CALIFORNIA HIGH-SPEED RAIL AUTHORITY

Date: October 27, 2011

To: Chairman Umberg and Board Members

From: Roelof van Ark, Chief Executive Officer

Re: **November 3, 2011 Agenda Item #4- Usable Segments / Funding Plan – Prop 1a:** *Selection of usable segment(s) for construction pursuant to Streets and Highways Code section 2704.08, subdivision (f)*

Discussion:

The California High Speed Rail Authority ("Authority") has been awarded approximately $3.3 billion in federal funding under the American Recovery and Reinvestment Act of 2009 ("ARRA"), the Passenger Rail Investment and Improvement Act of 2008 ("PRIIA") and the Consolidated Appropriations Act of 2010. These federal funds require matching funds, which the Authority has previously determined should be provided primarily from proceeds of the Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century ("Proposition 1A" or "the Bond Act").

The Authority will be requesting appropriation of proceeds of the Bond Act to provide the necessary matching funds. The Bond Act requires the Authority to assess certain criteria before selecting for construction a corridor or usable segment(s) thereof ("Usable Segments").

This selection of one or more usable segments to satisfy the conditions of the Bond Act builds on actions the Authority already has taken to select an initial construction section ("ICS") for purposes of the conditions to be awarded the above-referenced federal grant funding. There are two potential Usable Segments that incorporate within each of them the entirety of the ICS, and therefore both are appropriate to consider for selection as Usable Segments for construction at this time. These two Usable Segments to be considered for selection by the Board are described below:

Initial Operating Section – North (Central Valley to Bay Area)

This Usable Segment consists of the portion of the corridor defined as Phase 1 in the Bond Act, which portion will run between and include a Bakersfield station and a San Jose station. It would run approximately 250 miles from the Bakersfield station in the South to the San Jose station in the North, through four additional stations including Gilroy, Merced, Fresno, and Kings/Tulare. The six planned stations also provide vital connections with other rail and transit services throughout the State. This Usable Segment is described in the draft 2012 Business Plan as the IOS-North.

Initial Operating Section – South (Central Valley to Los Angeles Basin)

This Usable Segment consists of the portion of the corridor defined as Phase 1 in the Bond Act, which portion will run between and include a Merced station and a San Fernando Valley station. It would run approximately 300 miles from the Merced station in the North to the San Fernando Valley station in the South, with four additional stations including Fresno, Kings/Tulare, Bakersfield, and Palmdale. The six planned stations also provide vital connections with other rail and transit services throughout the State. This Usable Segment is described in the draft 2012 Business Plan as the IOS South.

The remainder of this memorandum outlines provisions in the Bond Act regarding criteria for the selection of usable segments, describes actions previously taken by the Authority related to identifying potential corridors or Usable Segments, and recommends specific additional actions to be taken to select the Usable Segments for construction.

Background:

A "usable segment" is defined in California Streets and Highways Code ("S&H") section 2704.01(g) as "a portion of a corridor that includes at least two stations." A "corridor" means a portion of the high-speed train system described in S&H Code section 2704.04. Phase 1 is a corridor.

Criteria for the selection of corridors or Usable Segments thereof for construction are specified in S&H section 2704.08(f), as described below. This statute states that "…the Authority shall give priority to those corridors or usable segments thereof that are expected to require the least amount of bond funds as a percentage of total cost of construction." The statute also states that, "[a]mong other criteria it [the Authority] may use for establishing priorities for initiating construction on corridors or Usable Segments thereof the Authority shall include the following:

(1) projected ridership and revenue,
(2) the need to test and certify trains operating at speed of 220 miles per hour,
(3) the utility of those corridors or usable segments thereof for passenger train services other than high-speed train service that will not result in any unreimbursed operating or maintenance cost to the Authority, and
(4) the extent to which the corridors include facilities contained therein to enhance the connectivity of the high-speed train network to other modes of transit, including, but not limited to, conventional rail (intercity rail, commuter rail, light rail, or other rail transit), bus, or air transit."

Bond funding consideration

ARRA funding and Proposition 1A funding are the only funding sources available at this time. The ICS is the only approved section under the Authority's ARRA federal grant funding agreement which requires that the funds be spent on this section by year end 2017. Moreover, the IOS-North and the IOS-South both include the ICS and meet the Proposition 1A unsubsidized high speed rail system requirement. Consequently, Authority must give priority to these usable segments under S&H section 2704.08(f) at this time. Previously, four potential segments were prequalified for federal funding: San Francisco – San Jose; Los Angeles – Anaheim; Merced – Fresno; and Fresno – Bakersfield. Subsequently, the FRA decided to require the federal grant funding to be used in the Central Valley.

This finding is consistent with the past findings of the Authority, most particularly on December 2, 2010 and December 20, 2010, in selecting the ICS pursuant to criteria approved on November 4, 2010, which criteria incorporated this factor into Criterion I. ***(See attached memo dated December 2, 2010 on Agenda Item #3 – Corridor Selection: Initial Construction.)***

Other criteria

1. ***Projected ridership and revenue***
   The Authority projects that ridership and resulting revenues and the associated costs of operations and maintenance for both of the Usable Segments will result in net operating profits commencing with the first year of operations of the Initial Operating Section and continuing thereafter. This result holds under multiple scenarios – characterized as "high," "medium" and "low" for planning purposes.

