

Supplemental Data for the 404 Alternatives Analysis – Response to EPA Request

On May 10, 2011, the EPA provided a request for additional data and clarification, mostly with respect to the Western Madera Alternative (A3). This document responds to the request, addressing the items listed below:

- **Item #1:** Information on Farmland Impacts
- **Item #2:** Roadway Closures Associated with the Western Madera Alternative (A3)
- **Item #3:** Acres Affected by Size of Farm Property along the Western Madera Alternative (A3)
- **Item #4:** Clarification of Data in Attachment 3 of the Summary Report (Aquatic and Waters of the US Potentially Affected by Merced to Fresno Alternatives Considered Technical Memorandum)
- **Item #5:** Additional Items (Stations, North-South Alignments, Wyes)

Item #1: Information on Farmland Impacts

Table 1 compares the impacts on Important Farmland along the north-south alignments only (i.e., the wyes are not included). The data shows that potential Important Farmland impacts would be least along the UPRR/SR 99 Alternative (A2) and greatest along the Hybrid and Western Madera (A3) alternatives. Impacts to Prime Farmland—the category with the highest value—are anticipated to be greater along the Western Madera Alternative (A3).

Important Farmland impacts are determined by overall length of the alternative (the BNSF [A1] and Hybrid alternatives are the longest), as well as by the quality of farmland along each alignment. The alternatives could result in loss of Important Farmland regardless of proximity to existing transportation corridors, although there is a higher presence of urban and built-up land, and thus less Important Farmland, near existing corridors. The advantage of locating the high-speed train (HST) tracks in proximity to existing corridors, essentially widening those corridors, is that the resulting impacts to farmland would be along the edge of the field or farm and would not bisect it, thus reducing the acreage of impact and the burden on farming operations from severed parcels (see Figure 1). The north-south alignments would minimize the occurrence of severance by following the existing UPRR/SR 99 or BNSF corridors.

Deviation from the existing corridors is necessary for the project to connect to the San Francisco Bay Area. This deviation would occur at one of the wye design options; all alternatives have to make this connection. The UPRR/SR 99 (A2) and BNSF (A1) alternatives would make these connections directly from existing corridors along either the Ave 24 Wye or the Ave 21 Wye. While the impacts from the Hybrid Alternative appear to be as high as those of other alternatives, it eliminates the alignment through Chowchilla by taking advantage of the Ave 24 Wye alignment, resulting in the shortest alternative (73 miles including the wye) compared to other alternatives (81 to 95 miles including the wyes) and reducing impacts on the urban areas of Chowchilla. Where the alternatives deviate from existing corridors, such as along the wye connections and the Western Madera Alternative (A3), parcel severance would occur that is highly disruptive to the agricultural community. This is demonstrated in Table 2 of the Checkpoint B Summary Report, which shows the number and acreage of severed parcels by alternative for the north-south alignment.

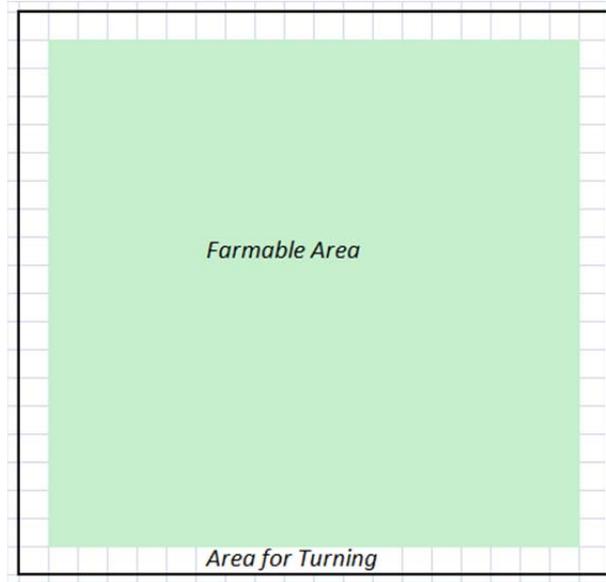
Table 1
 Important Farmland Potentially Affected by Each HST Alternative

