

## Memorandum

To: CHAIR AND COMMISSIONERS

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Information Item

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Subject: **UPDATE ON ENVIRONMENTAL DOCUMENTS FROM PRIOR YEARS**

### **SUMMARY:**

At the request of the California Transportation Commission (Commission), the Department of Transportation (Department) analyzed 43 documents (or 20 percent) of the 212 environmental milestones "rolled over" from Fiscal Year (FY) 2004-05 to FY 2005-06. In total, 88 percent of final environmental documents were delivered in FY 2004-05.

### **BACKGROUND:**

The Department's Division of Environmental Analysis sponsored a team to review and analyze 43 projects where the environmental milestone had "rolled over" from previous fiscal years. The team consisted of representatives from the Federal Highway Administration, as well as representatives from the Department's Divisions of Design, Project Management, and Transportation Programming.

Causes for delay of were split about half and half between "internal" and "external" causes; however, most of the delays in SHOPP projects were "internal" and most for STIP projects were "external". The main internal causes were: (1) missed issues at scoping, (2) late key studies, and (3) redirection for other priorities – mostly emergency projects. The main external causes were: (1) regulatory agency delays, (2) new alternatives, and (3) partner agency decisions.

Recommendations include focusing Project Initiation Document efforts to better scope capacity, widening, bridge or drainage projects and requiring risk management plans for these types of projects, pursuing dispute resolution with key review agencies, and better early coordination with partner agencies on alternatives and funding. The Department is pursuing these recommendations.

# Analysis of Delayed Environmental Milestones and Recommendations

California Department of Transportation  
June 23, 2006

At the request of the California Transportation Commission, Caltrans' Division of Environmental Analysis sponsored a team to review and analyze 43 environmental milestones from 41 projects "rolled over" from previous fiscal years.<sup>1</sup> Four projects that have been subsequently delayed were also evaluated, for a total of 47 milestones from 44 projects. These projects were delayed at Notice of Preparation (NOP), draft environmental document (DED), and/or final environmental document (FED).<sup>2</sup> They include both State Highway Operation and Protection Program (SHOPP) and State Transportation Improvement Program (STIP) projects.<sup>3</sup> To give some perspective on this number, 212 environmental milestones were due last fiscal year;<sup>4</sup> 43 milestones would represent 20% of that number.<sup>5</sup> The team assessed each project's general characteristics and causes for delay. Based on the findings, the team has preliminary recommendations.

This analysis only looked at delayed environmental milestones. While this provides some insights on how to avoid schedule failure, this analysis did not look at what techniques accelerate environmental milestones or lead to early delivery.

## 1. Delay by General Project Type

Three general types comprise the majority of the delayed projects: roadway widening, bridge improvements, and drainage improvements. These three types of projects tend to require additional right of way, include coordination with partner agencies, and can be in areas requiring regulatory authorization.

Of the 47 projects, 20 (40%) are in the broad category of roadway widening. It is not surprising that challenges exist with this type of project; however, it does indicate that the factors for delay are not being incorporated when developing the schedule. The delay factors for widening projects were primarily external in nature.

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<sup>1</sup> The lead on the team was Dale Jones from the Division of Environmental Analysis. Most of the statistics are from Matt Bailey, Division of Project Management. Also on the team were David Cohen and David Tedrick from FHWA, Gregg Magaziner from the Division of Project Management, Ken Cozad and Mike Thomas from the Division of Design, Rambabu Bavirisetty from the Division of Programming, and Gina Moran from the Division of Environmental Analysis. Edited by Jay Norvell, Chief, Division of Environmental Analysis, and team sponsor.

Two projects have delays on two measured milestones. Note that for the 41 projects only 39 environmental documents were prepared. In two instances, one document was prepared for two projects.

<sup>2</sup> These are California Environmental Quality Act (CEQA) milestones. Caltrans projects generally also must comply with the National Environmental Policy Act (NEPA), which has similar titles for environmental documents.

<sup>3</sup> The SHOPP includes rehabilitation and operational improvements to the existing state highway system. The STIP includes capacity improvements to the State Highway System and intercity rail.

