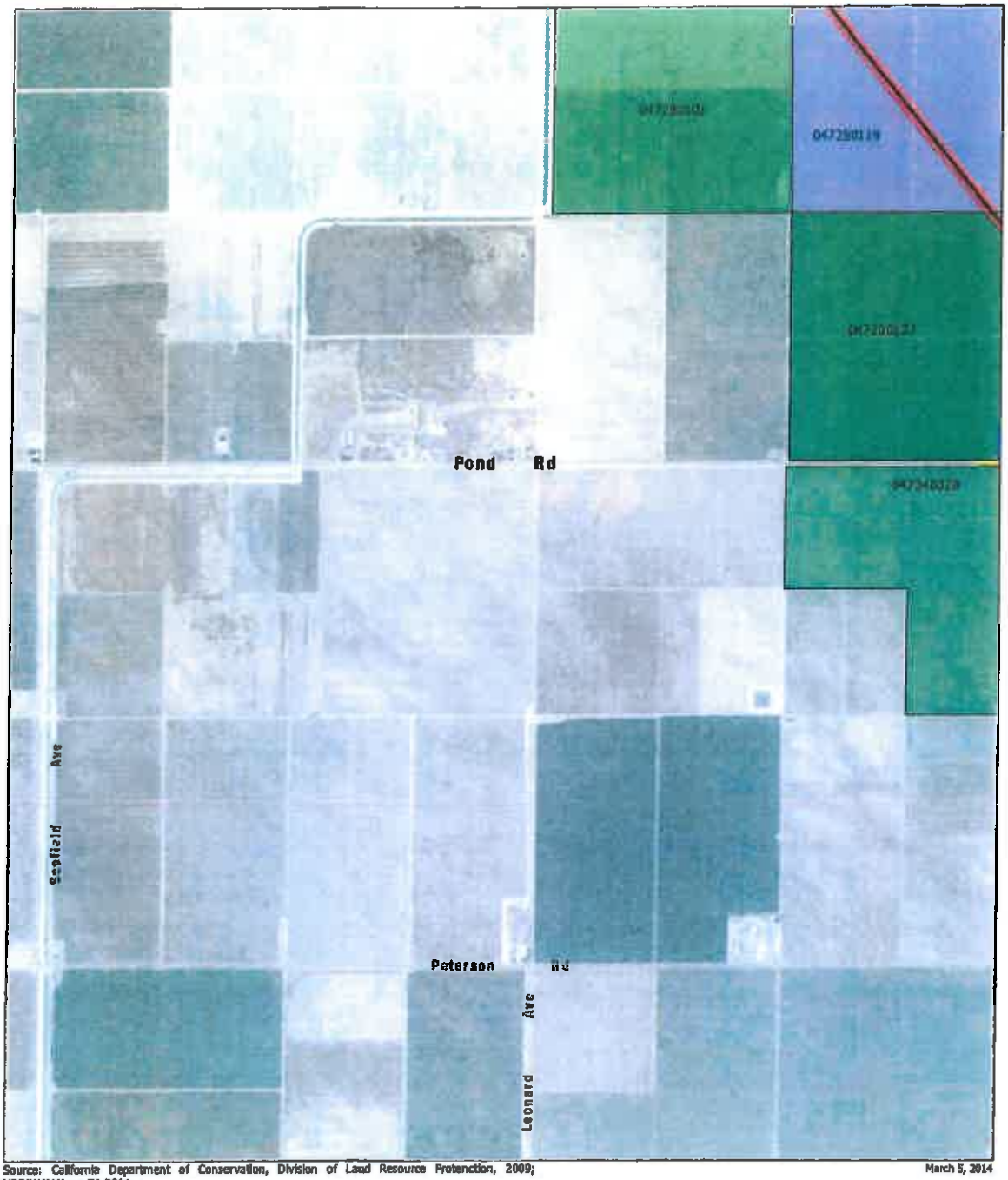
County: KERN

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



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Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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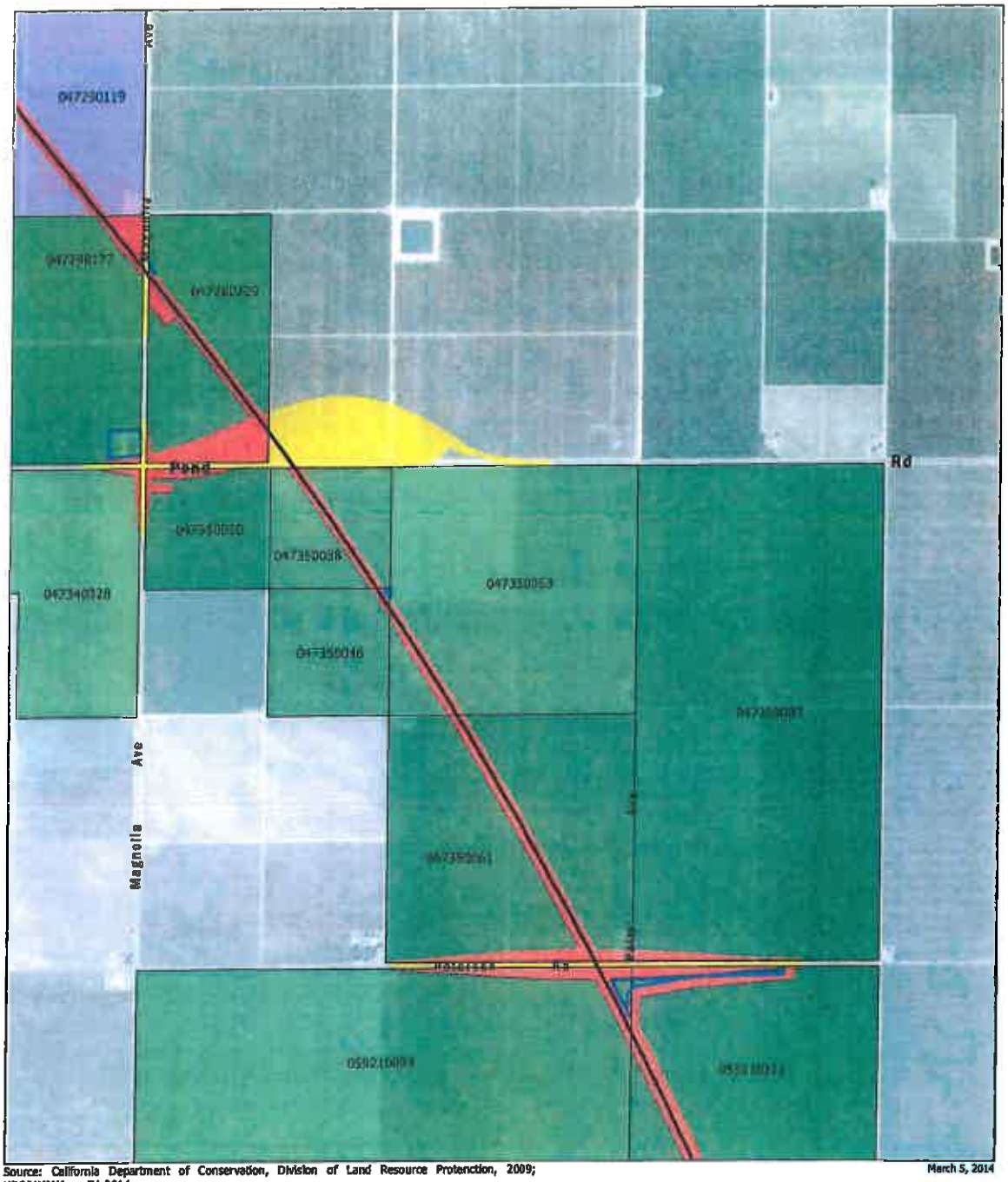
County: KERN

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



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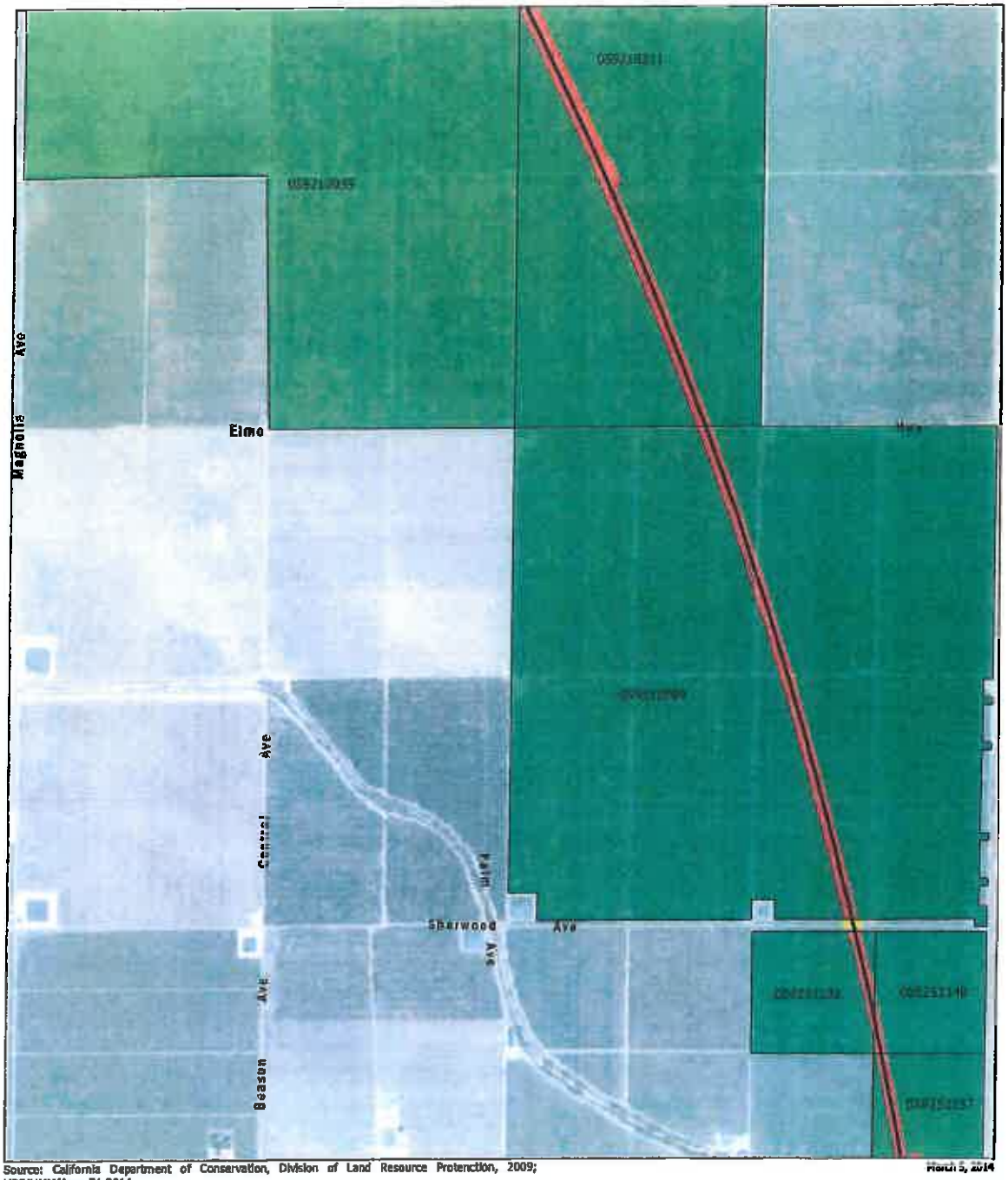
Fresno to Bakersfield Williamson Act and Farmland Security Contracts

County: KERN

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



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Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
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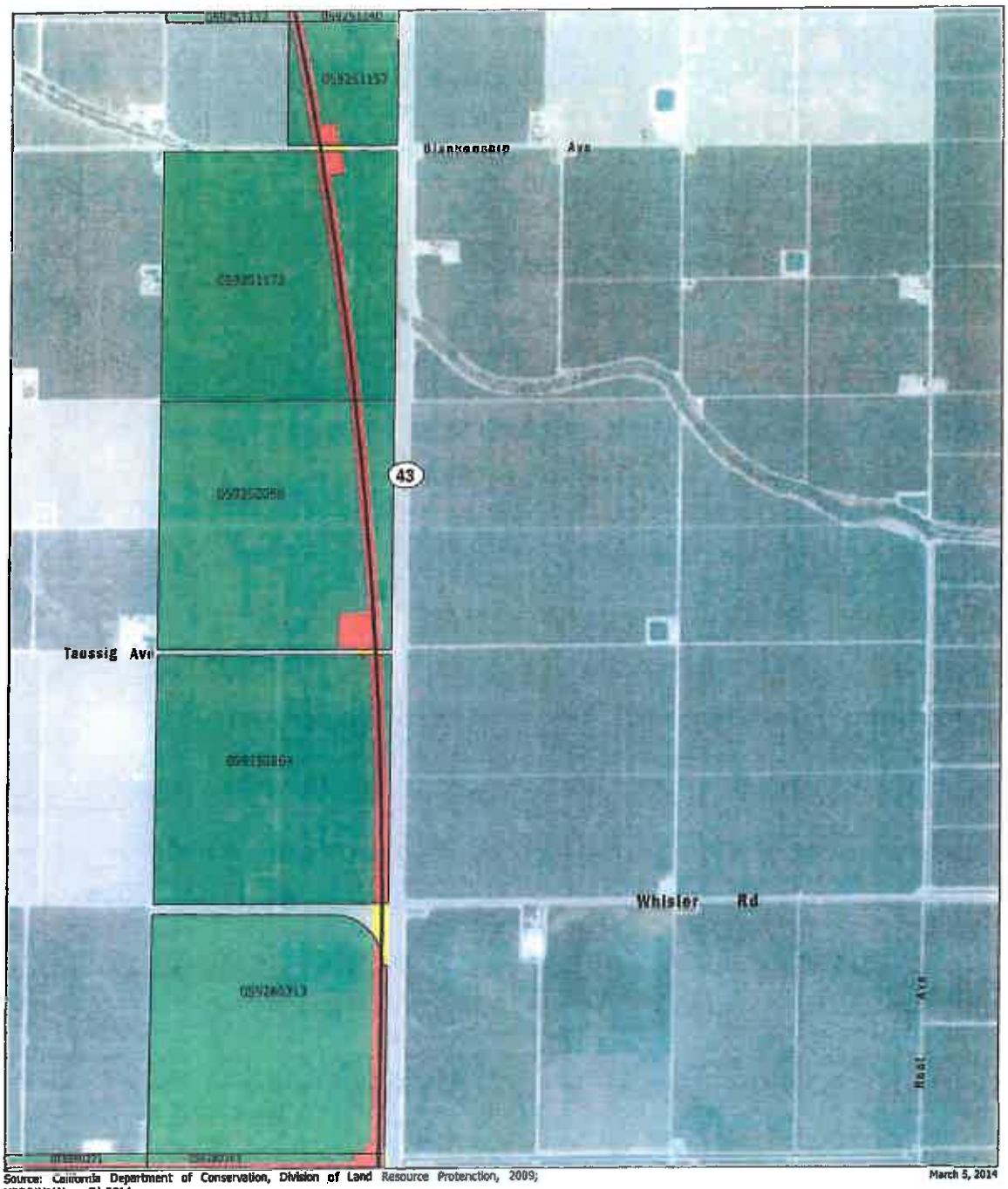
County: KERN

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



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Fresno to Bakersfield Williamson Act and Farmland Security Contracts
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CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD

Source: California Department of Conservation, Division of Land Resource Protection, 2009; URS/HMM/Arup JV, 2014.

March 5, 2014

Williamson Act parcel
- Parcel area impacted by footprint
- Farmland Security Zone
- Non-Prime
- Prime
- *Labeled as APN

- Proposed Preferred Alternative
- Proposed Preferred Alternative footprint
- Agricultural parcel boundary
- Uneconomic portion of agricultural parcel
- County boundary

N

0 1,000 2,000 Feet

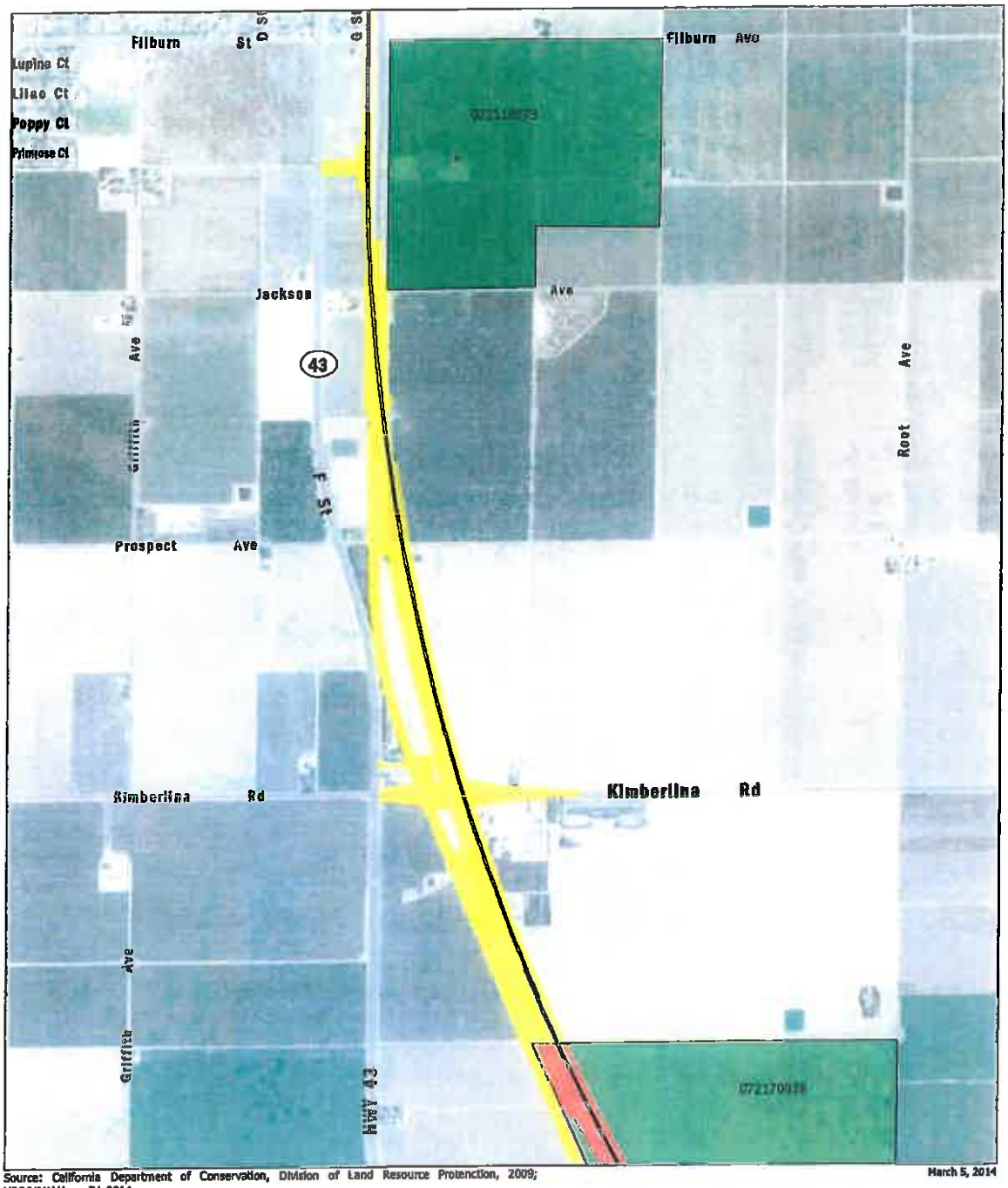
0 400 800 Meters

Fresno to Bakersfield Williamson Act and Farmland Security Contracts
Page 47 of 52
County: KERN

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



Source: California Department of Conservation, Division of Land Resource Protection, 2009; URS/HMM/Arup JV, 2014.

March 5, 2014

Williamson Act parcel
- Parcel area impacted by footprint
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- Agricultural parcel boundary
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N

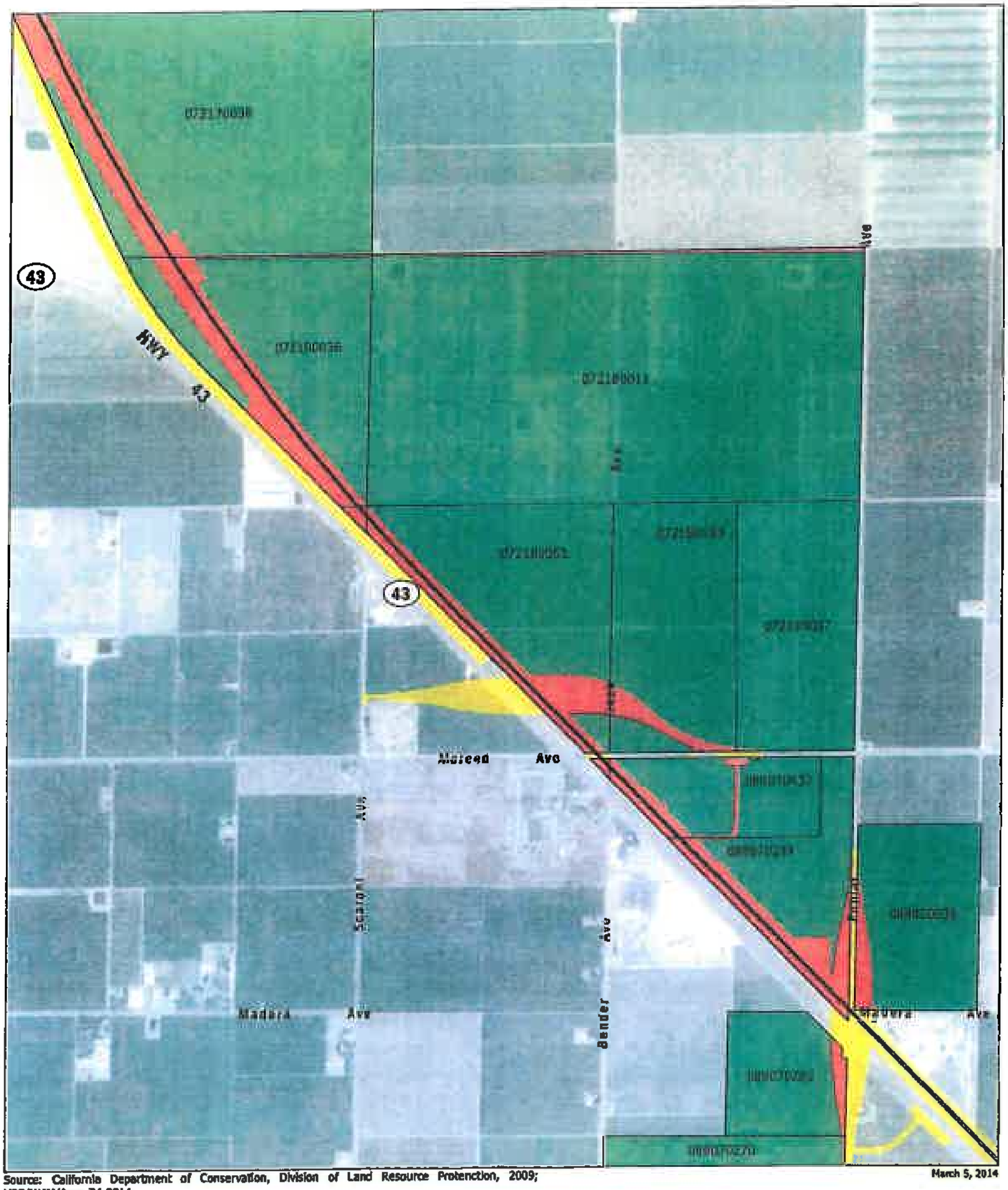
0 1,000 2,000 Feet

0 400 800 Meters

Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
Page 48 of 52
County: KERN

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration



Source: California Department of Conservation, Division of Land Resource Protenction, 2009; URS/HMM/Arup JV, 2014.