HST Alternative	Important Farmland				
	Prime Farmland (acres)	Farmland of Statewide Importance (acres)	Unique Farmland (acres)	Farmland of Local Importance (acres)	Total (acres)
Impact from Right-of-Way					
A1 - BNSF Alternative (64 miles)	112 to 141	48 to 58	138 to 157	39 to 70	337 to 426
A2 - UPRR/SR 99 Alternative (60 miles)	87	87	63	42	279
Hybrid Alternative (73 miles, including the wye)	110	149	215	63	537
A3 – Western Madera Alternative (46 miles)	214	140	104	53	512
A4 – Crossover Alternative (63 miles)	105	69	151	84	410
Impact from Right-of-Way Plus 250-Foot Buffer					
A1 - BNSF Alternative	930 to 1,357	587 to 755	1,508 to 1,768	333 to 524	3,359 to 4,405
A2 - UPRR/SR 99 Alternative	761	947	830	272	2,810
Hybrid Alternative	663	965	1,212	332	3,172
A3 – Western Madera Alternative	1,381	1,321	741	305	3,748
A4 – Crossover Alternative	1,154	747	1,194	479	3,574
Source: Merced, Madera and Fresno County Farmland Mapping and Monitoring Program (FMMP) (2009).					

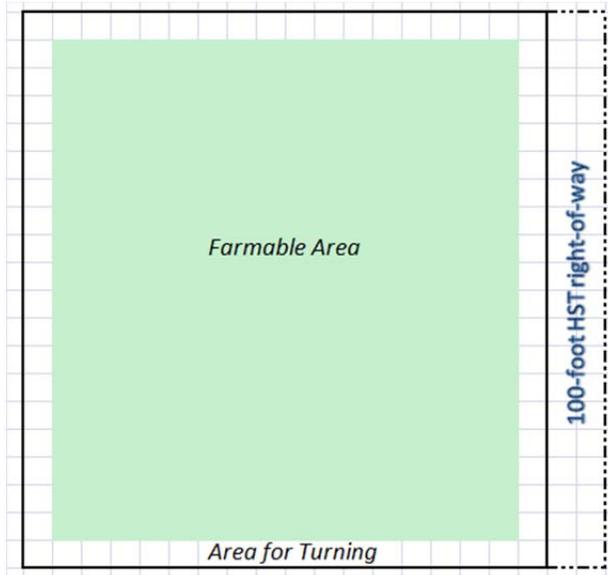
Data Source Notation:

While the U.S. Environmental Protection Agency (EPA) requested farmland data as used by the Natural Resources Conservation Service (NRCS) under the Department of Agriculture, the response relies on FMMP data for the following reasons:

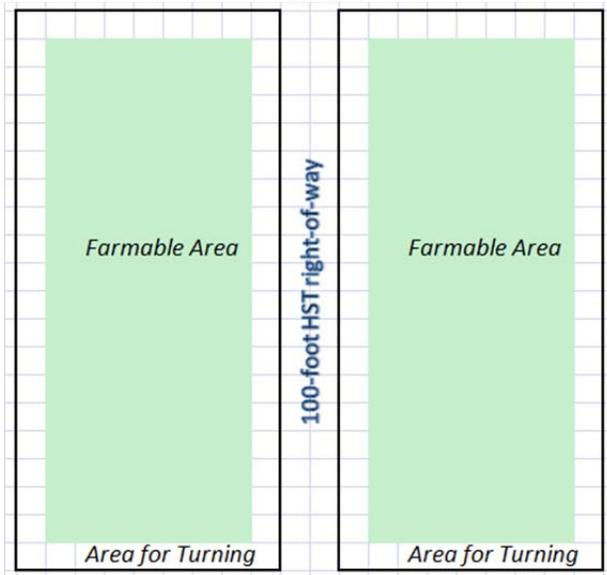
1. FMMP data has been used throughout the process and allows comparison with all other data generated to date.
2. According to Bill Reed/NRCS (personal communication with Karin Lilienbecker/CH2M HILL, May 11, 2011), a GIS layer with farmland classifications is not available.
3. The land evaluation and site assessment conducted for the Merced to Fresno Section reports data by corridor contained in a certain county so that using the data to calculate different alignments over the distance of the Merced to Fresno Section is not possible.



