

Memorandum

Tab 74

To: CHAIR AND COMMISSIONERS
CALIFORNIA TRANSPORTATION COMMISSION

CTC Meeting: August 20, 2014

Reference No.: 2.5e.(4)
Action Item

From: NORMA ORTEGA
Chief Financial Officer

Prepared by: Rachel Falsetti, Chief
Division of
Transportation Programming

Subject: **ALLOCATION FOR SUPPLEMENTAL FUNDS FOR PREVIOUSLY VOTED PROJECT
RESOLUTION FA-14-05**

RECOMMENDATION:

The California Department of Transportation (Department) recommends that the California Transportation Commission (Commission) allocate an additional \$746,000 for one State Highway Operation and Protection Program (SHOPP) project identified below.

ISSUE:

Additional funds are needed for one previously voted project in order to complete the construction contract.

RESOLUTION:

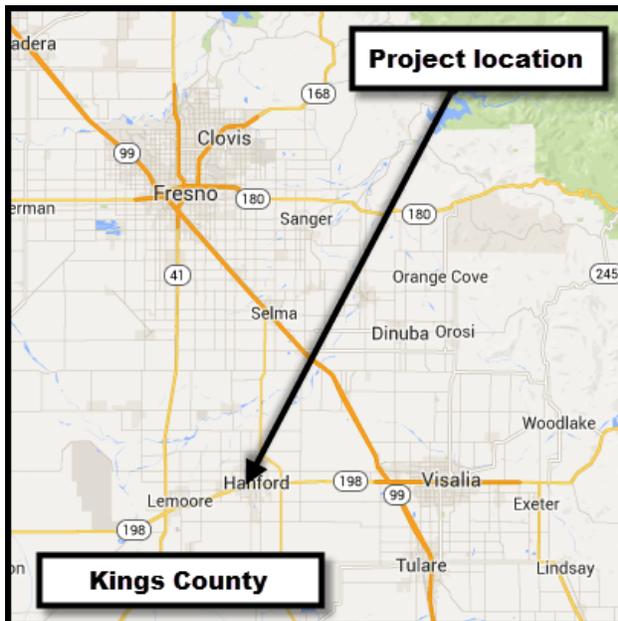
Resolved, that \$746,000 be allocated from the Budget Act of 2013, Budget Act Items 2660-302-0042 and 2660-302-0890 to provide additional funds for the project identified below.

<u>Project</u>	<u>Dist-Co-Rte</u>	<u>Original allocated Amount</u>	<u>Original Award Amount</u>	<u>Current Allocation</u>	<u>Allocation Adjustment</u>	<u>Revised Allocation</u>	<u>% Increase Above Current Allocation</u>
1	06-Kin-198	\$4,858,000	\$4,927,000	\$5,543,800	\$746,000	\$6,289,800	13.5%

Project # Allocation Amount Recipient County Dist-Co-Rte Postmile	Project Title Location Project Description	PPNO Program Budget Item # Fund Type Program Codes Project ID Adv Phase EA	State Federal Current Amount by Fund Type	State Federal Additional Amount by Fund Type	State Federal Revised Amount by Fund Type
2.5e.(4) Supplemental Funds for Previously Voted Projects			Resolution FA-14-05		
1 \$746,000	In and near Hanford, at 14th Avenue Undercrossing, Hanford-Armona Undercrossing, and 11th Avenue Undercrossing. <u>Outcome/Output:</u> Rehabilitate bridge decks to extend service life of three bridges	06-4340 SHOPP 2012-13 302-0042 SHA 302-0890 FTF 20.20.201.110	\$29,000 \$5,514,800		\$29,000 \$5,514,800
06-Kin-198 R14.8/R17.3	Supplemental funds needed to complete construction.	SHOPP 2013-14 302-0042 SHA 302-0890 FTF 0600000457 4 462204		\$15,000 \$731,000	\$15,000 \$731,000
	Total Revised Amount: \$6,289,800				

RECOMMENDATION:

The Department recommends that this request for \$746,000 be approved to allow the Department to complete construction of this project.



PROJECT DESCRIPTION:

This project is located on Route 198 in Kings County in and near Hanford, at the 14th Avenue Undercrossing, Hanford-Armona Road Undercrossing, and the 11th Avenue Undercrossing. The project is to rehabilitate the bridge decks of the three structures by removing and replacing unsound concrete in order to improve ride quality and extend bridge service life.

