CALIFORNIA High-Speed Rail Authority

# 2025 PROJECT UPDATE REPORT

CALIFORNIA High-Speed Rail Authority

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**Photo**: Dutch John Cut Bridge in Fresno

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# Table of Contents


Letter from the CEO ..... V

Chapter 1: CEO's Efforts to Advance the Nation's First High-Speed Rail ..... 1

Chapter 2: Accomplishments to Date ..... 9

Chapter 3: Funding and Cost ..... 19

Chapter 4: Management of Risks and Key Issues ..... 33

Chapter 5: Project Review and Optimization ..... 41

Appendices ..... 44


**Mission:** The California High-Speed Rail Authority (Authority) is responsible for planning, designing, building, and operating the first high-speed rail system in the nation. California high-speed rail will connect the megaregions of the state, contribute to economic development and a cleaner environment, create jobs, and preserve agricultural and protected lands.

**Photo**: Construction at Mountain View Avenue in Fresno County

# LETTER FROM THE CEO

**"I have personally experienced how high-speed rail systems transform countries, regions, cities and communities. California High-Speed Rail will also be an economic and environmental transformation catalyst — redefining transportation in the United States."**

Ian Choudri
Chief Executive Officer (CEO)
California High-Speed Rail Authority

## As CEO of the California High-Speed Rail Authority, my focus is clear:

Deliver the nation's first true high-speed rail system. This is not just a transportation project; it is a transformative investment that will reshape California's economy, infrastructure, and environmental leadership.

I stepped into this role knowing the challenges were significant — delays, cost pressures, and skepticism have persisted for years. With my background in engineering, rail development, operations, and finance, I have spent the last seven months analyzing every aspect of this project — what has been accomplished, where we are now, and how we move forward. As a result, I have initiated a comprehensive effort to update the Authority's design criteria, scope, cost, procurement strategy, ridership, and schedule. These updates will provide clarity on scope, cost, and schedule, which I will report back to the Legislature later this year. I have also reset expectations with the Authority, contractors, and stakeholders to ensure our focus is singular: delivering this system efficiently and effectively.

## Engaging Industry to Accelerate Delivery

A key priority has been seeking global expertise to refine our approach. In late January 2025, the Authority hosted a two-day Industry Forum with more than 400 rail, construction, design, and finance professionals to discuss how to build this system smarter and faster.

**Photo**: CEO Ian Choudri (center) with Chair Tom Richards (right) at the groundbreaking of the McKinley Avenue and Golden State Boulevard Grade Separation Project

The feedback gathered is already shaping our procurement, design, and construction strategies.

The project has made significant foundational progress:

- Environmental clearance is complete for the full San Francisco-to-Los Angeles route, enabling preliminary engineering in the south.
- One of three major civil construction packages in the Central Valley is substantially complete, with new grade separations already improving safety and reducing congestion.
- Railhead construction has begun in Kern County, marking the transition to track laying and system installation.

## Building California's First High-Speed Rail Network

- These efforts have already created more than 14,700 jobs and driven $22 billion in economic impact, with 99 percent of 2023-24 spending staying in California. Two-thirds of those dollars have gone to disadvantaged communities, and more than 860 small businesses have contributed to the project.
- But progress alone is not enough — we must fundamentally shift how we deliver this system. That means:

- Maximizing efficiency: leveraging existing investments instead of reworking designs.
- Operating like a business: streamlining decision-making, eliminating bureaucratic silos, and enforcing accountability.
- Preventing costly delays: ensuring complex right-of-way acquisitions and utility relocations are completed first before construction begins.

To institutionalize this mindset, I have overhauled the Authority's structure, creating a focused project delivery team with clear roles, defined responsibilities, and a culture of results-driven execution.

## Strategic Actions to Accelerate Construction

We are implementing key strategies to fast-track project delivery while controlling costs:

- Refining procurement — including direct purchasing of commoditized materials to accelerate logistics and reduce cost.
- Executing master agreements with local governments and third parties to streamline coordination.
- Updating the Authority's Design Criteria Manual to standardize approaches and cut unnecessary complexity.

These steps will deliver segments to the public sooner while keeping long-term system expansion on track.

## Connecting California: The Road Ahead

Our goal remains: seamless high-speed service from the Bay Area and to the greater Los Angeles area.

- In the north, we will connect to the newly electrified Caltrain system via Gilroy, creating immediate regional benefits.
- In the south, we will link into the High Desert Corridor at Palmdale, connecting to Brightline West's high-speed rail to Las Vegas, forming a Southwest High-Speed Rail Network.

Completing this vision within 20 years will be a landmark engineering and construction achievement for the United States.

## The Funding Imperative

Lack of stable, long-term funding has been a persistent challenge. The stop and go approach has cost us time and money. Achieving full system connectivity requires a new financial strategy that includes:

- Long-term sustained state investment.
- Innovative financing to drive construction momentum.
- Public-private partnerships to leverage state funds.

The state recognizes this urgency, and we are working closely with the Newsom Administration, California Legislature, and federal partners to secure a sustainable funding path forward. The January industry forum also opened the door for private sector engagement to explore new financing opportunities.

Since 2009, more than $6.8 billion in federal funding has been committed to this project, and while political dynamics shift, the long-term trajectory remains strong. Passenger rail is now recognized as a core national priority, and we will pursue every available federal dollar to move this project forward.

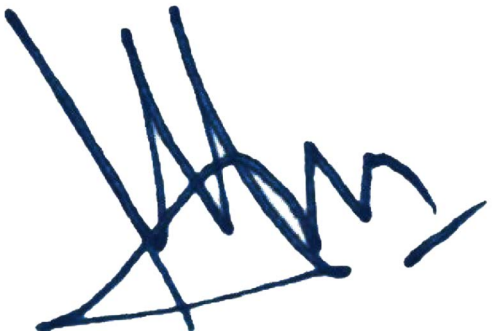
## Delivering on the Vision

I have personally experienced how high-speed rail systems transform countries, regions, cities and communities, California High-Speed Rail will also be an economic and environmental transformation catalyst – redefining transportation in the United States.

I am committed to leading an Authority that delivers on the promise of high-speed rail — an efficient, sustainable, and equitable system that embodies California's legacy of innovation, ambition, and leadership.

The timing of the Project Update Report provides me with the opportunity to lay the foundation of my vision for California's high-speed rail system. A lot more work is needed, and I intend to present the results of these analyses including updated cost and schedule estimates later this year.

Now, we build.



Ian Choudri
Chief Executive Officer (CEO)
California High-Speed Rail Authority

**Photo**: Construction of the Schmidt Creek Bridge in Madera County

**Photo**: Construction worker at Schmidt Creek Bridge in Madera County

**Photo**: Avenue 17 grade separation in the Central Valley

CHAPTER 1

# CEO'S EFFORTS TO ADVANCE THE NATION'S FIRST HIGH-SPEED RAIL

## Introduction

This is the California High-Speed Rail Authority's (Authority) 2025 Project Update Report. It fulfills the Authority's requirement to update the California Legislature on the development and implementation of intercity high-speed rail service. The Authority is undergoing a comprehensive effort to update its design criteria, scope, cost, procurement strategy, ridership and schedule. These updates will be submitted to the Legislature later this year. Additional details outlining this review are covered in Chapter 3.

## One Vision, One Mission, One Goal

With a new leader in place, a bold 100-day plan was established with a goal of evaluating the entire program, creating a "one vision, one mission, one goal" mindset and culture. The plan started by assessing what the Authority needed less of and what to focus more on. The first step was overhauling the organizational structure to remove overlapping functions, increase collaboration, improve decision making, and remove "red tape."

Addressing key areas of the organization was a top priority for the new CEO. For instance, as part of the review of consultant roles and responsibilities, an extensive effort was undertaken to remove overlapping roles and better leverage expertise from the industry experts on hand. Further, procurement and contract management functions were assessed to reduce time frames (ultimately reducing cost escalation), centralize processes for consistency and efficiency, and demand more accountability from Authority staff and consultant partners for more effective project delivery. Finally, addressing design criteria for the system as well as working toward discontinuing "stop and go" funding were two key elements of moving toward the new vision.

Overall, this is an exciting time for the Authority as there are many new efforts underway to get to building faster and laying tracks sooner — which ultimately brings the major population centers closer together sooner.

# Critical Juncture for California High-Speed Rail

Since its inception, the high-speed rail project has made tremendous progress while facing a complex web of challenges ranging from sequencing issues to incomplete funding and external opposition. In September 2024, CEO Ian Choudri assumed leadership with a commitment to thoroughly evaluate the project's status, achievements, planned activities, and expenditures. This in-depth review has provided a crucial understanding of the project's current position and the necessary steps for moving forward. Recognizing the project is at a critical juncture, the Authority acknowledges the challenging path ahead and the need to be laser-focused on the efficient use of limited resources.

## Build Faster and Lay Tracks Sooner

The Authority is exploring methods for enhancing project delivery, performance, and future commercial value, including input received from industry experts at our Industry Forum event in January. Highlights include:

- **Proven and tested system configurations:** identifying innovative, proven track system configurations that optimize construction and long-term maintenance costs while maintaining the highest safety and performance standards.
- The Authority is developing an approach to meet Buy America requirements while sourcing cost-effective rail components and equipment.
- **Early commercialization of assets:** maximizing the overall enterprise value of the high-speed rail system. The Authority will develop an approach driven to maximize the earliest possible commercialization of all our assets, including rail capacity (paths), trainsets, stations, operating systems, fiber network, surplus real estate, and advertising spaces. We aim to think like a business to market these assets for the benefit of the project and to attract private-sector investment at the earliest opportunity. Examples include transit-oriented development, express cargo and parcels movement, and the leasing of assets to the private sector.
- **Strategies for phased implementation:** allowing us to deliver portions of the system sooner and bring them online in phases as they are completed while ensuring seamless integration and connections with existing and future transportation networks.
- **Partnering with industry experts:** addressing challenges and opportunities in geotechnical investigations, tunneling, bridges, structures, and utilities.
- **New technology and systems:** investigating best practices in power generation and clean energy, track and rail systems, and system integration strategies, as well as broader innovation and technology to optimize performance.

- **Streamlined procurements:** exploring the feasibility and impact of developing a library of pre-engineered components and designs. This analysis will assess the degree to which this approach can accelerate track installation, streamline the construction process, reduce costs, and ensure consistent quality.

## Connecting the Central Valley to the North and South, and Creating a Southwest High-Speed Rail Network

In the north, we will connect the California High-Speed Rail's Early Operating Service (Merced to Bakersfield) in the Central Valley to the newly electrified Caltrain system via Gilroy, creating immediate regional benefits. Work is underway with Caltrain, the city of Gilroy, Santa Clara Valley Transportation Authority, and the High-Speed Rail Authority to explore transportation connections, transportation linkages, and potential land use strategies in the station area.

In the south, we will connect into the proposed Palmdale Transportation Center in Los Angeles County. The station will serve as a hub for California High-Speed Rail and the High Desert Corridor and further connect our system to the Brightline West high-speed rail line from Southern California to Las Vegas, Nevada, and to the Metrolink network. Already, the clear vision of the new Southwest High Speed Rail Network is creating industry excitement and momentum. This network will achieve:

- Substantial ridership by connecting the Bay Area and greater Los Angeles, and ultimately Las Vegas, Nevada, and the rest of Southern California.
- Significant economic impact and reduction of carbon emissions.
- Construction efficiencies and operational synergies.

These connectivity enhancements in the north and the south will significantly impact ridership across the entire state and must be carefully estimated. Analysis and future forecasts are underway and will be reported later this year. See **Exhibit 1.0** for how these networks will integrate into the California High-Speed Rail system.

## Objectives Going Forward

The Authority's mission is to deliver an electrified high-speed rail system that will carry passengers between San Francisco and the Los Angeles area in under three hours. Although completion of the Phase 1 system remains our ultimate objective, the Authority's immediate goal is to link the Bay Area at Gilroy and greater Los Angeles at Palmdale and deliver useful project segments in the interim.

The Authority is actively pursuing innovative solutions in multiple key areas with an immediate focus on the following three items. The Authority is committed to fostering strong partnerships with state and federal policymakers to secure the stable funding needed for the project's success. By actively engaging with legislators and key stakeholders, the Authority is advancing conversations around long-term investment strategies that will support project milestones, enhance public confidence, and maximize economic and environmental benefits.

**Exhibit 1.0:** Southwest High-Speed Rail Network Map

## Sustainable Funding

California high-speed rail has made significant progress in recent years despite persistent funding challenges. However, the existing "stop and go" funding approach is not sustainable, driving up both costs and timelines. Connecting Northern and Southern California via high-speed rail requires stable, long-term funding.

The Authority will continue engaging with the California Legislature, federal government, and private industry to develop a comprehensive and sustainable funding strategy. In Governor Gavin Newsom's proposed FY2025-26 state budget, he addressed the state's carbon target of net-zero emissions by 2045 and recognized the need for an early extension of the Cap-and-Trade program from its current 2030 sunset date. The Authority welcomes the opportunity of an early implementation of the extension with provisions that could facilitate financing for the project and remove potential market uncertainty due to the quickly approaching sunset date. Building on any additional Cap-and-Trade funding, our immediate aim is to secure additional state and federal funding sufficient to construct the entire Gilroy to Palmdale high-speed rail section, connecting the state's major population centers and taking the project one step further toward completion of Phase 1.

## Efficient Delivery

The Authority has adopted a focused, resource-efficient mindset to project delivery, prioritizing the full application of existing expertise and investments. The new approach will drive more efficient use of limited resources and funds through pre-existing expertise and investments that already have been made. For example:

- The Authority is reviewing design criteria to drive the most cost- and time-effective construction. For every design decision in the years ahead, the Authority will focus on standardization by removing over-engineered assets and ensuring the proven standards are applied to our system.
- New leadership, governance, and expertise will drive accountability across the organization, which includes the Authority, its consultants, contractors, and third-party stakeholders.
- The Authority is actively working to create efficiencies and reduce timeframes in areas like procurement to mitigate cost escalation associated with schedule delays.
- The Authority is developing standardized model contracts with essential provisions tailored to various procurement types and will explore innovative contract frameworks to enhance procurement efficiency and effectiveness.

