Finance and Audit Committee Performance Metrics

Construction Package 2-3
Contract No. HSR 13-57

Board Meeting: September 2019
Data Date: 7/31/2019

Performance Metrics Contents

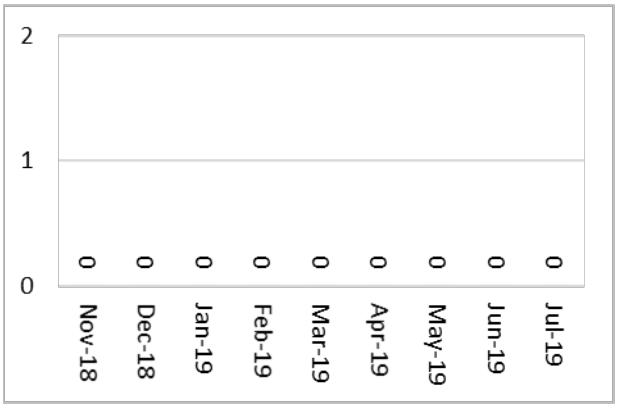
- Safety
  - Authority Safety Incident Rate
  - Contractor Safety Incident Rate
- Cost
  - Design & Construction Support Cost
  - Contingency
- Schedule
  - Schedule Performance Index (SPI)
- Quality
  - Percent of Non-Conformance Reports (NCRs) Resolved
- Economic Benefits
  - Disadvantaged/Small/Disabled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

The following performance metrics for Construction Package 2-3, 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.

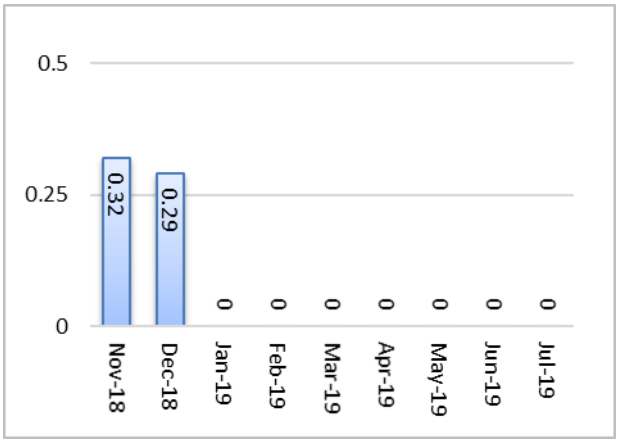
Performance Metrics

Authority Safety Incident Rate



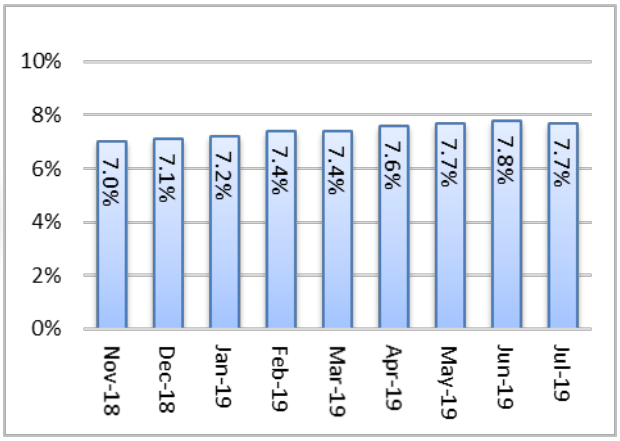
Calculation: (Number of injuries and illnesses in 2019 x 200,000) / (Employees Hours Worked in 2019)
(0 x 200,000) / (83,287) = 0.0

Contractor Safety Incident Rate



Calculation: (Number of injuries and illnesses in 2019 x 200,000) / (Employees Hours Worked in 2019)
(0 x 200,000) / (401,662) = 0.0

Design & Construction Support Cost[1]

