



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

**American Recovery and Reinvestment Act  
(ARRA) Status Report**

Reporting Period: Sept-Nov 2018

January 2019

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## Introduction, Document Purpose & Context

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- ▶ Consistent with a recommendation in the recent State Auditor’s report (Audit Report 2018-108), the Authority is to provide quarterly program updates to the Legislature to enable policymakers and the public to track the Authority’s progress toward meeting the federal grant (ARRA) deadline of December 2022.
- ▶ The following pages describe the progress of the Central Valley construction projects (Construction Package 1, State Route 99, Construction Package 2-3, Construction Package 4), and Environmental Approvals (Records of Decision RODs).
- ▶ Per the audit recommendation, the update report describes the progress of the Central Valley construction projects using an earned value model that compares construction progress to the projected total completion cost and date.
- ▶ For this initial quarterly report, Central Valley Construction Packages and Environment Approvals track to the Authority’s 2018 Business Plan Budget Baseline. However, this report reflects risks that may affect schedule and cost.
- ▶ The Budget Baseline is being subject to enhanced risk analysis and will be updated in future reports.
- ▶ This report reflects information for reporting period through November 30<sup>th</sup> 2018.
- ▶ The purpose of this report is to provide up-to-date information on project cost and schedule risk and the Authority’s response to those risks through mitigation strategies; it does not represent the end-state. This report is a dashboard showing those areas of active management of the program. It will allow the Legislature and the public to assess whether negative risks to schedule and cost are being adequately addressed over time.

## Terms & Definitions

| Term                                  | Definition  |
|---------------------------------------|---|
| <b>Baseline Budget</b>                | The current Baseline Budget for the CHSR Program is the published budget baseline adopted by the CHSRA Board of Directors in June 2018.   |
| <b>Baseline Schedule</b>              | The current Baseline Schedule for the CHSR program is the published Baseline Schedule adopted by the CHSRA Board of Directors in June 2018.   |
| <b>Earned Value</b>                   | Earned Value indicates how much work was actually completed during a given period of time. It is the budget associated with the authorized work that has been completed.  |
| <b>SPI Schedule Performance Index</b> | The Scheduled Performance Index is the ratio of Earned Value (EV) to the Planned Value (PV): $SPI=EV/PV$ . If the SPI is less than one, it indicates the project is potentially behind schedule to-date; whereas an SPI greater than one indicates that the project is ahead of schedule. |
| <b>EAC Estimate at Complete</b>       | Estimate at Completion (EAC) is the forecasted cost of the project, as the project progresses.  |
| <b>Baseline Budget /EAC Ratio</b>     | If the ratio is less than one, it indicates the project is potentially over-budget; whereas a ratio greater than one indicates that the project is within budget.   |

# Key Performance Indicators, Status & Management Actions

| KPI                    | Status  | Management Action   |
|------------------------|---|---|
| <p><b>Cost</b></p>     | <ul style="list-style-type: none"> <li>• <b>RED:</b> Budget is less than the EAC</li> <li>• <b>AMBER:</b> Budget is within 5% of the EAC and there is a mitigation plan in place to bring EAC within the Budget</li> <li>• <b>GREEN:</b> Budget is greater than EAC</li> </ul>  | <ul style="list-style-type: none"> <li>• <b>RED:</b> Full and immediate management attention and mitigation required</li> <li>• <b>AMBER:</b> Proactive monitoring, management and mitigation required</li> <li>• <b>GREEN:</b> Continue to manage, mitigate and control</li> </ul> |
| <p><b>Schedule</b></p> | <ul style="list-style-type: none"> <li>• <b>RED:</b> Program/Project Completion Date is forecasted to extend beyond Planned Dates. Will impact the Critical Path.</li> <li>• <b>AMBER:</b> Slippage that could impact the Program/Project Planned Dates and Critical Path</li> <li>• <b>GREEN:</b> Proceeding per schedule</li> </ul> | <ul style="list-style-type: none"> <li>• <b>RED:</b> Full and immediate management attention and mitigation required</li> <li>• <b>AMBER:</b> Proactive monitoring, management and mitigation required</li> <li>• <b>GREEN:</b> Continue to manage, mitigate and control</li> </ul> |
| <p><b>Risk</b></p>     | <ul style="list-style-type: none"> <li>• <b>RED:</b> Risk exposure is greater than 5% of Remaining Contingency</li> <li>• <b>AMBER:</b> Risk exposure is within 5% of Remaining Contingency</li> <li>• <b>GREEN:</b> Risk exposure is less than or equal to 5% of Remaining Contingency</li> </ul>                                    | <ul style="list-style-type: none"> <li>• <b>RED:</b> Full and immediate management attention and mitigation required</li> <li>• <b>AMBER:</b> Proactive monitoring, management and mitigation required</li> <li>• <b>GREEN:</b> Continue to manage, mitigate and control</li> </ul> |

