

DESIGN-BUILD DEMONSTRATION PROGRAM PROJECT AUTHORIZATION REQUEST

DEVORE INTERCHANGE

SBd-15, 215-PM 14.0/R16.4, 16.0/17.8

08-0K7100

Widen I-15 and Reconstruct I-15/I-215 Interchange

Executive Summary

California Department of Transportation (Department), in cooperation with San Bernardino Associated Governments (SANBAG) proposes to include the Interstate 15 (I-15) Devore Interchange project in the Design-Build Demonstration Program. This interchange improvement project includes 15 bridges, roadbed widening on two Interstates, improvements to local arterials, environmental mitigation and major drainage improvements.

This project will provide valuable lessons learned on the application of design-build delivery in California. While achieving this valuable information, the Department will be able to deliver this project and relieve the congestion of this major bottleneck 14 months ahead of a traditional design-bid-build schedule. In addition, SANBAG and Caltrans District 8 anticipate capitalizing on the current reduced construction costs trends.

The Devore Interchange project is located in San Bernardino County. The project features consist of reconfiguring Interstate 15/Interstate 215 (I-15/I-215) Interchange near Devore an unincorporated area in the San Bernardino County. The purpose of the proposed project is to eliminate congestion, reduce accidents, restore route continuity for I-15, construct truck by-pass, and improve non-standard weaving between interchanges.

Currently SANBAG is the lead agency and the project is in the (Project Approval and Environmental Document (PA&ED) phase. SANBAG and the Department recently agreed to pursue a change in delivery of this project. An amendment to the existing PA&ED cooperative agreement was approved by the Department and SANBAG to identify the Department as the lead for the Environmental phase. SANBAG will serve as the sponsor and provide support as needed.

This project's total cost is estimated at \$359 million for the anticipated locally preferred alternative.

Background and Importance of Project

a. Description and Scope of the project

On I-15, south of the I-15/I-215 interchange, two general use and two auxiliary lanes will be added to the existing three lane roadbed. Through the interchange, one lane in each direction will be added to the existing three lanes in each mainline direction to reduce the existing congestion. Northbound and southbound truck by-pass lanes will be added to I-15 to

separate trucks from vehicles to reduce congestion and improve weaving. Braided ramps meeting current standards will serve to eliminate non-standard weaving sections. Auxiliary lanes will be constructed to facilitate merging and diverging traffic on all three legs. Route 66/Cajon Road, a local arterial road paralleling I-15 and disconnected during the original construction of the interchange 40 years ago, will be constructed to reconnect this highway. Four alternatives are currently being considered ranging from \$359 million to \$468 million total project cost. Alternative 3A is the locally preferred alternative.

b. Project Benefits

This project will provide the following benefits:

- Congestion relief and improved traffic flow on the regional system
- Accommodating goods movement along an important trade corridor out of the Los Angeles area
- Improving the operational Level of Service of the freeways
- Eliminating a principal bottle neck along I-15
- Balancing local circulation system and reduce out-of-directional travel so arterial traffic is not utilizing narrow residential streets
- Improving the safety of the freeway

c. Regional Significance

The segment of I-15 north of the I-215 interchange through the Cajon Pass provides a critical link between Southern California and the high desert, linking the Inland Empire with high desert communities such as Victorville and Barstow. The roadway provides direct linkages to US 395 and I-40, as well as connecting such long distance destinations as Reno, Las Vegas, Salt Lake City and all points east.

I-15 also has a critical role in the national goods movement network. The Ports of Los Angeles and Long Beach, when combined, are the busiest ports in the United States and the fifth busiest in the world. Much of the nation's imports and exports flow through the Los Angeles/Long Beach Ports, and imports are distributed throughout the country from these locations. Much of the material coming into the Ports is transported by train to distribution centers near the I-15 Corridor, where it is placed on trucks for distribution throughout the nation via I-10 and I-15 and their connections to I-40, I-70, I-80 and I-90.

d. Project Status

i. Stage of Development

This project is currently in the Project Approval and Environmental Document (PA&ED) phase. Environmental technical studies and engineering studies are under review for approval. Development of alternatives and traffic operational analysis has been completed. Preliminary analysis determined that an Initial Study/Environmental Assessment (IS/EA) is the appropriate level of environmental documentation leading to a Negative Declaration/Finding Of No Significant Impact (ND/FONSI). Some of the areas

needed for the project contain endangered species potential and suitable habitats. Impacts to a 100-year flood plain are also possible.

