



March 1, 2014

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The Honorable Mark DeSaulnier, Chair  
Senate Transportation and Housing Committee  
State Capitol, Room 2209  
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The Honorable Mark Leno, Chair  
Senate Budget and Fiscal Review Committee  
State Capitol, Room 5019  
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Assembly Transportation Committee  
1020 N Street, Room 112  
Sacramento, CA 95814

The Honorable Nancy Skinner, Chair  
Assembly Budget Committee  
State Capitol, Room 6026  
Sacramento, CA 95814

Dear Senator DeSaulnier, Assembly Member Lowenthal, Senator Leno and Assembly Member Skinner:

The California High-Speed Rail Authority (Authority) is pleased to submit the enclosed Project Update Report, required under Provision 4 of Items 2665-104-6043, 2665-306-0890 and 2665-306-6043 of the Budget Act of 2012 (Senate Bill 1029, Chapter 152, Statutes of 2012), to be submitted biannually on March 1 and November 15.

Since the release of its November 15, 2013 Project Update Report, the Authority has made significant progress in its mission to plan, design, build and operate the nation's first high-speed rail system as part of California's statewide rail modernization program.

Among the most important milestones achieved by the Authority in this time, is the release of the Draft 2014 Business Plan. The draft Business Plan, which builds on and updates the 2012 Business Plan, includes current financial analysis and ridership forecasts and refinements to underlying models and analysis based on current data and recommendations from outside experts such as the United States Government Accountability Office.

In addition, the Authority has achieved significant results that further project delivery, and which will bring thousands of jobs to the Central Valley and the state. These achievements include, but are not limited to: the release of a joint request for proposals for trainsets with Amtrak; and the announcement of firms qualified to bid on the design-build contract for Construction Package 2-3, the next 60-mile phase of high-speed rail construction from Fresno to the Tulare-Kern County line near Bakersfield. We have also worked with the California Transportation Commission and regional agencies to advance improvements on existing rail lines, such as electrification of the Caltrain corridor, and safety systems on Metrolink.

As the program continues to advance, the Authority maintains its commitment to working closely with its state, local and federal partners to ensure success of California's high-speed rail system. Moreover, we look forward to continuing an open and constructive dialogue with the Legislature and the public.

EDMUND G. BROWN JR.  
GOVERNOR



DeSaulnier, Leno, Lowenthal, Skinner  
March 1, 2014  
Page 2

For your review, attached is a copy of the Authority's complete March 1, 2014 Project Update Report. If you have any questions, please contact Michael Pimentel, Legislative Aide, at (916) 324-1541 or [michael.pimentel@hsr.ca.gov](mailto:michael.pimentel@hsr.ca.gov).

Sincerely,



Jeff Morales  
Chief Executive Officer

Attachment: Project Update Report, dated March 1, 2014

cc: Honorable Darrell Steinberg, President pro Tem, California State Senate  
Honorable John A. Perez, Speaker, California State Assembly  
Honorable Ted Gaines, Vice Chair, Senate Transportation and Housing Committee  
Members of the Senate Transportation and Housing Committee  
Honorable Jim Nielsen, Vice Chair, Senate Committee on Budget and Fiscal Review  
Members of the Senate Committee on Budget and Fiscal Review  
Honorable Eric Linder, Vice Chair, Assembly Transportation Committee  
Members of the Assembly Transportation Committee  
Honorable Jeff Gorell, Vice Chair, Assembly Committee on the Budget  
Members of the Assembly Committee on the Budget  
Mr. Eric Thronson, Consultant, Senate Transportation and Housing Committee  
Ms. Janet Dawson, Chief Consultant, Assembly Transportation Committee  
Ms. Farra Bracht, Deputy Staff Director, Senate Budget and Fiscal Review Committee  
Mr. Christian Griffith, Chief Consultant, Assembly Committee on the Budget  
Ms. Diane Boyer-Vine, Legislative Counsel, State Capitol, Room 3021  
Mr. Gregory Schmidt, Secretary of the Senate, State Capitol, Room 3034  
Mr. E. Dotson Wilson, Chief Clerk of the Assembly, State Capitol, Room 3196  
Mr. Brian P. Kelly, Secretary, California Transportation Agency  
Mr. Brian Annis, Undersecretary, California Transportation Agency  
Mr. Brian Putler, Deputy Legislative Secretary, Office of Governor Edmund G. Brown Jr.



**Edmund G. Brown Jr.**  
Governor

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**Brian P. Kelly**  
Secretary

March 1, 2014

The Honorable Mark DeSaulnier, Chair  
Senate Transportation and Housing Committee  
State Capitol, Room 2209  
Sacramento, CA 95814

The Honorable Bonnie Lowenthal, Chair  
Assembly Transportation Committee  
1020 N Street, Room 112  
Sacramento, CA 95814

The Honorable Mark Leno, Chair  
Senate Committee on Budget and Fiscal Review  
State Capitol, Room 5019  
Sacramento, CA 95814

The Honorable Nancy Skinner, Chair  
Assembly Committee on the Budget  
State Capitol, Room 6026  
Sacramento, CA 95814

Dear Senator DeSaulnier, Assembly Member Lowenthal, Senator Leno and  
Assembly Member Skinner:

This letter is to indicate that I have reviewed and approve the California High-Speed Rail  
Authority's (Authority) Project Update Report as consistent with Provision 4 of Items 2665-104-  
6043, 2665-306-0890 and 2665-306-6043 of the Budget Act of 2012 (SB 1029, Chapter 152,  
Statutes of 2012),

Sincerely,

  
BRIAN P. KELLY  
Secretary

Attachment

cc list: See next page

3/1/14

Page 2

cc: The Honorable Darrell Steinberg, President pro Tem, California Senate  
The Honorable John Pérez, Speaker, California Assembly  
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Members of the Senate Budget and Fiscal Review Committee  
The Honorable Eric Linder, Vice Chair, Assembly Transportation Committee  
Members of the Assembly Transportation Committee  
The Honorable Jeff Gorell, Vice Chair, Assembly Budget Committee  
Members of the Assembly Budget Committee  
Ms. Carrie Cornwell, Chief Consultant, Senate Transportation and Housing Committee  
Ms. Janet Dawson, Chief Consultant, Assembly Transportation Committee  
Mr. Farra Bracht, Deputy Staff Director, Senate Budget and Fiscal Review Committee  
Mr. Christian Griffith, Chief Consultant, Assembly Committee on the Budget  
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Mr. E. Dotson Wilson, Chief Clerk of the Assembly, State Capitol  
Mr. Brian Putler, Deputy Legislative Secretary, Office of Governor Edmund G.  
Brown Jr.



**CALIFORNIA**  
High-Speed Rail Authority

# *Project Update Report to the California State Legislature*

March 1, 2014



# Statutory Requirements for the Project Update Report

In July 2012, the California Legislature approved – and Governor Brown signed into law – Senate Bill (SB) 1029 (Budget Act of 2012) which appropriated almost \$8 billion in federal and state funds to construct the first high-speed rail segments in the Central valley and fund 15 bookend and connectivity projects throughout California. The bill also put into place extensive reporting requirements to ensure legislative oversight over the progress of the project. The requirements of this report, the Authority’s biannual Project Update Report, are as follows:

On or before March 1 and November 15 of each year for which funding appropriated in this item is encumbered, the High-Speed Rail Authority shall provide a Project Update Report approved, as consistent with the criteria in this provision, by the Secretary of Business, Transportation and Housing 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 of the Public Utilities Code. The report, at a minimum, shall include a programwide summary, as well as details by project segment, with all information necessary to clearly describe the status of the project, including, but not limited to, all of the following:<sup>1</sup>

- (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 year and milestones expected to be reached in the coming year.
- (g) Any issues identified during the prior year and actions taken to address those issues.
- (h) A thorough discussion of various risks to the project and steps taken to mitigate those risks.



**Board of Directors**

**Dan Richard**

*Chair*

**Thomas Richards**

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*Chief Executive Officer*

**California High-Speed Rail Authority**

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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's high-speed rail system will connect the mega-regions of the state, contribute to economic development and a cleaner environment, create jobs and preserve agricultural and protected lands. By 2029, the system will run from San Francisco to the Los Angeles basin in under three hours at speeds capable of over 200 miles per hour. The system will eventually extend to Sacramento and San Diego, totaling 800 miles with up to 24 stations. In addition, the Authority is working with state and regional partners to implement a state-wide rail modernization program that will invest billions of dollars in urban, commuter, and intercity rail systems to meet the state's 21st century transportation needs.

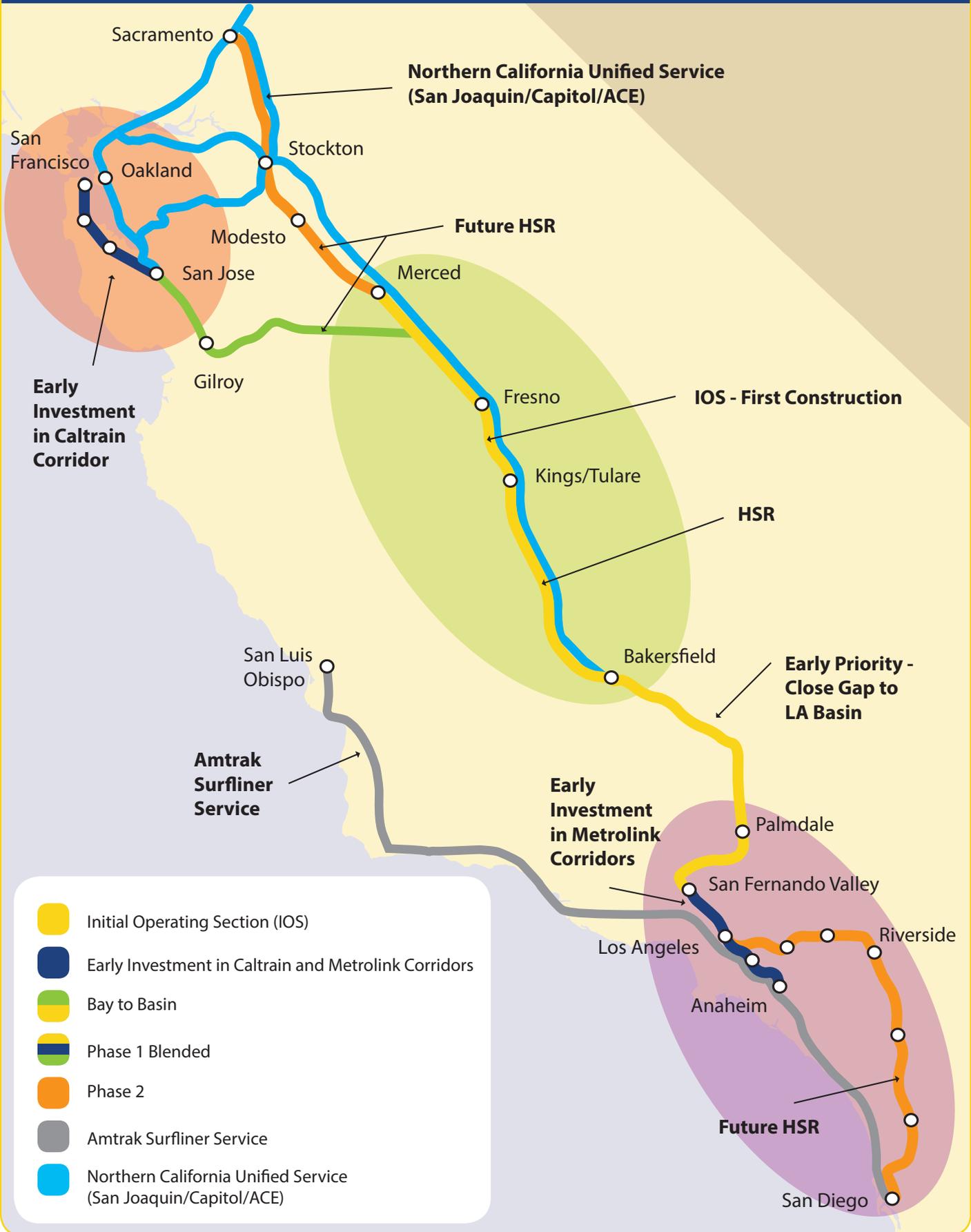


# Table of Contents

<i>Project Update by Section</i>	7
<i>Financials</i>	12
<i>Schedule: Current and Projected</i>	16
<i>Milestones Achieved: Since November 2013</i>	18
<i>Issues</i>	24
<i>Risk Management</i>	27

# STATEWIDE RAIL MODERNIZATION

## EARLY INVESTMENTS/STATEWIDE BENEFITS



# Project Update By Section

## PHASE I

### SAN FRANCISCO TO SAN JOSE

In January 2014, Caltrain marked 150 years of railroad service between San Francisco and San Jose by commemorating the past and looking towards the future that includes the Caltrain Modernization Program which will electrify the corridor and upgrade the performance, operating efficiency, capacity, safety and reliability of Caltrain's commuter rail service.

