Tenth Annual Status Report to the Legislature
Assembly Bills 405 and 2607 and Senate Bill 1210
Design-Sequencing

I. Purpose

This is the tenth annual report and reflects activities through March 31, 2010. The report is prepared in accordance with Chapter 795, Statutes of 2004 (amending Section 217 of the Streets and Highways Code), which states in pertinent part:

> 217.8. (a) Not later than July 1, 2006, and July 1 of each subsequent year during which a contract under the phase two pilot program, as described in Section 217.7, is in effect, the Department shall prepare a status report on its contracting methods, procedures, costs, and delivery schedules. Upon completion of all design-sequencing contracts, but in no event later than January 1, 2010, the Department shall establish a peer review committee or continue in existence the peer review committee created pursuant to former Section 217.4, which was added by Chapter 378 of the Statutes of 1999, and direct that committee to prepare a report for submittal to the Legislature that describes and evaluates the outcome of the contracts provided for in Section 217.7, stating the positive and negative aspects of using design-sequencing as a contracting method.

II. Background

Assembly Bill (AB) 405 (Knox), Chapter 378, Statutes of 1999, authorized the California Department of Transportation (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 the Department. AB 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 (SB) 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 complete before beginning construction. The Department is responsible for providing the contract plans for this pilot program. The contract for the entire project is awarded to one contractor with as little as 30 percent complete plans. This process allows for the successful contractor to work with the designers to incorporate innovative designs and construction methods to improve delivery.

Design-sequencing should not be confused with the design-build method of contracting. Design-build is a project delivery method that combines 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.

III. Program Objectives and Guidelines

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. 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.

IV. Project Information

Phase I Pilot Program

Ten projects are included in the Phase I Pilot Program. Construction of all the projects is complete. Nine of the ten completed projects are closed out and the last one is in the claims process. The Department was unable to utilize two of the slots in the Phase I Pilot Program. One project could not be awarded and one slot could not be filled prior to the January 1, 2005, sunset date established for the Phase I Pilot Program by AB 2607. Once the pilot projects are completely closed out, performance and cost analyses can be completed.

Since the ninth annual report, the State Route (SR) 60, 91, and Interstate (I) 215 (60/91/215) interchange improvement project in Riverside County and two of the five contracts composing the middle segment on the I-15 managed lanes project in San Diego County have been closed out.

A preliminary analysis of all completed projects has been performed and the results show minimal time savings. The ten completed Phase I projects represent $872 million in capital construction costs. When compared to the original delivery schedules, the time difference on completed projects has ranged from 14 months delay to 18 months savings. Some of the project delays were not attributable to the use of design-sequencing and would likely have occurred using traditional delivery methods. The most common delays caused by design-sequencing were late delivery of subsequent sequence packages and missing information on delivery packages.

Preliminary results from the completed projects indicate that the I-680 widening project in Contra Costa County and the 60/91/215 interchange improvement project in Riverside County experienced significant cost growth. The I-680 project experienced a cost increase of 51 percent during construction and the 60/91/215 project experienced a cost growth of 70 percent.

Primary issues on the 60/91/215 project have been design changes, utility conflicts, and right of way delays. In retrospect, given the issues faced, design-sequencing may not have been the appropriate delivery method for this project, although this procurement effort resulted in getting this project under construction 12 months earlier than planned.

Support costs for the closed-out design-sequencing projects were compared to those of projects delivered by the traditional method and no significant increase or decrease in support costs was found. To date, use of disadvantaged business enterprises when using design-sequencing has not declined nor increased. Final results will not be available until these projects have all been completely closed out.

When the pilot projects are closed out, final capital costs will be analyzed and compared to initial estimates, a control set of projects delivered using traditional methods, and to program wide data. This analysis will indicate whether design-sequencing costs more or less than traditional delivery methods.

Phase II Pilot Program

SB 1210 (Torlakson), Chapter 795, Statutes of 2004, authorized the Department to conduct a second phase of the pilot program with an additional 12 projects. Lessons learned from completed Phase I projects have assisted the Department in improving selection criteria for nomination of design-sequencing projects. As of the sunset date of January 1, 2010, set forth by SB 1210, the Department had selected just eight projects for inclusion in the Phase II Pilot Program. No other projects can be awarded using the design-sequencing method of contracting until the Department is provided additional authority for its use.

Since the ninth annual report, Phase 1B of the new freeway project on SR-905 in San Diego County began construction on July 22, 2009. The realignment and widening project on SR-76 also in San Diego County began construction on February 3, 2010, and the rehabilitation project on US-101 in San Luis Obispo County started construction on March 22, 2010. The rehabilitation project on US-101 in San Luis Obispo County has been approved since the ninth annual report. Also, the high-occupancy vehicle lane project on US-101 in Sonoma County was completed on April 21, 2009, with one month time savings. The 11 months lost from this project's original expected twelve months savings was due to funding issues not attributable to design-sequencing; seven months were lost before advertising due to a funding shortfall and another four months were lost after bid opening due to the need for a supplemental vote by the California Transportation Commission because the bids came in higher than the voted funds. This shortfall was related to the uncontrollable material price escalation during the 2005 period.

V. Peer Review Committee

SB 1210 required 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 pilot programs. The report will examine the contracting methods used; evaluate the effectiveness of design-sequencing procedures; and identify the positive and negative aspects of design-sequencing as a contracting method. The Committee has met eight times and has developed 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-sequencing projects are complete. An interim report on the Phase I Pilot Program has been completed under the guidance of the Committee. Although this report is not mandated, the committee recommended it to capture the preliminary results and to help prepare the mandated final report to be submitted to the Legislature at the end of the Pilot Programs.