<sup>4</sup> The Fiscal Year for the State of California is from July 1 through June 30.

<sup>5</sup> This does not include delivery of 63 environmental milestones that were not in the plan. These projects were added and delivered within the Fiscal Year. These were mostly emergency and smaller SHOPP projects.

Repairing or modifying bridges accounted for 10 (21%) of the projects. The delay factors for these projects were primarily internal.

Of delayed projects, 6 (13%) corrected drainage deficiencies. The delay factors for drainage projects were primarily external. It should be noted that two of these projects rehabilitated over 177 culverts. 5 of the 6 are in the Tahoe Basin, which has stringent requirements.

## **2. Types of Delay**

Although multiple issues may have impacted the delivery of a milestone, the team selected one per milestone as the principal delay cause. Delay types were categorized as internal to Caltrans or involving an external process. Interestingly, the breakdown is nearly half and half. However, STIP projects are delayed two-thirds of the time by “external” factors, while SHOPP projects are delayed two-thirds of the time by “internal” factors.

### **a. Internal Delays**

In order of importance, causes for internal delays included: 1) inadequate project scoping<sup>6</sup>, 2) late key studies, and 3) competing priorities.

#### **1. Inadequate project scoping leading to under-scheduling (10 projects, mostly SHOPP)**

Major factors that impact cost, scope or schedule such as hazardous waste, community impacts, cultural resources, endangered species, and wetlands were overlooked or missed prior to programming.<sup>7</sup> While these issues are sometimes discovered during project environmental investigations even with excellent scoping, it was the team’s sense that many of these factors should have been known before programming, and adequate time could have been included in the project schedules. (These projects should have simply been programmed to take more time. The “delay” is the result of programming the project with inadequate time to do the environmental work.)

This under-scheduling due to lack of good scoping is primarily a problem with delayed SHOPP projects. Much of this scoping was done in large batches with quick turnarounds responding to statewide funding and priority changes.

The Department is already working on becoming more agile and thorough in its scoping. The Division of Environmental Analysis is developing the “PEARtool”, which is an automated scoping tool that uses electronic forms and available GIS information.<sup>8</sup> This tool should be in place by 2008.

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<sup>6</sup> “Scoping” refers to the early analysis of projects to determine the level of environmental document and the types of investigations needed. “Scoping” in the context of this discussion is the early environmental workload and schedule analysis done as part of the Project Initiation Document (PID) done in California before projects are programmed.

<sup>7</sup> Project Initiation Documents, such as Project Study Reports (PSRs) are required for programming projects in the STIP or SHOPP. They predict the cost, schedule, and resources needed to deliver a proposed project.

<sup>8</sup> PEAR refers to the “Preliminary Environmental Analysis Report” prepared as part of the Project Initiation Document. The PEARTool would facilitate the preparation of the PEAR.

## **2. Late key studies affecting the project scope (6 projects)**

Key technical investigations are needed prior to programming or early in environmental work to determine the character and scope of the project. These studies include geotechnical investigations to determine the engineering characteristics of the subsurface, traffic modeling, and structures strategies. Generally, any delay in the delivery of these key studies affect both design and environmental deliverables and subsequent milestones.

In many cases, resources for geotechnical and structure strategy studies were available for scoping, however, due to the quick turnaround for programming, the studies could not be done in time.

Traffic modeling may come from an external partner. If they are late, then the project team must assume base information needed to determine the scope of the project.

## **3. Competing priorities (5 projects, all SHOPP)**

Resources planned to deliver these projects were redirected to other priorities such as storm repair, emergencies, and other unanticipated projects. Or, due to fiscal constraints, contracts were cancelled, delaying projects.

### ***b. External Delays***

In the order of importance external delays include 1) regulatory agency approval time, 2) the addition of new alternatives, and 3) partner agency decisions.

#### **1. Regulatory approval times (10 projects)**

The principal delay was due to endangered species negotiations with the US Fish and Wildlife Service (USFWS). Some were delayed at Corps of Engineers and other agencies.