## ARRA-Scope

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Under the ARRA grant terms the California High Speed Rail Authority is to complete the following by Dec 2022:

- Environmental Approvals (Records of Decisions) for the Phase-1 alignment (between San Francisco and Anaheim).
- Three design-build construction contracts, initially valued at \$3.13 billion, which were awarded to cover 119 miles from Madera to north of Bakersfield:-
  - Construction Package 1 (CP 1) – construction of 32 miles of civil construction between Avenue 19 (Madera) and East American Avenue (Fresno).
  - Construction Package 2-3 (CP 2-3)– 65 miles of civil construction from East American Ave (Fresno) to one mile north of the Tulare/Kern County line.
  - Construction Package 4 (CP 4) - 22 miles from the Tulare/Kern County line to Poplar Avenue (north of Bakersfield).
- State Route (SR) 99 Realignment – Roadway – Realignment of SR 99 from Clinton Avenue to Ashlan Avenue, through Fresno.
- Track Work to cover 119 miles from Madera to north of Bakersfield.

# Environmental Approval /Records-of-Decision (RODs)

| RC Section Name                           | Baseline Plan*** | Forecast | Schedule | Current Baseline | EAC          | On Budget | Risk Areas  |   |   |   |               |             |       |
|---|------------------|----------|----------|------------------|--------------|-----------|---|---|---|---|---------------|-------------|-------|
| San Francisco to San Jose                 | Mar/2021         | Mar/2021 | 1        | \$26,372,912     | \$26,438,700 | 2         | <table border="1"> <tr> <td>2</td> <td>1</td> <td>2</td> </tr> <tr> <td>ENV/<br/>LEGAL</td> <td>RAIL<br/>OPS</td> <td>POLIT</td> </tr> </table> | 2 | 1 | 2 | ENV/<br>LEGAL | RAIL<br>OPS | POLIT |
| 2   | 1                | 2        |          |                  |              |           |   |   |   |   |               |             |       |
| ENV/<br>LEGAL                             | RAIL<br>OPS      | POLIT    |          |                  |              |           |   |   |   |   |               |             |       |
| San Jose to Merced                        | Nov/2020         | Nov/2020 | 1        | \$49,161,300     | \$49,161,300 | 1         | <table border="1"> <tr> <td>2</td> <td>3</td> <td>2</td> </tr> <tr> <td>ENV/<br/>LEGAL</td> <td>RAIL<br/>OPS</td> <td>POLIT</td> </tr> </table> | 2 | 3 | 2 | ENV/<br>LEGAL | RAIL<br>OPS | POLIT |
| 2   | 3                | 2        |          |                  |              |           |   |   |   |   |               |             |       |
| ENV/<br>LEGAL                             | RAIL<br>OPS      | POLIT    |          |                  |              |           |   |   |   |   |               |             |       |
| Merced to Fresno*<br>(Central Valley Wye) | Jul/2019         | Nov/2019 | 3        | \$80,640,000     | \$80,191,000 | 1         | <table border="1"> <tr> <td>3</td> <td>1</td> <td>1</td> </tr> <tr> <td>ENV/<br/>LEGAL</td> <td>RAIL<br/>OPS</td> <td>POLIT</td> </tr> </table> | 3 | 1 | 1 | ENV/<br>LEGAL | RAIL<br>OPS | POLIT |
| 3   | 1                | 1        |          |                  |              |           |   |   |   |   |               |             |       |
| ENV/<br>LEGAL                             | RAIL<br>OPS      | POLIT    |          |                  |              |           |   |   |   |   |               |             |       |
