

**DESIGN-BUILD DEMONSTRATION PROGRAM  
PROJECT AUTHORIZATION REQUEST**

**Yol/Sac-50-PM 2.5/3.2, L0.0/0.6  
Sac-5-PM 23.6  
03-2F21U1**

**Rehabilitate Bridge Decks – Sacramento River Viaduct Bridge (Br. No. 24-0004L/R) and  
West End Viaduct Bridge (Br. No. 24-0069L/R)**

**Executive Summary**

This project proposes to rehabilitate the bridge decks on both the Sacramento River Viaduct on Route 50 in Yolo and Sacramento Counties and the West End Viaduct on Route 5 in Sacramento County. The Department desires to utilize design-build on this project to achieve several important benefits including obtaining bids earlier in order to take advantage of the low bid prices, faster delivery, transfer of risk, and cost certainty. The Department expects to save sixteen months or more through the use of design-build. The Department is requesting authorization to award based on Low Bid. The Department believes that it will achieve value through price competition on this project. This project will utilize one of the ten project slots authorized by Legislation for use of design-build contracting by the Department.

**Background and Importance of Project**

**a. Description and Scope of the project**

It is proposed to rehabilitate the bridge decks on two structures. Within the limits of the Sacramento River Viaduct Bridge, Ramps and Connectors (Br No 24-0004L/R), the project proposes placing a 3/8-inch slurry polymer concrete overlay on both decks and replacing all of the pourable and compression bridge deck joint seals. On the West End Viaduct Bridge (Br No 24-0069L/R), Ramps, and Connectors, the project proposes placing a 3/4-inch thick polyester concrete overlay on both decks and replace structure approach slabs and deck joint seals.

Environmental approval for the project will include preparation of a Categorical Exemption pursuant to CEQA and a Categorical Exclusion pursuant to NEPA. The project is within State right of way and preliminary design thus far identified no major environmental issues.

**b. Project Benefits**

The bridge deck on the mainline, ramps, and connectors are in need of major deck rehabilitation. This is due to the severity of transverse and longitudinal deck cracks, and concrete spalling. The deck cracks allow water to penetrate the top 3” of the bridge decks which rusts the top mat of reinforcement compromising the structural integrity of the structures. Rehabilitation of the bridge decks will minimize further deck deterioration and

preserve the integrity of the bridge decks. This will extend the serviceability of the bridge structures and improve ride quality.

The primary benefit is that less maintenance resources will be required in the future to maintain these failing sections of the decks. Safety will be enhanced due to less need for maintenance staff to be working on the decks, limiting exposure of both maintenance staff and the traveling public.

**c. Regional Significance**

Interstate 5 and US Route 50 are both National Highway System highways, functionally classified as principal arterial, with high percentages of truck traffic. Interstate 5 is an important regional and local facility within Sacramento County. It is a major truck route, which provides critical access for shipments of agricultural goods to markets. It also provides significant recreational access during the summer months.

**d. Project status**

**i. Stage of Development**

The project is programmed in the 2012 SHOPP and is currently in the Project Approval and Environmental Document (PA&ED) phase. The project team is assembling needed project documents and working on defining the scope of the project in order to prepare the Request for Proposals.

**ii. Current Schedule**

The current project schedule based on the 2012 SHOPP and utilizing design-bid-build is as follows:

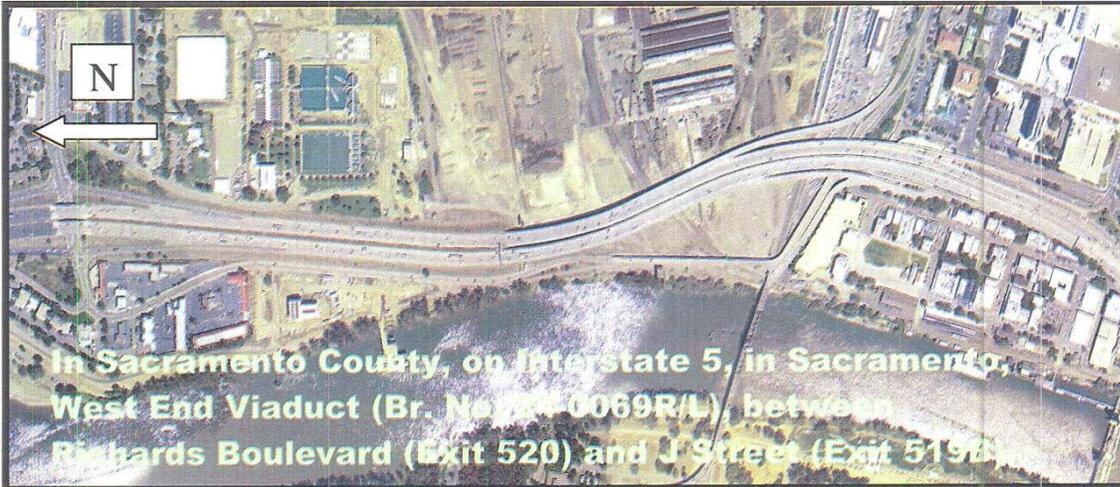
Project Approval and Environmental Document (PA/ED)	8/1/2013
Right of Way Certification	8/1/2015
Ready to List	8/1/2015
Award Contract	3/1/2016
Construction Contract Acceptance	11/1/2017

