



**CALIFORNIA**  
**High-Speed Rail Authority**

**2021 PROPOSITION 1A  
FUNDING PLAN**

**February 9, 2021**



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## Glossary of Key Terms

TERM	DESCRIPTION
<b>AB 1889</b>	Assembly Bill 1889, enacted in 2016, clarifies that early investments in the Bookends and elsewhere along the system, as defined in SB 1029 of the 2011–12 Regular Session (Chapter 152 of the Statutes of 2012), which will ultimately be used by high-speed rail trains, are consistent with the intent of the Legislature in appropriating funding and is consistent with Proposition 1A.
<b>Baseline Capital Costs Estimate</b>	A project’s baseline is defined as the cumulative project’s scope/assumptions, schedules, cost and risk.
<b>Business Plan</b>	One or more business plans approved by the Authority pursuant to Proposition 1A and state law (Public Utilities Code 185033), by which the Authority is required to prepare, publish, adopt and submit a business plan to the California Legislature every two years. The Authority’s business plan is an overarching policy document used to inform the Legislature, the public, and stakeholders of the project’s implementation, and assist the Legislature in making policy decisions regarding the project.
<b>Cap-and-Trade</b>	California’s Cap-and-Trade program was established through AB 32. The Authority has received both one-time Cap-and-Trade funding and statutory authorization for a continuous appropriation of Cap-and-Trade auction revenues. Appropriation of Cap-and-Trade Revenues was approved in the FY 2014-15 budget cycle, through SB 862, which continuously appropriated 25 percent of Cap-and-Trade revenues to the Authority. AB 398, which was signed into law in July 2017, extended the Cap-and-Trade Program through December 2030.
<b>Central Valley Segment</b>	The Central Valley Segment (CVS), also known as the Madera to Poplar Segment, is part of the planned Merced to Bakersfield segment and the Silicon Valley to Central Valley line. The CVS consists of the 119-mile segment – between Madera on the north end and Poplar Avenue in Shafter on the south end – that was the subject of previous funding plans in 2011 (C Plan) and 2017 (D Plan). It also has been described as the First Construction Segment (FCS) in the 2012 and 2014 Business Plans.

<b>Early Train Operator</b>	The Early Train Operator (ETO), DB Engineering & Consulting USA, a subsidiary of Deutsche Bahn AG, was engaged at the end of 2017. In this role, DB Engineering & Consulting USA will assist the Authority in developing the system—including operational planning, procurement of track and systems, stations, and trainsets.
<b>Funding Plan</b>	The plan prepared by the Authority herewith to meet the requirements of Streets and Highways (S&H) Code section 2704.08, subdivision (c), for the Usable Segments that are the subject of this Funding Plan.
<b>FRA Agreements</b>	Authority grant agreements with the federal government numbered FR- HSR-0009-10-01-06 (ARRA Agreement, Amendment 6) and FR-HSR-0118- 12-01-01 (FY 10 Agreement, Amendment 1).
<b>Madera to Poplar Segment</b>	The Madera to Poplar Segment, also known as the Central Valley Segment, consists of the 119-mile segment – between Madera on the north end and Poplar Avenue in Shafter on the south end – that was the subject of previous funding plans in 2011 (C Plan) and 2017 (D Plan). It also has been described as the First Construction Segment (FCS) in the 2012 and 2014 Business Plans.
<b>Merced to Bakersfield Early Interim Service</b>	The proposed approach to provide for early interim service at high speeds between Merced, Fresno and Bakersfield on a 171-mile portion of the future Silicon Valley to Central Valley line. This interim service would be operated by one or more regional service provider(s) to connect Merced, Fresno and Bakersfield, in one of the fastest growing regions in California, with additional stops to serve Madera and Kings/Tulare.
<b>Phase 1</b>	Phase 1 comprises approximately 520 miles between San Francisco and Los Angeles/Anaheim.
<b>Project Update Report</b>	A report that fulfills the Authority’s biennial requirement to update the California Legislature on the development and implementation of intercity high-speed rail service. SB 1029 put into place reporting requirements to ensure legislative oversight of the project. The requirement for a project update report was updated by Assembly Bill 95 in June 2015. This <i>2019 Project Update Report</i> provided comprehensive reviews of progress made on the high-speed rail project since the 2017 Project Update Report and project updates since the <i>2018 Business Plan</i> . In light of the extension of the schedule for completion of the current Business Plan into 2021, the requirement for a Project Update Report in March 2021 has been waived by the Legislature.

<p><b>Proposition 1A (Prop 1A) or the Bond Act</b></p>	<p>The “Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century” (the Bond Act), approved by voters in November 2008. The Bond Act authorizes \$9.95 billion in General Obligation (GO) bonds to pay for the capital costs of the high-speed rail system and improvements to regional services which will connect to the system. The Bond Act is codified in Streets and Highways (S&amp;H) Code section 2704 et seq.</p>
<p><b>SB 1029</b></p>	<p>SB 1029, passed by the California State Legislature and signed by Governor Brown in July 2012, appropriates Federal and State funding for the Central Valley Segment and Bookend projects on the Peninsula Corridor Segment, Burbank to Los Angeles Segment and Los Angeles to Anaheim Segment. The appropriations included the initial \$2.6 billion in Prop 1A funds for the Central Valley Segment between Madera and Poplar, as well as: \$600 million for the Peninsula Corridor Segment; \$423 million for the Link US project on both the Burbank to Los Angeles Usable Segment and Los Angeles to Anaheim Usable Segment; and \$77 million for the Rosecrans/Marquardt Grade Separation Project on the Los Angeles to Anaheim Usable Segment.</p>
<p><b>Silicon Valley to Central Valley Line</b></p>	<p>The geographic alignment between the Silicon Valley and the Central Valley proposed as the Initial Operating Segment of the high-speed rail system.</p>

## Acronyms and Abbreviations

<b>AB</b>	Assembly Bill
<b>ACE</b>	Altamont Corridor Express
<b>ARB</b>	Air Resources Board of the State of California
<b>ARRA</b>	America Recovery and Reinvestment Act
<b>ARTIC</b>	Anaheim Regional Transportation Intermodal Center
<b>Authority</b>	California High-Speed Rail Authority
<b>BART</b>	Bay Area Rapid Transit
<b>BNSF</b>	Burlington Northern Santa Fe
<b>CEQA</b>	California Environmental Quality Act
<b>CO</b>	Change Order
<b>CP</b>	Construction Package
<b>C&amp;T</b>	Cap and Trade
<b>CVS</b>	Central Valley Segment
<b>DB</b>	Design-Build
<b>DBE</b>	Disadvantaged Business Enterprise
<b>DOF</b>	Department of Finance
<b>DRB</b>	Disputes Resolution Board
<b>DVBE</b>	Disabled Veteran Business Enterprise
<b>EAC</b>	Estimate at Completion
<b>EIR</b>	Environmental Impact Report
<b>EIS</b>	Environmental Impact Statement
<b>ETO</b>	Early Train Operator
<b>ERM</b>	Enterprise Risk Management
<b>FRA</b>	Federal Railroad Administration
<b>FCP</b>	Funding Contribution Plan
<b>FY</b>	Fiscal Year
<b>FY10</b>	Cooperative Agreement No. FR-HSR-0118-12-01-01 (High-Speed Intercity Passenger Rail Program for federal fiscal year 2010)
<b>ETO</b>	Early Train Operator
<b>GGRF</b>	Greenhouse Gas Reduction Fund (a.k.a. Cap-and-Trade proceeds)
<b>GHG</b>	Greenhouse Gas

<b>GO</b>	General Obligation (as in General Obligation Bonds)
<b>HSIPR</b>	High-Speed Intercity Passenger Rail Program
<b>HMF</b>	Heavy Maintenance Facility
<b>IRL</b>	Issue Resolution Ladder
<b>LAO</b>	California Legislative Analyst's Office
<b>LGA</b>	Locally Generated Alternative (for the portion of the Merced to Bakersfield segment entering Bakersfield)
<b>M</b>	Millions
<b>Metro</b>	Los Angeles County Metropolitan Transportation Authority
<b>NEPA</b>	National Environmental Policy Act
<b>P70</b>	70% Probability
<b>PCEP</b>	Peninsula Corridor Electrification Project
<b>PCJPB</b>	Peninsula Corridor Joint Powers Board
<b>PCM</b>	Project and Construction Management
<b>PD</b>	Project Development <i>or</i> Program Delivery (depending on context)
<b>PMO</b>	Program Management and Oversight unit
<b>PMP</b>	Program Management Plan
<b>PRIIA</b>	Passenger Rail Investment and Improvement Act of 2008
<b>Prop1A</b>	Proposition 1A
<b>PUR</b>	Project Update Report
<b>RFP / RFQ</b>	Request for Proposals / Request for Qualifications
<b>RMP</b>	Risk Management Plan
<b>ROD</b>	Record of Decision
<b>ROW</b>	Right of Way
<b>SB</b>	Senate Bill
<b>S&amp;H Code</b>	Streets and Highways Code
<b>SCC</b>	Standard Cost Category
<b>SJJPA</b>	San Joaquin Joint Powers Authority
<b>SR 99</b>	State Route 99
<b>STO</b>	State Treasurer's Office
<b>UPRR</b>	Union Pacific Railroad
<b>YOE</b>	Year of Expenditure



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## Introduction

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The “Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century” (the Bond Act) is codified in Streets and Highways Code Section (S&H) 2704 et seq. S&H 2704.08, subdivision (c)(1) requires that, no later than 90 days prior to the submittal to the Legislature and the Governor of the initial request for appropriation of proceeds of bonds authorized by this chapter for any eligible capital costs on each corridor, or usable segment thereof, identified in subdivision (b) of Section 2704.04, other than costs described in subdivision (g), the authority shall have approved and submitted to the Director of Finance, the peer review group established pursuant to Section 185035 of the Public Utilities Code, and the policy committees with jurisdiction over transportation matters and the fiscal committees in both houses of the Legislature, a detailed funding plan for that corridor or a usable segment thereof.

### **Background and Purpose of the Funding Plan**

Pursuant to the requirements of the Proposition 1A Bond Act, the California High-Speed Rail Authority (Authority) is submitting this Funding Plan to the Legislature as the first step in seeking a 2021 Budget Act appropriation of Proposition 1A bond funds as part of the May Revision of the Governor’s Budget. As this Funding Plan is released, the Authority will also be releasing the Revised Draft Business Plan. These two plans, taken together, outline the progress the Authority has made addressing the challenges facing the project, the significant number of jobs this project is producing and seeks to increase through this appropriation of funds, as well as the next steps for construction and funding to complete early interim service between Merced and Bakersfield and ultimately the full “Phase I” segment between San Francisco and Los Angeles – Anaheim.

The Authority previously selected the Central Valley Segment (CVS) (from Madera to Poplar Avenue) for construction in accordance with the criteria specified in Streets and Highways (S&H) Code Section 2704.08, subdivision (f). This 119-mile project currently under construction also has been described as the First Construction Segment (FCS) in the 2012 and 2014 Business Plans, and as the Central Valley Segment in the 2016 and 2018 Business Plans (collectively, the Business Plans). For ease of reference, the terms Central Valley Segment, CVS, or Madera to Poplar Segment will be used interchangeably throughout this Plan, except when referencing past actions regarding the FCS.

The Authority has prepared this Funding Plan in accordance with Streets & Highways Code Section 2704.08 subdivision (c) to provide additional Proposition 1A bond funds for construction activities on the Central Valley Segment. The bond proceeds are projected to be needed in fiscal year (FY) 2021-22 to meet cash flow needs of the significant construction and project development work occurring throughout the state.

## **Current Funding Plan Request**

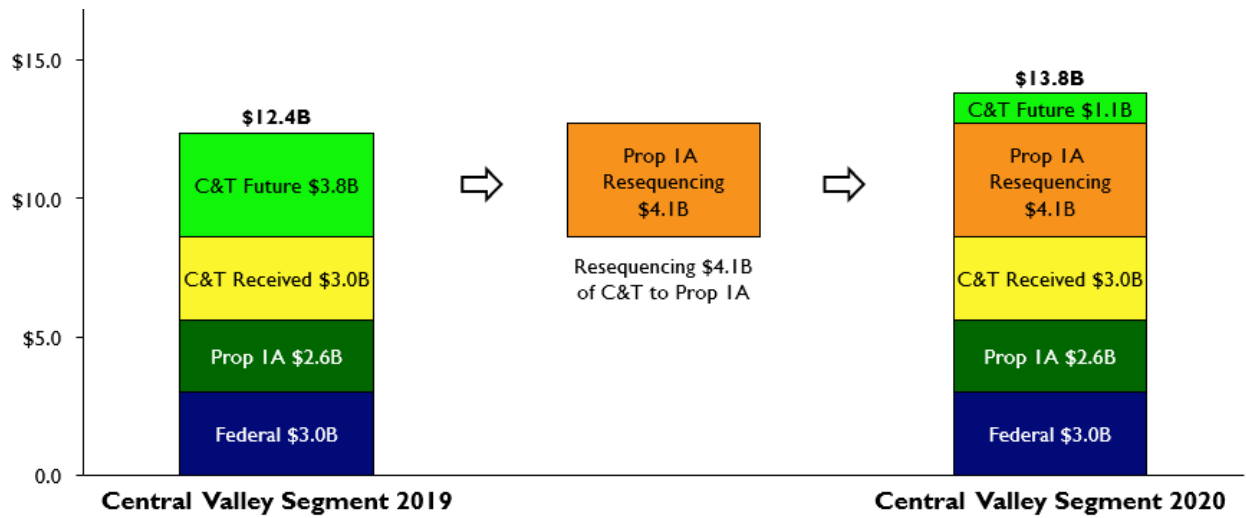
The Authority has \$4.2 billion available in remaining Proposition 1A bond funds for continued advancement of project activities. Of this \$4.2 billion, the Authority proposes to direct \$100 million to on-going project development work on the San Francisco to Los Angeles / Anaheim Phase I sections, including early design and completion of environmental documents.

The Authority proposes to direct the remaining \$4.1 billion, the subject of this Part C Funding Plan, to fund on-going construction work on the Central Valley Segment (from Madera to Poplar Avenue), as the Cap-and-Trade Funding previously appropriated for the project will be received quarterly through 2030, based on actual auction results, and Proposition 1A Bond funds are necessary for project cashflow in FY 2021-22 to continue construction without delay and job losses.

Recently, the COVID-19 pandemic has caused shocks to the Cap-and-Trade markets, resulting in lower auction proceeds and project funding from the last three quarterly auctions. This resulted in the loss of more than \$288 million, relative to what auctions produced in recent years. These near-term revenue shortfalls may continue to grow as the pandemic goes on, even if revenues increase following recovery.

Due to the volatility of Cap-and-Trade funding – as evidenced in 2020 with a decline in revenue caused by COVID 19 – and the long timeline for the full receipt of future Cap-and-Trade proceeds, the requested Proposition 1A bond funds will allow the Authority to re-sequence its funding to maintain funding stability for on-going construction and project development activities. This funding sequence allows for future Cap-and-Trade funds to recover to projected levels and be available for project commitments in later years as the quarterly auctions occur. Exhibit I-1 illustrates the re-sequencing of Proposition 1A Bond Funds and Cap-and-Trade funds. The known costs of Central Valley construction are about \$330 million above prior estimates. With an increased appreciation of risk due to COVID-19 and other factors, the Authority proposes to increase the contingency considerably to prepare for risk ahead. The total revised baseline for the Central Valley Segment is \$13.8 billion. Moreover, to mitigate risk affecting the track and systems procurement, these estimates include proposed changes to the timing, approach to construction, and phasing of track and system installation. These actions will mitigate cost risks and improve construction efficiency.

**Exhibit I-1. Central Valley Segment Project Cost and Proposed Funding**

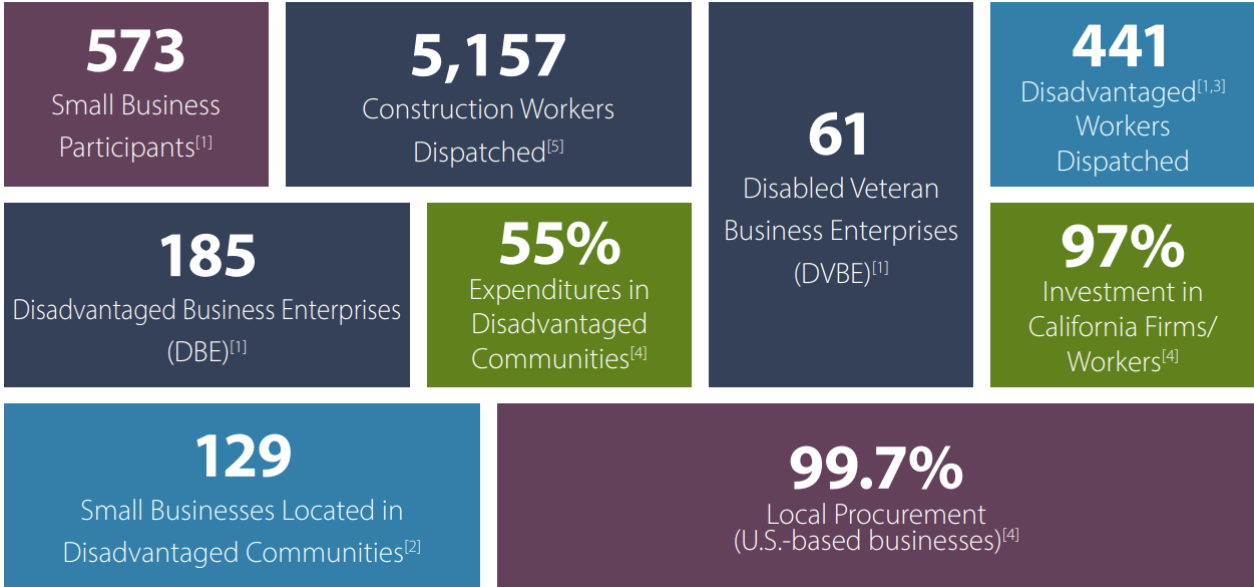


**Maintaining the Economic Engine of the Project**

One of the high-speed rail project’s signature benefits is the on-going creation of jobs in designing, planning and constructing the system. Through June 2020, high-speed rail created the equivalent of about 60,000 full-time jobs and \$11.4 billion in economic impact, with the majority of the economic activity stemming from construction of the Central Valley Segment. In FY 2019-20 alone, the project supported the equivalent of almost 10,000 full-time jobs. In the Central Valley, the project’s economic impact has been especially meaningful to the region. By the close of 2017, more than 1,400 craft laborers had been dispatched to work on building high-speed rail on the 119-mile Central Valley Segment. By December 2020, the Authority had surpassed 5,000 construction workers dispatched since the start of construction, with 77 percent of the men and women residing in the Central Valley. The appropriation of Proposition 1A bond funds will allow job growth to continue. Without the bond funds, project sites will have to be closed and workers laid off.

Exhibit I-2 shows how past investments have created opportunities for disadvantaged businesses, disadvantaged workers and others in California. To date, more than 550 certified small businesses are working on the project, statewide. This includes 180 certified Disadvantaged Business Enterprises and 60 Certified Disabled Veteran Business Enterprises. As construction continues to expand, the economic benefits will continue grow. This will lead to new connectivity and business to business interactions that will drive California’s economy, creating enormous benefits throughout the state.

**Exhibit I-2. Creating Opportunities for Disadvantaged Workers and Fostering Diversity**



Notes: 1. Through April 2020. 2. As defined by CalEnviroScreen. 3. As defined in Article 3.0 of the “General Management to Community Benefits Policy-National Targeted Hiring Initiative Plan” for the California High-Speed Rail Authority. 4. July 2006 to June 2019. 5. Through April 2020.

**Previous Funding Plans and Prop 1A Appropriations**

In 2011, the initial Funding Plan for the CVS Usable Segment was approved by the Authority Board, in accordance with the S&H Code section 2704.8, subdivision (c) (Resolution #HSR11-23, November 3, 2011). In the Budget Act for FY 2012-13, Prop 1A funds in the amount of \$2.6 billion were appropriated by the Legislature in Senate Bill 1029 (SB 1029), Chapter 152 of 2012. In making its appropriation, the Legislature chose to use Prop 1A funds to match the concurrent appropriation of federal funds (for combined funding of \$5.87 billion) to begin construction of the high-speed rail system.

A subsequent Funding Plan dated January 1, 2017, sought *expenditure* approval to use the appropriated Prop 1A funds to pay for the on-going construction in the Central Valley that SB 1029 authorized, and which had commenced using federal funding sources. The 2017 Funding Plan for the CVS (along with the required accompanying Independent Consultant Report) was approved in accordance with S&H Code section 2704.8, subdivision (d) (Resolution #HSRA 16-28, December 13, 2016).

