

**Background Paper for JOINT INFORMATIONAL HEARING**  
**California High-Speed Rail Authority's Draft 2020 Business Plan**

Wednesday, March 10, 2021  
California State Capitol  
Assembly Chambers

## Summary

The California High-Speed Rail Authority's (HSRA) February 9, 2021, Revised Draft 2020 Business Plan reviews the history of the project and recommends completion of a fully electrified, 171-mile high-speed link from Merced to Bakersfield operating at about 180 miles per hour. In the plan, completion of the 119 mile-Central Valley segment (from Madera to Poplar Avenue) is extended by one year until December 2023 and construction costs are up by \$1.3 billion—increasing the cost estimate from \$12.4 billion in 2019 to \$13.8 billion. HSRA's request for \$13.8 billion would only complete the 119 mile segment and not the extensions to Merced and Bakersfield discussed in the plan.

The project is at an opportune time to pause and consider the purpose of the project in the context of meeting the state's mobility needs. Does the proposed approach best meet the needs of future users and therefore have the ability to attract enough riders to demonstrate success of high-speed rail? Or should another pathway to the development of high-speed rail be considered? Also, there are many outstanding questions such as will there be forthcoming federal funds and what will the project ultimately cost? Having answers to some of these questions will better equip the Legislature to make the best decisions about the project.

## Introduction

The HSRA—an independent authority consisting of a nine-member board appointed by the Legislature and Governor—is responsible for planning and constructing an intercity high-speed train system that would link the state's major population centers. State law requires HSRA to prepare a business plan every even year that provides information about the planned high-speed rail system.

HSRA first issued the Draft 2020 Business Plan on February 12, 2020, with a 60-day public comment period that was extended an additional 49 days due to the COVID-19 pandemic. Subsequently, due to ongoing COVID-19 pandemic uncertainty, the Draft 2020 Business Plan final adoption was extended by the Newsom Administration and Legislative leadership to April 15, 2021. A Revised Draft 2020 Business Plan was issued on February 9, 2021, including an additional 30-day comment period through March 12, 2021. A final plan is due to the Legislature by April 15, 2021. This background paper reflects the information presented in the February 9, 2021, draft.

On February 12, 2021, HSRA submitted to the Legislature its funding plan as required by Streets & Highways Code Section 2704.08 subdivision (c). The funding plan proposes \$4.1 billion in additional Proposition 1A bond funds be directed to complete construction

work on the 119 miles in the Central Valley (from Madera to Poplar Ave). The Administration intends to request appropriation of these funds as part of the May Revision of the Governor's Budget.

This report summarizes the project's construction costs and funding sources, major features of the draft business plan and funding plan, and key considerations for the Legislature.

### **Project Background**

Chapter 796 of 1996 (SB 1420, Kopp) established HSRA to plan and construct a high-speed rail system that would link the state's major population centers. In November 2008, voters approved Proposition 1A, which authorized the state to sell \$10 billion in general obligation bonds to partially fund the system, as well as related projects. Proposition 1A also specified certain criteria and conditions that the system must ultimately achieve. For example, the measure requires that the system must be designed to be capable of specified travel times along certain routes, such as nonstop travel from San Francisco to Los Angeles within two hours and forty minutes. The measure also specifies that passenger rail service operated by HSRA, or pursuant to its authority, will not require an operating subsidy.

### **Key Aspects of the 2020 Draft Business Plan**

#### ***Project Course Essentially Unchanged from February 2020 Draft Business Plan.***

The draft business plan released February 2021 does not make significant changes to the course of the project that was proposed in the February 2020 draft business plan. As shown in the figure on the following page, the plan proposes to complete the 119-mile Madera to Poplar Avenue segment currently under construction. The plan also proposes to add a 19-mile segment from Poplar Avenue into Bakersfield and a 33-mile segment from Merced to Madera. The entire 171-mile length would be electrified, and interim high-speed electric trainsets that could run up to 186 miles per hour would be acquired. The 171-mile segment would be connected to the existing Altamont Corridor Express (ACE) and San Joaquin services in Merced. HSRA plans to commence testing of the electrified high-speed system in 2025, certify trains by 2027, and put electrified high-speed trains in service by the end of the decade.