| FB LGA*                                   | Oct/2018         | Apr/2019 | 3        | \$19,100,000     | \$17,665,512 | 1         | <table border="1"> <tr> <td>3</td> <td>1</td> <td>1</td> </tr> <tr> <td>ENV/<br/>LEGAL</td> <td>RAIL<br/>OPS</td> <td>POLIT</td> </tr> </table> | 3 | 1 | 1 | ENV/<br>LEGAL | RAIL<br>OPS | POLIT |
| 3   | 1                | 1        |          |                  |              |           |   |   |   |   |               |             |       |
| ENV/<br>LEGAL                             | RAIL<br>OPS      | POLIT    |          |                  |              |           |   |   |   |   |               |             |       |
| Bakersfield to Palmdale                   | Jun/2020         | Jun/2020 | 1        | \$53,558,068     | \$52,146,183 | 1         | <table border="1"> <tr> <td>2</td> <td>1</td> <td>1</td> </tr> <tr> <td>ENV/<br/>LEGAL</td> <td>RAIL<br/>OPS</td> <td>POLIT</td> </tr> </table> | 2 | 1 | 1 | ENV/<br>LEGAL | RAIL<br>OPS | POLIT |
| 2   | 1                | 1        |          |                  |              |           |   |   |   |   |               |             |       |
| ENV/<br>LEGAL                             | RAIL<br>OPS      | POLIT    |          |                  |              |           |   |   |   |   |               |             |       |
| Palmdale to Burbank                       | Jan/2021         | Jan/2021 | 1        | \$64,901,223     | \$63,805,326 | 1         | <table border="1"> <tr> <td>2</td> <td>1</td> <td>2</td> </tr> <tr> <td>ENV/<br/>LEGAL</td> <td>RAIL<br/>OPS</td> <td>POLIT</td> </tr> </table> | 2 | 1 | 2 | ENV/<br>LEGAL | RAIL<br>OPS | POLIT |
| 2   | 1                | 2        |          |                  |              |           |   |   |   |   |               |             |       |
| ENV/<br>LEGAL                             | RAIL<br>OPS      | POLIT    |          |                  |              |           |   |   |   |   |               |             |       |
| Burbank to Los Angeles                    | Jul/2020         | Jul/2020 | 1        | \$29,276,588     | \$29,276,537 | 1         | <table border="1"> <tr> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>ENV/<br/>LEGAL</td> <td>RAIL<br/>OPS</td> <td>POLIT</td> </tr> </table> | 2 | 2 | 2 | ENV/<br>LEGAL | RAIL<br>OPS | POLIT |
| 2   | 2                | 2        |          |                  |              |           |   |   |   |   |               |             |       |
| ENV/<br>LEGAL                             | RAIL<br>OPS      | POLIT    |          |                  |              |           |   |   |   |   |               |             |       |
| Los Angeles to Anaheim**                  | Oct/2019         | Jan/2020 | 3        | \$34,206,509     | \$34,206,509 | 1         | <table border="1"> <tr> <td>2</td> <td>3</td> <td>2</td> </tr> <tr> <td>ENV/<br/>LEGAL</td> <td>RAIL<br/>OPS</td> <td>POLIT</td> </tr> </table> | 2 | 3 | 2 | ENV/<br>LEGAL | RAIL<br>OPS | POLIT |
| 2   | 3                | 2        |          |                  |              |           |   |   |   |   |               |             |       |
| ENV/<br>LEGAL                             | RAIL<br>OPS      | POLIT    |          |                  |              |           |   |   |   |   |               |             |       |