A 2005 legal opinion from the Federal Highway Administration (FHWA), concurred with by USFWS in Washington D.C., has recently led to an issue elevation process with USFWS and the reduction of the backlog of projects.

#### **2. Late addition of new alternatives (6 projects, mostly STIP)**

The legally required environmental review process requires that a reasonable range of alternatives be investigated. However, due to cost pressures, regulatory input, partner preference, and public input alternatives may be added after programming. Analysis of project alternatives requires time. When new alternatives or additional areas are added to a project, the critical path becomes getting access to that land and pursuing investigations. Sometimes additional traffic and air quality modeling is required from partner agencies as well.

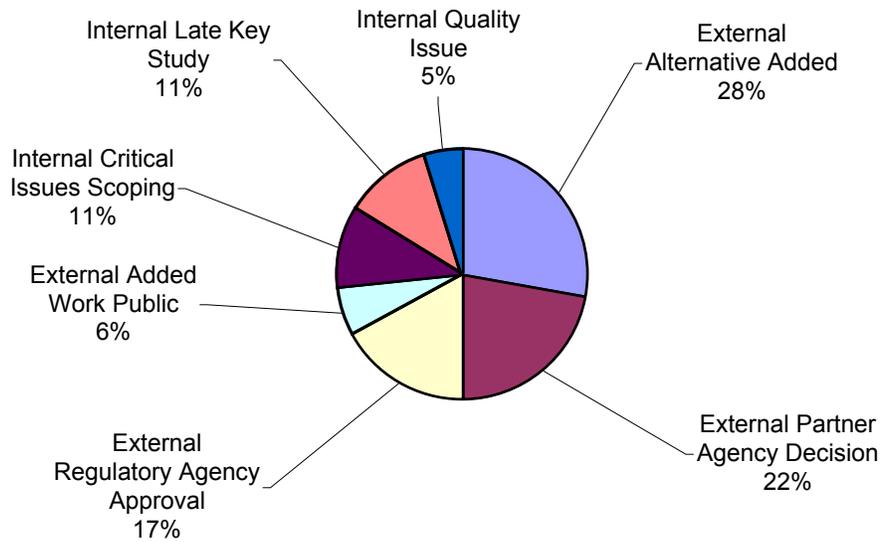
#### **3. Partner agency decisions (5 projects, mostly STIP)**

Transportation projects, particularly STIP projects, are a partnership effort between agencies. Three (3) of the projects in this analysis were delayed by local agency funding decisions. One (1) was delayed by FHWA changing its position on an environmental process issue. One (1) was delayed as a consequence of input from Native Americans with a heritage issue with the project.

### 3. STIP and SHOPP Milestone Delays

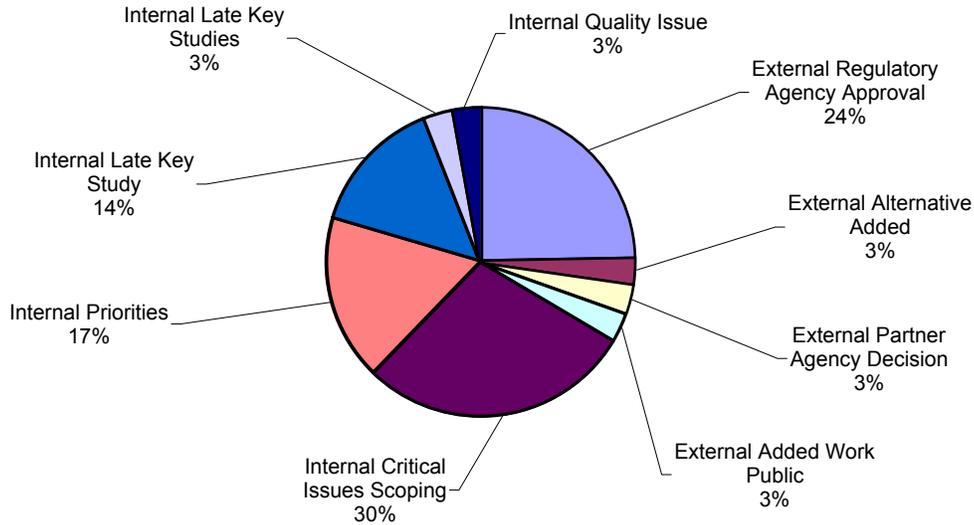
Of the 47 milestones, 18 were for STIP projects. The team concluded that STIP delays were from the following causes (72% are “external”):

