Board Meeting: February 2019
Data Date: 12/31/2018

Finance and Audit Committee Performance Metrics

Construction Package 1
Contract No. HSR 13-06

- **Safety**
  - Authority Safety Incident Rate
  - Contractor Safety Incident Rate
- **Cost**
  - Design & Construction Support Cost
  - Contingency
- **Schedule**
  - Schedule Performance Index (SPI)
- **Quality**
  - Percent of Non-Conformance Reports (NCRs) Resolved
- **Economic Benefits**
  - Disadvantaged/Small/Disabled Veteran/Micro Business Enterprises
  - All National Targeted Workers
  - Disadvantaged Workers

PERFORMANCE METRICS

The following performance metrics for Construction Package 1, a design-build project, are intended to give the Authority's Board of Directors and other key stakeholders a high-level overview of the performance of this project.

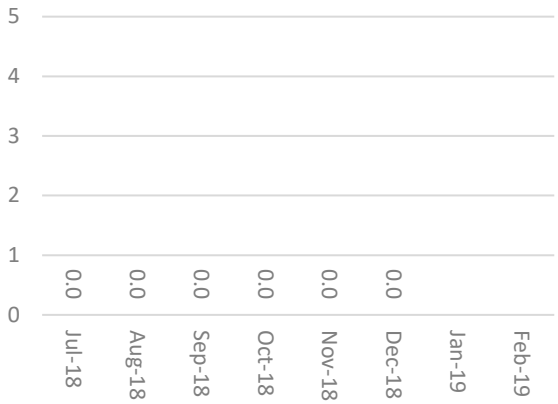
Safety is a top priority and listed first, followed by key metrics for cost, schedule, and quality, as all are fundamental metrics for the management of the project. In addition and in support of the business aspects of the project, three key metrics are included for economic benefits. The Authority's management team, both on the project site and at the headquarters in Sacramento, will also review other aspects of the project's performance. The Authority will track and monitor the trends of these performance metrics to proactively manage the project.

Performance Metrics

SAFETY

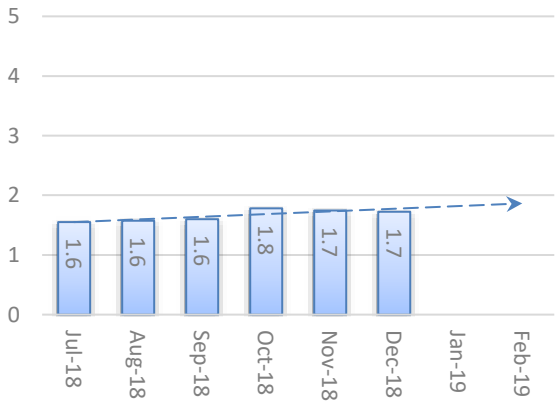
Authority Safety Incident Rate

[Number of injuries and illnesses] ÷ [Employee hours worked] * [200,000]



Contractor Safety Incident Rate

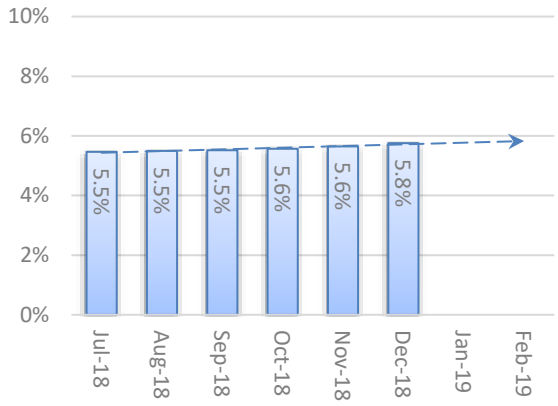
[Number of injuries and illnesses] ÷ [Employee hours worked] * [200,000]



COST

Design & Construction Support Cost[1]

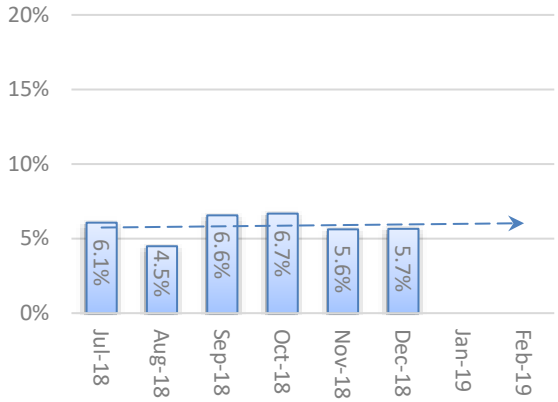
[Design & Construction Support Cost] ÷ [DB Invoiced to Date Amount]



[1] Design & construction support cost includes forecasted Earned to Date value for the current period

COST (Continued)

Contingency
[Remaining Contingency Value] ÷ [Remaining Contract Value]



1. Remaining Contingency[2] = $36,414,137; Remaining Contract Value[3] = $644,044,823.
2. Currently at 5.7%, performance target is > 10%.