March 5, 2014

Williamson Act parcel

- Parcel area impacted by footprint
- Farmland Security Zone
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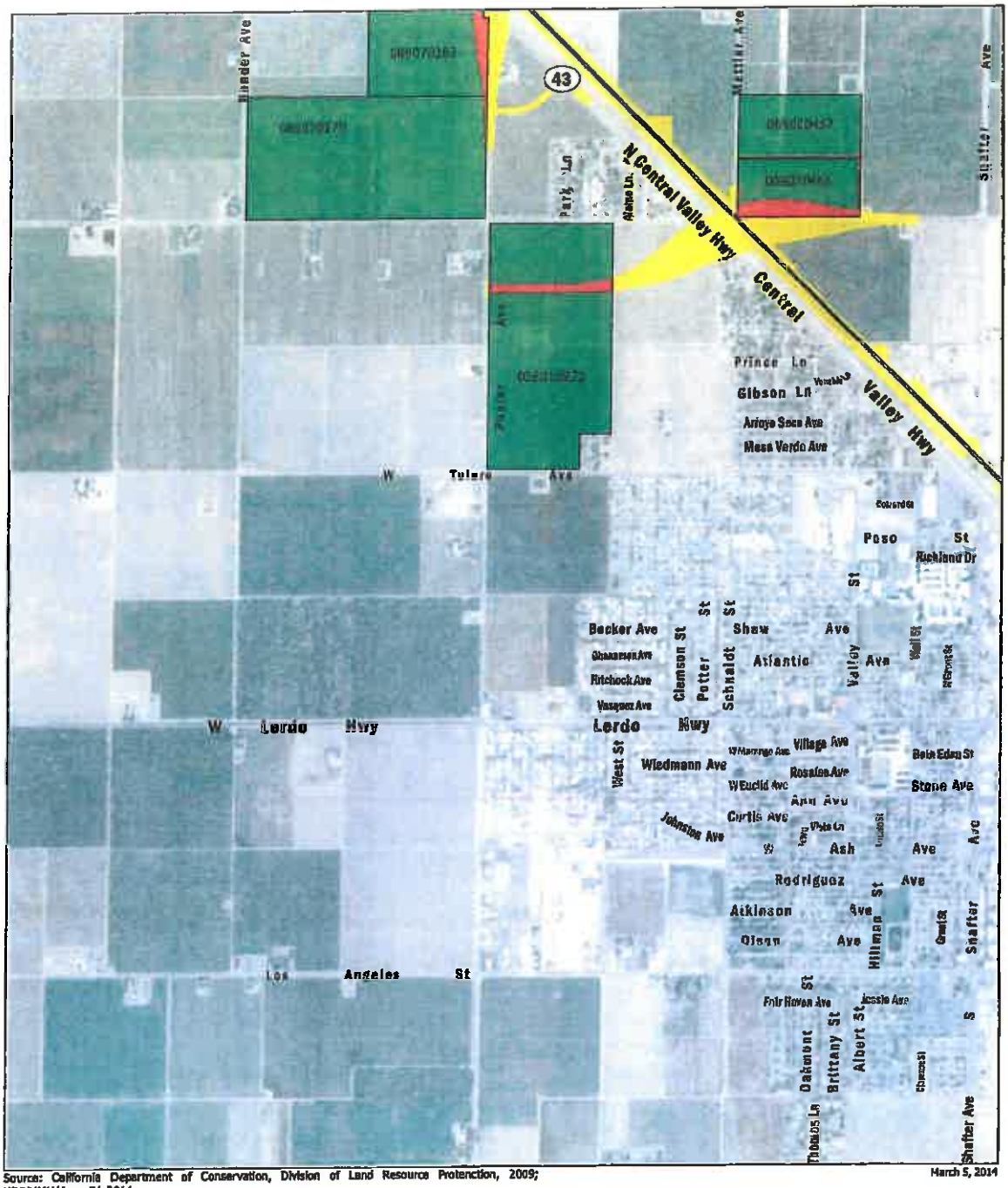
- Proposed Preferred Alternative
- Proposed Preferred Alternative footprint
- Agricultural parcel boundary
- Uneconomic portion of agricultural parcel
- County boundary

0 1,000 2,000 Feet
0 400 800 Meters

Fresno to Bakersfield
Williamson Act and
Farmland Security Contracts
Page 49 of 52
County: KERN

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



Sources: California Department of Conservation, Division of Land Resource Protection, 2009; URS/HMM/Arup JV, 2014.

March 5, 2014

Williamson Act parcel
- Parcel area impacted by footprint
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- Proposed Preferred Alternative
- Proposed Preferred Alternative footprint
- Agricultural parcel boundary
- Uneconomic portion of agricultural parcel
- County boundary

N

0 1,000 2,000 Feet

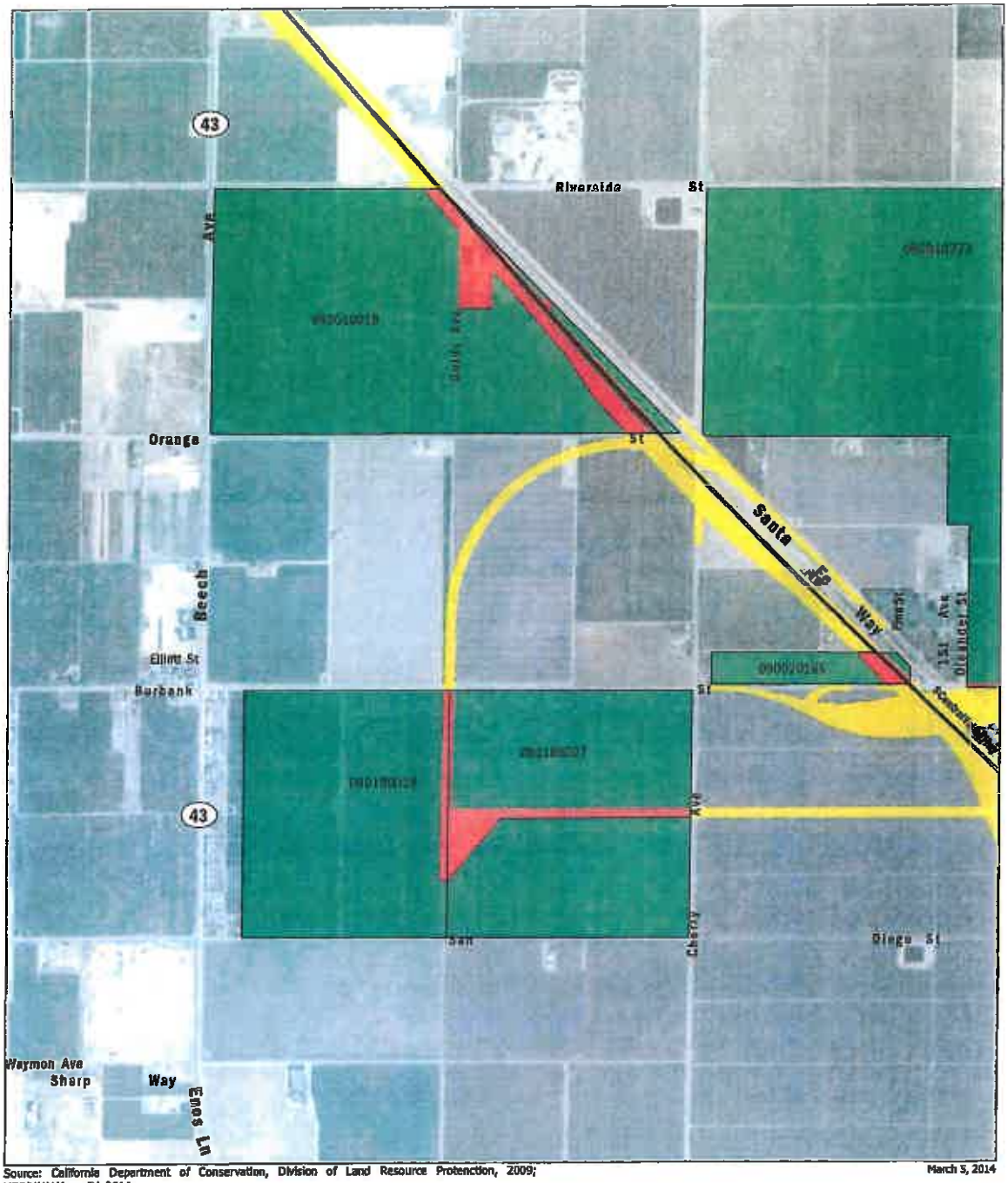
0 400 800 Meters

Fresno to Bakersfield Williamson Act and Farmland Security Contracts
Page 50 of 52
County: KERN

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD



Source: California Department of Conservation, Division of Land Resource Protection, 2009; URS/HMM/Arup JV, 2014.

March 5, 2014

Williamson Act parcel
- Parcel area impacted by footprint
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- Proposed Preferred Alternative footprint
- Agricultural parcel boundary
- Uneconomic portion of agricultural parcel
- County boundary

N
0 1,000 2,000 Feet
0 400 800 Meters

Fresno to Bakersfield Williamson Act and Farmland Security Contracts
Page 51 of 52
County: KERN

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROJECT
FRESNO TO BAKERSFIELD

Source: California Department of Conservation, Division of Land Resource Protection, 2009; URS/HMM/Arup JV, 2014.

March 5, 2014

Williamson Act parcel
- Parcel area impacted by footprint
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- Proposed Preferred Alternative
- Proposed Preferred Alternative footprint
- Agricultural parcel boundary
- Uneconomic portion of agricultural parcel
- County boundary

N

0 1,000 2,000 Feet

0 400 800 Meters

Fresno to Bakersfield
Williamson Act and Farmland Security Contracts
Page 52 of 52
County: KERN

CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation Federal Railroad Administration

Attachment D

New Contracts

Recording Requested by
County Board of Supervisors

When recorded, return to the
Fresno County Planning Dept.
4499 E. Kings Canyon Road
Fresno, California 93702

RECORDED IN OFFICIAL RECORDS OF
FRESNO COUNTY, CALIFORNIA
AT ___ MIN. PAST 8 A M
FEB 22 1971
J. L. BROWN, County Recorder
FEE

SPACE ABOVE THIS LINE FOR RECORDER'S USE

SHORT FORM LAND CONSERVATION CONTRACT

Incorporating Board of Supervisors Resolution by reference.

THIS LAND CONSERVATION CONTRACT, MADE AND EXECUTED THIS 11th day of January, 1971,

by and between Joseph Zumthurn; Martha Zumthurn; J. F. Zumthurn

hereinafter referred to as 'Owner' and the COUNTY OF FRESNO, a political subdivision of the State of California, hereinafter referred to as 'County,'

W I T N E S S E T H :

WHEREAS, Owner possesses certain real property situate in the County of Fresno, State of California, hereinafter referred to as 'the Subject Property,' and more particularly described in Exhibit 'A' attached hereto and by this reference incorporated herein; and

WHEREAS, the Subject Property is now devoted to agricultural uses and uses compatible thereto; and

WHEREAS, the Subject Property is located in an 'agricultural preserve' heretofore established by the County, and designated as the Fowler-Selma-Kingsburg #27

NOW, THEREFORE, both Owner and County, in consideration of the mutual promises, covenants and conditions to which reference is made herein and the substantial public benefits to be derived therefrom, do hereby agree as follows:

FIRST: The Subject Property shall be subject to all restrictions and conditions adopted by resolution by the Board of Supervisors of Fresno County, California on December 1, 1970 and recorded December 4, 1970 as Instrument Number 84793, Book 5841, Pages 570 through 577 of the Official Records of Fresno County, California, and IT IS MUTUALLY AGREED THAT the conditions and restrictions set forth in said resolution are adopted and incorporated herein and made a part hereof as fully as though set forth herein at length and that Owner will observe and perform said provisions.

SECOND: The minimum acreage for new parcels described in Paragraph Seven of the Board of Supervisors' Resolution shall be 20 acres.

THIRD: This Contract shall be effective as of the first day of March, 1971.

IN WITNESS WHEREOF, the Owner and County have executed this Contract the day and year first above written.

COUNTY OF FRESNO

By John Kenturan
Chairman of the Board of Supervisors

ATTEST:

J. L. Brown, County Clerk and Ex Officio
Clerk of the Board of Supervisors

OWNERS

Joseph Zumthurn
" "
" "

STATE OF California)
) ss.
COUNTY OF Fresno)

On this 29th day of January, in the year 19 71, before me, the undersigned, a Notary Public in and for the State of California with principal office in the County of Fresno duly commissioned and sworn, personally appeared Joseph Zumthurn, Maratha Zumthurn and J. F. Zumthurn known to me to be the person s described in, whose name s are subscribed to and who executed the within instrument, and acknowledged that they executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this Certificate first above written.

H. P. Berg

Notary Public in and for the State of California

H. P. BERG, Notary Public
State of California: Principal Office, Fresno County
My Commission Expires July 31, 1971
2828 D Street, Selma, California 93662

STATE OF CALIFORNIA)
) ss:
COUNTY OF FRESNO)

On this _____ day of _____, in the year 19 ____, before me, J.L. BROWN, County Clerk and Ex-Officio Clerk of the Superior Court in and for said County, which is a court of record having a seal, personally appeared _____, Chairman of the Board of Supervisors of Fresno County, known to me to be the person described in and whose name is subscribed to and who executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of the said Court, at my office in the County of Fresno, the day and year in this Certificate first above written.

J. L. BROWN

County Clerk and Ex-Officio Clerk of the Superior Court.

By _____ Deputy

PARCEL 1: A.P.N. 57-240-13s

Lots 4, 5; the South half of Lots 2 and 3, and the South half of that portion of Lot 1, lying North of the Easterly prolongation across said Lot 1 of the South line of said Lots 2 and 3 in Section 24, Township 17 South, Range 21 East, Mount Diablo Base and Meridian, according to the map entitled a portion of the LAGUNA DE TACHE GRANT, recorded in Book 2 Page 32 of Record of Surveys, in the office of the County Recorder of said County;
EXCEPT THEREFROM an undivided 1/2 of any and all gas, oil or mineral which may be found in, on or under said land, together with the right to enter said premises and remove the same.

PARCEL 2: A.P.N. 57-250-1s

Lot 8 in Section 19, Township 17 South, Range 22 East, Mount Diablo Base and Meridian, according to the map entitled a portion of the LAGUNA DE TACHE GRANT, recorded in Book 2 Page 32 of Record of Surveys, in the office of the County Recorder of said County;
EXCEPT THEREFROM an undivided 1/2 of any and all gas, oil or minerals which may be found in, on or under said land, together with the right to enter said premises and remove the same.

PARCEL 3: A.P.N. 57-240-13s

The South 3.10 acres of Lot 1 and that portion of the East 12.73 acres of Lot 14 in Section 24, Township 17 South, Range 21 East, Mount Diablo Base and Meridian, according to the map of a portion of the LAGUNA DE TACHE GRANT, recorded in Book 2 Page 32 of Record of Surveys, in the office of the County Recorder of said County, described as:
Beginning at the Northwest corner of said East 12.73 acres of Lot 14; thence South 653.19 feet parallel with the West line of said Lot 14; thence South 89°57' East parallel with the North line of said Lot 14 a distance of 520.68 feet, more or less, to a point on the Fresno-Kings County line; thence North 45°30' East along said County line to the East line of said Lot 14; thence North along said East line 516 feet, more or less, to the Northeast corner of said Lot 14; thence North 89° 57' West along the North line of said Lot 14, 660 feet, more or less, to the point of beginning.

PARCEL 4: A.P.N. 56-090-11s

The North half of Lots 25 and 26, all of Lot 27 North of the right of way of Fresno-Kings Reclamation District, in Section 18, Township 17 South, Range 22 East, Mount Diablo Base and Meridian, of the LAGUNA DE TACHE GRANT, according to the map thereof recorded September 11, 1902, in Book 2 Page 32 of Record of Surveys, in the office of the County Recorder of said County;
EXCEPT an undivided 1/2 interest in and to all oil, gas and other hydrocarbon substances in or under said property.

EXHIBIT "A"

PARCEL 5: A.P.N. 56-090-11s

That portion of Lot 26 in Section 18, Township 17 South, Range 22 East, Mount Diablo Base and Meridian, of the LAGUNA DE TACHE GRANT, according to the map thereof recorded September 11, 1902, in Book 2 Page 32 of Record of Surveys, in the office of the County Recorder of said County, described as follows:
Commencing at a point on the East line of Lot 26, distant 660 feet South from the Northeast corner; thence North 89°57' West parallel with the North line of said Lot 330 feet; thence South 545.30 feet to intersection of the Southeasterly line of Lot 26; thence North 50°50' East 118.30 feet; thence North 70°10' East 260.40 feet to the Southeast corner of said Lot; thence North 379 feet to the point of beginning;
EXCEPT an undivided 1/2 interest in and to all oil, gas and other hydrocarbon substances in or under said property.

PARCEL 6: A.P.N. 56-090-12s

Lots 25 and 26 in Section 18, Township 17 South, Range 22 East, Mount Diablo Base and Meridian, according to the map entitled a portion of the LAGUNA DE TACHE GRANT, recorded in Book 2 Page 32 of Record of Surveys, in the office of the County Recorder of said County;
EXCEPT the North 660 feet of said Lots;
ALSO EXCEPT the East 330 feet (measured along the East and West center line) of said Lot 26 (after excepting the North 660 feet thereof as aforesaid);
ALSO EXCEPT THEREFROM an undivided 1/2 of any and all gas, oil or minerals which may be found in, on or under said land, together with the right to enter said premises and remove the same.

PD018 COUNTY OF KINGS 02/25/14
ASSESSOR INQUIRY 13:27:49.5
OPEN SPACE DATA
==========

ASSESSMENT: 002 200 013 000 PARCEL: 002 200 013 000

ASSESSEE: BERTRAM FAMILY TRUST 50%

- -

PRESERVE NO:	0000210			
AG CONTRACT NO:	00538	EFFECTIVE DATE:	01/01/1969	
FSZ CONTRACT NO:	00000	EFFECTIVE DATE:	00/00/0000	FSZ ZONE: 0000
HOMESITE ACRES:	0.00			
OPEN ACRES:	0.00			
PRIME ACRES:	40.00			
GROW IMPRV ACRES:	0.00			
URBAN ACRES:	0.00	TOTAL ACRES:	40.00	

NON-RENEWAL DATE: 00/00/0000 NON-RENEWAL FLAG (N = NOT RENEWED)

- -

ENTER TO RETURN

6857

BOOK 954 PAGE 312

Recording requested by the

Kings County Board of Supervisors

When recorded, return to the
Kings County Planning Dept.
11815 – 11th Avenue
Court House Box "C"
Hanford, California 93230

RECORDED AT REQUEST OF
Kings County
AT 30 MIN. PAST 10 A M.
FEE
MAY 28 1970 $
VOL 954 OFFICIAL RECORDS, P 312
KINGS COUNTY, STATE OF CALIFORNIA
BEATRICE HAWES, Auditor and Recorder
DEPUTY

Space above this line for Recorder's use.

AMENDMENT
OF LAND CONSERVATION CONTRACT No. 210-538

THIS AMENDMENT TO LAND CONSERVATION CONTRACT No. 210-538, made and executed this _____ day of _____, 1970, by and between Frances E. Vierra

hereinafter referred to as the "Owner" and the COUNTY OF KINGS, a political subdivision of the State of California, hereinafter referred to as "County,"

WITNESSETH

WHEREAS, on December 26, 19 69, Owner and County entered into a written agreement, identified as Land Conservation Contract No. 210-538 which is recorded in Volume 950 at Page 354 of Official Records in the Office of the Recorder of the County of Kings, which Land Conservation Contract No. 210-538 identified the property subject to said contract by the following description:

SEE ATTACHED EXHIBIT "A"

WHEREAS, the description above set-forth having been found to be in error, the parties now wish to alter and amend said written description of the property subject to Land Conservation Contract No. 210-538, and do each and all of them hereby renounce and relinquish any claim, right, title or interest in or to the property set forth in the aforementioned erroneous description, which claim, right, title or interest may have been construed as arising out of or being created by the use of said erroneous description.

IN CONSIDERATION of the promises and acts contained herein, the parties agree with each other as follows:

1. That the correct description of the property subject to Land Conservation Contract No. 210-538 is as follows:

SEE ATTACHED EXHIBIT "B"

2. Said Land Conservation Contract No. 210-538 is hereby otherwise reaffirmed.

IN WITNESS WHEREOF, the parties executed this amendment this 26th day of May, 1970.

COUNTY OF KINGS

By J. E. Yenger
Chairman of the Board of Supervisors

OWNERS

Frances E. Vierra

STATE OF CALIFORNIA }
COUNTY OF KINGS } ss.

On this 26th day of May, 1970, before me, Vernice Thomsen, County Clerk and Ex-Officio Clerk of the Board of Supervisors in and for said County, personally appeared J. E. Yenger, Chairman of the Board of Supervisors of Kings County, known to me to be the person described in and whose name is subscribed to and who executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the Seal of said Board the day and year in this Certificate first above written.

VERNICE THOMSEN, County Clerk and
Ex-Officio Clerk of said Board

By _____ Deputy Clerk

STATE OF California }
COUNTY OF Kings } ss.

On this 12th day of May, 1970, before me, the undersigned, a Notary Public in and for the State of California with principal office in the County of Kings, duly commissioned and sworn, personally appeared Frances E. Vierra

known to me to be the person described in, whose name is subscribed to and who executed the within instrument, and acknowledged that she executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this Certificate first above written.

EDNA O. BREWER
NOTARY PUBLIC
KINGS COUNTY, CALIFORNIA
My Commission Expires September 24, 1973

Edna O. Brewer
Notary Public in and for the State of California

My commission expires Sept. 24, 1973

EXHIBIT "A"

Those portions of land lying in Township 17 South, Range 22 East, M. D. B. & M. described as follows:

The Northwest quarter of the Northeast quarter of Section 32;

All that portion of the Northwest quarter of Section 32 described as follows: Beginning at the Northeast corner of the Northwest quarter; thence West along the North line of said Section a distance of 970 feet; thence South and parallel with the East line of said quarter section a distance of 1321.37 feet to a point on the South line of the North one-half of said quarter Section; thence East along the South line of the North one-half of said quarter Section a distance of 104.4 feet; thence South 104.4 feet, thence West 104.4 feet; thence South along the prolongation of the line parallel with the East line of said quarter Section to a point on the South line of said quarter Section; thence East to the center of said Section 32 a distance of 970 feet; thence North along the one-half Section line to the point of beginning.

