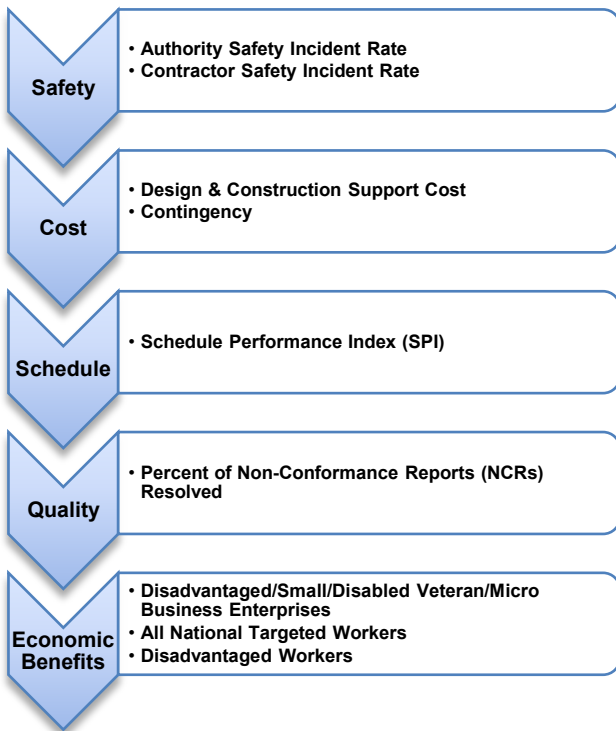


Finance and Audit Committee

Performance Metrics

State Route 99 Realignment Project Contract No. HSR 12-06

Board Meeting: Jul 2019
Data Date: 5/31/2019



PERFORMANCE METRICS

The following performance metrics for SR99, a Caltrans Construction Manager / General Contractor (CM/GC) project within the limits of CP1 intended to give the Authority's Board of Directors and other key stakeholders a high-level overview of the performance of this project.

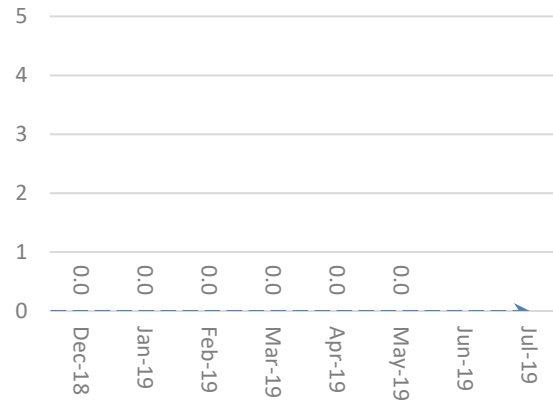
Safety is a top priority and listed first, followed by key metrics for cost, schedule, and quality, as all are fundamental metrics for the management of the project. In addition, and in support of the business aspects of the project, three key metrics are included for economic benefits. The Authority's 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

Caltrans Safety Incident Rate

$[\text{Number of injuries and illnesses}] \div [\text{Employee hours worked}] * [200,000]$

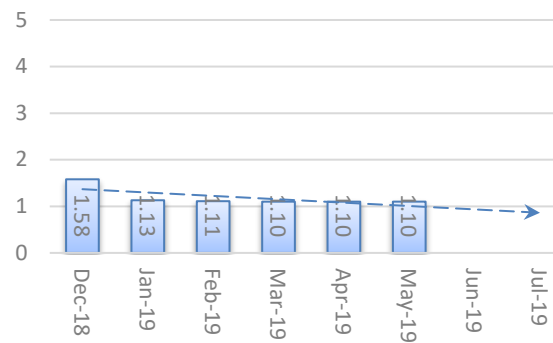


Contractor Safety Incident Rate

$[\text{Number of injuries and illnesses}] \div [\text{Employee hours worked}] * [200,000]$