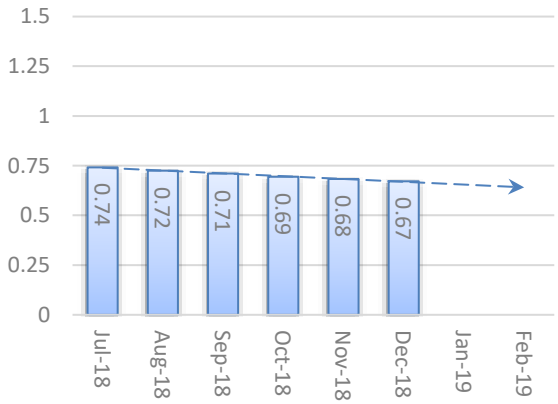
Reason – Right-of-way delay impacts through 12/31/2015 have been resolved with the Contractor in Change Order 00099, with the delay costs coming out of project contingency. The Remaining Contract Value has also increased due to added scope for the Northern Extension and previously excluded Third Party Utility relocations that are now delegated to the Contractor. The Project baseline is being evaluated based on events to date and the work remaining.

Mitigation/Improvements – Project budget and contingency are being evaluated and will be revised as part of the 2018 Business Plan.

[2] Includes Board authorized $50.3 million funds transfer to Contingency
[3] Includes Board authorized $40 million funding for 3rd Party Provisional Sums

SCHEDULE

Schedule Performance Index (SPI)
[Earned Value] ÷ [Average Planned Value]

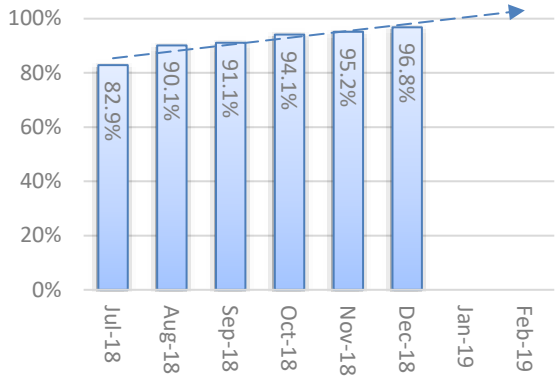


Reason – September 2017 the methodology used to perform the SPI calculation was revised to more accurately reflect progress (earned value) regarding the Contractor's plan (planned value). Previously, change orders executed after approval of the baseline schedule were skewing the calculation. This adjustment resulted in a reduction of the earned value portion of the calculation, and correspondingly, a lower SPI.

Mitigation/Improvements – The Authority is currently evaluating a Time Impact Analysis from the Contractor. Once resolved, the Contractor will submit a Revised Baseline Schedule, which will establish a revised plan (planned value) for evaluation of the SPI.

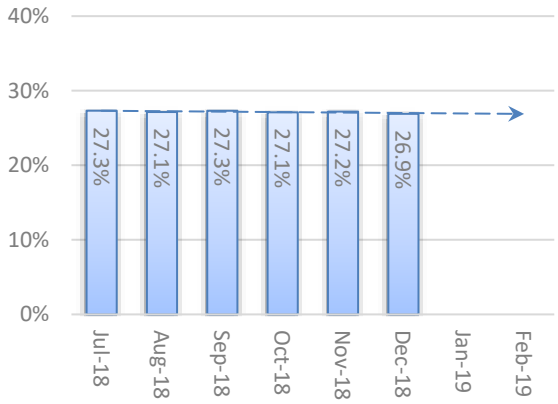
QUALITY

Percent of Non-Conformance Reports (NCRs) Resolved
[Resolved Non-Conformance Reports] ÷ [Total Number of Non-Conformance Reports]



ECONOMIC BENEFITS

Disadvantaged/Small/Disabled Veteran/Micro Business Enterprises
[Total Value of DBE/SBE/DVBE/MB Contracts Signed to Date with the DB Contractor] ÷ [DB Contract Value]
Goals: 10% by 1/2014, 20% by 7/2014, and 30% by 12/2016