FUNDING STATUS:

Project construction capital is programmed in the 2012 SHOPP in Fiscal Year 2013-14 for \$9,732,000. On June 11, 2013, the Commission allocated \$4,858,000 in capital construction for the project. The project was awarded on September 24, 2013 at \$4,927,000. \$69,000 of additional funds to award the project was allocated in accordance with Commission Resolution G-02-12 (G-12). The remaining G-12 capacity of \$616,800 (\$685,800 - \$69,000) was allocated May 26, 2014, leaving the project with zero G-12 capacity. This supplemental request of \$746,000 is necessary to complete the remaining work.

REASONS FOR COST INCREASE:

Construction work on the project started on November 18, 2013.

During the scoping of this project, and based on a bridge deck inspection and the type of deck cracking observed, deck rehabilitation was recommended for the three undercrossing structures instead of full deck replacement. Rehabilitation would also minimize falsework and detours and avoid disruption to farm industry related traffic and lessen impact on city streets passing under Route 198. The structure at 11th Avenue had the least amount of deck deterioration and was rehabilitated and completed as originally designed although the unsound concrete removal quantity was much greater than originally planned.

When construction at the 14th Avenue structure started, extensive steel (reinforcement bar) rebar deterioration in the bottom mat was discovered in the deck and it was determined that bridge deck replacement is necessary. The Hanford-Armona Road bridge is expected to have similar deterioration. Based on the project limited budget, it was determined to eliminate the Hanford-Armona Road bridge from the project scope in order to have enough funding to complete the 14th Avenue deck replacement. Further design refinement; however, revealed that the cost to complete the 14th Avenue deck replacement would exceed project funds due to more complex project shoring, falsework, and sequencing of demolition and construction. Currently the 14th Avenue bridge is under construction and has traffic diverted from two lanes to one lane per direction. The Hanford-Armona bridge is re-programmed in the SHOPP for a fiscal year 2014-15 delivery.

This supplemental request is necessary to complete construction of this project by completing the deck replacement at 14th Avenue. Work at 14th Avenue structure is approximately 10 percent complete and work was stopped after discovery of deteriorated rebar in the bridge deck.

The following summarizes calculations for new work, credit for work removed, projected expenditures such as change orders, and cash available in the form as contingency and G-12 which produce the net project deficiency of \$746,000. The Department's Engineer has determined the major components of this scope change from deck rehabilitation to deck replacement to be as follows:

- Existing Bridge Deck Removal: Complete removal of 14th Avenue bridge deck is much more extensive than the originally planned removal of bad concrete and deck overlay. Projected cost is \$700,000.
- Replacement Structural Concrete: This will be one of the two major components of the new deck. The existing areas of bad concrete were extensive and replacing these surface areas alone would not restore the strength of the structure without also replacing the lower level embedded steel. Projected quantity and cost are 361,000 cubic yards and \$926,000.
- Replacement Reinforcing Bar Steel: When discovered, this badly deteriorated item raised considerable concern since replacement is necessary to restore strength to the structure. Projected quantity and cost are 169,000 pounds and \$350,000.
- Additional Traffic Control, falsework, and mobilization: In comparison with the original deck rehabilitation, traffic control and proper falsework support are more complex with complete deck replacement. Concurrently local agricultural traffic flow will be maintained due to the importance of this route to commerce. Lump sum cost is estimated to be \$272,000.
- Contract redesign and labor/material escalations: Contractor will redesign falsework and prepare for the more extensive traffic control in the switch to deck replacement. Estimated at \$152,000.

These are the additional major items when modifying scope from bridge deck rehabilitation to bridge deck replacement due to severe, hidden, deep level deck deterioration. The total of these items for the 14th Avenue Deck replacement is \$2,400,000. The overall cost of the scope change is brought down to the requested amount of \$746,000 due to credit given for rehabilitation work no longer needed and cash still available to the project due to removing the Hanford-Armona Bridge rehabilitation from the scope of this project.

LESSONS LEARNED:

Based on available data, this project should have been another routine rehabilitation project since all indicators in the past have led to deck rehabilitation as an appropriate treatment. The Department's Structures Maintenance staff is currently evaluating how to test for the deep bridge deck deterioration, which was missed on the two bridges. They are also having deck corings analyzed to determine the cause of the damage in order to prevent re-occurrences of similar cost over-runs.

FUNDING OPTIONS:

OPTION A: Approve this request for \$746,000 and allow the project to complete construction.

OPTION B: Deny this request and direct the Department to remove the remaining work from the project and re-advertise this work as a separate project. The Department has considered this option and determined that reducing the scope of work of this project, and executing another project to complete the deleted work later, would result in greater costs, an 18 months delay, and more disruption to the traveling public, leaving a structurally weakened bridge over 14th Avenue with one opened traffic lane in each direction.

RECOMMENDED OPTION:

The Department recommends that this request for \$746,000, as presented in Option A, above, be approved to allow the completion of construction work.