In 2017 and 2020, the Director of California’s Department of Finance approved three more funding plans which when combined with the Central Valley Segment, provides a total of \$3.3 billion in Proposition 1A funds, specifically:

- \$2.6 billion for the Central Valley usable segment (as noted above);
- \$600 million for the Caltrain Peninsula Corridor Electrification Project (PCEP) on the Peninsula Corridor Usable Segment;
- \$423 million for the Link US project on both the Burbank to Los Angeles Usable Segment and Los Angeles to Anaheim Usable Segment; and
- \$77 million for the Rosecrans/Marquardt Grade Separation Project on the Los Angeles to Anaheim Usable Segment.

### **Current Funding Plan / Proposition 1A Appropriation**

This Funding Plan provides an outline of the high-speed rail project’s economic and environmental benefits, project funding (including bond funds, Cap-and-Trade Funds, and existing federal funds). The Authority also desires to work with the Biden Administration to restore the federal government as a project funding partner, as it was during the Obama Administration.

The Authority’s immediate priorities are as follows:

- Complete construction of the 119-mile Central Valley Segment and lay track fulfilling our federal grant agreements with the Federal Railroad Administration;
- Meet our federal commitment to environmentally clear the entire 500-mile system between San Francisco and Los Angeles/Anaheim;
- Advance construction on the “bookend” projects to which we have committed funding in the Los Angeles Basin and the Bay Area (including all funding sources, \$3 billion in investments for infrastructure projects in the Northern and Southern regions);

- Commence testing of electrified high-speed trains and put high-speed trains in service by the end of the decade;
- Expand the 119-mile segment in the Central Valley to develop 171 miles of electrified high-speed rail service by advancing design, funding pre-construction work, setting aside funds for construction extensions to Merced and Bakersfield, and connecting downtown Merced, Fresno and Bakersfield with additional stops at Madera and Kings/Tulare;
- Advance project design in each segment, including the four Southern California Segments between Bakersfield and Anaheim and the two Northern California Segments between San Francisco and Merced, as each segment completes the environmental review phase; and
- Pursue federal and private funds prospectively to “close the gaps” and expand electrified high-speed service to the Bay Area and Los Angeles/Anaheim, completing the Phase I system approved by the voters in 2008.

Approval of this Funding Plan is an important component of achieving the above objectives. Doing so is particularly important for the Central Valley Segment, as the on-going construction will continue to contribute to the economic stability of this region and the state.

## **Progress Made Supports the Current Funding Request**

### ***Environmental Clearance***

The Federal Railroad Administration (FRA) approved the application for National Environmental Policy Act (NEPA) Assignment, making California the first state in the nation to receive NEPA Assignment for rail projects. Since February 2020, the Authority has issued four Draft Environmental Impact Statements, and completed the second ROD certification, finishing the Central Valley environmental review process.

Although these actions have been challenging and required additional time for public and agency review during the COVID-19 pandemic, they were significant achievements. Within the next year, the Authority expects to release draft environmental documents for the final two project sections for public review and comment.

## **Construction**

On the construction front, significant progress is occurring in the Central Valley. The Authority resolved past litigation to allow construction work to progress more effectively. The resolution of contractor issues to clear areas of construction has doubled the amount of activity over the last year. The Authority increased the number of active construction sites, put thousands of workers on the job and engaged hundreds of small businesses. Many third-party agreements were completed, and stronger relationships were built with key stakeholders, thereby resolving program-related issues.

Additionally, the Authority released the first major operations infrastructure Request for Proposals (RFP), covering Track and Systems. These are the necessary steps required to meet terms of the federal funding agreements to construct the first segment of the nation's first truly high-speed rail system.

The Authority's past lessons learned, input from stakeholders, and analysis of impacts arising from the pandemic, among other factors, are guiding the Authority to take a more prudent and pragmatic delivery approach. To assess today's situation, Authority staff have conducted an extensive review of the current status of civil construction in the Central Valley, the remaining issues and risks that need to be addressed, and the schedule for delivering the Central Valley projects.

As part of this process, the Authority staff reviewed both the remaining legacy risks as well as the impact COVID-19 has already had and may continue to have in the future. This review shows solid progress—that the Authority is moving beyond past legacy risks—but also that the Authority must proceed with caution in the face of the still unknown risks that may emerge from the pandemic. Based on this review, the Authority staff developed an updated Estimate at Completion (EAC), recalibrated the schedule and recognized that the contingency needs to be maintained and replenished. Details are found in **Section C. Capital / Construction Cost**.

Construction also continues on the Authority-funded Bookend Projects. The Peninsula Corridor Electrification Project and San Mateo Grade Separation Project in the Bay Area are under construction, and Southern California will soon see the start of construction on the Los Angeles Union Station Link US Project and the Rosecrans Marquardt Grade Separation Project.

## ***Risk Management and Stage Gate Best Practices***

The Authority has identified two key actions to mature the organization and further strengthen risk management and project delivery, which will be discussed below, in turn:

- Adopting a Stage Gate project development and delivery process for future capital investments; and
- Establishing an Enterprise Risk Management Program.

**Stage Gate Approach to Project Delivery.** The Authority is implementing a new Stage Gate process to serve as a comprehensive project development / delivery process and to strengthen its risk management program. Stage Gate will serve as the organizing framework for our capital budget approval process. The purpose of a Stage Gate process is to ensure that every project passes through a systematic and controlled process of reviews and approvals before it can advance to the next stage. Capital projects will advance by passing through a series of stages and gates which will provide enhanced visibility into projects and greater rigor and control over key decisions. Stage Gate processes are considered best practices and are often used by both the private and public sectors.

As we advance capital projects through the Stage Gate process, we will do so with an integrated, multidisciplinary project team that includes Risk Management and Project Controls, Planning and Sustainability, Strategic Delivery, Engineering, Environmental, Real Property, Infrastructure Delivery, Rail Operations and the Authority's regional teams that interface with local communities and stakeholders. Additional details may be found in Section F of this funding plan.

**Enterprise Risk Management (ERM) – a comprehensive approach to risk.** The Authority's Form-to-Function proposal, authorized with the passage of the FY 2020/2021 State Budget, included the creation of a Risk Management Office, led by a Director of Risk Management and Project Controls. This independent office reports directly to the Board and in September 2020 a new director was appointed, and work began to enhance risk management oversight and develop the Authority's ERM Program.

This new function will bring state-specific oversight on risk, with independent risk analysis and data gathering. One of the key aspects of this framework will be the creation of an Enterprise Risk Committee (ERC), an oversight body including the Chief Executive Officer, the newly appointed Director of Risk Management and Project Controls, and other Authority executives. The ERC will evaluate and prioritize emerging risks, review management risk responses, and



provide transparent reporting. The committee will be administered by the Risk Management Office. There will be standardized tools to review and evaluate emerging trends, prioritize reviews, review management’s responses and recommend risk actions.

The result of this new approach to risk will be to bring a consistent, organization-wide approach to the management of risks to empower and support our people in continuously improving our understanding of risks and our ability to manage them.

**Organization of the Plan**

This funding plan is organized into seven sections, and one appendix, as shown in **Exhibit I-3**.

**Exhibit I-3. 2021 Funding Plan Sections**

Section	Description of Contents
<b>A. Usable Segment</b>	Describes the Central Valley Segment, previously selected and approved by the Authority for construction funding.
<b>B. Lease or Franchise Agreements</b>	Describes multiple agreements related to the funding, construction, and planning for operation of future passenger train service, as applicable, along the Usable Segment.
<b>C. Capital/Construction Costs</b>	Addresses updates to the projected capital costs for the Central Valley Segment, and describes changes in key assumptions and methodologies.
<b>D. Sources of Funding</b>	Describes the sources of funding available to the Usable Segment and presents the amount and rationale for additional Proposition 1A bond proceeds requested in the Funding Plan.
<b>E. Projected Ridership and Revenue Estimates</b>	Describes the future initial operating service, interim services, and interim use/independent utility options available to the Authority.
<b>F. Known or Foreseeable Risks</b>	Presents various funding and program risks as reported by the Authority’s risk management function.
<b>G. Authority Certifications</b>	Addresses statutory requirements for specific Authority findings and certifications related to the Usable Segment and the Funding Plan.
<b>Appendix 1</b>	Sources and Reference Documents

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## A. The Usable Segment

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Streets and Highways Code section 2704.08, subdivision(c)(2)(A) requires identification of the corridor, or usable segment thereof, in which the authority is proposing to invest bond proceeds.

### Central Valley Usable Segment (CVS)

Also known as the Madera to Poplar Usable Segment, this usable segment consists of the 119-mile Central Valley Segment – between Madera on the north end and Poplar Avenue in Shafter on the south end – that was the subject of previous funding plans in 2011 (C Plan) and 2017 (D Plan). See Exhibit A-1 for the location of the Central Valley Segment in the context of the Silicon Valley to Central Valley line.

Previous funding plans approved for the Central Valley Segment between Madera and Poplar are as follows:

- **Initial Funding Plan under S&H Code section 2704.08(c) (C Plan).** Approved by Resolution #HSR11-23, on November 3, 2011. Prop 1A bond proceeds in the amount of \$2.6 billion were appropriated by the Legislature in Senate Bill 1029 (SB 1029), Chapter 152 of 2012.
- **Expenditure Funding Plan under S&H Code section 2704.08(d) (D Plan).** Approved by Resolution #HSRA 16-28, December 13, 2016. Submitted to Department of Finance and Joint Legislative Budget Committee in January 2017. Approved by Director of Finance on March 3, 2017.

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Exhibit A-1. Central Valley Segment in Context of the Silicon Valley to Central Valley Line



SUBJECT TO CHANGE - JANUARY 2021

### **Current Construction Activities**

The official groundbreaking of construction for the high-speed rail system was held on January 6, 2015, in Fresno. In the years that have followed, the Authority has advanced construction, secured ROW parcels, attained permits, continued geotechnical investigations essential to structural design, demolished structures, relocated utilities along the ROW, and begun construction of dedicated high-speed rail viaducts, bridges, and guideway.

The Authority currently is delivering the infrastructure in the Central Valley through a series of contracts. The first contracts that the Authority let were design-build (DB) contracts for construction of the civil works for the segment. These contract packages include CP 1, CP 2-3, and CP 4. All of these contracts have been executed and work is underway with heavy construction ongoing. Information on the CVS Construction Packages and other Agreements can be found in **Section B. Agreements**.

The SR-99 realignment work was completed in January 2019. This shifted the highway 100 feet to the west, reconstructing three overpasses, adding auxiliary lanes and improved ramp access for traffic safety and mobility.

The COVID 19 pandemic, wildfires and civil unrest events have created delays, constricting an already very compressed construction schedule and made the goal of achieving the December 31, 2022, federal grant deadline increasingly difficult. The Authority anticipates working with a re-engaged FRA in 2021 to collaborate on completing the remaining steps and delivering the project under a more reasonable timeline that will allow both parties to make better business decisions on the remaining work to be completed.

The projects previously approved for construction on the Peninsula Corridor, Burbank to Los Angeles, and Los Angeles to Anaheim usable segments will not be funded under this funding plan and therefore, information about construction of these prior projects is not presented in this funding plan.

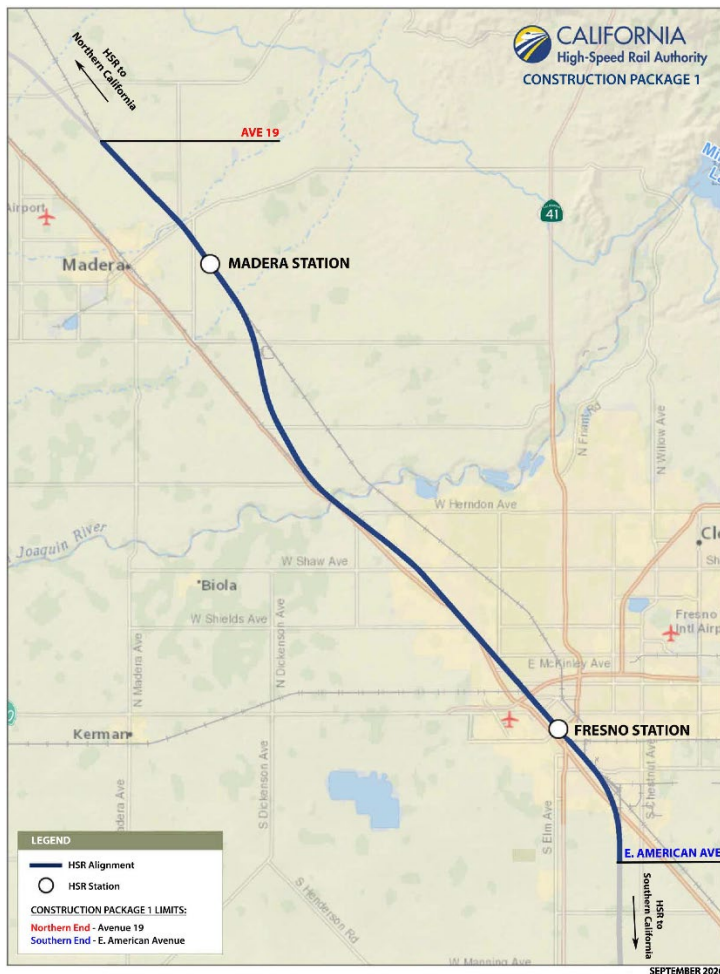
### **Status of Construction Packages in the Central Valley**

There are several construction packages and contracts associated with completion of the Central Valley Segment. The scope of each construction package is summarized here. Details of each agreement can be found in this section, under ***Current Agreements – Construction Agreements***.

### Construction Package 1 (CP 1)

CP 1 is the first significant construction contract executed on the Central Valley Segment, which is on the Valley to Valley Line, the Initial Operating Section of the high-speed rail system. The CP 1 construction area is a 32-mile stretch beginning at Avenue 19 in Madera County (approximately adjacent to the existing Madera Amtrak station) and concluding at East American Avenue in Fresno County. It includes 12 grade separations, two viaducts, one tunnel and a major river crossing over the San Joaquin River. Construction has been completed on 11 projects, and is under way at seven more active sites. CP 1 is being delivered under a DB model. The scope and boundaries of CP 1 are presented in **Exhibit A-2**.

### Exhibit A-2. CP 1 Project Scope and Boundaries



For more information on CP 1 please refer to:  
[http://www.hsr.ca.gov/Programs/Construction/about\\_construction\\_package\\_1.html](http://www.hsr.ca.gov/Programs/Construction/about_construction_package_1.html)  
[http://www.hsr.ca.gov/Programs/Construction/design\\_build\\_construction\\_contract.html](http://www.hsr.ca.gov/Programs/Construction/design_build_construction_contract.html)

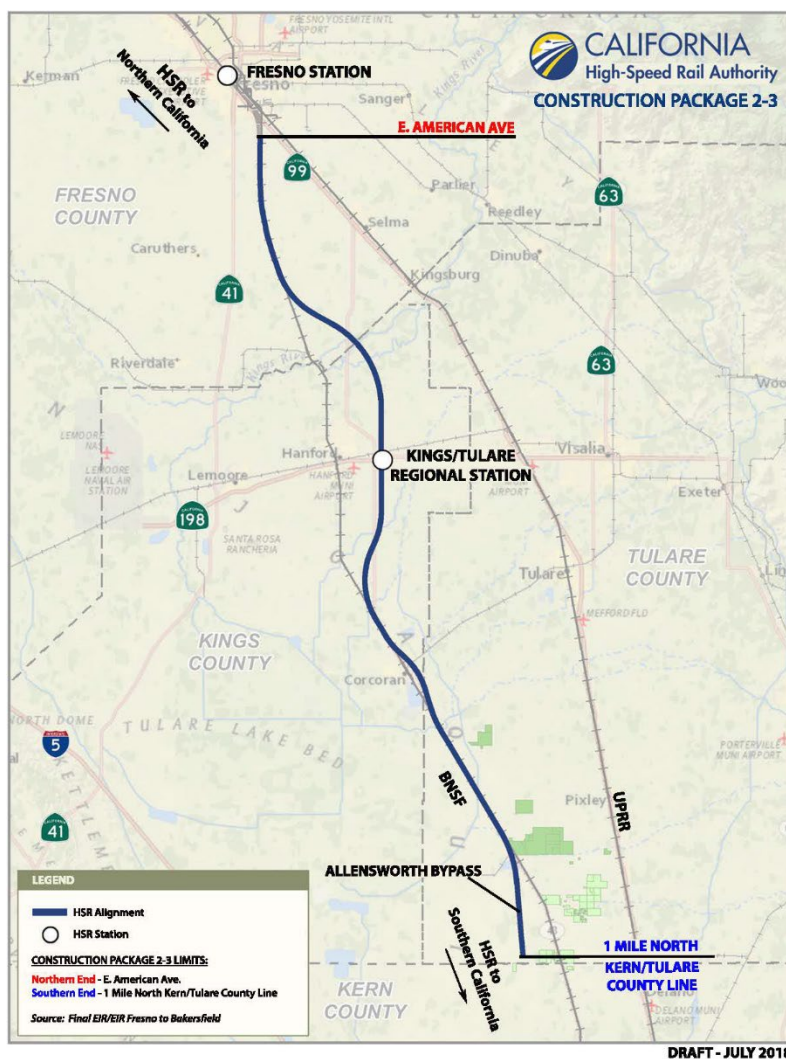
Source: About Construction Package 1 (HSR 13-06)

[http://www.hsr.ca.gov/Programs/Construction/about\\_construction\\_package\\_1.html](http://www.hsr.ca.gov/Programs/Construction/about_construction_package_1.html)

### Construction Package 2-3 (CP 2-3)

CP 2-3 is the second significant construction contract executed on the Central Valley Segment. The CP 2-3 construction area extends approximately 65 miles beginning at the terminus of CP 1 at East American Avenue in Fresno County and concluding approximately one mile north of the Tulare/Kern County line. CP 2-3 includes approximately 36 grade separations in the counties of Fresno, Tulare and Kings, including viaducts, underpasses and overpasses. Work in this section is completed at three sites and currently underway with active construction progressing at 16 sites. CP 2-3 is being delivered under a DB model. The scope and boundaries of CP 2-3 are presented in **Exhibit A-3**.

### Exhibit A-3. CP 2-3 Project Scope and Boundaries



For more information on CP 2-3 please refer to:  
[http://www.hsr.ca.gov/Programs/Construction/about\\_construction\\_package\\_2\\_3.html](http://www.hsr.ca.gov/Programs/Construction/about_construction_package_2_3.html)  
[http://www.hsr.ca.gov/Programs/Construction/design\\_build\\_construction\\_contracts.html](http://www.hsr.ca.gov/Programs/Construction/design_build_construction_contracts.html)

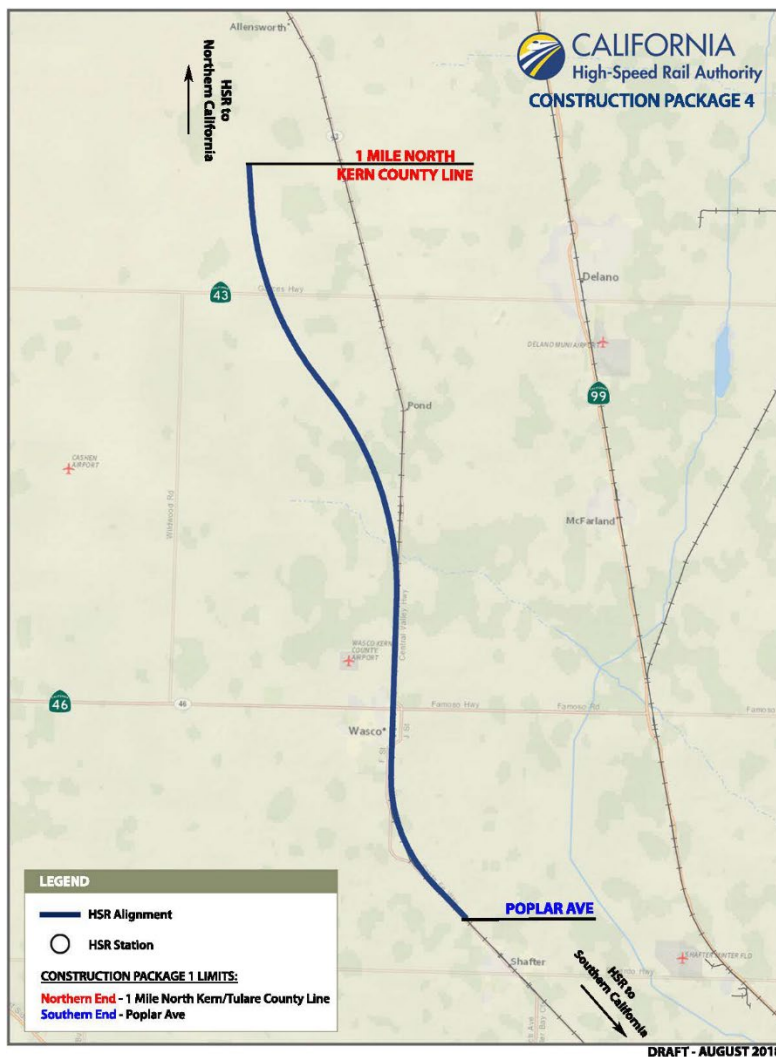
Source: About Construction Package 2-3 (HSR 13-57)

[http://www.hsr.ca.gov/Programs/Construction/about\\_construction\\_package\\_2\\_3.html](http://www.hsr.ca.gov/Programs/Construction/about_construction_package_2_3.html)

### Construction Package 4 (CP 4)

CP 4 is the third significant construction contract executed on the Central Valley Segment. The CP 4 construction area is a 22-mile stretch beginning at a point approximately one mile north of the Tulare/Kern County Line at the terminus of CP 2-3 and concluding at Poplar Avenue to the south. CP 4 work will include construction of at-grade, retained fill and aerial sections of the high-speed rail alignment and relocation of four miles of existing BNSF tracks. Work in this section is completed at two sites and currently underway with active construction progressing at five sites. CP 4 is being delivered under a DB model. The scope and boundaries of CP 4 are presented in Exhibit A-4.

