



February 22, 2012

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RE: Revised California High-Speed Train Project, Merced to Fresno Section
Checkpoint C Summary Report (USACE SPK-2009-01483) and Merced to Fresno
Permitting Schedule

Dear Mr. Jewell and Ms. Dunning:

Attached is the revised Merced to Fresno Section Checkpoint C Analysis and Summary Report (the Summary Report) as well as the latest Merced to Fresno Permitting Schedule. The package, comprised of the Summary Report and attached appendices, constitutes our formal submittal for the selection of the Preliminary Least Environmentally Damaging Practicable Alternative (LEDPA). It has been prepared in response to your comments on our November 13, 2011, draft document. It also responds to comments we received from your staff at a meeting held at the Authority's offices on December 20, 2011. A copy of the meeting summary is attached to the Summary Report.

Technical Information. In preparing this submittal and conducting the analysis set forth in the Summary Report, we have relied on the extensive technical information and project level analysis set forth in:

- the updated February 2012 administrative draft of the Merced to Fresno Section High-Speed Train (HST) Project EIR/EIS, which incorporates additional analysis and information in response to public comments on that document and will be supplied to you under separate cover;
- the updated Watershed Evaluation Report (WER), the California Rapid Assessment Methodology (CRAM), and the Compensatory Mitigation Plan (CMP); and
- all other technical reports referenced in the Summary Report, Section 1, Table 1-1, which sets forth a summary of all information provided with this submittal to satisfy EPA/USACE Data Needs for Checkpoint C.

All of the technical reports relied upon in preparing this submittal are provided concurrently with the attached Summary Report, either as separately bound documents, or on the enclosed DVD, or a combination of both, as indicated in the Table of Contents for Volume II of this submittal, titled *Appendices*. The Table of Contents also provides information regarding the delivery method for each technical report provided herewith.

Please notice that Historic Properties Survey Report and Archaeological Survey Report (Appendix J) provided with this submittal include sensitive cultural information that is not for public distribution. Accordingly, please limit distribution to your respective cultural resources reviewers. Also, please note that while the Authority has made

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significant progress at your request in preparing a detailed Mitigation Strategy and Implementation Plan (Appendix E) (the MSIP), the attached plan contains all essential elements, but certain nonessential elements remain to be completed. We will provide you with an updated version of the MSIP as this Checkpoint C process progresses and as soon as it is available.

Avoidance of Impacts to Jurisdictional Waters. In conducting the analysis for this submittal, we have made an effort to modify the project design and construction footprint for the Hybrid Alternative to further reduce impacts of the Preferred Alternative/proposed project on "jurisdictional waters," which for purposes of the Summary Report has been defined broadly to include all water features identified as jurisdictional in the preliminary jurisdictional determination. (See Summary Report, Section I, Definitions for details.) The additional avoidance achieved through this effort is reflected in the analyses of the WER and CRAM, as well as the Summary Report. A final version of the construction footprint reflecting all avoidance and reductions in impacts to jurisdictional waters (including changes to the footprint in downtown Fresno) achieved to date, together with any further avoidance and impact reductions to jurisdictional waters that may result from any additional post-submittal avoidance analysis, will be provided to you in mid-March. Once the avoidance analysis is completed, we will also provide you with a final set of acreage impacts numbers for jurisdictional waters, which will in turn be incorporated into the Final Merced to Fresno HST Project EIR/EIS.

The design standards for tracks that can accommodate a train traveling at speeds up to 250 miles per hour (mph) allow little flexibility to change the alignment of the proposed project to avoid jurisdictional waters because the curve radius for changes in alignment is a minimum of 5 miles. Nevertheless, the Authority was able to attain additional avoidance of jurisdictional impacts by focusing on:

- horizontal modifications to narrow the construction footprint or relocate temporary or existing roads to eliminate temporary or permanent impacts particularly in areas planned for roadway and railway overcrossings; and
- vertical modifications to change the profile, and thereby the pier structure, for planned bridges, particularly over the San Joaquin and Fresno Rivers.

The design modifications avoided a total of 2.35 to 3.17 acres (depending on the alternative/wye design option combination) of impact to jurisdictional waters, although the direct impacts avoided would still qualify under the conservative analysis methodology employed in the Summary Report and technical appendices as indirect impacts and would, therefore, still require mitigation. (See, Summary Report Section 5, which compares the original and reduced impacts attained by this avoidance analysis.)