Electrification of the Caltrain corridor is proceeding along a path that will accommodate planned electrified commuter service by 2019. This electrification project is an integral component of the blended system required to accommodate high-speed rail and will result in near-term greenhouse gas emissions reductions of approximately 18,000 tons of CO<sub>2</sub> per year. Full electrification of the corridor requires environmental approval. Caltrain released the draft environmental document on February 28, 2014. Authority staff has partnered with the Peninsula Corridor Joint Powers Board staff to ensure that the Draft EIR for electrification aligns with future blended operations with high-speed rail.

In addition to the \$600 million provided for Caltrain electrification, Senate Bill (SB) 1029 (Budget Act of 2012) provides \$106 million for the design, installation, testing, training and warranty for an intelligent network of signals, sensors, train tracking technology and computer systems on the Caltrain Corridor as part of Caltrain's advanced signaling systems. This system, known as Positive Train Control (PTC), is required by federal regulation and allows trains to travel safely at higher speeds, and is another component of a larger \$1.1 billion investment in "bookend" projects.

**Next Steps:** Construction of the PTC project is underway. Completion and full system operation are expected in 2015. Electrification of the Caltrain corridor is expected to be completed in 2019. Lastly, the Transbay terminal project in San Francisco is fully under construction with a planned completion date of 2017.

### SAN JOSE TO MERCED

We continue to work with the cities of San Jose, Morgan Hill and Gilroy to address questions and concerns related to high-speed rail alignments along the Union Pacific Railroad (UPRR) corridor. The cities of Morgan Hill and Gilroy are in the midst of updating their respective General Plans and are working to include the proposed options for alignments and station locations into those plans. The Authority is also

#### SB 1029 PROJECT UPDATE REPORT

##### Section (a)

*A summary describing the overall progress of the project.*

working with UPRR to address potential impacts on freight operations in this corridor. The draft environmental document for the San Jose to Merced project section is anticipated in 2016.

**Next Steps:** We will continue to work with local communities and UPRR on proposed service, alignment and station options. Analysis and environmental approval of the Central Valley Wye project has been incorporated into the Merced to Fresno environmental review process.

## MERCED TO FRESNO

Preconstruction work for Construction Package 1 (CP 1), a 29-mile stretch between Madera and Fresno is currently underway after the Authority issued Notice To Proceed (NTP) for design-build contractor Tutor Perini/Zachry/Parsons, a joint venture (TPZP) for an amount up to \$78,000,000 in October 2013.

In late Fall 2013, TPZP and Wong+Harris, the Project and Construction Management (PCM) firm opened offices in downtown Fresno and began the process of moving employees into the area to continue work on pre-construction activities. This includes the development of third-party agreements for construction and completing project design.

As the project approaches final design, TPZP and its subcontractors have begun conducting geotechnical and drilling work in the Fresno area. The work, which began in November and will continue for several months, is designed to identify soil types and will be used to complete the design work and prepare for erecting structures, including bridges and overpasses.

Appraisals have been completed for 317 of the 381 parcels needed for CP 1. To date, the Authority has submitted first written offers for 156 parcels. The latest numbers indicate over 45 agreements and/or right-of-way contracts have been executed by property owners and are in various stages of review and approval among the Authority, the Department of General Services (DGS) and the Department of Finance (DOF). To avoid delays in construction, the Authority has worked with TPZP to identify critical parcels for priority acquisition. The Authority's Division of Real Property has certified nine parcels to be turned over to the contractor. Work continues on parcels where an impasse exists or the project schedule dictates us to obtain Resolutions of Necessity (RONs) to initiate the eminent domain process. Even though that process may start us down the path towards condemnation, negotiations will continue to arrive at a settlement rather than proceed through the courts.

Portions of State Route 99 located within the CP 1 contract will need to be realigned to accommodate the high-speed rail project between the existing State Route 99 and the UPRR. The Authority has contracted this work to the California Department of Transportation (Caltrans) and work is underway for property acquisition, with major construction anticipated to begin in Spring 2016.

In December 2013, the Board of Directors approved the delegation of authority to the Chief Executive Officer to enter into a cooperative agreement with the City of Fresno for construction of Veterans Boulevard. This agreement, which defines the scope of work for this project for the City of Fresno and the Authority, will help mitigate the effects of local road closures to businesses and residents in the City of Fresno related to the construction of CP 1.

In addition, the Authority continues to support efforts of the Fresno Workforce Investment Board to implement an apprenticeship program to support high-speed rail construction work, and the Fresno Economic Development Corporation to connect with impacted property owners and business owners through the "one-stop shop" located in Fresno City Hall.

Work also continues to finalize permit applications and mitigation requirements for the Central Valley from partner agencies such as the California Department of Fish and Wildlife (CDFW), State Water Resources Control Board (SWRCB), United States Army Corps of Engineers (USACE), and United States Fish and Wildlife Service (USF-

WS), including completion of the Permittee-responsible mitigation plan, the regulatory framework for storm water management, geotechnical reports and hydraulic studies.

The Authority continues to pursue environmental clearance on a preferred alignment alternative for the Central Valley Wye in the vicinity of Chowchilla and Fairmead. Public engagement and work in the region continues as we move towards a Central Valley Wye draft environmental document.

**Next Steps:** We will continue the permitting process, the acquisition of right-of-way, the securing of off-site mitigation parcels, and design-build work on the first construction section. We will also continue the further development of the Central Valley Wye draft environmental document.

## **FRESNO TO BAKERSFIELD**

Work on the Fresno to Bakersfield Revised Draft EIR/Environmental Impact Statement (EIS) continues to move towards certification of the final document by the Board of Directors.

On November 7, 2013, the Board of Directors concurred with the staff-recommended preferred alternative alignment for the purpose of preparing final environmental documents and moving into the next phase of federal environmental permitting. This allowed staff to move forward with submitting the preferred alignment to our federal partners for approval. The Authority and the consultant staff are now in the process of completing the documents and preparing formal responses to those who commented as part of the official record.

In December 2013, the Authority received confirmation from the U.S. Environmental Protection Agency (USEPA) and USACE that the preliminary recommendation of the Preferred Alternative for the Fresno to Bakersfield project section was the preliminary Least Environmentally Damaging Practicable Alternative (LEDPA) as defined in Section 404 (b)(1) of the federal Clean Water Act of 1972 (33 U.S.C. Sec. 12501 et. seq.). This was a significant step in moving the Fresno to Bakersfield environmental document forward.

In February 2014, the Authority announced that five world class teams qualified to bid on the next construction package located within the Fresno to Bakersfield project section. The 60-mile phase is from East American Avenue in Fresno to one-mile north of the Tulare-Kern County line near Bakersfield. The qualified firms are now eligible to submit formal design-build proposals in 2014.

To date, Kings County has refused to allow access to certain county-owned parcels to allow the Authority to conduct non-damaging, geotechnical investigatory work that will be shared with the design-builder. Failure to provide this geotechnical investigatory work can lead to design-build delays and cost increases. The Authority continues to work to resolve the situation, as it already has with counties throughout the state.

**Next Steps:** The Board of Directors will make final decisions about alignments and station locations after issuance and consideration of the final documents in Spring 2014, followed by a Record of Decision (ROD) from the Federal Railroad Administration (FRA) and Surface Transportation Board (STB) approvals to begin construction.

## **BAKERSFIELD TO PALMDALE**

The Authority is continuing to collect engineering and environmental data needed to define and analyze project alignment alternatives, maintenance facilities, tunnel and viaduct structures, system operations, construction and design features. The Authority has conducted stakeholder meetings with numerous federal, state and local entities, including the U.S. Department of Defense, Bureau of Land Management, Kern County, the cities of Rosamond, Tehachapi, Lancaster and Palmdale, local farm bureaus, and land and business owners along the alignments. Coordination with key resources agencies such as USACE, USFWS, and the CDFW is also underway.

Work is progressing on targeting energy needs and assessments through this section. Locations for the traction power and other systems sites are under evaluation based on the latest alignments and profiles. The Authority is also developing multiple options for traction power supply systems on the northern and southern slopes of the Tehachapi Mountains.

**Next Steps:** We will continue stakeholder engagement in the region as the Authority completes a Supplemental Alternatives Analysis (SAA) and then the draft environmental documents. This includes the identification of the range of alignment alternatives to be studied during the environmental process.

## **PALMDALE TO LOS ANGELES**

The Authority continues alignment alternatives development and the collection of environmental data along with key stakeholder feedback needed to define and analyze alignment options, station location options, and construction and maintenance requirements. The Authority regularly meets with elected officials, key stakeholders, and technical staff within the alignment cities of Palmdale, Santa Clarita, Burbank, Glendale, Los Angeles and unincorporated Los Angeles County. Major coordination efforts are ongoing with the Los Angeles County Metropolitan Transportation Authority (LA Metro) and Metrolink in order to plan an integrated passenger rail network.

The Authority continues to coordinate with the Los Angeles Union Station Master Plan Team which is in the process of developing LA Metro's vision and plan to guide future development at the Los Angeles Union Station. Meetings are also underway with the City of Los Angeles regarding the Los Angeles River Master Plan.

**Next Steps:** We will continue stakeholder engagement in the region as the Authority completes an SAA and then the draft environmental documents. This includes the identification of the range of alignment alternatives to be studied during the environmental process.

## **LOS ANGELES TO ANAHEIM**

The Authority is preparing an SAA that presents less impactful alignment alternatives appropriate for this urban rail corridor. This approach also incorporates the principles of an integrated passenger rail network described in the Authority's 2012 Business Plan. The Authority continues to meet with staff from corridor cities to brief them on the revised conceptual alignment and provide information specific to their jurisdiction. The design concept continues to be refined based on feedback from corridor cities. Additionally, the Authority continues to work closely with Metro's Los Angeles Union Station Master Plan team and the newly formed Los Angeles-San Diego-San Luis Obispo (LOSSAN) Joint Powers Authority.

Outreach efforts for this section have primarily focused on engaging corridor cities and meeting with key stakeholders along the corridor, including briefing the district directors for federal and state legislative offices.

**Next Steps:** We will continue meetings with corridor cities in order to finalize an SAA document. This document will provide an update on the alignment alternatives that are practical and feasible and reflect the urban corridor approach that reduces the impacts of high-speed rail to local communities along the corridor, specifically the in the Gateway Cities area.

## PHASE II

### LOS ANGELES TO SAN DIEGO (VIA THE INLAND EMPIRE)

The Authority meets regularly with regional transportation partners from the four-county Southern California Inland Corridor Group (ICG) to coordinate the high-speed rail project with regional plans. The ICG has been integral in fostering integrated regional planning in order to promote synergy among the many systems and agencies along the 167-mile alignment. With input from the ICG, advancement of conceptual engineering and preliminary environmental review activities are underway to address stakeholder feedback received on the alignments presented in the Preliminary Alternatives Analysis (PAA) Report. A draft alignment refinement report documenting this activity is in preparation.