\* Central Valley (Wye) and FBLGA awaiting FRA Review or NEPA assignment.

\*\* Los Angeles-to-Anaheim is affected by negotiations with BNSF for shared Corridor. Negotiations are ongoing.

\*\*\* Dates are based upon the 2018 Baseline, approved in June 2018.

|            |        |          |       |
|------------|--------|----------|-------|
| Risk Level | 3 High | 2 Medium | 1 Low |
|------------|--------|----------|-------|

# RODs Key Risk Drivers with Mitigation Plan

Key Risk Drivers related to Environmental Clearances

| Program Section           | Risk Statement  | Mitigation Plan  |
|---------------------------|---|--|
| All ROD Projects          | Delays to project sections ROD due to NEPA assignment delays and FRA's disengagement from day-to-day operations | <ul style="list-style-type: none"> <li>Continue dialogue with FRA on approval of NEPA Assignment</li> <li>Explore options to separate NEPA and CEQA EIR/EIS to facilitate earlier distribution of EIR</li> <li>Decision on a path forward for the NEPA assignment process</li> </ul>   |
| All ROD Projects          | Document review delays or changes in documents from internal (legal) and external stakeholders                  | <ul style="list-style-type: none"> <li>Schedule regular meetings with regulatory agencies incl. over-the-shoulder reviews and workshops for the technical reports</li> <li>Direct team of any changes to be incorporated into environmental documents, pending approval of any other design changes that may impact current assumptions</li> </ul> |
| San Francisco to San Jose | Project definition issues related to Brisbane LMF and passing tracks  | <ul style="list-style-type: none"> <li>Continue consultation with Brisbane and Baylands developer</li> <li>Continue evaluating different options for universal paragon</li> <li>Maintain current project definition and seek legal options to obtain permits</li> </ul>  |
| San Jose to Merced        | City of San Jose request to evaluate alternative station alignment for HSR-defined Diridon at-grade alignment   | <ul style="list-style-type: none"> <li>Moving with Diridon to not preclude state rail plan configuration</li> <li>Verified operational plan acceptability with Caltrain</li> <li>Continue negotiation with City of San Jose station design for EIR/EIS</li> </ul>  |
| San Jose to Merced        | Lack of agreement with UPRR for purchase of UPRR ROW  | <ul style="list-style-type: none"> <li>Conduct negotiations with UPRR in advance of identifying preferred alternative.</li> <li>Get documentation of trend towards successful completion of negotiations.</li> </ul>   |
| Los Angeles to Anaheim    | BNSF requirements for project improvements East of Fullerton to be included in LA-A EIR/EIS                     | <ul style="list-style-type: none"> <li>Obtain engineering design of BNSF's Barstow and Colton facilities</li> <li>Evaluate potential env. effects of constructing and operating these facilities</li> <li>Prepare CEQA/NEPA documents, determine the schedule and how they are incorporated in the EIS/EIR document</li> </ul>                     |

# Construction Package 1

**Construction Package 1** is the first significant construction contract executed on the Initial Operating Section of the high-speed rail program. The CP 1 construction area is a 32-mile stretch between Avenue 19 in Madera County to East American Avenue in Fresno County. The package includes 12 grade separations, two viaducts, one tunnel, and a major river crossing over the San Joaquin River.

## Construction Package-1 Scope \*

- Section Length: 32 Miles
- Baseline Budget: \$1,953,676,979
- Current Budget Allotment: \$1,585,507,844
- Original Contract Price: \$1,022,988,000
- Design-Build Contractor: Tutor Perini/Zachry Parsons (JV)
- Project & Construction Manager: Wong+Harris (JV)
- 58.2% Complete

## Budget Performance

|                                  |                 |           |
|----------------------------------|-----------------|-----------|
| Baseline Budget                  | \$1,953,676,979 |           |
| EAC                              | \$1,953,676,979 |           |
| Baseline Budget/EAC              | Oct:<br>1       | Nov:<br>1 |
| Baseline Budget Management Trend | <b>2</b>        |           |

|            |               |                 |              |
|------------|---------------|-----------------|--------------|
| Risk Level | <b>3</b> High | <b>2</b> Medium | <b>1</b> Low |
|------------|---------------|-----------------|--------------|

## Contract Schedule Performance\*

|  |              |              |
|--|--------------|--------------|
| Baseline Date  | Dec 2020     |              |
| Forecast Date  | Dec 2020     |              |
| Earned Value/ Planned Value (Schedule Performance Index) | Oct:<br>0.67 | Nov:<br>0.68 |
| Schedule Performance Index Trend                         | <b>3</b>     |              |

\* Construction contract schedules are in the process of being analyzed, and current construction contract schedules may be adjusted to more closely align with the 2018 Baseline dates.

\* Significant additional scope has been added to Construction Package 1 in terms of infrastructure to be constructed and project length since the original bid, including extending the project to Madera and additional Railroad requirements.