*Parcel with No Project:
Turning Area = 10% of land.*



*Parcel with Project – Shaved:
Turning Area = 11% of land.*



*Parcel with Project – Severed:
Turning Area = 16% of land.*

Figure 1
Land Required for Turning

Item #2: Roadway Closures Associated with the Western Madera Alternative (A3)

Table 2 provides an overview of how the conceptual alternatives would interact with other transportation corridors. It was assumed that HST would cross over state routes, but in some cases, extending an existing state route interchange or overcrossing was considered to be more prudent. Due to the number and nature of local roadways, many smaller roadways are suggested to be closed, but, for this evaluation, a standard consistent with California Department of Transportation (Caltrans) policy was applied, maintaining access every 2 miles with a roadway overcrossing the HST. The Western Madera Alternative (A3) would have the most local and county road closures because it would diagonally traverse the agricultural grid. In addition, the Western Madera Alternative (A3) would also require the highest number new overcrossings, nearly double any other alternative. Overcrossings do not easily facilitate the need of agricultural operations to move large equipment from one side of the railroad barrier to the other side. An overcrossing may minimize the barrier, but farmers may still need to duplicate machinery, regrade their fields, and change irrigation systems in order to continue operations efficiently. Therefore, while crossings and overcrossings do provide access, they are considered impacts on the agricultural community.

Table 2
 Crossing by Alternative

	BNSF	UPRR/ SR 99	Western Madera	Crossover	Hybrid
	A1	A2	A3	A4	
Engineering Design Elements					
State Roads and Railroad Crossings					
SR 99 ^a	4	4	4	4	4
SR 152/ SR 233 ^b	0/1	0/1	1/0	0	0/1
UPRR	2	3	2	2	5
BNSF	0	0	0	0	0
Number of County/Local Road Closures/Modifications					
Closures	24	22	39	26	22
Extension of overcrossings	1	11	3	3	3
New Overcrossings	21	7	38	19	22
New Undercrossings	0	0	0	0	0

^a All alternatives also cross over SR 148/145.

^b Only the Ave 24 Wye would cross over SR 233 and SR 152 for Alternatives A1 and A2, whereas the A3 and Hybrid alternative north-south alignment would cross over SR 152 or SR 233.

Item #3: Acres Affected by Size of Farm Property along the Western Madera Alternative (A3)

EPA requested information regarding relative impacts on small, mid-sized, and large farms to determine socioeconomic effects. However, such information cannot be readily developed because of data limitations, as listed below:

1. Data collected is limited to parcels that would be affected by the alternatives. It does not reveal whether adjacent or noncontiguous parcels held under the same ownership would change the category of an affected land holding to large, medium, or small.
2. There are numerous properties that do not have named ownership, according to county assessor data.
3. Not all land holdings are necessarily farms; they may contain residences or other uses—such as railroad-owned lands or preservation lands. The owner name does not necessarily allow conclusion about land use.
4. The percentage of total lands for one property owner affected can be misleading. As shown below, 1.04 acres represents 31% of the total land area for one property owner, whereas 11.84 acres of impact only represents 1.6% of another property owner (this is a true situation, but the name has been changed). Furthermore, the three properties identified below could be considered to belong to the same owner.