Exhibit 5.6: Environmental Schedules and Cost Summary by Segment<sup>1</sup>

**NORTHERN CALIFORNIA<sup>2</sup>**

**San Francisco to San Jose**  
**43 miles**  
 Capital Cost: \$1.6 billion  
 EIR/EIS Complete: Q2 2022

**San Jose to Carlucci Road**  
**88 miles**  
 Capital Costs: \$13.6 billion  
 EIR/EIS Complete: Q1 2022

**CENTRAL VALLEY**

**Merced to Madera<sup>3</sup>**  
**33 miles**  
 Capital Cost: \$2.3 billion\*  
 EIR/EIS: Complete  
\*Includes partial funding for Central Valley Wye

**Madera to Poplar Avenue<sup>3</sup>**  
**119 miles**  
 Capital Cost: \$13.8 billion  
 EIR/EIS: Complete  
 Funded/Under Construction

**Poplar Avenue to Bakersfield<sup>3</sup>**  
**19 miles**  
 Construction Cost: \$1.2 billion  
 EIR/EIS: Complete

**Central Valley Wye Balance**  
**28 miles**  
 Capital Cost: \$2.2 billion  
 EIR/EIS Complete: Complete



**SOUTHERN CALIFORNIA<sup>2</sup>**

**Bakersfield to Palmdale**  
**79 miles**  
 Capital Costs: \$15.7 billion  
 EIR/EIS Complete: Q2 2021

**Palmdale to Burbank**  
**41 miles**  
 Capital Costs: \$16.8 billion  
 EIR/EIS Complete: Q4 2022

**Burbank to Los Angeles**  
**13 miles**  
 Capital Costs: \$1.4 billion  
 EIR/EIS Complete: Q4 2021

**Los Angeles to Anaheim**  
**31 miles**  
 Capital Costs: \$2.9 billion  
 EIR/EIS Complete: Q4 2022 - Q2 2023

**Notes:**

1. Final segment miles dependent on completion of environmental documents
2. Additional statewide funding:
  - a. Caltrain Electrification- \$714 million
  - b. San Mateo Grade Separation- \$84 million
  - c. Rosecrans/Marquardt Grade Separation- \$77 million
  - d. Los Angeles Union Station- \$423 million
3. Cost estimates are for single-track; an additional \$1.1 billion is required to add second track on the 171-mile Merced-Bakersfield line.

Source: California High-Speed Rail Authority

**Completion Delayed and Estimated Costs Increase.** In the most recent draft business plan, HSRA estimates completion of the 119-miles Central Valley segment is delayed until December 2023. HSRA estimates project costs increase by \$1.3 billion to \$13.8, from the \$12.4 billion estimated for this segment in 2019. The increase includes about \$330 million for project-related costs and \$1.04 billion to accommodate a greater risk contingency. The figure below shows the estimated costs of each of the construction packages that comprise the Central Valley segment, the track and systems contract, and support, contingency, and reserve costs.