Taking into account the additional proposed project design modifications adopted to avoid and reduce impacts to jurisdictional waters, and based on the conservative assumptions about the extent of direct and indirect impacts summarized in Section 8.1 of the Summary Report, the Hybrid Alternative would have, at most, 38.97 or 41.44 acres of direct impacts to jurisdictional waters, depending on the Hybrid Alternative/wye design option combination. See also, Section 3.2 of the Summary Report.

To assure that all potential indirect impacts are fully assessed pending further site-specific analysis, indirect impacts are conservatively assumed to occur to all jurisdictional waters within 250 feet of the project footprint. The Hybrid Alternative would have, at most, 87.20 or 94.54 acres of indirect impacts on other jurisdictional waters. See also, Section 3.2 of the Summary Report. In general, indirect impacts are

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anticipated to be minimized and fully mitigated by project design features and mitigation measures, including water quality control best management practices.

Comparison of Impacts to Jurisdictional Waters. Section 8.1 of the Summary Report sets forth a comparative analysis of the impacts to jurisdictional waters resulting from the three alternatives. By comparison, the BNSF Alternative, regardless of wye design option, has considerably larger areas of permanent direct and indirect impacts on jurisdictional waters. The BNSF Alternative could directly impact from 41.38 to 51.48 acres of jurisdictional waters. The indirect impacts of the BNSF Alternative would range from 110.67 to 135.25 acres. The BNSF Alternative would result in both the greatest direct and indirect impacts to jurisdictional waters of the three alternatives.

The UPRR/SR 99 Alternative's impacts are comparable to, but slightly smaller than, those of the Hybrid Alternative. The UPRR/SR 99 Alternative would have from 32.50 to 37.43 acres of direct impacts to jurisdictional waters and from 77.53 to 88.11 acres of indirect impacts on jurisdictional waters. (For a comparison of the three alternatives, see Summary Report, Section 8.1.)

The Hybrid Alternative would result in similar but somewhat greater impacts to jurisdictional waters than the UPRR/SR 99 Alternative. However, both the Hybrid and the UPRR/SR 99 Alternatives would affect only a small percentage of the existing jurisdictional waters within only two of the three watersheds encompassing the alternative construction footprints. More specifically, the UPRR/SR 99 Alternative would result in total permanent and temporary direct and indirect impacts to approximately 8 percent of existing vernal pool acreage within the three watershed area, and the Hybrid Alternative would result in total permanent and temporary direct and indirect impacts to approximately 10 percent of existing vernal pool acreage within the three watershed area. Evaluation of these predicted impacts in this watershed context indicates that quantity of impacts to jurisdictional waters by the UPRR/SR 99 and Hybrid Alternatives are within a similar range, and significant avoidance of impacts to the bulk of jurisdictional waters is achieved by both the Hybrid and UPRR/SR 99 Alternatives.

Further, the bulk of the difference between the UPRR/SR 99 Alternative's impacts to jurisdictional waters and the Hybrid Alternative's impacts to jurisdictional waters consists of temporary indirect impacts. These indirect impacts would occur in jurisdictional waters located outside of the construction footprint of the alternatives, within 250-foot impact area adjacent to the construction footprint conservatively identified by the Authority and FRA for purposes of assuring that all potential indirect impacts are fully assessed, pending further site-specific analysis (which is not feasible at this stage of the MF HST Project). Realistically, when site-specific conditions can be considered, indirect impacts are expected to be minimal or nonexistent, and project design features and mitigation measures would fully manage and minimize potential indirect impacts. As a result, when site-specific context is considered in evaluating predicted indirect impacts to jurisdictional waters, the indirect impacts to jurisdictional waters associated with the Hybrid and UPRR/SR-99 Alternatives are considered to be relatively equivalent, despite the stated differences in indirect impact acreage between those two alternatives, and all indirect impacts are expected to be fully minimized and mitigated.

The average CRAM rating for jurisdictional waters impacted by each alternative is also important information to consider in comparing the quality of resources impacted by the alternatives. The CRAM scores for waters impacted by all alternatives are low, with the mean CRAM scores for jurisdictional waters impacted by each of the three

alternatives range from 42 to 55—well below the statewide average of about 74 and generally at the high end of poor/low end of fair, even for the region. Although jurisdictional waters impacted by the three alternatives are generally low, the BNSF Alternative would impact the highest quality riverine and nonriverine jurisdictional waters.