The east one-half of the Southwest quarter of Section 32 EXCEPTING the West one-half of the Southeast quarter of the Southwest quarter of said Section 32.

Those portions of land lying in Township 18 South, Range 22 East, M.D.B. & M. described as follows:

All that portion of the West 101.65 acres of the Northwest quarter of Section 5, more particularly described as follows: BEGINNING at a point at the Northeast corner of said tract thence West parallel with the North line of said tract a distance of 630 feet to a point; thence South and parallel with the East line of said tract a distance of 1014 feet to a point; thence East and parallel with the first course herein a distance of 630 feet to the East line of said tract thence North along east line a distance of 1014 feet to the point of beginning.

The East 61 acres of the Northwest quarter of Section 5 EXCEPTING therefrom 1 acre in the Southeast corner thereof described as follows: Beginning at the Southeast corner of the Northwest quarter; thence North along the East line thereof, 19 rods and 4 feet; thence Northwesterly 8 rods and 8 feet; thence South, parallel with said East line, 21 rods and 4 feet, more or less, to the South line of said Northwest quarter; thence East, along said South line, 8 rods and 8 feet to the point of beginning.

EXHIBIT "B"

Those portions of land lying in Township 17 South, Range 22 East, M.D. B. & M. described as follows:

The Northwest quarter of the Northeast quarter of Section 32;

All that portion of the Northwest quarter of Section 32 described as follows: Beginning at the Northeast corner of the Northwest quarter; thence West along the North line of said Section a distance of 970 feet; thence South and parallel with the East line of said quarter section a distance of 1321.37 feet to a point on the South line of the North one-half of said quarter Section; thence East along the South line of the North one-half of said quarter Section a distance of 104.4 feet; thence South 104.4 feet; thence West 104.4 feet; thence South along the prolongation of the line parallel with the East line of said quarter Section to a point on the South line of said quarter Section; thence East to the center of said Section 32 a distance of 970 feet; thence North along the one-half Section line to the point of beginning.

The East one-half of the Southwest quarter of Section 32 EXCEPTING the West one-half of the Southeast quarter of the Southwest quarter of said Section 32.

Those portions of land lying in Township 18 South, Range 22 East, M.D.B. & M. described as follows:

All that portion of the West 101.65 acres of the Northwest quarter of Section 5, more particularly described as follows: BEGINNING at a point at the Northeast corner of said tract thence West parallel with the North line of said tract a distance of 630 feet to a point; thence South and parallel with the East line of said tract a distance of 1645 feet to a point; thence East and parallel with the first course herein a distance of 630 feet to the East line of said tract thence North along east line a distance of 1645 feet to the point of beginning.

The East 61 acres of the Northwest quarter of Section 5 EXCEPTING therefrom 1 acre in the Southeast corner thereof described as follows: Beginning at the Southeast corner of the Northwest quarter; thence North along the East line thereof, 19 rods and 4 feet; thence Northwesterly 8 rods and 8 feet; thence South, parallel with said East line, 21 rods and 4 feet, more or less, to the South line of said Northwest quarter; thence East, along said South line, 8 rods and 8 feet to the point of beginning.

END OF DOCUMENT

3048 BOOK 950 PAGE 354 210-538

Recording requested by the

Kings County Board of Supervisors

When recorded, return to the
Kings County Planning Dept.
11815 – 11th Avenue
Court House Box "C"
Hanford, California 93230

RECORDED AT REQUEST OF
KINGS CO.
AT — MIN. PAST 8 A M
FEE
MAR - 3 1970 $ Nil
VOL 950 OFFICIAL RECORDS, P 354
KINGS COUNTY, STATE OF CALIFORNIA
BEATRICE HAWES, Auditor and Recorder
BY Elizabeth Chesnut Deputy

Space above this line for Recorder's use.

LAND CONSERVATION CONTRACT

THIS LAND CONSERVATION CONTRACT, MADE AND EXECUTED THIS 26th day of December, 1969, by and between Frances E. Vierra

hereinafter referred to as the "Owner" and the COUNTY OF KINGS, a political subdivision of the State of California, hereinafter referred to as "County";

WITNESSETH:

WHEREAS, the Owner owns real property in the County of Kings, State of California, hereinafter referred to as the "Subject Property," which is described as follows:

See attached Exhibit "A"

WHEREAS, Subject Property is now devoted to agricultural uses and uses compatible thereto; and

WHEREAS, Subject Property is located in Agricultural Preserve No. 210 which was established by the Board of Supervisors of the County by Resolution No. 70-15; and

WHEREAS, the Owner and the County desire to limit the use of Subject Property to agricultural uses and uses compatible thereto in order to preserve a maximum of agricultural land, to conserve California's economic resources, to maintain the agricultural economy, to assure a supply of food and fiber for future residents of the State and to discourage the premature and unnecessary conversion of agricultural land to urban uses, recognizing that such land has public value as open space and constitutes an important physical, social, esthetic and economic asset to the Owner and the County; and

WHEREAS, both the Owner and the County intend that the terms, conditions and restrictions of this contract be substantially similar to Contracts authorized by the California Land Conservation Act of 1965.

NOW, THEREFORE, IT IS AGREED as follows:

1. This Contract is made and entered into pursuant to the provisions of the California Land Conservation Act of 1965; and all of the provisions of said Act, including all amendments thereto hereafter to become effective are incorporated herein by reference and made a part hereof.

2. During the term of this Contract and any renewals thereof the Subject Property shall not be used by the Owner, or his successors in interest, for any purpose other than the production of agricultural commodities for commercial purposes, and those compatible uses which are listed in the Resolution establishing the Agricultural Preserve within which the land is located. The Board of Supervisors of the County may from time to time during the term of the Contract and any renewals thereof, by Resolution, add to the permissible uses of the Subject Property listed in the Resolution establishing the Preserve. However, the Board of Supervisors may not during the term of the Contract and any renewals thereof eliminate any of the permitted uses for the Subject Property, as set forth in said Resolution, without the prior written consent of the Owner.

3. Nothing in this Contract shall limit or supersede the planning, zoning and other police powers of the County, and the right of the County to exercise such powers with regard to the Subject Property.

4. There shall be no payment to the Owner by the County.

5. The term of this Contract shall be for ten (10) years, commencing on the 1st day of January, 19 70. Benefits of this contract shall begin at the start of the following fiscal year. The 1st day of January of each year shall be the annual renewal date of this contract.

6. This Contract shall be automatically renewed on the annual renewal date each year for an additional period of one (1) year unless notice of non renewal is given in the manner provided for a contract under the California Land Conservation Act of 1965 and with like effect as provided in said Act. No notice of renewal is required to be given or recorded by either party to effectuate the automatic renewals provided for in this paragraph.

7. This Contract may be cancelled subject to the same proceedings and with like penalties as set forth in the California Land Conservation Act of 1965 for the cancellation of Contracts.

8. Upon acquisition of title or taking of possession in any action for the condemnation of fee title to any of the subject property, or of less than a fee interest which will prevent the land being used for any authorized use, and upon the acquisition of such title by a public agency in lieu of condemnation, this Contract shall automatically and immediately become null and void with regard to that portion of the Subject Property which is so condemned or acquired.

9. Any notices required to be given to the County under this Contract shall be delivered to the Clerk of the Board of Supervisors of the County, and any notices to be given to the Owner shall be mailed to him at the address of subject property as it is shown on the latest adopted tax roll of Kings County.

10. This Contract shall constitute a covenant running with the land and shall be binding upon and inures to the benefit of the heirs, executors, administrators, trustees, successors and assigns of the parties.

IN WITNESS WHEREOF, the parties have executed this Contract as of the date first above written.

COUNTY OF KINGS

By _____
Chairman of the Board of Supervisors

OWNERS

Frances E. Vierra

STATE OF CALIFORNIA }
COUNTY OF KINGS } ss.

On this 26 day of February, 1970, before me, Vernice Thomsen, County Clerk and Ex-Officio Clerk of the Board of Supervisors in and for said County, personally appeared J. E. Jessup, Chairman of the Board of Supervisors of Kings County, known to me to be the person described in and whose name is subscribed to and who executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the Seal of said Board the day and year in this Certificate first above written.

VERNICE THOMSEN, County Clerk and
Ex-Officio Clerk of said Board

By _____ Deputy Clerk

STATE OF California }
COUNTY OF Kings } ss.

On this 26th day of December, 1969, before me, the undersigned, a Notary Public in and for the State of California with principal office in the County of Kings, duly commissioned and sworn, personally appeared Frances E. Vierra

known to me to be the person described in, whose name is subscribed to and who executed the within instrument, and acknowledged that she executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this Certificate first above written.

CARMEN MOORE
NOTARY PUBLIC
County of Kings, State of California

Carmen Moore

Notary Public in and for the State of California

My commission expires 1/13/70

EXHIBIT "A"

Those portions of land lying in Township 17 South, Range 22 East, M.D. B. & M. described as follows:

The Northwest quarter of the Northeast quarter of Section 32;

All that portion of the Northwest quarter of Section 32 described as follows: Beginning at the Northeast corner of the Northwest quarter; thence West along the North line of said Section a distance of 970 feet; thence South and parallel with the East line of said quarter section a distance of 1321.37 feet to a point on the South line of the North one-half of said quarter Section; thence East along the South line of the North one-half of said quarter Section a distance of 104.4 feet; thence South 104.4 feet; thence West 104.4 feet; thence South along the prolongation of the line parallel with the East line of said quarter Section to a point on the South line of said quarter Section; thence East to the center of said Section 32 a distance of 970 feet; thence North along the one-half Section line to the point of beginning.

The East one-half of the Southwest quarter of Section 32 EXCEPTING the West one-half of the Southeast quarter of the Southwest quarter of said Section 32.

Those portions of land lying in Township 18 South, Range 22 East, M.D.B. & M. described as follows:

All that portion of the West 101.65 acres of the Northwest quarter of Section 5, more particularly described as follows: BEGINNING at a point at the Northeast corner of said tract thence West parallel with the North line of said tract a distance of 630 feet to a point; thence South and parallel with the East line of said tract a distance of 1014 feet to a point; thence East and parallel with the first course herein a distance of 630 feet to the East line of said tract thence North along east line a distance of 1014 feet to the point of beginning.

The East 61 acres of the Northwest quarter of Section 5 EXCEPTING therefrom 1 acre in the Southeast corner thereof described as follows: Beginning at the Southeast corner of the Northwest quarter; thence North along the East line thereof, 19 rods and 4 feet; thence Northwesterly 8 rods and 8 feet; thence South, parallel with said East line, 21 rods and 4 feet, more or less, to the South line of said Northwest quarter; thence East, along said South line, 8 rods and 8 feet to the point of beginning.

PD018 COUNTY OF KINGS 02/25/14
ASSESSOR INQUIRY 13:28:01.8
OPEN SPACE DATA
==========

ASSESSMENT: 002 200 032 000 PARCEL: 002 200 032 000

ASSESSEE: ROSA, MIKE J TESTAMENTARY TRUST

PRESERVE NO: 0000215
AG CONTRACT NO: 00000 EFFECTIVE DATE: 00/00/0000
FSZ CONTRACT NO: FSZ00064 EFFECTIVE DATE: 01/01/1999 FSZ ZONE: 0032

HOMESITE ACRES: 0.00
OPEN ACRES: 0.00
PRIME ACRES: 57.50
GROW IMPRV ACRES: 0.00
URBAN ACRES: 0.00 TOTAL ACRES: 57.50

NON-RENEWAL DATE: 00/00/0000 NON-RENEWAL FLAG (N = NOT RENEWED)

ENTER TO RETURN

9905969 9828033

Recording requested by the

Kings County Board of Supervisors

When recorded, return to the
Kings County Planning Dept.
Kings County Government Center
1400 W. Lacey Blvd., Bldg. #6
Hanford, CA 93230

RECORDED IN OFFICIAL RECORDS OF KINGS COUNTY, CALIFORNIA AT 39 MIN PAST 9 A M

MAR 19 1999

GEORGE J. MISNER Jr. FEE
County Clerk and Recorder

RECORDED IN OFFICIAL RECORDS OF KINGS COUNTY, CALIFORNIA AT 53 MIN PAST 12 M

DEC 29 1998

JOAN L. BULLOCK FEE
County Clerk and Recorder

Space above this line for Recorder's use.

Rerecorded to Correct Legal Description.

FARMLAND SECURITY ZONE CONTRACT NO. 00064

INCLUDING A RESCISSION OF CONTRACT No. 353,

A PARTIAL RESCISSION OF CONTRACT Nos. 550 and 1303

AND ENTERING INTO THIS NEW CONTRACT IN ITS PLACE PURSUANT TO GOVERNMENT CODE SECTION 51296, FARMLAND SECURITY ZONE

9905969

9828033

THIS FARMLAND SECURITY ZONE CONTRACT, MADE AND EXECUTED THIS 15th day of December, 1998, by and between Mike J. Rosa, hereinafter referred to as the "Owner" and the **COUNTY OF KINGS**, a political subdivision of the State of California, hereinafter referred to as the "County";

WITNESSETH:

WHEREAS, the Owner owns real property in the County of Kings, State of California, hereinafter referred to as the "Subject Property," which is described in "ATTACHMENT A"; and

WHEREAS, Subject Property is located in Farmland Security Zone No. 0032 ; established by the Board of Supervisors of the County by Resolution No. 98 - 107; and

WHEREAS, pursuant to Government Code 51296 the Owner of the Subject Property wishes to rescind Land Conservation Contract(s) No. 353 and a portion of Land Conservation Contract(s) No. 550 and 1303 , as to the Subject Property, and simultaneously place the Subject Property under new Farmland Security Zone Contract No. 00064 ; and

WHEREAS, Subject Property will continue to be devoted to agricultural uses and uses compatible thereto; and

WHEREAS, Subject Properties are located in Agricultural Preserve Nos. 147/69, 215/69, and 76/71, which were established by the Board of Supervisors of the County by Resolution Nos. 70-15 and 71-112 ; and

WHEREAS, the Owner and the County desire to limit the use of Subject Property to agricultural uses and uses compatible thereto in order to preserve a maximum of agricultural land, to conserve California's economic resources, to maintain the agricultural economy, to assure a supply of food and fiber for future residents of the State to discourage the premature and unnecessary conversion of agricultural land to urban uses, recognizing that such land has public value as open space and constitutes an important physical, social, esthetic and economic asset to the Owner and the County; and

WHEREAS, the Subject Property is not within the Sphere of Influence of any City; and

WHEREAS, the Subject Property is designated on the Important Farmland Series map as predominantly prime farmland; and

WHEREAS, both the Owner and the County intend that the terms, conditions and restrictions of this contract be substantially similar to Contracts authorized by the California Land Conservation Act of 1965, including the Farmland Security Zone provisions of the Act.

NOW, THEREFORE, IT IS AGREED as follows:

1. Land Conservation Contract No. 353 , and the portion of Land Conservation Contract Nos. 550 and 1303 , as it pertains to that territory described therein is hereby rescinded and this Farmland Security Zone Contract No. 00064 is

EXHIBIT B

San Joaquin Valley Air Pollution Control District

HEALTHY AIR LIVING

Indirect Source Review (ISR) - Air Impact Assessment (AIA) Transportation Project Application Form

Received
MAY 06 2014
Executive Office
SJVAPCD

A. Applicant Information

Applicant/Business Name: California High-Speed Rail Authority			
Mailing Address: 770 L Street, Suite 800	City: Sacramento	State: CA	Zip: 95814
Contact: Mark A. McLoughlin	Title: Director of Environmental Services		
Phone: (916) 403-6934 / Fax: (916) 322-0827	Email: mark.mcloughlin@hsr.ca.gov		

B. Agent Information (if applicable)

Agent/Business Name:			
Mailing Address:	City:	State:	Zip:
Contact:	Title:		
Phone: / Fax:	Email:		

If an Agent is signing the Air Impact Assessment Application on behalf of the Applicant, a signed letter from the Applicant giving the Agent authorization is required.

C. Project Information

Project Name: Fresno to Bakersfield High-Speed Rail (HSR) Project		Tract Number(s) (if known):	
Project Location:	Street: from a HSR station in downtown Fresno and extending south to a HSR station in downtown Bakersfield	City:	Zip:
Cross Streets:			County:
Permitting Agency Name:		Planner:	
Mailing Address:		City:	State: / Zip:
Permit Type and Number (if known):			

D. Project Description

Please briefly describe the project (e.g. : 6 miles road widening): The Fresno to Bakersfield HSR Project is designed to implement the California HSR System between Fresno and Bakersfield, providing the public with electric-powered high-speed rail service in the San Joaquin Valley and connecting to the northern and southern portions of the HSR System. The 114-mile long corridor between Fresno and Bakersfield that would parallel portions of the Union Pacific and BNSF railways and include stations in Downtown Fresno, east of Hanford and Bakersfield.

The Authority intends to build the project in segments using a design/build approach for completing project design and construction. A description of this approach is included in the cover letter to this application.

Please check the box next to the option that best describes the project:

- ☐ New Road Construction
- ☒ Expansion to an Existing Road (widening)
- ☐ Interchange or Intersection Improvements
- ☐ Bridge / Overpass

E. Notice of Violation

Is this application being submitted as a result of receiving a Notice of Violation (NOV) from the District?

- ☒ No
- ☐ Yes, NOV # _____

F. Voluntary Emission Reduction Agreement

Is this project part of a larger project for which there is a Voluntary Emission Reduction Agreement (VERA) with the District?

- ☐ No
- ☒ Yes, VERA # Agreement pending; number to be assigned

Do you want to receive information about . Healthy Air Living Business Partners Program [ ] Yes [ ] No

Filing Fee Received: $700.00 Date Paid: 6/6/14 Applicant #: 307106	FOR APCD USE ONLY Check #: 324096 Project #: 20140107	Date Stamp

H. Development and Timing Details

Please note that development timelines provided within this section should reflect actual work time, and should not account for possible project delays.

Year construction will start: 2014	Length of construction activity: 70 months Number of actual construction days: days
Length of road being constructed: 114 miles	Width of road being constructed: railroad right-of-way is generally 100 feet

Predominant Soil Type (choose one): ☐ Sand Gravel ☒ Weathered Rock – Earth ☐ Blasted Rock

Area to be disturbed: (see attachment) acres	Amount of soil imported: @24,000,000 cubic yards
Maximum area disturbed per day: 0.5 acres	Amount of soil exported: 0 cubic yards
Average truck capacity: 20 cubic yards	Will water trucks be used? ☒ Yes ☐ No

I. On-Site Mitigation

1. Construction Detailed Fleet (making a commitment to using a construction fleet that will achieve the emission reductions required by District Rule 9510)

☒ Yes, *please complete Mitigation measure 1* ☐ No

J. Review Period

You may request a five (5) day period to review a draft of the District's analysis of your project before it is finalized. However, if you choose this option, it will delay the project's finalization by five (5) business days.

☒ I request to review a draft of the District's analysis.

K. Fee Deferral Schedule

If the project's on-site air pollution reductions (mitigation) insufficiently reduced air pollution as outlined in Rule 9510, an off-site fee is assessed based on the excess air pollution. The money collected from this fee will be used by the District to reduce air pollution emissions 'off-site' on behalf of the project.

An Applicant may request a deferral of all or part of the 'off-site' fees up to, but not to exceed, the start date of construction. The start of construction is any of the following, whichever occurs first: start of grading, start of demolition, or any other site development activities not mentioned above. The Fee Deferral Schedule Application can be found on the District's website at www.valleyair.org.

☒ I request a Fee Deferral Schedule, and have enclosed the Fee Deferral Schedule Application.

L. Change of Project Developer

The Applicant assumes all responsibility for ISR compliance for this project. If the project developer changes, the Applicant must notify the Buyer, and both Buyer and Applicant must file a 'Change of Project Developer' form with the District. If there is a change of project developer, and a 'Change of Project Developer' form is not filed with the District, the Applicant will remain liable for ISR compliance. The Change of Project Developer form can be found on the District's website at www.valleyair.org.

M. Attachments

Required:	*If applicable:*
☒ Tract Map or Project Design Map	☐ Letter from Applicant granting Agent authorization
☐ Vicinity Map	☐ Fee Deferral Schedule Application
☒ Application Filing Fee: $700.00	☐ Monitoring & Reporting Schedule

O. Certification Statement

I certify that I have reviewed and completed the entire application and hereby attest that the information relayed within is true and correct to the best of my knowledge. I commit to impleme on of those on-site mitigation measures that I : selected above. I am responsible for notifying the District if I will be unable to implement these mitigation measures. If a committed mitigation measure is not implemented, the project may be re-assessed for air quality impacts.

(An authorized Agent may sign the form in lieu of the Applicant if an authorization letter **signed by the Applicant** is provided).

Name (printed): Mark McLoughlin	Title: Director of Environmental Services
Signature:	Date: May 2, 2014

Mitigation measure 1: Construction – Detailed Fleet

Will the project use a construction fleet to achieve the emission reductions required by District Rule 9510? *(Note: by checking "yes" the Applicant could potentially reduce any construction related off-site fees to zero.)*	☐ No	☒ Yes*

***If yes, daily records of the total hours of operation for each piece of equipment greater than 50-horsepower being used on the project site during construction shall be maintained. Within 30-days of completing construction of each project phase, a report summarizing total hours of operation of by equipment type, equipment model year and horsepower for each piece of construction equipment greater than 50-horsepower shall be submitted to the District. The *Construction – Detailed Fleet Template* may be used as an outline.**

For each project phase, the District will verify that the fleet details achieved the required emission reductions. If the reductions are not met, the District will notify applicant of the mitigation fee amount to cover any remaining emissions after on-site mitigation has been applied.

Fresno to Bakersfield High-Speed Train Project
Indirect Source Review, Air Impact Assessment Application

Additional Information

H. Development and Timing Details

For the Fresno to Bakersfield project section, specific construction elements would include at-grade, below-grade, and elevated track, track work, grade crossings, electrification, stations and installation of a positive train control system. At-grade track sections would be built using conventional railroad construction techniques. A typical sequence includes clearing, grubbing, grading, and compacting the rail bed; and applying crushed rock ballast. A Heavy Maintenance Facility (HMF) location is not approved at this time; however, this ISR application will be updated (or a new one filed) when the Authority approves an HMF location at a later date. Construction related activities (from pre to post construction) will extend from 2013 through 2021. Table 1 provides an approximate schedule for construction related activities contained in CP 1C and 2-3 (see cover letter for more detail) in this section.