### Exhibit A-4. CP 4 Project Scope and Boundaries



For more information on CP 4 please refer to:  
[http://www.hsr.ca.gov/Programs/Construction/about\\_construction\\_package\\_4.html](http://www.hsr.ca.gov/Programs/Construction/about_construction_package_4.html)  
[http://www.hsr.ca.gov/Programs/Construction/design\\_build\\_construction\\_contracts.html](http://www.hsr.ca.gov/Programs/Construction/design_build_construction_contracts.html)

Source: About Construction Package 4 (HSR 14-32)

[http://www.hsr.ca.gov/Programs/Construction/about\\_construction\\_package\\_4.html](http://www.hsr.ca.gov/Programs/Construction/about_construction_package_4.html)

## B. Lease or Franchise Agreements

Streets and Highways Code section 2704.08, subdivision (c)(2)(B) requires a description of the expected terms and conditions associated with any lease agreement or franchise agreement proposed to be entered into by the authority and any other party for the construction or operation of passenger train service along the corridor or usable segment thereof.

The Authority has developed hundreds of contracts in support of development of the high-speed rail system. This section of the Funding Plan identifies certain existing and proposed agreements and contracts relating to the construction and operation of the Usable Segments. The Authority has moved forward with a range of agreements necessary for construction and operation of the Usable Segments. This section identifies those agreements, specifically: Federal Agreements between the Authority and its federal funding and oversight partners, Regional Interagency Agreements and Memoranda, and Construction Agreements (both executed and planned). None of these are lease agreements or franchise agreements.

### Federal Agreements

#### *Grant / Cooperative Agreements*

The Authority has entered into agreements with the US Department of Transportation, Federal Railroad Administration (FRA) in connection with the two federal funding sources for the CVS. **Exhibit B-1** describes key elements and terms of the FRA Agreements. These include the ARRA Agreement, Amendment 6, and the FY 10 Agreement, Amendment 1.

#### **Exhibit B-1. FRA Grant/Cooperative Agreements – Key Elements and Terms**

Key Elements	Key Terms
Parties to the Agreement	California High-Speed Rail Authority (Authority) US Department of Transportation, Federal Railroad Administration (FRA)
Agreements	FR-HSR-0009-10-01-06 (ARRA Agreement, Amendment 6) FR-HSR-0118-12-01-01 (FY 10 Agreement, Amendment 1)
Purpose of Agreement	Conduct and fund the CVS (referred to in the Grant Agreement as the initial Central Valley Section), and Phase I project level environmental clearances as more specifically set forth in the Statement of Work, and any supplements thereto.



Key Elements	Key Terms
Performance Period*	<b>ARRA:</b> 8/17/2010 to 9/30/2022; and <b>FY 10:</b> 12/16/2009 to 12/31/2022
Federal Funding Period*	<b>ARRA:</b> 8/17/2010 to 09/30/2017; and <b>FY 10:</b> 12/16/2009 to 12/31/2022
Total Funding Amount	<b>\$3,481,176,231.00 total federal funds</b> \$2,552,556,231.00 from ARRA, and \$928,620,000.00 from FY 10 programs
Scope of Project	<ul style="list-style-type: none"> <li>• As used in the FRA Agreements, the term “Project” refers to the overall effort identified in Section 8 of the Grant/Cooperative Agreement and as that term is defined in Subsection 1(h) of Attachment 2. (ARRA Agreement, Attachment 2, General Provisions)</li> <li>• The ARRA Agreement Statement of Work, Attachment 3, incorporates Tasks 1-4, which define preliminary engineering and environmental work and pre-construction activities for seven Phase 1 sections, as well as project administration and indirect costs.</li> <li>• The ARRA Agreement Statement of Work, Attachment 3A, incorporates Tasks 5-10, which define activities for construction of the Initial Central Valley Section including: (5) design/build program management; (6) real property acquisition; (7) early work; (8) final design and construction; (9) project reserves; and (10) unallocated contingency. Note: Task 7 is no longer applicable to implementation of the Project.</li> </ul>
Delivery Responsibilities	<p>The Authority is responsible for furnishing all personnel, facilities, and equipment, and other materials and services (except as otherwise specified in the agreement) necessary to perform the Project as set forth in the Statement of Work (Attachment 3), and any supplements thereto. (ARRA Agreement, Attachment 1-Section 2. Scope, and Attachment 3 and 3A)</p> <p>The FRA will provide, on an “as available” basis, one professional staff person, to be designated as the Grant Manager, to review work or work products in progress, and arrange for the review of the Project results upon completion. Since the award was made as a cooperative agreement, FRA has substantial programmatic involvement. Substantial involvement means that, after award, technical, administrative, or programmatic staff will assist, guide, coordinate, or otherwise participate in Project activities. (Section 3. Awarding Agency Participation)</p>

Key Elements	Key Terms
Environmental Responsibilities	<p>Working collaboratively with FRA, the Authority is responsible for preparing the environmental analysis and documentation for each Project Section necessary to comply with the National Environmental Policy Act (NEPA), and other associated federal environmental laws including, but not limited to: Section 106 of the National Historic Preservation Act; Section 4(f) of the Department of Transportation Act; Section 7 of the Endangered Species Act; and the General Conformity requirements of the Clean Air Act. The Authority is also responsible for complying with applicable state laws that may include the California Environmental Quality Act.</p> <p>The Authority and FRA are jointly responsible for ensuring that the environmental review process is being conducted in accordance with relevant environmental laws. FRA is the lead federal agency responsible for NEPA compliance and the Authority is the lead state agency responsible for complying with all applicable state environmental laws. As part of the environmental review process, the Authority maintains all documents developed or received by the Authority that support agency decision making and makes them available to FRA upon request. In addition, the Authority has agreed to additional detailed provisions about how the work will be conducted with respect to its environmental responsibilities for the Project. (Task 1 Environmental Review – Attachment 3). Since NEPA Assignment the Authority is the NEPA lead federal agency.</p>
Other Responsibilities	<p>The Authority shall comply with the Buy America provisions set forth in 49 U.S.C. 24405(a) for the Project with respect to the use of steel, iron and manufactured goods produced in the United States, subject to the conditions therein set forth. (Section 11. Buy America)</p>

Sources: ARRA Grant Agreement, No. FR-HSR-0009-10-01-06 (Amendment 6) and FY 10 Grant Agreement, No. FR-HSR-0118-12-01-01

*\* The COVID-19 pandemic and other events have created delays, constricting an already very compressed construction schedule and made the goal of achieving the December 31, 2022, federal grant deadline increasingly difficult. The Authority anticipates working with a re-engaged FRA in 2021 to collaborate on completing the remaining steps and delivering the project under a more reasonable timeline that will allow both parties to make better business decisions on the remaining work to be completed.*

### **Environmental Authority MOU**

**Exhibit B-2** describes key elements of the MOU for delegated authority for the California High-Speed Rail Authority, which has been assigned FRA’s responsibilities as lead agency under the National Environmental Policy Act (NEPA).

**Exhibit B-2. NEPA Assignment MOU – Key Elements and Terms**

Key Elements	Key Terms
Parties to the Agreement	California High-Speed Rail Authority (Authority) US Department of Transportation, Federal Railroad Administration (FRA)
Agreements	Memorandum of Understanding (MOU), by which the California High-Speed Rail Authority (Authority) has been assigned FRA's responsibilities as lead agency under the National Environmental Policy Act (NEPA). Pursuant to Section 327 of Title 23 of the United States Code, effective July 23, 2019 the MOU is authorized under the Surface Transportation Project Delivery Program, otherwise known as NEPA Assignment.
Purpose of Agreement	The NEPA Assignment MOU provides that the FRA assigns, and the State assumes, environmental review responsibilities under NEPA and other federal environmental laws with respect to projects in California's High-Speed Rail system and projects that directly connect to stations on the high-speed rail system, which include the Link Union Station and West Santa Ana Branch Transit Corridor projects in Los Angeles. The MOU also includes the ACE forward project in the Altamont Corridor Express system. These federal responsibilities will be performed by the High-Speed Rail Authority, with oversight by the California State Transportation Agency.

Sources: <https://www.hsr.ca.gov/programs/environmental/nepa.aspx>,  
[https://www.hsr.ca.gov/docs/programs/enviro\\_n\\_planning/NEPA\\_MOU\\_Signed\\_Thank\\_you\\_Letter\\_BK\\_to\\_Batory\\_20190718.pdf](https://www.hsr.ca.gov/docs/programs/enviro_n_planning/NEPA_MOU_Signed_Thank_you_Letter_BK_to_Batory_20190718.pdf)

Additional information regarding the above-referenced federal agreements can be found here:

- [http://www.hsr.ca.gov/About/Funding\\_Finance/funding\\_agreements.html](http://www.hsr.ca.gov/About/Funding_Finance/funding_agreements.html)
- [http://www.hsr.ca.gov/docs/about/funding\\_finance/funding\\_agreements/HSRFRA\\_CooperativeGrantAgreement\\_Amendment6\\_051816\\_Redacted.pdf](http://www.hsr.ca.gov/docs/about/funding_finance/funding_agreements/HSRFRA_CooperativeGrantAgreement_Amendment6_051816_Redacted.pdf)
- [http://www.hsr.ca.gov/docs/about/funding\\_finance/funding\\_agreements/Executed\\_FY10\\_Amendment\\_1.pdf](http://www.hsr.ca.gov/docs/about/funding_finance/funding_agreements/Executed_FY10_Amendment_1.pdf)

**Regional Interagency Agreements and Memoranda**

***Station Area Development MOUs***

To date, the Authority has executed planning agreements with the cities of Fresno, Bakersfield and Merced in the Central Valley, as well as with other cities along the Phase I route.

These agreements allow the Authority to work closely with station jurisdictions and other service providers to promote city-regeneration opportunities and enable more sustainable, district-scale development. These efforts also include working with regional and local transit providers to

enhance multi-modal connectivity to high-speed rail stations and surrounding transportation improvements. Ultimately, the work will facilitate adoption of amendments to general plans and zoning codes and will help develop financing and phasing plans to support the station area plans, as well as options to attract private investors.

### ***Station Site Planning MOUs***

The vision for station planning is to create community hubs and help transform cities. The goals being advanced through this program include:

- Fostering sustainable development and operations;
- Reducing greenhouse gas emissions;
- Helping maximize system performance; and
- Creating economic engines for local communities.

Subject to authorization and approvals, the Authority plans to execute Memoranda of Understanding (MOU) with the various cities related to station site planning activities. The Authority plans to use a two-stage approach:

- MOU#1 is a high-level MOU that is intended to galvanize the station planning efforts between the Authority and its City partner.
- MOU#2 will focus on defined planning, governance, Public-Public agreements, timelines and resourcing milestones and commitments from the Authority and its City partner.

Following are summaries of the MOU#1 with the cities of Fresno and Bakersfield, respectively.

**Exhibit B-3. MOU for Station Site Planning – City of Fresno**

Key Elements	Key Terms
Parties to the Agreement	California High-Speed Rail Authority (Authority) City of Fresno (Fresno)
Purpose of Agreement	The purpose of this Memorandum of Understanding (“MOU”) is to establish a flexible framework between the Participants to permit them to enable key station site planning activities, enable customer access to the High-Speed Rail system, facilitate collaboration for development of future governance principles, and establish principles for future Public-Public agreements.
Scope of Project	The Authority and Fresno intend to work collaboratively through initiatives focused particularly on, but not limited to, the following areas of cooperation: <ul style="list-style-type: none"> <li>• Development of a Station Site and Adjacent Development Plan, led by the Authority, that lays out the location of station site facilities scaled to phases of the High-Speed Rail system program.</li> <li>• Under this MOU, the Authority and Fresno will work together to deliver a MOU amendment, for ratification by the Authority and Fresno, that defines plans for developing resources, governance, accountability, timelines, and a defined set of agreements associated with future station developments.</li> </ul>

**Exhibit B-4. MOU for Station Site Planning – City of Bakersfield**

Key Elements	Key Terms
Parties to the Agreement	California High-Speed Rail Authority (Authority) City of Bakersfield (Bakersfield)
Purpose of Agreement	The purpose of this Memorandum of Understanding (“MOU”) is to establish a flexible framework between the Participants to permit them to enable key station site planning activities, enable customer access to the High-Speed Rail system, facilitate collaboration for development of future governance principles, and establish principles for future Public-Public agreements.
Scope of Project	The Authority and Bakersfield intend to work collaboratively through initiatives focused particularly on, but not limited to, the following areas of cooperation: <ul style="list-style-type: none"> <li>• Development of a Station Site and Adjacent Development Plan, led by the Authority, that lays out the location of station site facilities scaled to phases of the High-Speed Rail system program.</li> <li>• Under this MOU, the Authority and Bakersfield will work together to deliver a MOU amendment, for ratification by the Authority and Fresno, that defines plans for developing resources, governance, accountability, timelines, and a defined set of agreements associated with future station developments.</li> </ul>

**Construction Agreements**

As described above, the CVS is being delivered through a series of agreements, commencing with the multiple construction packages referenced above. Below are additional details about the current terms of the agreements for each construction package.

Since March 2020, the progress of the construction work across the three Central Valley design-build Construction Packages (CP’s) has been affected by events related to the worldwide COVID 19 pandemic, state wildfires and civil unrest. At this time the impact of these events on the terms of these agreements is not yet known since the pandemic is ongoing.

**Construction Package #1 (CP 1)** is being delivered under a DB model. See **Exhibit B-5** for key elements and terms of the Design-Build Construction Agreement for CP 1.

**Exhibit B-5. Design-Build Construction Agreement for CP 1**

Key Elements	Key Terms
Parties to the Agreement	California High-Speed Rail Authority (Authority) Tutor-Perini/Zachry/Parsons, a joint venture, comprised of Tutor Perini Corporation, Zachry Construction Corporation and Parsons Transportation Group (a wholly owned subsidiary of Parsons Corporation)
Agreement Number	HSR 13-06
Purpose of Agreement	Design-build construction
Performance Period	August 2013 to November 2021
Total Contract Price	Contract price as of November 2020 is \$2,262,115,467, which consists of base bid of \$969,988,000 + \$53,000,000 provisional sums + \$1,239,127,467 in executed change orders (CO).

Key Elements	Key Terms
Scope of Projects	<p>The scope of CP 1 consists of civil works for at-grade and aerial track sections over a 32-mile section of the CVS beginning at Avenue 19 near the Madera Amtrak Station in Madera County and concluding at East American Avenue in Fresno County. It includes 20 grade separations, two viaducts, one tunnel and a bridge river crossing over the San Joaquin River. Major design and construction elements for CP 1 include the following:</p> <ul style="list-style-type: none"> <li>• Surveys, Mapping and Geotechnical Studies</li> <li>• Site Clearing, Demolition and Removal of Hazardous Materials</li> <li>• Utility and Third Party Relocation; Railroad Relocation</li> <li>• Scheduling and Coordination</li> <li>• Grading, Embankment and Drainage</li> <li>• Structure Construction and Foundation Work</li> <li>• Environmental Compliance and Mitigation</li> <li>• Paving, Re-striping, Landscaping and Traffic Signals</li> </ul>

For more information on CP 1 please refer to:

[BuildHSR | California High-Speed Rail Authority | Construction Package 1](#)

**Construction Package #2-3 (CP 2-3)** is being delivered under a DB model. See **Exhibit B-6** for key elements and terms of the Design-Build Construction Agreement for CP 2-3.

**Exhibit B-6. Design-Build Construction Agreement for CP 2-3**

Key Elements	Key Terms
Parties to the Agreement	California High-Speed Rail Authority (Authority) Dragados/Flatiron, a joint venture, comprised of Dragados USA, Inc. and Flatiron West, Inc.
Agreement Number	HSR 13-57
Purpose of Agreement	Design-build construction
Performance Period	June 2015 to April 2022

Key Elements	Key Terms
Total Contract Price	Contract price as of November 2020 is \$2,092,597,162, which consists of base bid of \$1,205,335,890 + \$160,000,000 provisional sums + \$727,261,272 in executed change orders (CO).
Scope of Projects	<p>The scope of CP 2-3 consists of design and construction of civil works for a 65-mile section of the CVS beginning at the terminus of CP 1 at East American Avenue in Fresno and concluding approximately one mile north of the Tulare-Kern County line.</p> <p>Major work elements include the design and construction of at-grade, retained fill and aerial sections of high-speed rail, and will be performed in the following areas:</p> <ul style="list-style-type: none"> <li>• Project Management, Scheduling, Investigation and Coordination</li> <li>• Geotechnical Engineering and Seismology Studies and Surveys</li> <li>• Surveys, Mapping and Investigations</li> <li>• Clearing and Demolition of ROW</li> <li>• Utility and Third-Party Relocation, Including Railroads</li> <li>• Environmental Compliance and Mitigation</li> <li>• Grading, Embankment and Drainage</li> <li>• Structure Construction and Foundation Work</li> <li>• Paving, Re-striping, Landscaping and Traffic Signals</li> </ul>

For more information on CP 2-3 please refer to:

[BuildHSR | California High-Speed Rail Authority | Construction Package 2-3](#)

**Construction Package #4 (CP 4)** will be delivered under a DB model. See **Exhibit B-7** for key elements and terms of the Design-Build Construction Agreement for CP 4.



**Exhibit B-7. Design-Build Construction Agreement for CP 4**

Key Elements	Key Terms
Parties to the Agreement	California High-Speed Rail Authority (Authority) California Rail Builders, a special purpose entity of Ferrovial Agroman US Corp.
Agreement Number	HSR 14-32
Purpose of Agreement	Design-build construction
Performance Period	February 2016 to June 2021
Total Contract Price	Contract price as of November 2020 is \$611,452,726, which consists of base bid of \$337,247,000 + \$107,000,000 provisional sums + \$167,205,726 in executed change orders (CO).
Scope of Projects	<p>The scope of CP 4 consists of design and construction of civil works for a section of the CVS of approximately 22 miles through the Central Valley beginning one mile north of the Tulare-Kern County line at the southern terminus of CP 2-3 and concluding at Poplar Avenue. Major work elements include:</p> <ul style="list-style-type: none"> <li>• Project Management and Administration</li> <li>• Utility Investigation, Coordination and Protection and Relocation</li> <li>• Demolition and Clearing of Right-of-Way</li> <li>• Code Assessment</li> <li>• Completing, Coordinating, Securing Approval and Executing Final Permitting and Utility Agreements</li> <li>• Survey and Mapping</li> <li>• Subsurface Investigations</li> <li>• Geotechnical Engineering and Seismology</li> <li>• Design, engineering and analysis</li> <li>• Estimating</li> <li>• Value Engineering and Possible Alternative Technical Concepts</li> <li>• Coordination with Jurisdictional Authorities (i.e. governments, FRA, the California Public Utilities Commission, etc.)</li> <li>• Coordination w/Adjacent Railroads (BNSF), Local Communities and Adjacent High-Speed Rail Works</li> </ul>

For more information on CP 4 please refer to:

[BuildHSR | California High-Speed Rail Authority | Construction Package 4](#)

## **Other Agreements**

### ***Early Train Operator***

In 2017, the Authority contracted with DB Engineering & Consulting USA, a subsidiary of Deutsche Bahn AG, as the Early Train Operator (ETO). In this role, DB Engineering & Consulting USA has assisted the Authority in developing the system—including operational planning, assistance with the procurement of track and systems, stations, and trainsets. An operator, responsible for initial operations and maintenance, will be selected in the future.