The CRAM scores for jurisdictional waters impacted by the UPRR/SR 99 and Hybrid Alternatives were significantly lower than those for waters impacted by the BNSF Alternative. Although the UPRR/SR 99 Alternative impacts jurisdictional waters with somewhat lower CRAM Scores (3 to 8 points lower) than those of the Hybrid Alternative, impacts resulting from both alternatives affect only low to low/fair quality jurisdictional waters as measured by those scores. Further, the scores for the waters impacted by the two alternatives are so close that the difference is statistically insignificant because, based on statistical analysis, total CRAM scores need to be at least 10 points from each other to conclude the resources scored are materially different in character or quality.

The Summary Report and supporting technical data do not support the selection of the BNSF Alternative as the LEDPA because its impacts to quantity and quality of jurisdictional waters are substantially greater than those of either the Hybrid or UPRR/SR 99 Alternative.

The USACE cannot issue a permit if there is a practicable alternative to the proposed discharge that would have less adverse impact on the aquatic ecosystem and would not have other significant adverse environmental consequences (40 CFR § 230.10(a)). The quantitative differences between impacts to jurisdictional waters associated with the Hybrid and UPRR/SR 99 Alternatives are relatively insubstantial when considered in the site-specific and watershed contexts. Further, based on a comparison of CRAM scores for jurisdictional waters impacted by the Hybrid Alternative (i.e., the Preferred Alternative) and the UPRR/SR 99 Alternative, the two alternatives would have relatively comparable impacts on jurisdictional waters in terms of quality of resources impacted and would generally affect quite low-quality waters as compared with waters of the state and the region. Therefore, the Hybrid Alternative cannot be dismissed from consideration as the Preferred Alternative or the LEDPA. Instead, it is appropriate to consider and compare the relative practicability of each alternative (in terms of construction costs, logistics, and constructability) and the other significant environmental impacts and consequences of the alternatives.

Comparison of Impacts to Riparian and Other Habitats of Concern. As discussed in more detail in Section 8.1.5, Section 8.1.6, and other related sections of the Summary Report, the BNSF Alternative would have the greatest encroachment into critical habitat; the UPRR/SR 99 and Hybrid Alternatives would not impact designated critical habitat.

The best-case design option for the BNSF Alternative would have the least impact on riparian habitat of design options for any of the alternatives; however, the best-case design option for each of the alternatives results in relatively equivalent total riparian impacts at approximately 28 acres under BNSF Alternative, 29 acres under the UPRR/SR 99 Alternative, and a little less than 30 acres under the Hybrid Alternative. With respect to the worst-case impact scenarios for the UPRR/SR 99 and Hybrid Alternatives, the Hybrid Alternative results in about 5 acres less impact to riparian habitats than the UPRR/SR 99 Alternative. The Hybrid Alternative is, therefore, preferable from the standpoint of riparian habitat impacts.

Other Significant Adverse Environmental Consequences. As discussed in more detail in Section 8.2.6, Section 8.2.7, and other related sections of the Summary

Report, both the Hybrid and UPRR/SR 99 Alternatives would result in other significant adverse environmental consequences. While the UPRR/SR 99 Alternative would result in a lower quantity of impacts to many biological resources (with the exception of certain special-status wildlife species and riparian habitat), it would result in the most severe environmental impacts to community resources and receptors. For example, the UPRR/SR 99 Alternative is expected to result in the greatest number of noise impacts with moderate to severe intensity to sensitive receptors, the greatest impacts to cultural resources sites protected by Section 106 of the National Historic Preservation Act, the most substantial visual and aesthetic impacts, the greatest construction air quality impacts based on an extended construction period and additional construction equipment needed for its elevated guideways, and adverse impacts to approximately twice as many Section 4(f) resources as the other alternatives. In many instances, the environmental impacts of the UPRR/SR 99 Alternative to local community resources are nearly twice as great as the other alternatives.

The uses of and/or adverse impacts to Section 4(f) resources are particularly problematic because Section 4(f) resources are protected to the same extent as wetlands and other jurisdictional waters, meaning there are substantive regulatory requirements to avoid and minimize impacts to those resources and to select the alternative that results in the least overall harm to such resources.

Only the agricultural impacts of the two alternatives are similar. The UPRR/SR 99 Alternative would result in fewer acres of important farmland impacted than the Hybrid Alternative, although its impacts to prime farmlands would be roughly equivalent to those of the Hybrid Alternative.