Table 1: Approximate Construction Schedule

Activity	Tasks	Duration
Right-of-way Acquisition	Proceed with right-of-way acquisitions once State Legislature appropriates funds in annual budget	March 2013–March 2015
Survey and Preconstruction	Locate utilities, establish right-of-way and project control points and centerlines, establish or relocate survey monuments	March 2013–October 2013
Mobilization	Safety devices and special construction equipment mobilization	April 2014–July 2014
Site Preparation	Utilities relocation; clearing/grubbing right-of-way; establishment of detours and haul routes; preparation of construction equipment yards, stockpile materials, and precast concrete segment casting yard	July 2014–November 2014 (two site preparation periods)
Earth Moving	Excavation and earth support structures	November 2014–November 2016
Construction of Road Crossings	Surface street modifications, grade separations	November 2014–November 2016
Construction of Aerial Structures	Aerial structure and bridge foundations, substructure, and superstructure	November 2014–January 2017
Systems	Train control systems, overhead contact system, communication system, signaling equipment	November 2016–May 2019
Demobilization	Includes site cleanup	October 2016–April 2017 (two demobilization periods)

Activity	Tasks	Duration
Maintenance-of-Way Facility	Potentially collocated with HMF	May 2017–November 2018
HST Stations	Demolition, site preparation, foundations, structural frame, electrical and mechanical systems, finishes	Fresno: June 2017–April 2020 Kings/Tulare Regional: June 2020–June 2023[a]

Notes:

[a] Right-of-way would be acquired for the Kings/Tulare Regional Station; however, the station itself would not be part of initial construction.

Tables 2 and 3 provide a comparison between the ARB Standard Equipment that was identified (by type) to be used during construction, and the actual equipment being used in CP 1C (and so likely to be used in out-to-bid CP 2-3. Reductions were determined in Nox, PM_{10} and $PM_{2.5}$ for both construction packages.

Table 2: Change between ARB Standard and Actual Equipment CP1C

ARB STANDARD EQUIPMENT			
CP1C - Total Equipment & Hauling			
Year	Nox	PM_{10} total	$PM_{2.5}$ total
	Tons	Tons	Tons
2014	6.84	4.09	0.57
2015	15.67	2.43	1.00
2016	13.05	2.22	0.92
2017	0.86	0.42	0.39
2018	1.34	0.43	0.40
2019	0.00	0.36	0.36
2020	0.00	0.00	0.00
2021	0.00	0.00	0.00
2022	0.00	0.00	0.00
2023	0.00	0.00	0.00
2024	0.00	0.00	0.00
2025	0.00	0.00	0.00
2026	0.00	0.00	0.00
2027	0.00	0.00	0.00
2028	0.00	0.00	0.00
Total for CP1C	37.76	9.94	3.65

CLEAN EQUIPMENT			
CP1C - Total Equipment & Hauling			
Year	Nox	PM_{10} total	$PM_{2.5}$ total
	Tons	Tons	Tons
2014	4.57	3.95	0.43
2015	7.14	1.84	0.51
2016	5.07	1.67	0.46
2017	0.54	0.39	0.37
2018	1.34	0.43	0.40
2019	0.00	0.36	0.36
2020	0.00	0.00	0.00
2021	0.00	0.00	0.00
2022	0.00	0.00	0.00
2023	0.00	0.00	0.00
2024	0.00	0.00	0.00
2025	0.00	0.00	0.00
2026	0.00	0.00	0.00
2027	0.00	0.00	0.00
2028	0.00	0.00	0.00
Total for CP1C	18.65	8.64	2.54
% Change	-51%	-13%	-31%

Table 3: Change between ARB Standard and Actual Equipment CP2/3

ARB STANDARD EQUIPMENT			
CP2/3 - Equipment & Hauling			
Year	Nox	PM_{10} total	$PM_{2.5}$ total
	Tons	Tons	Tons
2014	78.18	14.24	3.08
2015	228.43	35.99	13.08
2016	196.34	32.92	11.97
2017	8.40	3.35	3.09
2018	13.35	3.43	3.19
2019	0.00	2.77	2.77
2020	0.00	0.00	0.00
2021	0.00	0.00	0.00
2022	0.00	0.00	0.00
2023	0.00	0.00	0.00
2024	0.00	0.00	0.00
2025	0.00	0.00	0.00
2026	0.00	0.00	0.00
2027	0.00	0.00	0.00
2028	0.00	0.00	0.00
Total for CP2/3	524.71	92.71	37.18

CLEAN EQUIPMENT			
CP2/3 - Equipment & Hauling			
Year	Nox	PM_{10} total	$PM_{2.5}$ total
	Tons	Tons	Tons
2014	48.21	12.41	1.36
2015	96.70	27.02	4.93
2016	73.99	24.59	4.40
2017	5.36	3.14	2.91
2018	13.35	3.43	3.19
2019	0.00	2.77	2.77
2020	0.00	0.00	0.00
2021	0.00	0.00	0.00
2022	0.00	0.00	0.00
2023	0.00	0.00	0.00
2024	0.00	0.00	0.00
2025	0.00	0.00	0.00
2026	0.00	0.00	0.00
2027	0.00	0.00	0.00
2028	0.00	0.00	0.00
Total for CP2/3	237.62	73.36	19.56
% Change	-55%	-21%	-47%

I. On-Site Mitigation

Mitigation Measure AQ-MM-1 requires use of the cleanest on-site construction equipment possible. The Authority intends that use of clean equipment will result in the emission reductions required by ISR Rule 9510, if possible (and does in the case of this first phase application at least for NOx). As a fallback, the Authority and the District will enter into a Voluntary Emission Reduction Agreement (VERA). Based on discussions with District staff, use of the VERA will satisfy Rule 9510 if clean equipment is not available to result directly in the full emission reductions required by ISR Rule 9510.

Note also that the VERA will detail how a Monitoring and Reporting Schedule (MRS) per ISR 5.4, and fee schedule, will be implemented.

CALIFORNIA
High-Speed Rail Authority

May 5, 2014

Mr. Seyed Sadredin, Executive Director
San Joaquin Valley Air Pollution Control District
1990 East Gettysburg Avenue
Fresno, CA 93726

Re: CA High-Speed Rail Project, Fresno-Bakersfield Project Section
Indirect Source Review Application

Dear Mr. Sadredin:

It is anticipated that on May 7, 2014, the Board of Directors for the California High-Speed Rail Authority (Authority) will be asked to take action to certify the Environmental Impact Report (EIR) and approve the Fresno to Bakersfield High-Speed Rail (HSR) project section. Following this action it is anticipated that the Federal Railroad Administration will issue its Record of Decision for the Fresno to Bakersfield project section based on the Final Environmental Impact Statement (FEIS).

With pending completion of the project section EIR, the Authority has prepared and encloses its Indirect Source Review (ISR) Application for the Fresno to Bakersfield project section (FB Section) for your review and acceptance. Previously, the San Joaquin Air Pollution Control District (District) approved an ISR for the first construction segment for the Merced to Fresno project section.

This ISR application, as a general matter, is intended to cover the entire FB Section. However, given the size of the FB Section, the Authority will construct the FB Section in a phased manner – the phasing being predicated upon available funds and logical construction sequencing. That phasing will dictate what is constructed, where, when, and what equipment is used as compared to the then-current Air Resources Board (ARB) fleet average.

Accordingly, the Authority submits with this ISR application covering the entire FB Section construction emissions estimates for only the construction within the FB Section that is pending now or out for bid. These are what the Authority is calling Construction Packages (CP) 1C and 2-3, as shown in the graphic accompanying the application. These construction emissions estimates are based on precise activities and track mileage, as well as actual contractor-determined construction equipment (actual for CP 1C, which is also a reasonable assumption for CP 2/3 because it involves the same type of work.) It is anticipated that the Fresno to Bakersfield project section will entail

another three or four construction packages for full build out; the Authority will amend this application as each of the future construction packages progresses. Phasing in this manner also matches the phased approach (by construction package) the Authority and District staff have discussed for implementing the Authority's commitments stated in its EIR AQ-MM#4 to work with the District to secure offsets through a VERA. Matching the VERA approach to the ISR approach allows for consistent tracking.

In the Additional Information document included with this application, it is shown that the Authority will meet the ISR requirement for reduction of Nox emissions (20 percent below ARB fleet average). As to the PM10 reduction requirement, the Authority may meet the requirement depending on whether PM2.5 is counted with PM10 as an aggregate. In any event, the Authority has committed in the FB Section EIR to mitigation measure AQ-#4 to offset emissions to net zero, including for PM10. The Authority will implement mitigation measure AQ-#4 by entering into a Voluntary Emission Reduction Agreement (VERA) with the District.

Should you or your staff need additional information or have any questions regarding the ISR application, please contact Scott Rothenberg at (916) 403-6936 or via email at scott.rothenberg@hsr.ca.gov.

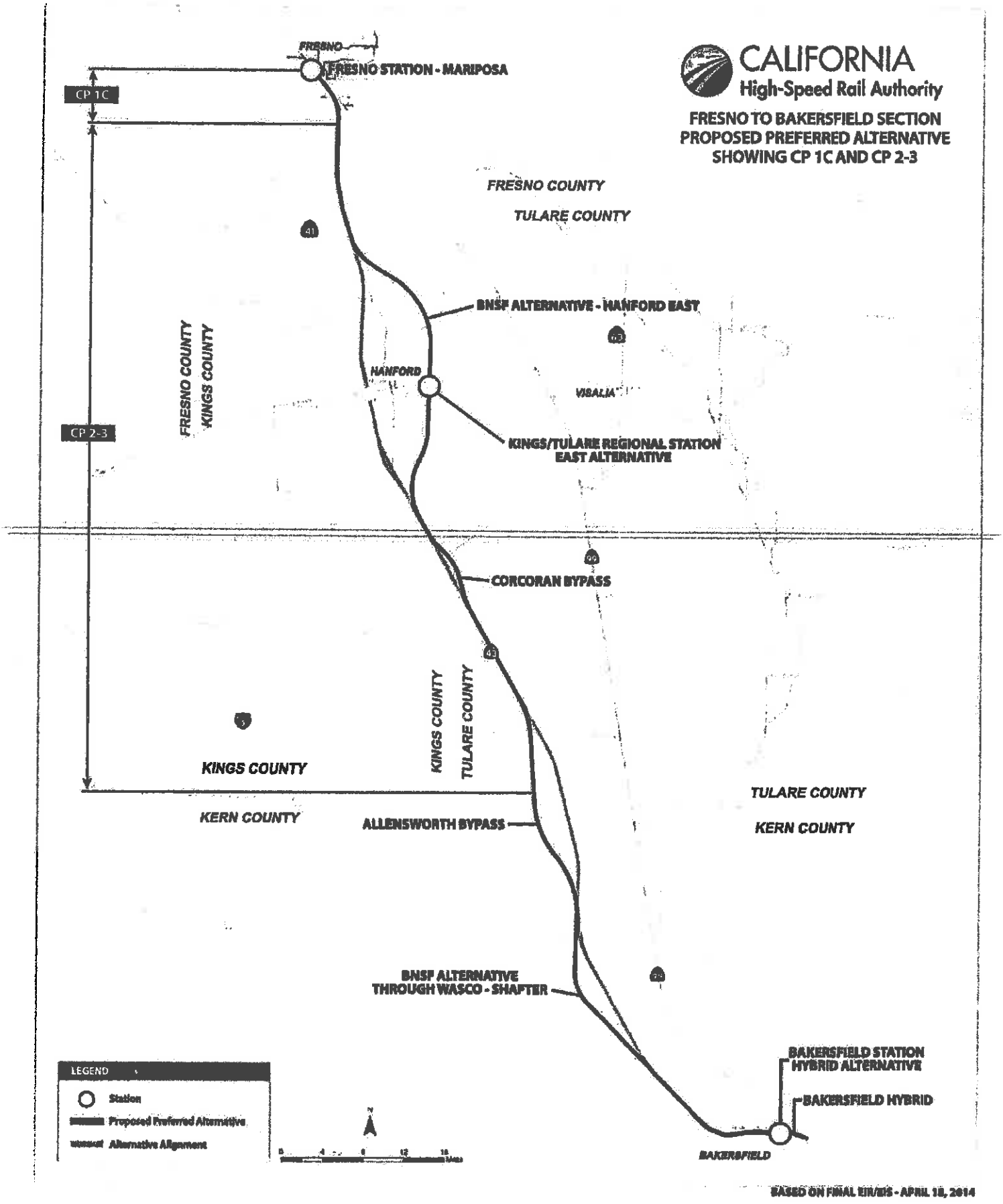
We appreciate your continuing technical guidance.

Sincerely,

Mark A. McLoughlin
Director for Environmental Services

Enclosure:
ISR Application, Fresno-Bakersfield HST Project
ISR Application Fee

cc:
Arnaud Marjollet, Director of Permit Services, San Joaquin Valley APCD
Chay Thao, Permit Services Manager, San Joaquin Valley APCD
Patia Siong, Supervising Qir Quality Specialist, San Joaquin Valley APCD
Jim Andrew, Assistant Chief Council, Authority
Scott Rothenberg, Senior Environmental Planner, Authority


CALIFORNIA
High-Speed Rail Authority
FRESNO TO BAKERSFIELD SECTION
PROPOSED PREFERRED ALTERNATIVE
SHOWING CP 1C AND CP 2-3
FRESNO
FRESNO STATION - MARIPOSA
CP 1C
CP 2-3
FRESNO COUNTY
TULARE COUNTY
BNSF ALTERNATIVE - HANFORD EAST
HANFORD
VISALIA
KINGS/TULARE REGIONAL STATION
EAST ALTERNATIVE
FRESNO COUNTY
KINGS COUNTY
CORCORAN BYPASS
KINGS COUNTY
TULARE COUNTY
KINGS COUNTY
TULARE COUNTY
KERN COUNTY
ALLENSWORTH BYPASS
KERN COUNTY
BNSF ALTERNATIVE
THROUGH WASCO - SHAFTER
BAKERSFIELD STATION
HYBRID ALTERNATIVE
BAKERSFIELD HYBRID
BAKERSFIELD
LEGEND
Station
Proposed Preferred Alternative
Alternative Alignment
BASED ON FINAL EIR/EIS - APRIL 18, 2014

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

MAY 2 7 2014

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

Mark McLoughlin
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, Fresno to Bakersfield Section (CEQ# 20140125)

Dear Mr. Valenstein and Mr. McLoughlin:

Thank you for the opportunity to review the Final Environmental Impact Statement for the Fresno to Bakersfield Section of the California High-Speed Rail System. We completed our review pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508), Section 309 of the Clean Air Act, and Section 404 of the Clean Water Act. If planned well, a HSR system can serve as an important catalyst for strengthening regional connectivity and economic centers, as well as providing environmental benefits, including reduced vehicle emissions.

Through programmatic and project-level environmental analysis for the high speed rail system, EPA has coordinated with Federal Railroad Administration and California High-Speed Rail Authority following decision checkpoints and a coordination strategy defined in an agreement 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*). Materials from this process are available on CHSRA's website for public review. Extensive early coordination on the development of the EIS for the Fresno to Bakersfield section resulted in early identification of potential issues and efficiencies in the environmental review process. In addition, CHSRA is promoting environmental sustainability through aggressive goals and policies described on their website and through a partnership with EPA, FRA, U.S. Department of 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.

EPA commented on this project through an October 13, 2011 letter in response to the Draft EIS, a May 16, 2012 letter in response to the Administrative Supplemental Draft EIS, an October 19, 2012 letter in response to the Supplemental Draft EIS, and a February 21, 2014 memorandum in response to the Administrative Final EIS. We rated the Draft and Supplemental Draft EISs *Environmental Concerns – Insufficient Information* based on aquatic resources, air quality, environmental justice, health, and community impacts. We thank FRA and CHSRA for addressing comments we made in our letters and throughout the early coordination process. While this statewide project will have large impacts on aquatic resources, communities, farmland, and other resources, we appreciate FRA and CHSRA's

commitments in the Final EIS to minimize and mitigate impacts anticipated in the Fresno to Bakersfield section. We understand that CHSRA will continue to work with affected residents, businesses, farmers, and cities as the project moves forward. In the enclosed detailed comments, please find recommendations for aquatic resource mitigation, general conformity, and measures to reduce valley fever exposure.

Thank you for the opportunity to review the Final EIS for the Fresno to Bakersfield Section of the California HSR system. We look forward to further collaboration to reduce impacts and maximize benefits from the statewide system. When the Record of Decision is signed, please send a copy to the address above (mail code: ENF-4-2). If you have any questions, please contact Connell Dunning, the lead reviewer for this project, at 415-947-4161 or dunning.connell@epa.gov.

Sincerely,

Lisa B. Hanf, Assistant Director
Enforcement Division

Enclosures: EPA's Detailed Comments

Cc via email:

Michael Jewell, U.S. Army Corps of Engineers
Leslie Rogers, Federal Transit Administration
Vincent Mammano, Federal Highway Administration
Ophelia B. Basgal, U.S. Department of Housing and Urban Development
Dan Russell, U.S. Fish and Wildlife Service
Ken Alex, Governor's Office of Planning and Research
Mike McCoy, Strategic Growth Council
Matt Rodriguez, California EPA
Kurt Karperos, California Air Resources Board
Seyed Sadredin, San Joaquin Valley Air Pollution Control District
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 Wildlife
Mark Nechodom, California Department of Conservation
Paul Romero, California Department of Water Resources
Bill Orme, State Water Resources Control Board

EPA'S DETAILED COMMENTS ON THE FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE CALIFORNIA HIGH-SPEED RAIL SYSTEM, FRESNO TO BAKERSFIELD SECTION MAY 27, 2014

AQUATIC RESOURCE MITIGATION

According to the Final Environmental Impact Statement, the project would directly impact 151.14 acres of waters of the U.S, including approximately 17 acres of vernal pools. We understand that the California High-Speed Rail Authority intends to fully offset these impacts and is in the process of developing a Final Compensatory Mitigation Plan. We believe that continued coordination between the Environmental Protection Agency, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Federal Railroad Administration, and CHSRA will facilitate efficiency in the permitting process.

Consistent with our March 27, 2014 comments in response to the Public Notice for the Clean Water Act Section 404 permit, we offer the following recommendations:

- Please continue to work with EPA, Corps, and FWS on the Final Mitigation Plan for the entire Fresno to Bakersfield section, and provide EPA with early versions of the Final Mitigation Plan for our review and comment.
- Use CHSRA's "Watershed Approach" document (from Checkpoint C under the NEPA/404 MOU) as the foundation for the scope and character of aquatic resource mitigation activities described in the Final Mitigation Plan.
- Maintain a preference hierarchy of mitigation activities. Priority should be given to offsetting unavoidable impacts with reestablishment of in-kind aquatic resources within their impacted watershed.
- Scale mitigation acreage using the Corps' *Standard Operating Procedures for Mitigation Ratios* and *Uniform Performance Standards.*
- Clearly define circumstances when compensatory mitigation will be provided for indirect impacts.

GENERAL CONFORMITY

Thank you for including the Draft General Conformity Determination in the Final EIS. As EPA, FRA, and CHSRA discussed on a May 5, 2014 conference call, EPA believes clarifying text should be added to the Final General Conformity Determination to address the following two issues.

- It is our understanding that CHSRA plans to fully offset emissions for every year of construction in the San Joaquin Valley Air Basin. Please add text to the Final General Conformity Determination to clearly state that these emissions will be fully offset (to net zero). This commitment would help address the concern that the combined emissions from two or more HSR sections within a single air basin could cumulatively exceed de minimis levels.

- The FEIS and the Draft General Conformity Determination explain that FRA cannot yet determine whether emissions from material hauling will exceed conformity thresholds in neighboring air basins. Please add text to the Final General Conformity Determination to clearly state that: (1) this Determination is not intended to fulfill general conformity requirements for neighboring air basins, and (2) separate general conformity determinations will be conducted for project impacts in neighboring air basins if required under the General Conformity Rule (Clean Air Act Section 176(c)(4), revised March 24, 2010).

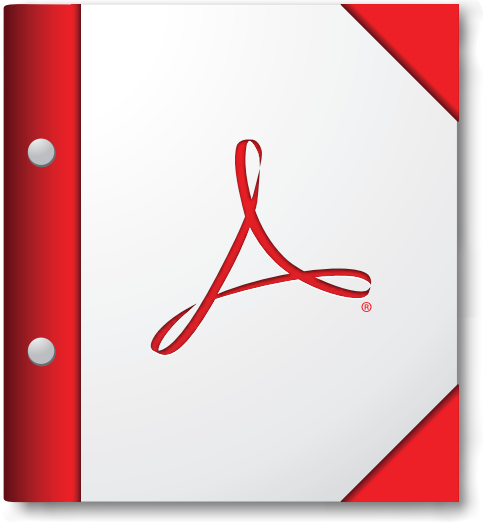
VALLEY FEVER

Coccidioidomycosis, commonly called valley fever, is a fungal infection with the main exposure pathway being inhalation of fungal spores. It is endemic to the soils within the project area for the Fresno to Bakersfield HSR alignment. Fungal spores can live for long periods of time in soil under harsh environmental conditions including heat, cold, and drought and can be released into the air when soil containing the fungus is disturbed, either by strong winds or activities such as farming or construction. Most people who are exposed to the fungus do not get sick, but some people develop flu-like symptoms, and on rare occasions develop more severe conditions, such as meningitis or even death. Early diagnosis and treatment is critical to preventing more serious conditions. Because this project will be a new alignment disturbing soils along 117 miles, EPA recognizes that valley fever is an important health consideration for this project.

CHSRA and FRA have committed to implement best practices to minimize and mitigate dust during construction, which will help prevent the spread of valley fever. Based on communication between EPA and FRA during April and May 2014, it is our understanding that FRA plans to make additional commitments in the Record of Decision to minimize valley fever health risks from the HSR project, including:

- Prior to construction, provide information on causes, preventive measures, symptoms, and treatments for valley fever to individuals who could potentially be exposed through construction activities (i.e., construction workers).
- Continue outreach and coordination with the California Department of Public Health to ensure that the above referenced information concerning valley fever is readily available to nearby residents, schools, and businesses.
- Conduct additional modeling of the potential for operations to increase exposure risks to valley fever for workers within the right-of-way and the general public outside of the right-of-way. If increased risks are found, take all practicable measures to avoid, minimize, and mitigate risks through educational programs and additional dust suppressant measures.

EPA strongly supports these measures, and we appreciate FRA and CHSRA's commitment to reducing health risks from valley fever.



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Aaron Fukuda
7450 Mountain View Street, Hanford, California 93230

May 5, 2014

California High Speed Rail Authority
Board Members
Attn: Final EIR/EIS Comment
770 L Street, Suite 800
Sacramento, California 95814

Ms. Stephanie Perez
Enviro. Protection Specialist
Federal Railroad Administration
1200 New Jersey Avenue, SE., MS-20
Washington D.C. 20590

Subject: Comments on Final EIR/EIS Fresno to Bakersfield

Dear Board Members and Ms. Perez,

On April 18, 2014 the California High Speed Rail Authority (Authority) released the Final EIR/EIS for public review. At the same time the Authority announced that a public meeting would be held on May 6, 2014 for public comments and another meeting on May 7, 2014 for potential adoption of the Final EIR/EIS. Based upon my review of the Final EIR/EIS I strongly encourage the Authority to postpone the adoption of the document and work with local agencies, groups and concerned citizens to ensure that comments filed by others and the included comments are properly address, as the Final EIR/EIS does not comport with CEQA and NEPA in its current form.