The ETO is now actively engaged in the program’s implementation and delivery strategy. The ETO confirmed that the Authority’s current procurement strategy is consistent with the long-term objectives of the program. The ETO also is assisting the Authority with the analysis of the early interim services that would operate in the Central Valley between Merced and Bakersfield.

In addition to helping with operational design and implementation, the ETO has brought industry expertise to current ridership and revenue strategies to assist the Authority on decisions to maximize ridership and revenue. The ETO also will assist the Authority with mobilization and the establishment of the Train Operating Company and subsequent commencement of revenue services. See **Exhibit B-8** for key elements and terms of the Early Train Operator Agreement.

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**Exhibit B-8. Early Train Operator Agreement – Key Elements and Terms**

Key Elements	Key Terms
Parties to the Agreement	California High-Speed Rail Authority (Authority) DB Engineering & Consulting USA, Inc.
Agreement Number	HSR 17-20
Purpose of Agreement	Consulting services to advise Authority on the design, development and procurement of the commercial aspects of high-speed rail passenger train operations
Performance Period	December 19, 2017 to November 30, 2023
Total Contract Price	\$30,000,000 (as of December 2020)
Scope of Project	<p>Contractor to perform general Consulting Services set forth in the Scope of Work, including:</p> <ul style="list-style-type: none"> <li>• During the First Phase, Contractor Key Personnel will work alongside the Authority and its advisors on the design, development and procurement of the commercial aspects of high-speed rail passenger train operations. The primary focus of work will be in relation to future passenger services in the Valley-to-Valley (V2V) segment of the System and its subsequent extension to San Francisco; additional work may also relate to other extensions of the System.</li> <li>• Establish the framework for the Franchise Agreement for operation of the high-speed rail system.</li> <li>• Engage Contractor in all decisions that have the potential to impact the future enterprise value of the business and fully integrate the Contractor within the Authority alongside the Rail Delivery Partner and other advisors (and with the Authority's reporting requirements).</li> <li>• Negotiate and execute a Franchise Agreement to govern the provision of the Second Phase services, which will include mobilization and the establishment of the Train Operating Company ("TOC") and subsequent commencement of revenue services.</li> </ul>

**Rail Delivery Partner**

The Rail Delivery Partner (RDP) provides the Authority with recommendations and advice regarding the implementation of delivery approaches and other strategies. As part of the delivery strategy and the original vision for the Authority, the RDP provides staff augmentation to essential functions within the organization.

**Exhibit B-9. Rail Delivery Partner – Key Elements and Terms**

Key Elements	Key Terms
Parties to the Agreement	California High-Speed Rail Authority (Authority) Parson Brinkerhoff, Inc. Name change Amendment 2 to WSP, Inc.
Agreement Number	HSR 14-66
Purpose of Agreement	Architectural & Engineering
Performance Period	July 1, 2015 to June 30, 2022
Total Contract Price	Upon Execution of the Contract in 2015 value: 700,000,000.00 Amendments reducing value: Amendment 1) 696,547.796.00 and Amendment 3) 666,369,796.00 Amendment 2) name change to WSP, Inc. Current Contract value: 666,369,796.00 (as of December 2020)
Scope of Projects	Through the Program, the Consultant will be providing the Authority with recommendations, advice and implantation of strategic delivery approaches and other strategies. The Consultant shall manage and plan the work required for the Program to meet applicable legal requirements, present a buildable solution and meet operating requirements. <ul style="list-style-type: none"> <li>• Modes of Rail Delivery Partner Support</li> <li>• Functional Areas of Responsible as defined in Work Plans</li> </ul>

### ***Third-party Agreements***

Master agreements are in place with BNSF, Union Pacific Railroad, AT&T, PG&E and various irrigation districts. In the past year, 45 third-party agreements were finalized, of which 34 were critical to supporting construction. As of November 2020, there are no delinquent agreements.

### **Proposed Future Agreements**

Upcoming long-term contracts for Track and Systems and Rolling Stock will have implications for testing on the CVS and potential future Interim Service between Merced and Bakersfield when these extensions can be completed. Likewise, one or more agreements will be needed for interim service operations. Decision points related to the procurement of Track and Systems and high-speed Trainsets are imminent, as described below.

### ***Track and Systems***

In 2021, the Authority plans to execute a contract for Track and Systems to achieve the ARRA grant deadline and complete high-speed rail infrastructure for testing and operations. The timing of this contract has been affected by the pandemic. The Authority has issued an RFP for the procurement of Track and Systems phased into several segments. The procurement is structured as a long-term design-build-maintain (DBM) contract that includes both the construction, fabrication, and installation of high-speed rail Track and Systems (e.g., communications, electrification, signals etc.), testing and commissioning, and the long-term maintenance and lifecycle of those assets.

The Track and Systems contract, as proposed, would include a 30-year term of maintenance for both the underlying civil works and the track and systems work. The Track and Systems work would be issued through multiple Notices to Proceed (NTP) for the Silicon Valley to Central Valley line. The contract will include long-term and complex provisions on performance levels, service plans, obligations and associated penalties during operations that will be rigorously examined by any operator that utilizes the high-speed rail infrastructure. The Operator of Interim Service will have to conform to the terms of the contract that the Authority is presently procuring, including service plans, performance criteria, and payments. As such, the Authority and stakeholders will need to agree that the terms and conditions of the contract conforms with the requirements of Interim Service.

For more information on the Track and Systems please refer to:

[https://www.hsr.ca.gov/business/contractors/track\\_and\\_systems.aspx](https://www.hsr.ca.gov/business/contractors/track_and_systems.aspx)

### ***Rolling Stock***

The Authority also is planning to begin procurement of high-speed rail Trainsets (also known as rolling stock). As part of this effort, the Authority will work with the California State Transportation Agency and the San Joaquin Joint Powers Authority to explore interim trainset procurement or lease options that could provide the early interim high-speed service between Merced and Bakersfield at speeds up to 186 miles per hour, but at a lower cost through use of existing production trainsets or a lease approach. Under this scenario, as the system expands beyond Merced and Bakersfield, the Authority would then procure trainsets capable of operating at speeds of 220 miles per hour. For full 220 mile-per-hour trains, the Authority will utilize a long-term contract model that bundles manufacturing, testing, and certification with the long-term maintenance.

### ***Interim Service Agreements***

The Authority plans to provide for early interim service at high speeds between Merced, Fresno and Bakersfield on a 171-mile portion of the future Silicon Valley to Central Valley line. This interim service would be operated by one or more regional service provider(s) to connect Merced, Fresno and Bakersfield, in one of the fastest growing regions in California, with additional stops to serve Madera and Kings/Tulare.

The Authority, CalSTA and the SJJPA have entered into an MOU to provide for early interim service from Merced to Bakersfield. The purpose of the MOU is to facilitate cooperation and coordination to develop the requirements of early interim operation to integrate that new service with existing intercity and regional rail systems. The MOU sets forth responsibilities for CalSTA, the Authority and the SJJPA. This is an overarching agreement that outlines roles and responsibilities and how the parties will work together to reach agreement on specific areas for service implementation. It outlines those elements to be resolved, details of which will be included in more detailed and specific agreement(s) that will amend, supplement or supersede the MOU. See **Exhibit B-10**, below for an overview of the current MOU.

**Exhibit B-10. Interim Service Plan MOU**

Key Elements	Key Terms
Parties to the Agreement	<ul style="list-style-type: none"> <li>• California High-Speed Rail Authority (Authority or CHSRA)</li> <li>• San Joaquin Joint Powers Authority (SJJPA)</li> <li>• California State Transportation Authority (CalSTA)</li> </ul>
Purpose of Agreement	<p>The parties are interested in pursuing a coordinated implementation strategy to provide improved rail service, including segments of HSR operations, connecting the Bay Area, Sacramento, Merced, and Bakersfield utilizing a combination of future HSR assets and existing regional rail services and/or corridors. The MOU will facilitate cooperation and coordination between the parties and other participants in the development of parameters for early interim operation of a portion of the California High-Speed Rail system in combination with existing intercity and regional rail systems.</p>
HSR Key Responsibilities	<ul style="list-style-type: none"> <li>• Provide system access to the operator for use of HSR infrastructure</li> <li>• Will not exclude any interested, qualified, and acceptable entity from participating in operator procurement</li> <li>• HSR’s Track and Systems contractor will maintain and have legal responsibility for civil infrastructure, track and railway systems, and associated facilities</li> <li>• Provide high-speed trainsets and train maintenance facility</li> <li>• HSR’s rolling stock contractor will maintain trainsets and train maintenance facility</li> <li>• Provision, maintenance, and operation (by HSR’s contractor) of an operations control center for dispatching, incident management, and service recovery</li> <li>• Security and policing of infrastructure, trainsets, and associated facilities</li> <li>• Provide budget inputs to SJJPA for business plan submissions to CalSTA</li> </ul>

Key Elements	Key Terms
SJJPA Key Responsibilities	<ul style="list-style-type: none"> <li>• Act as rail service provider (indirectly, by contract with the Operator)</li> <li>• Identify and propose a delegate Operator</li> <li>• Pay CHSRA system access fee for CHSRA infrastructure and related assets for maintenance and overhead costs related to interim service</li> <li>• Pay CHSRA a train rental fee for usage of trainsets to cover maintenance and insurance</li> <li>• Work with SJRRC and CHSRA to pursue a joint Operator for ACE, San Joaquins, and HSR operations.</li> <li>• Prioritize the development of regional rail connectivity infrastructure to Merced station including funding</li> <li>• Advertising and marketing</li> <li>• Engage and oversee the rail service Operator</li> <li>• Submit business plan to CalSTA that includes plans to execute future agreements for joint SJJPA and HSR Segment services that consider methods to account for operating costs</li> </ul>
CalSTA Key Responsibilities	<ul style="list-style-type: none"> <li>• Overall planning, coordination, and budgeting of intercity passenger rail service</li> <li>• Work with SJJPA on business plans and budgets to operate services, including high-speed rail, San Joaquins service, connecting bus services, and potentially ACE service.</li> <li>• Approve SJJPA business plans that ensure that incremental costs tied to HSR operations related to ACE services are fully covered by incremental revenues</li> <li>• Delegate appropriate authority to Caltrans to provide oversight and funding to SJJPA</li> </ul>
Notable Terms	<ul style="list-style-type: none"> <li>• Use the MOU as the next step in developing the interim service plan</li> <li>• Collaborate, cooperate, and coordinate with each other to commit personnel, exchange necessary technical and other information, and negotiate more detailed agreements</li> <li>• Anticipate entering into future agreements, including CHSRA/SJJPA system access agreement, train lease agreement, and operations agreement</li> </ul>



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## C. Capital / Construction Cost

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Streets and Highways Code section 2704.08, subdivision (c)(2)(C) requires presentation of the estimated full cost of constructing the corridor or usable segment thereof, including an estimate of cost escalation during construction and appropriate reserves for contingencies.

### Capital Cost Summary

The cost to complete the Central Valley Segment is \$13.8 billion in YOES. In 2017, the *Central Valley Segment Funding Plan* estimated the cost to deliver the Madera to Poplar Usable Segment to be \$7.813 billion in YOES. However, these numbers are not directly comparable and contain different elements of scope.

Of the current \$13.8 billion in YOES estimates in the current funding plan, \$5.9 billion has been spent through November 2020. The capital costs include an increase for known costs of \$330 million. The contingencies set aside for COVID and other future risks add up to \$1,040 million.

The Authority confirms that construction cost escalation is included in the total costs presented herein. However, because of the methodology used to produce the cost estimate at completion which focuses on actual construction progress achieved during the execution of its construction packages and other contracts rather than a forecasted spend curve in base year dollars that can be multiplied by a selected escalation rate to achieve a Year of Expenditure forecast, it is not possible to isolate the escalation elements of this forecast. Therefore, project contingencies have been isolated as a single number, but cost escalation is included in the totals presented.

**Exhibit C-1** below details the funding plan budget. Costs described in this funding plan do not include planning/project development costs, previously appropriated bookend costs, or system-wide construction costs outside those described. The baseline cost estimate presented for the CVS usable segment is based on P70 confidence levels. This means that current Authority forecasts reflect a 70% probability of the actual capital cost being at or below the estimate. Specifically, the expenditures will include the following:

- Civil Works
- Track
- Railroad Infrastructure
- Signaling
- Overhead catenary System
- Communication systems
- Positive train control
- Trainset Certification Facility

**Exhibit C-1. Construction Cost Estimates: Total Budget and Usable Segment Budget (\$ in millions)**

Item	Total Budget
Construction Package 1 and State Route 99	\$5,254
Construction Package 2-3	\$3,727
Construction Package 4	\$1,175
Track and Systems	\$2,253
Program-wide Support	\$604
Program Wide Contingency	\$420
Interim Use Reserve	\$162
Project Reserve	\$46
Trainset Certification Facility	\$72
Central Valley Balance	\$62
<b>Total</b>	<b>\$13.776</b>

*Notes: Usable Segment Budget excludes planning costs, as they are appropriated separately from construction costs under Proposition 1A. Line items above include contingencies.*

**Alternative Phased Track Option**

In light of the COVID-19 pandemic and increasing cost and funding pressures on the budget for the CVS, the Authority is undertaking a review of costs and schedules. Options were sought that could reduce immediate cost without compromising the fundamental objectives of the CVS. Since the civil works are under contract and well underway, the focus of these efforts turned to the on-going track and systems procurement, which is the major remaining component of the CVS works.

The key objective for the CVS is the establishment of a fully electrified 119-mile test track for the certification of Tier III high speed trains, followed by early interim service on the Merced to Bakersfield segment. To address this priority, the Authority is considering an alternative phased track option. The procurement strategy allows the Authority flexibility to deliver track in an incremental and phased manner – starting with a single track.

Allowing for this phased approach will provide the Authority with options to reduce costs without losing functionality. The approach would include construction of a single, mainline track, and all track necessary to support stations. The station track areas would serve initially as passing tracks for trains operating interim service. In addition, track elements necessary for ultimate expanded dual track operation would be constructed thus minimizing future service

interruptions and costs. This will allow the Authority to phase track implementation throughout the Central Valley in a way that meets cash flow and funding availability.

The decision to deliver a phased track is not anticipated to negatively affect ridership and revenue forecasts given that passthrough tracks can be used to mitigate the effect of switching to a single-track option and that only one train per hour was assumed to run in each direction.

### **Capital Cost Approach and Methodology**

The *2020 Capital Cost Basis of Estimate Report* provides an overview of the estimating approach, methodology, and assumptions that serve as the basis for the entire Phase I system.

Capital costs of this project have evolved as in any major transportation infrastructure project, from early planning and conceptual engineering through preliminary engineering, contract procurement and, ultimately, to final design and construction. As the project scope, alignment, procurement strategies, delivery mode and other key decisions are finalized—and as environmental mitigation and other project components are more accurately specified—capital costs become more certain and risk factors become more defined, supporting contingency modifications and schedule confidence.

### ***Central Valley Segment (CVS)***

The Authority conducted an Estimate At Complete (EAC) and Risk review as part of its ongoing review and updates to the CVS capital costs and schedule. The CVS consists of 119 miles of civil works track, systems, maintenance facilities, and stations. The three civil design-build construction packages have already been awarded and the design and construction works are in progress. The remaining costs outside of the civil packages (i.e., track and systems) is estimated using the Authority's defined process. EAC for fixed price contracts that are in progress are largely dependent on the value of remaining work. Remaining Work is equal to the current budget (including all executed change orders) minus all expenditures. EAC is also calculated based on pending change orders, potential changes, and trends. Internal stakeholders, including program and Project Construction Management (PCM) staff, were involved in the process.

A stochastic schedule model was created, which incorporated a number of specific risks across all construction package segments. Monte Carlo simulations were run against this model (quantitative cost risk analysis) to determine the possible range of contingency needed for each construction package based on the determined risk profile. The Authority has chosen to go with a P70 confidence level for the recommended contingency amount. Once the review was completed, the EAC and recommended contingency per construction package was presented to the senior management team to obtain feedback/approval.

## *Contingency Analysis*

The Authority conducted an enhanced and robust risk assessment effort, including Monte Carlo simulations, to identify and quantify discrete schedule and cost risks, as well as the uncertainties associated with the program scope. This assessment included a thorough review of the base project scope, schedule and cost established in the 2019 Program Baseline, followed by a comprehensive process to identify and quantify individual project risks relating to potential schedule and cost variables. This process resulted in updating the capital costs previously included in the 2019 Program Baseline.

The risk management team used iterative, risk-based execution planning to update the schedule and cost estimates of the 2019 Program Baseline. This process included using the initial execution plan for each project within the Central Valley Segment, identifying and quantifying the project risks, and developing and incorporating treatment strategies. Using the treatment strategies, a probabilistic schedule model was developed for each project that was used to run Monte Carlo simulations, resulting in quantitative schedule and cost risk analyses that established a range of possible schedule and cost outcomes. The range of schedule and cost outcomes includes the probability, or confidence level, associated with each potential outcome. To achieve the optimal execution plan that balances scope, schedule, cost and acceptable risk, several iterations of this process were performed for each project.

This technique allows the Authority to statistically quantify the cost and schedule impacts to projects, resulting in updated schedule and cost contingencies. Furthermore, these risk-informed forecasts allow the Authority to more effectively manage risks by:

- Drilling-down and understanding the impacts of specific risks;
- Supporting prioritization of risks for mitigation;
- Implementing risk management and mitigation measures; and
- Proactively monitoring the program's costs.

By performing iterative, risk-based execution planning, including Monte Carlo simulations, on the construction projects within the Central Valley Segment, staff has identified that many previously identified risks remain and that new risks have been added, including the addition of new scope of work. The Authority utilized the quantitative schedule and cost risk analyses for each project to develop a new, overall Central Valley Segment schedule and budget, which uses a 70th percentile, or P70, confidence level. By using a higher confidence level, the Authority is increasing the probability of completing projects within updated schedules and budgets by accounting for risks it is currently tracking and managing and for the unknown risks that may still occur given the current status of design and construction. This is a prudent, industry best

practice approach based on the current status of the projects.

For additional context, the Authority's Capital Cost Basis of Estimate also describes the Authority's inclusion of risk assessment in developing the contingency.

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## D. Sources of Funds

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*Streets and Highways Code section 2704.08, subdivision (c)(2)(D) requires presentation of the sources of all funds to be invested in the corridor, or usable segment thereof, and the anticipated time of receipt of those funds based on expected commitments, authorizations, agreements, allocations, or other means.*

### Overview of Sources of Funds

The Authority has identified the following three funding sources, totaling \$13.776 billion, to fund the construction of Central Valley Usable Segment, subject to satisfaction of the various conditions associated with each source summarized below:

- **Federal grants:** authorized under the American Recovery and Reinvestment Act of 2009 (Recovery Act or ARRA) and under the High-Speed Intercity Passenger Rail Program for federal fiscal year 2010 (FY10)
- **State general obligation bonds:** authorized under the “Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century” (Bond Act) approved by California voters as Proposition 1A in 2008
- **State Cap-and-Trade Revenues:** authorized through the Budget Act of 2014 (SB 852 and SB 862) and current laws

**Exhibit D-1** provides the federal and state funding sources for construction period activities for the Central Valley Segment. A summary of each funding source is then provided.

### Exhibit D-1. Sources of Funds for Central Valley Segment Construction (\$ millions)

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>

Source: Business Plan and Funding Contribution Plan

## Appropriation of Funding Sources

### *Federal Funding*

The Authority has received approximately \$3.5 billion in federal funding commitments to complete environmental review for the Phase 1 system and to construct the 119-mile Central Valley Segment between Madera and Poplar Avenue. Of this, \$3.0 billion is allocated for the construction of the Central Valley segment.

ARRA: \$2.5 billion was allocated by the federal American Recovery and Reinvestment Act of 2009 in compliance with the Federal Railroad Administration (FRA) grant requirement, of which \$2.0 billion dollars has been allocated towards CVS Construction. All ARRA funds were expended by the grant deadline of September 2017. These funds require a match from state funds. As approved by FRA, a tapered match provision was adopted, which allowed the expenditure of federal funds first, followed by the expenditure of state matching funds. Through October 2020, 99.4 percent, or nearly \$2.5 billion, of the ARRA obligation has been matched by state funds, including both match credit already submitted to the FRA, and match credit under final processing at the Authority.

FY10: \$929 million was appropriated by Congress from Fiscal Year 2010 Transportation, Housing and Urban Development funds. Per the terms of the federal grant agreement, the FY10 funds, along with \$360 million of state matching funds, are scheduled to be the last funding required to complete the federal grant scope of work. These funds are anticipated to be accessed as soon as May 2022.