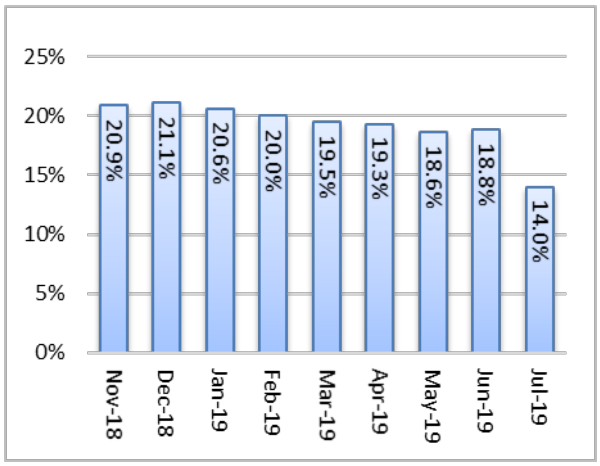


1. Design & Construction Support Costs (PCM Invoiced to date excluding ICE & ISE) = $53,341,752.14 (includes estimated July 2019 invoice of $1,500,000.00).
   DB Invoiced to date = $690,630,501.81 (includes estimated July 2019 invoice of $17,056,769.16).
2. Currently at 7.7%, performance target is < 6%.
   Design Impacts are requiring PCM staff to evaluate change notices. This is contributing to the change to the support cost versus DB invoices ratio.
   Some major field construction started in September 2017 but not sufficiently to increase DB Invoice amount. Increased field operations will help move the ratio to the green zone.
   In addition, PCM is involved with PG&E design and construction at a greater level than anticipated for PG&E facility work.

Also, the PCM is providing additional support for ROW, 3rd Party work and Environmental due to issues with agreements and permits.

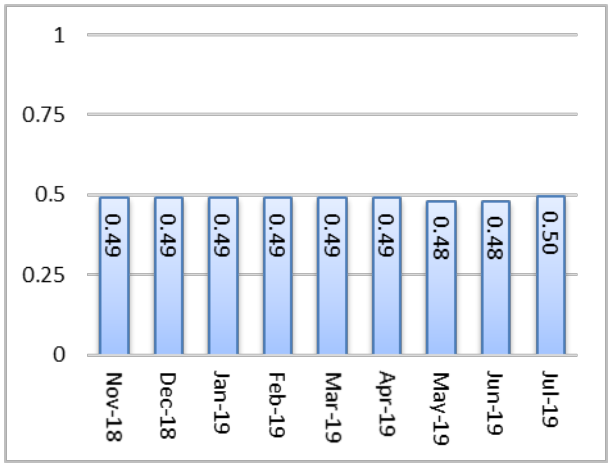
[1] Design & construction support cost includes forecasted Earned to Date value for the current period

Contingency



While the current amount of Executed Change Orders is well within the Approved Contingency Value, there are Potential Change Orders as well as risk costs that are currently tracked that may result in the project exceeding the Approved Contingency Value

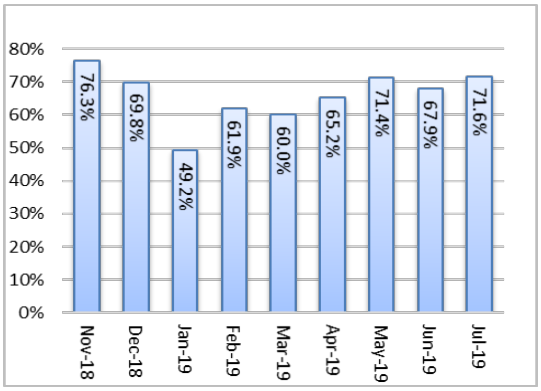
Schedule Performance Index (SPI)



1 Earned Value = $690,630,501.81 Average Planned Value = $1,393,288,788.
2 Currently at 0.50. The performance target is ≥ 1.
3 Average Planned Value (average of Early and Late Planed Value) is used instead of the Early Planned Value to calculate Schedule Performance Index.

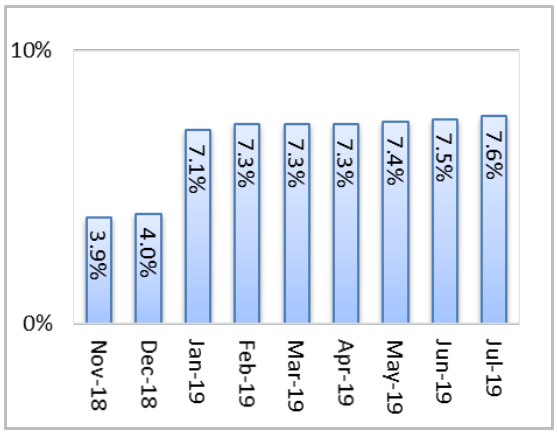
Reason: SPI is in red because the start of major field construction is needed to increase DB invoice amount.
Mitigation/ Improvements: The SPI calculation improves when DB contractor will start invoicing for major field construction. Working with the DB contractor to find more opportunities to start construction that will increase the monthly Earned Value.