# Construction Package 1 Contract Risk Mitigation Plans

Key Cost and Schedule Risks with Mitigation Plan

| Risk Statement  | Mitigation Plan   |
|---|---|
| <b>Major Cost Risks</b>   |   |
| <p>The Design-Build Contractor has submitted potential change orders that may impact cost and schedule</p>  | <ul style="list-style-type: none"> <li>• The Authority is analyzing each potential change order for merit and cost, based upon the provisions of the design-build contract. The Authority has also established a commercial team of contract experts in the Central Valley that provides expertise in the correct interpretation of the contract, including responsibility for changes</li> </ul> |
| <p>Potential for Railroad, Third Party and Authority driven design changes on Shaw Ave, McKinley, Church Ave, Olive Ave or other non-started structures</p> | <ul style="list-style-type: none"> <li>• Manage all stakeholders to negate any future design changes and vet directives or design changes to ensure its a requirement</li> <li>• Evaluate Directive Letters coming from Engineering / Rail Operations for wider implications</li> </ul>   |
| <p>Impact to contractor’s earthwork due to unanticipated Soil Balance due to out of sequence work result in additional costs</p>                            | <ul style="list-style-type: none"> <li>• Identify original earthworks plan and disrupted quantities</li> <li>• Review schedule for concurrent delays that impacted work sequence</li> <li>• Identify efficiencies, re-sequencing or possible lay down areas to mitigate excess soil disposal</li> </ul>   |
| <p>Potential for overrun in the allowance established for Class 1 &amp; 2 Hazardous Materials due to more than anticipated hazardous material</p>           | <ul style="list-style-type: none"> <li>• Initiate discussion with Department of Toxic Substance Control (DTSC) to establish revised criteria for soil that can be utilized on-site</li> </ul>   |
| <b>Major Schedule Risks</b>   |   |
| <p>Delays to DB Contract critical path work due to Authority Issued Directive Letter 152 changing the design</p>  | <ul style="list-style-type: none"> <li>• Continue to design as required before this directive letter, and bypass casings can be installed at a later date</li> </ul>  |
| <p>Delays other than cutover and DL152 to cover for easements and UPRR utility crossing agreements</p>  | <ul style="list-style-type: none"> <li>• Work with AT&amp;T on staggering cut-over activities as start-to-start relationships in lieu of start-to-finish relationships</li> </ul>   |
| <p>Potential for future delays resulting from scope creep in the 60% design revision</p>  | <ul style="list-style-type: none"> <li>• Review Design-Build B contractor Potential Change Order (PCO) when submitted for applicability of Authority-owned delays</li> </ul>  |
| <p>Potential for further delays to acquisition of ROW parcels for CP 1 contract as committed in the DB contract ROW Acquisition Plans</p>                   | <ul style="list-style-type: none"> <li>• Develop Get-to-Work schedules to identify additional ROW acquisitions</li> <li>• Share priorities with the ROW team</li> </ul>   |

# Construction Package 2-3

**Construction Package 2-3** is the second significant construction contract executed on the Initial Operating Section of the high-speed rail program. The CP 2-3 construction area extends approximately 65 miles from the terminus of Construction Package 1 at East American Avenue in Fresno to one mile north of the Tulare-Kern County line. CP 2-3 will include approximately 36 grade separations in the counties of Fresno, Tulare and Kings, including viaducts, underpasses and overpasses.

## Construction Package-2-3 Scope\*

- Section Length: 65 Miles
- Baseline Budget: \$1,896,819,077
- Current Budget Allotment: \$1,646,197,890
- Original Contract Price: \$1,365,335,890
- Design-Build Contractor: Dragados/Flatiron
- Project & Construction Manager: Arcadis
- 43.2% Complete

### Budget Performance

|                                  |                 |           |
|----------------------------------|-----------------|-----------|
| Baseline Budget                  | \$1,896,819,077 |           |
| EAC                              | \$1,896,819,077 |           |
| Baseline Budget/EAC              | Oct:<br>1       | Nov:<br>1 |
| Baseline Budget Management Trend | <b>2</b>        |           |

|            |               |                 |              |
|------------|---------------|-----------------|--------------|
| Risk Level | <b>3</b> High | <b>2</b> Medium | <b>1</b> Low |
|------------|---------------|-----------------|--------------|

### Contract Schedule Performance\*

|   |              |              |
|---|--------------|--------------|
| Baseline Date   | Mar 2022     |              |
| Forecast Date   | Mar 2022     |              |
| Schedule Performance Index (SPI) = Earned Value/Planned Value | Oct:<br>0.48 | Nov:<br>0.49 |
| Schedule Performance Index Trend                              | <b>3</b>     |              |

\* Construction contract schedules are in the process of being analyzed, and current construction contract schedules may be adjusted to more closely align with the 2018 Baseline dates.

\* Additional scope has been added to Construction Package 2-3, including additional Railroad requirements, agreements with local agencies, and utility relocation.