### Central Valley Construction Cost Estimate

Item	Total Budget (in millions)
<b>Construction Package 1 and State Route 99</b>	<b>\$5,254</b>
State Route 99	\$355
Project Construction Manager	\$142
Civil Contract	\$2,933
Right of Way	\$1,017
Env Mitigation/Third Party/Res Agency/etc.	\$416
CP 1 Contingency*	\$392
<b>Construction Package 2-3</b>	<b>\$3,727</b>
Project Construction Manager	\$172
Civil Contract	\$2,412
Right of Way	\$537
Env Mitigation/Third Party/Res Agency/etc.	\$158
CP 2-3 Contingency*	\$449
<b>Construction Package 4</b>	<b>\$1,175</b>
Project Construction Manager	\$88
Civil Contract	\$712
Right of Way	\$182
Env Mitigation/Third Party/Res Agency/etc.	\$93
CP 4 Contingency*	\$99
<b>Track and Systems</b>	<b>\$2,253</b>
Includes Track and Systems Contract, Project Construction Manager, Electrical Utility Connections, and related Environmental Mitigation and Legal. Procurement is active and allocation between cost and contingency is pending contract.	\$2,253
<b>Program-wide Support</b>	<b>\$604</b>
Includes Central Valley allocation for future rail delivery partner contract, early train operator contractor, legal, etc.	\$604
<b>Program Wide Contingency</b>	<b>\$420</b>
Program-level unallocated contingency	\$420
<b>Interim Use Reserve</b>	<b>\$162</b>
Reserve required by the Federal Railroad Administration - \$54 million utilized for radio spectrim.	\$162
<b>Project Reserve</b>	<b>\$46</b>
Reserve required by the Federal Railroad Administration	\$46
<b>Trainset Certification Facility</b>	<b>\$72</b>
Initial train maintenance facility through testing phase	\$72
<b>Central Valley Balance</b>	<b>\$62</b>
Central Valley miscellaneous projects not yet assigned in CP contract, including: emergency egress, trench pump stations, maintenance facility site preparation, etc.	\$62
<b>Total</b>	<b>\$13,776</b>

\* CP Contingency is enhanced risk beyond current estimate at complete.

Source: High-Speed Rail Authority

**Proposes Work Beyond the Central Valley Segment.** In addition to requesting \$13.8 billion for the 119 mile segment, the plan proposes to advance design work for the Merced and Bakersfield extensions. Specifically, the plan would advance design work including mapping right-of-way, conducting geotechnical evaluations, negotiating third party agreements and identifying environmental permits. This work would occur in 2022-23 and includes:

- \$155 million for the Merced and Bakersfield extensions and the Merced, Fresno, Kings/Tulare and Bakersfield stations;
- \$389 million for trainsets; and,
- \$787 million for program-wide costs.

**Right of Way (ROW) and Third Party Agreements.** HSRA has struggled with ROW acquisition and third party agreements which have contributed to construction delays and increased project costs. The latest business plan indicates that HSRA expects to have over 90 percent of the ROW acquisitions completed by the end of 2021. The acquisition of ROW impacts the completion of civil works and KPMG, who completed the Business Case Assessment for HSRA, recommends that **all ROW** should be acquired for 119-mile high-speed test track prior to executing the track and system contract. HSRA also indicates that it is making significant progress on obtaining third party agreements such as utility relocations.

**Independent Assessment of Early Train Operator (ETO) Ridership Estimates.** The ETO compared the high-speed rail investment between Bakersfield and Merced to other potential early investment options in the San Francisco to Gilroy corridor and the Burbank to Anaheim corridor. The study concludes that the high-speed rail investment in the Central Valley corridor provides the highest benefits, requires the least additional system investment and reduces, rather than increases, the operating subsidy of the system, including regional rail operators. An independent review of this study found the assumptions and benefits to be “fair and assigned correctly.”

While the ETO assessment determined that the Bakersfield to Merced investment was the best choice, this is not a meaningful comparison. The ETO assessment is not of the 119 mile single track segment in the Central Valley that HSRA is proposing and requesting funding to construct. Instead, the assessment is of ridership on an electrified, 171-mile double track, with assumed speeds of up to 220 miles per hour. It is not a comparison of the 119 mile segment to other rail investments that could be made in Northern and Southern California.

**Memorandum of Understanding (MOU).** Proposition 1A requires that “the planned passenger train service to be provided by the authority, or pursuant to its authority, will not require operating subsidy requirement.” According to HSRA, to mitigate the risk that maintenance and operating costs are covered by the service providers and not HSRA, it has entered into a MOU between the California State Transportation Agency, HSRA, and the San Joaquin Joint Powers Authority (SJJPA). The Independent High-Speed Rail Peer

Review Group (PRG) recommended that this MOU be established prior to executing any Track and Systems contract. HSRA believes that this agreement allows it to meet the “no operating subsidy” requirement of Proposition 1A.