Quality - Percent of Non-Conformance Reports (NCRs) Resolved



Reason: 9 Open DFJV issued NCRs. 15 Open PCM issued NCRs (1 ON Hold)
Mitigation: PCM is following up with DFJV for the status of resolution.
Status: 88 NCRs to date, 63 Resolved, 1 on hold and 24 remain open. 63 Resolved NCRs / 88 Total to Date = 71.6%. 24 Open NCRs and 1 On Hold / 88 Total to Date = 28.4%

Disadvantaged/Small/Disabled Veteran/Micro Business Enterprises[2]

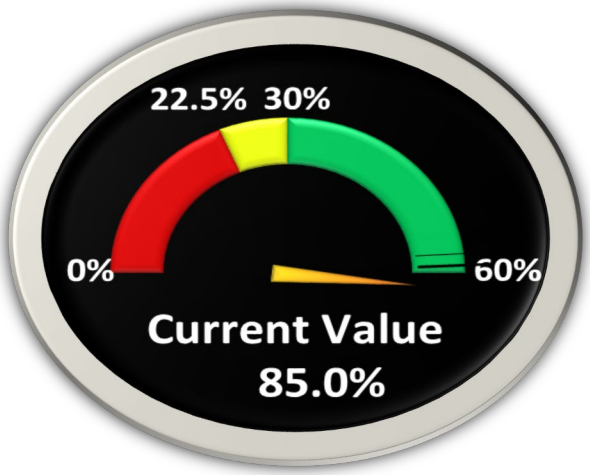


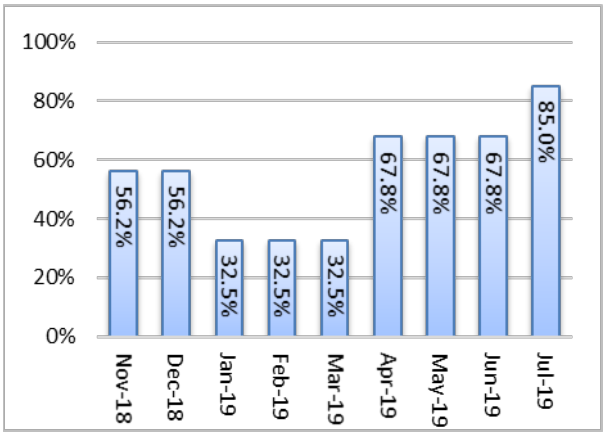
Reason – The value of DBE/SBE/DVBE/MB subcontracts signed to date has not reached 30% of the total contract value. This is, in part, due to prime contract change orders that have increased the total contract value but may not yet be subcontracted out for performance.
Additionally, the December 2019 date 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.

---

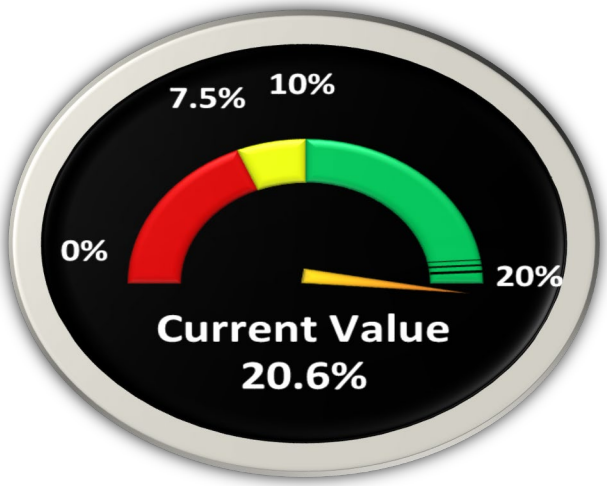
[2] Most recent data by HSR Labor and Compliance Group

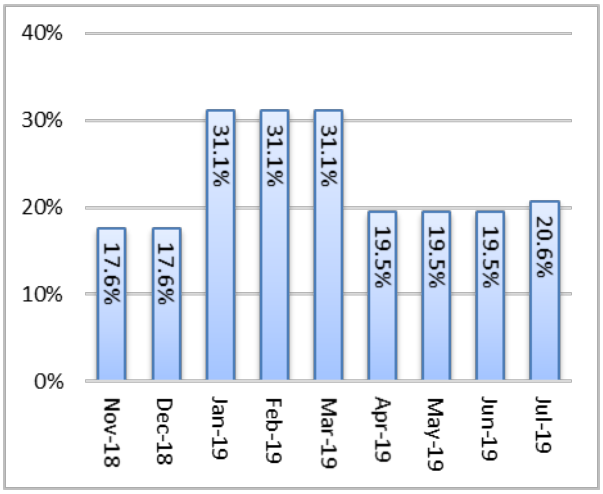
All National Targeted Workers





Disadvantaged Workers





Performance Metrics – Explanatory Details

The Performance Metrics represent the period of 10/15/2013 (Notice to Proceed) to 7/31/2019.