   Therefore, both Usable Segments are viewed favorably against this criterion. This finding is consistent with the past findings of the Authority, most particularly on December 2, 2010 and December 20, 2010, in selecting the ICS pursuant to criteria approved on November 4, 2010, which criteria incorporated this factor into Criterion I. (See attached, as noted above.)

2. ***The need to test and certify trains operating at speeds of 220 miles per hour***

   The Initial Construction Section was selected to receive federal grant funding in significant part because of its favorable scoring on a criterion that included the following factor: "Ensure the first investment forms the core of a state-wide 220 mph system that can be logically expanded as additional funding becomes available" (emphasis added).

   The ICS would serve as the test facility for all high-speed rail core systems such as rolling stock, power supply and catenary, signaling and control systems, switches and systems integration, all of which need to be tested at speeds of 220 miles per hour before passenger service can be initiated. This would be the first such test location in the whole of the nation, offering the state additional benefits once true high-speed rail is initiated in the U.S.

   Since both Usable Segments include the ICS, both are viewed favorably against this criterion. This finding is consistent with past findings of the Authority, particularly the above-referenced December 2010 findings regarding Criterion I. (See attached, as noted above.)

3. ***The utility of those corridors or usable segments thereof for passenger train services other than high-speed train service that will not result in any unreimbursed operating or maintenance cost to the Authority.***

   As noted above, both of the Usable Segments are viewed favorably against criterion 1, above, because the Authority projects that ridership and resulting revenues and the associated costs of operations and maintenance for both of the Usable Segments will result in net operating profits commencing with the first year of operations of the Initial Operating Section and continuing thereafter. Therefore, the Authority projects that high-speed train service on these Usable Segments will not result in an operating subsidy by the Authority.

In addition, the ICS on its own has utility for potential passenger train service other than high-speed train service that will not result in any unreimbursed operating or maintenance cost to the Authority.

Even if no significant federal funds or state bond funds are received beyond those already identified for the ICS, it still would be possible for California to move Amtrak's *San Joaquin* service from its present Burlington Northern Santa Fe (BNSF) host infrastructure onto the ICS. Without any additional improvements, this would reduce travel times on the *San Joaquin* service between northern and southern California - already one of Amtrak's five busiest corridors in the nation - by approximately 45 minutes. Such a change also would offer significant operating and safety benefits to the "intermediate high-speed" intercity rail operation, and would be expected to increase ridership and thereby reduce the need for the existing subsidy levels. In the event of a decision to undertake this in the future, track connections would need to be built to connect the ICS to the BNSF freight line at the northern and southern ends, and minimum rail core systems of signaling, Positive Train Control (PTC), and other investments would be made to augment the base ICS infrastructure. At this stage, electrification of the route would not be required as the Amtrak *San Joaquin* service is diesel-hauled.

To comply with the FRA requirement for assuring operational independence (referred to as "Independent Utility" in the ARRA funding agreements), Interim Use Reserves have been established by the Authority together with the FRA for the possible interim connection to the BNSF railroad mainline plus associated costs for Positive Train Control (PTC) and interim track maintenance. The funds allocated to the Interim Use Reserves are to be 100 percent federal funds. This allocation does not alter or affect the overall federal share associated with funding the ICS. A total of $108 million will be aside for the Interim Use Reserves, which amount has been determined to be sufficient to complete the additional capital investments necessary to allow for the provision of interim Amtrak *San Joaquin* service in this corridor. This interim service and associated maintenance facilities, if undertaken in the future, would not be provided, funded or constructed by the Authority. This would not constitute true high-speed train service (220MPH) although the Amtrak San Joaquin service could be upgraded to 125MPH which is defined as a "high-speed" service within the US DOT. The Authority would not operate any such interim service, and any future decision by the Authority regarding interim service would be subject to compliance with environmental laws and regulations.

4. The extent to which the corridors include facilities contained therein to enhance the connectivity of the high-speed train network to other modes of transit, including, but not limited to, conventional rail (intercity rail, commuter rail, light rail, or other rail transit), bus, or air transit

Both Usable Segments include stations that would connect to other modes of transit. Details for each Usable Segment appear below:

Initial Operating Section – North (Central Valley to Bay Area)

This Usable Segment will run approximately 250 miles from the Bakersfield station in the South to the San Jose station in the North, through four additional stations including Gilroy, Merced, Fresno, and Kings/Tulare. The six planned stations also provide vital connections with other rail and transit services throughout the State. These other rail and transit services with which the HSR would connect at these stations include, but are not limited to: Altamont Commuter Express-ACE, Santa Clara Valley Transportation Authority-VTA, Monterey-Salinas Transit-MST, San Benito County Express, Caltrain, Merced County Transit-The Bus, Fresno Area Express-FAX, Kings Area Rural Transit-KART, Tulare County Area Transit-TCAT, Golden Empire Transit District-GET Bus, and Kern Regional Transit. Connections to regional airports also can be made through these other rail and transit services.

