

## MEMORANDUM

TAB 76

To: CHAIR AND COMMISSIONERS  
CALIFORNIA TRANSPORTATION COMMISSION

CTC Meeting: August 16-17, 2023

From: STEVEN KECK, Chief Financial Officer

Reference Number: 2.5d.(1), Action Item **YELLOW REPLACEMENT ITEM**

Prepared By: Amarjeet Benipal  
District 03 – Director

Subject: **ALLOCATION FOR PROJECT WITH COSTS THAT EXCEED THE PROGRAMMED AMOUNT BY MORE THAN 20 PERCENT**  
**PPNO 6402/EA 3F070 – SACRAMENTO COUNTY – STATE ROUTE 51**  
**RESOLUTION FP-23-01**

**ACTION UPDATE:** *Reduction in allocation request and additional details on cost breakdown.*

### **ISSUE:**

Should the California Transportation Commission (Commission) approve the California Department of Transportation's (Department) allocation request for \$164,950,000 for the State Highway Operation and Protection Program (SHOPP) Bridge Rehabilitation and Replacement project on State Route (SR) 51, in Sacramento County, to award the construction contract?

### **RECOMMENDATION:**

The Department recommends that the Commission approve the requested allocation for this SHOPP project.

### **PROJECT DESCRIPTION:**

This American River Bridge Rehabilitation parent project is located on SR 51, in the City of Sacramento (City), from north of B Street Underpass to north of Exposition Boulevard Overcrossing, in Sacramento County. The project will rehabilitate the American River Bridge (No. 24-0003) by widening and replacing the bridge deck, widen the Cal Expo Undercrossing (No. 24-0133), and construct 0.14 mile of Class I bicycle and pedestrian path as a complete streets element. This is a Construction Management/General Contractor (CMGC) project.

### **FUNDING AND PROGRAMMING STATUS:**

In October 2015, the project was originally programmed in the SHOPP with \$125,000,000 in Construction Capital and \$10,550,000 in Construction Support in Fiscal Year 2021-22. In

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December 2020, the construction capital funding was reprogrammed to \$135,000,000 to accommodate for traffic during construction of the widening of the Cal Expo Undercrossing and the delivery year was changed from 2021-22 to 2023-2024. In March 2021, Construction Capital was reprogrammed to \$139,300,000, using \$4,300,000 from 2020 SHOPP Complete Streets Reservation to construct a Class I bike/pedestrian path on American River Bridge. An additional \$2,700,000 of Active Transportation Program funding was provided from the local Sacramento Area Council of Governments Program provided to the City of Sacramento to construct a Class I bike/pedestrian path, and associated work, outside of the bridge limits.

The American River Bridge Rehabilitation Project is utilizing the CMGC delivery method instead of the Design-Bid-Build delivery method and was split into three child projects and a parent project for efficient delivery of the project scope. In December 2021, the project was programmed back to 2022-23, after procurement of the CMGC Contractor to take advantage of obtaining a United States Army Corps of Engineers 408 permit and begin working in the American River during the summer of 2022. The child projects consisted of the following:

- Child Project 1 (clearing for the project site) was awarded for \$9,548,997 in January 2022
- Child Project 2 (procurement of the steel girders) was awarded for \$10,435,705 in April 2022
- Child Project 3 (in water work) was awarded for \$50,129,050 in June 2022

The parent project scope includes constructing a reinforced lightweight concrete deck, clean and erect steel girders, construct a bike path on the bridge and all connections required, modify abutments and approach slabs for the American River Bridge, widen the Cal Expo Undercrossing bridge, modify and install new drainage facilities, construct concrete barriers, construct retaining walls, and extend an existing box culvert.

After the project splits, and associated work completed in those three child projects, the remaining programmed amount for the parent project was \$62,209,000. As the project was programmed in the year of delivery, 2022-23, there was no opportunity to adjust that programmed amount at that time. The Department received a six-month allocation time extension in June 2023, to allow for the CMGC process to reach an Agreed to Price with the contractor for the parent project.

In June 2023, the Agreed to Price reflected the need of \$145,300,000 in Construction Capital (133.6 percent over the programmed amount) and \$19,650,000 in Construction Support (86.3 percent over the programmed amount) for the remaining work within State right of way. If this allocation request is approved, the Department plans to award the project in September 2023, and begin construction in October 2023. Construction is planned for five construction seasons with a duration of 870 working days.

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**REASON FOR COST INCREASE:**

In June of 2022, at the beginning of Child Project 3, after completing 60 percent design with the CMGC contractor on the project delivery team, more information was discovered through additional field investigations that revealed increases in cost due to underestimated items, unanticipated scope elements, changes in assumptions for construction based on a better understanding of the “means and methods” to be used, and scope that was not identified during Project Approval and Environmental Document (PA&ED). Current market conditions since February 2021, have also significantly changed since PA&ED was completed, which resulted in project cost increases.