**Next Steps:** We will continue to work with the ICG and other regional stakeholders to complete the alignment refinement report in preparation for development of an SAA.

### MERCED TO SACRAMENTO

The Authority continues to engage with stakeholders, coordinate with local agencies and develop engineering in support of project definition. Additionally, the Authority continues to partner with the Northern California Rail Partners to identify and work to prioritize near-term regional rail improvements as part of the Northern California Unified Rail Service. The Authority will continue to explore upgrades to the San Joaquin, Altamont and Capitol Corridor intercity rail lines to improve service and provide connectivity to the future high-speed rail system.

**Next Steps:** We will continue planning efforts and stakeholder outreach to review draft Alternatives Analysis and receive input for setting project priorities over the next two years.



# Financials

## **SB 1029 PROJECT UPDATE REPORT**

### **Section (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.*

### **Section (c)**

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

### **Section (d)**

*Expenditures to date, by segment or contract, for all project phase costs.*

## **BASELINES, CURRENT AND PROJECTED BUDGETS AND EXPENDITURES TO DATE**

The 2012 Business Plan included a cost estimate for the Phase I Blended System by implementation phase: Initial Operating Section (IOS), Bay to Basin, and Phase 1 Blended. Costs for these implementation phases are shown in 2011 and year of expenditure dollars (YOE). Updated cost estimates for the same implementation phases shown in constant 2013 dollars and YOE dollars are presented in the Draft 2014 Business Plan, which was released on February 7, 2014 for a 60 day public review period. The adopted 2014 Business Plan is due to the Legislature on May 1, 2014.

## **PRE-CONSTRUCTION PHASE**

Pre-construction expenditures are defined in California Streets and Highways Code Section 2704.08(g), as, “environmental studies, planning, and preliminary engineering activities, and for (1) acquisition of interests in real property and right-of-way and improvement thereof (A) for preservation for high-speed rail uses, (B) to add to third-party improvements to make them compatible with high-speed rail uses, or (C) to avoid or to mitigate incompatible improvements or uses; (2) mitigation of any direct or indirect environmental impacts resulting from the foregoing; and (3) relocation assistance for property owners and occupants who are displaced as a result of the foregoing.”

Table 1 shows the current contract amount (baseline) for the Program Management and the Regional Consultant contracts, and current projected contract costs for the Program Management contract and for each of the Regional Consultant contracts issued for the pre-construction phase of the high-speed rail project. These initial contracts were awarded between 2006 and 2008; during that timeframe it was assumed that the environmental reviews for all of the Phase 1 sections would be complete by 2014 and Phase 1 of the high-speed rail implemented and operating in 2020.

As shown on the table, two contracts were originally issued as single contracts for larger environmental segments but were subsequently divided:

- Subsequent to issuing the contract for the Sacramento to Fresno section, it was divided into the Merced to Fresno and Merced to Sacramento project sections with both remaining under contract to AECOM.
- Subsequent to issuing the contract for the Fresno to Palmdale project section, it was divided into the Fresno to Bakersfield and Bakersfield to Palmdale sections with both remaining under contract to the URS-HMM-Arup/JV.

- The regional sections that have been re-procured include Merced to Sacramento, Bakersfield to Palmdale, and Los Angeles to San Diego (Precision Civil Engineering, TY Lin and Ch2mHill, respectively). (The contracts are not yet executed).
- The projected budget by contract amounts reflect the current forecast to complete the pre-construction phase for each segment, including an additional \$29 million for resource agency costs for partner agencies such as CDFW, USACE, and the USFWS and \$10 million in contingency to cover potential future changes to scope.
- Program Management costs are allocated across planning and construction funding.

The amounts in Table 1 show the current contract expiration dates, current contract value, projected contract costs, and expenditures (expenditures to date – Dec. 31, 2013) for the Program Management Team contract and for each of the Regional Consultant contracts for work performed during the pre-construction phase of the program from inception of the contracts. This includes the current federal and state dollars and pre-date Proposition 1A when this work was funded using a mix of Public Transportation Account and Reimbursement funding.

<b>TABLE 1: PRE-CONSTRUCTION PHASE BUDGETS BY CONTRACT</b>				
<b>Section</b>	<b>Contract Expiration</b>	<b>Current Contract Value</b>	<b>Projected</b>	<b>Expenditures</b>
Program Management (Parsons Brinkerhoff) <sup>2</sup>	Jun-15	\$295	\$474	\$203
San Francisco - San Jose (HNTB) Expired	Expired	\$55	--	\$45
SF -SJ Future <sup>3</sup>	N/A	TBD	TBD	\$0
San Jose - Merced (Parsons Transportation Group)	Jun-14	\$64	\$77	\$61
Merced - Fresno (AECOM) <sup>4</sup>	Jun-15	\$83	\$89	\$63
Fresno - Bakersfield (URS-HMM-Arup/JV) <sup>5</sup>	Jun-15	\$158	\$146	\$121
Bakersfield - Palmdale (URS-HMM-Arup/JV) <sup>6</sup>	Mar-14	--	--	\$25
Bakersfield - Palmdale (TY Lin) <sup>11</sup>	Oct-18	\$46	\$45	\$0
Palmdale - Los Angeles (HMM-URS-Arup/JV) <sup>7</sup>	Sept-14	\$74	\$103	\$65
Los Angeles - Anaheim (STV)	Jun-14	\$50	\$56	\$36
Los Angeles - San Diego (HNTB) Expired	Sept-13	\$95	--	\$12
Los Angeles - San Diego (Ch2M Hill) <sup>11</sup>	Oct-15	\$2	TBD	\$0
Merced - Sacramento (AECOM) Expired <sup>8</sup>	Sept-13	--	--	\$8
Merced - Sacramento (Precision Civil Engineering) <sup>11</sup>	Oct-15	\$1	\$51	\$0
Altamont (AECOM) (Under SJRRC direction) <sup>9</sup>	Jun-14	\$55	\$41	\$9
Agency Costs (Estimate) <sup>10</sup>	N/A	--	\$29	--
Contingency	N/A	--	\$10	--
<b>TOTAL</b>		<b>\$978</b>	<b>\$1,121</b>	<b>\$648</b>
<b>(Dollars in millions)</b>				

## CONSTRUCTION COST

The Draft 2014 Business Plan includes updated cost estimates for each implementation phase of the program presented in both constant 2013 dollars and in YOE dollars. Table 2 provides a further breakdown of the construction cost estimates in constant 2013 dollars and YOE dollars from the Draft 2014 Business Plan by project section and cost estimates in constant 2011 dollars and YOE dollars from the 2012 Business Plan by project section. Approximately \$8.1 to \$8.2 billion in program wide costs, which were identified in the 2012 Business Plan, and which remain unchanged in the Draft 2014 Business Plan, have been prorated across the project sections. These costs include approximately \$4.4 billion for rolling stock, \$1.5 billion for program, project and construction management costs, and \$2.3 billion in unallocated contingency funds (approximately 3 percent of the overall cost of the project).

Table 3 shows the breakdown of costs for the contract awarded to TPZP for CP 1. The contract price for CP 1 is \$969,988,000 with additional Authority-controlled provisional sums of \$53,000,000 for utility relocation, construction contract work, and unforeseen circumstances, such as the discovery of hazardous materials. Table 3 also shows the \$160,000,000 contingency, approved by the Board of Directors, which was based on Authority staff's risk-informed contingency assessment reports and recommended contingency estimates and the unit price allowance for hazardous soil remediation.

**TABLE 2: CONSTRUCTION COST BY SECTION**

Baseline Budgets by Section		Cost Alignment Estimates (Constant Dollars*)	Cost Alignment Estimate (YOE)
San Francisco - San Jose	2012 Business Plan	\$5,699	\$8,363
	<b>Draft 2014 Business Plan</b>	<b>\$5,813</b>	<b>\$7,960</b>
San Jose - Merced	2012 Business Plan	\$14,042	\$19,757
	<b>Draft 2014 Business Plan</b>	<b>\$14,332</b>	<b>\$18,978</b>
Merced - Fresno	2012 Business Plan	\$5,214	\$5,482
	<b>Draft 2014 Business Plan</b>	<b>\$5,392</b>	<b>\$5,972</b>
Fresno - Bakersfield	2012 Business Plan	\$6,705	\$7,711
	<b>Draft 2014 Business Plan</b>	<b>\$6,927</b>	<b>\$7,813</b>
Bakersfield - Palmdale	2012 Business Plan	\$8,092	\$9,533
	<b>Draft 2014 Business Plan</b>	<b>\$8,359</b>	<b>\$9,418</b>
Palmdale - Los Angeles	2012 Business Plan	\$13,100	\$16,704
	<b>Draft 2014 Business Plan</b>	<b>\$13,468</b>	<b>\$16,627</b>
Los Angeles - Anaheim	2012 Business Plan	\$591	\$815
	<b>Draft 2014 Business Plan</b>	<b>\$603</b>	<b>\$825</b>
<b>TOTAL</b>	2012 Business Plan	\$53,443	\$68,365
	<b>Draft 2014 Business Plan</b>	<b>\$54,894</b>	<b>\$67,593</b>

\*2011 dollars are used for 2012 Business Plan estimates. 2013 dollars are used for Draft 2014 Business Plan estimates.  
(Dollars in millions)

**TABLE 3: CONTRACT COSTS FOR CP 1**

Item	Price
<b>CONTRACT PRICE</b>	<b>\$969,988,000</b>
Utility Provisional Sum:	\$25,000,000
Construction Contract Work Provisional Sum:	\$20,000,000
Building Hazardous Materials Provisional Sum:	\$8,000,000
<b>TOTAL PROVISIONAL SUMS</b>	<b>\$53,000,000</b>
<b>CONTRACT PRICE + TOTAL PROVISIONAL SUMS</b>	<b>\$1,022,988,000</b>
Board of Directors approved Contingency	\$160,000,000

# Schedule

## Current and Projected

### SB 1029 PROJECT UPDATE REPORT

#### Section (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.

### CONSTRUCTION/IMPLEMENTATION SCHEDULE

The design-build contract for CP 1 was executed with TPZP on August 16, 2013. The award and execution of CP 1 in Summer 2013 is a change from the initial schedule of early 2013 as was stated in the 2012 Business Plan. This change was made to accommodate requests received from the design-build teams bidding on the project for more time to develop their proposals. Despite the adjustments, the Authority remains on schedule to completing environmental review and design and construction of the first construction section by 2018.

The table below shows the phased implementation schedule adopted by the Authority in the 2012 Business Plan. The schedule, which remains unchanged in the Draft 2014 Business Plan, will become final upon adoption by the Board of Directors at the April 2014 Board Meeting. For more detail on these phases, please see Chapter 2 of the 2012 Business Plan titled “The Implementation Strategy: Blending, Phasing, Investing in Early Benefits.”