Figure 1. Causes of STIP Delays

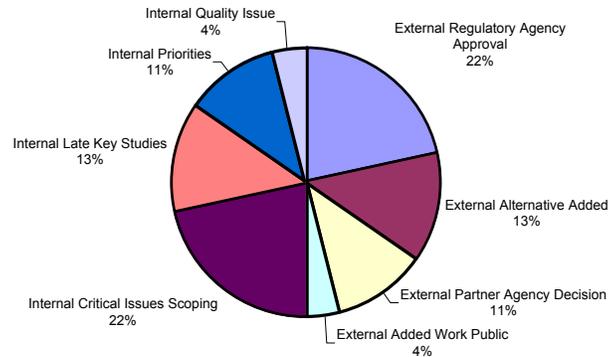


29 SHOPP milestone delays were evaluated. 66% of SHOPP project delays were “internal”.

Figure 2. Causes of SHOPP Delays



**Figure 3. Overall Causes of Delay (STIP and SHOPP)**



## 4. Discussion

Although each of the three general project delivery phases – project approval / environmental, design and right of way, and construction – contain risk, the project approval / environmental phase is the most risky. The National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) require that when a project may have a significant effect on the environment, no final project decision can be made until alternatives are developed, investigated, documents are published, agencies are consulted, a public hearing is held, and comments are considered. Additionally, there are many dozens of other laws that require permits, review, or concurrence from a range of regulatory agencies or affected parties. Each of these processes, the gathering of information necessary to satisfy them, and the negotiations with boards and agency staff, add risk.

The review of the 20% of environmental milestones that are delayed revealed a list of principal causes. Following is a table of recommendations and comments on current and future implementation.

One of the major causes of delay was an unrealistic schedule that did not allocate enough time to address issues. However, while it would be easy to improve delivery on schedule by simply making all schedules longer, this would not improve the efficiency of delivery. Some risk, with the potential for schedule failure, is warranted.

The team recommends consideration of additional processes. Additional process can avoid problems, but can also add cost and time.

This analysis was done internally within the Department and FHWA and emphasized what those entities could do. No recommendations were made that apply to the CTC or the Regional Transportation Planning Agencies (RTPAs) in regards to their programming responsibilities. The CTC and the RTPAs do have a role to play in Regional Transportation Improvement Program (RTIP) projects that linger at the environmental review phase due to financial or political reasons.

## 5. Recommendations Table

Recommendation	Implementation
<p><b>1. More consistently engage public, partner and regulatory agencies during scoping; collaborate with partner and regulatory agencies during alternative selection and get written agreement on a reasonable range of alternatives to study.</b></p>	<p>CURRENT: SAFETEA-LU, the new 2005 Federal surface transportation act, now requires consultation on purpose and need and range of alternatives with “participating agencies” on EIS projects.</p> <p>FUTURE: The Department could extend this to all CEQA EIR and mitigated ND projects. Partner agency “agreements” could be recorded in Cooperative Agreements<sup>9</sup>, Project Initiation Documents and/or Project Charters.<sup>10</sup></p>
<p><b>2. Pursue dispute resolution processes with regulatory agencies.</b></p>	<p>CURRENT: In late 2005, Caltrans, FHWA, and USFWS reached a conflict resolution agreement. The NEPA/404 MOU between Caltrans, FHWA, the Army Corps of Engineers, USFWS, and NOAA-Fisheries also has a conflict resolution section. A local conflict resolution agreement has been in place in the Tahoe Basin.</p> <p>FUTURE: The Department is pursuing dispute resolution agreements with CDFG and NOAA-Fisheries.</p>
<p><b>3. Incorporate negotiated timeframes into schedule development to minimize procedural delays.</b></p>	<p>See #1 above.</p> <p>CURRENT: The 2005 SAFETEA-LU encourages “negotiated timeframes” for EIS projects.</p> <p>FUTURE: This process needs to be implemented in the Department’s Standard Environmental Reference and Project Development Procedures.</p>
<p><b>4. Ensure partner agency’s priorities/funding capability is aligned with Project Development Team’s scope, schedule and budget constraints. Identify and address any discrepancies throughout the project process.</b></p>	<p>CURRENT: Caltrans Project Development Teams already review and approve updates to scope schedule and budget.</p> <p>FUTURE: Early partner agreements could be embodied in Cooperative Agreements, Project Initiation Documents, or Project Charters.</p>

