

# Memorandum

To: CHAIR AND COMMISSIONERS

CTC Meeting: December 14-15, 2005

Reference No.: 4.8  
Information Item

From: CINDY McKIM  
Chief Financial Officer

Prepared by: Mark Leja  
Division Chief  
Design

Ref: **REPORT ON THE DESIGN-SEQUENCING PILOT PROGRAM**

## **SUMMARY:**

At the July 2005 California Transportation Commission (Commission) meeting, the Department of Transportation (Department) made a presentation on the Design-Sequencing Pilot Program. Design-sequencing is a method of contracting that allows the Department to award a contract when the design is at least 30 percent complete. The remainder of the design is delivered at predetermined dates during construction. The Pilot Program was authorized by legislation in 1999. The program was expanded in 2000 and a second phase was approved in 2004. The Commission requested that the Department report back on the design-sequencing program and include a baseline costs comparison between design-sequencing and the traditional process using design-bid-build.

## **DISCUSSION:**

In order to evaluate the Design-Sequencing Pilot Program, the Department has developed a set of control projects delivered traditionally against which to compare the design-sequencing projects. Each design-sequencing project will be compared against projects of similar size and scope. Comparisons have been made between the low bid and Engineer's Estimate, final cost and initial allotment, and support costs for both delivery methods.

To date, ten control projects and four design-sequencing projects have been completed and completely closed out. There is no measurable difference between design-sequencing and traditional delivery when comparing low bid and engineer's estimate. Design-sequencing appears to have less capital cost growth during construction based on comparisons of the final cost and the initial allotment. Support costs are between two and six percent higher for design-sequencing projects than projects delivered traditionally.

It is important to note that all of these results are preliminary, as just a small portion of the program has been delivered to date. The Department will continue to collect data by which to compare the two delivery methods. The pilot program has been a success in offering the Department an opportunity to evaluate this innovative delivery method. The seven completed projects have had an average time savings of four months. With the experience gained in the Phase I Pilot Program, the Department expects to experience even greater time savings during the Phase II Pilot Program.

**BACKGROUND:**

Assembly Bill 405 (Knox), Chapter 378, Statutes of 1999, authorized the Department to conduct a pilot program to use design-sequencing contracts, for the design and construction of no more than six transportation projects, to be selected by the Director of Transportation. Assembly Bill 2607 (Knox), Chapter 340, Statutes of 2000, increased the number of transportation projects permissible under the Design-Sequencing Pilot Program from six to 12. Senate Bill 1210 (Torlakson), Chapter 795, Statutes of 2004, authorized a Phase II Pilot Program consisting of 12 additional projects.

Under traditional means of contracting for the construction of highway improvement projects, construction of any portion of the project cannot begin until the Department has developed complete plans and specifications for the entire project, placed the contract out for bid, and awarded the contract.

Design-sequencing is a method of contracting that enables the sequencing of design activities to permit each construction phase to commence when design for that phase is complete, instead of requiring design for the entire project to be completed before beginning construction. For this pilot program, the Department is responsible for providing the contract plans. The contract for the entire project is awarded to one contractor with as little as 30 percent of the plans completed. This process allows for the successful contractor to work with the designers to incorporate innovative designs and construction methods to improve delivery. With design-sequencing, there is a potential for earlier delivery of the project to the public.

Design-sequencing should not be confused with the design-build method of contracting. Design-build is a project delivery method that combines both the design and construction into one contract where the design firm and the construction contractor are a team, working together to design and construct phases of a project concurrently. The contracting agency identifies the end result parameters and establishes the design criteria.

The goal of this pilot program is to test whether the design-sequencing form of contracting is beneficial to California in the administration of its highway improvement program.

In selecting the projects for the pilot program, the Director of the Department has attempted to balance geographical areas among the pilot projects as well as pursue diversity in the types and complexity of projects undertaken.

The Department has developed general procedures with the assistance of the Federal Highway Administration (FHWA). Once a project has been selected as a design-sequencing project, care has been taken to minimize risks associated with the additional flexibility allowed through this legislation.

Eleven of the 12 slots for pilot projects in Phase I were filled. Seven projects have been completed and three projects are in the construction phase. The Department was unable to fill the final Design-Sequencing Phase I slot prior to the January 1, 2005, sunset date established for the Phase I Pilot Program in AB 2607. In addition, one project could not be awarded prior to the sunset date.

Of the ten projects awarded during the Phase I Pilot Program, the range of estimated time savings varies from no savings to 18 months. Completed projects have an average time savings of four months. As data is collected and analyzed, it is anticipated that the Department will be able to demonstrate greater time savings due to design-sequencing.

The Department made a statewide call for potential projects for the Phase II Pilot Program in March 2005. Sixteen projects were nominated for inclusion in the program. The Department evaluated the nominations and approved the first four projects.

The authorizing legislation requires that, upon completion of all design-sequencing contracts, a Peer Review Committee (Committee) established by the Department prepare a report for submittal to the Legislature that: describes and evaluates the outcome of the contracts; examines the contracting methods used, the procedures for design-sequencing, and the costs and delivery schedules; and states the positive and negative aspects of using design-sequencing as a contracting method. The Committee has met four times and is in the process of determining the criteria for measuring the success of the pilot programs. This includes assisting in the finalization of guidelines and procedures to be used in the delivery of future design-sequenced projects and determining the factors on which to evaluate the pilot program. The Committee will remain active until all design-sequenced projects have been completed.

The Design-Sequencing Pilot Program offers the Department a great opportunity to evaluate the effectiveness of this contracting method as applied to highway improvement projects. As the projects move through the design-sequencing contract process and information on delivery schedules and cost become available, the information will be provided to the Committee for inclusion in their final report to the Legislature.

The evaluation portion of the Phase I Pilot Program has begun and the Committee has been working on the criteria by which to evaluate the pilot program, evaluate the positive and negative aspects of using design-sequencing, and assist in the development of the final guidelines for future design-sequenced contract applications. From the preliminary evaluations completed to date, the Department envisions design-sequencing to be a valuable project delivery tool that can reduce project completion time on appropriately selected projects.