## Organizational Performance

The Authority is overhauling the organization and identifying new talent — individuals ready to make key decisions that will drive project delivery forward. To streamline operations, improve efficiency, and better serve our development partners, the Authority is transitioning to an organizational structure focused on project delivery, with five distinct and non-overlapping offices.

- **Planning and engineering:** integrates planning and engineering functions under one office.

- **Statewide regional early works:** anticipates and tackles challenges related to ROW acquisition and utilities relocation involving stakeholders and critical third parties to clear the path to construction.
- **Construction:** empowers field delivery teams to focus on project construction.
- **Infrastructure maintenance:** ensures the safety, functionality, and longevity of essential systems.
- **Rail operations:** focuses on the operational requirements for running a railroad as track laying and train operations approach.

This new structure will enable the Authority to be more accountable, responsive, agile, and focused on delivering results, while also providing partners with a more transparent and predictable process for engagement. More than just a reorganization, this is a fundamental shift that moves the Authority toward a more results-driven culture — to build a system that is efficient, sustainable, and equitable.

# Public Safety Enhancements

The California High-Speed Rail system has widespread safety benefits for local communities and resident families along the corridor. The project addresses existing safety hazards on the Amtrak, BNSF Railway, and Union Pacific Railroad networks, principally by eliminating intersections known as at-grade crossings, where roads cross railroad tracks. In the initial Merced to Bakersfield Early Operating Segment, major at-grade crossings will be converted so rail tracks will be fully separated from vehicle traffic to eliminate safety hazards.

The benefits of grade separations not only include improved safety from reduced train-car collisions (estimated to avoid more than 26 fatalities by 2040), but also significant travel time savings for residents. These important safety upgrades will greatly reduce and even eliminate wait times at upgraded crossings, improving travel times as well as the travel time reliability for auto travelers. These necessary upgrades also improve critical response times for emergency services and allow a much more efficient commercial freight truck network operation.

In all, on the high-speed route from San Francisco to the Los Angeles area, the Authority plans to rebuild 91 intersections to separate rail traffic from vehicle traffic. For 68 intersections that will not be grade-separated, "quad gates" will be installed. Quad gates are designed to block all lanes of traffic on both sides of the track, and to provide a closure delay on the exit side to allow vehicles that may get stuck between the gates to get off the tracks. These have been shown to reduce collisions at at-grade crossings by 98 percent.

## FEWER HIGHWAY ACCIDENTS, SAFER AIR QUALITY

Besides these specific sites where we are building new structures to realign traffic to improve safety, the California high-speed rail project will provide safety benefits in other ways, as described in the Authority's ***2023 Cost-Benefit Analysis***. Due to reduced vehicle miles traveled as more people opt instead to ride high-speed rail, the Authority estimates that 1,346 fatal crashes, 23,985 injury crashes, and 41,001 property damage crashes will be avoided, resulting in $56 billion in total benefits.

In addition, reduced vehicle miles traveled will result in a reduction of emissions and idling from vehicle travel. This, combined with lower emissions from a reduction in air travel as people opt instead

to ride high-speed rail, will result in $8.0 billion in total benefits, including health benefits.

These safety improvements will also be associated with improved livability in local communities along the corridor. Besides safer road travel and reduced emissions associated with reduced vehicle idling, the upgrades will reduce noise from less train horn use along with the corridor. More generally, by easing travel across rail corridors, neighborhood and community cohesion will be increased, benefiting families in the Central Valley and throughout the system's service areas. We can expect these improvements to be in turn reflected in more attractive living conditions and higher property values, improving financial conditions for resident homeowners in these communities.

These safety projects support other policy objectives, notably by providing greater access to jobs situated in qualified Opportunity Zones and their local communities and families. Construction has already begun improving safety and mobility to and within opportunity zones in the Central Valley, Los Angeles, and the Bay Area. The removal of hazardous traffic crossings directly supports accessibility and improves matching between firms and employees within these zones.

It is important to note that the crossing upgrades will deliver safety and environmental benefits even prior to the arrival of high-speed rail. As they are implemented, the safety and efficiency benefits will be felt across the existing nationwide network along the long-distance Amtrak routes departing from Los Angeles or San Francisco for cross-country travel.

**Photo**: Construction workers at the Whitley Avenue Underpass in Kings County


**Photo**: Celebrating the groundbreaking of the railhead.

CHAPTER 2

# ACCOMPLISHMENTS TO DATE

## Accomplishments and Recent Milestones

Since the publication of the 2024 Business Plan, the Authority has achieved several major accomplishments and milestones. This section highlights many of those accomplishments.

## Economic Impact

The Authority supports thousands of jobs across all functions, from planning and environmental clearance to engineering and construction. Over half of the project's investment occurred in designated disadvantaged communities, and the Authority further supports equity through job training programs. Since construction began, more than 14,700 jobs have been created, with 70 percent coming from disadvantaged communities; additionally, 232 students have completed the Authority's Central Valley Training Center pre-apprenticeship program in the city of Selma.

See **Exhibit 2.0** for a breakdown of jobs created per construction package as of December 2024.

The direct spending for the project has resulted in significant indirect spending on goods and services provided by supporting industries throughout California. From July 2006 through June 2024, the Authority invested approximately $13.0 billion in planning and constructing the nation's first high-speed rail system. Overall, this investment supported 109,000 job-years of employment and generated $21.8 billion in total economic activity. The investment also created $8.3 billion in labor income, which is all forms of employment income associated with the activity. For more information, see the ***High-Speed Rail: Investing in California's Economy*** webpage.

**Exhibit 2.0:** Jobs Created Through December 2024

# 14,744 Construction Jobs Created


We are also dedicated to ensuring small, disabled, disadvantaged, and diverse businesses are part of the effort to build the statewide high-speed rail project. This commitment will serve to inspire business growth, job creation, and workforce development opportunities while building the vitality of California's high-speed rail project. Currently 893 small businesses are working on the high-speed rail project statewide. Of those, 309 are certified disadvantaged businesses.

## Central Valley Railhead

In early 2025, the Authority and Governor Newsom celebrated the start of civil construction for the railhead in Kern County. The railhead provides temporary freight tracks to receive rail track, ties, poles, and other materials the construction teams will need to lay tracks along the California high-speed rail corridor. This step follows the substantial completion of Construction Package (CP) 4. Design of the railhead was finalized in July 2024. BNSF selected Ragnar Benson Construction, LLC as the civil contractor, and preconstruction biological surveys were completed in October 2024. The Authority anticipates the railhead to be in operation by the end of 2025.

## Caltrain Electrification

A successful partnership combining $714 million from the Authority with $1.7 billion from local, federal, and other state sources has delivered 51 miles of electrified rail service for Caltrain. In September 2024, Caltrain officially launched its fully electrified service, marking a major step toward bringing high-speed rail to Northern California. Since then, Caltrain has been able to increase service, and ridership has increased by nearly 40 percent. High-speed trains will use this completed section as part of the Phase 1 system when it begins its service on the San Francisco Peninsula.

# Public Safety Enhancements

In the Central Valley, where trains will operate at speeds exceeding 200 miles per hour, the high-speed rail system will be fully separated from vehicle traffic to eliminate safety hazards, reduce traffic congestion, improve emergency response times, and create new mobility options. As part of this effort, many existing vehicle crossings with freight service will also be eliminated. To date, 18 such traffic separations, known as grade separations, have been completed in the first 119 miles of construction, and 10 others are underway.

In December 2024, the Authority broke ground on the McKinley Avenue and Golden State Boulevard grade separation in Fresno. The overpass, which will serve as a four-lane roadway, will span 402 feet and be more than 78 feet wide. When complete, it will improve safety for drivers, bicyclists, and residents near the high-speed rail tracks and existing railroad tracks.

In Northern California, the San Mateo grade separation improved safety and connected two neighborhoods on opposite sides of the tracks creating new mobility options for residents in the area. Authority funding of $84 million was leveraged with $122 million in local, federal, and other state funds for this $206 million project. This project is completed.

In Southern California, the Authority invested in the Rosecrans/Marquardt grade separation in the city of Santa Fe Springs. The $156 million project was funded through a combination of sources, including $77 million from the Authority. The Rosecrans Avenue Bridge opened in January 2024, and the project is substantially complete. An estimated 45,000 vehicles and 135 trains travel through this location daily. From 2013 to 2019, 31 incidents involving vehicles and trains were reported, resulting in six fatalities and seven injuries; as a result, the California Public Utilities Commission had declared this intersection the most hazardous rail-motor intersection in the state. This grade separation project eliminates the hazardous conditions.

# Environmental Achievements

In 2024 the Authority finalized agreements with stakeholders and communities on several critical environmental issues, as described in the following sections.

## PALMDALE TO BURBANK RECORD OF DECISION (ROD)

The Authority Board of Directors approved the final environmental document for the 38-mile segment from Palmdale to Burbank in June 2024. This is a major milestone as it marks the full environmental clearance from downtown San Francisco to Los Angeles. The Palmdale to Burbank project section will connect two key population centers in Los Angeles County by linking future multimodal transportation hubs in Palmdale and Burbank. This key achievement allows us to move forward with preliminary engineering and construction in this section as soon as funding is made available.

The Authority anticipates full clearance of Phase 1 once the last remaining project segment, the 31-mile segment between Los Angeles and Anaheim, is completed. A timeline for this final segment will be included in our schedule updates later this year.

### CITY OF BRISBANE SETTLEMENT AGREEMENT

In August 2024, the Authority and the City of Brisbane finalized a collaborative framework and outlined a responsible path forward to develop a high-speed rail light maintenance facility. The two public agencies will work on studies for safety and environmental improvements to the former Baylands landfill and railyard to accommodate both the city's vision for a mixed-use development and the Authority's light maintenance facility on the site.

### GRASSLAND SETTLEMENT AGREEMENT

Also in August 2024, in partnership with the Grassland Water District, Grassland Resource Conservation District, and Grassland Fund, the Authority committed to ongoing coordination in addition to project elements intended to lessen impacts on wildlife and increase environmental protection in its advanced design and construction in the Grassland Ecological Area. Following nearly two decades of collaboration, the settlement reflects an important milestone in the project's conscientious environmental mitigation efforts.

## Track and Overhead Contact System Design Contract

The Track and Overhead Contact System (OCS) Design Services contract award marks a critical first step of the multi-phase procurement strategy for track and systems and trainset procurements. The contract was awarded to the SYSTRA|TYPSA joint venture team in June 2024.

The scope includes design services for the track and OCS for the 171-mile Merced-to-Bakersfield alignment. This includes designing the entire track and OCS network and along-track cable containment, across-track ducts, access walkways, fencing, and drainage systems. SYSTRA|TYPSA will collaborate extensively with the future track and OCS construction contractor during the design and construction phases, as well as with other interfacing contractors (trainsets, traction power, signaling and communications contractors) to ensure the system is fully integrated.

## Other Shared Corridor Projects

As we work to deliver this project, we continue to emphasize the importance of shared corridors and connecting to other important rail systems. In the north, the newly electrified Caltrain system via a new hub in Gilroy in southern Santa Clara County will allow connectivity benefits. In the south, service to the new Palmdale Transportation Center in Los Angeles County will enable a future connection via the High Desert Corridor high-speed rail line to the Brightline West high-speed rail line from Southern California to Las Vegas. This will facilitate an integrated Southwest High-Speed Rail Network.

Since the 2024 Business Plan, the following shared corridor projects have reached significant milestones.

### THE PORTAL

The Downtown Rail Extension project (The Portal) will extend the Caltrain system into downtown San Francisco at the multimodal Salesforce Transit Center. The extension ultimately will connect to the High-Speed Rail's northern terminus and link to 11 transit systems in the Bay Area.

In May 2024 the Portal received a new federal funding commitment of $3.4 billion, in addition to previously committed $500 million from the federal government. This new commitment, together with existing local funds committed and budgeted for the project, achieves two-thirds of the total cost and marks a major milestone in a decades-long effort to bring San Francisco a sustainable electrified rail service. Also in May 2024, the Portal was accepted into the Engineering Phase of the Federal Transit Administration's (FTA's) Capital Investment Grants (CIG) program, the second step of the CIG's total three-step process to secure future federal transit funding.

## GILROY STATION

Station area vision work is underway with the City of Gilroy to prepare the city for land use planning in support of station delivery. A collaborative effort with the city, VTA, and Authority staff has included workshops to explain the station area and potential land use strategies; transportation connections and active transportation linkages in and around the station; and engagement with local technical leaders and the broader community. This vision work is a foundational step in advancing station area planning to support the update of the Downtown Specific Plan.

VTA will be conducting a Transportation Access Plan that is being coordinated with the vision plan. To limit unnecessary duplication, the two efforts will coordinate on items including stakeholder outreach and consultant coordination (such as site area tour). This work included a Spanish-language meeting with the neighboring community to bring key stakeholders into the planning process.

The vision work includes draft recommendations on goals and objectives, land use, housing and transit-oriented development, urban design, access and connectivity, economic development, and next steps. The final product, a station area vision plan, will serve as a communication tool for residents and stakeholders and as a guide for subsequent downtown and station area plans and designs.

## MADERA STATION

The San Joaquin Joint Powers Authority (SJJPA) and the California Department of Transportation (Caltrans) were awarded more than $54 million in grant funding from the U.S. Department of Transportation's National Infrastructure Project Assistance (Mega) Program to construct a high-speed rail station for the Merced to Bakersfield segment. This project includes the design and construction of the Madera station by way of improving the relocated Madera Amtrak station.