Contractor Safety

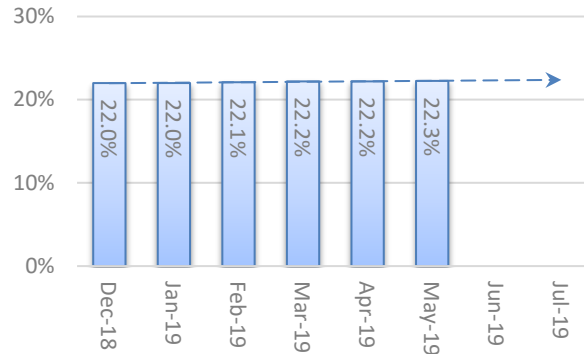


Total Support Cost¹

$[\text{Support Cost Expended to Date Amount}] \div [\text{Total Capital Cost}]$



Support Cost



Reason – The project is implementing CMGC procurement methodology that has a significant upfront effort to resolve issues and add value to the project in the design phase. Additionally, the project was broken up into two separate phases. An Early Work Package (EWP) was created to account for construction of some critical items of work to avoid significant delays to maintain the current project schedule. Work associated in development of this package has resulted in expending additional resources. There have been ongoing clarifications in the design and scope of work for the project. There has also been continuous Value Engineering through the design phase that has resulted in a large effort in support during the PS&E phase of the project. Furthermore, the construction phase has also seen continuous Value Engineering and scope modification that has resulted in additional support cost.

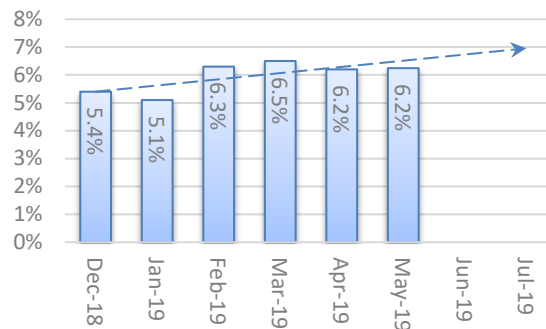
Mitigation/Improvements –. The goal is to reduce risks and eliminate changes and change orders in construction thereby potentially reducing capital cost in the construction phase. This has been realized in the EWP and will continue to be realized in the MP. While this metric has improved, it will continue to be over the projected target due to reasons listed above. The project budget amendment was approved by the Board in March 2018 and the interagency agreement was approved on May 14, 2018. The current planned Support to Capital ratio is 22%.

Construction Contingency

$[\text{Remaining Contingency Value}] \div [\text{Remaining Construction Contract Value}]$

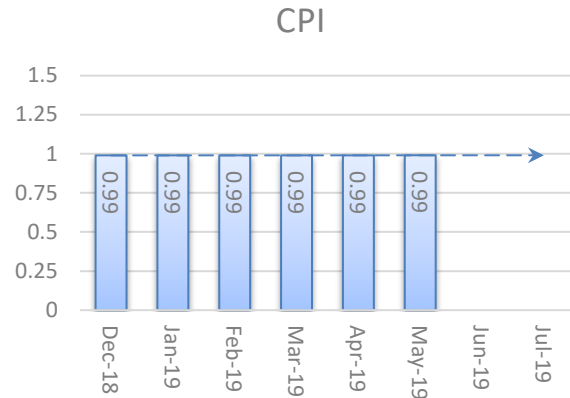


Contingency (MP)



¹ Design & construction support cost includes forecasted Earned to Date value for the current period
Data Date: 5/31/2019

Cost Performance Index
[Earned Value] ÷ [Actual Cost]

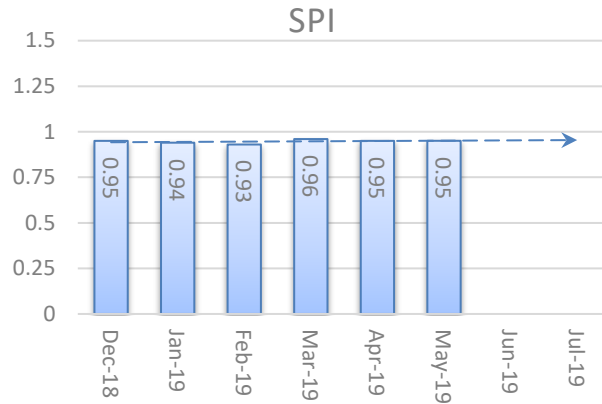


Earned Value (EV) = \$270,680,075
Actual Cost (AC) = \$273,220,589
Currently at 0.99, performance target is >1.0.

Reason – The project has been broken up into two separate phases. An Early Work Package (EWP) has been created to account for construction of some critical items of work to avoid significant delays to maintain the current project schedule. Work associated in development of this package has resulted in expending additional resources. There have been ongoing clarifications in the design and scope of work for the project. There has also been continuous Value Engineering through the design phase that has resulted in a large effort in support during the PS&E phase of the project. The begin construction of the MP was delayed by a couple of months due to budget shortfall discussions.