Given the limited time to review the Final EIR/EIS, I request that the California High Speed Rail Authority postpone any final approval of the document until a later date (if necessary the June 2014 Authority Board Meeting). If the Authority wishes to call a vote for the approval of the document, I urge the Board to weigh the comments and questions below as they are only a very limited set given the inability to review all of the information (that which has changed from the Draft Revised EIR/EIS to the Final EIR/EIS) and deny the approval of the Final EIR/EIS.

I also reserve the right to provide further comments in the future regarding the Final EIR/EIS as the time allotted to the public for review is inadequate.

Time Constraints
The Authority should note the immense amount of data, changes and responses that were provided in the Final EIR/EIS, and the short 18 calendar days to review this information. The responses in the Final EIR/EIS provided to questions on the Draft and Revised Draft EIR/EIS constituted 4,800+ pages of information. By providing a public comment period of only 18 days, any meaningful and complete review by the public is unrealistic and the Authority is on notice that this violates the rights of the public to a fair and equitable participation in the environmental process.

This short comment period is contrasted against the numerous years the Authority took to draft the first Draft EIR/EIS, the approximately 12 months the Authority took to draft the Revised

Draft EIR/EIS and the 18 months the Authority took to modify and provided responses to the Revised Draft EIR/EIS and produce the Final EIR/EIS. In total, the Authority was given over 5 years of document preparation, while the public was only afforded a few months to review the entire 30,000+ page document.

For these reasons and many others, the process implemented by the Authority has limited the ability of the public to a fair and equitable review of the propose project.

Comments on Final EIR/EIS

Introduction

Page 1-7

The Final EIR/EIS makes the following statement:

> "Because a minimum of 100 miles of track is needed to demonstrate train speeds of up to 220 miles per hour (mph), the Fresno to Bakersfield Section would provide a sufficient length of track for testing the trains. The Fresno to Bakersfield Section is critical for demonstrating system performance, commissioning trains, and obtaining the safety certification needed before service can be permitted."

This statement was added to the document and provides a new project objective, which changes the project description. During the review and commenting of the Draft and Revised Draft EIR/EIS, the inclusion of the system being used as a "test track" was not a project component. With the use of the system as a "test track" new and unanalyzed impacts are introduce such as:

- New safety concerns introduced by utilizing the system as a "test track"
- New sound impacts as the system may not have the ability to meet the documented levels.
- Inability to meet air quality reductions if test systems are not able to achieve established benchmarks.

Because the use of this system was previously not explained as a "test track" the Final EIR/EIS introduces a new component to the Project Description. Therefore the new component should be analyzed in the Final EIR/EIS and recirculated for public review.

Air Quality and Global Climate Change

Page 3.3-17

The Final EIR/EIS makes the following determination on the amount of water use for the individual stations:

> The water consumption rates of 15.33, 16.79, and 18.07 million gallons per year were used at the Fresno, Bakersfield, and Kings/Tulare stations, respectively. Wastewater was estimated as 8.43, 9.23, and 9.86 million gallons per year for the Fresno, Bakersfield, and Kings/Tulare stations, respectively.

The values determined to not seem to meet the common belief the higher ridership stations such as Fresno and Bakersfield would use higher rates of water compared to a Kings/Tulare station. I

recommend that the Authority ensure that the calculations provided properly reflect the true water consumption.

Page 3.3-31
The Final EIR/EIS introduces for the first time a section called Local Impacts from Construction Activities. This sections acknowledges the significant impacts associated with construction and provides new and qualitative analysis of the impacts. This information as it is newly presented to the public is critical to ensuring that impacts are identified, analyzed and mitigated. Due to the lack of time to review the newly provided information, under CEQA and NEPA, newly introduced impacts and analysis must be recirculated for public review.

Cumulative Impacts Page 3.19-1
The Final EIR/EIS established a cumulative review that addresses adjacent sections of the project, namely the Fresno to Merced and Bakersfield to Palmdale sections. The information added to the Final EIR/EIS and not included in the Draft of Revised Draft EIR/EIS indicates:

"including adjacent sections of the HST System"

With the inclusion of two new sections of environmental impacts and analysis, the public was restricted from a review based upon this new information. Had the initial Draft and Revised Draft EIR/EIS provided this statement the previous public review would have included this information. Given the addition of a SIGNIFICANT amount of new analysis and potential impacts, the Final EIR/EIS is required under CEQA and NEPA to be recirculated for public review.

Comment I032-86
As stated in comments provided the noise measurements shown in Figure 3.4-4 through 3.4-8 are along an alignment west of the current proposal. The response provided by the Authority indicates that these are characteristic of the general area and can be applied to the BNSF alignment which is to the east.

This statement is incorrect and lacks the detail of support information to establish grounds for a response. The samples taken are located just east of a major highway and closer to the city of Hanford. Also located along the path are several industrial facilities located to the west of the readings (from north to south). As one travels further to the east (which is approximately 1/2 away) the area becomes much more rural and agricultural. There is no highway system and there are no industrial facilities that would raise the ambient noise levels.

Comment I032-89
In the Revised Draft EIR/EIS the Authority indicated that in the No Project alternative the BNSF trains would still use the freight lines and therefore would introduce noise to the area. The distinction is that proposed alignment through Kings County is several miles away from the BNSF rail lines, therefore the ambient comparison between the No Project and the HSR alternative. The document misleads the reader to believe that the ambient noise level without the project would be the sound levels of the BNSF, however this is completely wrong given the

BNSF line is several miles away. As stated, the ambient noise level around the alignment near my home is approximately 45 dBA, whereas a BNSF train can be as loud as 85 dBA.

The Response the question does not address this concern and misleads the reader again towards a faulty explanation.

Comment I032-90
The Draft EIR/EIS indicates that construction noise impacts are moderate under CEQA, however fails to give a timeframe for the sound impacts. The response indicated that the schedule for construction and timeframe could not be obtained at this time, therefore at this time the Authority cannot seemingly define if the impact is low, moderate or severe. Construction noise that last several months can be seen as moderate as it has potential to impact quality of life (sleep patterns, relaxation, stress levels and attention), however if a project were to last for 5+ years, which is a half of a decade, that would seem to be a severe impact.

Without the ability to define the length of the impact, the Authority cannot make a judgment on the severity of the impact. The Authority should provide an estimate of construction before making an assumption of the severity of the impact.

Comment I032-102
When asked to provide date that indicates that there are no impacts from stray voltage the responses provided by the Authority indicated:

> In regard to dairy production, McGill University conducted a study with cows in pens exposed to controlled EMF levels of 330 mG and 10 kV/m, the projected magnetic and electric fields that occur at ground level under a 735-kV line at full load. The researchers measured the following: melatonin levels, prolactin levels, milk production, milk fat content, dry-matter intake by cows, and reproductive outcomes. While a few statistically significant changes in these factors were found, none of the changes were outside the normal range for cows (McGill University 2008). The study concluded that the EMF exposure did not harm the cows or reduce milk productivity. Various studies cited by other researchers regarding EMF and wildlife suggest a range of effects similar for livestock, from non-existent to relatively small to positive. One study suggests a beneficial application for ELF-EMF in broiler chickens to fight a common parasitic infection called Coccidiosis (Golder Associates 2009).
>
> Because 735-kV utility power transmission lines run up and down the state, cattle and people near those lines are exposed to these levels on a continuing basis. Consistent with the McGill study, epidemiological evidence does not indicate that cattle or people near existing 735-kV utility power transmission lines are generally or broadly affected by the fields.
>
> California HST traction power 60-Hz current will flow in the overhead contact system (OCS) and running rails to provide power to trains. The traction power system is called a 2x25 kV system because it uses 25 kV voltage for the trains and uses two nearby cables with opposite phase of the 25 kV to distribute the power down the tracks. Currents in this California HST 2x25 kV system create EMFs and static electric fields near the HST tracks. However, the HST levels will be lower than the fields typical of a 735-kV utility power transmission line. This is because the separation between California HST OCS cables is less, cable-to-cable voltage levels and cable current levels are less, and the HST cables are closer to the ground so that they are closer to the reducing effect of the fields in the ground, all compared to the 735-kV utility power cables.
>
> California HST TM 300.07, EIR/EIS Assessment of CHST Alignment EMF Footprint, shows that at the closest fence line to the HST tracks, the expected magnetic field is 60 mG, less than one-fifth the level from a transmission line. Since cattle cannot be inside the fence line and people can only be inside the fence line at passenger stations, the possible HST EMF exposure is:
>
> * Low compared to the 735 kV utility power transmission line.

* Therefore, below the level at which the McGill study showed no effect on cows and milk production.

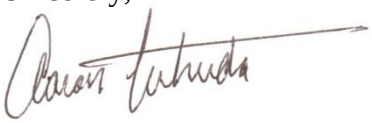
Similarly, the electric field from the California HST 25 kV 60 Hz OCS will be low compared to the exposure from a 735-kV utility power transmission line. For these reasons, EMF effects on livestock and poultry are expected to have negligible intensity under NEPA, and the impact would be less than significant under CEQA. See Standard Response FB-Response-AG-06: Confined Animal Facilities regarding the impact of EMF emissions on dairies.

This is information and analysis that is supportive of the findings in the Draft Revised EIR/EIS, however was not provided. As this is new and vital information provided to the public, the Draft Revised EIR/EIS should include this information and be recirculated for review and comment.

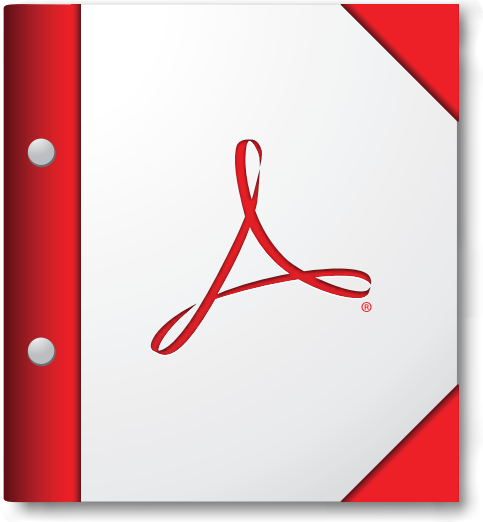
Conclusion

Based upon my cursory review of the Final EIR/EIS the California High Speed Rail Authority and the Federal Railroad Administration has tried to placate their responsibilities to CEQA and NEPA by loosely identifying impacts to our communities and trying to reassure the public that "everything is going to be okay." Unfortunately, all of the impacts have not been identified, mitigation measures are either missing or lack any detail that would indicate their feasibility, and the project as a whole is misconstrued as a high-speed rail system between San Francisco and Los Angeles. The public, including myself has participated at every juncture of this process to provide comments, concerns, information and even tours when needed. Unfortunately all of that work is not reflected in the Final EIR/EIS. As the word "Final" is utilized in this document, it seals the fate of our community and our agricultural heritage, therefore I cannot say with any sense of confidence that this document does anything to protect our community from environmental impacts. ***I strongly urge the California High Speed Rail Authority to refrain from adopting the Final EIR/EIS.***

Sincerely,



Aaron Fukuda



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Aaron Fukuda
7450 Mountain View Street, Hanford, California 93230

May 5, 2014

Ms. Stephanie Perez
Environment and Systems Planning Division
Office of Railroad Policy and Development
Federal Railroad Administration
U.S. Department of Transportation
1200 New Jersey Avenue SE., MS–20
Washington, DC 20590

Subject: Comments on Final EIS Fresno to Bakersfield & Draft Conformity Determination

Dear Ms. Perez,

On April 18, 2014 the California High Speed Rail Authority (Authority) released the Final EIR/EIS for public review. At the same time the Authority announced that a public meeting would be held on May 6, 2014 for public comments and another meeting on May 7, 2014 for potential adoption of the Final EIR/EIS. Based upon my review of the Final EIR/EIS I strongly encouraged the Authority to postpone the adoption of the document and work with local agencies, groups and concerned citizens to ensure that comments filed by others and the included comments were properly addressed, as the Final EIR/EIS does not comport with CEQA and NEPA in its current form.

Given the limited time to review the Final EIR/EIS, I strongly urge the Federal Railroad Administration (FRA) to defer any approval of the Final EIR/EIS and conduct a further discussions landowner, agencies and organization located within the subject alignment. The FRA to date has relied heavily upon the Authority and their cadre of consultants to ensure that the proposed project comports with NEPA. Unfortunately, the Authority and its consultants have filed to fulfill some of the basic requirements of NEPA as they have focused on forcefully pushing the project forward without meaningful dialogue and public participation.

I also reserve the right to provide further comments in the future regarding the Final EIR/EIS as the time allotted to the public for review is inadequate.

Time Constraints
The FRA should note the immense amount of data, changes and responses that were provided in the Final EIR/EIS, and the short amount of time allowed to review this information. The responses in the Final EIR/EIS provided to questions on the Draft and Revised Draft EIR/EIS constituted 4,800+ pages of information. By providing a the public a limited comment period of approximately 30 days, any meaningful and complete review by the public is unrealistic and the

FRA is on notice that this violates the rights of the public to a fair and equitable participation in the environmental process.

This short comment period is contrasted against the numerous years the Authority and the FRA has taken to draft the first Draft EIR/EIS, the approximately 12 months the Authority took to draft the Revised Draft EIR/EIS and the 18 months the Authority took to modify and provided responses to the Revised Draft EIR/EIS and produce the Final EIR/EIS. In total, the Authority was given over 5 years of document preparation, while the public was only afforded a few months to review the entire 30,000+ page document. This hardly equates to an equitable review time for the public, and verges on intimidation by the Authority and the FRA.

For these reasons and many others, the process implemented by the Authority has limited the ability of the public to a fair and equitable review of the propose project.

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HST cables are closer to the ground so that they are closer to the reducing effect of the fields in the ground, all compared to the 735-kV utility power cables.

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* Low compared to the 735 kV utility power transmission line.
* Therefore, below the level at which the McGill study showed no effect on cows and milk production.

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For these reasons, EMF effects on livestock and poultry are expected to have negligible intensity under NEPA, and the impact would be less than significant under CEQA. See Standard Response FB-Response-AG-06: Confined Animal Facilities regarding the impact of EMF emissions on dairies.

This is information and analysis that is supportive of the findings in the Draft Revised EIR/EIS, however was not provided. As this is new and vital information provided to the public, the Draft Revised EIR/EIS should include this information and be recirculated for review and comment.

Comments on the Draft Conformity Determination

This document is provided as a newly created resource in the environmental review process and therefore provides new and revealing information.

Page 6-1
The Draft Conformity Determination outlines the project design features that will be implemented during construction. Many of these activities include the application of water to abate air quality concerns. As the Central Valley is currently experiencing a drought, many of the surface water channels will not see water this year and many of the groundwater deepwells are experiencing increasing depth to groundwater readings. As this occurs it seems reasonable that the Draft Conformity Determination provide evidence of the quantity of water that would be required, where the water would come from and address any air quality impacts that may be incurred in acquiring or applying dust control water.

Page 7-1
The Draft Conformity Determination indicates that the EMFAC2011 model was used to estimate air quality impacts. The EMFAC2011 does not incorporate new more-stringent fuel economy standards that were adopted in 2012. The new fuel efficiency standards significant increase the fuel economy of cars and therefore the carbon dioxide savings being utilized in the model is not accurate.

Page 9-1
The Draft Conformity Determination addressed air quality concerns as they relate to the construction of the project. One particular item that is missing is the impact to local roadways from the immense hauling and import requirements for this project. It has been estimated that 24 million cubic yards of dirt will need to be imported to create the railbed. This amount of traffic on local roads will require local agencies to repave and/or reconstruct many of the heavily used roadways once construction is done. As this will be an impact of the project, the air quality

impacts associated with the repaving and/or reconstruction of roads must be included in the analysis, which it is not.

Page 9-2
The Draft Conformity Determination indicates that the mobilization of this project will occur in April 2014. The Authority has yet to gain full environmental clearances, including permits and contract. The Draft Conformity Determination should be updated to include a more realistic mobilization date and other construction related dates should be updated.

Page 9-3
The Draft Conformity Determination indicates that anticipated travel distances for hauling trucks were used to determine air quality impacts. The public should be given information to determine what hauling distances were used. In other documents provided by the Authority, 24 million cubic yards of dirt will be moved to the project for construction. As this is a monumental amount of dirt, I find it hard to believe that this material will be made readily available adjacent or within close proximity of the alignment. I recommend that the information be provided in the document and recirculated for public review.

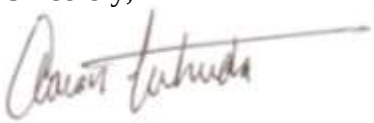
Page 9-3
The Draft Conformity Determination indicated that parking lots at HSR stations were left out of the analysis. This removal of this item is not allowed as it is a part of the project and will have air quality impacts during construction and into the future. The FRA should include those structural features and recirculate the Draft Conformity Determination.

Page 9-4
The Draft Conformity Determination indicates that power stations were analyzed, however I was unable to find any mention of the power distribution and connection facilities. As this is an electrically powered train, power must be brought to the system and therefore infrastructure must be installed. This will be a signficant source of air quality impacts as they may required clearing and grubbing of land, installation of power poles (metal and wood) and extensive installation of overhead powerlines.

Conclusion
Based upon my cursory review of the Final EIR/EIS the California High Speed Rail Authority and the Federal Railroad Administration has tried to placate their responsibilities to CEQA and NEPA by loosely identifying impacts to our communities and trying to reassure the public that "everything is going to be okay." Unfortunately, all of the impacts have not been identified, mitigation measures are either missing or lack any detail that would indicate their feasibility, and the project as a whole is misconstrued as a high-speed rail system between San Francisco and Los Angeles. The public, including myself have participated at every juncture of this process to provide comments, concerns, information and even tours when needed. Unfortunately all of that work is not reflected in the Final EIR/EIS. As the word "Final" is utilized in this document, it seals the fate of our community and our agricultural heritage, therefore I cannot say with any sense of confidence that this document does anything to protect our community from

environmental impacts. ***I strongly urge the Federal Railroad Administration to refrain from adopting the Final EIR/EIS. Beyond not approving the Final EIS, I encourage the FRA to become engage in an on-the-ground review of the impacts associated with this project. Relying upon the Authority to be the administrator of this project will yield failure.***

Sincerely,



Aaron Fukuda

Transportation Solutions Defense and Education Fund

P.O. Box 151439 San Rafael, CA 94915 415-331-1982

May 27, 2014
By E-Mail

Stephanie Perez
Office of Railroad Policy and Development
Federal Railroad Administration
U.S. Department of Transportation
1200 New Jersey Ave. SE, MS-20
Washington, DC 20590

Re: Fresno-Bakersfield HST FEIS Comments

Dear Ms. Perez:

The Transportation Solutions Defense and Education Fund is an environmental non-profit advocating the regional planning of transportation, land use and air quality. Our focus in recent years has been on reducing the impacts of transportation on climate change. Our comments pertain to the inadequate analysis of construction impacts on global climate change under NEPA.

The analysis of Impact AQ#4, Greenhouse Gas Emissions During Construction, fails to include the GHG emissions from the production of materials used in construction. Concrete production, especially, creates very high GHG emissions. A recent paper, attached, estimates these emissions to be so high as to offset twenty to thirty years of GHG emissions reductions from the reduction in VMT due to the operation of the HST. When properly analyzed, the impact should be considered of substantial intensity under NEPA.

While Impact AQ#8 covers the Localized Air Quality Impacts of Concrete Batch Plants, no analysis is offered for the global climate change impacts of concrete batch plants.

CHSRA provided the Legislature with its *Contribution of the High-Speed Rail Program to Reducing California's Greenhouse Gas Emission Levels* (June 2013). TRANSDEF has produced an analysis (attached) of this report, finding it scientifically worthless. The comments on the GHG report pertain equally to the flawed FEIS analysis.

Sincerely,

/s/ DAVID SCHONBRUNN

David Schonbrunn,
President

High-speed rail with emerging automobiles and aircraft can reduce environmental impacts in California's future

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High-speed rail with emerging automobiles and aircraft can reduce environmental impacts in California's future

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Abstract
Sustainable mobility policy for long-distance transportation services should consider emerging automobiles and aircraft as well as infrastructure and supply chain life-cycle effects in the assessment of new high-speed rail systems. Using the California corridor, future automobiles, high-speed rail and aircraft long-distance travel are evaluated, considering emerging fuel-efficient vehicles, new train designs and the possibility that the region will meet renewable electricity goals. An attributional per passenger-kilometer-traveled life-cycle inventory is first developed including vehicle, infrastructure and energy production components. A consequential life-cycle impact assessment is then established to evaluate existing infrastructure expansion against the construction of a new high-speed rail system. The results show that when using the life-cycle assessment framework, greenhouse gas footprints increase significantly and human health and environmental damage potentials may be dominated by indirect and supply chain components. The environmental payback is most sensitive to the number of automobile trips shifted to high-speed rail, and for greenhouse gases is likely to occur in 20–30 years. A high-speed rail system that is deployed with state-of-the-art trains, electricity that has met renewable goals, and in a configuration that endorses high ridership will provide significant environmental benefits over existing modes. Opportunities exist for reducing the long-distance transportation footprint by incentivizing large automobile trip shifts, meeting clean electricity goals and reducing material production effects.

Keywords: life-cycle assessment, high-speed rail, transportation, greenhouse gas
S Online supplementary data available from stacks.iop.org/ERL/7/034012/mmedia

1. Background

Deployment of new and more fuel-efficient transportation modes is expected in the coming decades. Next generation automobiles and aircraft are already entering the market. Despite major political and economic roadblocks in the United States, federal, state, and regional transportation and land-use planners are discussing high-speed rail (HSR) as a potentially better investment for future mobility. The discussion of new transportation options is often coupled with the identification of strategies to help reduce congestion and travel times. With increasing populations

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and long-distance transportation demand forecasts, HSR was made a centerpiece of the American Recovery and Reinvestment Act as a modal diversification strategy. While several corridors are under study, California in 2008 authorized $9.95 billion in bonds for their 1200 km system and the state legislature recently approved funding to start construction. Engineering and planning work are already underway, with possible groundbreaking in 2013 (CAHSRA 2012). While many technical, legal, economic, community and political battles loom, the California HSR (CAHSR) Authority has made significant progress towards deploying the system, which will connect Sacramento, San Francisco, Los Angeles and San Diego. In addition to direct mobility benefits, CAHSR has the potential to reduce long-distance transportation energy consumption and air emissions, provided measures are taken to encourage high ridership, minimize construction effects, and establish clean electricity contracts (Chester and Horvath 2010).