The HSRA completed the MOU in November 2020, however the MOU lacks sufficient detail on the operating plan and support responsibility for the leased line along with a re-analysis of any impacts on demand and operating forecasts resulting from the full operating plans and schedules as recommended by the PRG. The agreement does not specifically establish which agencies would bear the responsibility for covering all of HSRA’s costs and holding it harmless in the event that capital costs or subsidies are larger than projected by the ETO. Also, the MOU does not provide any detail about work and funding commitments that would be needed to connect the San Joaquin’s Intercity Passenger Rail Service and the Altamont Corridor Express to the high-speed rail segment.

**Track and Systems Contract.** Currently, a request for proposals is out for a phased track option within the Notice-to-Proceed (NTP) structure. According to HSRA, this procurement strategy allows it the flexibility to deliver track in an incremental manner, starting with a single track which will provide options to manage and defer costs without losing functionality. An initial NTP for a single track has been added to the procurement documents to allow for phased track installation on the 119 miles, as well as on the Merced and Bakersfield extensions. HSRA intends to award a contract in September 2021. There are only two bidders for this contract.

In contrast to the approach being proposed in the business plan, a recent KPMG study recommends that HSRA should ensure stakeholders are committed to interim service before additional major contracts are executed and that the Track and Systems contract include flexibility to comply with the minimum scope of the federal grant requirements. In addition, the study recommends civil works contracts should be fully aligned with the Track and Systems contracts and all ROW should be acquired for the 119-mile high-speed test track before executing the contract.

HSRA is partially addressing KPMG’s recommendations by working with the federal government to modify schedules in the American Recovery and Reinvestment Act (ARRA) and FY10 grant agreements. However, HSRA estimates that all of the ROW would not be acquired until August 2022. Despite KPMG’s recommendation, HSRA plans to move forward with the Track and Systems contract and asserts that completing the track on the proposed timeline is necessary to meet the scope of the federal agreement. Yet, given that HSRA is proposing to seek the extension of other deadlines in the federal agreements, it seems reasonable that the track deadline could be extended as well.

**Projects in Northern and Southern California.** The plan proposes to continue funding for the projects in Northern and Southern California. Previously, \$819 million of Proposition 1A bonds were appropriated for “connectivity” projects on existing regional and inter-city rail systems throughout California to improve the connectivity to the future high-speed rail system. In addition, \$1.1 billion of Proposition 1A funds were appropriated

for improvements in the Los Angeles Basin and in the San Francisco Peninsula, referred to as the "bookends." These funds were for near-term improvements to these existing rail segments that will facilitate the eventual use of the segment for high-speed rail and also improve service for existing riders. Funding agreements have been completed for the following projects:

- \$714 million for construction for the Caltrain Peninsula Corridor Electrification Project;
- \$84 million for the San Mateo Grade Separation Project;
- \$18 million for the environmental review of the Link Union Station (Link US) Project;
- \$423 million for the Link US Phase A run through track and station improvements; and,
- \$77 million for the Rosecrans/Marquardt Grade Separation Project.

### **Funding and Expenditures**

***Three Major Sources of Funding.*** The three major sources of funding for the high-speed rail project are Proposition 1A bonds, federal funds, and cap-and-trade auction revenues. Proposition 1A authorized the state to sell about \$10 billion in general obligation bonds—\$9 billion for the high-speed rail system itself, with the remainder to support the connectivity projects. About \$4.2 billion Proposition 1A bond funds are available for appropriation. HSRA has spent nearly all of the of the Proposition 1A bond funds that have been appropriated for the project (this does not include bookend expenditures).

The federal government has awarded HSRA two grants totaling \$3.5 billion. First, the state received \$2.6 billion in ARRA funds in 2009. HSRA fully expended the ARRA funds and recently fulfilled the federal state match requirement. Second, the state received a \$929 million grant from the federal High-Speed Intercity Passenger Rail program in 2010 (FY10 Federal Grant), which expires at the end of 2022. The state must meet certain conditions under this grant agreement, including: (1) completing its match to the ARRA grant before spending these funds; (2) using the funds to support the construction of a segment useable for intercity passenger rail by 2022; and, (3) completing all environmental reviews for Phase I by 2022. On May 16, 2019, the federal government terminated the FY10 Federal Grant; however, HSRA is seeking to overturn that decision.