Overall, the Hybrid Alternative would result in the fewest significant environmental impacts and consequences to local community resources and receptors.

Thus, while the impacts to jurisdictional waters associated with the UPRR/SR 99 and Hybrid Alternatives are relatively comparable when considered in terms of quality, quantity, and site-specific and watershed-level context, the UPRR/SR 99 Alternative would result in other more significant adverse environmental consequences than the Hybrid Alternative, which also must be considered in the 404(b)(1) analysis.

Impacticability of UPRR/SR 99 Alternative

Cost. Practicable alternatives are project alternatives that are available and capable of being implemented after taking into account considerations of cost, existing technology, and logistics in light of overall purpose and need of the project (40 CFR § 230.3(q)).

The purpose of the statewide HST System is to provide a reliable high-speed, electric-powered train system that links the major metropolitan areas of the state and that delivers predictable and consistent travel times. The purpose of the Merced to Fresno HST Project is to implement the Merced to Fresno Section of the California HST System to provide the public with high-speed, electric-powered 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 system.

The HST System must meet California's need for reliable, high-speed, lower emissions transit in a manner that is consistent with provisions of Proposition 1A, the Safe, Reliable, High-Speed Passenger Train Bond Act, adopted by California voters in November 2008 (Streets and Highways Code § 2704, et seq.). That initiative states, in part, "[i]n order to reduce impacts on communities and the environment, the alignment

for the high-speed train system shall follow existing transportation or utility corridors to the extent feasible and shall be financially viable, as determined by the authority" (Streets & Highways Code § 2704.09(g)).

Detailed and reasonably reliable construction and capital-cost estimates have been prepared for each alternative and design option combination for the Merced to Fresno HST Project as set forth in the Capital Cost Estimate Report, Merced to Fresno Section High-Speed Train Project (February 2012) (Capital Cost Estimate Report), attached as Appendix C to the Summary Report.

As shown in Sections 6.3 and 8.2.1 of the Summary Report, the UPRR/SR 99 Alternative would cost an estimated \$6.7 billion with the Ave 24 Wye Design Option and an estimated \$5.9 billion for the Ave 21 Wye Design Option. The Hybrid Alternative would cost between \$3.8 billion for the Ave 24 Wye Design Option and \$4.8 billion for the Ave 24 Wye Design Option. Thus, the UPRR/SR 99 Alternative would cost the public between \$1.1 to \$2.9 billion more to construct than the Hybrid Alternative with the equivalent wye design option. While the BNSF Alternative is less costly than the UPRR/SR 99 Alternative, the BNSF Alternative is still estimated to cost at least \$500 million more to implement than the Hybrid Alternative with an equivalent wye connection.

As stated in the California High-Speed Rail Program Draft 2012 Business Plan, the Authority has secured \$3.5 billion as part of the American Recovery and Reinvestment Act of 2009 and the potential for \$9.5 billion from the sale of bonds authorized under Proposition 1A to fund the entire HST System. It is extremely important to note that these funding sources apply to the whole of the HST Program. Thus, the UPRR Alternative's potential total cost of \$6.7 billion would consume over 51 percent of the total currently available funding for the entire HST Program solely to build the Merced to Fresno HST Project, which is a relatively small segment of the proposed 800-mile system.

Taking into account that tax revenues and public monies are the primary source of currently available funding for the Merced to Fresno HST Project, and in light of the legal mandate that the HST System (including the Merced to Fresno HST Project) must be "financially viable," the implementation of the UPRR Alternative in a manner consistent with the purpose and need for the Merced to Fresno HST Project is precluded because that alternative would cost between \$5.2 to \$6.7 billion, and between 135 and 145 percent more than the preferred Hybrid Alternative, and would consume an inordinate percentage of the total HST System budget that is not commensurate with the portion of the HST System project completed by the alternative. As a result, prohibitive cost of the UPRR/SR 99 Alternative alone supports the conclusion that the UPRR/SR 99 Alternative is not a practicable alternative, nor can it meet the applicable legal requirements regarding financial viability set forth in Streets and Highways Code § 2704.09(g).