# Construction Package 2-3 Contract Risk Mitigation Plans

## Key Cost and Schedule Risks with Mitigation Plan

| Risk Statement   | Mitigation Plan   |
|--|---|
| <b>Major Cost Risks</b>  |   |
| <p>The Design-Build Contractor has submitted potential change orders that may impact cost and schedule</p>   | <ul style="list-style-type: none"> <li>The Authority is analyzing each potential change order for merit and cost, based upon the provisions of the design-build contract. The Authority has also established a commercial team of contract experts in the Central Valley that provides expertise in the correct interpretation of the contract, including responsibility for changes</li> </ul> |
| <p>Deer Creek &amp; Cross Creek Viaduct Design &amp; Construction resulting from complying with additional California Department of Fish and Wildlife (CDFW) requirements.</p> | <ul style="list-style-type: none"> <li>Submit updated TSR designs to California Department of Fish and Wildlife (CDFW) to obtain concept approval.</li> <li>Proceed with 60-90% &amp; RFC designs to get to construction.</li> </ul>  |
| <p>Additional cost exposure to PG&amp;E Provisional Sum based on higher subcontract and materials prices than in the estimate.</p>   | <ul style="list-style-type: none"> <li>Conducting tower by tower analysis to reduce and verify quantity of towers with physical conflict with HSR guideway and reduce scope where possible</li> </ul>   |
| <p>Potential Maintenance and betterment issues with Irrigation Districts resulting from ongoing negotiation &amp; the ability to get-to-work.</p>                              | <ul style="list-style-type: none"> <li>Continue ROW justification and ensure all changes to the wet utilities are assessed for merit determination and the DB is justified in their request for equitable adjustment</li> <li>Third Party and Legal teams evaluating scope impacts of directive</li> </ul>  |
| <p>Additional impacts from Kings County Protests to Power and Utilities Commission (PUC) could affect design speeds for structures.</p>  | <ul style="list-style-type: none"> <li>Ensure the Design-Build work with the Third Party on the permitting process and all required documentation is in compliance with Third Party requirements.</li> </ul>  |
| <b>Major Schedule Risks</b>  |   |
| <p>Potential for further delays to acquisition of Right-of-Way (ROW) parcels leading to further delays to CP 2-3 critical path work</p>  | <ul style="list-style-type: none"> <li>Identify areas that allow construction to get started and re-sequence work in lieu of not having the Right-of-Way (ROW).</li> </ul>  |
| <p>Delays to Design-Build work due to delays by BNSF railroad in design review/approval and realignment work</p>   | <ul style="list-style-type: none"> <li>Review of TIA submitted by Dragados Flatiron Joint Venture and assess impact of the time delay.</li> </ul>   |
| <p>Potential for future delays due to Differing Site Conditions identified during construction</p>   | <ul style="list-style-type: none"> <li>Collaborate with Design-Build Contractor to revise design as necessary for solutions to mitigate problem areas for differing site conditions.</li> </ul>   |

# Construction Package-4

**Construction Package 4** is the third significant construction contract executed on the Initial Operating Section of the high-speed rail program. The CP 4 construction area is a 22-mile stretch bounded by a point approximately one mile north of the Tulare/Kern County Line at the terminus of Construction Package 2-3 and Poplar Avenue to the south. CP 4 will include construction of at-grade, retained fill and aerial sections of the high-speed rail alignment and the relocation of four miles of existing Burlington Northern Santa Fe (BNSF) tracks.

## Construction Package-4 Scope\*

- Section Length: 22 Miles
- Baseline Budget: \$565,204,773
- Current Budget Allotment: \$513,027,000
- Original Contract Price: \$444,247,000
- Design-Build Contractor: California Rail Builders
- Project & Construction Manager: HNTB
- 21.9% Complete

### Budget Performance

|                                  |               |           |
|----------------------------------|---------------|-----------|
| Baseline Budget                  | \$565,204,773 |           |
| EAC                              | \$565,204,773 |           |
| Baseline Budget/EAC              | Oct:<br>1     | Nov:<br>1 |
| Baseline Budget Management Trend | <b>2</b>      |           |

|            |               |                 |              |
|------------|---------------|-----------------|--------------|
| Risk Level | <b>3</b> High | <b>2</b> Medium | <b>1</b> Low |
|------------|---------------|-----------------|--------------|

### Contract Schedule Performance\*

|   |              |              |
|---|--------------|--------------|
| Baseline Date   | Aug 2021     |              |
| Forecast Date   | Aug 2021     |              |
| Schedule Performance Index (SPI) = Earned Value/Planned Value | Oct:<br>0.27 | Nov:<br>0.28 |
| Schedule Performance Index Trend                              | <b>3</b>     |              |

\* Construction contract schedules are in the process of being analyzed, and current construction contract schedules may be adjusted to more closely align with the 2018 Baseline dates.

\* Additional scope has been added to Construction Package 4, including additional Railroad requirements and coordination with Caltrans.