The state operates a cap-and-trade program intended to limit the emission of greenhouse gases (GHGs). The program generates revenues from auctioning of GHG "allowances." (Essentially, each allowance is a permit to emit one ton of carbon dioxide equivalent.) In 2014, the state began providing cap-and-trade auction proceeds for the high-speed rail project. This includes a one-time appropriation of \$650 million in 2014-15, as well as the continuous appropriation of 25 percent of cap-and-trade revenues beginning in 2015-16. Currently, the cap-and-trade program is authorized through 2030. To date, the project has received about \$3.6 billion in cap-and-trade revenues and spent about \$1.7 billion of

these funds. HSRA estimates it will receive between \$500 million and \$750 million per year in cap-and-trade revenues through 2030.

The figure below summarizes the state and federal funding received and spent on the project as of November 30, 2020.

**Table 5.0: Summary of Total Funding Available and Total Funds Expended as of 11/30/2020**  
(\$ in Billions)

Funding Source	Total Funding A	Total Expended* B	Total Remaining C = A - B
<b>Federal Funds</b>			
ARRA Construction	2.1	2.1	0.0
ARRA Planning	0.5	0.5	0.0
FY10	0.9	0.0	0.9
<b>State Funds</b>			
Proposition 1A Project Development	0.7	0.6	0.1
Proposition 1A Central Valley Segment Construction	2.6	2.6	0.0
Proposition 1A Bookends	1.1	0.2	0.9
Proposition 1A for future Construction Appropriation	4.1	0.0	4.1
Cap-and-Trade Received through November 2020	3.6	1.7	1.9
Subtotal	15.6	7.6	7.9
Future Cap-and-Trade**	5.0 to 7.5	0.0	5.0 to 7.5
<b>Total</b>	<b>20.6 to 23.1</b>	<b>7.6</b>	<b>12.9 to 15.4</b>

Notes: Numbers might not total due to rounding

\*Excludes administration and other State operations expenditures

\*\*Future Cap-and-Trade funding assumes a low of \$500 million to a high of \$750 million per year from 2021 to 2030 (10 years)

Source: High-Speed Rail Authority

**Funding Plan for Appropriation of Remaining Proposition 1A Bond Funds Submitted.** On February 12, 2021, HSRA submitted a request for \$4.1 billion of the remaining bond funds consistent with Streets & Highways Code Section 2704.08 subdivision (c). The funding plan for the 119 mile segment from Madera to Poplar Avenue is shown the figure below. HSRA believes the appropriation of \$4.1 billion in Proposition 1A funds is necessary for project cashflow in 2021-22 to continue construction without delay and job losses. Submission of the funding plan is the first step in seeking a 2021 Budget Act appropriation of additional Proposition 1A bond funds as part of the May Revision of the Governor's Budget. HSRA asserts, this approach also would allow cap-and-trade funding to be used for other priorities.

## Prop 1A Funding Plan

Source of Funds

Funding Sources	Total
ARRA Grant	\$2,081
FY10 Grant	\$929
Prop 1A – Already Appropriated	\$2,609
Prop 1A – Requested Future Appropriations	\$4,100
Cap-and-Trade – Historical and Future	\$4,057
<b>Total Funding</b>	<b>\$13,776</b>

**Unclear if Proposition 1A Funds Needed in 2021-22.** Historically, HSRA has been overly optimistic about its rate of expenditure of funds. The projected rate of expenditure is important because it drives the request for additional funding. As shown in the figure below, HSRA has spent roughly \$700 million through December 2020 of the current fiscal year. However, it estimates it will spend nearly \$3 billion by the end of June 2021—or \$2.3 billion in the next six months. This estimate is extremely unrealistic given that HSRA has only spent about \$1.5 billion in its highest year of spending.