Although the Authority has collaborated with the FRA to execute the requirements of the grant agreements, on May 16, 2019, FRA sent notice that it was terminating the FY10 Grant Agreement and stating that it would de-obligate the \$929 million in funding obligated by the FY10 Grant Agreement. On May 21, 2019, the State and the Authority filed a lawsuit against the U.S. Department of Transportation (U.S. DOT) and the FRA in the Federal District Court, Northern District (San Francisco) asking the Court to enter a judgment in favor of the Authority to set aside the FRA termination notice.

On May 22, 2019, the Authority and the U.S. DOT stipulated that no portion of the \$929 million in FY10 Grant Agreement funds that were de-obligated by the federal government would be re-obligated except through a new Notice of Funding Opportunity (NOFO). The Authority agreed not to file a temporary restraining order preventing the re-obligation of the FY 10 Agreement funds until the federal government issued a new NOFO, allowing the litigation to proceed while the grant monies were held in limbo.

The Authority is confident in its position and looks forward to restoring full communications with the new federal administration and working collaboratively to execute upon the terms of the grants with our federal partner.

### ***State Funding***

In 2008, Californians voted to build electrified high-speed rail by approving Proposition 1A, which provided \$9.95 billion for high-speed rail planning and construction, \$9 billion of which will be used to develop the high-speed rail system. In 2012, the Legislature appropriated Proposition 1A funding to advance construction activities in the Central Valley and regional areas: \$2.6 billion was appropriated for the Central Valley and \$1.1 billion was appropriated for bookend projects in Northern and Southern California. Over multiple appropriations, the Legislature has additionally approved about \$600 million for project development, including completing environmental reviews on the entire Phase I system.

Additionally, California authorized the development of a trading system of carbon-emissions allowances, also known as the Cap-and-Trade Program. The California Air Resources Board implements the program and oversees quarterly auctions of emission credits. The Authority is allocated a portion of the revenue generated from the auctions. Each of these state funding sources is described below.

Proposition 1A: The Central Valley Segment Funding Plan estimated the cost of construction scaled to support initial operations. With its approval, the Authority was provided access to \$2.6 billion in Proposition 1A construction funds for the 119-mile segment in the Central Valley that is currently under construction. As of November 30, 2020, the Authority has expended \$2.586 billion of the authorized \$2.6 billion and has put those dollars directly to work in the Central Valley.

The Authority has \$4.2 billion available in remaining Proposition 1A bond funds for capital outlay activities. The Authority proposes to direct \$100 million to on-going project development work, which is a separate appropriation and not the subject of this Part C Funding Plan.

The Authority proposes to direct the remaining \$4.1 billion to fund on-going construction work on the Central Valley Segment (from Madera to Poplar Avenue). The requested Proposition 1A bond funds will allow the Authority to re-sequence its funding to maintain funding stability for on-going construction and project development activities. This funding sequence allows for future Cap-and-Trade funds to recover to projected levels and be available for project commitments in later years as the quarterly auctions occur. The Proposition 1A Bond funds are necessary for project cashflow in FY 2021-22 to continue construction without delay and job losses. Recently, the COVID-19 pandemic has caused shocks to the Cap-and-Trade markets,

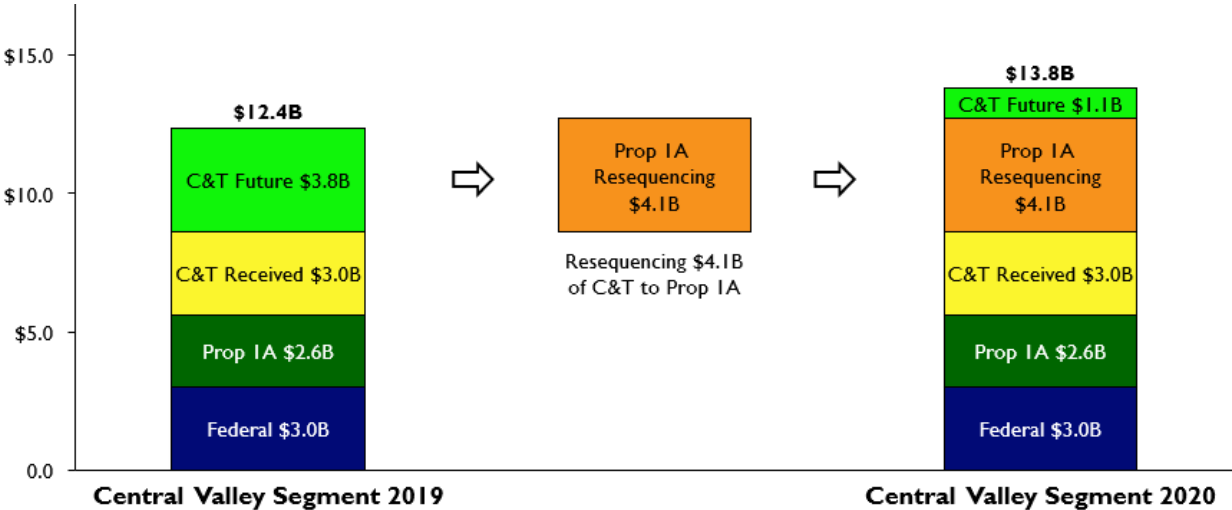


resulting in lower auction proceeds and project funding from the last three quarterly auctions. This resulted in the loss of more than \$288 million, relative to what auctions produced in recent years. These near-term revenue shortfalls may continue to grow as the pandemic goes on, even if revenues increase following recovery. Therefore, the requested bond funds will ensure the Authority’s ability to continue construction without delays or job losses at a crucial time in the State’s recovery from the recent economic downturn.

**Exhibit D-2**, below, illustrates the re-sequencing of Proposition 1A Bond Funds and Cap-and-Trade funds. The known costs of Central Valley construction are about \$330 million above prior estimates, and, with an enhanced risk reserve of \$1.04 billion, the total revised baseline budget has increased to \$13.8 billion. Moreover, to mitigate risk affecting the track and systems procurement, these estimates include proposed changes to the timing, approach to construction, and phasing of track and system installation. These actions will mitigate cost risks and improve construction efficiency.

***This Funding Plan is submitted pursuant to Proposition 1A to initiate the request for appropriation of these \$4.1 billion in bond funds in FY 2021-22 for the Central Valley Segment.***

**Exhibit D-2. Central Valley Segment Construction Cost and Proposed Funding**



Cap-and-Trade: To reduce greenhouse gas (GHG) emissions in California, the Legislature authorized the development of a trading system of carbon emissions allowances, also known as the Cap-and-Trade Program. The California Air Resources Board implements the program and oversees the quarterly auctions. In 2014, the Authority received two one-time allocations of Cap-and-Trade funding totaling \$650 million. In addition, the Legislature continuously appropriated 25 percent of annual Cap-and-Trade funds for high-speed rail going forward. In July 2017, the

Legislature approved Assembly Bill (AB) 398, which was then signed into law by Governor Brown. This legislation implemented several measures to stabilize the Cap-and-Trade Program, including extending the sunset date through December 31, 2030; this was an important step by the Legislature toward securing a long term, stable source of funding for this project and for regional transit and rail projects statewide. Subsequent to the passage of AB 398, the auctions began yielding more consistent results, providing a more stable funding stream. As of November 2020, the Authority has received \$3.6 billion in Cap-and-Trade funds, which includes the initial \$650 million appropriation and quarterly auction proceeds since August 2015.

Looking forward, because of the variability of Cap-and-Trade auctions, we have established a range of future Cap-and-Trade receipts for purposes of capital planning. The low range assumes that the Authority will receive \$500 million per year, and the high range assumes \$750 million per year. The Authority conservatively estimates Cap-and-Trade revenues to generate \$500 million of funding per year between 2021 and 2030. As shown on **Exhibit D-2**, since the enactment of AB 398 (Statutes of 2017), the Authority has received approximately \$638 million annually through the November 2020 auction. However, proceeds for May 2020 were \$6.2 million—a direct result of the impact of the COVID-19 pandemic. Subsequent auctions in August and November 2020 have rebounded towards the mean.

The Authority anticipates that the risks to future Cap-and-Trade revenues will be primarily short- to medium-term because past auction results suggest the Authority will capture revenue from unsold allowances through auctions in the coming years as those unsold allowances will be offered again for sale.

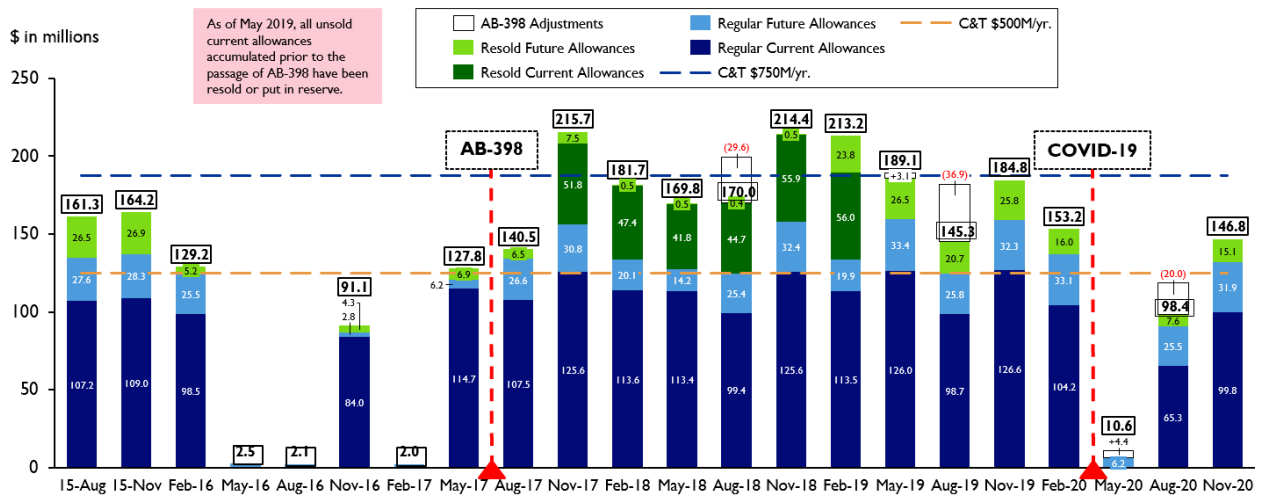
In August 2020, the Cap-and-Trade auction yielded \$98.4 million for the Authority. In this auction, 100 percent of the advanced allowances offered were sold, and approximately 80 percent of the current allowances offered were sold. In November 2020, the auction saw a 100% subscription to advanced and current allowances and yielded \$146.8 million for the Authority. The increase in the August auction yield, combined with the 100% subscription from the November 2020 auction, presents a strong indicator that the Cap-and-Trade program is well into recovery for the coming 2021 auctions.

Currently, the Cap-and-Trade program has 32.7 million previously unsold current allowances as a result of the less than fully subscribed historical auctions. In the event of another fully subscribed auctions in February 2021, the Authority would realize revenues as early as the May 2021 auction from re-selling the previously unsold allowances.

As the impacts of COVID-19 recede over time and as the state ramps up its climate actions to achieve its 2030 greenhouse gas reduction targets, the total cumulative Cap-and-Trade revenue for the Authority may not be significantly affected. More analysis is needed to better

understand the long-term impacts of COVID-19 on the Cap-and-Trade program and the Authority’s revenue. The Authority will continue to track and analyze the program in the coming months.

**Exhibit D-3. Quarterly Cap-and-Trade Auction Proceeds for High-Speed Rail (\$ millions)**



**Managing Cash Flow**

Governor Newsom’s May Budget Revision projected a multi-year \$1.8 billion reduction in gasoline and diesel tax revenues that are directed to the California Department of Transportation and to cities and counties. Local sales tax revenues that support transportation projects are also being impacted. Although the Authority does not receive any of these revenues, changes in fuel consumption are affecting Cap-and-Trade auction proceeds.

As indicated in the prior section, the Cap-and-Trade auction proceeds from the May 2020 auction were down significantly due to COVID-19 impacts, from \$153.2 million in the February 2020 auction to \$6.2 million in the May 2020 auction. However, auction proceeds rebounded to \$146.8 million by the November 2020 auction. The declines in fuel consumption had a more dramatic impact on auction proceeds than on fuel tax revenues due to the structure of the Cap-and-Trade market. As the Authority moves into 2021, COVID-19 adds additional risks to future cash flows. The Authority has multiple appropriations to fund the various commitments currently in place; however, the reliance on Cap-and-Trade proceeds is increasing and, at the same time, this revenue source will be directly impacted by the COVID-19 pandemic.

The Authority received separate Proposition 1A appropriations from the Legislature in 2012 for the Central Valley construction and for bookend projects in the Bay Area and Southern California. The Central Valley Proposition 1A appropriation for construction has been fully

utilized, resulting in full reliance on Cap-and-Trade funding for Central Valley construction thereafter, in the absence of the current Funding Plan. The Proposition 1A appropriation for bookends remains available to cover those expenditures in FY 2020-21. Federal funds are not anticipated to be accessible for the project until 2022, per the current federal grant agreement matching requirements. As published in the Financial Office's *November 2020 Cash Management Report*, the Authority maintains a Cap-and-Trade cash balance of \$1.9 billion as of November 30, 2020, providing a modest beginning balance of funds to pay contractors in 2021. Going forward, approval of the current Funding Plan will provide Prop 1A bond proceeds to reduce near-term reliance on uncertain future Cap-and-Trade proceeds from upcoming auctions. The use of the balance of Prop 1A appropriation in the CVS will provide a more secure and certain stream of funding to the project, and not subject it so directly to the significant fluctuations in Cap-and-Trade receipts that have been experienced over the past twelve months. This will enable the project to keep moving forward, keep workers employed and move toward completion of the section.

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## E. Projected Ridership and Operating Revenues

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Streets and Highways Code section 2704.08, subdivision (c)(2)(E) requires presentation of the projected ridership and operating revenue estimate based on projected high-speed passenger train operations on the corridor or usable segment.

The Authority does not plan to run stand-alone high-speed rail service on the 119-mile Central Valley Segment between Madera and Poplar Avenue. Instead, this segment is the first construction segment of early interim service between Merced and Bakersfield. It also will serve as the high-speed rail test track that will be necessary to test high-speed rolling stock before passenger service can begin. There is currently no other place in this country to test trains at speeds of 200mph and higher so completing this segment is essential to bringing high-speed rail to California.

The Silicon Valley to Central Valley line will be the Initial Operating Section (IOS) for the high-speed rail system. The Central Valley Usable Segment, running from Madera to Poplar Avenue, is a part of the Silicon Valley to Central Valley Line. As the Authority builds out the Silicon Valley to Central Valley Line, it will look for ways to bring tangible mobility benefits to Californians as quickly as possible through early use of the high-speed rail infrastructure and assets being built for the Central Valley Segment.

As the Authority advances construction of the CVS, the Authority will advance design and complete other preconstruction work on the north and south extensions to Merced and Bakersfield, where it can begin providing interim service in the Central Valley. Under this concept the Authority plans to lease its rail assets to a regional partner that will operate rail passenger service at high-speed in the Central Valley.

Until such time as the Silicon Valley to Central Valley line is completed, interim service at high-speed will be provided along the Merced to Bakersfield corridor, once those extensions have been completed. The following information provides service concepts, ridership projections and revenue projections for the following services:

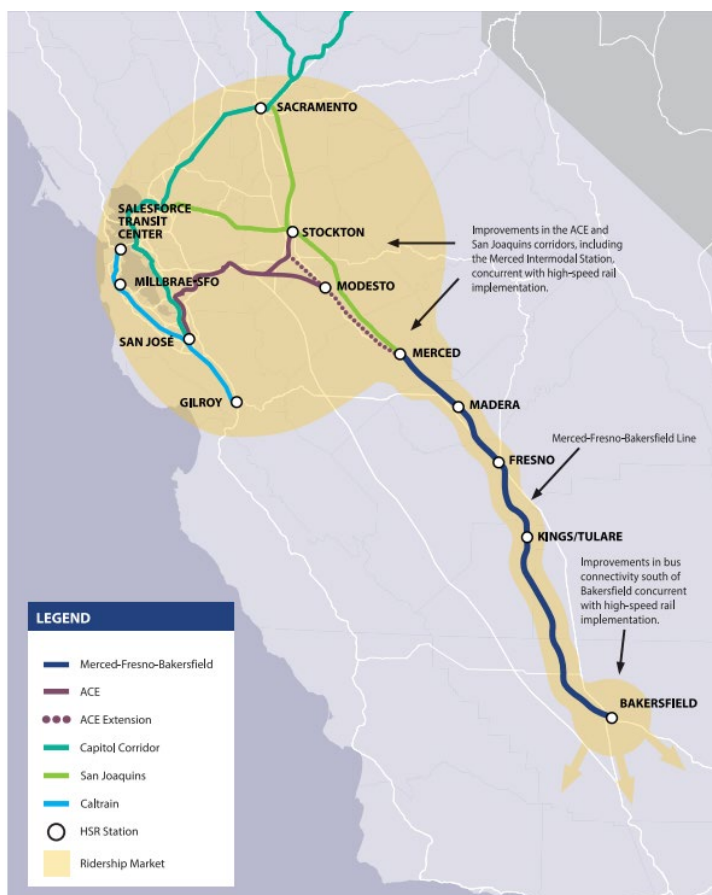
- **Interim service:** Passenger service at high-speed between Merced and Bakersfield upon completion of 171 miles of high-speed rail system, with service operated by regional service providers
- **Initial Operating Section (IOS):** High-speed service between Silicon Valley and Central Valley – full revenue positive high-speed rail service operated under purview of the Authority

## Merced to Bakersfield Interim Service

### Interim Service Concept

The service concept for the interim service operating at high-speed through the Usable Segment plans for one train per hour per direction. Service would extend over approximately 19 hours per day for seven days per week. Additional peak or reduced off-peak hour services or holiday period services have not been modeled. As envisioned, interim high-speed service is scheduled according to a clock face timetable, in which departures and arrivals occur at the same minute of each hour. At the northern terminus of the Usable Segment, at Merced, the schedule provides for conveniently timed transfers between interim service trains and corresponding San Joaquins and ACE trains, as well as for buses. At the southern terminus of the Usable Segment, at Bakersfield, the schedule provides for conveniently timed transfers between interim service trains and buses.

### Exhibit E-1. Merced to Bakersfield Connectivity Map



Source: CHSRA 2019 Project Update Report

**Interim Service - Ridership Projections**

Total annual interim service rail ridership in 2029 is forecasted at 2,049,000 for the future usable segment between Merced and Bakersfield. **Exhibit E-2** illustrates the 2029 ridership projections by route.

**Exhibit E-2. 2029 Interim Service Ridership**

From/To	Merced	Madera	Fresno	Tulare	Bakersfield	Total
Merced		35,900	162,900	65,500	308,200	572,500
Madera	35,900		2,500	4,300	13,600	56,300
Fresno	162,900	2,500		134,900	197,800	498,100
Kings Tulare	65,500	4,300	134,900		98,900	303,600
Bakersfield	308,200	13,600	197,800	98,900		618,500
<b>Total</b>	<b>572,500</b>	<b>20,400</b>	<b>335,200</b>	<b>238,100</b>	<b>310,300</b>	<b>2,049,000</b>

Source: California High Speed Rail Early Train Operator – Central Valley Segment System Management & Operations Interim Financial Plan. January 31, 2020

**Interim Service - Revenue Projections**

The fares used in the demand modeling effort and the base case forecasts for interim service represent average fare levels. These projections have been presented below in **Exhibit E-3**.

**Exhibit E-3. 2029 Interim Service Revenue (in 2019\$)**

From/To	Merced	Madera	Fresno	Tulare	Bakersfield	Total
Merced		\$395,000	\$2,281,000	\$1,114,000	\$8,013,000	\$11,803,000
Madera	\$395,000		\$21,000	\$52,000	\$326,000	\$794,000
Fresno	\$2,281,000	\$21,000		\$675,000	\$4,352,000	\$7,329,000
Tulare	\$1,114,000	\$52,000	\$675,000		\$1,681,000	\$3,522,000
Bakersfield	\$8,013,000	\$326,000	\$4,352,000	\$1,681,000		\$14,372,000
<b>Total</b>	<b>\$11,803,000</b>	<b>\$794,000</b>	<b>\$7,329,000</b>	<b>\$3,522,000</b>	<b>\$14,372,000</b>	<b>\$37,820,000</b>

Source: California High Speed Rail Early Train Operator – Central Valley Segment System Management & Operations Interim Financial Plan. January 31, 2020

### ***Side-by-Side Peer Review Report***

At the request of legislators, the Authority commissioned an independent peer review of ridership forecasts prepared by the Early Train Operator (ETO) for the Side-by-Side Analysis that compared relative benefits of early high-speed rail service in the Central Valley, Northern California, and Southern California corridors. Resource Systems Group (RSG), a consulting firm with 30 years of experience in transportation forecasting, reviewed whether the ETO properly conducted their ridership study and whether the results produced were reasonable.