## PALMDALE STATION

On January 10, 2025, the City of Palmdale was awarded a $1 million grant from the U.S. Department of Transportation's Reconnecting Communities Pilot program to advance planning for the Palmdale high-speed rail station in collaboration with the Authority and the High Desert Corridor JPA, among others. Previously, the city had completed the Palmdale Transit Area Specific Plan, laying out how land development for the future station will foster a mixed-use station that supports sustainable, economic, and social development. Other agencies also are collaborating on the station, including LA Metro, the High Desert Corridor JPA, and Antelope Valley Transit Authority. The California High-Speed Rail Authority is providing in-kind support as part of the non-federal matching funds for the grant.

Ultimately, the interconnectivity created with getting to Palmdale station provides connections to Las Vegas (through Brightline West connections enabled by the High-Desert Corridor), to Los Angeles and Ventura County on Metrolink, and throughout the southern California region on the integrated intercity and regional rail systems.

## HIGH DESERT CORRIDOR

The Authority, the High Desert Corridor Joint Powers Authority (JPA), and Brightline West have entered into a Memorandum of Understanding (MOU) effective November 1, 2024, regarding collaboration for high-speed rail development. The purpose of the MOU is to collaborate on connecting the three independent systems with the goal of ultimately creating an integrated Southwest High-Speed Rail Network, see **Exhibit 2.1**, that will provide customers with multiple travel options to any destination served by the three systems. Since receiving initial environmental approval for the High Desert Corridor project

**Exhibit 2.1:** Southwest High-Speed Rail Network

in 2016, the JPA has begun working with the Authority as its lead agency to complete environmental work, leveraging the Authority's delegation agreement with the FRA.

# Early Operating Segment (Merced to Bakersfield) Progress

The Merced to Bakersfield segment, also known as the Early Operating Segment (EOS), will integrate with existing services like Amtrak San Joaquins and ACE commuter rail at the Merced station, effectively replacing the Amtrak San Joaquins service between Merced and Bakersfield.

Historic federal grant funding of nearly $3.1 billion was awarded to the Authority in late 2023 under the Federal-State Partnership (FSP) for Intercity Passenger Rail National Program. The cooperative agreement was executed with the Federal Railroad Administration (FRA) in September 2024. These funds, together with $768 million in state matching funds, will enable final design of the Merced and Bakersfield extensions, right-of-way acquisition, design and construction of the Fresno station, six high-speed rail trainsets, and various trainset facilities, including a light maintenance facility. It also funds civil construction to the Bakersfield interim location, including track and systems.

The following section provides a status update on both the 119-mile Central Valley Segment under construction and the Merced and Bakersfield extensions currently under advanced design.

A map of the California High-Speed Rail Phase 1 system, including the EOS and 119-mile Central Valley Segment track is available in **Appendix G**.

# 119-Mile Central Valley Segment

The original project segment in the Central Valley starts in Madera and ends at Poplar Avenue in Fresno County. This project segment, which also will serve as the Authority's test track for its high-speed rail trainsets, encompasses three construction packages: CP 1, CP 2-3, and CP 4. In 2024, CP 4 reached substantial completion, highlighting tremendous progress toward civil construction in the Central Valley.

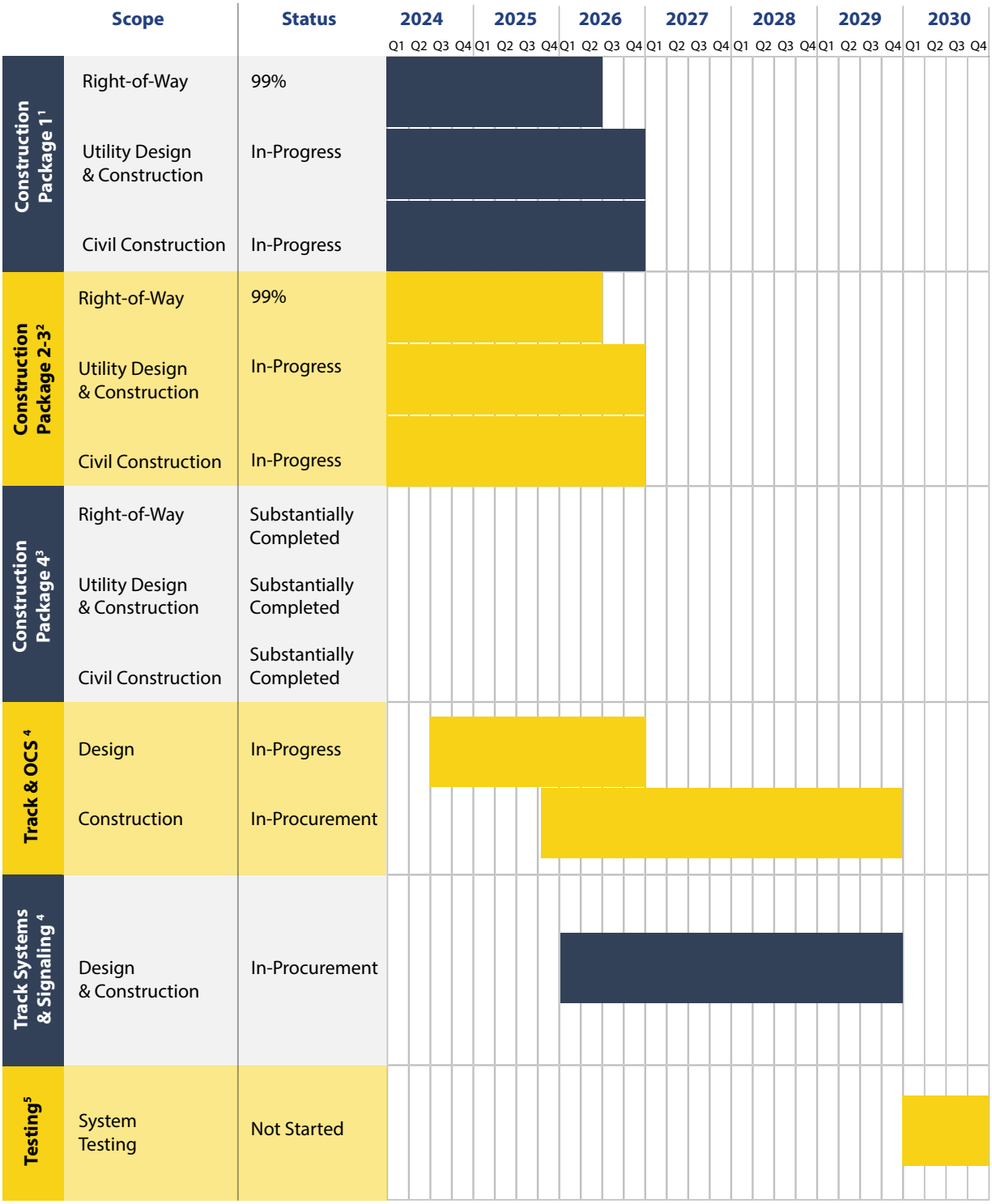
Both CP 1 and CP 2-3 are expected to be completed in 2026. Due to right-of-way (ROW) planning and management improvements, the Authority has been able to exceed ROW delivery forecasts, and as of December 2024, 99 percent of the ROW parcels within the 119-mile Central Valley Segment have been delivered to the design-builder. The Authority has also made significant advancements toward resolving commercial issues and relocating utilities, with 1,523 of 1,836 utilities relocated (83 percent) and an additional 150 (7 percent) in progress.

Construction progress through December 2024 reflects that of the total 93 structures, 53 are completed (57 percent) and another 33 are underway. Guideway miles completed through December 2024 reflect that of the total 119 miles, 60 are complete (50 percent) and another 36 are underway.

See **Exhibit 2.2** for all major scope items for the 119-mile Central Valley Segment.

The Authority is undergoing a comprehensive effort to update its design criteria, scope, cost, procurement strategy, and schedule. These updates will be submitted to the Legislature later

**Exhibit 2.2:** 119-Mile Central Valley Segment Timeline for Major Scope Items




Notes:
1. Based on latest approved revised baseline schedule
2. Based on latest conditionally approved revised baseline schedule
3. CP 4 is substantially complete
4. Dates align with latest grant agreement

this year. The Authority will continue to focus on re-sequencing work and mitigating potential schedule impacts.

## Merced and Bakersfield Extensions

As progress continues along the 119-mile Central Valley Segment, development of the Merced and Bakersfield extensions is moving forward thanks to a substantial allocation of federal funds in December 2023 from the FSP Grant. This grant facilitates the funding for final design work for the Merced and Bakersfield extensions, as well as helping fund ROW acquisitions for both extensions.

ROW acquisitions for the extensions are moving forward. We are planning on completing the mapping process by the end of 2025 and have started the acquisition process on full-take parcels.

As the Merced and Bakersfield extensions approach 60 percent design and as additional funding continues to become available, the Authority and its Board will determine appropriate construction package scope, cost, schedule, and delivery methods. No construction agreements have been developed at this time. The Bakersfield extension civil works as well as track and systems are funded from the northern limits (CP 4) to approximately the Bakersfield Airport.

## Early Operating Segment Schedule

The Authority is advancing the project at a faster pace than ever and celebrating the substantial completion of CP 4 — while simultaneously kicking off the track-laying phase of the project with the start of construction work on its southern railhead. The railhead will be the site for delivery of rail track, ties, poles, and other materials the construction teams will need to lay tracks along the California high-speed rail corridor.

The Authority is undergoing an extensive effort to improve the delivery of this project. The results of that review will provide informative assumptions that will drive changes to the schedule beyond the Central Valley 119-mile segment. The Authority will provide an updated schedule at the same time as the release of an updated capital cost and procurement sequencing plan.

Schedules dating back to the 2012 Business Plan are available in **Appendix E**.

**Photo**: Construction workers at Tule River Viaduct

CHAPTER 3

# FUNDING AND COST

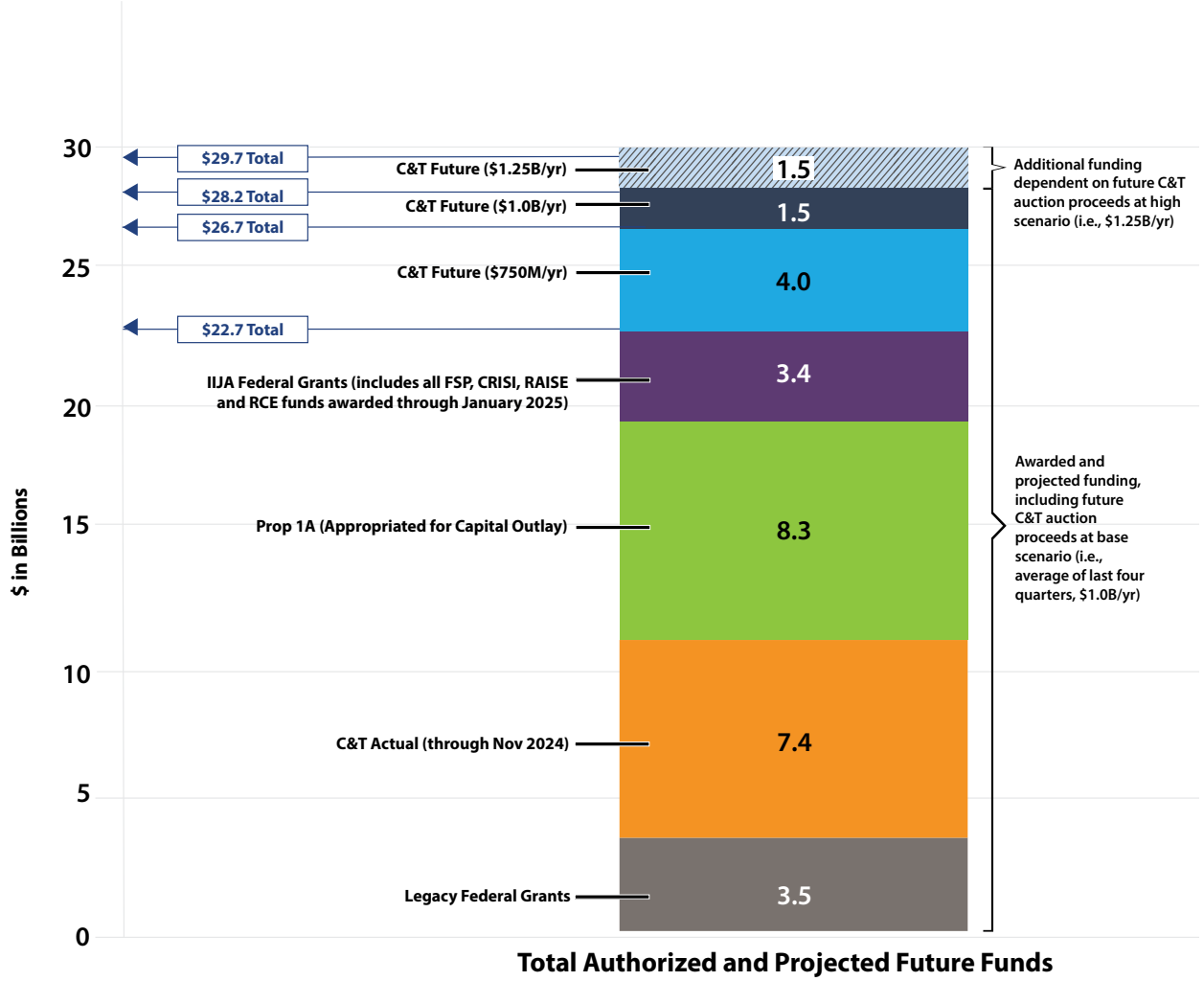
## Introduction

Despite challenges, the Authority is moving forward with the funded elements of the project and continuing comprehensive efforts to improve project performance. A supplemental report later this year will update funding requirements, schedules, ridership and cost estimates.