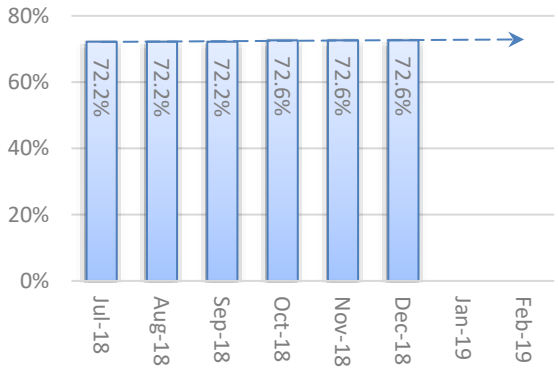
Reason – The value of DBE/SBE/DVBE/MB subcontracts signed to date has not reached 30% of the total contract value. This is, in part, due to prime contract change orders that have increased the total contract value but may not yet be subcontracted out for performance.

Additionally, the December 2016 date identified for achieving the overall 30% small business goal is an internal goal established by the Authority; it is not stipulated in the Contract nor the Community Benefits Agreement.

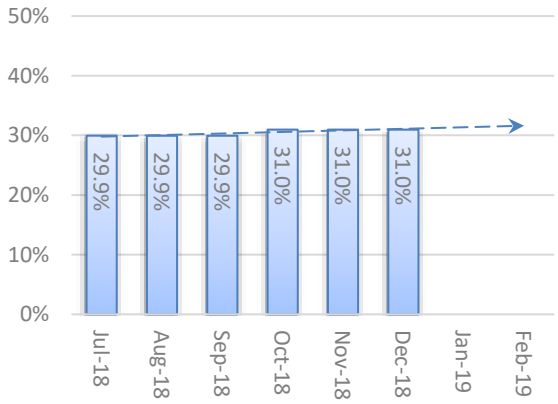
Mitigation/Improvements – Subcontracts are continuously awarded and amended by the Contractor throughout construction. This metric will improve as the Contractor awards additional small business subcontracts, or issues subcontract change orders to existing subcontracts to account for prime contract change orders.

ECONOMIC BENEFITS (Continued)

All National Targeted Workers
[National Targeted Worker Craft Hours to Date[4]] ÷ [Total Craft Hours to Date]



Disadvantaged Workers
[Disadvantaged Worker Craft Hours to Date] ÷ [National Targeted Worker Hours]



[4] Estimated value

Performance Metrics – Explanatory Details

Category	Description
General	**Data Period**
Description	The Performance Metrics represent the period of 10/15/2013 (Notice to Proceed) to 12/31/2018.
Safety	**Authority Safety Incident Rate: [**Number of injuries and illnesses] ÷ [Employee hours worked] * [200,000]
Description	• The goal is to contain the incidence rate at ≤ 3.2. • Benchmark: The average incidence rate per the 2012 U.S. Bureau of Labor Statistics, U.S. Department of Labor for heavy and civil engineering construction is 3.2. • Authority (CP1 Authority and Consultant on-site staff) has zero (0) incidents of recordable injury or illness to date. • The Consultant staff has 337,728 hours worked to date • The incidence rate represents the number of nonfatal occupational injuries and illnesses per 100 full-time workers and is calculated as: (N/EH) x 200,000, where N = number of injuries and illnesses EH = total hours worked by all employees during the calendar year 200,000 = base for 100 equivalent full-time workers (working 40 hours per week, 50 weeks per year)
Safety	**Contractor Safety Incident Rate: [**Number of injuries and illnesses] ÷ [Employee hours worked] * [200,000]
Description	• The goal is to contain the incidence rate at ≤ 3.2. • Benchmark: The average incidence rate per the 2012 U.S. Bureau of Labor Statistics, U.S. Department of Labor for heavy and civil engineering construction is 3.2. • Design-Build Contractor (DB) has thirty-two (32) incidents of recordable injury or illness to date. • Design-Build Contractor (DB) has 3,711,333 hours worked to date. • The incidence rate represents the number of nonfatal occupational injuries and illnesses per 100 full-time workers and is calculated as: (N/EH) x 200,000, where N = number of injuries and illnesses EH = total hours worked by all employees during the calendar year 200,000 = base for 100 equivalent full-time workers (working 40 hours per week, 50 weeks per year)
Cost	**Design & Construction Support Cost: [**Design & Construction Support Cost] ÷ [DB Invoiced to Date Amount]
Description	• The goal is to keep the support cost at ≤ 6%. • Benchmark: Transit Cooperative Research Program (TCRP) Report 138 is an industry resource for understanding soft costs and was sponsored by the FTA. Construction Administration & Management should be in the range of 5% to 6% of construction costs. • The Design & Construction Support Cost encompasses the Project & Construction Management Team (PCM) invoiced to date amount = $52,093,799 • The DB Invoiced to Date Amount = $905,048,883