**TABLE 4: IMPLEMENTATION SCHEDULE**

Section	Length (approx)	Endpoints	Service Description	Planning Schedule
Initial Operating Section (IOS)	300 miles	Merced to San Fernando Valley	<ul style="list-style-type: none"> <li>→ One-seat ride from Merced to San Fernando Valley.</li> <li>→ Closes north-south intercity rail gap, connecting Bakersfield and Palmdale and then into Los Angeles Basin.</li> <li>→ Begins with construction of up to 130 miles of high-speed rail track and structures in Central Valley.</li> <li>→ Private sector operator.</li> <li>→ Ridership and revenues sufficient to attract private capital for expansion.</li> <li>→ Connects with enhanced regional/local rail for blended operations with common ticketing.</li> </ul>	2022
Bay to Basin	410 miles	San Jose and Merced to San Fernando Valley	<ul style="list-style-type: none"> <li>→ One-seat ride between San Francisco and San Fernando Valley.<sup>12</sup></li> <li>→ Shared use of electrified/upgraded Caltrain corridor between San Jose and San Francisco Transbay Transit Center.</li> <li>→ First high-speed rail service to connect the San Francisco Bay Area with the Los Angeles Basin.</li> </ul>	2026
Phase 1	520 miles	San Francisco to Los Angeles/ Anaheim	<ul style="list-style-type: none"> <li>→ One-seat ride between San Francisco and Los Angeles.<sup>12</sup></li> <li>→ Dedicated high-speed rail infrastructure between San Jose and Los Angeles Union Station.</li> <li>→ Shared use of electrified/upgraded Caltrain corridor between San Jose and San Francisco Transbay Transit Center.</li> <li>→ Upgraded Metrolink corridor from LA to Anaheim.</li> </ul>	2028

## ENVIRONMENTAL SCHEDULE

The Authority extended the comment period on the Fresno to Bakersfield Revised Draft EIR/EIS from the required 45 days to 90 days, allowing more time for public comment and stakeholder involvement. The public comment period for this section concluded on October 19, 2012, which initially shifted the anticipated date for the FRA to issue a ROD out from January 2013 (as projected in the 2012 Business Plan) to Fall 2013. However, to address stakeholder concerns as well as additional comments from the reviewing agencies, the date for the Fresno to Bakersfield ROD has been extended to the Spring of 2014. Once the ROD has been issued and construction approval has been obtained by the STB for this project section, the Authority will be able to procure real property and begin construction. The implementation of the Blended System and integration of the state rail modernization program has resulted in some changes in the environmental schedule in order to accommodate work with strategic stakeholders on the Bookends (the San Francisco Bay Area and Los Angeles Basin) and on Connectivity projects. These extended timelines will allow additional time for community outreach and stakeholder input.

TABLE 5: PROJECTED MILESTONES FOR ENVIRONMENTAL REVIEW PROCESS/POTENTIAL CONSTRUCTION COMPLETION			
Section		Receive Record of Decision	Complete Construction
Merced - Fresno	BASELINE REVISED	June 2012 COMPLETED	2018 <sup>13</sup>
Fresno - Bakersfield	BASELINE REVISED	December 2012 Spring 2014	2018
San Francisco - San Jose <sup>14</sup>	BASELINE REVISED	December 2014 Summer 2017	2028
San Jose - Merced	BASELINE REVISED	December 2013 Fall 2016	2026
Bakersfield - Palmdale	BASELINE REVISED	February 2014 Fall 2015	2021
Palmdale - Los Angeles	BASELINE REVISED	October 2013 Summer 2015	2028 <sup>15</sup>
Los Angeles - Anaheim	BASELINE REVISED	December 2014 Spring 2016	TBD
Merced - Sacramento (Phase 2)	BASELINE REVISED	TBD TBD	TBD
Los Angeles - San Diego (Phase 2)	BASELINE REVISED	TBD TBD	TBD

# Milestones Achieved

## Since November 2013

### **SB 1029 PROJECT UPDATE REPORT**

#### **Section (f)**

*A summary of milestones achieved during the prior year and milestones expected to be reached in the coming year.*

### **ARMY CORPS OF ENGINEERS AND ENVIRONMENTAL PROTECTION AGENCY APPROVE PREFERRED ALIGNMENT FOR FRESNO TO BAKERSFIELD PROJECT SECTION**

In December 2013, the Authority received confirmation from the USEPA and the USACE that the preliminary recommendation of the Preferred Alternative for the Fresno to Bakersfield section of the project was the preliminary LEDPA as defined in Section 404 (b)(1) of the federal Clean Water Act. This was a significant step in moving the Fresno to Bakersfield environmental document forward.

### **FIVE WORLD-CLASS TEAMS SUBMIT STATEMENTS OF QUALIFICATIONS FOR CONSTRUCTION PACKAGE 2-3**

In December 2013, five world-class construction teams submitted qualifications to bid on the next 60-mile phase of high-speed rail construction from Fresno south to the Tulare-Kern County line near Bakersfield. In February 2014, the Authority announced the construction teams that qualified for the design build contract for Construction Package 2-3 (CP 2-3). Meeting qualifications are the following teams listed in alphabetical order:

- California Rail Builders: Ferrovia Agroman US Corp. and Granite Construction Company
- Dragados/Flatiron/Shimmick: Dragados USA, Inc., Flatiron West, Inc. and Shimmick Construction Co., Inc.
- Golden State Rail Partnership: OHL USA, Inc. and Samsung E&C America, Inc.
- Skanska-Ames a Joint Venture: Skanska USA Civil West California District Inc. and Ames Construction, Inc.
- Tutor Perini/Zachry/Parsons, a Joint Venture: Tutor Perini Corporation, Zachry Construction Corporation and Parsons Transportation Group Inc.

These qualified firms are now eligible to submit formal design- build proposals. The Authority anticipates releasing the Request for Proposals (RFP) in Spring 2014. The selected design-build firm will be responsible for delivering final designs for bridges, culverts, trenches and tunnels, utility relocations, aerial structures, grade separations, security and drainage.

### **2013 STAFF MANAGEMENT REPORT RELEASED**

In December 2013, we released the 2013 Staff Management Report. The report, which is required by Provision 5 of Item 2665-306-6043 of SB 1029, must be issued 60 days prior to advertising the contract for CP 2-3. The report describes the

organizational structure supporting the delivery of the high-speed rail program, as well as the staffing structure and key construction management procedures established by the Authority. Additionally, the 2013 Staff Management Report documents the enhanced organizational strategies implemented by the Authority's executive management team since 2012 to achieve the program goals identified in the 2012 Business Plan and to implement the program funded through SB 1029.

## **AUTHORITY BOARD OF DIRECTORS CHAIR DAN RICHARD OFFERS TESTIMONY TO HOUSE TRANSPORTATION AND INFRASTRUCTURE COMMITTEE**

In January 2014, Board of Directors Chair Dan Richard testified before the United States House Subcommittee on Railroads, Pipelines, and Hazardous Materials Committee on Transportation and Infrastructure. In his testimony, Chair Richard covered why the high-speed rail project is critical to California's future prosperity and, therefore, will benefit the nation as a whole. He also provided a brief summary of the benefits associated with the Authority's plans for delivery of the system, both in the short and long-term. He concluded his formal testimony with an update on the progress to date and laid out the next steps in developing this critical transportation investment.

## **JOINT REQUEST FOR PROPOSALS FOR TRAINSETS RELEASED**

In January 2014, Amtrak and the Authority issued a joint RFP for trainsets currently being manufactured and in commercial service that are capable of speeds up to 220 mph. The joint procurement is expected to increase industry interest and competition, reduce administrative and capital costs associated with procurement, and facilitate compliance with the FRA's Buy America requirement by encouraging off-shore manufacturers to establish factories in the United States. The Authority is seeking an initial order of 15 trainsets which will have a minimum of 450 seats that can meet its planned trip-time requirements for service from the San Francisco Bay Area to Los Angeles. Proposals are due in May, and it is expected that a builder will be selected by the end of 2014.

## **TOM RICHARDS RE-APPOINTED TO AUTHORITY BOARD OF DIRECTORS**

In January 2014, Governor Brown re-appointed Tom Richards to the Authority Board of Directors. He currently serves as Vice-Chair on the Board. Richards is Chair and CEO of The Penstar Group, a Fresno-based real estate investment, development and construction company. His projects have extended from Santa Barbara to the Central Valley, from Sacramento to Bakersfield and in the Inland Empire from Corona to Victorville. With his re-appointment and the appointments of Board Members Katherine Perez-Estolano, Patrick W. Henning, Sr., Richard Frank highlighted in the Authority's November 15, 2013 Project Update Report, all Board of Directors positions remain filled.

## **GOVERNOR BROWN INCLUDES CAP AND TRADE INVESTMENTS FOR THE HIGH-SPEED RAIL AND THE STATEWIDE RAIL MODERNIZATION PROGRAM IN THE PROPOSED 2014-15 BUDGET**

In January 2014, Governor Brown released his proposed 2014-15 Budget to the California Legislature and the public. The proposal includes \$300 million in Cap and Trade proceeds for Rail Modernization of which \$250 million is for high-speed rail and \$50 million for other passenger operators. The proposal also establishes an ongoing state commitment of Cap and Trade proceeds to high-speed rail, which will facilitate future phases of the initial operating segment by allowing the Authority to leverage both public and private financing. This proposed investment in statewide rail modernization demonstrates Governor Brown's commitment to reducing greenhouse gas emissions in the near-term, while also addressing the long-term challenge of inter-regional mobility. Specifically, these funds will aid in the development of a high-speed rail system and make necessary upgrades to urban, commuter and intercity rail networks – a catalyst for transit-oriented and sustainable community development.

## **CONNECTIVITY FUNDS RELEASED FOR SOUTHERN CALIFORNIA (METROLINK)**

In January 2014, the California Transportation Commission (CTC) approved the release of \$8.5 million of Proposition 1A connectivity funds for the Southern California Regional Rail Authority's (Metrolink) High-Speed Readiness Program. The program will increase Metrolink service levels to support and complement planned increases in ridership as well as connectivity to the future high-speed rail system.

The \$8.5 million allocation allows Metrolink to purchase three additional high-powered and low-emission Tier-4 locomotives for their commuter rail service. This is part of an \$89 million investment of connectivity funds allocated through SB 1029 to repower and/or purchase 20 to 30 stronger, faster, and greener locomotives, and recondition and improve passenger cars. The state investment of \$89 million will help leverage a total of \$203 million for this purpose. Metrolink also received approximately \$35 million for PTC system work from Proposition 1A connectivity funds in previous appropriations.

## **AUTHORITY FILLS KEY PROGRAM MANAGEMENT POSITIONS**

Under the direction of Authority's Chief Program and Assistant Chief Program managers, we filled three management positions to oversee the design and construction of the high-speed rail system. These positions include: the Director of Design and Construction, who will supervise the overall management for the design-build projects, including all contractors and staff associated with the projects; the Director of Contracts and Compliance, who will oversee the planning, organizing and evaluations of contracts and compliance; and the Director of Project Management, who will be responsible for the direction and coordination of policy development and all activities related to the capital program.

## **NEW FINANCIAL, RISK MANAGEMENT AND PROGRAM OVERSIGHT REPORTING SYSTEM ESTABLISHED**

At its February 2012 meeting, the Board of Directors created the Finance and Audit Committee and nominated Board Members Mike Rossi and Tom Richards to comprise its membership. At the time, the Authority had no Chief Financial Officer (CFO) and was not appropriately staffed or organized in the area of fiscal management to deliver a project on the scale of high-speed rail. Since then, the Authority has hired CFO Russell Fong, built out its Fiscal Services Division, and put in place policies and procedures that are consistent with industry best practices. During the course of these efforts, the Fiscal Services Division has been reporting to the Finance and Audit Committee. These reports include summaries of cost variances, compliance, risk management, and project status.

The Committee has worked with staff to develop appropriate reporting templates that will provide updates to the Board and public on current financial trends as well as the Authority's fiscal control efforts that are critical to project success. And at the February 2013 Board of Directors meeting, CFO Fong provided the Board Members and the public with an update on the accomplishments of the Finance and Audit Committee and a made presentation of financial reports that included summaries of cost variances, compliance, risk management and project status.