## Current and Projected Funding

This section provides a summary of total current and projected funding available for the project projected through 2030 as shown in **Exhibit 3.0**. The total amount of estimated revenue for the capital program is currently estimated in the range of $26.7 billion to $29.7 billion, assuming Cap-and-Trade annual revenue scenarios of $750 million and $1.25 billion per year through 2030, respectively, and $28.2 billion assuming the current annual revenue trends at $1.0 billion a year.

**Exhibit 3.0:** Authorized and Projected Future Funding ($ in Billions)




*Totals may not sum due to independent rounding
**Portion of future C&T revenues may be used to fund administrative support activities
***Prop 1A is net of funds for administrative support activities

The total projected capital outlay funds available to the project through 2030 as compared to funds expended is summarized in **Table 3.0**, assuming the midpoint of $1.0 billion a year in future Cap-and-Trade revenues. The figures also include certain awarded federal grant funds that are not yet obligated. Under these assumptions, total remaining funding through 2030 is $14.9 billion, after taking into account expenditures through December 31, 2024.

**Table 3.0:** Summary of Total Base Case Funding Available and Total Funds Expended ($ in Billions)

| Funding Source | Total Funding A | Total Expended* B | Total Remaining C = A - B |
|---|---|---|---|
| **Federal Funds** | | | |
| ARRA Grant: Construction | 2.1 | 2.1 | 0.0 |
| ARRA Grant: Planning | 0.5 | 0.5 | 0.0 |
| FY10 + Brownfields + RAISE FY21 Grants | 1.0 | 0.0 | 1.0 |
| IIJA Federal Grants (Fed-State + RAISE FY22 & FY23 + CRISI FY23 + Corridor ID) | 3.3 | 0.0 | 3.3 |
| New RCE FY23-24 | 0.1 | 0.0 | 0.1 |
| **State Funds** | | | |
| Proposition 1A Project Development | 0.6 | 0.6 | 0.0 |
| Proposition 1A Central Valley Segment Construction** | 6.6 | 5.7 | 1.0 |
| Proposition 1A Bookends | 1.1 | 0.6 | 0.5 |
| Cap-and-Trade (Received through November 2024) ** | 7.4 | 3.8 | 3.7 |
| **Subtotal** | **22.7** | **13.2** | **9.4** |
| Future Cap-and-Trade*** | 5.5 | 0.0 | 5.5 |
| **Total** | **28.2** | **13.2** | **14.9** |

**Note:** Totals may not sum due to independent rounding.
***Total Expended shown is as of December 31, 2024.
****Both Cap-and-Trade and Prop 1A balances shown are net of funds set aside for administrative support activities.
***** Future Cap-and-Trade funding assumes a midpoint of $1.0 billion per year

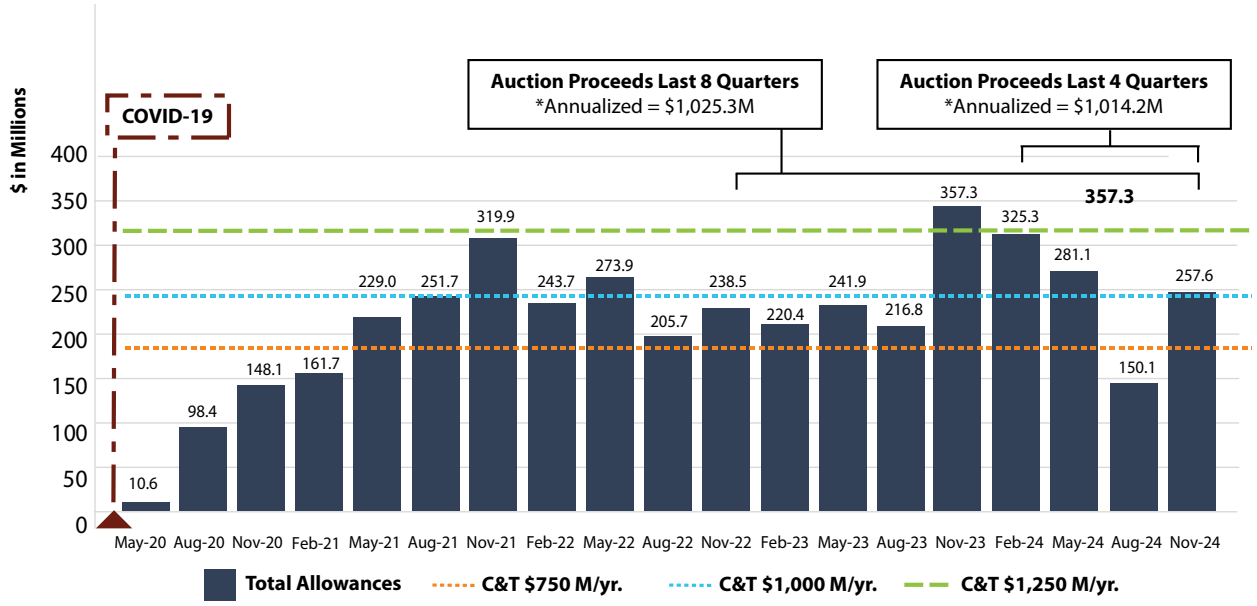
# State Funding

On June 30, 2022, the California Legislature appropriated the final $4.2 billion of Proposition 1A funds. Appropriating these bond funds toward Central Valley construction allowed the Authority to expand the labor workforce on the project, eased internal cash flow needs, and freed up Cap-and-Trade funding for other project priorities, including matching federal grant awards. Proposition 1A Central Valley construction funds are expected to be fully expended by the end of FY2025-26. The remaining Proposition 1A funds are committed to Southern California bookend projects and state operations.

The General Fund supports bond debt service on general obligation bonds, including for Proposition 1A, but does not currently provide any direct funding for the project.

Since 2014, the Authority has received a quarterly appropriation of 25 percent of specified ***Cap-and-Trade Program*** revenues. Through the November 2024 auction, the Authority has received a total of $7.545 billion in Cap-and-Trade auction funds, including one-time appropriations. See **Exhibit 3.1** for a historical account of Cap-and-Trade auction proceeds dating back to May 2020. Demand for allowances in recent years and resulting current and future prices indicate a market expectation that allowance settlement

**Exhibit 3.1:** Quarterly Cap-and-Trade Auction Proceeds for High-Speed Rail ($ in Millions)




*Annualized after adjusting to reflect AB 398 for the Department of Forestry and Fire Protection and the Manufacturers Tax Credit and SB 155 for Forest Health and Fire Prevention.

prices will continue to be high through 2030. However, there always remains the risk, as the COVID-19 pandemic demonstrated, that a market-based revenue stream is susceptible to shocks that can cause significant revenue fluctuations.

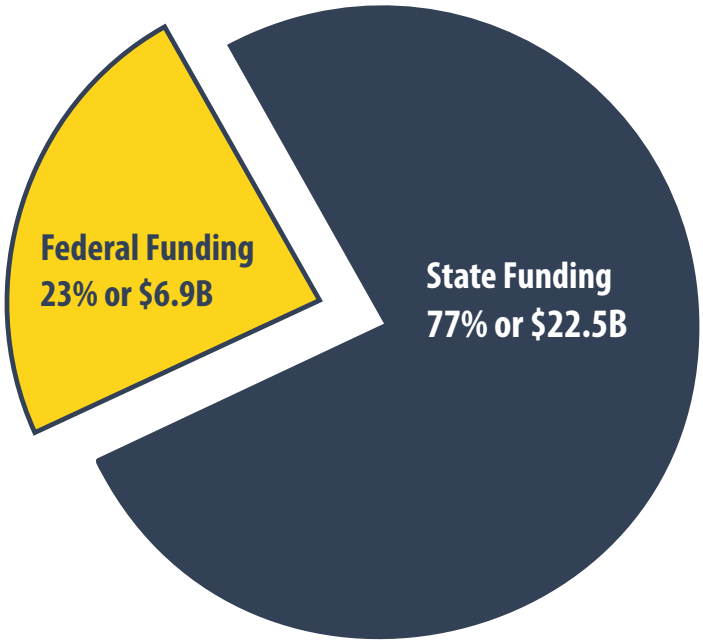
The Authority forecasts the project funding, expected Cap-and-Trade auction results, at scenarios of $750 million, $1.0 billion, and $1.25 billion per year to provide a range of funding that is possible as the current funding source is uncertain and volatile due its market-based mechanisms.

The FY2025-26 state budget recently highlighted a sense of urgency to implement an extension to the current Cap-and-Trade program.

# Federal Funding

Most high-speed rail systems around the world have the national government as the primary direct funder and "generator" of revenues through financing. In 2008, when Proposition 1A was approved by voters, the Authority targeted up to 50 percent of project funding coming from the federal government. However, for this project the state has appropriated approximately 75 percent of current funding. See **Exhibit 3.2** for total project appropriation by funding source.

**Exhibit 3.2:** Total California High-Speed Rail Project Appropriation by Funding Source ($ in Billions)




# Local and Regional Funding

Funding opportunities multiply in shared corridors where passenger rail service is provided by regional rail operators today and the corridors will be shared with high-speed service in the future. Some of the projects implemented to date have leveraged the Authority's bookend funds, and others have leveraged federal funds or other state funds without an Authority contribution but based in part on future high-speed rail benefits.

## BOOKEND PROJECTS

- **Caltrain electrification:** $714 million from the Authority was leveraged with $1.7 billion in local, federal, and other state funds for this $2.4 billion project. Caltrain launched its fully electrified rail service in 2024.
- **San Mateo grade separation:** $84 million from the Authority was leveraged with $122 million in local, federal, and other state funds for this $206 million project. This project is completed.
- **Rosecrans/Marquardt grade separation:** $77 million from the Authority was leveraged with $80 million in private, local, federal, and other state funds for this $156 million project. The newly opened Rosecrans Avenue bridge, part of LA Metro's grade separation project funded by the Authority, has significantly improved road safety and efficiency. This project not only enhances pedestrian and driver safety but also reduces greenhouse gas emissions by eliminating the need for vehicles to idle at the intersection while safety gates are down. Full completion is expected in 2025.
- **Los Angeles Union Station (LinkUS):** $423 million from the Authority will leverage more than $527 million local, federal, and other state funds.

## Target Dates and Confidence Level for Future Funding

With the Authority's new leadership team in place, and intensive efforts underway to improve how this project gets delivered, the funding needs and timing will be better understood once the initiatives mentioned in the beginning of this report are completed later this year. In the supplemental report, the target date ranges and the level of confidence for future funding will be updated.

## Private-Sector Financing

Proposition 1A, which was passed in 2008, directed the Authority to "pursue and obtain other private and public funds" to supplement the $9 billion in bond funds approved for the California high-speed rail system.

A fundamental goal of the project is to create a commercially successful and financially sustainable high-speed rail system. As we achieve completion of environmental clearance for the entire Phase 1 system and are advancing early works in specific areas, the Authority will be in a better position to engage private partners. In January 2025, the Authority met with potential partners at its Industry Forum including private equity firms. This was the first instance of such industry engagement, and the Authority expects to continue to learn more in follow-up sessions to gain a better understanding of how collaborations can be constructed.

## Program Funding Baseline

Given the program's available funding levels, the Authority's Board adopts and modifies a program baseline budget as state and federal funding is committed.

In 2023 and 2024, the Authority saw significant improvement in the program's overall funding picture. The Authority received federal grant awards totaling $3.3 billion to advance the inaugural high-speed service on the Early Operating Segment (EOS) in the Central Valley from Merced to Bakersfield. Since the January 2024 baseline budget was published in the last Business Plan, the Authority received an additional $89.6 million Railroad Crossing Elimination (RCE) grant award in January 2025 to fund the Le Grand Overcrossing Project on the Merced Extension. This RCE funding is not yet adopted into the program baseline budget.

**Table 3.1** shows the adopted program baseline budget, which includes the $3.3 billion in federal grants.

**Table 3.1:** Program Baseline Budget ($ in Millions)

| Scope | Amount | Notes |
|---|---|---|
| Central Valley Segment (CVS) Civil Construction: CP 1, CP 2-3, and CP 4 | 12,455 | Civil works for 119 miles from Madera to Poplar Avenue, including SR-99 and SR-46 projects |
| CVS Track and Systems, Trainset Certification Facility, and Fresno Historic Depot | 3,813 | Single track and related systems on 119 miles from Madera to Poplar Avenue, high-speed rail trainset certification facility, and Fresno Historic Depot |
| Project Development and Advance Design | 1,043 | Phase 1 environmental clearance and advance design |
| Program Management and Support | 2,732 | Program management and support for planning and construction activities |
| Bookend Investments | 1,298 | Caltrain electrification, San Mateo grade separation, Rosecrans/Marquardt grade separation, Union Station |
| Program Contingencies and Reserves | 618 | Unallocated contingency, interim use, project reserve |
| **Subtotal with 2023 PUR Adjustments** | **21,960** | **Subtotal Without New Federal Grants Scopes** |
| Federal-State Partnership for Intercity Rail Grant Award Scope | 3,842 | High-speed rail trainsets, trainset facilities design and construction, Fresno station design and construction, Merced and Bakersfield extensions final design and ROW acquisition, and Bakersfield interim extension civil works and track and systems construction ($3.074B FY2022 and 20-23 FSP-National grant award) |
| CRISI Grant Award Scope | 292 | Six grade separations in the City of Shafter ($202M FY2022 CRISI grant award) |
| RAISE Grant for Fresno Historic Depot | 0 | Depot Renovation and Plaza Activation Project. No net budget change, but reflect new funding ($20M 2023 RAISE grant award) |
| Corridor ID Grant | 0 | For planning associated with a future service development plan. No net budget change, but reflect new funding ($500K 2023 CIDP grant award) |
| **Total January 2024 Expenditure Authorization** | **26,094** | **Total Program Baseline Budget** |

**Note:** Totals may not sum due to independent rounding

# Cost Estimates and Expenditures

The Authority's cost estimates are being revised through a significant effort explained further below and will be updated later this year with a supplemental report. This report does provide updated expenditures through December 31, 2024.