Initial Operating Section – South (Central Valley to Los AngelesBasin)

This Usable Segment will run approximately 300 miles from the Merced station in the North to the San Fernando Valley station in the South, with four additional stations including Fresno, Kings/Tulare, Bakersfield, and Palmdale. The six planned stations also provide vital connections with other rail and transit services throughout the State. These other rail and transit services with which the HSR would connect at these stations include, but are not limited to: Merced County Transit-The Bus, Fresno Area Express-FAX, Kings Area Rural Transit-KART, Tulare County Area Transit-TCAT, Golden Empire Transit District-GET Bus, Kern Regional Transit, Antelope Valley Transit Authority-AVTA, City of Santa Clarita Transit, and Los Angeles County Metropolitan Transportation Authority-Metro. Connections to regional airports also can be made through these other rail and transit services.

Since both Usable Segments include multiple stations connecting to other rail and transit services, both are viewed favorably against this criterion. This finding is consistent with past findings of the Authority, particularly regarding promoting "…current and future connections to other modes of transportation including public transit," which is found in Criterion IV of the above-referenced December 2010 findings. (See attached, as noted above.)

Related Past Authority Board Actions

The following past Authority Board actions relate to selection of corridors, segments or portions thereof:

November 4, 2010

- Agenda Item # 3 – Corridor Selection Criteria]
  - Selection criteria was discussed, modified, and adopted as modified

December 2, 2010

- Agenda Item #3: Corridor Selection: Initial Construction
  - Approve the staff recommendation for selection of Alternative 1 (approx. 65 miles of alignment plus two stations; from a point approximately 0.6 miles south of Nevada Avenue near Corcoran northwards through Fresno to a point approximately 0.8 miles northwest of W. Herndon Ave)
  - Delegate to the Chief Executive Officer to conclude a Funding/Cooperative Agreement with the FRA based on the Alternative 1

December 20, 2010

- Agenda Item #1: Corridor Section Modification
  - Delegate to the Chief Executive Officer the authority to conclude the Funding/Cooperative Agreements with FRA incorporating the major portion of the additional amount of $616M for the continuation of the Initial Construction section to the south to Bakersfield/Kings County

March 30, 2011

- Agenda Item #2: Federal Funding Application
  - Delegate to the Chief Executive Officer the responsibility to prepare and submit an application to the federal government for the funds rejected by Florida, for extension of the state-wide system as specified

July 14, 2011

- Agenda Item #7: Initial Operating Segment
  - Board received and accepted Program Management Team informational presentation regarding future extension of the Initial Construction Section to an Initial Operating Section.

Recommendations:

Staff recommends that the Authority adopt resolution HSR 11-22 stating the following:

Pursuant to Streets and Highways Code section 2704.08, subdivision (f), the Authority hereby selects for construction each of the following usable segments:

- The portion of the Phase 1 corridor (described in Streets and Highways Code 2704.04, subdivision (b)(2)) between and including a San Jose station and a Bakersfield station; and

- The portion of the Phase 1 corridor between and including a Merced station and a San Fernando Valley station.

Appendix/Attachments:

Memorandum of December 2, 2010 – Agenda Item #3-Corridor Selection: Initial Construction (including Appendix A: Evaluation of the two Central Valley ARRA sections; Appendix B: Criteria for selecting the Section/Usable Segment; and Resolution HSRA 11-16)

Resolution HSRA 11-22 –Resolution Selecting for Construction Certain Usable Segments Pursuant to Streets and Highways Code Section 2704.08, Subdivision (f)

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

DATE: December 2, 2010
TO: Chairman Pringle and Board Members
FROM: Roelof van Ark, Chief Executive Officer
RE: Agenda Item #3 – Corridor Selection: Initial Construction

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Discussion:

In 2009 and 2010, the California High-Speed Rail Authority (Authority) applied for a total of $5.73 billion from the Federal Railroad Administration (FRA) under the new High-Speed Intercity Passenger Rail Program (HSIPR) to initiate construction of Phase I of the California High-Speed Train Project (CHSTP). Federal funding, made available under the American Recovery and Reinvestment Act (ARRA) and the FY 2010 Transportation Appropriations Act, would be matched with California Proposition 1A bond proceeds to initiate construction in four of the seven sections of the Anaheim-San Francisco Phase 1 program: San Francisco-San Jose; Merced-Fresno; Fresno Bakersfield; and Los Angeles Anaheim (denoted as "sections" below).

With letter dated October 28th, 2010, the FRA informed the Authority that it had been awarded $715M in response to its application for HSIPR FY10 funds, for application to either one of the Central Valley sections (Fresno to Bakersfield or Merced to Fresno) and on November 3rd the Authority was informed by the FRA that all allocated funding, namely the FYI0 funding and the remaining unobligated FY09 ARRA funds must be applied to final design and construction of one of two Central Valley sections (Fresno to Bakersfield or Merced to Fresno) of the California High-Speed Train System. On October 28, 2010, the Authority was also selected to receive $16M of FY10 funding toward specific improvements to the San Francisco to San Jose project section.