To understand the comprehensive energy and air emissions effects of deployment and adoption of CAHSR, a life-cycle assessment (LCA) framework should be used to assess future modes in the California corridor. The energy and environmental tradeoffs of CAHSR have been examined with then-planned vehicles and fuels (Chester and Horvath 2010) by constructing a life-cycle inventory using information from CAHSRA (2005), the then-current design data and with groundbreaking expected around 2010. However, many new corridor plans and design considerations have been made warranting new outlooks for the system. Forecasts for a future long-distance transportation system should include emerging and expected automobile, aircraft and HSR improvements. In this study, an environmental assessment of future long-distance travel is developed using the California corridor as a case study. We start by developing a per passenger-kilometer-traveled (PKT) attributional assessment of future transportation systems that expands the results of Chester and Horvath (2010) by evaluating (i) emerging automobiles and aircraft, (ii) new train designs, and (iii) low-carbon electricity scenarios. We then develop a consequential assessment for the corridor to determine the net effects of the decision to build a new HSR system. Following our past work, we identify the critical system design parameters that lead to transportation systems having larger or smaller human and environmental footprints than their competitors. Our goal is to identify the potential design, construction and operation pitfalls early so that transportation planners and operators can reduce future impacts at potentially lower cost.

The goal of this research is to develop a framework for assessing the environmental effects of long-distance transportation in the California corridor to provide more comprehensive measures of the greenhouse gas, human health and other environmental damage potentials of future systems. We anticipate that this framework will (i) aid policy and decision makers in the assessment of long-distance transportation options, (ii) provide HSR designers, engineers and operators with information on how to best reduce environmental damage potentials, and (iii) provide a standard methodology by which other US and international transportation systems can be evaluated.

2. Methodology

An environmental assessment is developed for automobiles, aircraft and HSR operating in the California corridor between 2030 and 2050. When performing an LCA a year of analysis is generally defined. We choose to evaluate modes in a two-decade range to acknowledge the uncertainty in adoption of HSR and the challenges of estimating future life-cycle process improvements in a single year.

LCA is the preeminent framework for evaluating the energy and environmental effects of complex systems and can be used to understand the tradeoffs of transportation decisions. Life-cycle inventorying (LCI) is one stage of LCA, the quantification of environmental flows. Impact assessment must be performed to connect physical flows to the human health, ecosystem quality, climate change and resource effects of ultimate interest (ISO 2006, Jolliet *et al* 2003). End-use energy and air emissions are first inventoried. Air emissions include greenhouse gases (GHG) and conventional air pollutants (SO_x, CO, NO_x, VOCs, PM_{10} and $PM_{2.5}$). GHGs are reported as CO_2 equivalence (CO_2eq) using radiative forcing multipliers of 25 for CH_4 and 298 for N_2O for a 100 yr horizon. The US Clean Air Act established a regulatory framework for criteria air pollutants to reduce direct human and environmental impacts. SO_2, CO, NO_x, PM and ozone are regulated through National Ambient Air Quality Standards. We evaluate NO_x and VOCs because they are ozone precursors.

The LCI results are joined with human and environmental impact characterization factors from the Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts (TRACI, v2.03) in the development of a life-cycle impact assessment (LCIA) (Bare *et al* 2002). Impact characterization factors are used to show the maximum potential effects of pollutant releases. In addition to global warming (CO_2eq), human health respiratory, acidification, tropospheric ozone (smog) and eutrophication impact potentials are determined. We stress that impact potentials are the maximum effects that can occur and actual effects may be lower, or potentials may never turn into damages. However, given the challenge of combining air transport and chemistry modeling with concentration-response functions, endpoint damages have not been determined for this study. Bare *et al* (2002) provide background for TRACI and how air emissions are used to determine impact potentials.

2.1. *Efficient and electric automobiles*

Improved gasoline efficiency and plug-in hybrid electric vehicles (PHEV) are expected to have significant market penetration by 2030 (EPRI 2011). The 2007 US Energy Independence and Security Act established fleet-wide fuel economy standards at 35 mpg (15 km l^{-1}) by 2020. Furthermore, the US EPA and the National Highway Traffic Safety Administration have proposed a 102 g km^{-1} CO_2 standard for 2025, which is equivalent to a fuel economy of 54.5 mpg (23 km l^{-1}) (EPA 2011). Given these policies and trends, it is reasonable to expect future long-distance

automobile travel to occur in a vehicle that has improved fuel economy from the 21 mpg (9.6 km l^{-1}) average today (ORNL 2011). While a fuel economy standard does not translate to actual onroad performance, the range of economies modeled is intended to illustrate future potential performance of improved vehicles. Congestion effects are not modeled and it is acknowledged that this would increase the automobile footprint. Second-generation biofuels are likely to be a widespread transportation fuel in the future (Scown *et al* 2012), but we focus on reformulated-gasoline and electric vehicles.

Vehicle manufacturing, battery manufacturing (including replacement) and operation are evaluated with the GREET 1 (fuel-cycle) and 2.7 (vehicle-cycle) models (ANL 2011). A 35 mpg, 1500 kg sedan and a 55 mpg, 900 kg (before batteries) PHEV (ANL 2011) are modeled to meet future fuel economy standards. Large battery pack plug-in and battery electric vehicles are expected to have market penetration gains in the next decades, and we evaluate a PHEV60 (60 mi, 97 km all electric range) assuming that the first 97 km of a 480 km California long-distance trip are in charge-depleting mode and the vehicle is configured as a parallel hybrid drivetrain. GREET models vehicle emissions with a drive cycle that is 43% city and 57% highway. Using drive cycle characterizations from Karabasoglu and Michalek (2012), vehicle emissions are adjusted assuming that the beginning and ending 24 km of the trip occur in cities with the remainder occurring on highways. We believe that our PHEV60 assessment is conservative as future vehicles may have improved battery energy densities and intelligent operational controls that more effectively utilize a blended mode. The PHEV60 is modeled with one lithium-ion battery replacement and specifications are consistent with those modeled by Michalek *et al* (2011). All automobiles are evaluated with a 260 000 km lifetime. Brake wear, tire wear and evaporative losses are included. General maintenance and tire replacement are evaluated using EIO-LCA (GDI 2011). Lead-acid and lithium-ion battery replacement are evaluated with GREET. The energy and environmental effects associated with insurance industry operation (e.g., electricity consumption, waste management) are captured using EIO-LCA (GDI 2011).

The energy inputs and air emission outputs generated by the construction and maintenance of the California highway (interstate and major arterial) system serve as the infrastructure basis for future long-distance statewide travel. There are currently 12 100 km of California highways facilitating 250 billion annual vehicle-kilometers-traveled (VKT) (FHWA 2009). Across all California roadways there are 380 billion annual VKT and this is forecast to increase to 480 billion VKT by 2040 absent a HSR system (CAHSRA 2012). The 74% of asphalt surfaces are specified with a 15 yr life and concrete surfaces at 25 yr (both surface sub-bases are assumed to last 100 yr). Material production, transport, equipment process, and direct emissions from construction and maintenance activities are modeled with PaLATE (2004). Roadway construction effects are allocated to vehicles based on VKT splits and maintenance to heavy duty vehicles since damage follows a fourth-power relationship to axle load (Huang 2004). Roadway design specifications, herbicide use and overhead lighting are included (Chester 2008).

Gasoline vehicle and PHEV60 energy production are evaluated with GREET and are specified with parameters commensurate with Michalek *et al* (2011). California reformulated gasoline is used, and GREET estimates that 18% of crude oil feedstock will be extracted from oil sands by 2020. For the PHEV60 and CAHSR, future regional electricity is used (this is detailed in later sections). Gasoline and electricity production include raw fuel feedstock inputs, transportation, processing (or generation) and distribution.

2.2. High-speed rail

HSR effects are determined following the approach of Chester and Horvath (2010) but updated to acknowledge that a future CAHSR system will likely see improved train performance and an opportunity for increased renewable electricity usage. The assessment by Chester and Horvath (2010) was designed to evaluate the high-speed rail system specified by CAHSRA (2005) under a life-cycle lens. CAHSRA (2005) performs an energy assessment based on large 1200 seat trains consuming an exaggerated 170 kWh of electricity per VKT. Despite acknowledging this over-estimate, Chester and Horvath (2010) chose not to redesign the CAHSRA (2005) system or challenge the publicized parameters. Given the uncertainty in the CAHSRA (2005) propulsion electricity estimate, primary data collection exercises were undertaken to develop improved electricity consumption estimates for a future CAHSR train. In this study, we evaluate three train sizes (400, 670 and 1200 seats) and use actual electricity consumption outcomes from Deutsche Bahn, instead of relying on literature. A range of HSR propulsion electricity exists in the literature and a survey and comparison are performed in the supplementary information (SI, available at stacks.iop.org/ERL/7/034012/mmedia). Actual electricity consumption factors for ICE trains (preliminarily chosen by CAHSRA 2005) were gathered from Deutsche Bahn (2011) and correspond to those reported by IFEU (2011) resulting in 13, 20 and 36 kWh/VKT for the respective train sizes. Regenerative braking effects are included. It is possible that the trains deployed in California will be several generations newer and will consume less electricity, but without data on future technologies we choose not to make projections, and instead assume current state-of-the-art technology for CAHSR.

A study has been performed for the CAHSR Authority to evaluate the feasibility of deploying wind and solar electricity to meet system-wide electricity demands (Navigant 2008) and strategies have been developed to power the stations and trains with 100% renewable energy (NREL 2011). While funding for a renewable electricity infrastructure remains uncertain, this future configuration is considered using existing PV and solar study LCIs (Pehnt 2006) with an 80% wind and 20% solar mix.

Vehicle (manufacturing, maintenance and insurance), infrastructure (construction, operation, maintenance and

parking), and non-renewable electricity generation scenarios follow the methodology used in Chester and Horvath (2010, 2011) and are adjusted for future electricity inputs. The infrastructure assessment matches the results of Chang and Kendall (2011) when a commensurate system boundary is used. Whenever possible, we apply the Western Electricity Coordinating Council (WECC) electricity mix generation emission factors to scenario life-cycle components. Without a contract to purchase electricity from a particular supplier, electricity consumption by CAHSR should be evaluated in the WECC reliability network (Marriott and Matthews 2005), capturing flows across nearby states, including imports to California. Vehicle and infrastructure effects from WECC electricity use are based on a mix that has reached 2020 Renewable Portfolio Standards (WECC-RPS) (WECC 2011). Furthermore, a projected 2040 mix that has reduced coal inputs resulting in 60% carbon emissions intensity of today is also included (WECC-2040).

2.3. Next generation aircraft

Midsize aircraft (130–160 seats) were responsible for 79% of domestic US air travel PKT in 2009 (BTS 2011) and current and future planes are evaluated to capture significant improvements in engine fuel use and emissions. A Boeing 737–800 is used to evaluate currently operating state-of-the-art aircraft. The 737–800 seats 160 and uses CFM56-7B26/2 engines. The Bombardier CS300-ER is an emerging aircraft that offers 20% fuel savings (and commensurate GHG savings) and additional emissions reductions over in-service planes. The CS300-ER will use Pratt and Whitney (PW) 1524G PurePower engines offering propulsive efficiency gains while carrying up to 130 passengers. For both aircraft, maintenance and insurance costs are based on 737–800 airframe materials, engine materials, insurance and hourly costs of employee benefits, reported by BTS (2011). To provide perspective on energy and environmental gains in air travel, the 737–800 and CS300-ER are compared against the legacy Boeing 737 series (<800) which has been a workhorse of the mid-haul market (Chester and Horvath 2010).

Fuel and emission indices are used to determine landing–takeoff (LTO) and cruise phase effects for a San Francisco to Los Angeles flight. In previous studies, LTO effects were determined with FAA (2010) and cruise phase with EEA (2006) data. These software and data do not offer the flexibility or transparency to evaluate future engine improvements. FAA (2010) reports fuel and emission indices which are combined with time-in-mode and rated thrust estimates to determine total flight effects for the 737s. The CFM56-7526/2 engines on the 737–800 achieve 25% reductions in CO, 27% in HC, 31% in NO_x, and 97% in smoke emissions relative to CAEP6 engine emission standards (ICAO 2010). ICAO (2010) does not yet report PW1524G engine testing results, however, Hoke (2011) reports 64% reductions in CO, 96% in HC, 58% in NO_x, and 50% in smoke emissions relative to CAEP6 standards, which were used to determine the CS300-ER flight emissions. Flight LTO and cruise fuel consumption and emissions were validated by PW engineers (Pratt and Whitney 2011). Aircraft energy and environmental effects are determined with fuel and emission indices and rated thrust estimates by flight phase (see the SI for details, available at stacks.iop.org/ERL/7/034012/mmedia). The potential for respiratory, acidification and eutrophication impacts from non-LTO emissions are included (Barrett *et al* 2010, Tarrasón *et al* 2002).

3. Modal attributional footprinting

The assessment and allocation of direct and ancillary processes to each transportation mode reveal the life-cycle activities that should be targeted for the greatest environmental improvements. Consistent with existing transportation LCA studies, results are normalized to a per-PKT functional unit to evaluate the effectiveness of providing passenger mobility. For automobiles and CAHSR, a dearth of data exists to provide a rigorous assessment of expected occupancy rates. For aircraft, detailed reporting provides strong indicators for future utilization (BTS 2011). To avoid universally characterizing modal performance by normalizing to an average occupancy, reasonable and expected high and low occupancies are assessed to capture the *potential* of modes. For all modes, the high occupancy is the number of seats. Low occupancies are designed to consider off-peak ridership. While it is possible for CAHSR and aircraft to operate with a single passenger, this outlying case is not informative and therefore not shown. Low occupancy for CAHSR is approximately one-quarter of seats, and for aircraft is the lower occupancy quartile in 2009, determined from BTS (2011). Figure 1 shows global warming and human health respiratory life-cycle results for each mode for high and low occupancy.

GHG emissions are dominated by vehicle propulsion (energy production for CAHSR and vehicle operation for automobiles and aircraft) but show increases of 38–54% for automobiles, 77–116% for future CAHSR and 13–34% for aircraft when all life-cycle components are included. Results for future long-distance modes are consistent with those identified in past transportation LCA studies (Chester and Horvath 2010, 2009) even when new data and modeling are included (ANL 2011). Automobile vehicle manufacturing is dominated by steel and plastic use (ANL 2011), and maintenance effects are largely the result of supply chain electricity (GDI 2011). CAHSR infrastructure construction effects are dominated by concrete use. Approximately 67% of CAHSR infrastructure emissions are the result of cement production for concrete use and 9% are related to steel production. Automobile infrastructure effects are small compared to past studies because only highways are included to isolate long-distance infrastructure. The inclusion of trip-specific infrastructure provides a clearer comparison of corridor travel by focusing only on roads, tracks and airports needed for each trip. Non-propulsion fuel-cycle effects are primarily the result of refineries, oil and gas extraction activities, and supply chain electricity use (ANL 2011, GDI 2011). With distributed hard infrastructure and its long-distance nature, the life-cycle effects of air

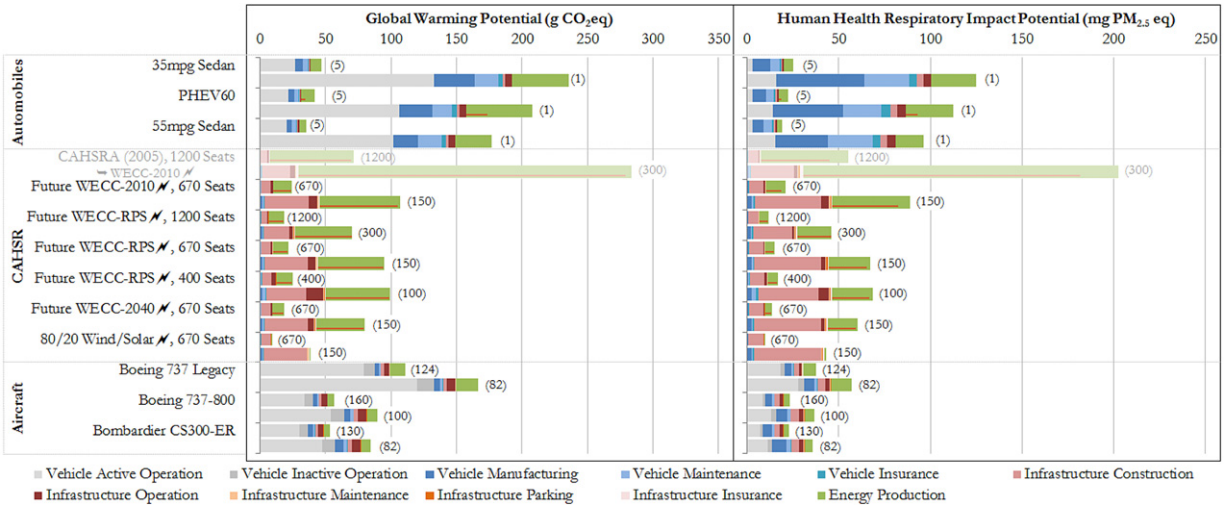

Figure 1. Global warming and human health respiratory impact potential results per PKT. For each mode, results at long-run average high and low occupancy (shown in parenthesis) are displayed as juxtaposing bars. Previous research by the authors reported electricity generation effects for electric vehicle propulsion in the *Vehicle Operation* life-cycle groupings. In an effort to improve the spatial characterization of effects, electricity generation for CAHSR propulsion is reported in *Energy Production* and differentiated from upstream effects (e.g., emissions from fuel extraction and transport) by a red line. The CAHSRA (2005) train is shaded gray to emphasize that it is an unlikely outcome, but reported for comparative purposes.

travel are diminished when results are normalized per PKT. WECC-2040 electricity reduces HSR GHG propulsion emissions by 26% but infrastructure construction effects continue to add heavy burdens to life-cycle results showing the need for low-CO_2 materials.

Across modes and life-cycle groupings, PM_{10} emissions are often generated by mining activities for raw materials, and $PM_{2.5}$ emissions by supply chain combustion processes including electricity generation, the latter contributing to human health respiratory impact potentials. While PHEV60s produce fewer $PM_{2.5}$ emissions during propulsion, battery manufacturing and associated electricity requirements have the potential to contribute significant $PM_{2.5}$ and SO_x emissions and increase respiratory impacts beyond the 35 mpg sedan. This implies that strategies should be developed that minimize human and environmental exposure as the battery industry expands, and that meeting or exceeding RPS standards will reduce impacts across automobiles and CAHSR. For CAHSR, concrete and steel production including upstream mining activities are larger than propulsion effects. The dominating share of environmental impact potentials are often in non-propulsion components and are shown in figure 2.

Several common processes dominate the environmental impact potentials. Vehicle manufacturing and maintenance are affected by assembly activities, but are dominated by the use of metals (i.e., steel, aluminum and copper) and its associated electricity demands for processing. Supply chain truck transport for these processes also contributes heavily to CO, NO_x and VOC emissions. Asphalt and concrete use dominate infrastructure construction and the use of these materials is affected primarily by direct emissions at hot-mix asphalt and cement kilns, and their associated electricity demands. Airport ground support equipment use contributes heavily to aircraft life-cycle results. For automobiles and aircraft, fuel production effects are largely the result of refinery electricity demands and extraction activities, and for HSR are dominated by primary fuel extraction, processing and transport. Air pollutant emission reductions may achieve the largest benefit-to-cost ratio by targeting infrastructure and supply chain effects.

Assuming that options exist, the decision by a traveler to take a mode produces marginal effects in the short-run, a subset of those reported in figures 1 and 2. For example, the decision to walk instead of driving immediately avoids fuel consumption and emissions from vehicle operation. Including mid-run life-cycle components avoids vehicle manufacturing, vehicle maintenance, vehicle insurance, infrastructure maintenance, and associated supply chain effects including fuel refining. Ultimately, a critical mass of travelers choosing to walk instead of drive would have long-run effects including reductions in roadway capacity needs avoiding future infrastructure construction. Marginal effects are critical for understanding the change in energy or environmental outcomes from a policy or decision. Long-run average effects are reported to provide a comprehensive set of indicators for analysts, however, future analyses with these results should consider marginal effects at specified timescales. Long-, mid- and short-run average and marginal comparisons are presented in the SI (available at stacks.iop.org/ERL/7/034012/mmedia).

Considering the potential of a mode to environmentally outperform another is critical to developing strategies that acknowledge different long-term operating characteristics. Modal potential considers the occupancy range in which transportation systems operate instead of averages which can mask peak and off-peak, position along lines and day-of-week characteristics, to name a few. Future CAHSR ridership forecasts have been developed and scrutinized (Brownstone *et al* 2010). Designs that do not access airports

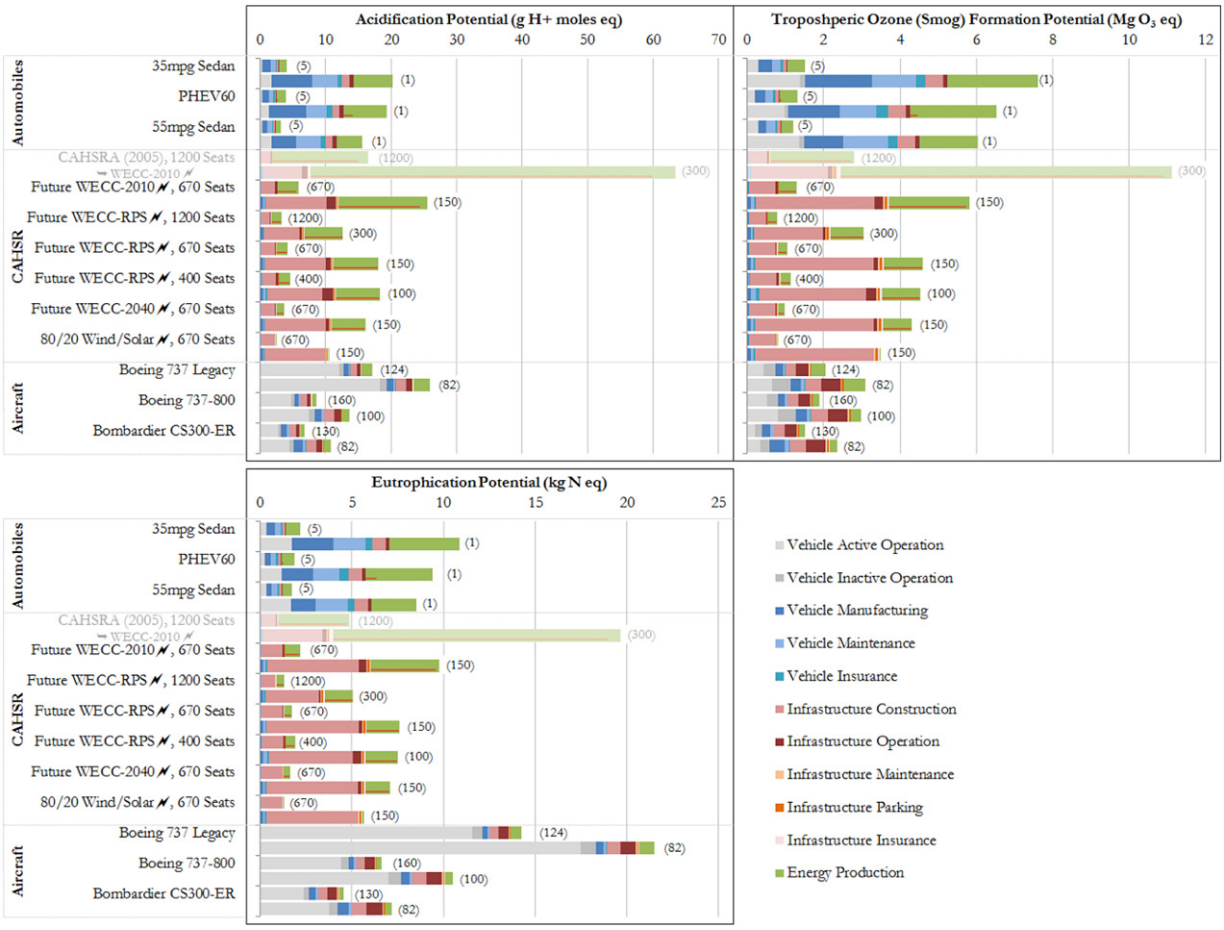

Figure 2. Environmental impact potentials per PKT.

and city centers, hub existing transit at HSR stations and encourage urban infill are inimical to high ridership, and risk disincentivizing trip takers switching from autos. Technical, political, community and economic roadblocks exist for many high ridership configuration options that could ultimately lead to lower than optimal adoption outcomes. Furthermore, even with high ridership configurations, the system will at times (whether during off-peak or end-of-lines) exhibit fluctuations and these instances should be considered in policies that target marginal operation. Given the large uncertainty in a future HSR system's ridership, figure 3 shows the CAHSR life-cycle and vehicle propulsion effects at varying occupancy levels against a current mean occupancy automobile and midsize aircraft (represented as a 2.2 passenger 35 mpg sedan and 116 passenger 737–800).