The Authority is under new leadership and as such a complete and bottoms-up review of its project scope requirements, scope sequencing, and cost methodologies was initiated in the fall of 2024.

## Design Criteria Manual

Under the direction of the CEO, the Authority took a fresh look at our Design Criteria Manual (DCM), which is the basis of design for the project and is used by the Authority's designers to ensure the continuity and integrity of the system. The objective was to identify design requirements with

the highest potential impact on infrastructure costs and, where prudent, refine these requirements to align with proven international best practices, while maintaining the safety, reliability, and performance expected of the high-speed rail system. The revised DCM will be used to inform design refinements, and in turn enable quantities to be re-assessed; the capital cost estimates will then be revised and updated in detail.

The DCM refinements are based on standards governing operating international high-speed rail systems, and lessons learned to date from our work in the Central Valley. It also draws upon the European Union's Technical Specifications for Interoperability, which are regulations that establish the technical and operational standards for European high-speed rail, and other international standards.

During the review of the DCM, the Authority identified the following main areas where design efficiency could be achieved. These include, but are not limited to, aligning the operational speed with the design speed, increasing the absolute maximum gradient, reducing the vertical clearance required above trackways, and allowing the use of seismic isolation devices and rail expansion joints in the design of bridge structures. These refinements to the DCM will allow for greater flexibility in design, and lead to potential cost and schedule savings in both construction and overall project development.

The revisions are in the process of being reviewed, vetted, approved, and applied to portions of the project that are still in development, including the Merced and Bakersfield extensions and remaining Phase 1 segments. As the Authority completes its internal efforts to update its design criteria, the scope, cost, procurement strategies, and schedules will be updated subsequently and presented later this year.

**Table 3.2** shows scope elements necessary to complete the work on the 119-mile Central Valley segment at the scope definition that generally matches both the 2022 Proposition 1A Funding Plan and the federal ARRA/FY10 grants scope.

**Table 3.2:** 119-Mile Central Valley Segment Cost Estimates (in Millions, YOE$)

| Scope Element | Low | Base | High | Expenditures |
|---|---|---|---|---|
| **Central Valley Segment** | | | | |
| Central Valley Construction | Central Valley Segment Estimates are being revised and will be updated later this year with a supplemental report.<br><br>See the ***2024 Business Plan Table 5.0 on Page 92*** for the following categories' estimates. | | | 8,114 |
| Central Valley ROW | | | | 1,516 |
| Track & Systems 119 Single Track | | | | 9 |
| Program Management & Support (Con) | | | | 550 |
| Project Reserve | | | | 0 |
| Interim Use | | | | 54 |
| Program Wide Unallocated Contingency | | | | 0 |
| **Subtotal CVS Construction** | | | | **10,243** |
| Project Development, Management, and Support | | | | 521 |
| **Total Central Valley Segment** | | | | **10,764** |

**Note:** Total expenditures shown is as of December 31, 2024

**Table 3.3** reflects the scope for the EOS. For additional details see the 2024 Business Plan.

**Table 3.3:** 171-Mile Merced to Bakersfield (and other Phase 1) Cost Estimates (in Millions, YOE$)

| Scope Element | Estimate YOE | P30 | P50 | P65 | Expenditures |
|---|---|---|---|---|---|
| **Merced to Bakersfield** | | | | | |
| Central Valley Segment | Merced to Bakersfield (and other Phase 1) Segment Estimates are being revised and will be updated later this year with a supplemental report.<br><br>See the ***2024 Business Plan Table 5.0.1 on Page 94*** for the following categories' estimates. | | | | 10,764 |
| Project Development Balance | | | | | 127 |
| Merced Extension | | | | | 70 |
| Merced Extension ROW | | | | | 0 |
| Bakersfield Extension | | | | | 53 |
| Bakersfield Extension ROW | | | | | 0 |
| Stations | | | | | 45 |
| Track & Systems Balance (Including CVS Second Track) | | | | | 0 |
| Solar and Utility Interconnection | | | | | 0 |
| Trainsets (6 total) | | | | | 0 |
| Maintenance Facility and Driving Simulator | | | | | 0 |
| Program Wide Support and Contingency Balance | | | | | 519 |
| Phase 1 Transfer (Phase 1) | | | | | 0 |
| **Subtotal Merced to Bakersfield** | | | | | **11,577** |
| Project Development Balance (Phase 1) | | | | | 514 |
| Program Wide Support Balance (Phase 1) | | | | | 322 |
| Bookend | | | | | 800 |
| **Total Merced to Bakersfield** | | | | | **13,212** |

**Note:** Total expenditures shown is as of December 31, 2024

# Capital Cost Estimates – Northern California

**Table 3.4** reflects the scope from the approved environmental documents for the Northern California section. For additional details, see the 2024 Business Plan.

**Table 3.4:** Northern California Capital Cost Estimates (in Millions, YOE$)

| Scope Element | Low | Base | High | Expenditures |
|---|---|---|---|---|
| **Northern California** | | | | |
| San Francisco to San Jose | Northern California Segment Estimates are being revised and will be updated later this year with a supplemental report. See the ***2024 Business Plan Table 5.0.2 on Page 95*** for the following categories' estimates. | | | - |
| San Jose to Gilroy | | | | - |
| Gilroy to Carlucci Road | | | | - |
| Central Valley Wye Balance | | | | - |
| Preliminary Design | | | | - |
| Bookend Investments | | | | 757 |
| **Total** | | | | **757** |

**Note:** Total expenditures shown is as of December 31, 2024

# Capital Cost Estimates – Southern California

**Table 3.5** reflects the scope from the approved environmental documents for the Southern California section. For additional details, see the 2024 Business Plan.

**Table 3.5:** Southern California Capital Cost Estimates (in Millions, YOE$)

| Scope Element | Low | Base | High | Expenditures |
|---|---|---|---|---|
| **Southern California** | | | | |
| Bakersfield to Palmdale | Southern California Segment Estimates are being revised and will be updated later this year with a supplemental report. See the ***2024 Business Plan Table 5.0.3 on Page 96*** for the following categories' estimates. | | | - |
| Palmdale to Burbank | | | | - |
| Burbank to Los Angeles | | | | - |
| Los Angeles to Anaheim | | | | - |
| Preliminary Design | | | | - |
| Bookend Investments | | | | 43 |
| **Total** | | | | **43** |

**Note:** Total expenditures shown is as of December 31, 2024

# Other Program Wide Capital Cost Estimates

**Table 3.6** reflects the other program scope elements for the Phase 1 system. For additional details see the 2024 Business Plan.

**Table 3.7** reflects a summary of the full Phase 1 scope elements. For additional details, see the 2024 Business Plan.

**Table 3.6:** Program Wide Capital Cost Estimates (in Millions, YOE$)

| Scope Element | Low | Base | High | Expenditures |
|---|---|---|---|---|
| **Program Wide** | | | | |
| Project Development & Support | Program Wide Capital Cost Estimates are being revised and will be updated later this year with a supplemental report.<br>See the ***2024 Business Plan Table 5.0.4 on Page 97*** for the following categories' estimates. | | | 835 |
| Heavy Maintenance Facility Balance | | | | - |
| Trainsets Balance | | | | - |
| Solar Power Generation Balance | | | | - |
| **Total** | | | | **835** |

**Note:** Total expenditures shown is as of December 31, 2024

**Table 3.7:** Phase I Capital Cost Summary (in Millions, YOE$)

| Scope Element | Low | Base | High | Expenditures |
|---|---|---|---|---|
| **Phase I Program** | | | | |
| Merced to Bakersfield | Phase 1 Capital Cost Estimates are being revised and will be updated later this year with a supplemental report.<br>See the ***2024 Business Plan Table 5.0.5 on Page 97*** for the following categories' estimates. | | | 11,577 |
| Northern California | | | | - |
| Southern California | | | | - |
| Program Wide | | | | 835 |
| **Total** | | | | **13,212** |

**Note:** Total expenditures shown is as of December 31, 2024


**Rendering**: Future California high-speed rail track and systems


**Photo**: Construction crews placing girders at the Hanford Viaduct

CHAPTER 4

# MANAGEMENT OF RISKS AND KEY ISSUES

## Integrated Approach to Managing Risk and Issues

Managing the emergence of risks and issues is a critical function for the successful delivery of all projects, but more so on large and complex infrastructure projects. Whether identifying future impacts in the form of risks or addressing ongoing impediments in the form of issues, an agile, dedicated enterprise risk function is necessary to support organizational objectives.

For the Authority, this function holds a heightened level of significance with evolving external threats to the project as the organization transitions to a more streamlined project delivery entity with new leadership. As our new CEO ushers in his new vision for delivering the project, we are adapting and aligning our risk program function and project control activities to support our revised delivery strategy.

The Authority's Enterprise Risk Management (ERM) program is a key enabler of adapting risk management in alignment with organizational

strategy. The ERM program creates a bridge of transparency, accountability, and alignment between the highest levels of leadership and project execution teams to prevent and manage a wide range of complex risks and issues.

The Authority is continuously updating its risk management policies, procedures, frameworks, and tools by incorporating the latest guidance from federal standards for internal controls, such as the GAO Green Book, International Organization of Standards for risk management, and leading ERM guidance from the Committee of Sponsoring Organizations of the Treadway Commission, in our pursuit of excellence as a world-class risk and issues management program.

## Adapting to New Leadership

As the Authority's CEO and executive management set the performance objectives and strategy for the organization, the risk program continuously evaluates potential risk outcomes to these objectives which may result in management making strategic adjustments. The figure below further outlines the integral relationship of executive strategy and risk management:

**Performance**
Executive agreement to strategic objectives and key performance measures for the organization and what drives value

**Risk**
Executive agreement to the key risk to objectives/ performance measures, and the drives (i.e., root causes) of each risk

**Assessment**
Assesment and monitoring of probable variance in performance outcomes through risk-adjusted performance models

**Strategic Adjustment**
Designed controls to mitigate key risk and adjustment to strategy to achieve performance objectives aligned with risk appetite

# Management of Risks and Mitigation Strategies

The following section provides an update on management of Authority risks and our mitigation efforts.

## Funding Uncertainty

The Authority is proactively seeking new opportunities for funding to sustain and expand design, early works, and construction, and to reduce downstream delays associated with insufficient funding. The following established controls and mitigation plans highlight some of the key actions to close the gap on program funding.

### ESTABLISHED CONTROLS

- The Authority is responsive to new funding opportunities as they are made available, such as by completing timely grant applications for new federal funding or partnering with regional agencies for shared corridor advancements that support the high-speed rail system.
- The Authority submits timely deliverables, produces monthly reports on the financial status of the project, and provides transparent communications with state and federal policymakers and regulators to maintain confidence and support for advancing the project.
- The Authority has an established organizational management plan and project-specific program management plans to guide adherence to reporting requirements for relevant funding partners and to make transparent that all funds are effectively and efficiently used for authorized purposes.

### MITIGATIONS IN PROGRESS

- The Authority continues monitoring projected expenditures and available cash to prevent and mitigate any potential short-term disruptions to critical operations and master program schedule milestones.
- The Authority remains persistent in its pursuit of additional federal and state funding opportunities to mitigate risk of funding shortfalls.
- The Authority is actively exploring diverse funding and financial strategies to ensure long-term sustainability. This includes evaluating potential private sector partnerships and opportunities to generate ancillary revenue streams.

## Right-of-Way (ROW) Acquisition and Delivery

The Authority is focused on mitigating risks associated with ROW to ensure seamless progress in construction and future rail operations. Challenges such as landowner resistance, incomplete designs, and complex negotiations pose risks to timely ROW delivery. The following controls and mitigation strategies focus on strengthening planning efforts, aligning utility and design requirements, and securing necessary agreements to minimize delays and cost impacts.

### ESTABLISHED CONTROLS

- The ROW team collaborates with functional teams to identify, and survey required high-speed rail parcels, and coordinates with our engineering section to define boundaries.
- The ROW team provides monthly progress reports to executive management highlighting key ROW risks and issues. If landowner offers remain unaccepted and parties are unable to reach a mutually acceptable settlement within 45 days, the Authority initiates condemnation to prevent delays to early works and construction.
- The ROW team holds biweekly meetings with design and construction teams to focus on accelerating design finalization, sharing up-to-date information to support negotiations, and strategizing responses to landowner resistance.
- Legal is working with ROW and third parties' teams to update their templates based on lessons learned with the objective of facilitating agreement with property owners.

### MITIGATIONS IN PROGRESS

- Dedicated project managers oversee ROW planning in each program geographic section, aligning acquisition priorities with the program master schedule.
- The Authority starts major construction only when right-of-way has been acquired. Right-of-way acquisition will begin after design reaches a level of certainty that advancing the work poses minimal risk.
- Before purchasing land, the Authority will advance early work such as ROW mapping, getting appraisal contracts in order, and setting a strategic plan to deliver the work.
- For early work packages such as utility relocations, the Authority is planning to acquire right-of-way after significant design has been achieved.

## Third-Party Management

The Authority is actively enhancing communication and coordination efforts to address evolving third-party requirements, concerns, and changing conditions. A key focus is identifying and establishing third-party agreements and securing necessary third-party approvals to advance design and construction activities. The following controls and mitigation plans outline critical steps taken to reduce risks associated with delays and ensure continued progress.

### ESTABLISHED CONTROLS

- Third-party strike force meetings are held monthly to record, deliberate, and address critical risks and issues affecting construction progress. Additionally, this team has implemented an issue tracker to systematically document and track the resolution of potential third-party conflicts during construction.
- The Authority established and filled a new statewide regional director position to provide enterprise-level oversight and coordination for third-party conflicts, and to work with functional teams to develop proactive measures and resolutions to reduce risk.
- A focused team of state staff and project and construction management (PCM) staff is organized to manage third-party relationships in each region. This team regularly engages with third parties to share Authority plans and progress to address potential conflicts, capture

changed conditions, and ultimately negotiate resolutions that are fair and reasonable for all sides.