The FRA has informed the Authority that it intends to conclude Funding & Cooperative Agreements for these funds by December 31, 2010. Based on this revised grant execution schedule, it is clear that the Authority needs to make a determination of which of the two Central Valley sections it would choose to apply the ARRA and HSIPR FY10 funds. An agreement with the FRA must be based on a defined Scope of Work for one section, as also previously communicated by the FRA. As the Record of Decision/ Notice of Determination (ROD/NOD) and final selection of the alignment would not yet be completed for either Central Valley section by the time the Grant / Cooperative agreement is signed with the FRA, such Agreement would be conditioned upon the successful completion of the project-level environmental

impact studies, the selection of the final preferred alternative route within the selected section and the conclusion of the ROD/NOD for the section by the fall of 2011. The Authority would retain discretion over the outcome of the environmental process and would have the ability to seek adjustments to the grant agreement, if necessary, based on its final decisions.

At the November 4, 2010 meeting, the Board approved the selection criteria which are attached to this report as Appendix B. At the December 2, 2010, Board Meeting the Chief Executive Officer will present to the Board, the evaluation of the two Central Valley ARRA sections, done according to the final criteria (Refer to Appendix A). The Board will then determine the section and corridor to which the ARRA and HSIPR FY10 funds will be applied.

Throughout the process it should be remembered that the California High-Speed Rail System will be the backbone passenger rail system of the State, and needs to connect southern and northern California, including the metropolitan areas of Los Angeles/Anaheim, San Diego, San Francisco, San Jose and Sacramento. This first step in the process, to select and then build the first segment of the line, is only the beginning of a continuous process, which should logically lead to the continued construction of the alignment, until the whole network is interconnected.

Major factors that need to be considered in the selection process include impacts on the project schedule, logical sequencing of the work, mandated testing of high-speed trains, and the maximum impact the investment of present Federal and State dollars can have on the project. The Authority also must consider the specific requirements and guidance provided in ARRA and Proposition 1A (as codified in CA Streets and Highways Code §§2704-2704.21 and Public Utilities Code §§185033, 185035 and 185037). The “Independent Utility” / “Operational Independence” requirement associated with the ARRA respectively the FY10 HSIPR funding also needs to be met.

Recommendation:
That the Board discuss and decide upon the section and corridor which should be selected as being the first High-Speed corridor to be constructed. Staff recommends the corridor “Alternative 1” as described and evaluated in the attached Appendix A & B. Furthermore it is recommended the Board delegate to the Chief Executive Officer to conclude a Funding/ Cooperative Agreement with the FRA on behalf of the Authority by end December 2010 based on this Alternative 1.

Attachments:

- Appendix A: Evaluation of the two Central Valley ARRA sections
- Appendix B: “Criteria for selecting the Section/Usable Segment” as approved by the Board on November 4, 2010 and duly applied to the relevant sections.
- Resolution HSRA11-16

APPENDIX A

EVALUATION OF THE TWO CENTRAL VALLEY ARRA SECTIONS (TO DETERMINE THE OPTIMUM SECTION TO BEGIN CONSTRUCTION)

General Comment:

The environmental process is currently being conducted therefore in many instances more than one alignment alternative is being evaluated and will be available for eventual selection as the environmental process is concluded. In all instances typical alignment sections, including alternatives, have been used for costing reasons, however this should not be construed as a preference for one alignment over another, but rather a necessity for reason of fair costing.

A. Eligibility of Applications:

To date, the California High-Speed Rail Authority has been successful in securing an allocation of $2.965 billion in total Federal HSIPR funding (plus an additional $16M dedicated to the San Francisco to San Jose section) that can be applied to construction of the Phase 1 sections. With a planned state match of $1.962 billion, a total of $4.333 billion[(1)] is available to initiate construction work [referred to as "Available Funding" in this document]. All allocated funds need to be applied to one section of the alignment (except for the $16M which has been specifically allocated by the FRA to the San Francisco to San Jose section). FRA is requiring the selection of an High-Speed Rail (HST) section to initiate a grant agreement to provide construction financing and this will be conditioned upon completion of environmental studies and selection of a final alignment and the issuance of a ROD/NOD by fall of 2011.[(2)]

Although the amount of HSIPR funding is substantial, and more than allocated to any other program in the nation, it is less than the amount which was requested from the FRA in the application submitted by the Authority on August 6, 2010, when the FY2010 funding application was submitted. The Authority has approached the FRA for additional funding, particularly as funding from other states may become available.

Footnote:

1) $2.25 billion minus $400M earmarked for TJPA's Transbay Terminal = $1.85 billion minus $194M allocated to Phase 1 PE/NEPA/CEQA work = $1.656 billion of Federal funds matched 50/50 with GO Bond funds = $3.312 billion plus $715 million new FY10 HSIPR application, matched 70/30 with GO Bond funds = a total of $4.333 billion available for construction.