# Construction Package 4 Contract Risk Mitigation Plans

## Key Cost and Schedule Risks with Mitigation Plan

| Risk Statement   | Mitigation Plan   |
|--|---|
| <b>Major Cost Risks</b>  |   |
| The Design-Build Contractor has submitted potential change orders that may impact cost and schedule  | <ul style="list-style-type: none"> <li>The Authority is analyzing each potential change order for merit and cost, based upon the provisions of the design-build contract. The Authority has also established a commercial team of contract experts in the Central Valley that provides expertise in the correct interpretation of the contract, including responsibility for changes</li> </ul> |
| Additional requirements to accommodate SunnyGem operations may impact schedule   | <ul style="list-style-type: none"> <li>Review all requests, determine merit &amp; necessity for reasonable settlement</li> <li>Determine best design alternative &amp; construct offer accordingly</li> <li>Maintain regular communication with SunnyGem during negotiations</li> </ul>   |
| Differing Site Conditions - changes in ground conditions from RFP Geotechnical Baseline Report for Bid (GBR-B) to actual ground conditions Geotechnical Baseline Report for Construction (GBR-C) | <ul style="list-style-type: none"> <li>Monitor changed ground conditions from Geotechnical Baseline Report for Bid (GBR-B) and accept changes in ground conditions from Geotechnical Baseline Report for Bid (GBR-B)</li> </ul>   |
| <b>Major Schedule Risks</b>  |   |
| Potential for further delays to acquisition of Right-of-Way (ROW) parcels leading to further delays to CP 4 critical path work   | <ul style="list-style-type: none"> <li>Use anticipated critical path to set priorities and focus effort toward targeted properties</li> </ul>   |
| Delays by BNSF railroad in track/signaling realignment work leading to delays in DB civil work   | <ul style="list-style-type: none"> <li>Coordinate requirements between California Road Builders (CRB) and BNSF</li> <li>Encourage CRB to include realistic BNSF timelines in schedule update</li> <li>Take active role in monthly coordination meetings</li> </ul>  |
| Delays in relocation of non-provisional sum utilities impacting critical path work   | <ul style="list-style-type: none"> <li>Monitor design activities on the critical or near-critical path work</li> <li>Elevate missed deadlines to management team for action</li> </ul>  |
| Delays in review/approval of design submittals by Authority/third parties  | <ul style="list-style-type: none"> <li>Monitor design activities on the critical or near-critical path work</li> </ul>  |
| Railroad master agreement delays   | <ul style="list-style-type: none"> <li>Accept risk and only retain for Master Agreement changes</li> </ul>  |

# State-Route 99

Portions of **State Route 99 (SR 99)** located within the CP 1 contract limits will be realigned to accommodate the high-speed rail project between the existing SR 99 and the Union Pacific Railroad. Additionally, the project will improve traffic operations, reduce congestion, and enhance traffic safety in the region.

## Construction Package SR-99

- Section Length: 2.7 Miles
- Baseline Budget: \$333,400,000
- Current Budget Allotment: \$290,100,000
- Original Contract Price: \$225,900,000
- Project & Construction Manager: Caltrans
- 88% Complete