## Infrastructure and Asset Maintenance

The Authority recognizes the importance of a clear interim and long-term strategy, along with dedicated funding, to maintain all property and infrastructure assets in its possession. The following controls and mitigation plans outline key actions being taken to manage and address this risk effectively.

### ESTABLISHED CONTROLS

- The Authority has established an Infrastructure Maintenance Office dedicated to asset management and maintenance. Efforts are ongoing to identify and secure the necessary staffing and key positions, ensuring the office is fully resourced and operational to provide best-in-class oversight and strategic execution for its asset maintenance program.

### MITIGATIONS IN PROGRESS

- The Authority established a new office to focus on maintenance and asset management, with recruitment underway to bring on a new strategic leader to manage this function.
- The Authority is implementing a comprehensive Strategic Infrastructure Management Plan and a Strategic Asset Management Plan to drive accountability, define roles and responsibilities, and establish mechanisms for managing Authority-owned assets and infrastructure by asset class, covering both routine maintenance and ad-hoc responses to incidents such as vandalism, theft, fire hazards, and crime.

# Key Issues and Management Plans

This section provides an update on key issues and the efforts to address these issues.

## Encroachment Permitting Authority

Currently, the Authority has limited ability to issue encroachment permits, which creates challenges for entities requiring access to the Authority's right-of-way. These entities include utilities, biogas, and farmers, among others. This limitation affects not only project progress but also businesses and organizations that need temporary access for construction or transit.

Statutory authority similar to that of other state entities, such as Caltrans and the Department of Water Resources, would need to be established. Once in place, the Authority would be authorized to issue encroachment permits and establish a fee schedule to recover administrative costs associated with processing and administering these permits.

## Third-Party Management

Effective third-party coordination is essential to keeping the project on schedule and within budget. However, challenges such as delays in reviews, agreements, disputes, and permits—as well as inconsistent participation and adherence to schedules by some third parties—continue to impact project timelines and costs. Additionally, some third parties are accustomed to passing on costs to the Authority, further straining resources.

To address these challenges, the Authority has implemented mitigation efforts, including a third-party strike force and an accountability team that meets regularly to resolve interface issues, manage dependencies, and navigate evolving conditions and approvals. While these controls have led to progress, further improvements are needed to increase efficiency, enforce accountability, and minimize ongoing disruptions.

To strengthen third-party management and ensure smoother project execution, the Authority is working to:

- Enhance engagement and enforcement by ensuring third parties actively participate in scheduled meetings and adhere to established timelines.
- Streamline approval and permitting processes to reduce unnecessary delays and create clear expectations for all stakeholders.
- Implement stronger cost-control measures to prevent the automatic transfer of expenses to the Authority.
- Leverage digital project management tools to improve coordination, track progress, and increase transparency.
- Expand oversight and accountability measures to proactively address bottlenecks and hold third parties responsible for meeting commitments.

By strengthening these strategies, the Authority aims to improve predictability, reduce inefficiencies, and enhance collaboration with key stakeholders. These refinements will not only accelerate project delivery but also minimize disruptions to local communities and maximize cost-effectiveness.

## Power Generation

The Authority is required to power the high-speed rail system with 100 percent renewable energy. This energy source would ideally connect to a utility company's electrical grid, requiring the utility provider to feed electricity to the Authority when needed. This system would also allow the Authority's excess energy to be exported onto the grid. Providing this excess power creates stability and reliability to the grid, and the Authority could potentially receive credit for the excess power generated.

During review of potential renewable energy procurement structures, including third-party finance, the Authority identified potential statutory adjustments that could optimize its power approach. For example, adjusting the definition of eligible customer-generators and enabling the export of greater than 1 megawatt of capacity back to the grid could allow the Authority's renewable energy assets to support and reinforce the grid as well as provide cost-effective energy for the system.

### Advancing Risk Management and Monitoring in the Digital Age

The Authority has evolved its risk program to incorporate emerging forms of technology to achieve increased efficiency in identifying, assessing, prioritizing, managing, and reporting key risks and issues, thus enabling greater transparency and proactive management. Under supervision of the Authority's Enterprise Risk Committee, the project controls office has developed a digital platform to collate, assess, and report key risks, trends, and issues across the organization to inform strategic decisions.

# Successful Mitigation of Prior Key Issues

The following are prior issues the Authority has successfully mitigated.

## Construction Quality Control and Assurance

The Authority has worked diligently to mitigate construction quality issues. The Authority has reorganized existing positions to establish and carry out a best-in-class quality program to prevent future quality disruptions.

### MANAGEMENT ACTIONS

- A Quality Management unit was created within the Construction Office to inspect construction activities, report on quality issues, and monitor corrective actions.
- A construction quality model was established and supported by quality procedures to define requirements, roles and responsibilities, and monitoring and reporting cadences.

## Staffing Gaps

Since 2023, the Authority experienced resource gaps while working to meet the demands of expanded scopes of work and the acceleration of its operations to meet key milestones and legislative commitments. To address this, a significant effort was undertaken to break down silos and create a more efficient project delivery-oriented structure. As a result of these and other changes, the Authority's vacancy rate is being reduced.

### MANAGEMENT ACTIONS

- Significant reorganization completed.
- Streamlining efforts to expedite the recruiting process.

## Funding Gaps for Bakersfield Extension

Through aggressive pursuit of federal grant funds, the Authority has been awarded a significant amount of federal funding. Although those awards have not fulfilled the overall goal for funding targets, a sizable step in the right direction has been achieved.

### MANAGEMENT ACTIONS

- Executed agreement of $202 million from the FY2022-23 CRISI grant for construction of six grade separations in the City of Shafter that are needed for high-speed rail.
- Executed agreement of $3.1 billion from the FY2022-23 Fed-State grant for critical elements of the Merced to Bakersfield early operating segment.
- Executed agreement of $20 million from the 2023 RAISE grant for the Fresno Historic Depot.
- Awarded $98 million federal grant from the FY2023-24 Railroad Crossing Elimination Grant Program for the Le Grant Road Overcrossing.


**Photo**: Construction worker at Deer Creek Viaduct in Tulare County

# CHAPTER 5

# PROJECT REVIEW AND OPTIMIZATION

## Introduction

The Authority is undertaking a comprehensive review of its design criteria, scope, cost methodologies, and project sequencing to ensure the most cost- and time-effective delivery of the system.

Under new leadership, a bottom-ups fresh look at all aspects of the project was initiated in fall 2024 to identify opportunities for refinement and improvement. The project has not undergone a comprehensive reassessment since the blended system approach was adopted. Therefore, the magnitude of the changes coming necessitates additional time to get a quality report.

This initiative stems from the recognition that design standardization, removal of over-engineered assets, and adherence to proven engineering principles will allow for construction to occur at lower cost and faster pace, while maintaining safety and performance. This process is critical to ensuring delivery of the system in the most cost-effective manner.

# Progress to Date

As part of this review, the Authority has already identified key areas for improving design efficiency within the Authority's DCM, which governs the technical and engineering specifications for project construction. These refinements include:

- Aligning operational speed with design speed to ensure optimal system performance.
- Increasing the maximum gradient where feasible, reducing the need for costly earthwork and infrastructure modifications.
- Reducing vertical clearance requirements above trackways, which will lower construction costs and streamline bridge and tunnel designs.
- Incorporating seismic isolation devices and rail expansion joints into bridge structures, which enhances resilience while reducing construction complexity and cost.

With these guiding principles we were able to review: (1) the quantity and length of tunnels for potential reductions, (2) potential removal of structures or reduction in length of structures, (3) reductions in earthwork volume, (4) optimizing source of materials to reduce transportation distances, and (5) phasing of project parts.

These changes allow for greater design flexibility, enabling a more efficient and cost-effective construction process while maintaining the system's reliability and safety. The Authority is currently reviewing, vetting, and approving these modifications for application to project segments still in development, including the Merced and Bakersfield extensions and remaining Phase 1 segments.

**Photo**: Construction on the Wasco Pedestrian Underpass

# Advancing Project Development

Beyond these initial findings, the Authority's review aims to inform strategic decisions regarding construction sequencing, procurement, and cost management. Specifically, the review is expected to:

- Enhance project delivery through refined scheduling and resource allocation beyond the 119-mile Central Valley Segment currently under construction.
- Provide updated assumptions and design standards to guide capital cost projections and procurement sequencing.
- Develop an updated project schedule that incorporates up-to-date assumptions and strategic planning to guide the next phases of development.

# Positioning the Project for Success

The results of this review will shape the future of the project, influencing how construction proceeds across multiple segments and ensuring that the system is built in the most financially responsible and efficient manner possible. By optimizing design criteria and standardizing construction approaches, the Authority will be better positioned to control costs, streamline approvals, and accelerate project delivery.

As high-speed rail becomes an increasingly critical component of California's long-term transportation and climate goals, ensuring that it is developed in a financially sustainable and strategically planned manner is essential. The insights gained from this review will not only inform current construction efforts but also establish a framework for future expansion and long-term operational success.

# Next Steps and Timeline

The Authority is committed to transparency and accountability in implementing the findings of this review. As work continues, the Authority will release:

- An updated project schedule, reflecting the refined scope and delivery timelines.
- An updated capital cost and procurement sequencing plan, incorporating the latest engineering and financial assumptions.

This comprehensive review is expected to be completed by summer 2025, with a supplemental Project Update Report to be submitted at that time. This report will provide a detailed overview of all refinements and adjustments and serve as the foundation for the next phase of project development.

# APPENDICES

# Appendix A: 2025 Project Update Report Statutory Requirements and Legal Memo

## Note from California High-Speed Rail Chief Counsel

**DATE:** **February 28, 2025**
**TO:** **File**
**FROM:** **Thomas Fellenz, Acting Chief Counsel**
**SUBJECT:** **Review of draft 2025 Project Update Report**

As part of the process of following the statutory requirements for producing the Authority's draft 2025 Project Update Report, I have reviewed this draft 2025 Project Update Report and Appendix. The Authority's cost and schedule estimates, as well as operating agreement schedules, ridership and additional milestones required, are being revised and will be updated later this year with a supplemental report. I confirm that other elements required pursuant to CA Public Utilities Code section 185033 are included therein as indicated in the following tables.

Thomas Fellenz
Acting Chief Counsel
California High-Speed Rail Authority

The California High-Speed Rail Authority prepares a biennial report to the California State Legislature on the status of the program. This report, which is submitted in odd-numbered years, is known as the Project Update Report.

The requirements for submission of a biennial Project Update Report were updated in June 2015 (AB 95) and require that on or before March 1, 2017, and every two years thereafter, the Authority provide a project update report, approved by the Secretary of Transportation, to the budget committees and the appropriate policy committees of both houses of the Legislature. AB 95 added a new Section 185033.5 to the Public Utilities Code to specify the information that Project Update Reports are required to provide to the Legislature.

The requirements for submission of a biennial Project Update Report were updated again in June 2022 (SB 198). SB 198 added a new Section 185033.7 to the Public Utilities Code to specify additional information that Project Update Reports and Business Plans are required to provide to the Legislature.

The Authority is also required to prepare and submit business plans to the Legislature, also on a biennial basis, in even-numbered years. Together, these two reports fulfill the requirements of Government Code 16724.4 which relates to annual reporting requirements associated with voter approved bond measures.

As set forth in Section 185033.5, "On or before March 1, 2017, and every two years thereafter, the Authority shall provide a project update report, approved by the Secretary of Transportation and consistent with the criteria in this section, to the budget committees and the appropriate policy committees of both houses of the Legislature, on the development and implementation of intercity high-speed train service pursuant to Section 185030. The report, at a minimum, shall include a program wide summary, as well as details by project section, with all information necessary to clearly describe the status of the project, including, but not limited to, all of the following:

(A) A summary describing the overall progress of the project.

(B) The baseline budget for all project phase costs, by segment or contract, beginning with the California High-Speed Rail Program Revised 2012 Business Plan.

(C) The current and projected budget, by segment or contract, for all project phase costs.

(D) Expenditures to date, by segment or contract, for all project phase costs.

(E) A comparison of the current and projected work schedule and the baseline schedule contained in the California High-Speed Rail Program Revised 2012 Business Plan.

(F) A summary of milestones achieved during the prior two-year period and milestones expected to be reached in the coming two-year period.

(G) Any issues identified during the prior two–year period and actions taken to address those issues.

(H) A thorough discussion of risks to the project and steps taken to mitigate those risks."

| Statutory Requirements | Response to Requirements and Location | Page(s) |
|---|---|---|
| (A) A summary describing the overall progress of the project. | CEO Letter<br>Chapter 2 | Pages V to VIII<br>Pages 9 to 17 |
| (B) The baseline budget for all project phase costs, by segment or contract, beginning with the California High-Speed Rail Program Revised 2012 Business Plan. | Chapter 3 | Pages 19 to 30 |
| (C) The current and projected budget, by segment or contract, for all project phase costs | Chapter 3 | Pages 19 to 30 |
| (D) Expenditures to date, by segment or contract, for all project phase costs. | Chapter 3 | Pages 19 to 30 |
| (E) A comparison of the current and projected work schedule and the baseline schedule contained in the California High-Speed Rail Program Revised 2012 Business Plan. | Appendix D | Page 54 |
| (F) A summary of milestones achieved during the prior year and milestones expected to be reached in the coming year. | Chapter 2 | Pages 9 to 17 |
| (G) Any issues identified during the prior two-year period and actions taken to address those issues. | Chapter 4 | Pages 33 to 39 |
| (H) A thorough discussion of risks to the project and steps taken to mitigate those risks. | Chapter 4 | Pages 33 to 39 |

In 2022, SB 198 modified the requirements for the information that is to be included in the Project Update Report. SB 198 added a new Section 185033.7 to the Public Utilities Code, and this new section specified that a set of delivery schedules be added to the Project Update Report.