2) As the ROD/NOD for such selected alignment would not yet be completed by the time the Grant / Cooperative agreement is signed with the FRA, such Agreement would be conditioned on the successful conclusion of the environmental impact studies, the selection of the final alignment within the selected section and the conclusion of the ROD/NOD for the section by the fall of 2011.

The FRA requires that any rail project using ARRA funding be capable of demonstrating "Operational Independence"/ "Independent Utility" as defined in Sec. 3.5.2 of the Notice of Funding Availability (NOFA) upon completion. A project is considered to have Operational Independence "if, upon being implemented, it will provide tangible and measurable benefits, even if no additional investments in the same service are made." Examples of these benefits include "operational reliability improvements, travel-time reductions, and additional service frequencies resulting in increased ridership." In practice, this requirement means that the improvements can be used for existing or new intercity rail passenger operations, including Amtrak and other intercity service should no further High-Speed Rail funds be made available. Importantly, such service is clearly specified as being "intercity service" as opposed to enhanced commuter rail service. In both the Central Valley ARRA sections Amtrak's *San Joaquin's* would offer operational independence by connecting the new infrastructure to the existing BNSF network, on which the San Joaquin service presently operates.

The need to demonstrate "Operational Independence" and also to meet other FRA requirements determines that one portion of the two Central Valley sections will be initially constructed. Combined Federal and State funding is sufficient to provide only one operationally independent corridor. However, additional funding ultimately will be required to fully complete the work necessary to support high-speed train operations and to procure the trains. The Authority will be developing a new business/funding plan that will detail how additional funding will be secured from Federal, State, local and private sources to extend beyond the first segment and to finally complete the entire CHSTP system.

B. Evaluation of the ARRA-eligible Sections

The following chronology highlights events leading up to the Board's selection of the ARRA Section for initial construction of the California High-Speed Train Project:

- On January 28, 2010, USDOT announced the selection of the four sections eligible to receive up to $1.656 billion (see footnote 1), leaving the decision to the Authority as to which section would be built first.

- As part of its application for FY 2010 HSIPR funding the Authority redefined the four ARRA-eligible sections and submitted them to FRA as part of its applications for additional funding.

- On October 25, 2010, the USDOT announced an additional $715 million in FY10 SDP funds for use by the Authority in the Central Valley. On November 4, 2010, the FRA clarified that both the FY09 ARRA funds and FY10 SDP funds must be applied to a single Central Valley project to be determined by the Authority.

- A total of $4.33 billion of FY09 ARRA + FY10 HSIPR and Prop 1A matching funding is available for final design and construction of the initial Central Valley "ARRA Section."

- At its November 4, 2010, meeting, the Authority Board adopted criteria for selecting the section/usable segment in which to initiate construction of the California High-Speed Train Project.

- Staff developed four Alternatives[3] within the Central Valley sections that meet the FRA and Prop 1A requirements, which can be built within the available $4.33 billion and which will be described below.

C. The Central Valley Alignment

Please refer to Figures 1 and 2 of the attached "Backup Information, Maps and Data."
The sections which qualify for FRA Funding include the alignment beginning near Castle Commerce Center north of Merced, through Fresno, and down to Bakersfield. This alignment is made up of two sections which are separately being environmentally cleared, namely:

- The Merced to Fresno section which includes the Wye in the vicinity of Chowchilla, as well as the extension north of Merced to the Castle Commerce Center.
- The Fresno to Bakersfield section.

Although reference is often made to the application of the funds being made to either of these two sections, in fact the application by the Authority to the FRA included alternatives, which are combinations of the two sections, and due to their adjacency, this concept is acceptable to the FRA.

D. The Evaluated Sections

The "Best Fit" allocation of the Available Funding:
Since the amount of HSIPR funding is less than the amount which was requested from the FRA in the application submitted by the Authority on August 6, 2010, staff applied the Available Funding to possible sections and portions thereof, with the aim to optimize the use of the funds, but at the same time to ensure that "Operational Independence"/ "Independent Utility" is achieved with each of the selected alignments. This has been done within the overall alignment starting from the Castle Commerce Center all the way down to Bakersfield, thus investigating combinations of alignment which would meet these criteria. The Authority staff and its Consultants investigated permutations and combinations of possible alignments, starting from Bakersfield in the south and from Castle Commerce Center in the north as well as from other possible starting and ending points along the total alignment, to find viable possibilities and the best possible alignments which would make best use of the Available Funding.

Footnote:
3) The term "Alternative" is being used here to explain the various alternatives for best utilizing the Federal and State funding available for construction in the Central Valley. The term alternative should not be interpreted as identifying the range of alternatives being considered in the project-level NEPA/CEQA documents.