VI. Summary

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 costs become available, the information will be provided to the Committee for inclusion in the 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. The Department will continue to include information on these projects in future annual reports.

Even though the projects completed to date have shown minimal time savings on average, the Department has learned a great deal about what makes a good design-sequencing candidate. Lessons learned during the Phase I Pilot Program have helped the Department to identify projects that are more likely to be successful. It is anticipated that greater time savings will be realized on the Phase II Program projects. The Department envisions design-sequencing as a valuable project delivery tool that can reduce project completion time when properly used on appropriately selected projects.

DESIGN - SEQUENCING PILOT PROGRAM (Phase I)

PROJECT STATUS (as of 3/31/10)

Stage	District-Co-Rte-KP	E.A.	Cost[1] ($ x million)	Project Description	Project Status	Time[2] Savings (mos.)
Complete	07-LA-405-59.6/62.8	191004	$6.2	405/101 Interchange, construct northbound auxiliary lane from Mulholland Dr to Ventura Blvd.	Facility opened to the traveling public in 1/03. Construction completed on 3/03/03.	10 Actual
	03-Sac-80-18.3 03-Sac-51-12.7/13.7	2A8604	$4.9	Construct westbound lane from I-80 to near the Watt Ave OC on southbound SR-51.	Facility opened to the traveling public in 9/02. Construction completed on 10/8/03.	18 Actual
	04-Ala-680-M0.0/R21.9 04-Scl-680-M7.6/M9.9	253714	$24.5	Construct interim SB high-occupancy vehicle (HOV) lane on I-680 from Rte 84 in Ala Co to SR-237 in SCl Co.	Facility opened to the traveling public in 12/02. Construction completed on 2/18/03.	0 Actual
	04-Sol-80-15.4/18.0	259014	$7.6	Stabilize landslide near Red Top Road.	Construction completed on 6/21/04.	0 Actual
	07-LA-210-62.1/64.1	0533U4	$5.3	Construct soundwalls in Azusa.	Construction completed on 3/11/05.	- 2 Actual
	04-CC-680-25.1/39.1	2285U4	$48.2	Add an HOV lane in each direction of traffic within the existing median.	Construction completed on 8/29/05.	0 Actual
	08-SBd-15-67.4/113.6	3555U4	$123.3	Widen Northbound and Southbound freeway from Victorville to Barstow.	Construction completed on 7/1/05.	0 Actual
	11-SD-905 9.2/19.3	091804	$16.3	Construct SR-905/I-215 Siempra Viva Interchange.	Construction completed on 11/24/06.	- 3 Actual
	08-Riv-215, 60, 91	334844	$267.2	Realign and widen SR-60, SR-91, I-215.	Construction completed on 12/31/08.	-14 Actual
	11-SD-15-M30.0/M44.8 Middle Segment[3]	080904 080914 080924 080934 080944	$319.7	Construct lanes within the existing median and install a movable barrier to manage congestion and reduce delays.	Construction completed on 3/16/09.	-2 Actual

Notes:

1 Cost is the current Capital Construction Cost. This cost is equal to the awarded amount plus cost of change orders approved to date.

2 Time Savings: based on projected Construction Complete date (CCA) under Design-Bid-Build versus CCA date under Design-Sequencing. Delays in completing construction are not necessarily attributable solely to the use of Design-Sequencing.

3 Corridor project: 5 contracts treated as a single pilot project.

DESIGN SEQUENCING PILOT PROGRAM (Phase II)
PROJECT STATUS (as of 3/31/10)

Stage	District-Co-Rte-KP	E.A.	Cost[1] ($ x million)	Project Description	Project Status	Time[2] Savings (mos.)
Complete						
	04-Son-101-31.4/34.8	245414	$80.7	Construct HOV lanes from Route 12 to Steele Lane.	Construction completed on 4/21/09.	1 Actual
Construction	11-SD 905-9.5/18.6 Phase 1A	091824	$64.0	Construct New Freeway.	Project awarded on 1/30/08 and targeted for completion on 1/19/11.	7
	11-SD-15-M18.4/M31.3 South Segment[3]	2T0914 2T0924 2T0934	$186.0	Construct Managed Lanes (South)	Contracts awarded on 2/8/08, 5/12/08, and 7/25/08. Construction began on 3/17/2008 and is targeted for completion on 6/15/12.	12
	11-SD-15-M44.7/R50.7 North Segment[3]	2T0814 2T0824	$96.0	Construct Managed Lanes (North).	Contracts awarded on 7/21/08 and 11/20/08. Construction began on 10/20/08 and is targeted for completion on 10/18/11.	12
	03-Pla-65-R19.3/R38.3	3338U4	$142.4	Construct Bypass	Project awarded on 6/9/08 and is targeted for completion on 3/19/12.	10
	11-SD-905-9.5/18.6 Phase 1B	288801	$58.1	Construct New Freeway	Contract awarded on 5/8/09. Construction began on 7/22/09 and targeted for completion on 8/1/13.	9
	11-SD-76-11.7/21.1	080101	$61.0	Realign and Widen Highway	Contract awarded on 12/23/09. Construction began on 2/3/10 and targeted for completion on 9/10/12.	9
	05-SLO-101-35.7/46.3	0G0304	$25.3	Rehabilitation	Contract awarded on 12/31/09. Construction began on 3/22/10 and targeted for completion on 12/21/11.	23

Notes:

1 Cost is the current Capital Construction Cost. This cost is equal to the awarded amount plus cost of change orders approved to date.

2 Time Savings: based on projected Construction Complete date (CCA) under Design-Bid-Build versus current projected (or actual if already attained) CCA date under Design-Sequencing. Delays in completing construction are not necessarily attributable solely to the use of Design-Sequencing.

3 Corridor project: multiple contracts treated as a single pilot project.