<sup>9</sup> Cooperative Agreements are “contract” like agreements between public agencies. They are required when there is a shared financial responsibility for a project.

<sup>10</sup> Project Charters are optional formal statements of project goals and partner responsibilities.

Recommendation	Implementation
<p><b>5. Encourage management level meetings with regulatory agencies to allow open discussion on projects that have excessive approval times</b></p>	<p>CURRENT: The Department has informally encouraged District Directors and other District and Department managers to meet with regulatory agencies. Much of this is being done.</p> <p>FUTURE: This could be more systematic.</p>
<p><b>6. Engage partner and regulatory agencies during scoping; during alternative selection collaborate with partner and regulatory agencies and get written agreement on a reasonable range of alternatives to study.</b></p>	<p>CURRENT: This is now required by the 2005 SAFETEA-LU for EIS projects.</p> <p>FUTURE: The Department could extend this practice to all CEQA EIR and mitigated ND projects.</p>
<p><b>7. The project type is important to consider as a category for risk planning. If the project is a widening, bridge or drainage improvement, it has inherent challenges. The schedule should be developed with this as a key multiplier for risk management.</b></p>	<p>CURRENT: The Department already has extensive guidance on project scoping for Project Initiation Documents and for Risk Analysis.</p> <p>FUTURE: These special considerations should be added to PID guidance. Risk Analyses, now required for larger projects, could be extended to more projects types.</p>
<p><b>8. Focus additional PID resources to scope widening, bridge or drainage projects.</b></p>	<p>FUTURE: Planning proposes “workplans” for Project Initiation Documents. This could provide a mechanism to allocate resources based on these considerations.</p>
<p><b>9. Ensure that adequate time is allocated for PID development.</b></p>	<p>FUTURE: The Department could develop a policy to allow minimum times for PID development, however political and funding realities do not always allow long times. The Department is working on a “PEARtool”<sup>11</sup> environmental scoping tool to allow more rapid and accurate environmental scoping. It is slated to be in place by 2008.</p>

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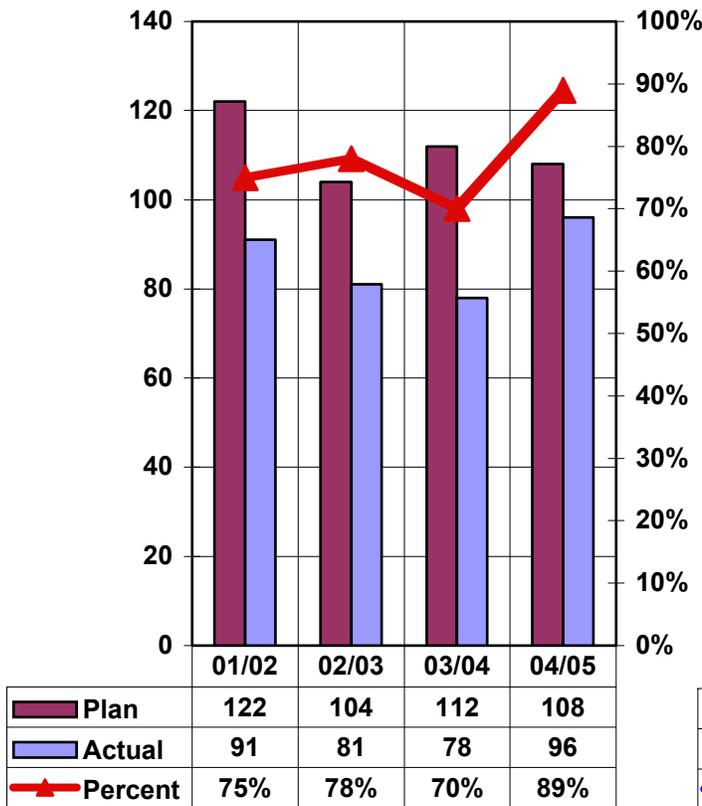
<sup>11</sup> PEAR refers to the “Preliminary Environmental Analysis Report” prepared as part of the Project Initiation Document. The PEARtool uses GIS and electronic forms to facilitate the preparation of the PEAR.