In June 2023, the Department reached an Agreed to Price with the CMGC contractor for the parent project. The negotiations were based on the Engineer’s Estimate of \$154,000,000. As part of the CMGC process, the Department procured an Independent Cost Estimator consultant, and that estimate was \$147,000,000. The CMGC contractor estimate was \$148,000,000. As the Agreed to Price was resolved for the parent project, the Department submitted the letter of intent to award to the contractor on June 16, 2023.

**Capital Cost Increase:**

**Underestimated Elements:**

- Seal coarse and drainage system impacts, identified in August 2022, at Elvas Underpass (Increase of \$3,400,000) – During design in the Plans, Specifications, and Estimate (PS&E) phase, and after multiple field inspections of the existing seal coarse and drainage system, it was realized that the existing drainage system was not adequate to handle the increased surface run-off from the project. This requires installation of new drainage features under the seal coarse concrete slab, which requires temporary barrier installation, additional traffic control, roadway excavation, replacement of seal coarse concrete, and pavement structural section.
- Pump plant modification (Increase of \$4,000,000) – Due to drainage system impacts at Elvas Underpass, during the PS&E phase in September 2022, after the American River Bridge and roadway design was sufficiently complete, it was realized that the existing pump plant storage system was not adequate to handle the increased surface run-off from the project. This required the need for additional storage capacity at the pump plant and additional connections to drain the facility. At this time, it was also realized that the power capacity to operate the pumps was inadequate, causing intermittent shutdown of the pumps, resulting in the need to add additional electrical power.
- Groundwater pumping during construction (Increase of \$2,000,000) – During PS&E in August 2022, field observations and review of more recent geotechnical borings resulted in a better understanding and reliability of the existing ground water table elevation. With this new/updated information, to safely facilitate construction, it was determined that additional pumping would be required to construct the drainage system

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items and any other features that fall within the groundwater table.

- Scour protection concrete around modified pier footings in the American River (Increase of \$4,000,000) – Hydraulic analysis of scour at the bridge footings require placing sheet pile to protect the footings. Due to the length of the sheet piles required to be embedded into the river bottom and the limited working space between the barge and bottom of the bridge, the sheet pile thickness was reduced, and embedment length was reduced to avoid the impact hammer striking the bottom of the bridge during placement. Structural evaluation of the reduced sheet pile thickness revealed the need for a reinforced concrete connection between the pier and the sheet pile system, to reinforce the sheet piles in the river. This work was not anticipated during the PA&ED phase and was deemed necessary during the PS&E phase in July 2022. Due to the limited work window for Child Project 3 within the river channel, the sheet pile placement was moved from Child Project 3 to the parent project.
- Light weight concrete (Increase of \$6,600,000) – To keep a seamless transition between the roadway and bridge deck, the bridge deck profile needed modification. This resulted in the need for a thicker bridge deck. An analysis of existing girder strength was completed, and it was determined that the existing girders were inadequate to support a normal weight concrete deck, requiring the use of light weight concrete on the entire bridge.

**Unanticipated Elements:**

- Use of barges for construction (Increase of \$8,000,000) – The use of construction barges was decided upon as a method of construction, as opposed to trestles, during the PS&E phase. Barges allowed the Department to acquire the 408 Permit more expeditiously. In addition, the construction method using barges provides benefits to environmental mitigation, reduction in hydroacoustic impacts, allows recreational and boat traffic during construction below the bridge, elimination of trestle material costs and procurement time, reduced time exposure in the water, and less susceptibility to flood events compared to a trestle.

**Construction “Means and Methods” Revisions Affecting Cost:**

- Traffic Control Impacts (Increase of \$5,500,000) – A detailed analysis with close coordination with the CMGC Contractor, revealed the project will require over 500 shifts of lane closures and flagging for pedestrians. It was originally estimated to have limited nightly closures during PA&ED, the result of the complicated staging for the project compounds costs for traffic control, constrained lane closures, and extension of work durations due to limited access.
- Bridge Constructability (Increase of \$11,500,000) – Construction of this project is more difficult, and thus, more costly than typical, due to multiple phases and construction

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staging, wide girder spacing, difficult steel girder forming costs, restricted access due to traffic constraints, and the height of the work above the ground and river. The impacts the required construction methodology would have on the costs were not determinable until late in the PS&E phase.

- Time-Related Overhead (TRO) (Increase of \$8,400,000) – During PA&ED, the TRO was estimated based on 700 working days. The TRO at final design is not only based on the increased number of working days to 870, but also includes the complexity of the construction staging.

**Inflation:**

Inflationary Costs (Increase of \$18,500,000) – The inflationary costs in the last two years exceeded the assumptions of cost escalation during PA&ED. A total of approximately \$70,100,000 worth of construction capital was previously awarded for Child Project 1, Child Project 2, and Child Project 3. The result of awarding these projects during the current inflationary time took away from the available budget from the Parent project.