### Budget Performance

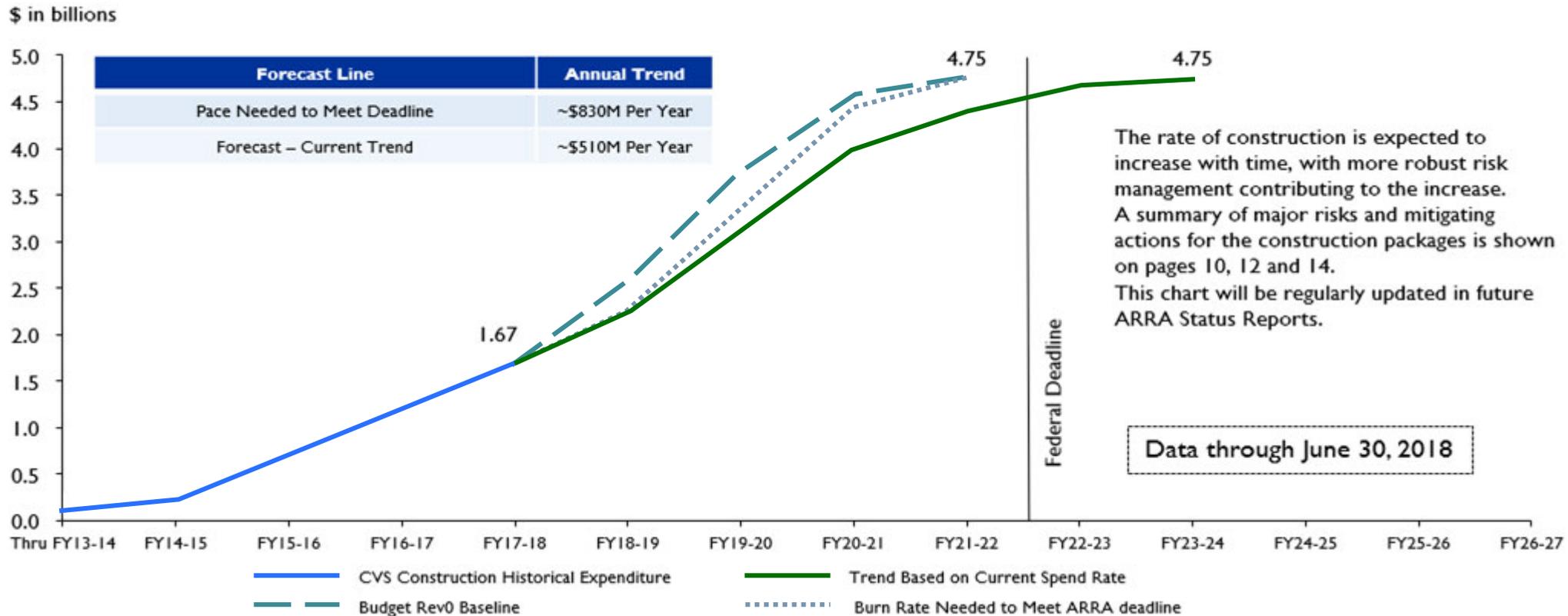
|                                  |   |           |
|----------------------------------|---|-----------|
| Baseline Budget                  | \$333,400,000   |           |
| EAC                              | \$333,400,000   |           |
| Baseline Budget/EAC              | Oct:<br>1   | Nov:<br>1 |
| Baseline Budget Management Trend | <span style="border: 1px solid green; padding: 2px;">1</span> |           |

### Contract Schedule Performance\*

|   |   |              |
|---|---|--------------|
| Baseline Date   | Sep 2020  |              |
| Forecast Date   | Apr 2019  |              |
| Schedule Performance Index (Earned Value/Planned Value) | Oct:<br>0.96  | Nov:<br>0.95 |
| Schedule Performance Index Trend                        | <span style="border: 1px solid green; padding: 2px;">1</span> |              |

|            |  |   |   |
|------------|--|---|---|
| Risk Level | <span style="background-color: red; color: white; padding: 2px;">3</span> High | <span style="background-color: yellow; color: black; padding: 2px;">2</span> Medium | <span style="background-color: green; color: white; padding: 2px;">1</span> Low |
|------------|--|---|---|

# Required Rate of Construction to Meet the Federal Deadline



## Notes:

- CVS Construction Forecast Expenditure for FY18-19 is equal to the total FY2018-19 budget for CP1, SR-99, CP2-3 and CP4 contracts.
- Current Pace of Construction line is consistent with Figure 8 of the November 15, 2018 Audit Report, adjusted to include SR99 and other factors
- \$1.67B total expenditures through June 30, 2018 includes \$240M in SR-99 expenditures. SR-99 expenditures were excluded from the audit report's expenditure to date calculation for CVS construction.
- Total budget for CP1, SR-99, CP2-3 and CP4 is \$4.75B based on Capital Outlay Report – November 2018. Auditor's report showed total CVS construction budget is \$4.7B.
- Pace needed to meet deadline calculation is based on March 2022 completion date for CVS construction.

## Sources:

1. Total Projects Expenditure with Forecast Report – November 2018
2. Capital Outlay Report – November 2018

## Summary

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As described in the previous pages, the work of the ARRA grant generally tracks to the Authority's 2018 Baseline schedules and costs. However, risks exist that may affect schedule and cost. This report provides a summary of those risks and mitigating actions for the environmental approval work (RODs) and the construction packages.

Specifically, this report reflects that:

- All of the environmental approvals are expected to be achieved prior to the ARRA deadline of December 2022. However, the Authority's forecast completion dates for three of the segments have been delayed (but are still expected to be achieved prior to December 2022).
- The three construction packages in the Central Valley are experiencing budget and schedule risk. The Authority understands what the specific risks are and has developed plans to mitigate the impacts of the risks.
- The State Route 99 project is expected to complete within the Baseline budget and completion date (a ribbon-cutting ceremony to open the project is scheduled for February 15, 2019).

The Authority will continue to provide quarterly updates to the Legislature that will transparently track the Authority's progress toward meeting the ARRA grant deadline of December 2022.