Mitigation/Improvements – The project is implementing CMGC procurement methodology that had a significant upfront effort to resolve issues and add value to the project in the design phase. The goal was to reduce risks and eliminate changes and change orders in construction thereby potentially reducing capital cost in the construction phase. The EWP has been awarded and construction has been completed. The construction contract for the MP was awarded to Granite on June 30, 2016. The construction contract is substantially complete.

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



Earned Value (EV) = \$270,680,075

Planned value (PV) = \$284,815,195

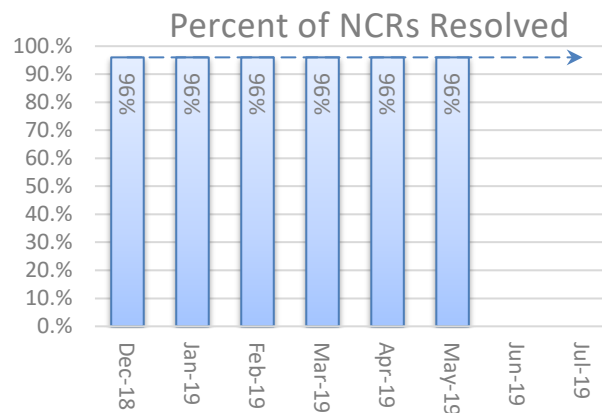
Currently at 0.95, performance target is >1.0.

Reason – The project is on schedule. The metric is lagging due to outstanding invoices from PG&E. Additionally, due to the wet weather the final completion of the project was delayed to April 2019.

Mitigation/Improvements –

Work for the relocation of PG&E facilities have been completed but the payments are outstanding, additionally there is a high probability of settlement of one outstanding property by the end of 2019. The metric will further improve once the utility payments are processed and the property settlement payments are processed.

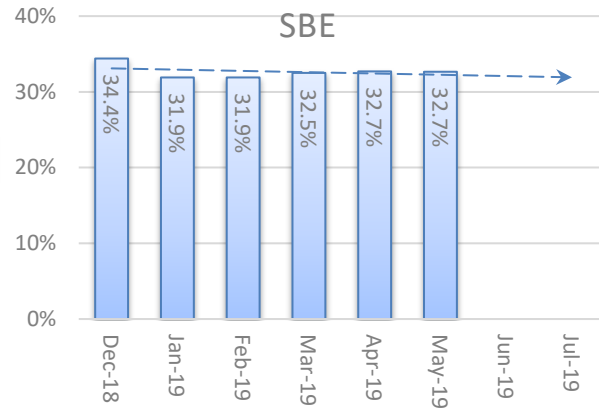
Quality - Percent of Non-Conformance Reports (NCRs) Resolved
[Resolved Non-Conformance Reports] ÷ [Total Number of Non-Conformance Reports]



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



Performance Metrics – Explanatory Details

Category	Description
General	Data Period
Description	The Performance Metrics represent the period of 10/15/2013 (Notice to Proceed) to 5/31/2019.
Safety	Authority Safety Incident Rate: [Number of injuries and illnesses] ÷ [Employee hours worked] * [200,000]
Description	<ul style="list-style-type: none"> 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. Caltrans has <u>0</u> incidents of recordable injury or illness to date. Caltrans has <u>116,470</u> construction 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: $(N/EH) \times 200,000$, 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	<ul style="list-style-type: none"> 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. The Contractor has <u>3</u> incidents of recordable injury or illness to date. The Contractor has <u>545,140</u> 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: $(N/EH) \times 200,000$, 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) <p>Contractor Safety Incident Rate = $(3/545,140) \times 200,000 = 1.10\%$</p>
Cost	Design & Construction Support Cost: [Design & Construction Support Cost] ÷ [DB Invoiced to Date Amount]
Description	<ul style="list-style-type: none"> The goal is to keep the support cost at $\leq 20\%$ of the Capital cost. Benchmark: The statewide average Support to Capital ratio for project development cost on the State Highway System is approx. 32% of the Capital costs for major projects. For this project the Total Support Cost encompasses the effort required to provide Project Management, Contract Administration, Inspection and Quality Control for the Design, Right of Way and Construction phases. Support Cost Expended to Date Amount = <u>\$ 52,959,977</u> Total Capital Cost = <u>\$ 237,918,225</u> Project Total Support to Capital ratio = <u>22.2%</u>
Cost	Contingency: [Remaining Contingency Value] ÷ [Remaining Contract Value]
Description	<ul style="list-style-type: none"> The goal is containing the contingency to 10% of the total Construction Capital Cost for the EWP and 5% of the total Construction Capital Cost for the MP. Benchmark: Caltrans is using an alternative procurement method called CMGC. This procurement method helps define, manage and allocate risk before the project is awarded. A reduced contingency of 5% will be established for the MP.