**Added Scope Elements:**

- Added Catwalks (Increase of \$3,500,000) – Catwalks were added to facilitate future bridge inspections and for maintenance worker safety. These costs were not included during PA&ED.
- Additional Permit Requirement (Increase of \$2,000,000) – Discussion with the American River Flood Control District during PS&E, the Levee Maintenance Agency (LMA), required the implementation of a retaining wall system for the project. This system was necessary to comply with a LMA requirement, that would allow them to maintain their levee after construction of the bridge.
- Traffic Electrical (Increase of \$5,700,000) – Various work scopes were added during design that contributed to this increase including bike path lighting, replacement of roadside weather information system, overhead sign structure upgrades, traffic cameras, and temporary lighting for stage construction.

**Support Cost Increase:**

The increased support costs are a result of the increase in working days and inspections for material procurement and construction activities that are required for such a large project. Since PA&ED, and finalizing PS&E, the Department, with the CMGC contractor, has better information on the construction staging and “means and methods” of construction and needs to appropriately staff the project to oversee that work. Including, but not limited to, specialized inspections and/or testing for light weight concrete, the pump plant, seal coarse concrete slab, five-year on-site environmental mitigation, and the added catwalks and traffic electrical items. The Department is requesting \$19,650,000 in Construction Support costs.

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**CONSEQUENCES:**

If these funds are not approved, the project would be unable to be constructed and completed by the planned delivery year of 2025-26. Any delays to the completion of this project would result in reprogramming of another project and additional years of escalation and inflationary costs. The result would likely be increased support and construction costs to complete the same scope of work later. Incomplete work would also be visible along the project vicinity along the freeway and the recreational area, and the need of the project will not be addressed, and the deck of the American River Bridge will continue to deteriorate.

Therefore, the Department has determined that the requested additional funds are in the best interest of the State to avoid delays in implementing this important safety improvements project, and to avoid reprogramming at higher costs due to escalation and potentially new requirements.

**FINANCIAL RESOLUTION:**

Resolved, that \$145,300,000 be allocated from the Budget Act of 2022, Budget Act Items 2660-302-3290 and 2660-302-0890 for Construction Capital, and \$19,650,000 for Construction Support, to provide funds to award this SHOPP project.

Attachment

2.5 Highway Financial Matters

Project No.	Allocation Amount	County	Dist-Co-Rte	Postmile	Location	Project Description	Project Support Expenditures	PPNO	Program/Year	Phase	Prgm'd Amount	Project ID	Adv Phase	Budget Year	Item # Fund Type	Program Code	Amount by Fund Type
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2.5d.(1) Allocations for Projects with Cost Increase Greater than 20 percent

Resolution FP-23-01

1	\$164,950,000	Sacramento	03-Sac-51	2.0/3.5	In the city of Sacramento, from north of B Street Underpass to north of Exposition Boulevard Overcrossing at the American River Bridge No. 24-0003 and Cal Expo Undercrossing No. 24-0133. <u>Outcome/Output:</u> Widen and replace bridge deck and construct 0.14 mile of Class 1 bike and pedestrian path as a complete streets element. This is a Construction Manager/General Contractor (CMGC) project.			03-6402	SHOPP/22-23	CON ENG	\$10,550,000	0312000054	EA	2022-23	001-0890 FTF	20.10.201.110	\$2,254,000
																	\$17,396,000
																	\$19,650,000
																	\$16,666,000
																	\$128,634,000
																	\$145,300,000

Additional \$2,700,000 contribution for Const Cap from the city of Sacramento.

Preliminary

Engineering	Budget	Expended
PA&ED	\$4,974,000	\$4,973,514
PS&E	\$13,400,000	\$13,128,225
R/W Sup	\$860,000	\$657,732

CEQA - MND, 2/16/2021; Re-validation 6/26/2023

NEPA - CE, 2/16/2021; Re-validation 6/26/2023

Future consideration of funding approved under Resolution E-21-19; March 2021.

Six month allocation time extension for CONST and CON ENG approved under Waiver 23-72; June 2023.

Addendum for the previously approved Future Consideration of Funding approved under Resolution E-23-74; May 2023.

SB 1 Baseline Agreement approval under Resolution SHOPP-P-2021-06B; May 2021.

As part of this allocation request, the Department is requesting to extend the completion of CONST and CON ENG an additional 24 months beyond the 36 month deadline.

Related non-SHOPP allocation for PPNO 03-2217, under Resolution FATP-2324-04; August 2023.

**Change to the CON ENG amount and to the overall allocation amount made via the Yellow Replacement distributed at the August 2023 CTC meeting.**

Performance Measure: Bridges (Planned: 2, Actual: 2 Bridge(s))					
	Unit	Good	Fair	Poor	Quantity
Existing Condition	Square feet	0.0	166,055.0	0.0	166,055.0
Post Condition	Square feet	264,920.0	6,028.0	0.0	270,948.0

**Bridge Health**

Bridge Number	Exist. Condition	Post Condition
24-0003	Fair	Good
24-0133	Fair	Fair