Most right of way impacts will be residential in nature. It is anticipated up to 90 parcels may be impacted with fewer than four businesses expected to be affected by relocation.

ii. Current Schedule (according to the Project Baseline Agreement)

Based on the Trade Corridors Improvement Fund project baseline agreement, the schedule is as follows:

PA&ED	8/1/2011
Plans, Specifications, & Estimate	7/1/2013
Right of Way Certification	6/1/2013
Ready to List	7/1/2013
Award Contract	11/1/2013
Construction Contract Acceptance	11/1/2016

iii. Project Cost Estimate

The current design-bid-build estimate for the locally preferred alternative (Alternative 3A) is as follows:

Construction Capital	\$244,500,000
Right of Way Capital	<u>\$45,500,000</u>
Total Capital	\$290,000,000
PA&ED	\$7,075,000
PS&E	\$16,800,000
Right of Way Support	\$6,400,000
Construction Support	<u>\$45,400,000</u>
Total Support	\$75,675,000
Total Project Cost	\$365,675,000

iv. Vicinity Map

See Figure 1 for vicinity map.

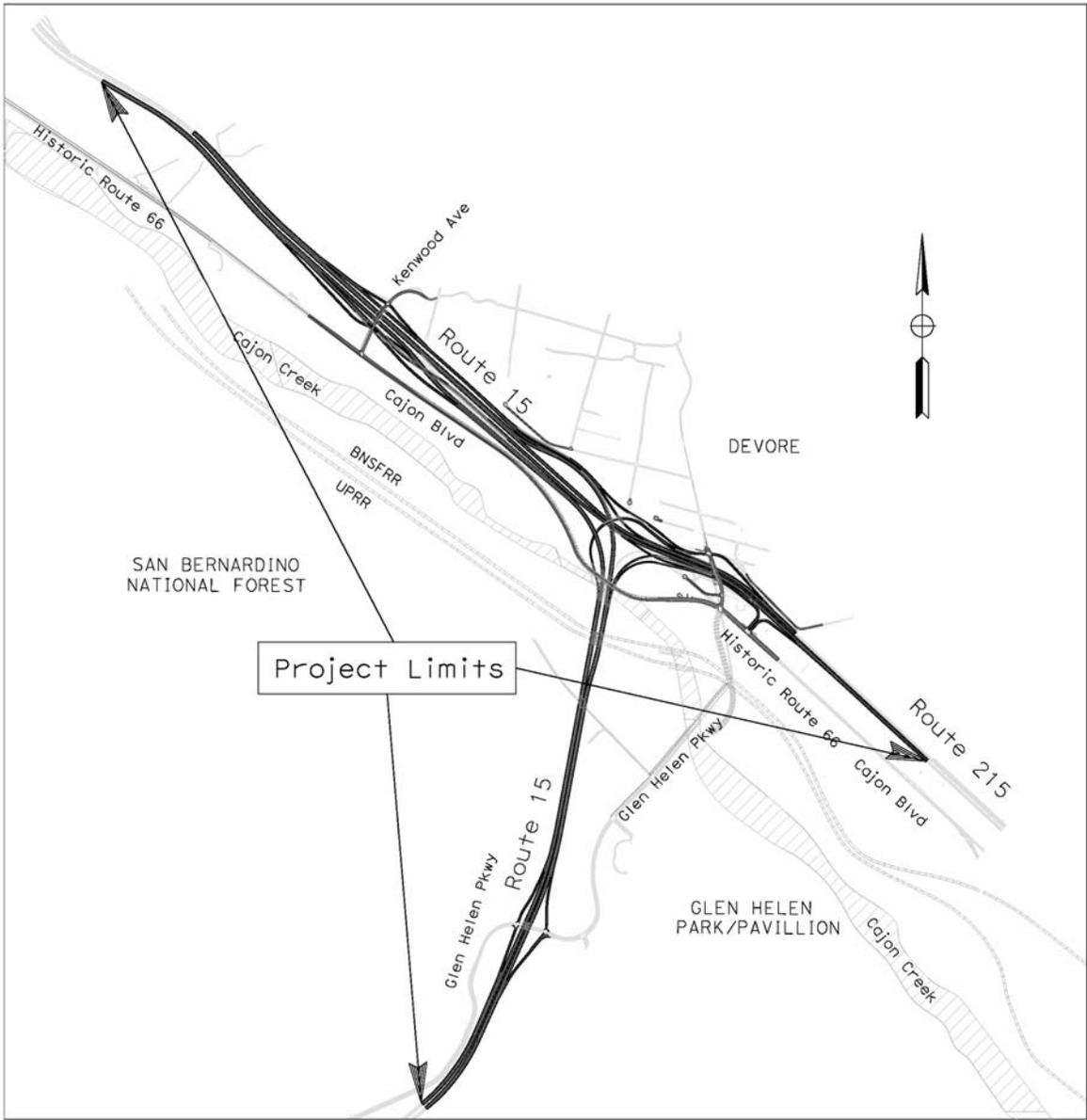


Figure 1

Justification for Design-Build Authorization

a. Summary of Analysis and Steps taken to Date

SANBAG was delivering this project as a design-bid build project until the Design-Build Demonstration Program was established in 2009. At that point, SANBAG became interested in design-build delivery and evaluated methods for utilizing the design build method. Given that legislation only makes five of fifteen positions available to local agencies statewide, SANBAG considers the best option for assuring a position is through a partnership with the Department. This partnership encompassed the assignment of the Department as the lead for Environmental, Design, Right of Way and Construction. SANBAG's role would be that of support and sponsorship.