The Evaluated Alignment Sections that met the criteria and fit to the available funding are:

1. **Central Valley Alternative 1: for a total of $4.15 Billion** (approx. 65 miles of alignment plus 2 stations)**.**

   Please refer to Figure 4 and 5 of the attached "Backup Information, Maps and Data". This alternative incorporates:
   - Civil infrastructure including trackwork from a point approximately 0.6 miles south of Nevada Avenue near Corcoran northwards through Fresno to a point approximately 0.8 miles northwest of W. Herndon Ave.
   - A basic High-Speed Rail (HSR) station in Fresno (including 2 tracks into and out of the station) which can be used by Amtrak in case of Independent Utility.
   - A basic HSR station at Kings/Tulare Regional Station (including 2 tracks into and out of the station) which can be used by Amtrak in case of Independent Utility.
   - A signaling system (Positive Train Control / PTC) as required for Independent Utility.
   - Interconnectors to the BNSF line to ensure Independent Utility:
     - 3 miles reserved for Interconnector in Corcoran
     - An 8 mile Interconnector to a point approximately 0.4 miles north of Avenue 13, north of Fresno.

2. **Central Valley Alternative 2**: **for a total of $3.5 Billion** (approx. 90 miles of alignment plus 1 station)**.**

   Please refer to Figure 6 and 7 of the attached "Backup Information, Maps and Data". This alternative incorporates:
   - Civil infrastructure including trackwork from a point approximately 4 miles south of Shafter (adjacent to the BNSF) northwards through the Corcoran bypass (C2 alignment) to a point where the BNSF line intersects E. American Avenue south of Fresno.
   - A signaling system (PTC) as required for Independent Utility.
   - A basic HSR station at Kings/Tulare Regional Station (including 2 tracks into and out of the station) which can be used by Amtrak in case of Independent Utility.
   - Interconnectors to the BNSF lines approximately 4 miles south of Shafter and at E. America Avenue south of Fresno to ensure Independent Utility.

2A. **Central Valley Alternative 2A: for a total of $4.3Billion** (approx. 90 miles of alignment plus 1 station)**.**

   Please refer to Figure 6 and 8 of the attached "Backup Information, Maps and Data". This alternative incorporates:

- Civil infrastructure including trackwork from a point approximately 4 miles south of Shafter (adjacent to the BNSF) northwards through Corcoran (C1 alignment) to a point where the BNSF line intersects E. American Avenue south of Fresno.
- A signaling system (PTC) as required for Independent Utility.
- A basic HSR station at Kings/Tulare Regional Station (including 2 tracks into and out of the station) which can be used by Amtrak in case of Independent Utility.
- Interconnectors to the BNSF lines approximately 4 miles south of Shafter and at E. America Avenue south of Fresno to ensure Independent Utility.

Please note: Alternatives 2 and 2A cover the same alignment, except for an optional alignment section (through or bypassing Corcoran) which will finally be determined by the CEQA/NEPA environmental process. These two alternatives would have to be chosen together, one being an alternative of the other.

3. **Central Valley Alternative 3: for a total of $2.7 Billion** (approx. 44.5 miles of alignment plus 1 station)**.**

   Please refer to Figure 9 and 10 of the attached "Backup Information, Maps and Data". This alternative incorporates:
   - Civil infrastructure including trackwork from V Street in Merced through Merced continuing west of Chowchilla on the hybrid alignment to a point approximately 1.75 miles south of Avenue 15, south of Madera, where the line will be adjacent to the BNSF existing network.
   - The basic HSR station in Merced (including 2 tracks into and out of the station) which can be used by Amtrak in case of Independent Utility.
   - A signaling system (PTC) as required for Independent Utility.
   - An approximately 4.5 mile Interconnector to the BNSF line near Castle Commerce Center to ensure Independent Utility.

This alternative has some limitations which the Board must be made aware. As a final route/alignment decision has not yet been made, it could occur that "Operational Independence/ Independent Utility" may not be possible under certain conditions, such as if the UPRR alignment (A2) is chosen, no connection to BNSF will be possible at a reasonable cost and within reasonable time.

E. Evaluation of the above Alternatives:

The following actions have been taken:

- Staff evaluated each of these aforementioned Alternatives against the Board approved selection criteria. The results of the evaluation are summarized in the attached Appendix B.
- ARRA Central Valley Alternative 1 scored the highest in the evaluation and is the alternative recommended by staff for selection.
- Following is a brief description of the rationale for the scores shown in Appendix B:

Note: Alternatives that fully meet a criterion are scored "10"; those not fully meeting the criteria are scored proportionately less than "10" depending on how well they meet each criterion.

1. **Evaluation of Alternative 1:**

   Overall aggregate score (out of a possible 130 points): 110
   Pass/Fail Criteria: Pass

   Criterion I: This alternative fully meets this criterion. Overall score: All 10s.
   Criterion II: Right-of-way may be more difficult to acquire through the City of Fresno than in Alternative 2. Construction of the aerial guideway through Fresno is more difficult than construction in Alternative 2. Impact to existing railroad facilities is higher than Alternative 3. Overall this alternative was scored "8" on all three sub-criteria.
   Criterion III: Schedule risk of achieving the ROD/NOD by the fall of 2011 is slightly higher than for the other three alternatives because for this section two NOD/ROD documents must be approved (both for Merced-Fresno and Fresno-Bakersfield). All other alternatives will require a single NOD/ROD for construction. In addition, the Authority is working through a process with the USEPA and USACOE to obtain concurrence on the range of alternatives being evaluated in the two EIR/EIS documents. This process is underway, and could have a potential for delay regarding providing USEPA and USACOE requested information on the elimination of a UPRR/SR 99 corridor from detailed study in the Fresno to Bakersfield Section EIR/EIS. Construction of this section is more complex than in Alternative 2A which somewhat increases the risk of delay. The third sub-criterion is not applicable. Scored "7" on sub-criteria a) and scored a "9" on b).
   Criterion IV: This alternative fully meets this criterion. It is the only section which has two HSR stations, Fresno and Kings/Tulare Regional Station. This alternative also offers the best opportunity for the Authority to accommodate further funds from the FRA, in case money from other states becomes available, as connectivity with the BNSF alignment can be done with relative ease, as HSR runs adjacent to BNSF. Overall score: All 10s.