**e. Project Cost Estimate**

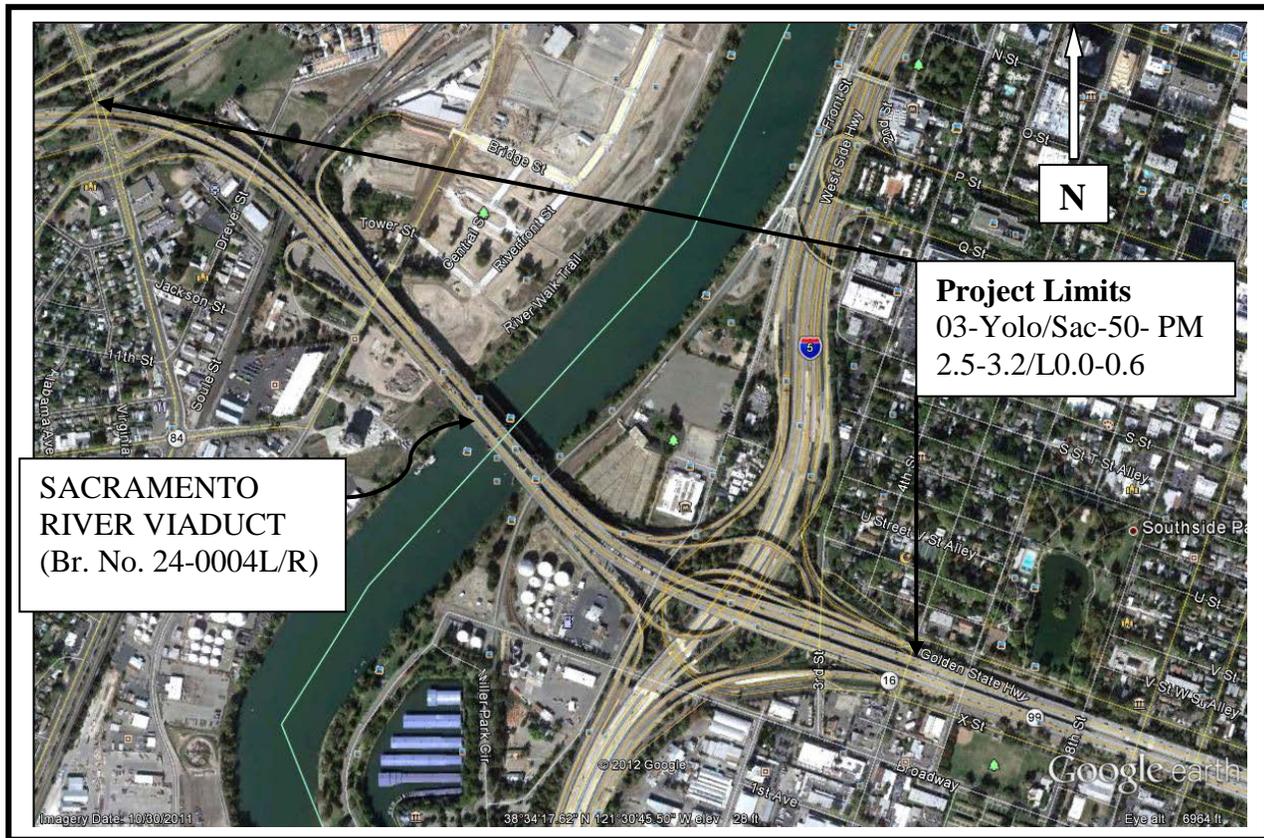
Construction Capital	\$46,800,000
Right of Way Capital	<u>\$44,000</u>
Total Capital	\$46,844,000

PA&ED	\$1,377,000
PS&E	\$3,873,000
Right of Way Support	\$96,000
Construction Support	<u>\$5,835,000</u>
Total Support	\$11,181,000
Total Project Cost	\$58,025,000

**f. Vicinity Map**



**West End Viaduct  
(03-Sac-5-PM 23.6)**



## Sacramento River Viaduct (03-Yol/Sac-50-PM 2.5-3.2/L0.0-0.6)

### Justification for Design-Build Authorization

#### a. Summary of Analysis and Steps Taken To Date

The Department made a final call for projects in June of 2012 to identify the last two projects in anticipation of fulfilling the program requirements as outlined in the California Transportation Commission's (CTC) Design-Build Program Guidelines. Initial screening criteria were for projects that were fully funded, that had achieved environmental clearance, and with minimal right of way involvement. The nominated projects were then presented to the Department's Design-Build Steering Committee for approval. The projects were compared to the draft CTC guidelines to ensure that they met the proposed criteria and the Steering Committee approved the final projects.