In addition, CFO Fong reported that, in accordance with FRA Grant/Cooperative Agreement No. FRA-HSR-0009-10-01-05, Amendment No. 5., the Authority has continued to update its Funding Contribution Plan (FCP) quarterly to reflect expenditures and revised projections of future expenditures. Following this presentation, on February 21, 2014, the Authority announced that the FRA approved its most recent FCP. The approval triggers the advance payment of nearly \$63 million from FRA to the Authority for payments due to our consultants and contractors and further clarifies that the FCP is a living document that is required to be updated and submitted to the FRA for review and approval. The approval also emphasized that, contrary to numerous press reports, there is not and never has been an April 1, 2014 "deadline from the FRA to secure \$180 million in state funding" for the pro-

gram. The most recent updated FCP, approved by FRA, includes updated expenditure projections and also reflects updated assumptions about the availability of Proposition 1A funds and the Governor's proposal for cap and trade revenues. The FCP, which will be updated again in the Spring, shows no new commitment of new state funds before July 2014.

As a capstone, the committee reports established a regular reporting mechanism to the full Board and the public going forward.

## **DRAFT 2014 BUSINESS PLAN RELEASED**

On February 7, 2014, the Authority released its Draft 2014 Business Plan, a foundational document for implementing the high-speed rail program, which includes current financial analysis and ridership forecasts. This draft business plan summarizes the progress the Authority has made over the last two years, updates the Authority's 2012 Business Plan to include recent ridership forecasts and cost estimates, and describes the next major decisions and milestones that lie ahead.

The main components of this draft plan have changed little from the 2012 Business Plan, with capital costs effectively unchanged, down by 1%. Ridership projections are increasing and farebox revenue projections are decreasing, and continuing to cover operations and maintenance. The updates, including refinements to underlying models and analysis, are based on current data and recommendations from outside experts such as the United States Government Accountability Office (GAO).

With this release, the Authority has made tremendous progress toward fulfilling the statutory requirement established by Public Utilities Code Section 185033, as amended by Assembly Bill 528 (Lowenthal, Chapter 237, Statutes of 2013), to prepare, publish, adopt, and submit an updated business plan to the Legislature on May 1, 2014. More specifically, the release satisfies the provision in current law which also requires that, at least 60 days prior to the submittal to the Legislature, the Authority publish a draft business plan for public review and comment. To ensure that the public has an opportunity to respond, the Authority is providing multiple methods for submitting comments on this draft business plan.

## **AUTHORITY AWARDS RIGHT-OF-WAY ENGINEERING AND SURVEYING CONTRACTS TO FIVE CALIFORNIA FIRMS**

In February 2014, the Board of Directors approved right-of-way engineering and surveying contracts with five California firms. Supporting its goal to ensure small business participation and in putting Californians to work, four out of the five firms are certified small businesses, with two of those businesses located in the Central Valley. The terms negotiated with the five firms include the location of offices based in Fresno, Tulare or Kings County, and they also will adhere to the Authority's 30 percent small business participation goal. Each contract is worth up to \$3.2 million over four years. Right-of-way engineering and survey work will include staking and marking parcels, drafting maps, developing legal property descriptions and identifying and relocating underground utilities. Firms will also be responsible for administration and project management, progress reports and project tracking systems. The procurement will cover support services for acquiring more than 1,000 parcels of real property from just south of Madera to north of Bakersfield.

## **FUTURE MILESTONES**

### **ENVIRONMENTAL CLEARANCE FOR FRESNO TO BAKERSFIELD**

The Board of Directors expects to approve final environmental documents for the Fresno to Bakersfield project section in Spring 2014, followed by a ROD from the FRA, and STB approval for construction. These actions will authorize us to begin negotiations with impacted land owners for property acquisition, to purchase real property and award subsequent design-build contracts.

### **EXECUTION OF AGREEMENT WITH BURLINGTON NORTHERN SANTA FE FOR ENGINEERING, CONSTRUCTION AND MAINTENANCE**

The Authority and Burlington Northern Santa Fe (BNSF) have worked jointly to develop an engineering design to address adjacency concerns in the Central Valley that will enhance the safety of both freight and passenger rail service. Recommendations have been shaped by both parties and a willingness to meet and discuss at length various options for mitigation and to understand BNSF's engineering and operating standards. These recommendations will provide the engineering foundation for how the Authority and BNSF will work together in the future and the Authority anticipates execution of the master agreement within the coming months.

### **EXECUTION OF AGREEMENT WITH UPRR FOR CONSTRUCTION, ENGINEERING, MAINTENANCE AND RELATED INSURANCE AND INDEMNIFICATION**

After extensive collaboration, the Authority and UPRR reached consensus and executed an Insurance and Indemnification Agreement, effective November 2013, which sets forth the terms of indemnity and insurance that will apply between both parties in connection with all current and future discussions and agreements related to the high-speed rail project. The Authority and UPRR continue to work toward a related Construction, Engineering, and Maintenance Agreement. These agreements will ensure safe access for construction, temporary relocation of UPRR tracks, changes to signal/communication systems, design approval over key project design features, including overpasses and intrusion protection barriers; and continuous and safe operation of freight service during and after construction.

### **2014 BUSINESS PLAN ADOPTION AND SUBMITTAL**

The Authority is required by Public Utilities Code Section 185033 to prepare, publish, adopt, and submit an updated Business Plan to the Legislature on May 1, 2014. Statute also dictates that, at least 60 days prior to the submittal to the Legislature, the Authority must publish a draft Plan for public review and comment. The public review and comment period began on February 7, 2014, and the Authority anticipates Board of Director adoption in April 2014 with submittal to the Legislature by May 1, 2014.

### **RELEASE OF REQUEST FOR PROPOSALS FOR DESIGN-BUILD SERVICES FOR CONSTRUCTION PACKAGE 2-3**

The Authority anticipates releasing the RFP for design-build work for CP 2-3 in Spring 2014. In February 2014, the Authority announced that five world-class construction teams qualified to bid on the next 60-mile phase of high-speed rail construction from Fresno south to the Tulare-Kern County line near Bakersfield. The qualified firms are eligible to submit formal design-build proposals in 2014.

## **RELEASE OF REQUEST FOR QUALIFICATION FOR PROJECT AND CONSTRUCTION MANAGEMENT SERVICES FOR CONSTRUCTION PACKAGE 2-3**

The Authority anticipates releasing the RFQ for Project and Construction Management Services (PCM) for CP 2-3 in Spring 2014. The scope of services include: project management and administration; quality verification and validation; oversight of safety, security, project controls, engineering, construction, environmental, contracts and utility and public outreach and specialty support services. The PCM ensures that technical and contract requirements, including costs, are met for CP 2-3. They will oversee inspection and testing of the high-speed rail infrastructure, technical and environmental compliance including hazmat oversight, utility relocation, procurement and risk management assistance, construction safety and security, document control, fraud and theft prevention and public outreach.



# Issues

## SB 1029 PROJECT UPDATE REPORT

### Section (g)

Any issues identified during the prior year and actions taken to address those issues.

## LEGAL CHALLENGES

### **HIGH-SPEED RAIL AUTHORITY V. ALL PERSONS INTERESTED IN THE MATTER OF THE VALIDITY OF THE AUTHORIZATION AND ISSUANCE OF GENERAL OBLIGATION BONDS TO BE ISSUED PURSUANT TO THE SAFE, RELIABLE HIGH-SPEED PASSENGER TRAIN BOND ACT FOR THE 21ST CENTURY**

*Sacramento Superior Court, Filed March 19, 2013.*

On November 25, 2013 the Court denied the Authority a validation judgment. The Court concluded that the High-Speed Passenger Train Finance Committee's determination that it was "necessary and desirable" to authorize the issuance of bonds to finance construction of the high-speed rail project as of March 18, 2013 was not supported by any evidence in the record, and therefore did not comply with the essential legal requirement.

**Actions Taken:** On January 24, 2014, the Authority and the High-Speed Rail Passenger Train Finance Committee, filed a Petition for Extraordinary Writ with the California Supreme Court requesting it to reverse the Superior Court's denial to validate the bonds. The Writ was transferred to the Court of Appeal, Third Appellate District. On February 14, 2014, the appellate court announced that it will take up the up the state's request for expedited review. The Court ordered Tos et al. to file an opposition brief on the merits by March 17, 2014. The Authority's reply is due April 1, 2014.

### **JOHN TOS, AARON FUKUDA AND COUNTY OF KINGS V. CALIFORNIA HIGH-SPEED RAIL AUTHORITY**

*Sacramento Superior Court, Filed November 14, 2011.*

The Tos lawsuit is currently proceeding in two parts. First, on November 25, 2013 Judge Kenny issued a written decision ordering the Authority to rescind its funding plan that had been submitted to the Governor and the Legislature in November 2011 requesting an appropriation of Proposition 1A bond funds for project capital cost. That writ has been stayed by the Third District Court of Appeal, as noted below. All other writs of mandate were dismissed by the Court.

In addition the Court found there is no evidence that the Authority is using, or planning to use, federal grant money in violation of any applicable law or order of this Court. Secondly, the parties submitted additional briefings to address whether there are still unresolved taxpayer claims in the case that warrant an evidentiary trial.

There are still unresolved taxpayer claims in the Tos case. The Court did not set a trial date to address the taxpayer claims as requested by Tos to allow the Authority to file a motion addressing whether the taxpayer claims are barred as a matter of law for the reasons asserted by the Authority at the conference. Oral argument on that motion was heard on February 14 and Judge Kenny has taken the matter under submission.

**Actions Taken:** In January the Authority, Governor Brown, Treasurer Bill Lockyer, Director of Department of Finance Michael Cohen, and Secretary of the State Transportation Agency Brian Kelly filed a California Supreme Court Extraordinary Writ to overturn the Superior Court ruling that ordered the funding plan rescission. The Writ was transferred to the Court of Appeal, Third Appellate District, for an expedited review.

On February 14, the Third District Court of Appeal announced that it will take up the state's request for expedited review. In addition, the appellate court stayed the superior court's order requiring the Authority to rescind its funding plan. The Court ordered Tos et al. to file an opposition brief on the merits by March 17, 2014. The Authority's reply is due April 1, 2014.

### **TOWN OF ATHERTON V. CALIFORNIA HIGH-SPEED RAIL AUTHORITY, COURT OF APPEAL**

*Third Appellate District, Filed April 13, 2012.*

In the November 2011 rulings for Atherton I and II, the Sacramento County Superior Court determined that the Authority had complied with the environmental review requirements in CEQA for the Bay Area to Central Valley Program EIR/EIS. The court also ruled that the Authority did an adequate job of engaging the public in the environmental review process. The Atherton plaintiffs are appealing the ruling on those items. On June 26, 2013, the Authority provided notice of an STB decision to take jurisdiction over the Authority's project that may preempt State laws, including CEQA. and the Authority requested and was granted a continuance of the oral argument on the merits of the CEQA appeal and granted permission to file a supplemental brief on possible federal preemption that would remove the Court of Appeals jurisdiction to hear the CEQA appeal .

Supplemental briefs were filed on the preemption issues.

**Actions Taken:** The Authority is currently waiting for the Court to schedule oral arguments on this preemption matter.

### **RIGHT-OF-WAY**

Before construction can begin on a given parcel of land, the Authority must obtain legal possession of the parcel. Thus, the acquisition of property rights is directly linked to the ability to meet CP 1 project deadlines. This ability is affected by the timing of achievement of environmental milestones, receipt of funding, completion of multiple levels of governmental review and approval processes and the cooperation of property owners. Delays in the acquisition process could affect the CP 1 contractor's ability to meet project deadlines and costs.

For more detail on this topic, please see this report's Risk Management section.

**Actions Taken:** The Authority is mitigating and managing the risk associated with ROW in a variety of ways, including development of a highly detailed acquisition plan, vetting the acquisition plan with contractors and prioritizing acquisition to meet initial contractor work-zone requirements and securing technical expertise and additional capacity. The Authority is also working to streamline the right-of-way process in order to mitigate for schedule challenges that gave a late start to the acquisition process.