Logistics and Constructability. For the reasons discussed in Section 8.2.2, Section 8.2.3, and other related sections of the Summary Report, the Hybrid Alternative would be the best alternative and the UPRR/SR 99 Alternative would be the least favorable in terms of constructability. The Hybrid Alternative is shorter in length, has fewer elevated structures, and fewer linear miles of urban and elevated guideway. As a result, construction processes are less complex and less concrete and construction materials and equipment are needed to implement the alternative, as well as the construction period for the alternative will be shorter. Consequently, construction-phase impacts, including impacts on air quality, noise, transportation and transport, and parks are less significant for the Hybrid Alternative than for the UPRR/SR 99 Alternative.

The Hybrid Alternative would also be the best alternative and the UPRR/SR 99 Alternative would be the least favorable in terms of constructability based on required elevated guideway and overcrossing construction. The UPRR/SR 99 Alternative would require the greatest amount of elevated structures and guideways, the largest number of roadway and railroad overcrossings, and some of the most costly, intrusive, and complex overcrossings. The UPRR/SR 99 Alternative requires 1.5 to 2 times the number of overcrossings required by the Hybrid Alternative and is the only alternative that would require construction of a 70-foot-high overcrossing in the community core of Madera. The number and complexity of elevated guideways and overcrossings required by the UPRR/SR 99 Alternative not only increase construction complexity, related logistics and constructability issues, and construction impacts associated with the alternative, but the overcrossings, and particularly those that are superelevated, also increase permanent impacts to local community visual and aesthetic resources.

The increased construction complexity, logistics and constructability issues, and construction impacts associated with the UPRR/SR 99 Alternative render the alternative impracticable.

Displacement Impacts. As discussed in more detail in Section 8.2.4 and other related sections of the Summary Report, construction delays and construction cost increases tend to rise in direct proportion to the number of residential and nonresidential property owners that must be displaced to implement an infrastructure project. As a result, increased displacement impacts tend to result in greater construction delay impacts (including increased construction period air quality, noise, park, and traffic impacts associated with a longer construction periods as described above), as well as increased constructability issues and higher construction costs. While the number of residential units displaced would be similar among the three alternatives, the relatively high number of nonresidential displacements associated with the UPRR/SR 99 Alternative would result in substantially greater construction costs, greater construction delay impacts (including associated increases in construction period noise, air quality, traffic, and park impacts), and greater constructability issues for this alternative.

The increased construction complexity, logistics and constructability issues, and construction impacts associated with the high displacement impacts resulting from the UPRR/SR 99 Alternative render the alternative impracticable.

Conclusions of the Authority and FRA for USACE and EPA Consideration.

While the impacts to jurisdictional waters associated with the UPRR/SR 99 and the Hybrid Alternatives are relatively comparable when considered in terms of quality, quantity, and the site-specific and watershed-level context, the evidence, technical information, and analysis support selection of the preferred Hybrid Alternative as the LEDPA because:

- the UPRR/SR 99 Alternative would result in several other substantially more severe significant adverse environmental consequences, including more substantial adverse noise, cultural resources, Section 4(f), visual and aesthetic, air quality, and construction traffic impacts;
- the UPRR/SR 99 Alternative is not practicable and cannot meet project purpose and need due to extremely high comparative construction costs; and
- the UPRR/SR 99 Alternative is not practicable due to substantial property displacement, construction complexity and constructability issues, and related increased construction impacts on local community resources and receptors.

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For the same reasons, the evidence, technical information, and analysis do not support selection the UPRR/SR 99 Alternative as the LEDPA.

Checkpoint C Review Process. We would appreciate your review of the enclosed information. We would also request that, based on a "high-level" review, you contact us by Friday, February 24, to notify us whether there is any missing information or other major issues that would prevent you from making a Checkpoint C concurrence determination. In addition, based on previous discussions over the past few weeks regarding the Authority's schedule constraints, we are requesting a reduced review period, from 30 to 15 days, using a proactive, iterative, and collaborative process for obtaining Checkpoint C concurrence.

Should you have any questions, please feel free to contact us at (916) 956-8731. As always, we appreciate your continuing help.

Sincerely,



Mark A. McLoughlin
Interim Deputy Director, Environmental Planning

Attachments:

Checkpoint C Summary Report
Merced to Fresno Environmental Permitting Schedule

cc:

David Valenstein and Melissa DuMond, FRA
Jen Blonn and Sarvy Mahdavi, Region 9, USEPA
Paul Maniccia and Zachary Simmons, Sacramento District, USACE
Veronica Chan, Los Angeles District, USACE