Recommendation	Implementation
<p><b>10. Strengthen the connection between environmental planning and transportation planning. Ensure that sufficient resources are available to Caltrans for scoping the environmental constraints during advanced planning. The high percentage of critical issues overlooked during scoping indicates the need to review the project initiation document (PID) process and how projects are scoped.</b></p>	<p>CURRENT: The 2005 SAFETEA-LU now requires a closer tie between Transportation Planning and Environmental considerations. The Department and the CTC already require some coordination through their Regional Transportation Plan (RTP) Guidelines. CEQA also requires that Regional Transportation Planning Agencies prepare environmental documents for their RTPs.</p> <p>FUTURE: There are limited resources for early environmental analysis prior to project programming and budgeting.</p>
<p><b>11. Plan for the unanticipated emergencies. Allocate a percentage of resources for quick responses to keep needed focus on delivery projects.</b></p>	<p>CURRENT: Department managers in the Districts do have some discretion and some resources to respond to a modest level of emergency projects.</p> <p>FUTURE: The Department, with the assent of the Department of Finance, could allocate a contingency resource for emergency response.</p>
<p><b>12. Review key studies and how they are incorporated into the project schedule.</b></p>	<p>CURRENT: The Department’s Division of Engineering Services already has resources for early analysis of structures strategies and for geotechnical investigations. Caltrans Planning does have resources for early traffic modeling, constrained by the overall limits of PID resources.</p> <p>FUTURE: The lack of critical technical studies at the PID stage due to lack of time should be incorporated in a projects risk analysis. Department procedures should be reviewed for guidance on timing of critical studies.</p>

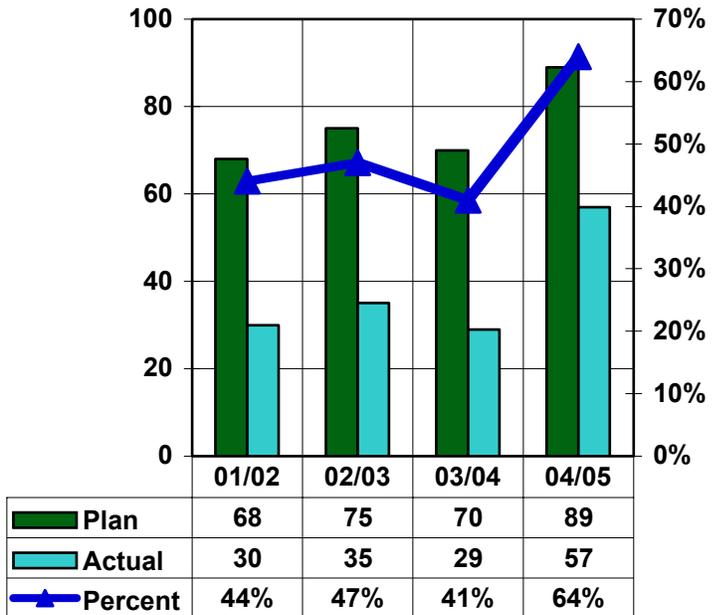
## APPENDIX 1. Overall Environmental Delivery

Below are charts displaying the overall delivery percentages reported for (California Environmental Quality Act or CEQA) environmental document milestones over the past four fiscal years.<sup>12</sup> It should be noted that the financial situation for project delivery has been extremely volatile over this period. Funding was robust early in the decade, collapsing in the 2002/2003 fiscal year, leading to cancellation of contracts for environmental work and reductions in Department staff. Note that simpler projects do not require draft environmental documents, so the chart for draft documents is primarily focused on the more difficult projects.