## THIRD PARTY AGREEMENTS

For utilities, facilities and railroads that are impacted by the design and construction of the high-speed rail project, the Authority is in the process of negotiating numerous agreements to facilitate design, cost apportionment and relocations. Due to the complexity of the high-speed rail project and the necessity of developing new relationships with these entities which will extend through construction to operation, some of these agreements have taken longer to finalize than anticipated. These stakeholder concerns include compliance with Buy America, possible future impacts of the high-speed rail project on future growth or services provided by these entities, designing relocations to be compatible with the safety standards of the high-speed rail and ensuring continuation of service during construction. Failure to execute these agreements in a timely fashion can impact the design phase of CP 1.

**Actions Taken:** The Authority is addressing these concerns on a number of fronts. For the railroads, design work and coordination is progressing to address concerns about future growth and protection of services, including intrusion barriers. Issues related to the electrification of the train are being handled through the rulemaking process with the Public Utilities Commission in technical and all-party workshops for a new General Order. The Authority is working in collaboration with utilities and the FRA for early identification of any potential Buy America issues; and negotiations are continuing on agreements to resolve remaining issues and development of a working relationship with stakeholders.

# Risk Management

Identifying and managing project risk is an essential element of successfully delivering the high-speed rail program. The Authority is utilizing a state-of-the-art approach to risk management, including extensively detailed calculation of variables to quantify risk and the incorporation of lessons learned by global experts from other programs.

The Authority is also working with the Legislature’s Peer Review Group (PRG), not just to implement provisions of SB 1029, but to also gain the benefit of their perspective and guidance to continually improve the program.

The risk management program provides the Authority with a formal, systematic approach to identifying, assessing, evaluating, documenting and managing risks that could jeopardize the success of the project. These include specific engineering, environmental, planning, right-of-way, procurement, construction, organizational, stakeholder, budget and schedule risk, or any other potential inabilities to deliver the required results.

## OVERVIEW OF KEY RISK AREAS

### ENVIRONMENTAL APPROVALS

The risk associated with environmental approvals may be broadly separated into risk of obtaining approvals in the requisite time necessary to avoid delays to construction, and risk associated with conditions of the approval (e.g. work windows). While the working relationship between our staff and the staff at FRA and the various resource agencies, including USACE, USEPA, USFWS, SWRCB, CDFW, is constructive, we do continue to experience delays at least partially and perhaps largely due to review periods that are extending longer than anticipated. Due to the interdependencies between various approvals/permits granted by different agencies, it may take delays of only one or two documents/permits at one or two agencies to delay the entire process. The conditions and restrictions associated with these permits or approvals are another area of uncertainty, as is the relationship between property acquisition and ability to implement pre-construction requirements. Per terms of the contract with the design-build contractor, meeting these conditions will be the responsibility of the design-build contractor, but they will not be fully known until the permit is in hand and not achievable until the property(ies) in question are acquired.

#### MANAGEMENT AND MITIGATIONS

We continue to manage this risk by increasing staff levels and maintaining intergovernmental collaboration while complying with all approval processes in addition to the risk transfer alluded to above.

### SB 1029 PROJECT UPDATE REPORT

#### Section (h)

*A thorough discussion of various risks to the project and steps taken to mitigate those risks.*

Specifically:

- Obtain written commitments for accelerated review periods (Authority to get funding agreements).
- Establish close working relationships with state and federal agencies to expedite permits whenever feasible and continue to keep agencies informed of the schedule requirements and how they impact the schedule.
- Establish MOU/Memorandum of Agreement (MOAs) with the required agencies.
- Authority to pay for third party resources dedicated to support high-speed rail environmental reviews now in place.
- Continue to work with the FRA to prioritize resource allocation.
- Authority to develop and fund Permission to Enter (PTE) agreement and access with private land owners to facilitate early access to properties.
- Pursue early access to parcels and funding of survey work whenever feasible.
- Regional Coordinators to develop a outreach and communication plan for coordination with property owners (environmental and engineering staff to coordinate to minimize the impacts on the community).
- Early and informal consultation of the materials required for the development of alternatives for formal submittal.
- Develop strategy anticipating delayed decisions and reviews.
- Obtain process concurrence from lead and permitting agencies.
- Integrate environmental considerations earlier into the Alternative Analysis process.
- Preliminary design schedule and deliverables to be carefully aligned with environmental permitting process in order to allow sufficient time for review by the environmental team.
- Targeted environmental permitting/process analysis to be performed.
- Regional consultants to define the impacted areas and mitigation sites, and include standard mitigation measures in EIS/EIR

## **FINANCING AND FUNDING**

A number of risks exist for the overall program related to funding. Failure to receive the anticipated amount of public funding at the requisite time could threaten the pace of development of the full program. Additionally, failure to manage the timing of committed funds against the cash flow requirements of the construction program presents another risk. In the case of the Central Valley project, the primary funding risks relate to recent court rulings (under appeal, see Litigation risk below) and meeting the administrative requirements for full and timely receipt of the state and federal funding already identified for the Central Valley project.

## MANAGEMENT/MITIGATIONS

The near-term funding risk is mitigated by the identification of all necessary sources for the \$6 billion cost. The ultimate scope of the Central Valley project will be adjusted up or down over the course of the multiple phases of construction procurement, such that the total miles to be constructed will fit within the available funding. Steps to address uncertainties in future federal funding include:

- Phased implementation to align construction costs with funding.
- Utilize an American Recovery and Reinvestment Act reserves to preserve funding for the minimum systems and track connections.
- Continue to work with legislators, the USDOT the private sector and other stakeholders to maintain support for funding the programs, such as the High-Speed Intercity Passenger Rail Program; the Passenger Rail Investment and Improvement Act of 2008; the FTA New Starts Program; the Transportation Investment Generating Economic Recovery Discretionary Grant program; the Passenger Rail Investment and Improvement Act reauthorization, etc. and investigate other future funding sources.
- Engage private sector entities to discuss the ability of private finance to complement or supplement public sector funding.
- Develop budget commitment requirements to quantify funding requirements.
- Continue to work with federal partners to establish funding sources.
- Performing scenario and sensitivity analysis to test the project's financial performance under different ranges of inputs (see Ridership).
- Financing strategies aligned with successful high-speed rail projects in other parts of the world, including the Channel Tunnel Rail Link (HS1) in the United Kingdom. Financing is timed to align with project cash flows to enhance project value.

## LEGAL

In the normal course of business associated with implementing a complex transportation infrastructure project, public agencies typically address a range of litigation challenges and adjudicatory administrative processes related to project funding, environmental clearances, property acquisition and contract disputes. These litigation challenges have the potential to affect project schedules, costs and financing.

## MANAGEMENT/MITIGATIONS

The Authority works closely with affected stakeholders to address issues before they become formal lawsuits or, for legal issues raised through lawsuits, the Authority typically seeks to resolve them. In addition to court resolution processes, the Authority seeks to use alternative dispute resolution such as mediation or arbitration. For litigation purposes, the Authority is represented by the Attorney General's office except in those cases where additional expertise may be required.

## **OPERATIONS, MAINTENANCE, CAPITAL AND REHABILITATION COSTS**

Without a directly comparable system operating in the U.S., there is a risk that current estimates for operations and maintenance (O&M) costs are different than eventual actual costs. Currently, development of pre-revenue O&M costs are captured as part of the testing and start-up costs in the capital cost estimate under and are estimated as percentages of the system elements that are subject to the testing and startup operations.

### **MANAGEMENT AND MITIGATIONS**

To further refine its understanding of the system's O&M costs, the Authority undertook a comprehensive effort to develop a bottom-up O&M cost model for the 2014 Business Plan. The new model includes a detailed estimate of each cost category based on the current information about the system, service plans, federal regulations, and industry standards that is available. The model produces a separate estimate from the top-down 2012 Business Plan estimate and helps validate the results of the 2012 effort. The model is also capable of producing both high and low cost scenarios to further evaluate the potential range of O&M costs based on current system design/plans. The model was designed to follow the U.S. Department of Transportation Office of Inspector General's (DOT IG) guidance for the creation of O&M cost forecasts and the FRA WBS.

As an "intermediate" forecast, the estimate for the 2014 Business Plan accounts for all known cost categories and includes appropriate contingencies (based on the DOT IG guidance) for each cost category.

A thorough reassessment of appropriate contingency was undertaken to develop risk-based contingencies based on a number of applicable reference projects (for a particular O&M cost category), guidance contingency percentages defining limits, and a group of expert's judgment regarding the uncertainty or risk surrounding a particular O&M category's cost. In order to ensure judgments were as objective as possible, each assessor made their own assessment regarding their confidence in a particular category's base cost individually (assigning it a score on a scale of 1-5). These assessments were then averaged and combined with the guidance contingency percentages to determine a recommended contingency percentage for the particular O&M cost element.

Additionally, the Authority has undertaken an effort to understand the risks associated with the O&M forecasts more thoroughly. To do that, the Authority conducted Monte Carlo Simulations that analyzed the risk to the total cost estimate based on the accuracy of other O&M forecasts (reference cases) and to specific cost categories based on uncertainties internal to those categories (bottom-up). The two Monte Carlo simulations were run as an interim step in the development of the forecasts but they showed that current contingency percentages covered the majority of the scenarios in the reference case and nearly all scenarios in the bottom-up case. The preliminary results of the new estimating approach and these Monte Carlo simulations were shared with the Peer Review Group in July 2013. The Group commented that significant progress had been made in the creation of O&M cost estimates.

In September 2012, the Authority commissioned the Union Internationale des Chemins de Fer (UIC), the International Union of Railways, to conduct a review of the operations and maintenance estimates that were developed to support the 2012 Business Plan as required by SB 1029. The UIC formed a group of international high-speed rail experts from France, Spain and Italy to conduct this analysis. The experts reviewed the methodology and the procedures developed by the Authority and assessed the resulting O&M cost estimates for reasonableness. The independent experts' role was not to produce another O&M cost estimate; instead their review was conducted for the sole purpose of evaluating the soundness, validity and reasonableness of the process, approach, assumptions and variables used in the O&M cost study.

The review also provided best practice guidelines and some European benchmark values, based on the experts' experience in building, operating and maintaining European high-speed rail systems, in order to improve the O&M cost modeling process developed by the Authority. This effort was conducted between September 2012 and January 2013 in collaboration with the Authority staff. The UIC issued its report earlier this year, which was delivered to the Legislature and is available on the Authority website.

For the 2014 Business Plan, the Authority has developed a comprehensive life cycle cost model to capture the 50-year capital rehabilitation and replacement costs for the infrastructure and assets of California's high-speed rail system. The 2014 model transparently presents the methodology used to develop lifecycle requirements for each asset, allows changes to rehabilitation and replacement costs, timing, and spread for each asset, and generates outputs to summarize 50-year lifecycle costs in real and inflated dollars. The model has two scenarios built in; the base scenario assumes that assets are rehabilitated and replaced according to specifications, while the low scenario aims to optimize costs by modifying the frequency and spread of rehabilitation and replacement activities.

The 2014 model uses the 2012 Business Plan to establish system and service assumptions, and the model methodology is based on established research and practice by MAINTenance, renewaL, and Improvement of rail transportation INfrastructure to reduce Economic and environmental impacts (MAINLINE), which is part of the European Union-funded research program. MAINLINE's methodology is documented in *Proposed methodology for a Lifecycle Assessment Tool* and aims to capture all costs involved throughout the life of an asset, including construction, operations, maintenance, and end-of-life. The 2014 model also draws from lifecycle guidance by the International Union of Railways and the European Investment Bank, based on the planning and experience with existing systems.

The model includes detailed estimates for each cost category based on the design life and experience around the world for asset lifespans and rehabilitation requirements. Contingency was applied to the model to account for inherent risks and uncertainties with forecasting lifecycle costs. Unallocated contingency and allocated contingency were applied to mirror those percentages applied to each asset category in the capital cost model. Professional services, which includes all professional, technical, and management services related to the design and construction of infrastructure during the preliminary engineering, final design, and construction phases of the project, was also applied to each second level asset cost category.