The Department made a call for projects in November of 2009. This project was submitted as part of that call and was found to meet the initial screening criteria developed by the Department. The project was then presented to the Department's Design-Build Nomination Review Committee for approval. The project was compared to the draft CTC guidelines to ensure that it met the proposed criteria and the Steering Committee approved the project for submittal to the CTC.

An amendment to the existing PA&ED cooperative agreement to implement the necessary change in roles has been approved by the Department and SANBAG. The cooperative agreement for other phases of work will be completed after authorization to utilize design-build is obtained.

To prepare for the use of design-build, the Department has been developing 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 expects to achieve consistency in contract documents by developing these templates.

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

b. Procurement Type Requested

The Department is requesting authorization to utilize Best Value procurement for this project. The project scope contains a level of complexity and it is anticipated that the State will obtain value through competition of other factors than just price. This project will allow for flexibility in final design and the Department expects to achieve value in transferring utility coordination, pavement design, maintenance of traffic, environmental coordination and associated risks. Best Value procurement will allow the Department to compare the approach to these areas by competing design-builders and select the entity that best meets the Department's goals.

At this time, the Department is considering using the following as selection criteria:

- Price
- Design-Build Team Qualifications
- Life-cycle costs over 15 years (or more)
- Project Schedule
- Design Alternatives
- Project Management Approach
- Project Quality Approach
- Maintenance of Traffic
- Safety
- Public Communication
- Design build approach with respect to constraints

The relative weights for each of these criteria will be developed and clearly documented in the Request for Proposal submitted to the shortlisted design-build entities.

c. Implementation Schedule (Awarded before January 1, 2014)

	Begin	End
PA&ED		8/1/2011
Design-Build Procurement	5/1/2010	4/26/2012
R/W Certification	9/1/2011	2/1/2014
Construction	6/1/2012	9/1/2015
Project Closeout	6/1/2015	9/1/2016

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 14 months earlier than by design-bid-build. This project, because of the geographical size and the variety of work, offers a design-builder the opportunity to maximize options that will allow for an expedited project delivery.

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. It is anticipated that there will be sufficient flexibility in the selection of structures and pavement design to obtain innovation.

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.

e. Proposed Project Funding Plan

This project is fully funded and the sources of funding are as follows:

Public Lands Highways funds	\$2,000,000
Local (Measure I) funds	\$243,664,000
STP funds	\$5,139,000
SHOPP funds	<u>\$118,000,000</u>
Total Programming*	\$368,803,000

*Current alternatives range from \$359 million to \$468 million

f. Project Considerations

i. Project Eligibility

This project includes funding from the State Highway Operation and Protection Program (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 the ten slots allocated to the Department by statute.

Department and SANBAG have amended an existing Cooperative Agreement transferring responsibility for preparation of the project report and environmental document to the Department. Once authorization to utilize design-build is obtained, Department and SANBAG will enter into a separate Cooperative Agreement to cover preliminary engineering, pre-bid services, development of performance specifications, and construction inspection services pursuant to Public Contract Code 6808. SANBAG will provide a support and sponsorship role.

iii. Selection Method (low bid / best value)

Department is requesting authorization to utilize best value method.

iv. Geographic Location (north/south)

This project is in San Bernardino County and will be a “South” project as defined by the CTC Guidelines.

v. Project Size

With a construction cost estimate of over \$245 million, this project falls in the category of projects greater than \$200 million.

Conclusion/Summary

The Devore Interchange project is a prime candidate for Design-Build delivery method. This interchange project has structural and maintenance of traffic components which make it ideally suited for significant innovative construction methods which will result in cost savings and early project delivery. The locations of the improvements are such that construction activities may begin immediately with little or no impact to traffic. A significant amount of the work is within existing right of way allowing for construction activities to begin concurrent with right of way acquisition.

The location of the project lends itself very well to the design-build delivery method. It is at the edge of an urban setting so that resources and materials are readily available. The area surrounding the project is not heavily developed so that interaction with other stakeholders is minimized. The project has gained strong local support from transportation officials, local agencies, the traveling public, and the community. Lastly it is a project that is sorely needed due to daily congestion. Whether constructed using the design-build approach or conventional methods it will be pursued in the most expeditious method possible.

This project will provide valuable lessons learned on the application of design-build delivery in California. While achieving this valuable information, the Department and SANBAG will be able to deliver this project and relieve the congestion of this major bottleneck nearly a year and a half ahead of a traditional design-bid-build schedule.

Attachment

Design-Build Project Selection Tool