### Historical and Proposed High-Speed Rail Project Expenditures (in millions)

Category	2006-07 to 2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21 (July- December)	2020-21 Estimated
<b>Administrative &amp; Support</b>	\$80.4	\$35.8	\$34.9	\$37.2	\$40.0	\$42.4	\$21.4	\$61.0
<b>Local Assistance (Bookends) /1</b>	0.0	0.0	76.5	0.0	164.3	138.1	27.9	349.4
<b>Construction and Project Development</b>	\$1,172.3	\$1,021.2	\$1,145.4	\$1,033.7	\$934.9	\$1,360.8	\$628.1	\$2,553.9
<b>Total</b>	<b>\$1,252.8</b>	<b>\$1,057.0</b>	<b>\$1,256.8</b>	<b>\$1,070.9</b>	<b>\$1,139.1</b>	<b>\$1,541.3</b>	<b>\$677.4</b>	<b>\$2,964.3</b>

1 Bookend projects include in the North--the Peninsula Corridor Electrification Program and South--Rosecrans/Marquardt Grade Separation.

If project spending is closer to HSRA's historical spending rate, the remaining \$4.1 billion in Proposition 1A funds may not be needed in 2021-22. In addition, if the Legislature were to pause work on the extensions to Merced and Bakersfield and delay the track and systems contract it would further minimize the need to appropriate \$4.1 billion of Proposition 1A funds in 2021-22. It will be critical for the Legislature to obtain from HSRA and assess projections of cash flow to determine the need for funding in the budget year.

Moreover, due to the more favorable federal environment and the strong signals the Biden Administration has sent about investing in high-speed rail projects nationwide, it is possible the state may receive additional federal assistance. The state also may receive the \$929 million in federal funds that were terminated under the previous administration.

### **Legislative Considerations**

The Legislature has an important question before it: Should it appropriate the remaining Proposition 1A bond funds and continue construction of the high-speed rail project as proposed by the HSRA?

Since inception and due to the lack of certainty about funding to complete the project and the requirement that construction begin in the Central Valley, high-speed rail has developed as a project without a plan, in search of a purpose. Development has been driven by available funding and federal requirements, rather than by a vision of what would be the optimal long-term user experience and operation of a mobility system in the state. The project would benefit from a big picture perspective that defines its purpose and considers its value to future users of the system and what other transit and rail investments the state could make.

The likely request for the remainder of the Proposition 1A bond funds in the Governor's May Revision offers an opportunity to pause further development of the project beyond the 119 miles (un electrified) currently being constructed in the Central Valley. During such a pause of the project - for six months up to a year - the following could occur, or could be required of HSRA so that unanswered questions would be answered and there would be more direction and purpose for the project:

- 1) Allow the Biden Administration to act and provide resources and direction for the project.
- 2) Require further development of the MOU with SJJPA and ACE to ensure there is necessary detail and commitment, especially regarding what work will be completed and how it will be funded.
- 3) Allow additional time for more work on the 119-mile segment to be completed so that the cost estimates for Construction Packages 1, 2, and 3 are more certain. Currently, they do not provide enough certainty about the likely cost of the project upon completion.
- 4) Delay the Track and Systems contract until 2022, when HSRA estimates all ROW will be acquired for the 119-mile test track.
- 5) Develop better cost estimates for the Merced and Bakersfield extensions, which would be possible with an additional year of construction.

- 6) Use the time to think big picture about the project and its role in the state's mobility. As part of that process determine the following:
- What, in terms of long-term value and need, could the state accomplish with high-speed rail? Could the same amount of state funding alternatively be put towards other mobility investments first that would have a greater return on mobility, economic impact, equity, and climate benefits?
  - How are operations and maintenance costs being incorporated into the long-term vision for the project?
  - Do we need to rethink mobility infrastructure in real-time as we recover from COVID-19? Will transit and possible connections to high-speed rail come back?
  - How does HSRA plan to address operational connectivity and the last mile problem? How is high-speed rail going to be connected to the state's transit systems?
  - How does high-speed rail fit into the Governor's Executive order N-79-20 and his order that the State Transportation Agency, the Department of Transportation and the Public Utilities Commission in consultation with specified others "shall by July 15, 2021 identify near term actions, and investment strategies, to improve clean transportation, sustainable freight and transit options, while continuing a "fix-it-first" approach to our transportation system"?