## **RAILROAD AGREEMENTS**

Given the interface with existing railroad right-of-way, there is a need to come to agreement with the railroad companies. Although we have regular, ongoing communication with the railroads, at this time, there is not a Master Agreement in place between the Authority and BNSF or between the Authority and UPRR to inform design and construction of modifications to UPRR or BNSF facilities and each railroad's ROW and operational requirements. There is also risk related to fulfilling the obligations of the agreements once they are in place. In addition, there may be significant additional costs to the program associated with any disruptions to service experienced by BNSF and UPRR during construction. If agreements cannot be reached with the railroad companies, then design work in progress or already completed may be affected, leading to cost increases or schedule delays that could become significant if the delay in reaching agreements persists. In addition, the terms of these agreements and constraints imposed by railroad normal operations may negatively impact productivity assumptions made during the development of the program's schedule and cost estimate, as well as the eventual contractor's possible means and methods.

## MANAGEMENT AND MITIGATIONS

While the Authority is responsible for securing the agreements with the railroad companies, the Authority intends to transfer much of the risk related to performance under the agreements to the design-build contractors. The design-build contract mandates that the contractor will be responsible for fulfilling the Authority's obligations under the agreements with continued participation by the Authority.

The Authority has executed reimbursement agreements with the following railroads/operating agencies: Orange County Transportation Authority, Southern California Regional Rail Authority, Capitol Corridor Joint Power Authority, San Joaquin Regional Rail Commission and UPRR. In addition, the Authority has executed MOUs with both BNSF and UPRR. The Authority has recently executed an Insurance and Indemnification Agreement with the UPRR. The Authority has also made substantial progress in negotiating the Engineering, Construction and Maintenance Agreement with the UPRR and has begun negotiations with UPRR on a Purchase and Sale Agreement for the parcels required for the first Construction Package. Substantial progress has also been made between the Authority and BNSF in negotiating the template for the overpass agreements that will be required for CP 1. The Authority and BNSF are also working cooperatively to identify engineering solutions for mitigating the adjacency issues within CP 1, 2 and 3. Importantly, to expedite the development of additional agreements, BNSF has agreed to negotiate a single Master agreement. The Master agreement would eliminate the need for a separate reimbursement agreement and would combine the Insurance and Indemnification requirements within the Engineering, Construction and Maintenance Agreement.

## **RIDERSHIP AND FAREBOX REVENUE**

The financial viability of the program is dependent on public funding for early construction, and then on ridership revenues to support access to private capital as the program matures. Although the Authority is using best practices in its modeling, given that the program is entirely new, and no high-speed rail currently operates in the U.S., a risk exists that the actual ridership demand and revenue will differ from the projections currently being used. The impact to the program could be wide ranging and include the following:

- Decreased commercial and financial viability
- Lower-than-expected project revenue
- Increase in the public funding required
- Loss of stakeholder support

## MANAGEMENT AND MITIGATIONS

Demand and ridership estimates have been reduced and peer reviewed and a range of revenue scenarios have been evaluated for sensitivity. High, medium, and low revenue estimates all illustrate that the project will generate a positive operating cash flow.

The model developed for the 2014 Business Plan has been enhanced with additional features and latest available input data to address SB1029 requirements. Four main sources of data were updated complementing previous dataset and widening the range of perspectives. The most recent dataset was developed in conjunction with the California Department of Transportation to ensure better consistency with other California model suites. Additional features include more detailed access/egress mode choice model, variable forecast horizon years, streamlined model structure and faster run times.

As part of the 2014 Business Plan forecasting effort, the Authority is developing a Risk Analysis Model to esti-

mate a ridership and revenue forecast range and an associated probability for each of the Business Plan scenarios. The risk model will be used to develop Monte Carlo Simulations for each of the Business Plan scenarios and associated forecast year. The risk analysis model will include a range of assumptions relating to various risk factors having the greatest combination of uncertainty and impact on the results.

Main risk factors considered in this analysis include:

- Change in demographic growth rate
- Change in household income and size
- Change in statewide and regional spatial distribution
- Automobile fuel cost
- Highway capacity
- Airline ticket prices and frequency of service
- Change in overall amount of long distance travel
- Amount of travel induced by the introduction of high-speed rail

For each risk factor, minimum, most-likely and maximum values will be estimated based on best available research and analysis. These will serve as inputs to Monte Carlo simulations which will allow the Authority to quantify the full range of potential ridership and revenue outcomes together with the probability of each outcome. Based on this distribution of outcomes, low, median and high projected values for ridership and revenue will also be determined. The ‘low’ projection is more likely than not to be exceeded by actual future ridership. It just as likely that the actual results will be greater than the median projection as that the median projection will exceed actual results. The ‘high’ projection will have a correspondingly smaller probability that it will be met or exceed by actual results. Together, these values will provide a better picture of the range of potential ridership and revenue scenarios than a single point estimate as well as quantify the probability for each potential outcome. Applying Monte Carlo simulations to each 2014 Business Plan scenario, the risk model will provide a probability distribution of ridership and revenue outcomes resulting from identified risk factors together with a sensitivity analysis highlighting the main drivers for ridership and revenue.

## **RIGHT-OF-WAY**

Before construction can begin on a given parcel of land, the Authority must obtain legal possession of the parcel. Thus, the acquisition of property rights is directly linked to the ability to meet CP 1 project deadlines. This ability is affected by the timing of achievement of environmental milestones, receipt of funding, completion of multiple levels of governmental review and approval processes and the cooperation of property owners. Delays in the acquisition process could affect the CP 1 contractor’s ability to meet project deadlines and costs.

The actual right-of-way (ROW) acquisition process on the CP 1 contract is currently lagging the estimated baseline acquisition schedule provided in the awarded CP 1 contract. As part of the design-build process, the contractor is developing a new schedule based on their design and construction approach, which takes into account the current and projected ROW status. While the actual ROW acquisition schedule may result in impacts to CP 1 planned work, the Authority is currently assessing mitigation actions (see details below), such as re-sequencing of work and other design and construction work-around actions, in order to mitigate or eliminate potential impacts to the CP 1 contract completion date. Current CP 1 ROW acquisition projections do not impact the estimated overall First Construction

Section (FCS) completion schedule owing to criticality of other FCS work. To the extent that current ROW projections may impact the CP 1 contractor's planned work, they may pose a cost risk to the CP 1 contract. It should be noted that such cost risks were identified in earlier risk assessments and provided for in the CP 1 contract contingency approved by the California High Speed Rail Authority Board of Directors.

While different parcels present different challenges in the CP 1 ROW acquisition schedule, the primary risk drivers are the following:

- Initial availability of funding
- Reassessment of appraisals as a result of timing of initial project funding
- Procurement schedule for the ROW consulting services contracts
- Learning curve for reviewing and approving agencies
- Hiring of qualified staff
- Coordination of processes with SPWB
- Design refinements and changes to the ROW process arising from legal, third party, and environmental clearance issues.
  - \* Law – Compliance with eminent domain legislation requires the Authority to minimize private damage to land owners.
  - \* Third Parties – Coordination with third parties in the execution of the master agreements has resulted in additional refinements.
  - \* Environmental clearance – Both situations, above, and differences in the preliminary design between the environmental engineering and preliminary engineering for procurement have meant improvements have fallen external to the environmental footprint and these have to be cleared and acquired. e.g., Madera settlement.
  - \* Lawsuits and settlements have resulted in changes to ROW needs and processes.

#### MANAGEMENT AND MITIGATIONS

The Authority is mitigating and managing the risk associated with ROW in a variety of ways, including development of a highly detailed acquisition plan, vetting the acquisition plan with contractors and prioritizing acquisition to meet initial contractor work-zone requirements and securing technical expertise and additional capacity.

Steps being taken include:

- Surveying all single alignments prior to selection of preferred alternative
- Consulting with DOF and the SPWB to allow earlier site selection and reduce review and approval processes
- Accelerating survey and appraisal of all parcels

- Ensuring adequate resources to avoid staffing constraints. e.g., the execution of the four consulting contracts with full-service ROW firms
- Coordinating with all review agencies (e.g. DOF, DGS, and Caltrans) with respect to the project status and expected workload. Coordinate with the court system to ensure potential caseloads can be handled on a timely basis
- Assessing the advisability and practicality of having design-builders perform acquisition (except condemnation), of some of the temporary construction easements
- Enhancing cross-functional communications; discussions involving design refinements, noting that the current design is very preliminary
- The Authority has initiated early review of parcel impacts similar to Caltrans' condemnation review meetings. Caltrans' legal division, DGS, DOF, and the Authority have met to review Caltrans' current condemnation processes and have generally implemented same in adopting the Authority's process.

The following specific ROW mitigation actions are being pursued or have already been put in place on the CP 1 contract:

- Information Transfer
  - The first parcels acquired by the Authority have been transferred to the CP 1 contractor.
  - The Authority is providing the CP 1 contractor with data files in an effort to foster a partnership approach and facilitate timely acquisition.
  - The CP 1 contractor has provided a list of critical parcels, which the Authority is pursuing as a priority.
- Process
  - Workshops are being held with those other agencies to better elucidate the potential impacts of acquisition delays.
  - DGS have recently recruited two new review appraisers to help with the workload
  - The Authority is investigating the possibility of embedding additional dedicated appraisers.
  - DOF has recruited additional staff.
  - DOF is pursuing administrative measures to further streamline the process.
  - Tracking systems have been put in place to track our own process performance to understand exactly where the pinch points are.
- Design Refinements and changes to the ROW
  - In response to the legal requirements for design arising from eminent domain legislation, the Authority is in the process of transitioning work associated with advancing engineering beyond preliminary engineering to the CP 1 contractor, as has already been done with two parcels on CP 1

## **STAFFING AND ORGANIZATIONAL STRUCTURE**

During the peak construction years, the annual construction outlay will be several billion dollars. The Authority faces the risk that it will not have the number of experienced staff necessary to meet the demands of the program from an internal management perspective. If this risk is not mitigated by enhancing in-house capabilities, engaging supplemental resources, and considering appropriate business and commercial structures to transfer or share risk, then staffing and organizational structure may prove to be inadequate to the demands of the high-speed rail program. Without adequate staffing and expertise necessary to make timely, informed decisions necessary to advance the program, delays and increased costs are likely.

### **MANAGEMENT AND MITIGATIONS**

The risk(s) associated with staffing and organizational structure have been addressed with key hires on the Authority side as follows:

1. Risk Manager
2. Chief Program Manager and Assistant Chief Program Manager
3. Assistant Chief Counsel
4. Northern California Regional Director
5. Central California Regional Director
6. Southern California Regional Director
7. Chief Administrative Officer
8. Chief of External Affairs
9. Director of Communications
10. Deputy Director of Legislation (Vacant)
11. Director of Project Management
12. Director of Design and Construction

The Authority has made significant progress in filling the positions authorized by the Legislature. At the start of March 2014, there are 115.5 staff members, up from 61.5 prior to enactment of the budget. In the next month, the number of staff members is expected to increase to 127.5 with the start of confirmed hires.

## **STAKEHOLDER SUPPORT**

The program could face potential adverse effects due to a possible decline of local public support. Local interest groups could attempt to prevent or delay the local authorization process and local permitting or cooperation necessary for work to advance. Maintaining public support at the local level poses its own risks to the project if expectations are not clearly managed and mitigated. If the Authority does not clearly present both the program's cost and benefits or agrees to mitigations (and their associated costs) in an incremental manner without first determining the cost implications for the overall program, there is a risk that public support will erode and/or that the program's overall costs could exceed current cost estimates.