Category	Description
	<p><u>Main Package</u></p> <ul style="list-style-type: none"> Contract amount is \$134,700,000 which includes Contract items, supplemental work and State furnished material. The total contingency for the MP is \$ 5,919,753. The Remaining Contingency (MP) = [Current Allocated Contingency Amount] – [Executed unplanned Change Orders] = (\$5,919,753- <u>\$5,531,993.49</u>= <u>\$387,759.51</u> The Remaining Construction Contract Value (MP) = [Construction Contract Amount + Executed unplanned Change Orders – Monthly Progress Payment Estimates] = (\$134,700,000 + <u>\$5,531,993.49</u> - <u>\$134,021,988.91</u>) = <u>\$6,210,004.58</u>
Cost	Cost Performance Index (CPI): $\text{Earned Value (EV)} \div \text{Actual Cost (AC)}$
Description	<ul style="list-style-type: none"> The goal is to achieve $\text{CPI} \geq 1$, which is same as $\geq 100\%$ when expressed in percent. Benchmark: As per guidelines by PMI (Project Management Institute, World Wide) the CPI should be ≥ 1 or 100%. At a value of 100% the value earned is same as planned, and the project is right on cost. EV = Percent Complete x BAC (Budget at Completion) = <u>\$270,680,075</u> AC = Actual Costs to Date = <u>\$ 273,220,589</u> Project Cost Performance Index = <u>0.99</u> Support Cost, Construction Capital for EWP & MP and Right of Way Capital cost included in reporting.
Schedule	Schedule Performance Index (SPI): $\text{Earned Value (EV)} \div \text{Average Planned Value (PV)}$
Description	<ul style="list-style-type: none"> The goal is to achieve $\text{SPI} \geq 1$, which is same as $\geq 100\%$ 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) = <u>\$270,680,075</u> PV= Planned Value = <u>\$284,815,195</u> Planned Value in dollars to be spent to date is derived from the approved baseline established for the project using a linear burn rate for support. Project Schedule Performance Index = <u>0.95</u> Support Cost, Construction Capital for EWP & MP and Right of Way Capital cost included in reporting.
Quality	Percent of Non-Conformance Reports (NCR) Resolved: $\frac{\text{Resolved Non-Conformance Reports}}{\text{Total Number of Non-Conformance Reports}}$
Description	<ul style="list-style-type: none"> 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 project and across multiple High-Speed Rail construction packages to develop a performance standard for the High-Speed Rail. Total Non-Conformance Reports Issued to Date: <u>25.0</u> Total Non-Conformance Reports Resolved to Date: <u>24.0</u>

Economic Benefits	Disadvantaged/Small/Disabled Veteran/Micro Business Enterprises: $[\text{Total Value of DBE/SBE/DVBE/MB Contracts Signed to Date with the DB}] \div [\text{DB Contract Value}]$
Description	<p>Benchmark: The Authority has established a Small and Disadvantaged Business Enterprise Program, inclusive of Small Businesses (SB), Disabled Veteran Business Enterprises (DVBE), Disadvantaged Business Enterprises (DBE) and Microbusinesses (MB) and has set an overall Small Business participation goal of $\geq 30\%$.</p> <p>This project is utilizing an alternative procurement method called CMGC. The project will achieve the 30% goal by project completion. The work performed estimate is developed by the relative proportion of SB involved in each item of work. The number will be adjusted as actual payments are made.</p> <p style="padding-left: 40px;">Total SB work performed amount = <u>\$53,536,585</u> Total Sub Contract payments = <u>\$163,957,249</u> The project has achieved a <u>32.7%</u> participation to date.</p>
Economic Benefits	All National Targeted Workers: $[\text{National Targeted Worker Craft Hours to Date4}] \div [\text{Total Craft Hours to Date4}]$
Description	<ul style="list-style-type: none"> • The goal is $\geq 30\%$ 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 39,322 National Targeted Worker craft hours to date per CRB's 2019 1st Quarter update. DB has 66,747 total craft hours to date per CRB's 2019 1st Quarter update.
Economic Benefits	Disadvantaged Workers: $[\text{Disadvantaged Worker Craft Hours to Date4}] \div [\text{National Targeted Worker Hours to Date4}]$
Description	<ul style="list-style-type: none"> • The goal is $\geq 10\%$ 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 14,627.27 Disadvantaged Worker craft hours to date per CRB's 2019 1st Quarter update. DB has 66,747 total craft hours to date per CRB's 2019 1st Quarter update.