Cost	**Contingency: [**Remaining Contingency Value] ÷ [Remaining Contract Value]
Description	• The goal is to contain the contingency in the range of 10-20%. • Benchmark: As per guidelines by Federal Transit Authority cost for contingency should be in the range of 10% to 20% of construction cost during the 15% - 30% Preliminary Design Report. • *(Note: The contingency percentage will be adjusted per FTA guidelines as design and construction move forward.)* • The Remaining Contingency[5] = [Current Allocated Contingency Amount] – [Executed Change Orders Affecting Contingency] = $36,414,137 • The Remaining Contract Value = [Revised DB Contract Amount] – [Authority Approved Invoices to Date] = $644,044,823
Schedule	**Schedule Performance Index (SPI):** Earned Value (EV) ÷ Average Planned Value (PV)
Description	• The goal is to achieve SPI ≥ 1, which is same as ≥ 100% when expressed in percent. • Benchmark: As per guidelines by PMI (Project Management Institute, World Wide) the SPI should be ≥ 1 or 100%. • At a value of 100% the Project is forecasted to complete on-time. • EV = Percent Complete x BAC (Budget at Completion) • PV= Planned Value • Planned Value in dollars to be spent to data date is derived from the approved baseline schedule, which stands at $932,979,887 through the most recent billing period.
Quality	**Percent of Non-Conformance Reports (NCR) Resolved:** [Resolved Non-Conformance Reports] ÷ [Total Number of Non-Conformance Reports]

Description	• The goal is to maintain a NCR resolution rate of ≥ 85%.
	• This metric is a measure of the quantity of non-conforming work issues identified on the project, based on the KPI Standard Organization's Heavy and Civil Engineering Construction definition.
	• The target rate identified is preliminary and is derived from the professional judgment of multiple quality managers and construction professionals. This metric will be measured and trended for refinement throughout the life of the CP1 project and across multiple High-Speed Rail construction packages to develop a performance standard for the High-Speed Rail.
	• To Date:
	  ○ 160 Contractor Issued NCRs, 155 resolved
	  ○ 83 Owner Issued NCRs, 79 resolved
	  ○ 14 ISE Issued NCRs, 14 resolved
	  ○ 57 Environmental Issued NCRs, 56 resolved

[5] Includes Board authorized $50.3 million funds transfer to Contingency

Economic Benefits	**Disadvantaged/Small/Disabled Veteran/Micro Business Enterprises:** [Total Value of DBE/SBE/DVBE/MB Contracts Signed to Date with the DB] ÷ [DB Contract Value]
Description	• The current goal is to achieve ≥30% • Benchmark: As the project design is refined, the DB executes DBE/SBE/DVBE/MB subcontracts for specific portions of work. To date, the DB has not provided a schedule of when all the DBE/SBE/DVBE/MB subcontracts will be signed. The Project and Construction Management Team set goals of 10% by 1/14, 20% by 7/2014 and 30% by 12/2016. • DB has executed subcontracts with DBE/SBE/DVBE/MB firms totaling 26.9% of the current DB Contract Amount.
Economic Benefits	**All National Targeted Workers:** [National Targeted Worker Craft Hours to Date] ÷ [Total Craft Hours to Date]
Description	• The goal is ≥ 30% as identified in the contract. • Benchmark: The Community Benefits Agreement requires a minimum of 30% of all hours of Project Work shall be performed by National Targeted Workers. The data is officially reported quarterly and estimated monthly by the DB. • DB has 965,344 National Targeted Worker craft hours[6] to date. • DB has 1,329,572 craft hours to date.
Economic Benefits	**Disadvantaged Workers:** [Disadvantaged Worker Craft Hours to Date] ÷ [National Targeted Worker Hours to Date]
Description	• The goal is ≥ 10% as identified in the contract. • Benchmark: The Community Benefits Agreement requires a minimum of 10% of all National Targeted Worker hours shall be performed by Disadvantaged Workers. The data is officially reported quarterly and estimated monthly by the DB. • DB has 298,821 Disadvantaged Worker craft hours to date. • DB has 965,344 National Targeted Worker hours to date.

[6] Estimated value