As set forth in Section 185033.7 "(b) (1), As part of the project update report that is due on or before March 1, 2023, pursuant to Section 185033.5, the authority shall develop schedules related to the delivery of all of the following tasks:

(A) Completion of the 119-mile dual track segment from Madera to Poplar Avenue, which means Avenue 19 in the County of Madera to one mile north of the Tulare-Kern county line southward to north of Bakersfield, currently near Poplar Avenue.

(B) Completion of right-of-way, planning, and advance engineering for extensions to Merced and Bakersfield.

(C) Completion of an agreement or agreements between the state, the San Joaquin Joint Powers Authority, the San Joaquin Regional Rail Commission, and the authority that details the role of each in planning, constructing, and funding the connection in the City of Merced.

(D) Completion of an agreement or agreements between the state, the San Joaquin Joint Powers Authority, the San Joaquin Regional Rail Commission, and the authority covering the planning, funding, and operation of the proposed high-speed rail services from Merced to Bakersfield and the authority and approval for the San Joaquin Joint Powers Authority to contract for the operation of the high-speed rail services.

(E) Provision of an updated cost estimate with a stated probability level, or levels, of its ongoing contracts and for the work it is funding and managing that is required to complete the Merced to Bakersfield segment extensions.

(F) Completion of a funding plan that includes any additional federal funding awards for the Merced to Bakersfield segment.

(G) Additional milestones required for the completion of the Merced to Bakersfield segment and the full Phase 1 System pursuant to subparagraphs (A) to (F), inclusive.

(2) The delivery schedules developed pursuant to paragraph (1) shall be included and updated in each subsequent business plan adopted pursuant to Section 185033 and project update report prepared pursuant to Section 185033.5."

| Statutory Delivery Schedules Requirements | Response to Requirements and Location | Page(s) |
|---|---|---|
| (A) Completion of the 119-mile dual track segment from Madera to Poplar Avenue, which means Avenue 19 in the County of Madera to one mile north of the Tulare-Kern county line southward to north of Bakersfield, currently near Poplar Avenue. | * | |
| (B) Completion of right-of-way, planning, and advance engineering for extensions to Merced and Bakersfield. | * | |
| (C) Completion of an agreement or agreements between the state, the San Joaquin Joint Powers Authority, the San Joaquin Regional Rail Commission, and the authority that details the role of each in planning, constructing, and funding the connection in the City of Merced. | * | |
| (D) Completion of an agreement or agreements between the state, the San Joaquin Joint Powers Authority, the San Joaquin Regional Rail Commission, and the authority covering the planning, funding, and operation of the proposed high-speed rail services from Merced to Bakersfield and the authority and approval for the San Joaquin Joint Powers Authority to contract for the operation of the high-speed rail services. | * | |
| (E) Provision of an updated cost estimate with a stated probability level, or levels, of its ongoing contracts and for the work it is funding and managing that is required to complete the Merced to Bakersfield segment extensions. | * | |
| (F) Completion of a funding plan that includes any additional federal funding awards for the Merced to Bakersfield segment. | * | |
| (G) Additional milestones required for the completion of the Merced to Bakersfield segment and the full Phase 1 System pursuant to subparagraphs (A) to (F), inclusive. | * | |

*The Authority's cost and schedule estimates, as well as operating agreement schedules, ridership, and additional milestones required, are being revised and will be updated later this year with a supplemental report.

In 2022, SB 198 modified the requirements for the information that is to be included in the Project Update Report. SB added a new Section 185033.7 to the Public Utilities Code, and this new section specified that a set of cost and funding requirements be added to the Project Update Report.

As set forth in Section 185033.7 "(c) (1), In order to demonstrate reasonable likelihood of adequate funding to complete the Merced to Bakersfield segment, the authority shall provide all of the following information in the project update report that is due on or before March 1, 2023, pursuant to Section 185033.5:

(A) Estimated and actual civil works costs of the Merced to Bakersfield segment.

(B) Estimated and actual right-of-way, acquisitions, utilities, and other third-party agreement costs.

(C) Estimates of contract costs, including contingencies to cover change orders.

(D) Other costs, estimated and actual, including, but not limited to, rolling stock, interim use, and stations.

(E) Costs reported in a manner than can be comparable across reports.

(F) Updates on the authority's progress on achieving project milestones, as established in the project update report or the business plan adopted pursuant to Section 185033.

(G) Funding commitments beyond the Merced to Bakersfield segment, and spending to meet those commitments to date, including funding sources used to meet identified funding commitments.

(2) The information specified in paragraph (1) shall be included and updated in each subsequent business plan adopted pursuant to Section 185033 and project update report prepared pursuant to Section 185033.5."

| Statutory Cost/Funding Requirements | Response to Requirements and Location | Page(s) |
|---|---|---|
| (A) Estimated and actual civil works costs of the Merced to Bakersfield segment. | * | |
| (B) Estimated and actual right-of-way, acquisitions, utilities, and other third-party agreement costs. | * | |
| (C) Estimates of contract costs, including contingencies to cover change orders. | * | |
| (D) Other costs, estimated and actual, including, but not limited to, rolling stock, interim use, and stations. | * | |
| (E) Costs reported in a manner than can be comparable across reports. | * | |
| (F) Updates on the Authority's progress on achieving project milestones, as established in the project update report or the business plan adopted pursuant to Section 185033. | CEO Letter<br>Chapter 2 | Pages V to VIII<br>Pages 9 to 17 |
| (G) Funding commitments beyond the Merced to Bakersfield segment, and spending to meet those commitments to date, including funding sources used to meet identified funding commitments. | Chapter 3 | Page 23 |

*The Authority's cost and schedule estimates, as well as operating agreement schedules, ridership and additional milestones required, are being revised and will be updated later this year with a supplemental report.

# Appendix B: Correspondence


**Gavin Newsom**
Governor

**Toks Omishakin**
Secretary

400 Capitol Mall, Suite 2340
Sacramento, CA 95814
916-323-5400
www.calsta.ca.gov

February 27, 2025

Mr. Ian Choudri
Chief Executive Officer
California High Speed Rail Authority
770 L Street, Suite 620
Sacramento, CA 95814

Dear Mr. Choudri:

I have reviewed and approve the California High-Speed Rail Authority's 2025 Project Update Report for submission to the California State Legislature, as required under Section 185033.5 of the Public Utilities Code. The Report is approved upon the condition that the Authority update this report to include cost and schedule estimates, as well as operating agreement schedules and additional milestones reporting required later this year. The report also meets, or intends in the updated version of the report to meet, the additional requirements outlined in AB 221 (Budget Act of 2023) and SB 198 (Section 185033.7).

As you and I have discussed, California's high-speed rail project will revolutionize how people travel around the state—it is a transformative investment that will expand mobility, create jobs, and drive economic growth while advancing the state's climate, equity, safety and prosperity goals. From my tours of the project, I can confirm that the Merced to Bakersfield segment is under active construction, and progress is visible every day.

I fully support a commitment to drive efficiency and accountability within the project. A comprehensive review of cost-saving measures, procurement strategies and project delivery improvements reflect the urgency and responsibility required to complete this critical infrastructure.

I recognize that more work is needed to refine cost estimates, and I appreciate the Authority's commitment to providing a supplemental report this summer with updated financial projections. This approach ensures transparency and accountability while keeping California's first-in-the-nation high-speed rail system moving forward.

This project is about more than just building a train—it's about creating a modern, sustainable transportation network that will serve generations of Californians. With strong state and federal support, we will deliver high-speed rail, reduce emissions, connect communities and position California as a global leader in 21st-century mobility.

Thank you for your continued efforts on this critical project.

Sincerely,

Toks Omishakin
Secretary

# Appendix C: Capital Cost Comparsion

The Authority's cost estimates are being revised through a significant effort explained further below and will be updated later this year with a supplemental report.