The sensitivity to vehicle occupancy is used to illustrate breakeven points, or the ridership levels where one mode is equivalent to another in the long-run. Occupancy levels of between 80 and 280 passengers produce HSR GHG-equivalency to future automobiles or aircraft (depending on train size). However, for acidification potential, this equivalency increases to between 160 and 420 passengers, or roughly 35–40% average occupancy for trains. This assumes that the WECC has met the RPS. The acidification breakeven points capture the dynamic of mode switching from low-sulfur liquid fuels to high-sulfur electricity and reaffirm the findings of Chester and Horvath (2010) that deployment of HSR should occur with mandates for cleaner propulsion electricity sources to avoid increased human and environmental impact potentials. The breakeven point assessment highlights the importance of future ridership scenario considerations in the determination of potential corridor effects.

4. Regional consequential effects

To evaluate the net effects of the decision to implement a new system in the corridor, a consequential assessment is developed. A consequential assessment should compare a *without HSR* future where additional automobile and aircraft capacities are needed to meet growing demands to a *with HSR* future where the new rail system reduces the need to fully build this capacity. Estimates of this capacity expansion have been produced by the Authority (PB 2011) and the LCA methods can be used to evaluate the change in effects in the corridor. The per-PKT results reported in figures 1 and 2 are valuable for understanding the footprint of each transportation system in the long-run but do not allow for direct assessment of the changes in corridor impacts when a new system is implemented. For example, an infrastructure will be constructed to facilitate an

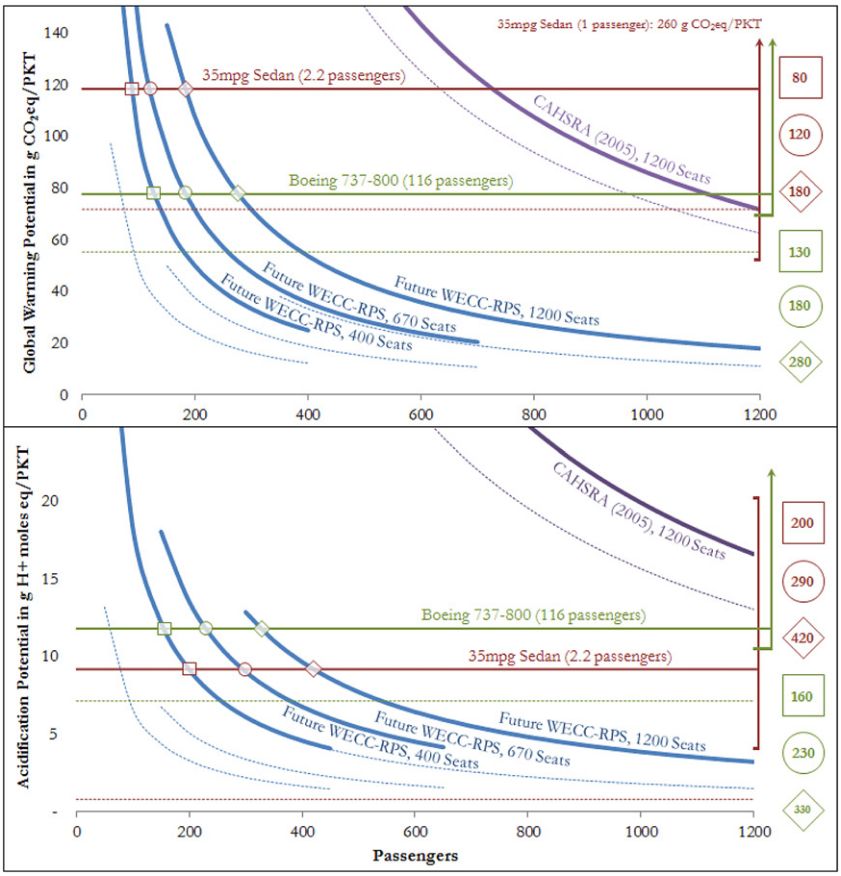

Figure 3. CAHSR global warming and acidification potential sensitivity to vehicle occupancy. Life-cycle results are shown as solid colored lines and vehicle propulsion as dotted. Breakeven points are shown as red and green shapes on the figure and corresponding ridership levels are shown on the right side. While average occupancies are shown for the 35 mpg sedan and 737–800, their potential ranges are shown as vertical lines on the right side.

expected level of service for CAHSR. This infrastructure may be flexible to accommodate more passengers if demand is greater than anticipated. Yet if the per-PKT GHG results in figure 1 are applied to the different PKT demand forecasts, different net infrastructure construction effects would be falsely determined (i.e., the infrastructure construction effects remain the same with different ridership outcomes). While the attributional assessment can inform questions like: *what are the major energy and environmental processes in the life-cycle of a transportation system, and how can they most effectively be reduced?* A consequential assessment is needed to answer questions such as: *how can California deploy a future multi-modal transportation system with the lowest human and environment impacts?*

The energy and environmental costs of a new HSR system should be compared against the avoided costs of automobile and air infrastructure expansion, assuming there is long-distance travel demand growth. PB (2011) estimated that 3600 freeway lane km and 13 000 m of runways, and 115 additional airport gates are needed to meet growing corridor demand in the coming decades. This is the only assessment of future infrastructure expansion needs to date and it is possible that this is an aggressive estimate. PB (2011) estimates are based on full corridor future capacity (117 million auto and air trips) and the most recent forecasts estimate 33 million HSR trips at high ridership. Therefore, 28% of infrastructure expansion effects are considered (i.e., 1000 lane km, 3600 m of runways and 32 additional airport gates) to account for only the avoided effects of HSR travelers and may be an aggressive allocation because of induced demand. Using roadway design guidelines (AASHTO 2001), construction and maintenance energy and emissions were calculated with PaLATE (2004) following Chester and Horvath (2009). The runway expansion would come with an estimated 670 000 m^2 of taxiways and tarmacs. Construction and maintenance of concrete runways and asphalt taxiways and tarmacs are also evaluated with PaLATE (2004) using dimensions reported by Chester (2008). For all surfaces, it is assumed that the wearing courses will last 20 yr and subbases 50 yr. It is also assumed that infrastructure expansion will start 10 yr after it has been decided not to build HSR, and will occur over 30 yr. Airport gate and corresponding concourse expansion construction follow the methodology of Chester (2008). Detailed construction and maintenance schedules for the infrastructure expansion are provided in the SI (available at stacks.iop.org/ERL/7/034012/mmedia).

Consequential effects are highly sensitive to modal shifts and forecasting of HSR energy and environmental effects should occur with uncertainty assessment. Forecasts for CAHSR adoption have only been reported by the Authority making rigorous uncertainty assessment challenging. Adoption discussions by the Authority have been presented through

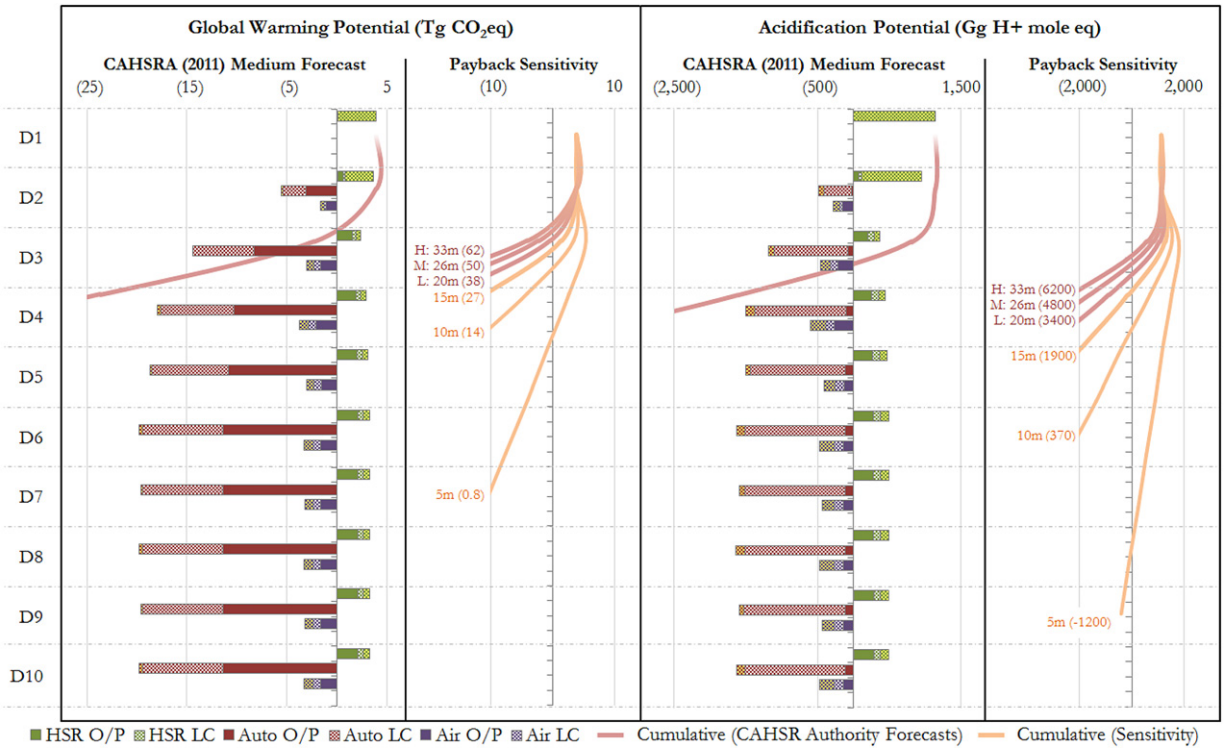

Figure 4. Decadal (D) consequential global warming and acidification potentials including payback for phase 1. O/P = operation and propulsion components (impacts from energy consumed to move vehicles). LC = life-cycle (excludes operation and propulsion components). Life-cycle effects are separated by infrastructure expansion (yellow background) and non-infrastructure (e.g., vehicle manufacturing and maintenance). After each ridership forecast (shown in millions (m) of annual trips in 2040), the 50 yr savings are shown in parentheses. These savings are the GHG or acidification benefit (negatives are costs) after 50 yr from groundbreaking.

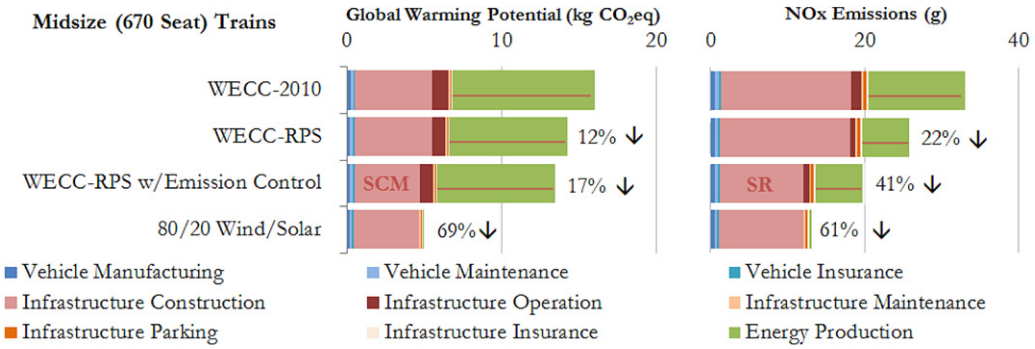

Figure 5. Energy and emission control strategies for reducing environmental impacts per VKT.

without HSR and *with HSR* forecasts. The consequential assessment considers the difference between these two, essentially, what environmental changes have occurred in California as a result of implementing HSR. The current forecasts report that by 2040 CAHSR Phase 1 (San Francisco to Los Angeles) will perform between 27 and 41 million annual VKT (PB 2012a). The Authority's medium *with HSR* forecast (34 million HSR VKT) displaces 5.8 billion auto VKT and 5.1 million air trips annually, generating between 20 and 33 million trips on the new mode (PB 2012a, 2012b). Using these forecasts, the Authority's medium (middle) projection is first evaluated to determine the consequential effects at full adoption in 2040. The WECC-RPS 670 seat HSR train is compared against displaced travel in a 35 mpg sedan and 737–800 aircraft (assumed to be reasonable representative vehicles for 2040). In the *without HSR* scenario, it is estimated that auto travel will increase from 380 billion VKT today to 480 billion VKT, and air travel will increase to 33 million trips (PB 2012b).

The deployment of CAHSR will create induced demand as a subset of trip takers who would not travel by auto or air now find the generalized cost for the journey lower than existing options (Outwater *et al* 2010). Additionally, access to and from HSR stations by autos and other modes may induce new system-wide demand. The CAHSRA (2012) *with HSR* forecast includes estimates of new trips and these are bundled in the aforementioned VKT. We model induced demand implicitly through the change in travel reported by CAHSRA (2012). A summary of the *with HSR* and *without*

HSR consequential analysis critical parameters is provided in the SI (available at stacks.iop.org/ERL/7/034012/mmedia).

The consequential assessment evaluates the difference between a future where CAHSR has or has not been constructed. Figure 4 shows the GHG and acidification potential for operation/propulsion and other life-cycle (including the avoided expansion of auto and air infrastructure) effects aggregated per decade for Phase 1 of the system (San Francisco to Los Angeles). The cumulative effect curve shows the time until payback. Given the uncertainty in the forecasts (Brownstone *et al* 2010), a payback sensitivity analysis is performed on the high adoption scenario as reported by the Authority (41 million VKT). The sensitivity analysis evaluates how long it takes CAHSR to achieve payback given certain adoption levels (for perspective, the Authority's low adoption scenario is 66% of ridership in the high adoption scenario) and considers the high (H), medium (M) and low (L) scenarios followed by decreases of 5 million (m) annual riders.

The payback sensitivity reveals several important considerations for transportation planners and air quality policy makers. The cumulative plum-colored lines for the high, medium and low forecast figures show that the GHG payback will likely occur between 20 and 30 yr (D3) after groundbreaking and acidification potential after 20–40 yr. However, payback is highly sensitive to reduced automobile travel. The 5.8 billion auto VKT displaced dominate emissions changes in the corridor and the effects from reduced air travel and CAHSR are small. The reduced auto impacts are significantly affected or dominated by life-cycle components, in particular, avoided vehicle manufacturing, vehicle maintenance and gasoline production. For GHGs the sooner the system is implemented the more opportunity it will have to help meet GHG reduction policies aiming for 80% of 1990 statewide emissions by 2050. Larger trains or more carbon-intensive electricity generation will delay the payback further. Acidification, the release of SO_x and NO_x emissions which are of concern for respiratory and cardiovascular (through secondary particle formation) effects, agricultural impacts and increased built environment maintenance costs, are dominated by life-cycle processes. For infrastructure life-cycle processes acidification is dominated by the combustion of sulfur-bearing compounds in clinker manufacturing for cement used in concrete freeways, and for non-infrastructure life-cycle processes supply chain electricity use. Ultimately, impacts should account for the time-based radiative forcing of GHGs, high-altitude CO_2 emissions effects, and the shifting of human and environmental effects from vehicle tailpipes to powerplants, to name a few additional factors. We reserve these analyses for future studies. The results of the consequential assessment are highly sensitive to automobile trips avoided and efforts should be made to validate the travel demand model used by the Authority.

5. Strategies for reducing environmental impacts

Given the dominating HSR life-cycle effects from electricity generation and infrastructure construction, strategies can be identified to reduce the system's footprint, prior to its construction and use. First, by meeting the RPS, GHG and NO_x emissions will be reduced by 12% and 22%. Next, emission control strategies are identified for reducing the infrastructure footprint. For GHGs, the use of supplementary cementitious materials (SCMs) such as fly ash or ground granulated blast furnace slag can reduce concrete's footprint by 14–22% depending on the mixture (Flower and Sanjayan 2007). It is expected that the portion of the infrastructure that impacts roadways will be required to use fly ash to meet California Department of Transportation requirements. Furthermore, if the Authority requires concrete producers to utilize cement kilns with selective catalytic and non-catalytic reduction (SR) advanced NO_x controls, material production emissions can be decreased between 35 and 95%, reducing the potential for acidification, respiratory, smog and eutrophication potential impacts (EPA 2007). Lastly, the use of 100% renewables lowers electricity generation impacts (to only power generation facility construction effects) and combined with the infrastructure control strategies produces the greatest reductions. The effects of these strategies are shown in figure 5.

The impact reduction strategies can decrease GHGs between 12 and 69% and NO_x emissions between 22 and 61%. The costs of implementing these strategies should be compared against other opportunities, particularly those identified by GHG and air quality policies. The 80/20 Wind/Solar train, outside of the infrastructure material footprint, has a payback within the first few years of operation and is equivalent to the GHG assessment developed by the Authority, based on NREL (2011), following California Environmental Quality Act requirements.

The transportation emissions reduction from CAHSR, if operating within a cap-and-trade system, should be evaluated. Cap-and-trade programs have been successfully implemented in the US for NO_x and SO_x, and California continues to discuss a GHG initiative. Cap-and-trade programs remove the potential of any single initiative to reduce aggregate emissions as offsets will be met by increases elsewhere in the economy (Millard-Ball 2009). This is because the cap is designed to equalize the marginal abatement cost and does not encourage each economic sector to undertake reductions. Furthermore, if road and rail emissions are part of the cap but aircraft emissions are not, then the only major GHG change resulting from HSR implementation will be the displaced airplane operational emissions. To meet GHG reduction goals, policy makers should consider where CAHSR potential reductions will be counted, whether that is in a cap-and-trade program or direct transportation mandates.

6. Planning for a sustainable mobility future

HSR has the *potential* to reduce passenger transportation impacts to people and the environment, but must be deployed with process and material environmental reduction measures and in a configuration that will ensure high adoption. We have highlighted the life-cycle hotspots that dominate modal success: (i) train size (affecting electricity consumption,

frequency of service and ridership); (ii) infrastructure construction; and (iii) the fossil fuel intensity of the electricity mix. By identifying low and high adoption outcomes, the potential benefits can be discussed, instead of speculating on a normative long-distance transportation future, especially in light of large uncertainty that surrounds many critical factors of the system. Ultimately, this research aims to inform planners and decision makers about providing sustainable mobility options. Planners and policy makers should be asking how a future sustainable transportation infrastructure can be deployed to meet increasing travel demands with the lowest total cost, including externalities. The environmental benefits of HSR should be joined with other considerations when making decisions about the system. Ultimately, decision assessment should include changes in travel time, productivity, congestion, safety, transportation infrastructure resilience, freight synergies, urban development opportunities and employment, in addition to GHG, human health and environmental damages.

Acknowledgments

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Analysis of the CHSRA's GHG Report

On July 1, 2013, the California High-Speed Rail Authority released its *Contribution of the High-Speed Rail Program to Reducing California's Greenhouse Gas Emission Levels* (June 2013).[1] It is meant to fulfill the mandate contained in SB 1029 (the Legislature's authorization of HSR bonds for the Central Valley project) to provide "a report on the 'net impact of the high-speed rail program on the state's greenhouse gas emissions.'"[2] However, the report fails to quantify the project's emissions and emissions reductions, thereby making an evaluation of the program's net impact impossible.

The report is obviously intended to counter the Legislative Analyst's budget report[3] of April 2012, which concluded that the HSR project would result in a net increase in GHG emissions for the first 30 years of operations. Knocking down that report would open the door to funding HSR with cap and trade revenues. Interestingly, the CHSRA report never mentioned the LAO report and pretended it didn't exist. Someone must have concluded they couldn't win an argument on the merits.

Rather than dispute the LAO report, the CHSRA report claims to "detail[] the projected net greenhouse gas (GHG) emissions associated with the construction and operation of the high-speed rail system."[4] However, the report offers no details of those emissions. If numbers were developed during the preparation of the report, they weren't included in the publication. This is a politicized promotional piece and not a science-based document. It is simply not credible and not responsive to the legislative mandate.

Update: The Governor's Budget Proposal

The Governor proposed that $250 million in 2014-15 cap and trade revenues go to HSRA. He further requested that 33% of all cap and trade revenues starting with 2015-16 be continuously appropriated to HSRA.[5] These many billions of dollars, if not well-spent by the HSR project, could threaten the effectiveness of the entire cap and trade program. Careful scrutiny of the HSR project's net GHG benefits is warranted.

Methodology

A disclosure on p. 17 invalidates the entire report: "The timeframe and activities analyzed and discussed in this report were for CP1 [the first phase of the current Merced-Bakersfield project]. As the project moves forward, direct GHG emissions calculations will be carried out for each subsequent construction package." The construction impacts of CP1 cannot be meaningfully analyzed in relation to the operational emissions

reductions calculations, because the latter pertains to the Initial Operating Section (IOS), which is ten times its length. No HSR operations are planned for CP1.

This is critical, because the report is actually comparing the emissions benefits of the IOS to the emissions costs of the one-tenth-as-long CP1. Completing the IOS would require funding the $26 billion extension to the LA Basin, as well as building CP2, CP3, CP4 and CP5 [the remainder of the Merced-Bakersfield project]. Obviously, the net project emissions are going to be very different when the emissions arising from $26+ billion of construction are added in.

Evaluating the HSR program's net impacts requires either the operational emissions reductions of CP1 or the construction emissions of the IOS. This report offers neither.