2. **Evaluation of Alternative 2:**

   Overall aggregate score (out of a possible 130 points): 102
   Pass/Fail Criteria: Pass

   Criterion I: This alternative fully meets sub-criteria b) and c). Expansion of this alternative is constrained by long and expensive aerial guideway structures at both ends of this route, which could limit the expansion until a substantial amount of additional funding is available. (This sub-criterion was rated "7".)

Criterion II: This alternative fully meets sub-criteria a) and b). This alternative involves more BNSF track relocation than Alternatives 1 and 3. (This sub-criterion was rated "6".)
Criterion III: The Authority is working through a process with the USEPA and USACOE to obtain concurrence on the range of alternatives being evaluated in the two EIR/EIS documents. This process is underway, and could have a potential for delay regarding providing USEPA and USACOE requested information on the elimination of a UPRR/SR 99 corridor from detailed study in the Fresno to Bakersfield Section EIR/EIS. Sub-criterion a) was rated "8". Section through the Corcoran by-pass is greatly complicated by the Tulare Wetlands Mitigation Area. (Sub-criterion b) was rated as "5".)
Criterion IV: This alternative fully meets sub-criteria a), c), and d). This alternative serves only the Kings/Tulare Regional Station and therefore offers fewer connections to other modes of transportation, including public transit. (Score: "6".)

3. **Evaluation of Alternative 2A:**

Overall aggregate score (out of a possible 130 points): 105
Pass/Fail Criteria: Pass

Criterion I: This alternative fully meets sub-criteria b) and c). Expansion of this alternative is constrained by long and expensive aerial guideway structures at both ends of this route, which could limit the expansion until a substantial amount of additional funding is available. (This sub-criterion was rated "7".)
Criterion II: Right-of-way may be more difficult to acquire through Corcoran than in Alternative 2. Construction of the aerial guideway through Corcoran is more difficult than construction in Alternative 2. (a) was rated a "9" and b) was rated an "8") This alternative involves more BNSF track relocation than Alternatives 1 and 3. (This sub-criterion was rated "7".)
Criterion III: The Authority is working through a process with the USEPA and USACOE to obtain concurrence on the range of alternatives being evaluated in the two EIR/EIS documents. This process is underway, and could have a potential for delay regarding providing USEPA and USACOE requested information on the elimination of a UPRR/SR 99 corridor from detailed study in the Fresno to Bakersfield Section EIR/EIS. Sub-criterion a) was rated "8". This alternative fully meets sub-criteria b). The third sub-criterion is not applicable.
Criterion IV: This alternative fully meets sub-criteria a), c), and d). This alternative serves on the Kings/Tulare Regional Station and therefore offers fewer connections to other modes of transportation, including public transit. (Score: "6".)

4. **Evaluation of Alternative 3:**

Overall aggregate score (out of a possible 130 points): 88
Pass/Fail Criteria: Pass

Criterion I: This alternative provides the least logical expansion and evolution opportunities of any of the alternatives because the investment in infrastructure north of the "Wye" would not be fully utilized until the Phase 2 line to Sacramento is built. To achieve an operable HSR system as quickly and efficiently as possible, connectivity to the Bay Area and / or the Los Angeles Basin need to receive priority (Overall score: 5).

Criterion II: This alternative has the least impact to railroad facilities because it does not require any existing railroad track relocation. (Score:10) Right-of-way availability in Merced is more difficult than in Alternative 2. (Score:8)

Criterion III: This alternative only requires one NOD/ROD for construction. This alternative therefore involves only one concurrence from USEPA and the USACOE on the range of alternatives being studied in the project-level EIR/EIS, and does not include the issue of screening out the UPRR/SR 99 alternative between Fresno and Bakersfield, making it somewhat less complex. Sub-criteria c) is not applicable to this alternative.

Criterion IV: This alternative fully meets sub-criterion a) – Score 10. It can be connected to future connections to other modes of transportation including public transit in Merced, but there is only one HST station included in this alternative, so it was scored "8". Since the portion of infrastructure constructed north of the "Wye" is not pivotal to ensure connectivity of a first HSR operable segment, it is rated low ("5") in sub-criteria c) and d).

Our inability to guarantee "Operational Independence/ Independent Utility" for all alignments for this alternative adds a risk to this section. Not all alternatives which today exist are in the proximity of the BNSF alignment (e.g. the UPRR –A2 alignment).