The peer review report found that the ETO (and its subconsultant, Steer) applied the model appropriately. The work is “high level” (Steer’s term) to answer the questions asked as part of the Side-by-Side analysis, but it is not an investment-grade study and is caveated accordingly. RSG confirmed the ridership estimates for all three corridors were reasonable, while the SoCal estimates appear slightly high. The ridership estimates are within expected and published elasticity ranges for travel time and frequency.

RSG found that the Central Valley corridor, which includes the HSR service from Merced Bakersfield and improvements in supporting Altamont Corridor Express (ACE) and San Joaquins rail and bus services, obtains the highest forecast gain in ridership and does so at the lowest increase in cost, relative to a “no build” scenario in comparison to the Northern California and Southern California corridors.

RSG noted that there is risk that the demand for the services may not materialize in the Central Valley corridor as expected. However, this risk has more margin for error compared to the Northern California and Southern California corridors, which have higher costs and lower forecasted ridership and revenue. Further, this risk seems relatively low compared to the Northern California and Southern California corridors since there is much less need for additional regional funding in the “build” scenario of the CVS relative to the other corridors.

### ***Interim Service - Connecting Ridership Projections***

At the same time that the interim service option includes 2,049,000 trips attributable to interim high-speed services, it is also noted that San Joaquins, ACE, and Thruway Bus ridership increases by a total of 2,758,000 annually, as of 2029. The significant increase seen in traditional regional rail and bus services is likely attributable in large part to interim services at high-speed driving total demand throughout the system.



The ETO ridership projections are based upon the number of linked trips - defined as the number of individual passengers riding to a destination regardless of how many transfers are made along the way. The ETO forecasted total system ridership at 8,776,000 for the 2029 commencement assumption. When comparing the no Interim Service option to the Interim Service option as of 2029, the total system ridership increase is 121 percent from 3,969,000 to 8,776,000 riders annually, respectively.

**Exhibit E-4** illustrates the breakdown of total forecasted system ridership by service type and as a total system. The interim service at high speed almost triples the train miles between Merced and Bakersfield and increases bus ridership by 96 percent. The other throughway service bus ridership increases by 145 percent. The combined connecting services north of Merced increase the train and bus miles by 122 percent and show a corresponding increase in ridership of 118 percent.

**Exhibit E-4. 2029 Total System Ridership in the Usable Segment**

Service	No Interim Service	Interim Service
Interim Service - Unlinked	0	2,049,000
San Joaquins – Unlinked	1,778,000	3,111,000
ACE – Unlinked	2,191,000	4,572,000
Thruway Bus Bakersfield* - Unlinked	341,000	668,000
Other Thruway Bus* - Unlinked	587,000	1,441,000
<i>Unlinked Trips are not additive</i>		
<b>Total System – Linked Trips**</b>	<b>3,969,000</b>	<b>8,776,000</b>

Notes: *\*Reflects approved Senate Bill 742 in future scenarios which allows transportation of passengers who are not connecting to a passenger rail service;*  
*\*\*The system total for ridership is calculated as linked trips, i.e., trips transferring from ACE, San Joaquins or Thruway bus connections are only counted once for total ridership.*

Source: *California High Speed Rail Early Train Operator – Central Valley Segment System Management & Operations Interim Financial Plan. January 31, 2020*

**Interim Service - Connecting Revenue Projections**

Similar to the impact of interim service at high speed on ridership estimates, introduction of interim service into the total system presents a positive effect on revenue. As seen in **Exhibit E-5** below, total additional fare revenue for the San Joaquins, ACE, and Thruway bus systems under the interim service option is estimated at \$78,422,000 (excludes the \$37,820,000 direct revenue of the interim service).

**Exhibit E-5. 2029 Total System Revenue (in 2019\$)**

Services	No Interim Service	Interim Service	Additional Fare Revenue
Interim Service	\$0	\$37,820,000	NA
San Joaquins	\$33,104,000	\$62,458,000	\$29,354,000
ACE	\$14,607,000	\$45,265,000	\$30,658,000
Thruway Bus – Bakersfield	\$4,498,000	\$8,799,000	\$4,301,000
Other Thruway Bus	\$9,383,000	\$23,492,000	\$14,109,000
<b>Total System</b>	<b>\$61,592,000</b>	<b>\$177,834,000</b>	<b>\$78,422,000</b>

*Source: California High Speed Rail Early Train Operator – Central Valley Segment System Management & Operations Interim Financial Plan. January 31, 2020*

**Silicon Valley to Central Valley Line IOS**

**IOS Service Concept**

The Authority plans to operate trains on the Silicon Valley to Central Valley Initial Operating Segment after early interim service in the Central Valley. The sequential delivery of high-speed rail segments implies that the Authority will first be an Infrastructure Owner for the Merced to Bakersfield segment, and then build out the balance of the Silicon Valley to Central Valley Line as funding sources permit.

**IOS Ridership and Revenue Projection**

The ridership and farebox revenue forecasts continue to use the enhanced risk analysis that addressed the feedback provided by Project Finance Advisory, Ltd. (PFAL), from its review of all the forecasts that were used in previous Proposition 1A funding plans. The risk analysis was conducted separately for the Silicon Valley to Central Valley Line opening year (2031).

These results presented below reflect Silicon Valley to Central Valley Line operations in 2036, which is the first full year of operations forecast without service ramp-up impact.

**Exhibit E-6. Silicon Valley to Central Valley Line Ridership and Revenue (Medium Case)**

Initial Operating Segment (IOS)	2036
Ridership	17,585,246
Revenue (2019\$)	\$1,086,756,253

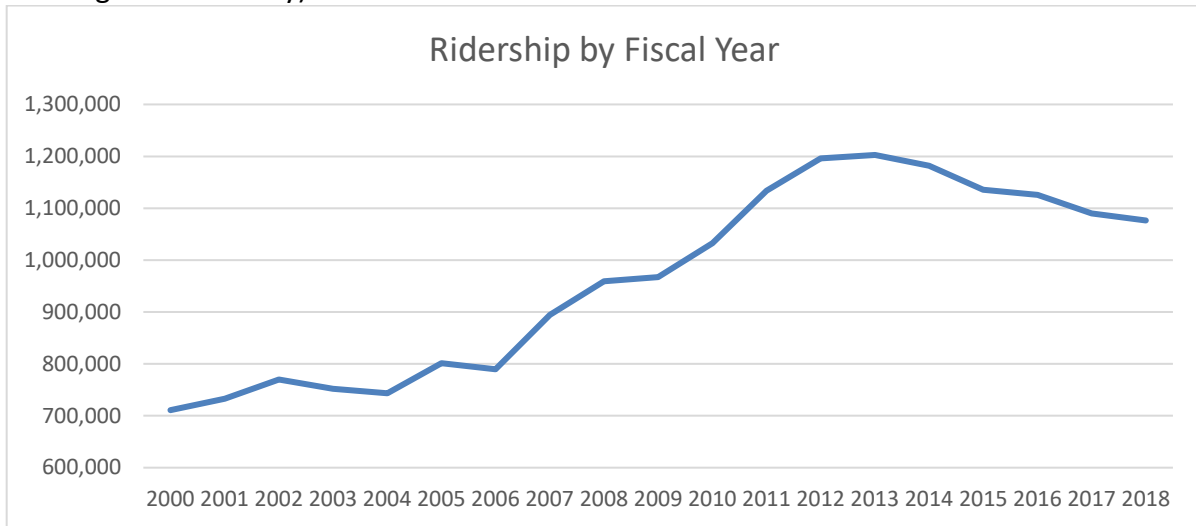
Source: 2020 Business Plan

**Madera to Poplar Early Interim Use**

As required under the Federal grant which the Prop 1A funds are matching, if the development of the Merced to Bakersfield extensions are significantly delayed then the existing state Amtrak service could use the CVS high-speed rail infrastructure on an interim basis to provide faster service to their customers, as was described in the 2017 CVS Funding Plan. Such early interim use of the CVS infrastructure and assets will increase travel options for Central Valley residents, create new mobility connections, enhance economic opportunity, and improve air quality. However, this is a back-up option and not the primary goal of completing this segment.

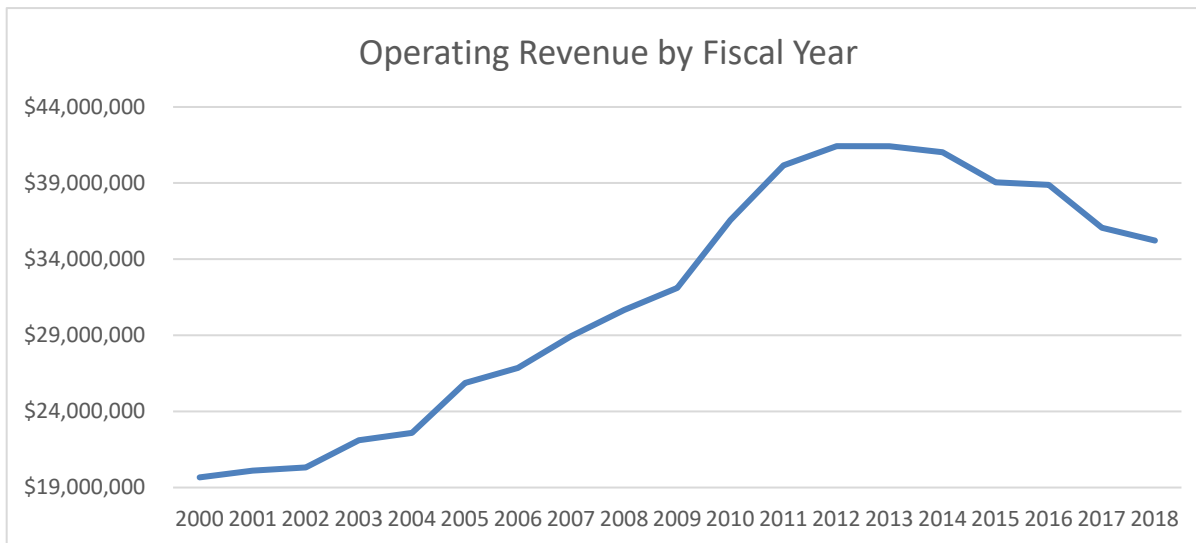
As the Authority currently does not have plans to deploy high-speed rail service on the stand-alone Central Valley Segment, ridership and operating revenue projections do not exist for this segment. In lieu of this, historical ridership and operating revenue statistics for the existing San Joaquins service are shown in **Exhibits E-7** and **E-8** below.

**Exhibit E-7. San Joaquins Service – Systemwide Ridership**  
(including Central Valley)<sup>1</sup>



Source: 2020 SJJPA Business Plan Update

**Exhibit E-8. San Joaquins Service – Systemwide Operating Revenue**  
(including Central Valley)<sup>2</sup>



Source: 2020 SJJPA Business Plan Update

<sup>1</sup> Ridership figures presented for the San Joaquins service include systemwide (Central Valley, Bay Area, and Sacramento region) alignments.

<sup>2</sup> Revenue figures presented for the San Joaquins service include systemwide (Central Valley, Bay Area, and Sacramento region) alignments.

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## F. Known or Foreseeable Risks

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Streets and Highways Code section 2704.08, subdivision (c)(2)(F) requires presentation of all known or foreseeable risks associated with the construction and operation of high-speed passenger train service along the corridor or usable segment thereof and the process and actions the authority will undertake to manage those risks.

This section sets forth the Authority's framework to identify, manage, and mitigate risk. The Authority has recently developed a new comprehensive process for the identification and management of risks which is structured around an Enterprise Risk Management (ERM) framework. This brings a deeper, more holistic and process-oriented approach to the comprehensive management of risk throughout the project life cycle and the entire organization.

Just as a range of risk is inherent to any large-scale capital program, such as the California high-speed rail project, actively managing risk is critical to objectively framing and guiding decision-making at all levels of the organization and to achieving the program's strategic objectives. The process of identifying, defining and quantifying risks is iterative, as is developing adequate risk mitigation strategies and management actions. The Authority has been engaged in this iterative process since its inception, gradually increasing its understanding of current and future program risks and is now employing ERM as a more formal and systematic approach to risk management.

Effectively managing the risk is essential to the program's future success. Over the last two years, many of the impediments to construction, including executing agreements with communities and utilities, and securing right of way needs, have been resolved. These have led to executing change orders with contractors and approval of significant budget change proposals in an overall effort to resolve and eliminate key risks.

The known and foreseeable risks identified in this section are high priorities and the mitigation strategies largely remain the same.

The Authority's Form-to-Function proposal, authorized with the passage of the FY 2020-21 State Budget, included the creation of a Risk Management Office, led by a Director of Risk Management and Project Controls. This independent office reports directly to the Board. In September 2020 a new director was appointed, and work began to enhance risk management oversight and develop the Authority's ERM Program. As a part of this process the Authority will be creating an Enterprise Risk Committee comprised of senior executives.

**Review of Key Risks and Mitigations**

The following presents a summary of the major known and foreseeable risks that the Authority is presently managing within the delivery of the Central Valley project. Those risks are presented here along with mitigations.

*Funding and Affordability*

State Funding and Financing	
Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>- <b>Prop 1A Bonds.</b> Delays in access to funds could affect the project’s delivery schedule. By delaying or significantly altering the contemplated access to Prop 1A funds, the resulting decrease in available cash could result in the Authority needing to slow construction or consider delaying future procurements, either of which could result in worksite closures, layoffs and job losses. Any such construction or procurement delays could affect commencement of operations.</li> </ul>	<ul style="list-style-type: none"> <li>- To date, the Authority has successfully overcome legal challenges associated with the appropriation of Prop 1A funds, including findings that allowed the State Treasurer to sell \$3.2 billion in Prop 1A bonds to advance project development, continue construction, and meet federal match requirements since the beginning of FY 2016-2017. This provides an important precedent to this Funding Plan.</li> <li>- The Authority is committed to working with the legislature to ensure that all required funding plans are compliant with Streets and Highways Code section 2704.08.</li> <li>- The Authority works in close coordination with the State Attorney General’s Office, Department of Finance and the State Treasurer’s Office to validate the content of Proposition 1A plans and to facilitate Proposition 1A bond sales to meet project cash flow needs.</li> <li>- Staff maintain detailed critical-path timelines that describe the requirements to secure approval for accessing the remaining Proposition 1A funds. This includes developing a strategy and ratifying it with internal leadership as well as external stakeholders, also providing information to the Independent Consultant involved in the funding plan process early in order for them to have adequate time to review and comment upon the proposal.</li> <li>- Significant cash flow planning activities are undertaken on a monthly basis to determine cash flow needs for the duration of the construction period.</li> </ul>

<ul style="list-style-type: none"> <li>- <b>Cap-and-Trade.</b> The Authority has experienced revenue shortfalls from the Cap-and-Trade auction. There is a risk that auction results could be lower than forecast. This is an auction-based revenue source that is contingent upon market factors. The source is variable and has potential for volatility in the future. For example, it is unclear how the auctions in the upcoming fiscal year 2020-21 and thereafter will be affected by COVID-19. For example: <ul style="list-style-type: none"> <li>o California has experienced budget shortfalls that are directly related to the COVID-19 pandemic. This has caused the California Legislature and Governor of California to implement a two-year furlough program for all state employees. The furlough program includes two days of unpaid leave per month, which has reduced state staffing resources for all state departments. This not only affects departments on an individual basis, but it also adversely impacts workflow between departments that have interdependencies, such as the Authority has for financial appropriations, transportation and permitting.</li> <li>o The COVID-caused shutdown of businesses and schools have put additional strains on Authority staff and their families to maintain work schedules while managing children's schooling and daycare needs, and/or to care for family that have contracted the virus.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- For planning purposes, the Authority assumes average receipts in a range of \$500 million to \$750 million annually moving forward. This assumption is supported by California's Legislative Analyst's Office (LAO), which published the Cap-and-Trade Extension: Issues for Legislative Oversight report in December 2017. The report notes a low and a high revenue scenario, which result in the Authority's share of expected revenues ranging from \$500 million to \$1 billion in 2018 and from \$500 million to \$1.7 billion by 2030. Since the passage of AB 398 in July 2017, through November 2020, the Authority has received an average of \$638 million per year.</li> <li>- The May 2020 Cap-and-Trade auction resulted in \$6.2 million proceeds for the Authority. While this is significantly lower than forecast, the Authority anticipates that the risk to future Cap-and-Trade revenues primarily will be short- to medium-term. Past auction results suggest the Authority can capture revenue from unsold allowances as they are offered again for sale through auctions in the coming cycles. By November 2020, auction proceeds had rebounded to \$148.6 million, near the \$153 million pre-pandemic amount received by the Authority in February 2020.</li> <li>- Current mitigations include cash flow management and planning. Through periodic sources and uses modeling and cash management analysis, the Authority has strong controls in place to identify the magnitude of currently available funding relative to funds already committed.</li> <li>- The Authority undertakes periodic analysis of the Cap-and-Trade auction process to fully understand and analyze its function. This work provides the Authority with more clarity and understanding as to the likely outcomes of future auctions.</li> <li>- As part of the funding allocation process, the Authority takes into account current program obligations and anticipated sources and uses. Funds are then allocated to ensure that current</li> </ul>
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State Funding and Financing	
Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>○ COVID-19 has had direct impacts on project revenues. The May 2020 auction yielded \$6.2 million in proceeds for the Authority, significantly under low estimates. Although the auctions rebounded in August and November of 2020, overall, those three auctions produced a total of \$288 million less than the level that auctions typically were yielding in recent years.</li> </ul>	<p>commitments are met and that priority projects can be funded.</p> <ul style="list-style-type: none"> <li>- AB 398 (E. Garcia), which was signed into law in July 2017 and extended the Cap-and- Trade Program through December 2030. Cap-and- Trade auction proceeds experienced an increase in stability as a result. Additionally, unsold allowances are advanced to the next quarterly auction and are subsequently sold. This can potentially provide the Authority with the compliment of its forecast funds at a future time when the effects of Covid-19 stabilize.</li> <li>- Longer term, the Authority is seeking to secure a base level of receipts, which could include a Cap and Trade revenue floor or borrowing authority. This would likely bolster and stabilize this revenue stream. This is critical to any large scale infrastructure program.</li> </ul>
<ul style="list-style-type: none"> <li>- <b>Affordability.</b> There are risks associated with the uncertainty regarding the overall affordability of the capital program. These risks include variability similar to any project of this scale.</li> </ul>	<ul style="list-style-type: none"> <li>- The main mitigation against these combined risks, should they materialize, would be to find additional funding and/or de-scope or delay future portions of the project.</li> <li>- The Authority is working closely with key stakeholders and partner agencies-- including the Governor’s Office, Department of Finance and the Legislature --to gain stakeholder consensus to increase the certainty of securing the necessary funding on a timely basis.</li> </ul>

Federal Funding and Financing	
Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>- <b>Federal FY10 grant funds.</b> In May 2019, the FRA de-obligated \$929 million provided in the FY10 grant agreement.</li> <li>- The Authority could lose access to \$929 million in FY10 funds, which would reduce current funding for the program.</li> </ul>	<ul style="list-style-type: none"> <li>- The State of California has filed a lawsuit to stop FRA’s action to rescind FY10 funds.</li> <li>- However, at this time, the Authority is anticipating a normalizing of relations with the FRA under the incoming Federal Administration, which may mitigate these risks.</li> <li>- The Central Valley Project Funding Plan (CVPVP) -- an FRA deliverable-- anticipates access to FY10 funds in May 2022. The Authority is working</li> </ul>



## Federal Funding and Financing

Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>- Delay in access to, or elimination of, this funding resource will at a minimum affect the program’s cash flow and could affect its ability to deliver the initial system.</li> </ul>	<p>with the DOF and the Administration to identify funding alternatives in the event FY10 funds are not available at that time.</p> <ul style="list-style-type: none"> <li>- Management has significantly accelerated construction expenditure over the last 12 months. This increases the probability of achieving full grant compliance maintaining the current cost estimate.</li> <li>- With the State match prioritization on ARRA expenditures, the identification of further State match funds may be necessary to access FY10 funding. The Authority has anticipated this possibility by selling approximately \$3.2 billion in Prop 1A bonds to-date. In addition, the State also can use Cap-and-Trade funding as available should Proposition 1A become unavailable for any reason and additionally seek appropriation of additional Proposition 1A in the fiscal year 2020-21 Budget Act.</li> <li>- It may be possible to offset the loss of federal funds with state funds, if Cap-and-Trade revenues are sufficient to do so. Analyses undertaken by the Authority have considered the level of Cap-and-Trade annual revenues from now through 2030 to cover the loss of the \$929 million.</li> <li>- The Authority is in the process of conducting a comprehensive schedule re-baseline and associated cost risk. Additionally, the Authority continues to actively manage construction contracts to ensure that the forecasted monthly expenditures increase to the level required for timely completion.</li> <li>- Potential new federal funding sources might become available in the future. For example, the “Investing in a New Vision for the Environment and Surface Transportation in America Act” (INVEST Act) would provide a total of \$494 billion over five years (FY 2021-FY 2025). A component of the INVEST Act, Transforming Rail by Accelerating Investment Nationwide (TRAIN) Act, would direct \$19 billion for high-speed rail and other transformative rail investments. The</li> </ul>