Category	Description
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 (CP 2-3 Authority and Consultant on-site staff) has no recordable injury or illness in the year 2019. • The Consultant staff has 83,287 hours worked in 2019, including estimated 11,000 hours worked in July. The incidence rate represents the number of nonfatal occupational injuries and illnesses per 100 full-time workers and is calculated as: (N x 200,000) ÷EH, 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 no recordable injury or illness in 2019. • Design-Build Contractor (DB) has 401,662 hours worked in the year 2019, including estimated 65,000 hours worked in July. The incidence rate represents the number of nonfatal occupational injuries and illnesses per 100 full-time workers and is calculated as: (N x 200,000) ÷ EH, 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 (excluding ICE and ISE) and including estimated July 2019 invoice of $1,500,000.00 = $53,341,752.14 • The DB Invoiced to Date Amount = $690,630,501.81 based on estimated July 2019 invoice of $17,056,769.16
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.

Category	Description
	• *(Note: The contingency percentage will be adjusted per FTA guidelines as design and construction move forward.)* • The Remaining Contingency = [Current Allocated Contingency Amount] – [Executed Change Orders Affecting Contingency] = $113,867,839.88 • The Remaining Contract Value = [Revised DB Contract Amount] – [Authority Approved Invoices to Date] = $812,467,548.31 • While the current amount of Executed Change Orders is well within the Approved Contingency Value, there are Potential Change Orders as well as risk costs that may result in exceeding the Approved Contingency Value.
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 (Baseline Average of Early Start and Late Start Cashflow): $1,393,288,788 • Design Builder invoiced to date is $690,630,501.81 (including estimated July 2019 invoice of $17,056,769.16. • SPI calculation using the average cashflow is $690,630,501.81 divided by $1,393,288,788 = 0.50. • SPI calculation using the Baseline Late Start cashflow is $690,630,501.81 divided by $1,392,009,685 = 0.50 • The Design Build Contractor (DFJV) is anticipating that the project will be completed on 03/24/2023 based on DFJV June 2019 Schedule Update. Time extension has been granted via Change Order No. 45 to 5/22/2020. It is noted that the Planned Value is based on the original contract duration.
Quality	**Percent of Non-Conformance Reports (NCR) Resolved: [Resolved Non-Conformance Reports] ÷ [Total Number of Non-Conformance Reports]**
Description	• Measures the effective resolution of NCRs based on percentage of NCR corrective actions approved. • The goal is to identify and approve resolution of the NCR as soon as practical. • The target rate is to stay above 85% closed. • This metric is a measure of the resolution rate 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 construction professionals and NCR data to date. This metric will be measured and trended for refinement throughout the life of the CP 2-3 project and across multiple High-Speed Rail construction packages to develop a performance standard for the High-Speed Rail. • Total NCR Issued to Date: 88 (DFJV Issued = 46), (PCM Issued = 42), • Total NCR Resolved to Date: 63 (DFJV Resolved =37), (PCM Resolved =26) • Total NCR Open to Date: 24 (DFJV Open=9), (PCM Open=15) (88 NCR Issued to Date - 63 Resolved)
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%

Category	Description
	• 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 of the DBE/SBE/DVBE/MB subcontracts will be signed. The Project and Construction Management Team set goals of 30% over the course of the project. • DB is continuing its process of executing subcontracts with DBE/SBE/DVBE/MB firms. • DBE/SBE/DVBE/MB Contract Amount signed with small businesses to date: $99,079,955.11. The Project Team has achieved 7.6% target. The Project Team has revised intermediate goals to 3% by December 2017, 10% by June 2019 and 20% by December 2019.
Economic Benefits	**All National Targeted Workers: [National Targeted Worker Craft Hours to Date4] ÷ [Total Craft Hours to Date4]**
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 by the DB. • DB has 275,594 National Targeted Worker craft hours to date. • DB has 324,405 craft hours to date. Note: Data is reported quarterly.
Economic Benefits	**Disadvantaged Workers: [Disadvantaged Worker Craft Hours to Date4] ÷ [National Targeted Worker Hours to Date4]**
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 56,761 Disadvantaged Worker craft hours[8] to date. • DB has 275,594 National Targeted Worker hours[8] to date.