Summary of Findings

The following six so-called Findings are mere restatements of vague intentions, with no identified funding to implement them:

- Commitment to 100% renewable energy during operations
- Zero net greenhouse gas emissions during construction
- Supportive transit and land use for greater cumulative benefits for the state
- Plans to plant thousands of new trees across the Central Valley
- Cleaner school buses and water pumps in Central Valley communities
- Agricultural conservation measures aimed at reducing Central Valley sprawl and preserving valuable agricultural land[6]

In addition, the report offers no evidence in support of the following two so-called Findings:

- Zero net greenhouse gas emissions during construction[7]

There is no evidence to support this claim. No numbers whatsoever are offered for GHG mitigation activities. This is a classic "aspirational goal" rather than a finding on a plan to achieve one.

- Significant contributions to the State's goals embodied in AB 32 and SB 375[8]

There is no evidence to support this claim.

Not only is there no evidence to support the following three so-called Findings, they are actively misleading, as they are entirely dependent on CHSRA receiving an additional $26 billion to build out the IOS to the Los Angeles Basin. In addition, they will mislead non-technical readers because they appear to be findings on the project's net emissions impacts. Because they exclude the construction emissions of both CP1 and the IOS, they represent only one side of the emissions ledger.

- Greenhouse gas savings from the first year of operations increasing to over 1 million tons of CO2 per year within 10 years[9]
- Result in net GHG emissions diversions that, conservatively, are the equivalent of the GHG emissions created from the electricity used in 22,440 houses, or removing 31,000 passenger vehicles from the road.[10]

- Using methodologies consistent with state practice, an estimated 4 to 8 million metric tons of CO2 saved by 2030, as if the state turned off a coal fired power plant[11]

As discussed below, this last assertion is also misleading because the 8 years of operations are being compared to roughly one year of such a power plant's emissions.

GHG Emissions Sources for High-Speed Rail System

The diagram on page 9 is the only rendition of emissions category totals in the report. Amazingly, there is no corresponding table. The diagram comes closer to identifying the net impact than anything else in the report. However, its use of graphic symbols instead of conventional chart bars makes it impossible to interpret quantitatively. It is unclear from the diagram (or its associated text) whether the symbols have any quantitative significance, and if they do, whether emissions totals are represented by the height or by the area of the symbols. This makes the diagram both useless and deceptive: it obscures more than it discloses. Given the central importance of this data, choosing this indecipherable diagram for its portrayal can only be interpreted as an act of bad faith.

Operational Emissions Reductions

This project has had a long history of challenges to the technical validity of the HSR ridership model and litigation about the hidden changes that were made to it that advantaged Pacheco ridership while penalizing Altamont ridership. Ridership is the key input to an analysis of operational emissions reductions. As will be discussed later, the GHG reduction benefits of the HSR project are very dependent on ridership. With the controversy surrounding the ridership projections, this net emissions analysis rests on a shaky foundation.

The most striking part of this section is the meaningless apples-and-oranges comparison between the annual emissions of a coal-fired power plant and the emissions reductions from 8 years of HSR operations.[12] This is an attempt to invite positive identification with HSR by creating a "Coal Bad--HSR Good" dualism, a classic technique of promotion.

Construction Emissions

While the report uses standard methods to calculate the direct emissions resulting from construction, it entirely leaves out the emissions resulting from the acquisition of construction materials, and offers a weak justification that these emissions shouldn't be counted against the project:

> Regarding the construction materials, for some it is possible to calculate the impacts over the material's life-cycle, from extraction through processing, use onsite, and disposal, and express those impacts in GHG emissions terms. Those GHG emissions are usually the reporting responsibility of the manufacturer, and in terms of a project GHG emissions

> inventory, happen "upstream" and outside the boundary of the project.
>
> For example, cement manufacturers in California are subject to ARB's Mandatory Reporting and Cap-and-Trade Regulations. These regulations require cement manufacturers to report their GHG emissions annually to ARB. The emissions from cement manufacturing count towards the statewide GHG emissions "cap." The GHG emissions covered under the "cap" are required to be reduced through emission controls or a limited amount (eight percent) may be offset through the purchase of ARB certified offset credits.[13]

The problem is that these emissions from construction materials constitute a very significant part of the project's overall emissions, because of the huge amount of concrete called for in the plans. This amount is large enough to increase the cement manufacturing sector's statewide emissions, which makes the "count it upstream" approach entirely inappropriate when evaluating the project's net impacts.

Perhaps recognizing this, the next paragraph of the report acknowledges the appropriateness of including the emissions from construction materials in its analysis, yet withholds the data on the flimsy excuse that the data is not "precise" enough:

> However, the Authority considers it important to disclose the GHG emissions that occur outside of the project associated with materials used during construction. **These have not yet been quantified, due to the limitations of available information at this stage of project delivery.** While it is understood that the rail infrastructure will consist, largely of aggregate, concrete, steel, rails, and ballast; the **precise** source and supplier of those materials is not yet known. Additionally, the **precise** quantities are not available, given the nature of the design-build procurement process... (emphasis added)[14]

This is a masterful exercise in appearing to be fair-minded while simultaneously holding back damaging information. It is obvious that in the course of putting the project out to bid, the Authority prepared estimates of construction material quantities. These estimates were the basis for the calculation of the direct construction emissions. The materials' emissions must be **huge** for the Authority to need to bury them with this kind of double-talk.

The Legislative Analyst's April 2012 report[15] relied on a 2010 pioneering study by Chester and Horvath entitled *Life-cycle assessment of high-speed rail: the case of California.*[16] The study's 2012 update produced data that enabled this calculation: Infrastructure construction and operations contribute between 40% and 51% of the

CHSRA project's GHG emissions per person per kilometer travelled. This figure rises to near 100% of the emissions for the scenario with 100% renewable power, and falls to 32% when the train's capacity is nearly doubled.[17] The paper found "CAHSR infrastructure construction effects are dominated by concrete use. Approximately 67% of CAHSR infrastructure emissions are the result of cement production for concrete use..."[18]

This is the smoking gun: Construction materials (as well as infrastructure construction, if one doesn't assume the success of the zero net GHG emissions program[19]) make up a highly significant percentage of the project's overall GHG emissions. Leaving them out so compromises the net impact analysis as to render it worthless.

The Chester and Horvath study calculated the project's payback period, the point at which the emissions reductions from the substitution of auto and air trips (measured as Vehicle Kilometers Traveled, or VKT) with HSR trips equals the HSR project's GHG emissions, including its cumulative prior emissions:

> The payback sensitivity reveals several important considerations for transportation planners and air quality policy makers. The cumulative plum-colored lines for the high, medium and low forecast figures show that the **GHG payback will likely occur between 20 and 30 yr** (D3) **after groundbreaking**, and acidification potential after 20–40 yr. **However, payback is highly sensitive to reduced automobile travel.** The 5.8 billion auto VKT displaced dominate emissions changes in the corridor and the effects from reduced air travel and CAHSR are small. The reduced auto impacts are significantly affected or dominated by life-cycle components, in particular, avoided vehicle manufacturing, vehicle maintenance and gasoline production. (emphasis added.)[20]

Chester and Horvath are thus warning that any slip in ridership from currently predicted levels would delay the GHG benefits of HSR even further.

Double Counting

When evaluating statewide benefits, it is important that GHG emissions reductions calculations represent only the project's own properties. The model that was used, on the other hand, "also reflects the GHG emissions benefits of ARB's recent rulemakings including on-road diesel fleet rules, Pavley Clean Car Standards, and the Low Carbon Fuel standard."[21] This means that the report's emissions reduction calculations overstate the benefits accruing to the HSR project.

Offset Activities

The only way the CHSRA's GHG Report is able to claim a net beneficial GHG impact is by buying offsets in the form of environmental mitigations, including construction mitigations,[22] and farmland protection.[23] The strategy of the Cap and Trade program is

to purchase GHG-reducing offsets at the lowest cost per ton. There's something very odd about committing Cap and Trade funds to a project that increases GHGs, which then has to buy GHG-reducing offsets. It would be dramatically less expensive on a per-ton basis to fund the GHG-reducing projects directly. Buying these same offsets as part of a CHSRA project package is inherently far more expensive.

Conclusion

The report offers no numbers capable of serving as a basis for the conclusion that "the high-speed rail program will have a positive impact on reducing the state's greenhouse gas emissions."[24] Instead, that conclusion "'feels right' without regard to evidence, logic, intellectual examination, or facts"--the Wikipedia definition of Stephen Colbert's 'truthiness'.

Endorsements

The uncritical endorsements of the report by agency heads expose the depth of its politicization. It simply is not credible that sophisticated agency heads and their staffs failed to spot the profound flaws identified above. Brian Kelly, now Secretary of the State Transportation Agency, "reviewed and approve[s]" the report.[25] Mary Nichols, Chair of the Air Resources Board, "believe[s] the analysis is reasonable..."[26] Instead of the comprehensive overview expected of someone of her subject matter expertise, she offered only superficial comments on the emissions reductions from mobility choices, and avoided construction emissions and offsets entirely. These two endorsements make it obvious that the Governor ordered his people to "make HSR funding happen" no matter what.

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[1] hsr.ca.gov/docs/programs/green_practices/HSR_Reducing_CA_GHG_Emissions_2013.pdf

[2] p. 13. (Unless otherwise noted, all references are to the report accessible at the URL above.)

[3] Legislative Analyst's Office, *Funding Requests for High-Speed Rail*, April 17, 2012, p. 8

[4] p. 13.

[5] Legislative Analyst's Office, *Cap-and-Trade Auction Revenue Expenditure Plan,* February 2014, p. 5

[6] p. 6.

[7] *Id.*

[8] *Id.*

[9] *Id.*

[10] *Id.*

[11] *Id.*

[12] p. 11.

[13] p. 14.

[14] p. 14.

[15] Legislative Analyst's Office, p. 8

[16] Mikhail Chester and Arpad Horvath, *Life-cycle assessment of high-speed rail: the case of California*, Environmental Research Letters, January 2010.

[17] Mikhail Chester and Arpad Horvath, *High-speed rail with emerging automobiles and aircraft can reduce environmental impacts in California's future*, Environmental Research Letters, July 2012, p. 5 [Interpolated from the chart data in Figure 1]
[18] Chester and Horvath, 2012, p. 4.
[19] pp. 13-15.
[20] Chester and Horvath, 2012, p. 9.
[21] p. 19.
[22] p. 13.
[23] p. 15.
[24] p. 20.
[25] p. 1.
[26] p. 5.

Draft General Conformity Determination Comments and Responses

No.	Comment	From	Response
1	ISR application disclosed 24,000,000 cubic yards of imported soil (attachment B), EIS states 11,300,000 cubic yards of fill. Discrepancy should be recirculated for public review and comment	Chatten-Brown & Carstens, 5/23/14, Pg. 1	The estimate of net imported soil for the entire Fresno to Bakersfield Section has increased from 11,300,000 cubic yards (cy) to 29,400,000 cy (the quantity (24,000,000 cy) mentioned in the comment from the ISR application only covered a portion of the F/B Section, for the reasons stated in that application). This new value, which is based on refined analysis and calculations, has been incorporated into the construction analysis and, while it changes the overall emission burdens, it does not change the overall conclusions presented in the document; the increase does not create any new exceedances of General Conformity thresholds for any covered pollutant in any construction year, and all construction emissions of covered pollutants in all construction years (regardless of exceedance) will be offset to net zero through the VERA offset program.
2	It is our understanding that CHSRA plans to fully offset emissions for every year of construction in the San Joaquin Valley Air Basin." Add text to the Final General Conformity Determination to clearly state that these emissions will be fully offset (to net zero).	U.S. Environmental Protection Agency, Region IX, received May 27, 2014Detailed comments, Pg. 1	Text has been added to the Final General Conformity Determination to address this comment.
3	The FEIS and Draft General Conformity Determination explain that FRA cannot yet determine whether emissions from material hauling will exceed conformity thresholds in neighboring air basins." Add text to to clearly state that (1) this Determination is not intended to fulfill general conformity requirements for neighboring air basins (2) separate general conformity determinations	U.S. Environmental Protection Agency, Region IX, received May 27, 2014Detailed comments, Pg. 1	Text has been added to the Final General Conformity Determination to address this comment.

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	will be conducted for project impacts in neighboring air basins if required under the General Conformity Rule (Clean Air Act Section 176(c)(4), revised march 24, 2010).		
4	The Draft Conformity Determination relies upon AQ-MM#4 which indicates that a Voluntary Emission Reduction Agreement (VERA) between the Authority and the San Joaquin Valley Air Pollution Control District will mitigate for the air quality impacts in the year of the source. The Draft Conformity Determination cannot rely upon a document that is not included in the Determination, nor been created or finalized. There is no guarantee that the elements within the VERA will be effective, nor has the VERA been vetted by the public and/or specialists. I request that the Draft Conformity Determination not be approved as its foundation has not been established. The Conformity Determination relies upon the VERA, which is not included or approved.	Aaron Fukuda, via email, May 25, 2014	The California High-Speed Rail Authority Board of Directors, and the San Joaquin Valley Air Pollution Control District (District) Governing Board approved on May 7, 2014 and June 19, 2014, respectively two agreements demonstrating the Authority's commitment to this method of offsetting emissions. Specifically, the parties executed a Memorandum of Understanding between the two agencies committing the Authority to offset its project construction emissions of NOx, ROG/VOC, PM10 and PM2.5 to net zero within District's boundaries (and authorizing up to $35 million for this purpose) and committing the District to implement the offsets with Authority/project funding and a detailed VERA for the portion of the Merced to Fresno HSR Section about to enter construction. Per the terms of the MOU, the MOU commitments (i.e. offsets) will be implemented through a series of VERA agreements substantially similar to the first approved VERA mentioned above. A VERA or multiple VERAs will be completed – again, based on the already-approved VERA, and implementing the MOU – prior to commencement of construction in the Fresno-Bakersfield Section.
5	Page 6-1 The Draft Conformity Determination outlines the project design features that will be implemented during construction. Many of these activities include the application of water to abate air quality concerns. As the Central Valley is currently	Aaron Fukuda, May 5, 2014, Pg. 5	As described in the Final EIS that accompanied the Draft General Conformity Determination, the construction of the Fresno to Bakersfield Section of the HST will result in a net decrease in annual water consumption for the area impacted by the construction of the track and facilities (because the HST project will take water-using agricultural land out of production), when annualized over a 5-year

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	experiencing a drought, many of the surface water channels will not see water this year and many of the groundwater deep-wells are experiencing increasing depth to groundwater readings. As this occurs it seems reasonable that the Draft Conformity Determination provide evidence of the quantity of water that would be required, where the water would come from and address any air quality impacts that may be incurred in acquiring or applying dust control water.		construction period. Specifically, it is estimated that the water usage during the construction of the Fresno to Bakersfield Section of the HST System will be only 6% (868 ac-ft/yr needed for construction compared to 14,689 ac-ft/yr for current existing water usage) of the existing water usage on an annual basis for the Project Footprint. In other words, current annual water usage at locations the Project will displace (mostly agricultural land water usage) is far greater than the water Project-related construction will require annually in the same place. It is important to note that construction water demand is not a continuous flow demand on the supplier and often water usage is sporadic and a function of the particular construction activities going on at the time. It is therefore reasonable to rely on the availability of the necessary quantity of water to implement the Project Design features described in the Draft General Conformity Determination. Construction demand is frequently offset by water supply system storage so other users do not notice a drop in pressure or flow. Contractors sometimes also use a small volume of water storage onsite during construction to eliminate lengthy trips for water trucks to reach a water source such as a municipal fire hydrant. A further analysis of water usage during construction was conducted and can be found in the Water Usage Memo which was made available to the public for http://www.hsr.ca.gov/docs/programs/fresno-baker-eir/final_ERIS_FresBaker_Vol_II_CH3_6B_Water_Usage_Analysis.pdf.
6	Page 7-1 The Draft Conformity Determination indicates that the EMFAC2011 model was used to estimate air quality impacts. The EMFAC2011 does not incorporate new more-stringent fuel economy standards that were adopted in 2012. The new fuel efficiency standards significant increase the fuel	Aaron Fukuda, May 5, 2014, Pg. 5	The General Conformity Rule ensures that the actions taken by federal agencies in nonattainment and maintenance areas do not interfere with a state's plans to meet national standards for air quality. Currently there are no national standards for CO_2 emissions and

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	economy of cars and therefore the carbon dioxide savings being utilized in the model is not accurate.		therefore they are not addressed in the General Conformity document. CO_2 emissions are however addressed in Section 3.3 of the FEIS. http://www.hsr.ca.gov/docs/programs/fresno-baker-eir/final_ERIS_FresBaker_Vol_I_CH3_3_Air_Quality_Global_Climate_Change.pdf.
7	Page 9-1 The Draft Conformity Determination addressed air quality concerns as they relate to the construction of the project. One particular item that is missing is the impact to local roadways from the immense hauling and import requirements for this project. It has been estimated that 24 million cubic yards of dirt will need to be imported to create the rail bed. This amount of traffic on local roads will require local agencies to repave and/or reconstruct many of the heavily used roadways once construction is done. As this will be an impact of the project, the air quality impacts associated with the repaving and/or reconstruction of roads must be included in the analysis, which it is not.	Aaron Fukuda, May 5, 2014, Pg. 5	The Draft General Conformity Determination includes emissions from trucks used for hauling materials, as detailed in the Air Quality Technical Report (http://www.hsr.ca.gov/docs/programs/fresno-baker-eir/final_ERIS_FresBaker_Tech_Air_Quality_Technical_Report_April_2014.pdf). Any future repaving and/or reconstruction of roads are secondary or perhaps tertiary impacts that are speculative both in likelihood of occurrence and quantity and will be offset to net zero in any event (if they occur at all) by the VERA mentioned above.
8	Page 9-2 The Draft Conformity Determination indicates that the mobilization of this project will occur in April 2014. The Authority has yet to gain full environmental clearances, including permits and contract. The Draft Conformity Determination should be updated to include a more realistic	Aaron Fukuda, May 5, 2014, Pg. 6	The Draft General Conformity Determination has construction starting in April, 2014. While the start month has changed, mobilization for the project is still expected to occur in the year 2014. Since the emission estimates used to determine exceedances of the applicable conformity thresholds are calculated annually year, the month used as a start for mobilization should not affect the total emissions and therefore would not affect the conformity analysis, as mobilization is a small part of the

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	mobilization date and other construction related dates should be updated.		overall construction schedule, the major works are expected to occur according to the schedule used to estimate the emissions.
9	Page 9-3 The Draft Conformity Determination indicates that anticipated travel distances for hauling trucks were used to determine air quality impacts. The public should be given information to determine what hauling distances were used. In other documents provided by the Authority, 24 million cubic yards of dirt will be moved to the project for construction. As this is a monumental amount of dirt, I find it hard to believe that this material will be made readily available adjacent or within close proximity of the alignment. I recommend that the information be provided in the document and recirculated for public review.	Aaron Fukuda, May 5, 2014, Pg. 6	The Draft General Conformity Determination includes emissions from trucks used for hauling materials. Details on the distances used for haul trucks are included in the AQ Technical Report and Appendices which were referenced in the Draft General Conformity Determination and made available for public review during the 30 day comment period.
10	Page 9-3 The Draft Conformity Determination indicated that parking lots at HSR stations were left out of the analysis. This removal of this item is not allowed as it is a part of the project and will have air quality impacts during construction and into the future. The FRA should include those structural features and recirculate the Draft Conformity Determination.	Aaron Fukuda, May 5, 2014, Pg. 6	As stated in the Draft General Conformity Determination, the stations will include parking structures rather than lots. Therefore, the potential emissions from parking lots were not included in the analysis. However, the emissions from the construction of these structures were included in the calculations in the Draft General Conformity Determination.

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11	Page 9-3 The Draft Conformity Determination indicated that parking lots at HSR stations were left out of the analysis. This removal of this item is not allowed as it is a part of the project and will have air quality impacts during construction and into the future. The FRA should include those structural features and recirculate the Draft Conformity Determination.	Aaron Fukuda, May 5, 2014, Pg. 6	See Response to Comment No. 10 above.
12	Draft Conformity does not analyze the emissions from the induced growth that will be created by the Project - EIS violates NAPA and Clean Air Act	City of Shafter, May 22, 2014, Pg. 4	Potential induced growth due to the project has been analyzed in detail in http://www.hsr.ca.gov/docs/programs/fresno-baker-eir/final_ERIS_FresBaker_Vol_I_CH3_13_Station_Planning_Land_Use_Development.pdf (page 3.13-42). The Build Alterative analyzed in the Final EIS considers the potential emissions that could result directly from the Project. For example, the Final EIS analyzes the potential increased traffic around the new stations. However, beyond this analysis, the exact amounts of any emissions from induced growth are highly speculative and could not be accurately measured. In addition, neither FRA nor the Authority has any direct control over these emissions. For these reasons the potential emissions from induced growth are not included in this Conformity Determination.
13	The analysis of Impact AQ#4, Greenhouse Gas Emissions During Construction, fails to include the GHG emissions from the production of materials used in construction. Concrete production, especially, creates very high GHG emissions. A recent paper, attached, estimates these emissions to be so high as to offset twenty to thirty years of GHG emissions reductions from the reduction in VMT due to the operation of the HST. When	Transportation Solutions Defense and Education fund, May 27, 2017, via email	For purposes of this analysis, the General Conformity Rule ensures that the actions taken by federal agencies in nonattainment and maintenance areas do not interfere with a state's plans to meet national standards for air quality for certain specific pollutants. Currently there are no national standards for CO_2 emissions and therefore they are not addressed in the General Conformity document. CO_2 emissions are however addressed in Section 3.3 of the FEIS. http://www.hsr.ca.gov/docs/programs/fresno-baker-eir/final_ERIS_FresBaker_Vol_I_CH3_3_Air_Quality_Global_Climate_Ch

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	properly analyzed, the impact should be considered of substantial intensity under NEPA.		ange.pdf. However, while FRA is not required to analyze CO_2 emissions in this Conformity Determination it is important to note that the Authority is taking steps that may result in reduced emissions from cement production. Most notably, the Authority will allow the use of recycled materials (e.g. aggregates and Supplementary cementitious materials (SCM)) if they meet durability and maintainability standards in cement. SCMs are commonly used in concrete mix designs for civil infrastructure. SCMs substitute cement content with industrial waste and by-products, such as silica fume, ground granulated blast furnace slag, and fly-ash, as appropriate to the required performance. The use of these recycled materials (and other requirements for construction waste recycling), will reduce greenhouse gas emissions associated with materials manufacture and disposal, including those from cement production. It is also noteworthy that cement manufacturer emissions are regulated in the State of California under AB32, and are covered in the cap and trade program.
14	The analysis of Impact AQ#4, Greenhouse Gas Emissions During Construction, fails to include the GHG emissions from the production of materials used in construction. Concrete production, especially, creates very high GHG emissions. A recent paper, attached, estimates these emissions to be so high as to offset twenty to thirty years of GHG emissions reductions from the reduction in VMT due to the operation of the HST. When properly analyzed, the impact should be considered of substantial intensity under NEPA.	Transportation Solutions Defense and Education fund, May 27, 2017, via email	Same as above.