Name	Impacted Area	Percent of Total Land Owned
Property Owner A	1.04 acres	31.0%
Property Owner B	6.87 acres	4.3%
Property Owner C	11.84 acres	1.6%

5. The EPA did not provide parameters for classifying small, mid-sized, and large farm operations.
6. The percentage does not explain the relative impact on the agricultural community, because there are other impacts associated with property acquisition on the agricultural community. There is a possibility that the acquisition would sever the land, thereby creating other hardships on the entire farm, including rebuilding the irrigation system, need for additional equipment, inefficient shape of land, or ineffective farming. In addition, the cumulative impact of a new transportation corridor could lead to further reduction of farmable lands since a farm typically requires a perimeter roadway for farm equipment and utilities commonly follow transportation corridors, resulting in less useable property along the edge of the farm. Therefore, the total area of reduction on a farm may be more than the permanent acquisition area for the project.

Conclusions drawn about socioeconomic impacts on farm operations of different sizes based on vague or inconclusive data would be misleading and potentially erroneous and controversial. Nevertheless, the concerns about impacts on farmlands have long been recognized by the Authority. To address concerns regarding severance of farmland (and concerns about other environmental effects, such as on natural resources), the Authority has included as part of the project’s Purpose and Need, and as concurred with by the EPA and the U.S. Army Corps of Engineers (USACE) (on January 20, 2011, and February 2, 2011, respectively) an objective “to follow existing transportation corridors to the extent possible.”

Item #4: Clarification of Data in Attachment 3 of the Summary Report (Aquatic and Waters of the US Potentially Affected by Merced to Fresno Alternatives Considered Technical Memorandum)

Comments from EPA questioned potential inconsistencies in the wetland acreages presented in Tables 1 and 2 of Attachment 3 to the Summary Report, particularly, for the Kojima Development Heavy Maintenance Facility (HMF) site. For the Kojima Development HMF, Table 1 indicates that there are 0.51 acre of wetlands in the wetland study area (WSA), and Table 2 indicates 0.75 acre for the—presumably smaller—construction footprint. However, as mentioned in footnote c of Table 2, the GIS calculations are set up to “favor” the HST track over the HMF sites, which may or may not be built at any particular location. Figure 2 explains how the calculations are set up.

Item #5: Additional Items (Stations, North/South Alignments, Wyes)

Stations

As described in the Checkpoint B package, three station sites in Merced were considered as part of the range of alternatives. From the analysis presented in the AA Report and described in Checkpoint B, the Downtown Merced Station best satisfies purpose and need and provides the best access to SR 99 and the public transit system, and has the fewest residential impacts.

Existing multi-modal stations like Diridon Station in San Jose and Union Station in Los Angeles represent major transportation hubs that bring together local, regional, and interregional transportation services. To promote connectivity to the larger transportation system, the Authority has always assumed that the high-speed train (HST) would serve these existing stations. In other areas that lack an existing transportation hub, the regional teams are working with local communities to identify one or more potential station sites. Again, these station sites are to be described and evaluated in the AA Report, in Checkpoint B, and the EIR/EIS.

With regard to your question regarding the 404(b)(1) analysis, Checkpoint B includes this evaluation and has been prepared as a stand-alone document. Checkpoint B is also referred to in the text as part of Chapter 2, Alternatives, of the Merced to Fresno Section EIR/EIS.