Federal Funding and Financing	
Known or Foreseeable Risks	Mitigations
	<p>Authority believes the bill to be a positive sign that could signal a pathway to furthering federal investments in the California high-speed rail system. It should also be noted that this bill contains language that would re-instate FY10 funds to the Authority.</p>
<ul style="list-style-type: none"> <li>- <b>Federal ARRA grant funds.</b> The federal government indicated in a February 2019 letter that it may consider additional action to reclaim already expended ARRA federal funds. This action would likely result in additional litigation and could have other financial impacts to the State of California.</li> </ul>	<ul style="list-style-type: none"> <li>- The Authority will continue to comply with all federal grant requirements, communicate and cooperate with FRA, and participate in any mediation, arbitration, and litigation process.</li> <li>- At this time, the Authority is anticipating a normalizing of relations with the FRA under the incoming Federal Administration, which may mitigate these risks.</li> </ul>
<ul style="list-style-type: none"> <li>- If additional state matching contributions are required to meet <b>ARRA grant requirements</b>, in essence the Authority has two methods by which to match federal funds—Prop 1A and Cap and Trade.</li> <li>- Additionally, there is also a risk that FRA do not accept the <b>ARRA state-match costs</b> that the Authority submits to the FRA for match purposes. In this case the Authority may have to provide further evidence that the costs are valid and appropriate or may have to identify other expenditures for match purposes. This situation has occurred historically.</li> </ul>	<ul style="list-style-type: none"> <li>- Prop 1A bond proceeds have already been received by the Authority.</li> <li>- If future Proposition 1A funding is delayed as additional contributory state matching funds for the ARRA funding, the Authority will utilize appropriated Cap-and-Trade funds in its place.</li> <li>- The Authority has placed significant resources into its efforts to provide comprehensive information related to ARRA match requirements.</li> <li>- The Authority currently has matched 99.4 percent of the state funds necessary to meet the ARRA match obligation as of October 31, 2020. To date, the Authority has submitted to FRA approximately 81.5 percent, \$2.0 billion for approval. The FRA has processed only \$690 million, approximately 27.5 percent, as of October 31, 2020. Another \$451 million is currently under internal review, for a total of nearly \$2.5 billion.</li> </ul>

**Litigation Risks**

Prop 1A Legal Challenges	
Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>- <b>Existing Litigation.</b> <u>John Tos, et al. v. California High-Speed Rail Authority – Sacramento Superior Court</u>, was filed December 13, 2016. The lawsuit is related to two Proposition 1A bond funding plans.</li> </ul>	<ul style="list-style-type: none"> <li>- In November 2018, the Superior Court ruled in the Authority’s favor, finding that AB 1889 is constitutional.</li> <li>- The Plaintiffs already have conceded that if AB 1889 is valid, then the two funding plans at issue are also valid. All parties stipulated to enter a final judgment in the Authority’s favor on that issue.</li> <li>- The case was appealed by Tos, et al, in May 2019 to challenge the validity of AB 1889.</li> <li>- The risk posed by this litigation is being mitigated to a certain extent by the continued expenditure of bond funds, resulting in a reduction in the remaining unspent funds that may remain at risk until spent.</li> </ul>
<ul style="list-style-type: none"> <li>- <b>Future Litigation.</b> It is possible that similar litigation on other project sections or new litigation may arise in the future.</li> </ul>	<ul style="list-style-type: none"> <li>- As the program advances, the Authority will work closely with stakeholders to address issues and concerns before they become formal lawsuits.</li> <li>- In addition, the agency will continue its practice of using alternative dispute resolution processes, such as mediation or arbitration, whenever possible.</li> </ul>

Prop 1A Legal Challenges	
Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>- <b>Prop 1A Litigation Risk.</b> There is a risk associated with funding under Proposition 1A in the event a claim arises due to the interpretation of the no operating subsidy requirement in the context of Interim Service provided by other rail operators. Legal challenges could result.</li> </ul>	<ul style="list-style-type: none"> <li>- The Authority believes it would prevail in any litigation regarding Interim Service provided by other rail operators, since the Authority would become an infrastructure owner making its assets available through a lease or a track access agreement with the operator(s) and would be paid for its infrastructure operations and maintenance costs, in compliance with Proposition 1A.</li> <li>- The Authority will plan for any delays in funding that might result from legal challenges.</li> <li>- In addition, the Authority will continue its practice of using alternative dispute resolution processes, such as mediation or arbitration, whenever possible.</li> </ul>

FRA Litigation	
Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>- <b>See FY10 Funds above</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>See FY10 Funds above</b></li> </ul>

**Stakeholder Support Risks**

Public and Agency Support	
Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>- <b>Public support</b> There is a risk that public support for the project could weaken.</li> <li>- There is a risk that the Authority’s mitigation choices could erode public support, which could impact the program’s schedule and cost.</li> </ul>	<ul style="list-style-type: none"> <li>- The Authority will continue to clearly articulate both the program’s impacts, costs and benefits to maintain public support. This will primarily be achieved by increasing transparency and through regular communications such as through the Business Plan and Project Update Report, as well as public board meetings. The Introduction section to this Funding Plan details the significant economic benefits that the project has already generated.</li> <li>- The Authority will continue to work diligently with the communities and stakeholders along the alignment and statewide to ensure accurate information is provided in a timely manner. Maintaining strong public support at all levels through education and outreach is vital to the program’s success.</li> </ul>
<ul style="list-style-type: none"> <li>- <b>State and Regional support.</b> There is a risk of reduced support at the state level.</li> </ul>	<ul style="list-style-type: none"> <li>- Communication with external entities is a responsibility managed at all levels within the organization, both at a statewide and regional level. The Authority employs three regional directors with the specific role of representing the Authority with stakeholders and communities, including a dedicated Central Valley Regional Director.</li> <li>- At the state level, ongoing communication with legislators and state agencies ensures that current and factual information is shared. As noted previously, the Authority works closely with its sister agencies to share information and provide regular updates.</li> <li>- Additional mitigation includes outreach activities, regular stakeholder and/or public meetings, and addressing community needs and concerns related to potential project effects in specific areas.</li> </ul>

Public and Agency Support	
Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>- <b>Federal support.</b> There is a risk of reduced support at the federal level.</li> </ul>	<ul style="list-style-type: none"> <li>- Authority and CalSTA staff maintain an ongoing line of communication with members of Congress and their staff and with federal agencies.</li> <li>- The Authority’s main federal stakeholder is the Federal Railroad Administration (FRA). We continue to cooperate fully with the requirements of the federal grants and look forward to the normalization of relations in the coming months.</li> </ul>

**Organizational Development Risks**

Responding to Audit Recommendations	
Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>- <b>State Audit Report Recommendations.</b> The State Auditor’s report identified three broad areas for Authority improvement: planning, contract management, and monitoring and reporting. The Audit made 17 specific recommendations.</li> <li>- The recommendations focused on improving processes and updating areas of construction planning and oversight, contract management, contract manager oversight; and legislative, sustainability, and small business utilization reporting.</li> <li>- Risks related to not implementing these recommendations include cost escalation and delay.</li> </ul>	<ul style="list-style-type: none"> <li>- In the period since the Audit report was issued, the Authority has worked diligently to implement the recommendations and provide evidence of implementation to the State Auditor.</li> <li>- As a result of the Authority’s focused efforts, the State Auditor has concurred that 16 of the 17 recommendations are either partially or fully complete, and those that the State Auditor has deemed partially implemented are primarily based on awaiting implementation results.</li> <li>- The Authority views the continuation of the refinement of its organizational structure as a key mitigant to cost escalation and delay.</li> <li>- With the implementation of the Enterprise Risk Management framework (described at the start of this section) the Authority is structuring a comprehensive approach to the management of risk which is designed to further enhance the ability to implement and manage the state auditor’s recommendations.</li> </ul>

Managing Interfaces	
Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>• <b>Federal scope interface risks.</b> The final piece of construction to complete the federal scope of work is the installation of plain-line track along the 119 miles of the Central Valley Project.</li> <li>• Award of the track and systems contract is planned in 2021 before completion of guideway and structures on 119-miles of CVS. ROW acquisition and civil works are ongoing and are targeting completion in [2023].</li> <li>• There will be required a high degree of flexibility and coordination between the civil works design builders and track-and-system contractors due to portions of the guideway still being under construction.</li> <li>• Two prototype trainsets will also be delivered in parallel under a separate contract so that the test-track can be certified for high-speed rail.</li> </ul> <p>-</p>	<ul style="list-style-type: none"> <li>• The Authority has proposed a structure whereby work on track and systems can be conducted on discrete sections of completed civil works while construction elsewhere is ongoing. This will allow work to proceed on all contracts simultaneously.</li> <li>• Authority is also proposing to install a single track first to expedite installation and defer the additional cost of a second track until a time when more funding is available. Stations will also be installed at a later date as these are not required for the 119-mile test-track functionality.</li> </ul>

Managing Internal Delivery Organization	
Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>- <b>Internal delivery risks.</b> As the Authority increases its right-of-way acquisition and subsequent contracts are executed, it faces risks associated with the ability of its internal delivery organization to adequately manage its assets.</li> <li>- For example, the Track and Systems contract is large and complex with multiple phases and interfaces that will bridge multiple decades. The counterparty is likely to be sophisticated and highly familiar with its own risk profile and resulting negotiating position.</li> </ul>	<ul style="list-style-type: none"> <li>- The Authority will further expand its asset management capability and capacity to ensure that sufficient resources are provided to manage all aspects of the process in a timely and effective manner.</li> <li>- As noted above the Authority has largely completed its form to function process, which arose as a result of the 2018 State Audit.</li> <li>- Additionally, the ERM work that the Authority is presently undertaking is designed to highlight organizational needs early so that they can be remedied and provided resourcing to adequately respond to those needs.</li> </ul>

**Program Delivery Risks**

Third Party and Procurement	
Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>- <b>ROW acquisition risk.</b> The Authority needs to acquire further right of way in order to complete design-build contracts which are already underway. In addition, the number of parcels required has increased due to redesigns, third party assets, and utility relocations. This could impact forecast completion schedules and in turn compliance with the ARRA deadline.</li> </ul>	<ul style="list-style-type: none"> <li>- In September 2018, the Legislature approved Senate Bill 1172, which allowed the Authority to directly acquire right of way through purchase and eminent domain. This has streamlined the process of acquisition.</li> <li>- This included a major reconciliation of data to compile parcel data into a single tracking database—GeoAmps. The result has been increased processing efficiencies; for example, the time to process land acquisition was reduced by 38 percent, and we can more accurately account for the fluctuations in the need for right-of-way parcels. In addition, we are working closely with legal counsel as we streamline our right-of-way processes.</li> <li>- This work has resulted in significant advancement. For example, in February 2020 approximately 130 right-of-way parcels were in negotiation. By the end of November 2020, approximately 400 parcels were in negotiation—an increase of more than 300 percent.</li> <li>- We are working with Caltrans on a one-year staff augmentation Taskforce. The additional staff will comprise principal, supervising and senior right-of-way agents to form a Fresno focused team. This augments the existing four Caltrans staff are already assisting efforts in the Central Valley managing non-operational/real property and supporting mapping.</li> </ul>



### Third Party and Procurement

Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>- <b>ROW Condemnation Risk:</b> Some ROW acquisition is going to condemnation and/or parcels might be at risk of not being acquired by the required date.</li> <li>- The revised baseline schedule is based on optimal acquisition delivery dates. Any parcels that go to condemnation could result in schedule delays.</li> <li>- Significant delays have been experienced in 2020 and likely 2021 as a result of COVID-19 which has considerably slowed the process down as courts have had reduced hours of operations.</li> </ul>	<ul style="list-style-type: none"> <li>- The Authority recognizes that ROW is a critical path item and is therefore applying more focus and resource to it.</li> <li>- The Authority is applying mitigating measures however the continuing impact of COVID-19 has introduced volatility into the process that is often beyond the immediate ability of the Authority to control.</li> <li>- Authority staff have defined a schedule for the remaining parcels to be acquired for ongoing Central Valley construction. To meet these updated schedules, we have refined our acquisition approach this has resulted in:               <ul style="list-style-type: none"> <li>• Streamlining the pre-acquisition and utility land conveyance processes;</li> <li>• Consolidating acquisitions affecting related parcels; and</li> <li>• Adding staff to oversee and expedite the process.</li> </ul> </li> <li>- Because of these steps, we have reduced the time necessary for land conveyance by 100 days and the pre-acquisition process by 40 days. Our work has also resulted in developing new approaches to aggregating parcels to consolidate acquisitions.</li> </ul>

### Third Party and Procurement

Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>- <b>Third Party agreement risks.</b> There are risks associated with the unexecuted third-party agreements still remaining in the Central Valley.</li> </ul>	<ul style="list-style-type: none"> <li>- While gaining a greater understanding of the construction barriers and outstanding contractor concerns, staff worked to build stronger relationships with third-party partners. As that work was underway, staff worked to prioritize the outstanding agreements necessary for construction.</li> <li>- Over the last year, the Authority signed the following types of agreements: master/cooperative; reimbursement; operations and maintenance; right-of-way transfer; utility; interagency; encroachment permit; license; and permits to enter. Of the 43 agreements signed; 34 of those agreements were critical to supporting and advancing construction activities.</li> <li>- Master agreements are in place with BNSF Railway and Union Pacific Railroad and construction of key projects are increasing access to high-speed rail construction sites.</li> <li>- Master agreements are also in place with key utilities including AT&amp;T, PG&amp;E and various irrigation districts. Many require multiple agreements for right-of-way, construction and ongoing maintenance. We have added additional staff with specialized expertise to assist with complicated utility agreements and relocation coordination.</li> </ul>

Third Party and Procurement	
Known or Foreseeable Risks	Mitigations
<p><b>Track and Systems contract interface risks.</b> There are risks associated with both the Trainset and Track &amp; Systems agreements. The design and development of trainsets will require additional interfaces with contractors designing and building the high-speed rail infrastructure. The design will require coordination with the Track and Systems contractor on connections to the signals and communications network as well as track and electrical interfaces. In addition, the contractor will also be responsible for the development of train maintenance facilities.</p> <ul style="list-style-type: none"> <li>- Track and Systems contractor must also interface with civil works design build contractors in order to install high-speed track and systems on completed civil superstructures and guideway etc. This will be critical in managing schedule risk.</li> <li>- The coordination and interface between all these contracts will be critical to maintain costs, meet schedule requirements, mitigate Authority/State risks, and begin a coordinated service with ACE and the San Joaquins.</li> </ul>	<p>Prior to entering the Track &amp; Systems contract, the Authority will:</p> <ul style="list-style-type: none"> <li>- Work with stakeholders, including SJJPA/SJRRC, CalSTA, and/or other regional partners to advance agreements that memorialize the details of the interim service once the system is completed.</li> <li>- Include flexibility in the first Track and Systems NTP to allow the Authority to comply with the minimum scope of the federal grant requirements (i.e., high-speed ready track) by setting specific delivery milestones and other control points to mitigate the Authority’s financial exposure.</li> <li>- Ensure the design-build civil works contracts are fully aligned with the Track and Systems contract, including any necessary renegotiation and amendment of existing design-build contracts to allow for the delivery and acceptance of individually completed sub-sections of the civil works and the associated delivery schedule.</li> <li>- Complete the acquisition of all ROW for the 119-mile test track.</li> </ul>

Third Party and Procurement	
Known or Foreseeable Risks	Mitigations
<p><b>Track and Systems contract termination risk.</b> The Track and Systems contract requires maintenance and lifecycle payments once revenue service commences. Maintenance of the high-speed rail infrastructure almost necessitates Interim Service once the infrastructure is completed, or there is a risk of an unutilized asset.</p> <ul style="list-style-type: none"> <li>- The Track and Systems contractor will have termination rights under the contract if either revenue service does not start or payment for maintenance is not made. The termination could represent a significant cost to the program and ultimately to the State.</li> </ul>	<ul style="list-style-type: none"> <li>- The Authority has secured a memorandum of understanding with CalSTA and SJJPA on the use of high-speed rail assets until the completion of the full Silicon Valley to Central Valley line. This MOU sets out the agreement in principle of how the parties will collaborate to provide interim service in the future.</li> </ul>
<ul style="list-style-type: none"> <li>- <b>Track &amp; Systems contract procurement delays:</b> To comply with the federal grants scope, track must be placed on the 119-miles under construction by the end of 2022.</li> <li>- There is a risk that because of the continued slippage in CP 1-4 handover dates further delays in procurement of Track &amp; System contract may be experienced which would impact the baseline schedule activity of installing track. There is also risk that contract access dates from the CP 1-4 contracts will fail to achieve contractual access dates identified in the Track &amp; Systems contract resulting in claims for delays and disruption by the contractor.</li> </ul>	<ul style="list-style-type: none"> <li>- The Authority is advancing Track &amp; Systems contract procurement activities. Procurement is continuing with addendums planned to incorporate latest CP 1-4 access dates.</li> <li>- The Authority is undertaking cost benefit analysis in awarding Track &amp; Systems contract with significant risk of further delays in access due to late CP1-4 contracts.</li> <li>- The program team is evaluating various procurement options to ensure that track installation can start as smaller segments of guideway (average 5 miles in length each) are available from the civil contractors in order to meet the ARRA Grant deadline.</li> </ul>

## Capital Cost and Schedule

Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>- <b>COVID-19 Impacts:</b> This is an evolving risk impacting many project activities.</li> <li>- Third Party and ROW activities are some of the most impacted, including but not limited to: Extended time for approving and reviewing; Third-Party Agency resource availability; court capacities opening new eminent domain cases filed; conducting ROW appraisal settlement negotiations; failure to set trial dates; and escrow company delays in paying funds.</li> <li>- Construction activities include but are not limited to: Material supplies/deliveries delayed due to shelter-in-place or positive COVID-19 cases; labor shortages due to positive COVID-19 cases and quarantining; additional time required for daily health and safety information-sharing and practices; and COVID-19 tracking and reporting workload throughout the organization.</li> <li>- Additionally, delays observed in communication for continued operations with internal and external parties due to shelter-in-place constraints.</li> </ul>	<ul style="list-style-type: none"> <li>- COVID-19 continues to impact construction activities within the Central Valley. Impacts have now been experienced for close to one year.</li> <li>- The Authority has implemented the following responses:               <ul style="list-style-type: none"> <li>○ Teleworking practices implemented, including staff provided with appropriate tools and capacity to ensure continued productivity wherever possible.</li> <li>○ Social distancing implemented on construction sites and site and head offices to ensure safety and health of all project workers, including rotating shifts to minimize staff in offices.</li> <li>○ Training, guidance, processes, procedures, and appropriate PPE provided to all project staff to ensure as far as possible project progresses with least interruptions.</li> </ul> </li> <li>- Activities advanced where COVID-19 has provided opportunities to expedite construction. These include utility street works where city and jurisdiction traffic and environmental constraints have been relaxed as traffic has been reduced. In addition, Contractors have rotated in staff when they have had to quarantine larger groups of laborers. Contractors have strived to find alternative methods to provide materials when delays due to the Pandemic have arisen.</li> </ul>

Capital Cost and Schedule	
Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>- <b>Cost overruns.</b> There is a general risk that the project could experience cost overruns and delays.</li> <li>- This includes cost escalation risks associated with interfaces both on the Track and Systems contract and the existing design-build contracts.</li> </ul>	<ul style="list-style-type: none"> <li>- The Authority will proactively manage interfaces (particularly on timing), delay future segments, secure additional funding and pursue de-scoping, if necessary.</li> <li>- The introduction of the Enterprise Risk Management structure is specifically designed to provide organizational mitigations to generalized areas of risk such as cost overrun and schedule delay.</li> </ul>
<ul style="list-style-type: none"> <li>- <b>Central Valley construction cost risks (various).</b> On-going risks include potential scope changes due to final third-party designs or additional requirements, right-of-way acquisition delays, negotiations with remaining third parties and utility relocations.</li> <li>- In addition, there are isolated pieces of construction—such as the SR-46 improvements in Wasco—for which the Authority is adopting strategies for timely procurement and completion by the 2022 deadline.</li> </ul>	<ul style="list-style-type: none"> <li>- As described in earlier sections, the Authority, under the umbrella of the Enterprise Risk Management framework, has taken measures in key risk areas such as Right of Way, Third Party Agreements, and Construction to mitigate risk exposure.</li> <li>- Additionally, during the process of cost estimation risks are identified and quantified through Monte Carlo (quantitative probabilistic analysis) for the adoption of the CVS Baseline Budget.</li> </ul>