APPENDIX B

CRITERIA FOR SELECTING THE SECTION/USABLE SEGMENT
IN WHICH TO INITIATE CONSTRUCTION OF THE
CALIFORNIA HIGH-SPEED TRAIN PROJECT

American Recovery and Reinvestment Act/FRA Requirements (Pass / Fail Criteria)	ARRA Central Valley Alternative 1	ARRA Central Valley Alternative 2	ARRA Central Valley Alternative 2A	ARRA Central Valley Alternative 3
a) Construction must be completed by fall of 2017[(1)]	**Pass**	**Pass**	**Pass**	**Pass**
b) The project must have "Operational Independence"	**Pass**	**Pass**	**Pass**	**Pass**

Note (1): This Pass/Fail evaluation addresses the ability to meet the Fall 2017 construction deadline based on today's project status and knowledge, while Criterion III addresses the risks associated with meeting this date.

Program Defined Selection Criteria:

All sections must pass the Pass / Fail criteria above, to be considered for the Program Defined Selection Criteria evaluated in the following Table. Each of the 4 Criterion below (I through IV) carry an equal weighting of 10 points where:

- 0 equates to (a) not meeting the criteria, or (b) offering the lowest advantage or (c) resulting in the higher risk to the project
- 10 equates to (a) fully meeting the given criteria or (b) offering the highest advantage or (c) the lowest risk to the project

CRITERIA FOR SELECTING THE SECTION/USABLE SEGMENT IN WHICH TO INITIATE CONSTRUCTION OF THE CALIFORNIA HIGH-SPEED TRAIN PROJECT

PROGRAM DEFINED SELECTION CRITERIA	ARRA Central Valley Alternative 1	ARRA Central Valley Alternative 2	ARRA Central Valley Alternative 2A	ARRA Central Valley Alternative 3
I. Logical expansion and evolution of the alignment to an operational HSR system.				
a) Ensure the first investment forms the core of a state-wide 220 mph system that can be logically expanded and extended as additional funding becomes available	**10**	**7**	**7**	**5**
b) Ensure the earliest startup of a high-speed rail service with the least funds required	**10**	**10**	**10**	**5**
c) Consider connectivity of sections, availability of control centers and maintenance facilities, and phasing of future expansion	**10**	**10**	**10**	**5**
II. Minimized construction risk.				
a) Right of Way [ROW] availability and ability to reach agreement with stakeholders to acquire easements or operating rights	**8**	**10**	**9**	**8**
b) Least construction complexity equating to lower cost volatility	**8**	**10**	**8**	**8**
c) Least impacts to existing railroad facilities and operations	**8**	**6**	**7**	**10**

- 0 equates to (a) not meeting the criteria, or (b) offering the lowest advantage or (c) resulting in the higher risk to the project
- 10 equates to (a) fully meeting the given criteria or (b) offering the highest advantage or (c) the lowest risk to the project

CRITERIA FOR SELECTING THE SECTION/USABLE SEGMENT IN WHICH TO INITIATE CONSTRUCTION OF THE CALIFORNIA HIGH-SPEED TRAIN PROJECT

PROGRAM DEFINED SELECTION CRITERIA	ARRA Central Valley Alternative 1	ARRA Central Valley Alternative 2	ARRA Central Valley Alternative 2A	ARRA Central Valley Alternative 3
III. Minimized schedule risk, to meet the ARRA criteria of completion by the fall of 2017.				
a) Probability of achieving ROD/NOD by fall of 2011	7	8	8	10
b) Ease of construction, reduces probability of delay	9	5	10	9
c) Future construction and equipment procurement sequencing	N/A	N/A	N/A	N/A
IV. Builds the most useful HST infrastructure for the least cost.				
a) Builds HST infrastructure that will not result in unreimbursed costs to the Authority	10	10	10	10
b) Builds HST infrastructure that promotes current and future connections to other modes of transportation including public transit.	10	6	6	8
c) Builds HST infrastructure that can be expanded to complete the entire CAHSR system in an efficient manner	10	10	10	5
d) Builds the most useful segment of HST infrastructure that does not require additional federal or state funding	10	10	10	5
Total Aggregate Score	**110**	**102**	**105**	**88**

- 0 equates to (a) not meeting the criteria, or (b) offering the lowest advantage or (c) resulting in the higher risk to the project
- 10 equates to (a) fully meeting the given criteria or (b) offering the highest advantage or (c) the lowest risk to the project

CALIFORNIA HIGH-SPEED RAIL AUTHORITY

Resolution #HSRA11-16
Federal Railroad Administration Grant Agreement

Resolved, that the Board delegates to the Chief Executive Officer the authority to enter into a grant agreement substantially as proposed, and subsequent amendments of a non-material nature, with the Federal Railroad Administration to receive federal funds to support the final design and construction of portions of the HST system in the Central Valley corridor as selected or identified by the board on December 2, 2010, subject to the future decisions to be made by the HSRA to approve specific facilities and alignments in this portion of the system and provided, however, that the Final EIR/EIS(s) is (are) completed and any necessary permits and approvals are obtained before construction may begin.

Vote: 6-0
Date: December 20, 2010

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