To prepare for the use of design-build, the Department developed templates for the Request for Qualification (RFQ) and Request for Proposal (RFP) documents. The templates were posted for industry review between December 2, 2009 and January 8, 2010. The Department has used these templates on the initial projects and has incorporated lessons learned to improve the templates.

The Project Team will be using the templates to develop the project RFP. Upon CTC authorization, the Project Team will be prepared to release the procurement documents per the proposed implementation schedule contained in this Authorization Request.

**b. Procurement Type Requested (Low Bid)**

The Department is requesting authorization to utilize Low Bid procurement for this project. The Department has utilized its five Best Value slots per the CTC Guidelines, but can still obtain value by utilizing a Low Bid design-build award method. The RFQ process will also allow the Department to evaluate qualifications and prequalify firms for this type of work.

**c. Implementation Schedule**

The following is the proposed schedule for delivery of this project utilizing design-build:

PA/ED	3/2013
Request for Qualifications	3/2013
Request for Proposals	6/2013
R/W Certification	10/2013
Award Contract	11/2013
Construction Contract Acceptance	6/2016

**d. Expected Design-Build Benefits**

Thirty-two states have design-build authority and have used design-build to deliver a large number of projects. There have also been a number of studies that have documented the benefits of design-build over the design-bid-build method of contracting. Based on the results achieved by other state departments of transportation that have utilized the design-build and the available research, the Department anticipates achieving the following benefits by using design-build on this project.

**i. Schedule Acceleration** - Under design-build, portions of the design and construction phases are overlapped leading to significant time savings. Improved coordination between the designer and the builder lead to better constructability and improved efficiency. The design-builder is also able to order critical materials earlier and schedule subcontractors more effectively. Finally, the designer is able to design the project to take advantage of the contractor's strengths (equipment, materials on hand, and expertise). Each of these benefits can lead to significant time savings. It is anticipated that design-build will enable this project to be completed about sixteen months earlier than by design-bid-build.

**ii. Innovation** –The innovation in the design-build process is the early involvement of the contractor that enables engineering considerations to be incorporated into the design phase and enhances the constructability of the engineered project plans. Interjecting contractor knowledge early into design can foster creative engineering and construction solutions as well as possible innovation available in the staging of construction and maintenance of traffic. Design-build projects have the ability to lessen the impact on the

traveling public by shortening overall construction schedule while allowing the contractor maximum flexibility.

**iii. Risk Transfer** - The design-build process allows for transfer of risks including cost escalation and schedule delays. The design-build contract is for a firm fixed price and a schedule guarantee for the work. The contractor is responsible for completing the scope of the work in accordance with the schedule. This would include responsibility for the schedule performance of subcontractors after the initial award. The contractor is responsible for any increase in the quantities of commodities, labor, and any other units that evolve as design is advanced.

**iv. Cost Certainty** - Because design-build projects are awarded on a fixed price basis, with limited opportunities for cost growth, the Department will have greater certainty regarding the total project cost at a fairly early stage of the process. Under the design-build delivery methodology, the contractor provides the Department with a fixed price for the construction before detailed design is complete and then is responsible for working with the designer to make sure that price remains fixed.

**v. Other** - Allow early lock-in of lower construction material/labor pricing, since it is anticipated the project will be awarded 27 months earlier by using the design-build process than by using the normal design-bid-build process.

**e. Proposed Project Funding Plan**

This project is currently programmed for \$58,025,000 in the Bridge Rehabilitation Program of the 2012 State Highway Operation and Protection Plan (SHOPP) in the 2012/2013 fiscal year. Funding for construction capital and construction support totals \$52,635,000.

**f. Project Considerations**

**i. Project Eligibility**

This project has been programmed for funding in the 2012 SHOPP and is therefore eligible for the Design-Build Demonstration Program pursuant to authorization by the California Transportation Commission.

**ii. State or local project**

This is a State Project on the State Highway System and will fill one of the ten slots allocated to the Department by statute.

**iii. Selection Method (low bid / best value)**

Department is requesting authorization to award based on Low Bid.

**iv. Geographic Location (north/south)**

This project is in Yolo and Sacramento Counties and will be a “North” project as defined by the CTC Guidelines.

**v. Project Size**

With a total cost estimate of over \$58 million, this project falls in the category of projects between \$20 and \$200 million.

**Conclusion/Summary**

The Department desires to utilize the design-build method of contracting for this project to achieve several important benefits including schedule acceleration, risk transfer, and cost certainty. The project meets the eligibility requirements as outlined in the CTC’s Design-Build Guidelines approved in September 2009. It is requested that the CTC authorize the use of design-build method of procurement for this project with a Low Bid award.

**Attachment**

Design-Build Project Selection Tool