Capital Cost and Schedule	
Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>- <b>Schedule delay or increased project costs due to final certification of CP 1-4 projects is incomplete / unsatisfactory at handover Quality Milestone Data Pack (QMDP) documents to Track &amp; Systems contractor:</b> There is a risk that the Track &amp; Systems contractor will not accept the work or ICE/ISE cannot provide proper independent certification.</li> <li>- There is also a risk that the Rev2 baseline may not contain sufficient float to manage these handover requirements. There is a significant quantity of QMDP documentation required from the civil contractors and there is a risk this may not be available to meet schedule dates for Track &amp; Systems access.</li> <li>-</li> </ul>	<ul style="list-style-type: none"> <li>- The Authority is progressing mitigation of 2021 Baseline Capital Cost Estimate schedules to allow Track &amp; Systems Contractor sufficient access to complete track installation.</li> <li>- The Authority is progressing handover QMDP documentation and certification processes for completed structures to prove process and identify any issues with documentation gathering, recording, sign offs and completion.</li> <li>- The Authority has designed, procured and is populating database for deposit and tracking of all turn over documentation.</li> <li>- The Authority is certifying structures noting exceptions in compliance with QMDP as early as possible and identify any common issues that can be worked through to avoid similar issues with later structures.</li> <li>- The QMDP team has developed a detailed process schedule and highlighted a requirement of an average of 67 days for the Contractor certification delivery process, ICE/ISE certification, and Authority review and acceptance after completion of civil work and before handover to Track &amp; Systems contractor.</li> </ul>

Business Model	
Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>- <b>Covering Central Valley O&amp;M costs.</b> The primary operating risk to the Authority would be to ensure that the operating and maintenance costs of its built infrastructure are fully covered by the track access charges paid by a third-party operator.</li> </ul>	<ul style="list-style-type: none"> <li>- The Authority will enter into formal agreements, including allocation of responsibilities and risk between the various parties, necessary to implement Interim Service without incurring any unreimbursed Authority O&amp;M costs.</li> <li>- This is being undertaken.</li> </ul>

Business Model	
Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>- <b>Delay risks.</b> Given the long timeline and associated risks of the capital program, schedule, and funding, there is a risk that the start date of operations may be delayed.</li> </ul>	<ul style="list-style-type: none"> <li>- The Authority will manage risks and costs to ensure timely completion of the full Merced to Bakersfield segment to allow operations to commence by the planned start date.</li> <li>- In the event of a stress case scenario, the Authority will require assurances that SJJPA will still operate Interim Service if the delivery of the infrastructure is delayed and on a shorter segment if the Authority is not able to complete the infrastructure for Merced to Bakersfield as planned.</li> <li>- The Authority is working closely with SJJPA and CalSTA to coordinate operations and ultimately mitigate risk from an overall State perspective.</li> </ul>
<ul style="list-style-type: none"> <li>- <b>Ability to achieve proposed risk transfer.</b> Under the business model for Interim Service, the Authority would become an infrastructure owner that will make its assets available through a lease or a track access agreement with the operator(s). This approach would transfer most Interim Service operating risks to other agencies. The innovative nature of this approach poses some risks as to both policy precedent and market acceptance.</li> <li>- Risks associated with FRA certification of Track and Systems and Trainsets would continue to be retained by the Authority.</li> </ul>	<ul style="list-style-type: none"> <li>- The Authority is working to clarify the ability to delegate its responsibility for the operation of high-speed rail services to a third party.</li> <li>- The business model for Interim Service Business proposes that SJJPA/SJRRC procures operator(s) for enhanced San Joaquins service.</li> <li>- In addition, all operating risks, excluding Track and Systems and Trainsets, would rest with the operator(s) and SJJPA.</li> <li>- The process and risk of certifying the operator for high-speed rail operations would lie with SJJPA.</li> </ul>



**Ridership and Revenue Risks**

Ridership and Revenue	
Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>- <b>Risk of insufficient revenue.</b> Ridership revenues need to be projected to be sufficient to cover the operations and maintenance costs of the Program to comply with Proposition 1A requirements.</li> </ul>	<ul style="list-style-type: none"> <li>- The Authority will work with the ETO and other consultants to ensure that travel demand modeling incorporates latest developments in ridership estimating and assessing travel network forecasts.</li> <li>- Current forecasts predict that revenue will be sufficient within the corridor. These forecasts continue to be updated and refined over time.</li> </ul>
<ul style="list-style-type: none"> <li>- There is a risk that, without certain investments by partners, Interim Service will not achieve the expected level of ridership.</li> </ul>	<ul style="list-style-type: none"> <li>- The Authority will ensure that firm commitments for partner funding are received and a comprehensive agreement for both construction and operations is completed prior to the Authority’s full commitment.</li> <li>- This initially will take the form of a memorandum of understanding, or similar agreement, that includes the Authority, CalSTA, SJJPA and SJRRC. A more comprehensive agreement will follow</li> </ul>

**Future Risks and New Technology**

Technology and Interface	
Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>- <b>New technology.</b> One such risk derives from the cost of power grid interconnections that need to be upgraded for high-speed rail operations.</li> </ul>	<ul style="list-style-type: none"> <li>- Work is underway with PG&amp;E to define the scope and costs of these improvements to the network including new transmission line construction necessary for a reliable power supply within the PG&amp;E service territory.</li> <li>- By engaging early with power providers the Authority is confident that power solutions will be available upon commencement of operations.</li> </ul>

Technology and Interface	
Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>- <b>Interface risk.</b> There is risk based on interdependency between the Track and Systems contract to test and certify the infrastructure for high-speed rail (trainsets also require certification by the FRA as Tier III) and to be compliant with Buy America requirements.</li> </ul>	<ul style="list-style-type: none"> <li>- The Authority will include flexibility in the first NTP to allow the Authority to comply with the minimum scope of the federal grant requirements.</li> </ul>

**Operations and Maintenance (O&M) and Capital Replacement Cost and Revenue Risks**

O & M and Capital Replacement Cost Risk	
Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>- <b>Cost risk.</b> There is a risk that differences between actual costs and forecasts could result in limiting resources available to continue system expansion.</li> </ul>	<ul style="list-style-type: none"> <li>- The Authority will work with Network Rail (the operator and maintainer of both the high-speed and conventional rail network infrastructure in the United Kingdom), the ETO, and the International Union of Railways to enhance understanding of these areas and incorporate best practices.</li> <li>- This work will flow directly into the Enterprise Risk Management process so that the approach is comprehensive and universal to the program as a whole.</li> </ul>

O&M Revenue Risk	
Known or Foreseeable Risks	Mitigations
<ul style="list-style-type: none"> <li>- Once the high-speed rail infrastructure is complete, the Authority will be responsible for long-term maintenance of completed assets. The Authority may not have sufficient long-term funding or revenue to cover maintenance of the highly specified Trainset assets prior to the commencement of IOS operations.</li> <li>- There is a risk that the track access charges paid by a third-party operator will not fully cover the operating and maintenance costs of these infrastructure assets.</li> </ul>	<ul style="list-style-type: none"> <li>- Future Interim Service would provide an additional source of funding for maintenance and lifecycle costs until the commencement of IOS operations.</li> <li>- To implement Interim Service, the Authority will enter agreements for Interim Service and the allocation of responsibilities and risk between the various parties.</li> <li>- Beyond Interim Service, the Authority will enter into an agreement with a long-term system operator. Forecasting suggests that even under low revenue scenarios the system would be cash flow positive.</li> </ul>

## **Authority Governance as a Component of Risk Management**

Governance is a function performed in various ways throughout the organization of the Authority. The most formal element of governance is the statutory organization of the Authority, including the composition and powers and duties of its Board of Directors, a public body. Beyond the Authority's Board, the Authority staff also has established structures to ensure appropriate governance and management of the project. Both these layers of governance are discussed below, in turn.

**Authority Board** – The Authority Board of Directors was established in 2003 by California Public Utilities Code §185020. The Board of Directors oversees the planning, construction, and operation of the nation's first high-speed rail system.

The Board of Directors consists of eleven members. There are five members appointed by the Governor, two members appointed by the Senate Committee on Rules, and two members appointed by the Speaker of the Assembly. In addition, there are two *ex officio* members: one Member of the Senate appointed by the Senate Committee on Rules; and one Member of the Assembly appointed by the Speaker of the Assembly. The *ex officio* members serve without vote and participate in the activities of the Authority to the extent that participation is not incompatible with their positions as Members of the Legislature. Each Board member, other than the *ex officio* members, represents the entire state and serves a four-year term.

The Board of Directors is responsible for setting policy directives for the Authority, and for the development and approval of the Authority's key policy documents. These policy documents include the Authority's business plans, financial plans, and strategic plans. The Chief Executive Officer and Authority staff report directly to the Board of Directors and seek approval and guidance on a broad range of issues regarding the ongoing program including, but not limited to: certifying environmental documents; entering into significant contracts; making project alignment decisions; and business plans.

The Board of Directors also may establish committees dedicated to overseeing specific aspects of the high-speed rail project. The current active committee is the Finance and Audit Committee.

## **Internal Staff Governance Committee Structure**

As the high-speed rail program evolves, we must ensure that our staff committee governance structure evolves to keep pace. To that end, senior executive leadership is in the process of reviewing the Authority's staff committee structures.

In part, the review will focus on committee charters, delegations of authority, oversight and the possibility of adding new committees as the Program matures and moves through the various phases of completing a high-speed rail system. The review is being undertaken to ensure that the governance committees function as efficiently as possible, that the committees' responsibilities correctly overlap and that programmatic issues are being considered in a cohesive manner.

This review is part of a continuous effort to provide greater rigor, accountability and transparency for major decisions. The outcomes of this governance review will be captured in the Authority's updated Program Management Plan.

The Authority maintains a structure of four internal staff governance committees, each with its own purpose, roles, organization and operations. These committees are made up of Authority state employees as well as staff of the Rail Delivery Partner that interact to make key decisions on behalf of the program. The organization of these committees is necessary for the Authority to have a strong governance structure, with a streamlined process for decision-making and problem-resolution.

These four internal governance committees – the Executive Committee, the Program Delivery Committee (PDC), the Business Oversight Committee (BOC) and the Administrative Committee – regularly interact with one another. The PDC, BOC and Administrative Committee report directly to the Executive Committee and engage with one another as needed.

**Executive Committee** – serves as the senior governance committee. Members of the committee advise the Chief Executive Officer, who chairs the committee, on key agency decisions and recommendations to the Board of Directors. The Executive Committee makes executive, enterprise-wide policy decisions, provides overarching Authority strategy and priorities, and resolves escalated disputes.

**Administrative Committee** – provides governance and oversight of the Authority's Administrative Budget. Additionally, the Administrative Committee is responsible for overseeing the administration of the Authority including, but not limited to, information technology, communications, human resources, procurement and contracting, employee engagement, facilities outside of program delivery, and commercial/business oversight.

**Business Oversight Committee (BOC)** – provides programmatic acquisition strategy, procurement governance and commercial oversight. It acts as the Program Baseline configuration-management control board and approves all changes of scope, timeline and budget to any program element within the Program Baseline. This committee ensures Program Baseline compliance with federal and state regulations and statutes. The Business Oversight Committee also approves any program execution or fiscal request presented to the Board of Directors. The

BOC will forward issues requiring escalation resolution to the Executive Committee.

**Program Delivery Committee (PDC)** – provides governance and oversight of the Authority’s programmatic execution and performance. The Program Delivery Committee is accountable for all aspects of program development and delivery in accordance with the Program Baseline, including scope, schedule, budget and risk management. This committee surveils the program threats and opportunities to the Program Baseline, assesses trends and risk impacts to the Program Baseline, and provides recommendations to the program delivery pillar heads. The Program Delivery Committee advises the Executive Committee regarding program execution and performance.

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## G. Authority Certifications

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*Streets and Highways Code section 2704.08, subdivision (c)(2)(G) through subdivision (c)(2)(K) requires presentation of various certifications of the Authority regarding the corridor or usable segment thereof, as noted below:*

- (G) Construction of the corridor or usable segment thereof can be completed as proposed in the plan.*
- (H) The corridor or usable segment thereof would be suitable and ready for high-speed train operation.*
- (I) One or more passenger service providers can begin using the tracks or stations for passenger train service.*
- (J) The planned passenger service by the authority in the corridor or usable segment thereof will not require a local, state, or federal operating subsidy.*
- (K) The authority has completed all necessary project level environmental clearances necessary to proceed to construction.*

Based on the Authority's various estimates, plans and other information, the Authority certifies the following:

- **Construction of the Usable Segments, can be completed as proposed by the Authority. (subparagraph (G))**
  - *The Usable Segments can be completed as proposed by the Authority and described in detail in this document. **The Authority has demonstrated satisfaction of this provision in Section A and Section C of this Funding Plan.***
- **Upon completion, the Usable Segment would be suitable and ready for high-speed train operation. (subparagraph (H))**

*The track and related structures in the Usable Segments are being designed and built to high-speed passenger rail standards, thus satisfying this standard under the statute. **The Authority has demonstrated satisfaction of this provision in Section E of this Funding Plan.***

- **Upon completion of each Usable Segment, one or more passenger service providers can begin using the tracks or stations for passenger train service. (subparagraph (I))**
  - *The Usable Segments are being developed in a manner that will enable other systems to operate on the new high-speed tracks, which can be done without impacts on design or the integrity of the new infrastructure. **The Authority has demonstrated satisfaction of this provision in Section E of this Funding Plan.***
  
- **The planned passenger service by the Authority for the Usable Segment will not require a local, state, or federal operating subsidy. (subparagraph (J))**
  - *The Authority does not plan to run a high-speed passenger service on the Usable Segments prior to additional investments, so no operating subsidy will be required. **The Authority has demonstrated satisfaction of this provision in Section E of this Funding Plan.***
  
- **In connection with the Central Valley Segment, the Authority has completed all necessary project level environmental clearances necessary to proceed to construction.**
  - *Furthermore, the Authority has commenced construction under the authority of previous Funding Plans and state appropriations. The environmental clearances in connection with the Central Valley Segment include:*
    - *the Record of Decision/Notice of Decision (ROD/NOD) for the Merced to Fresno portion, which was received on September 18, 2012 (Completed)*
    - *the Record of Decision/Notice of Decision (ROD/NOD) for the Fresno to Bakersfield portion, which was received on June 27, 2014 (Completed)*

**Sources:** All Project Section Environmental Documents (Tier 2) may be found on the Authority's website at: [https://hsr.ca.gov/programs/environmental/eis\\_eir\\_project\\_sections.aspx](https://hsr.ca.gov/programs/environmental/eis_eir_project_sections.aspx)

## Appendix 1 - Sources and Reference Documents

Document	URL
CP 1	<a href="http://www.hsr.ca.gov/Programs/Construction/about%20construction%20package%201.html">http://www.hsr.ca.gov/Programs/Construction/about construction package 1.html</a>
CP 2-3	<a href="http://www.hsr.ca.gov/Programs/Construction/about%20construction%20package%202%203.html">http://www.hsr.ca.gov/Programs/Construction/about construction package 2 3.html</a>
CP 4	<a href="http://www.hsr.ca.gov/Programs/Construction/about%20construction%20package%204.html">http://www.hsr.ca.gov/Programs/Construction/about construction package 4.html</a>
Design Build Construction Packages	<a href="http://www.hsr.ca.gov/Programs/Construction/design%20build%20construction%20contracts.html">http://www.hsr.ca.gov/Programs/Construction/design build construction contracts.html</a>
Environmental Documents	<a href="https://www.hsr.ca.gov/programs/environmental/nepa.aspx">https://www.hsr.ca.gov/programs/environmental/nepa.aspx</a>
NEPA Assignment	<a href="https://www.hsr.ca.gov/docs/programs/environmental/NEPA%20MOU%20Signed%20Thank%20you%20Letter%20BK%20to%20Batory%2020190718.pdf">https://www.hsr.ca.gov/docs/programs/environmental/NEPA MOU Signed Thank you Letter BK to Batory 20190718.pdf</a>
Funding Agreements (General)	<a href="http://www.hsr.ca.gov/About/Funding_Finance/funding_agreements.html">http://www.hsr.ca.gov/About/Funding_Finance/funding_agreements.html</a>
ARRA Grant Agreement	<a href="http://www.hsr.ca.gov/docs/about/funding_finance/funding_agreements/HSRFRA_CooperativeGrantAgreement_Amendment6_051816_Redacted.pdf">http://www.hsr.ca.gov/docs/about/funding_finance/funding_agreements/HSRFRA CooperativeGrantAgreement Amendment6 051816 Redacted .pdf</a>
FY10 Grant Agreement	<a href="http://www.hsr.ca.gov/docs/about/funding_finance/funding_agreements/Executed_FY10_Amendment_1.pdf">http://www.hsr.ca.gov/docs/about/funding_finance/funding_agreements/Executed FY10 Amendment 1.pdf</a>
Track and Systems	<a href="https://www.hsr.ca.gov/business/contractors/track_and_systems.aspx">https://www.hsr.ca.gov/business/contractors/track and systems.aspx</a>





## CALIFORNIA HIGH-SPEED RAIL RESOLUTION #HSRA 21-01

### Approval of the 2021 Proposition 1A Funding Plan

**Authorization to finalize and submit the Funding Plan to the Legislature and the Governor as Required by Streets & Highways Code section 2704.08(c).**

**Whereas**, the California High-Speed Rail Authority (Authority) is responsible for the development and implementation of intercity high-speed rail service pursuant to California Public Utilities Code sections 185030 et seq.;

**Whereas**, the Safe, Reliable High-Speed Passenger Train Bond Act for the 21st Century, chapter 20 (commencing with section 2704) of Division 3 of the S&H Code (the “Bond Act”) was approved by the voters of the State in November 2008;

**Whereas**, the Bond Act authorized bonds for purposes of developing a high-speed train system (as defined in the Bond Act);

**Whereas**, the Bond Act added section 2704.08, subdivision (f), to the Streets and Highways Code, which requires the Authority consider certain criteria in designating for construction corridors or usable segments (each as defined in the Bond Act) of the high-speed train system;

**Whereas**, the Authority was presented with information and reports bearing on each required criterion and such other criteria, if any, the Authority has deemed appropriate to consider;

**Whereas**, the Authority has considered such information and reports and evaluated such criteria in accordance with Streets and Highways Code section 2704.08, subdivision (f);

**Whereas**, the Central Valley Segment satisfies the criteria required for designating corridors or usable segments for construction as specified in S&H Code section 2704.08(f) and through Resolution #HSRA 16-28 the Authority Board has so designated the Central Valley Segment;

**Whereas**, the Central Valley Segment qualifies as a usable segment as defined by S&H Code section 2704.01(g);

**Whereas**, California Streets & Highways (S&H) Code section 2704.08(c) requires a detailed funding plan (Funding Plan) for a corridor or usable segment thereof to be submitted to the Legislature and the Governor prior to appropriation of Proposition 1A bond proceeds;

**Whereas,** the construction ground-breaking ceremony for Central Valley Segment took place in January 2015;

**Whereas,** the advancement of construction has resulted in over 5,000 construction workers dispatched as of December 2020, and 55 structures complete or under construction as of November 2020, and 79 guideway miles complete or under construction as of November 2020;

**Whereas,** the Authority fully expended federal American Recovery and Reinvestment Act funds directed to the Central Valley Segment, has fully expended or accrued the prior Proposition 1A appropriation directed to the Central Valley, and is expected to fully expend cash balances from the Cap and Trade Program funds during the 2021-22 fiscal year;

**Whereas,** Proposition 1A bond funds requested by this Funding Plan are needed in 2021-22 to fund ongoing construction in the Central Valley and avoid the layoff of construction labor and the closure of construction sites;

**Whereas,** the Authority prepared a Funding Plan for the Central Valley Segment pursuant to S&H Code section 2704.08(c) and,

**Whereas,** S&H Code section 2704.08 (c) requires the Authority to approve the Funding Plan and then to submit the approved Funding Plan to the Director of Finance, the peer review group, and the policy committees with jurisdiction over transportation matters and the fiscal committees in both houses of the Legislature.

**Therefore, it is resolved:**

Effective February 9, 2021:

The Authority approves the 2021 Proposition 1A Funding Plan pursuant to S&H Code section 2708 (c).

The Authority authorizes the CEO to finalize the 2021 Proposition 1A Funding Plan and submit it to the recipients set forth in S&H Code section 2708(c).

Vote: 9

Yes: Richards; Schenk; Camacho; Miller; Perea; Ghielmetti; Escutia; Butros; Williams

No: 0

Absent: N/A

Date: February 9, 2021

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