**Figure 1.0:** Capital Cost Estimate Changes by Segment Since 2012 (Constant Year Dollars, Millions)

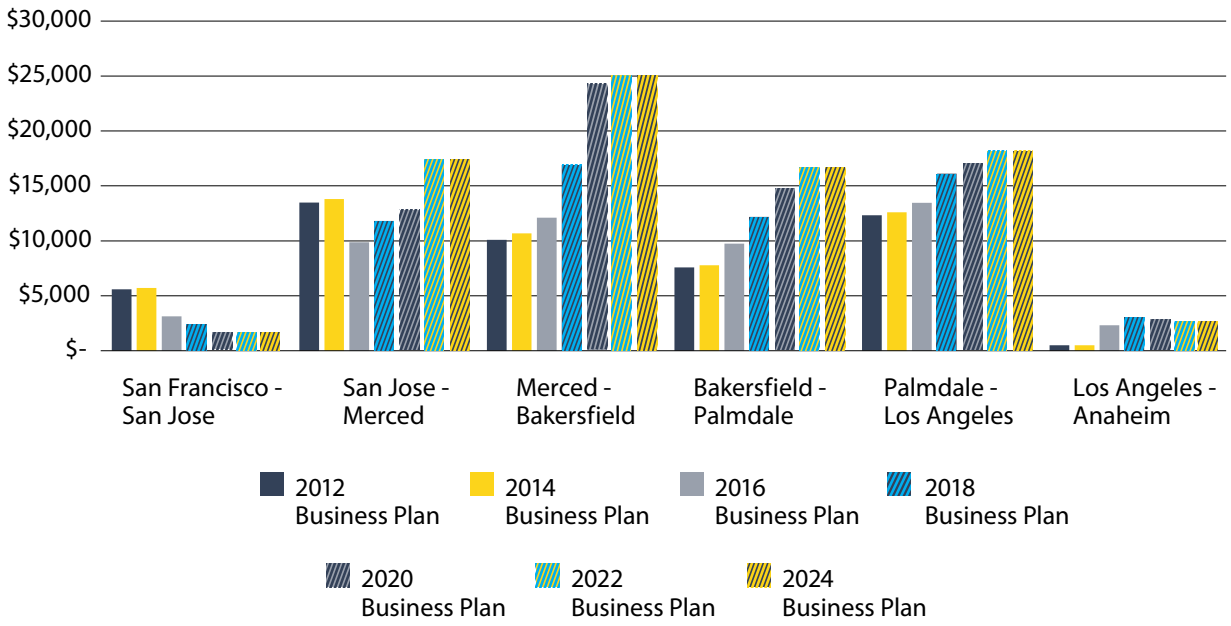


**Figure 1.1:** Capital Cost Estimate Changes by Segment Since 2012 (Year of Expenditure Dollars, Millions)

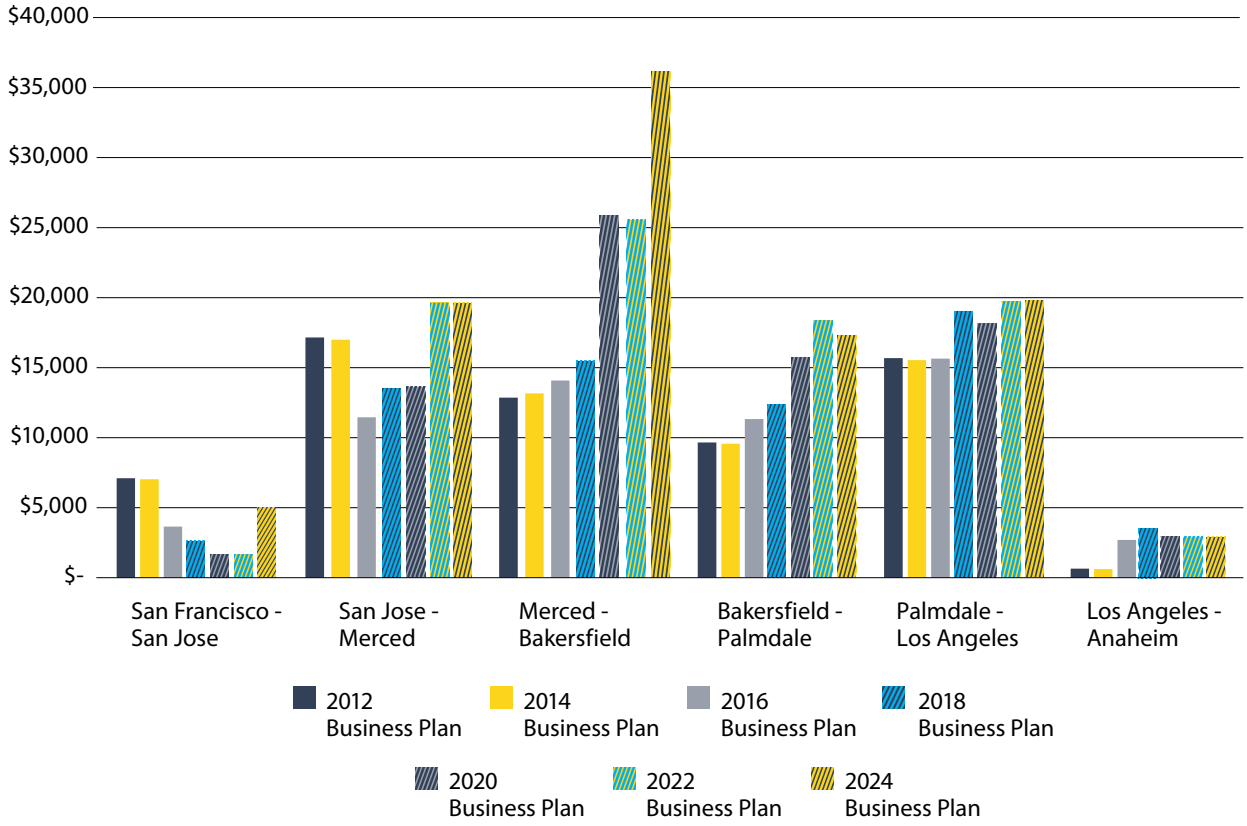


**Figure 1.2:** Maintenance Facility and Trainset Costs (Constant Year Dollars, Millions)

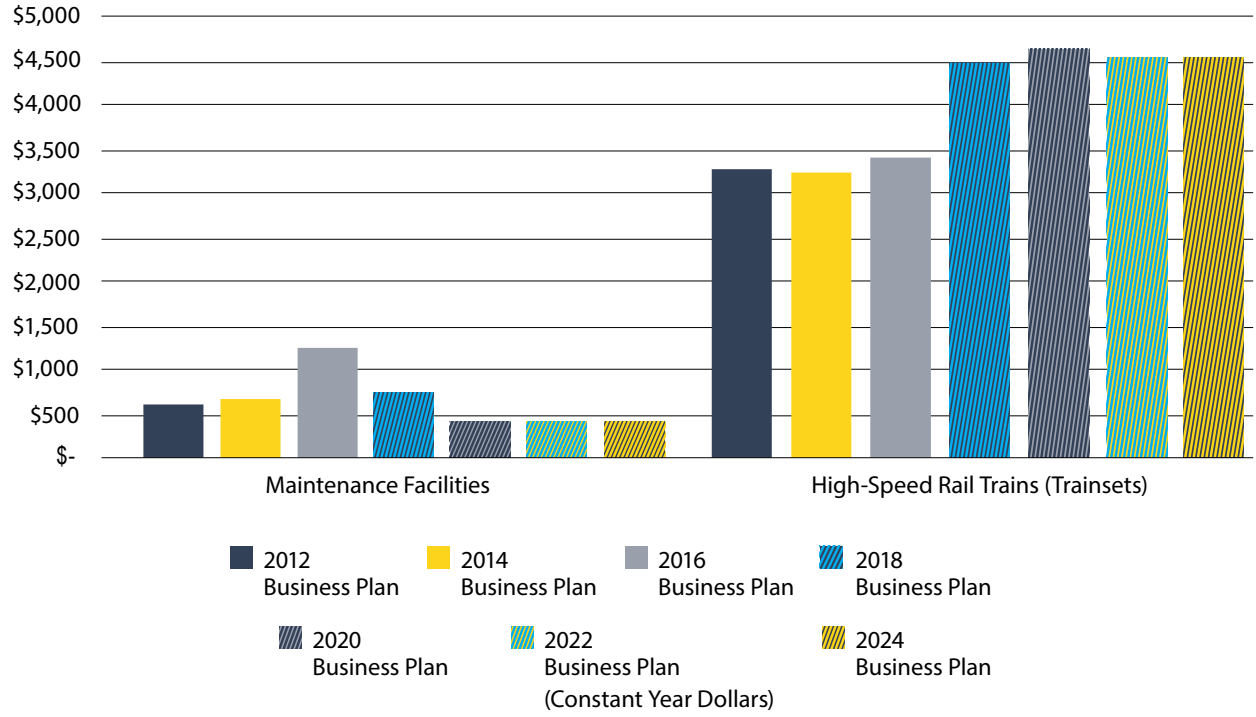


**Figure 1.3:** Maintenance Facility and Trainset Costs (Year of Expenditure Dollars, Millions)

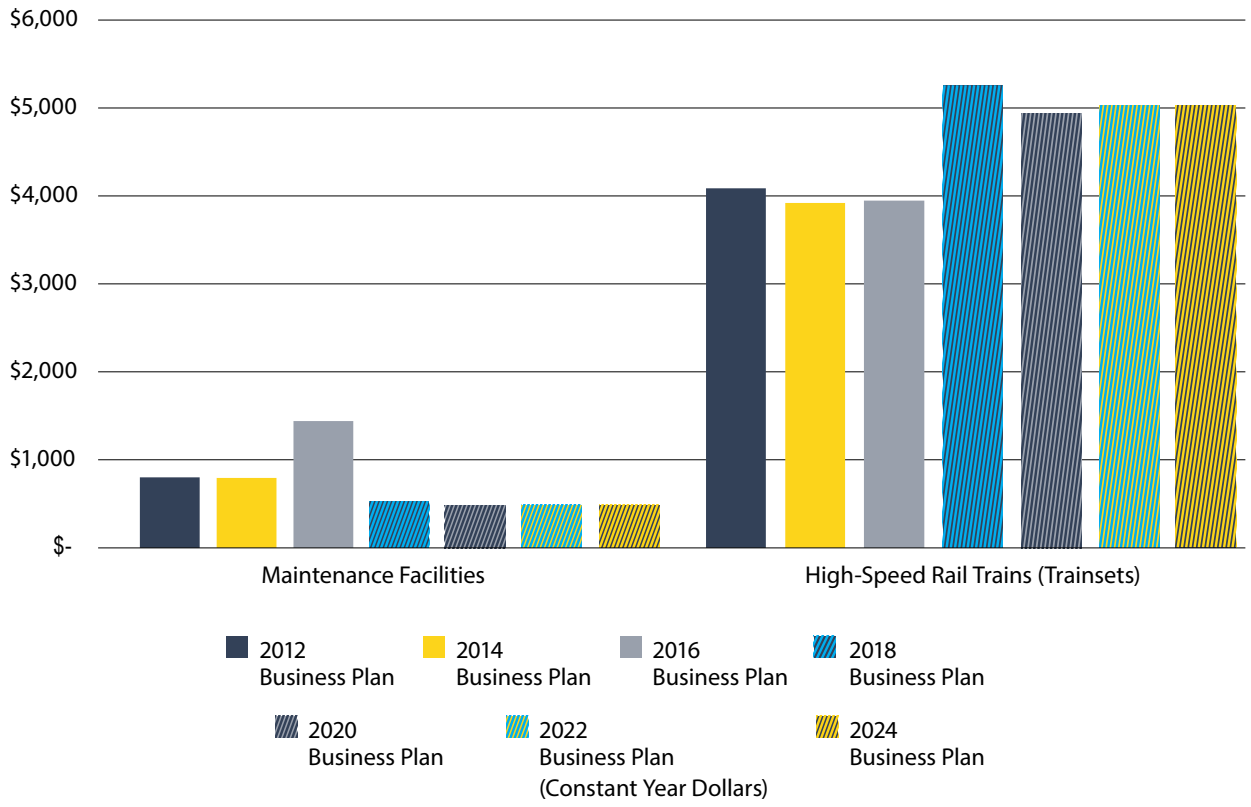
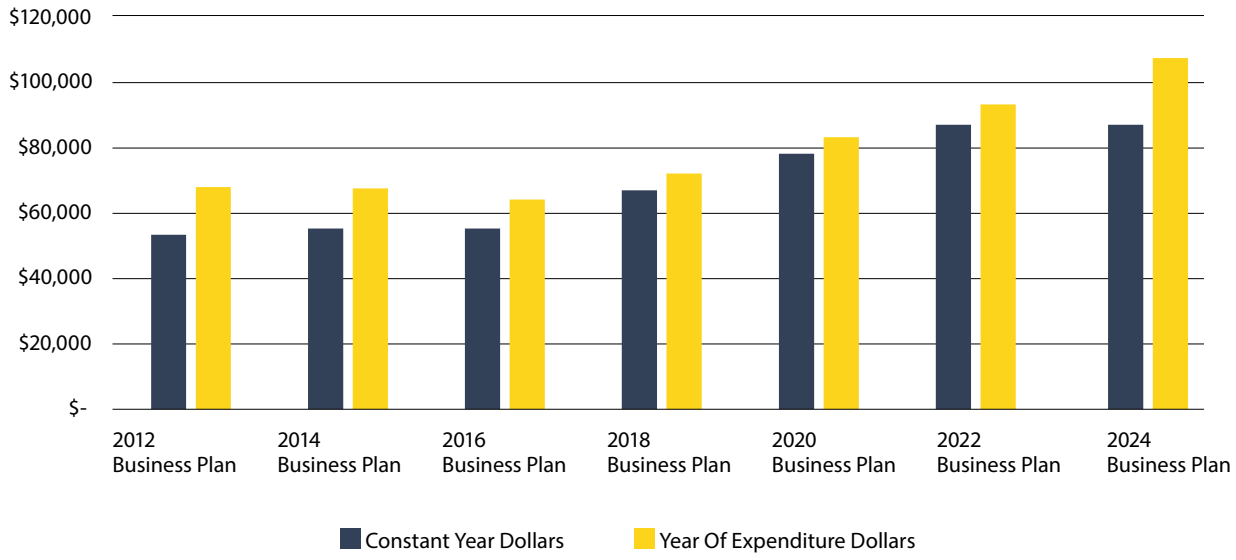
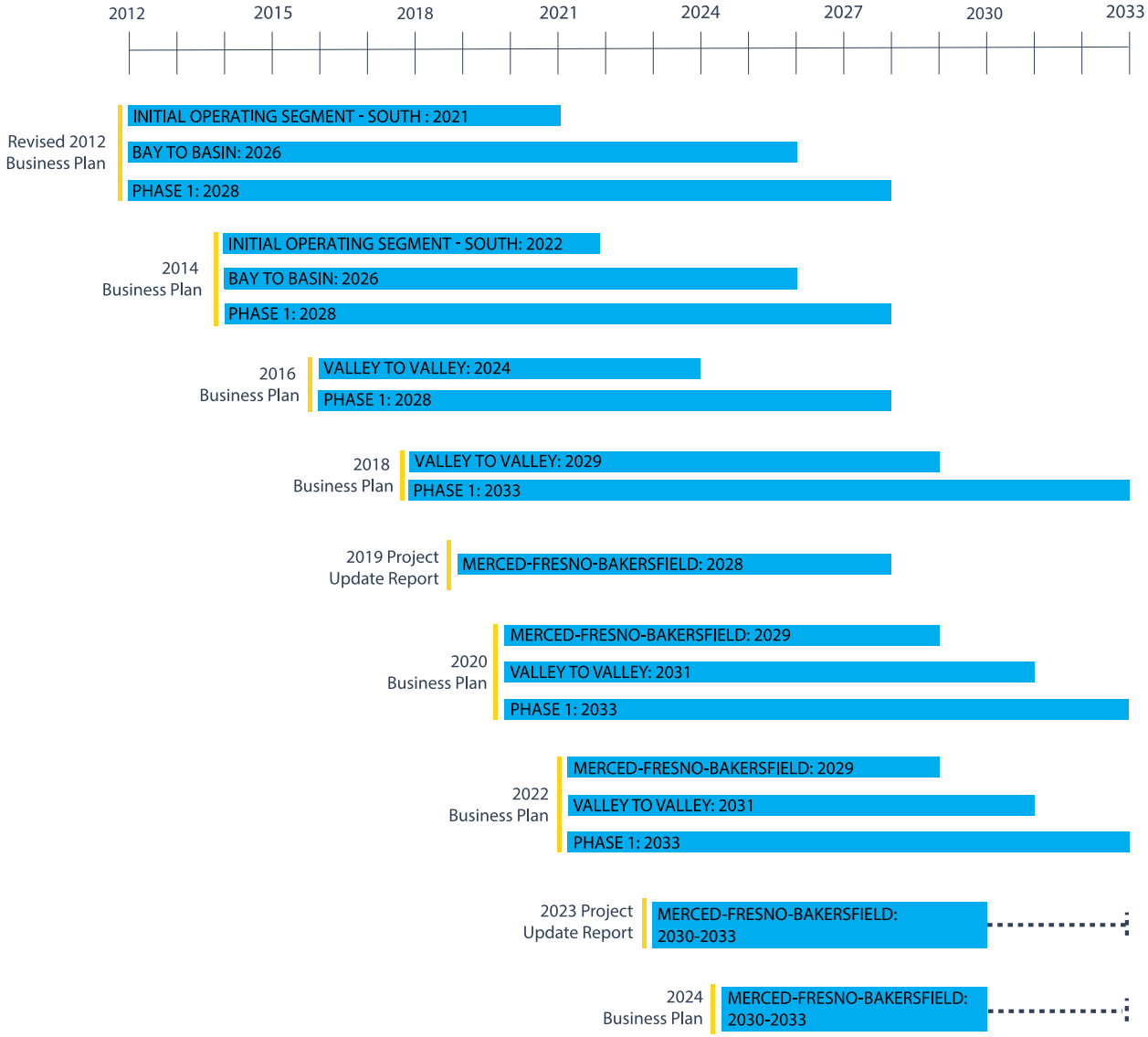


**Figure 1.4:** Total Phase I System Cost Estimate Since 2012 (Millions)



# Appendix D: Schedule Comparison

The following graphic provides a historical account of project timeline dating back to the 2012 Business Plan. The 2025 PUR schedule will be available later this year.




Note: Schedule to be updated in supplemental report later this year.

# Appendix E: Agreements

In the 2023 PUR and 2024 Business Plan, the Authority, CalSTA, and SJJPA have collaborated to establish a business model for interim passenger rail service on the Merced to Bakersfield corridor. The Authority owns the infrastructure, SJJPA operates and assumes revenue risk, and CalSTA provides financial support. Agreements outlining operational relationships and requirements are being developed, influenced by state high-speed rail policy, infrastructure completion timelines, and financial backing for rail and connecting services. Updates about our City of Merced and Merced to Bakersfield operational agreements will be provided in an upcoming Supplemental Report.

Below is a list of the agreements the Authority and its partners have identified to be established as part of the operating relationships and requirements for each agency:

- Capital Cost Funding Agreements
- Operating Costs Agreement
- Alignment of Track and Systems, Rolling Stock, Power Supply and Station Maintenance Agreements
- Railroad Asset Access and Use Agreement(s)
- Maintenance Contract Strategy – New Merced Assets
- Interagency with Legal Framework Agreement
- Service Agreement
- Delegated In-House or Subcontract Service Provider Agreements
- Infrastructure Lease Model and Specifications
- Rolling Stock Lease Model and Specifications
- Power Supply Lease Model and Specifications
- Station Lease Model and Specifications
- Final Agreements

# Appendix F: Phase 1 Progress Map

**Photo**: Merced Avenue Grade Separation in Kern County

# 2025 PROJECT UPDATE REPORT

CALIFORNIA
High-Speed Rail Authority

**California High-Speed Rail Authority**
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