**Figure 4. Final Environmental Documents**  
(Both STIP and SHOPP)



**Figure 5. Draft Environmental Documents**  
(Both STIP and SHOPP)



<sup>12</sup> California's fiscal year is July 1 through June 30 and fiscal years are expressed in two-year couplets, e.g. "02/03" is the fiscal year beginning in July 2002 and extending through June 2003.

## APPENDIX 2. Environmental Milestone Delays by Program

Table 1. Milestones with Environmental Delays

Project Type	MS Status				MS		Document Type			Internal Delay Factor			External Delay Factor			
	Quarter Miss	New Milestone	Last Year Milestone	Prior Year Milestone	Draft Env. Doc. -- DED	Final Env. Doc. -- FED	Env. Impact Report -- EIR	Negative Declaration -- ND	Categorical Exemption -- CE	Critical Issues at Scoping	Late Key Studies	Quality Issues	Regulatory Agency Approval	New Alternative Added	Partner Agency Decisions	Added Work from Public
<b>Support Only STIP</b>																
Roadway Widening			3	5	4	4	8				1	1	1	2	3	
IC Improvement	1				1		1							1		
<b>STIP Projects</b>																
Roadway Widening		1		5	3	3	4	1	1				2	2	1	1
IC Improvement				2	2			2		1	1					
Relocate Intersection				1		1		1		1						
<b>Total STIP</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>13</b>	<b>10</b>	<b>8</b>	<b>13</b>	<b>4</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>5</b>	<b>4</b>	<b>1</b>

*Quarter Miss* – Last year milestone delivered this year.

*New Milestone* – environmental delay within the current

*Fiscal Year Last Year Milestone* – environmental delay from the previous Fiscal Year

*Prior Year Milestone* – environmental delay from before the previous Fiscal Year

*Support Only STIP* – projects that do not have resources programmed for construction.

Project Type	MS Status				Milestone			Document Type			Internal Delay Factor				External Delay Factor				
	Quarter Miss	New Milestone	Last Year Milestone	Prior Year Milestone	Notice of Preparation -- NOP	Draft Env. Doc. -- DED	Final Env. Doc. -- FED	Env. Impact Report -- EIR	Negative Declaration -- ND	Categorical Exemption -- CE	Critical Issues at Scoping	Late Key Studies	Priorities	Late Functional Product	Quality Issues	Regulatory Agency Approval	New Alternative Added	Partner Agency Decisions	Added Work from Public Input
<b>SHOPP Projects</b>																			
Roadway Widening	3			2		3	2	1	3	1	1				1	2			1
Bridge Improvements	2	2	1	5		6	4	2	7	1	1	4	2			1	1	1	
Tahoe Basin Drainage	2		3			3	2		5		1					4			
Commercial Vehicle Enforcement Facilities		1		2		1	2		2	1			3						
Rural Curve Correction	1		1			2			2		1			1					
New Maintenance Station	1			1		1	1		1	1	2								
Culvert Rehabilitation				1			1			1	1								
New Roadway				1	1			1			1								
<b>Total SHOPP</b>	<b>9</b>	<b>3</b>	<b>5</b>	<b>12</b>	<b>1</b>	<b>16</b>	<b>12</b>	<b>4</b>	<b>20</b>	<b>5</b>	<b>8</b>	<b>4</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>7</b>	<b>1</b>	<b>1</b>	<b>1</b>

*Quarter Miss* – Last year milestone delivered this year.

*New Milestone* – environmental delay within the current

*Fiscal Year Last Year Milestone* – environmental delay from the previous Fiscal Year

*Prior Year Milestone* – environmental delay from before the previous Fiscal Year