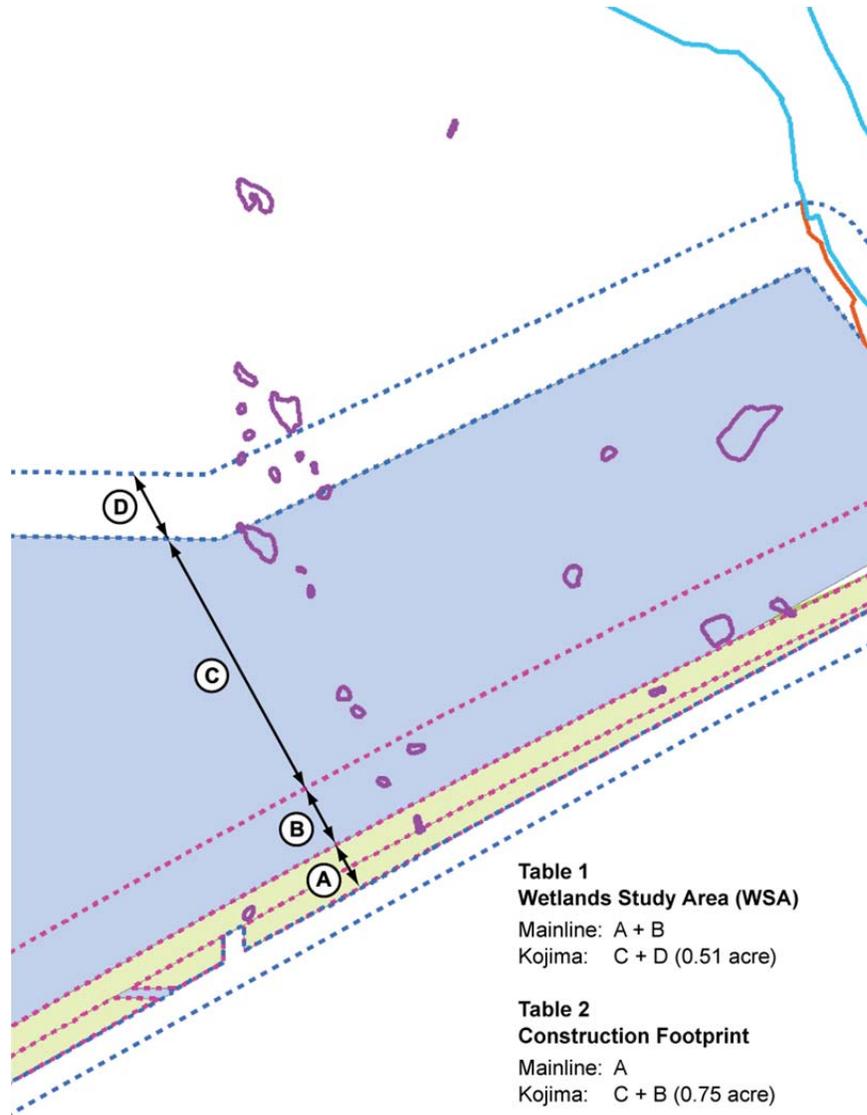
North/South Alignments

The Merced to Fresno team is compiling information on agricultural and water impacts for the portion of the UPRR, Hybrid and Western Madera alternatives from the point where all three alternatives share the UPRR alignment northwest of Chowchilla to the point where they reconnect to the UPRR northwest of Fresno. The team will provide you this information to you the week of May 16.

Wyes

As described in the Preliminary Alternatives Analysis (AA) and Supplemental AA Reports previously provided, the Authority evaluated several different wye configurations to establish a connection from the San Francisco Bay Area via the Pacheco Pass to the UPRR or BNSF alternatives between Merced and Fresno. As a result of this earlier work, two wye options are presently being carried into the EIR/EIS, one providing a connection utilizing Ave 21, the other using Ave 24.

To better clarify the wye alternatives being evaluated as part of the San Jose to Merced and Merced to Fresno sections, the Authority would propose to host a conference call with EPA and the Corps to discuss the issue the week of May 23. We agree with your comment about the need to evaluate the wyes and their relationship with the two HST sections holistically.



B was counted as part of the mainline because the HMF might not be built at the Kojima site. This avoids double counting of wetlands in the WSA.

The difference in acreage between the wetlands in B and D is 0.24 acre.

The wetlands area in B is greater than the area in D.

Figure 2
 Wetland Acreage Calculations at Kojima Development HMF Site, for Tables 1 and 2 of Summary Report Attachment 3