### **MANAGEMENT AND MITIGATIONS**

Mitigation of this risk overlaps to some extent with staffing risk, as described above. Regional Directors in Northern California, the Central Valley and Southern California were appointed in 2012, and the Authority's Central Valley, Northern California, and Southern California offices all opened in 2013. These Regional Direc-

tors and their staff have a program-level understanding of the cost implications of potential program decisions, and they use this information to act as a point of contact for local and regional stakeholders when addressing their needs and concerns related to potential project effects in their region. Regular outreach meetings are held by all Regional Directors and their staff to provide outreach and facilitate communication opportunities between the program and stakeholders. A Small Business Advocate was also appointed in 2012 to serve as the main point of contact between the Authority and small businesses.

## **TECHNICAL**

The program will be measured by public acceptance and in compliance with law (Prop 1A) passed by voters in 2008, which impose legal, political, financial, and technical challenges. Transportation programs have varying degrees of engineering issues throughout each phase of a major capital program that includes the environmental phase, preliminary engineering and final design through construction and startup of revenue operations. Technical issues are usually evaluated in an analytical manner and resolved through established design procedures and standards that meet best practices in the industry.

Since high-speed rail systems do not currently operate in the United States, the project assessed European and Asian high speed rail systems in order to develop guidance that could be adapted to the US market. With the majority of alignment segments in the program still largely in the project level environmental phase, a concerted effort was made to develop criteria and provide technical guidance to support the environmental teams as alignment alternatives are developed and project impacts evaluated and appropriate mitigation measures considered to eliminate or minimize impacts on the environment. In this context, California will set the standard for other high speed rail lines under consideration in the United States.

### **MANAGEMENT AND MITIGATIONS**

Engineering challenges will continue to be identified throughout development of the program with solutions developed by engineers and industry experts involved in the implementation of the system. Some of the significant engineering challenges and steps being taken to provide solutions are listed below:

- Adjacent Railroad Hazard Risk Assessment – Models have been developed that quantify the risks of potential derailments from adjacent freight railroads and allow the risks to be evaluated and ranked as to their significance. Risk analysis accounts for safety records, derailment frequencies, alignment geometry (i.e., tangent tracks, curve radii, gradients) and separation distances between freight and high-speed rail tracks. Design measures such as intrusion barriers, earth berms or increased track separation have been developed and are currently under discussion and review by the railroads.
- Multiple earthquake faults throughout northern and southern California regions pose significant challenges particularly in mountainous areas though the Tehachapi's between Bakersfield and Palmdale and the San Gabriel's between Palmdale and the San Fernando Valley. Major faults have been known to slip as much as several meters during seismic events and can severely misalign track and cause damage to structures. Engineering solutions include crossing active faults on at-grade alignments but is not always practical for alignment alternatives under review. Alignments crossing faults in underground structures can be constructed with seismic fault chambers or within tunnel segments that are oversized to accommodate shifts in track alignment where tracks and systems can be repaired and revenue service restored. Risks must be carefully

evaluated as costs can be extremely high to design for earthquakes with long return periods. As the Southern California segments proceed into a project level environmental phase, engineers supported by a seismic and tunnel experts will review and develop criteria based on state of the art practices that balance cost, reliability and risk for the project.

- Mountainous terrain also poses challenges in establishing a vertical alignment that achieves the high-speed operational requirements without requiring the extensive use of capital-intensive underground structures and support facilities. Balancing the design requirements with the existing topography may require the use of tall aerial structures to support the high-speed tracks. These structures must be sufficiently rigid to provide for passenger comfort at high-speeds and ductile enough to react to seismic forces during earthquake events. High winds, particularly through mountain passes, will also be assessed in the design of the structures. The potential use of seismic isolation devices in the structural design will be considered as a means to provide safe and efficient structures that achieve these competing design requirements.
- Tunnels with lengths up to 12 miles are being evaluated in the mountainous terrain in southern California regions between Bakersfield and San Fernando Valley due to where maximizing operational speeds is desired. The Authority has reached out to industry experts to develop criteria for design of tunnels, tunnel configuration, uphill operating speeds and downhill braking speeds, The Authority will continue to reach out to industry, particularly for development of fire, life-safety requirements and ventilation parameters for tunnels as well as evaluating latest technologies and tunneling methods in use today. Tunneling can be particularly challenging in remote mountainous areas where access to work sites is difficult. Tunneling under national forests is under consideration where vertical penetrations for ventilation shafts can disrupt recreational areas and other 4 F uses. Solutions under consideration include evaluation of single bore versus twin bore tunnels, adding service tunnels that can provide for tunnel ventilation as well as a place of refuge in the event of an emergency evacuation. Developing geotechnical work programs and evaluating alternate project delivery methods to mitigate risk to the program will be conducted as these segments proceed through the environmental phase.
- In regions of the Central Valley where the high-speed rail alignment will be constructed, subsidence has occurred in the soils due to consolidation settlement of alluvium that occurs in response primarily to groundwater pumping although subsidence also occurs as a result of saturation of loose alluvial deposits (hydro compaction); subsidence due to oil and gas extraction; tectonic subsidence due to faulting; and drainage and oxidation of organic soils and peat. In wet years, the associated decrease in groundwater pumping has resulted in a steady recovery of water levels and a reduced rate of compaction. Further data and analytical work is necessary and will be evaluated as part of the final design work to be performed in the San Joaquin Valley. Mitigation measures include use of ballasted track as it is faster and less expensive to restore than non-ballasted track forms and establishment of monitoring and maintenance programs to measures and mitigate the effects of subsidence. Other measures may include establishing wider right-of-way and/or con-

structing wide embankments to account for future re-ballasting of the track structure; installation of geosynthetics within the embankments supporting the trackway in order to promote uniform movement due to land subsidence; or providing more robust drainage systems to account for the creation of localized “low points” due to subsidence.

- Access to stations in urban areas such as Transbay Terminal or Los Angeles Union Station pose significant alignment challenges for high speed rail in order to fit within constrained corridors usually with existing commuter rail, freight or other transit systems where additional right-of-way opportunities are limited. Potential alignments and station footprints are being evaluated and discussed with local agencies and solutions will be developed as project level environmental documents are prepared.

### **THIRD-PARTY AGREEMENTS**

The program faces a number of challenges, both general and location specific, associated with third-party agreements. There are a significant number of project dependencies that are introduced to a longitudinal project. Simply put, key activities necessary to construct the project are not under the direct control of the project team (Authority, Project Management Team or contractor). For example, construction of a section of high-speed rail or overcrossing may be dependent on the relocation of a section of existing rail which may in turn depend on the relocation of a fiber-optic cable or major utility. The relocation of fiber-optic cable or major utility in many locations will be done by third-party(s) operating under their own business constraints and according to their own schedule.

#### **UTILITIES**

Prior to selecting a preferred alternative, the program faces information limitations regarding the physical location of many utilities (both major and minor), ownership of utilities, and, generally, a limited understanding of how this and other third-party work is best integrated with construction of high-speed rail infrastructure and systems to provide a schedule and cost estimates with a high degree of confidence. While the Authority is currently in negotiations with the utility owners who will be impacted by, there may be some utilities for which the Authority does not have enough information in order for design-build contractors to price the cost of the relocation or removal. There is also a risk that such relocation or removal may require additional right-of-way. Minor to significant delays and additional costs to the overall program may also arise from lengthy regulatory process for signing utility agreements and requisite assumptions that must be made to advance the work at the regional level. Regions are required to carry multiple alternatives owing to uncertainty surrounding utility plans and certain elements of the power system must be "over provisioned" and regional teams must make assumptions regarding power supply by utilities - If these assumptions are not ratified by subsequent studies by the utility company, significant rework on engineering and environmental sides together with potential delays are likely as review and permitting process, for these locations must be restarted.

Cooperative agreements must be followed up with sufficient technical and operations detail, without which there will be no effective way to establish a realistic scope and schedule, which must precede financial detail and subsequent financial agreements. Who is doing "what" and "when" needs to be reflected in contract documents. As noted above, the "what" can be difficult to determine given the level of planning and design, which can make it difficult to determine the appropriate "when" with a high level of confidence.

## MANAGEMENT AND MITIGATIONS

The Authority is working to mitigate and manage the risk associated with utilities in a variety of ways, including working closely with the affected utility companies in managing utility design and construction requirements, and in finalizing all cooperative utility agreements. In June 2013, Governor Brown signed SB 85 (Committee on Budget and Fiscal Review, Chapter 35, Statutes of 2013) that established a framework for the reimbursement or payment, and apportionment, of utility relocation costs, clarifying the Authority's utility relocation process on land acquired for the high-speed rail project. SB 85 will help the Authority avoid delays in project delivery from a failure to reach agreements with utility companies regarding the relocation of utility facilities. These provisions were modeled after existing statutes utilized by Caltrans for the relocation of utilities within right-of-way acquired for highway purposes in order to establish a familiar framework for utility companies.

# Footnotes

- <sup>1</sup> Source: SB 1029 (Budget Act of 2012)  
[http://www.leginfo.ca.gov/pub/11-12/bill/sen/sb\\_1001-1050/sb\\_1029\\_bill\\_20120718\\_chaptered.pdf](http://www.leginfo.ca.gov/pub/11-12/bill/sen/sb_1001-1050/sb_1029_bill_20120718_chaptered.pdf)
- <sup>2</sup> Contract extended at the Board of Directors meeting on 5/2/13 from 6/30/13 to 6/30/15. Current contract value, projected value (thru FY 17/18) and expenditures represent the combination of values for the original contract and the contract extension and incorporate all costs starting from the execution of the original contract on 11/16/06. In addition, a portion of the PMT costs are now allocated to construction funding.
- <sup>3</sup> San Francisco to San Jose is part of the blended system. Caltrain will lead the environmental process.
- <sup>4</sup> Contract extended at the Board of Directors meeting on 5/2/13 from 6/30/13 to 6/30/15. Current contract value, projected value and expenditures represent the combination of values for the original contract and the contract extension and incorporate all costs starting from the execution of the original contract on 2/17/07.
- <sup>5</sup> Contract extended at the Board of Directors meeting on 4/4/13 from 6/30/13 to 6/30/15. Current contract value, projected value and expenditures represent the combination of values for the original contract and the contract extension and incorporate all costs starting from the execution of the original contract on 2/12/07.
- <sup>6</sup> Bakersfield to Palmdale, Contract value is included in the Fresno to Bakersfield totals.
- <sup>7</sup> Contract extended at the Board of Directors meeting on 5/2/13 from 6/30/13 to 9/30/14. Current contract value, projected value and expenditures represent the combination of values for the original contract and the contract extension and incorporate all costs starting from the execution of the original contract on 12/29/06.
- <sup>8</sup> Merced to Sacramento, Contract value is included in the Merced to Fresno totals.
- <sup>9</sup> The Altamont corridor is now under the direction of the SJRRC. The agreement between SJRRC and Authority has not been completed regarding Authority financial support of the environmental document.
- <sup>10</sup> Agency costs consist of multiple contracts with an estimate to complete.
- <sup>11</sup> A&E contracts for these sections were re-procured. Execution of these contracts is pending. These planning activities do not include the cost for the environmental documents required to bring electrification to the high-speed rail alignment (i.e. PG&E, SoCal Edison, etc.).
- <sup>12</sup> One-seat ride means that passengers do not need to switch trains, even if the train operates over two systems (e.g., moving north on dedicated high-speed rail infrastructure and then moving onto Caltrain tracks at San Jose, assuming electrification of Caltrain corridor by 2019 as proposed by Caltrain).
- <sup>13</sup> Completion date does not include construction of Central Valley Wye.
- <sup>14</sup> Caltrain's Peninsula Corridor Electrification Project environmental review is anticipated to be completed by the end of 2014.
- <sup>15</sup> Construction from Palmdale to the San Fernando Valley is scheduled to be completed by 2022.

