

# California Department of Transportation

## Its Capital Outlay Support Program Should Strengthen Budgeting Practices, Refine Its Performance Measures, and Improve Internal Controls

### REPORT NUMBER 2010-122, ISSUED APRIL 2011

This report concludes that, despite a stated goal to reduce overruns in its support project budgets, the California Department of Transportation (Caltrans) has performed little analysis to determine the frequency or magnitude of support cost budget overruns. Our review of projects that completed construction in fiscal years 2007–08 through 2009–10 indicates that 62 percent of the projects had support costs that exceeded their respective budgets. These overruns totaled more than \$305 million of the \$1.4 billion in total support cost expenditures for the projects that completed construction during these fiscal years. Our analysis found that the primary cause for support cost overruns was an increase in the hourly rate for support costs. For example, one project was approximately 14,600 hours under budget but exceeded its budgeted dollar amount by nearly \$6.8 million, representing a support cost overrun of 83 percent. The changes in the hourly rate for support costs were due, in part, to salary increases of more than 40 percent during fiscal years 2005–06 through 2008–09 for certain Caltrans employees, including engineers. We also found that project managers for 12 of the 40 projects we reviewed monitored their budgets based primarily on the hours charged and not dollars spent. If project managers do not pay attention to costs, escalations in the rate paid per hour could cause a support cost overrun, even if the project remains under its budgeted hours. Further, project managers for 10 of the 40 projects we reviewed did not use a detailed approach to develop a support budget when a project was ready for construction.

Moreover, although Caltrans has established a goal of reducing support costs to represent a ratio of 32 percent of the total capital costs (support-to-capital ratio), according to our assessment Caltrans generally did not meet its goal for fiscal years 2007–08 through 2009–10. In addition, Caltrans has failed historically to use a consistent method to calculate this ratio over time, thus decreasing the value of the ratio for assessing Caltrans' performance in managing the support program. Furthermore, the support-to-capital ratio has limitations and could be defined more precisely to better measure efficiency, given that support costs can vary greatly depending on a project's size and type.

We also noted that Caltrans' time-reporting system lacks strong internal controls, and better project monitoring and consistent use of performance metrics, such as earned value metrics, could help it minimize support cost overruns. Further, although Caltrans recently sought to hire consultants rather than permanent employees to address a temporary increase in workload, it was not successful in doing so because requests for consultants have historically been revised during the legislative budget process to align with a staffing ratio of 10 percent consultants to 90 percent state staff.

In the report, the California State Auditor (state auditor) made the following recommendations to Caltrans. The state auditor's determination regarding the current status of recommendations is based on Caltrans' one-year response to the state auditor as of April 2012.

#### **Recommendation 1.1.a—See pages 28—37 of the audit report for information on the related finding.**

To improve accountability internally and with the public, Caltrans should create and incorporate an analysis of support cost budget variances in its quarterly report to the agency and in its annual report to the Legislature and the governor. The analysis should report on the number of completed projects with budget variances and on the number of open projects for which the estimates at completion predict budget variances. Further, the analysis should report on the overrun and underrun ratios for those projects, and the portions of the variances due to rates and hours. Also, Caltrans should include in its strategic plan a measurable goal for reducing variances.

***Caltrans' Action: Partially implemented.***

Caltrans established a performance measure that targets support expenditures that are within a specified range of the support budget. The performance measure is now in place and Caltrans stated that it is now included in the quarterly project delivery reports submitted to the California Transportation Commission (CTC). The report was not included in the 2011 annual report to the Legislature and governor due to timing issues; however, Caltrans stated that it will be included in future reports. Further, Caltrans did not state whether it will include in its reports an analysis of the portions of budget variances due to rates and hours.

**Recommendation 1.1.b—See pages 32 and 33 of the audit report for information on the related finding.**

To improve accountability internally and with the public, Caltrans should establish budgets for those State Transportation Improvement Program (STIP) projects programmed before the passage of Senate Bill 45 so that overruns may be reported in the quarterly report to the agency and in the annual report to the Legislature and the governor.

***Caltrans' Action: Fully implemented.***

Caltrans has established support budgets for the 24 projects it identified as having started (projects programmed) prior to the passage of Senate Bill 45.

**Recommendation 1.1.c—See page 33 of the audit report for information on the related finding.**

To improve accountability internally and with the public, Caltrans should develop a system to report on the total budgets of support program projects—including initial project support budgets—of projects that have been divided into multiple projects or combined into a larger project.

***Caltrans' Action: Fully implemented.***

Caltrans stated that it has developed improved business practices to allow for easier tracking of project budgets. Specifically, Caltrans provided a project management directive outlining a process for managing project funding and costs when projects are split or combined into one or more construction contracts. The process allows for tracking the origin of projects split into multiple projects or combined into one project. That directive took effect in August 2011.

**Recommendation 1.2.a—See pages 41—43 of the audit report for information on the related finding.**

To improve performance metrics related to the support program, Caltrans should devise, use, and publicize a consistent method for reporting the support-to-capital ratio on its Web site and in other reports to the public. Further, Caltrans should recalculate past support-to-capital ratios using the method devised to allow for comparison across years.

***Caltrans' Action: Partially implemented.***

Caltrans stated that it developed a consistent methodology for reporting the support-to-capital ratio and posted the methodology on its project management intranet site. Caltrans also recalculated past support to capital ratios consistent with this new methodology. However, it did not indicate that it has or will publish this information on its Web site or in other reports to the public. Further, Caltrans stated that it would incorporate these measures into a quarterly report to the CTC by the third quarter of fiscal year 2011–12.

**Recommendation 1.2.b—See pages 43—45 of the audit report for information on the related finding.**

To improve performance metrics related to the support program, Caltrans should develop goals—and publicly report on the progress against those goals—for the support-to-capital ratio, based on project type—STIP or the State Highway Operation and Protection Program (SHOPP)—and project size.

***Caltrans' Action: Partially implemented.***

Caltrans stated it established support-to-capital ratio goals based on the capital cost of STIP and SHOPP projects. For example, projects with a capital cost greater than \$25 million would have a support-to-capital ratio goal of below 30 percent. Caltrans stated it would include the established measures in the CTC Project Delivery Report starting with the third quarter of fiscal year 2011–12.

**Recommendation 1.2.c—See pages 45 and 46 of the audit report for information on the related finding.**

To improve performance metrics related to the support program, Caltrans should continue to explore the use of additional metrics, such as a measure based on a productivity index as described in a March 2011 draft study by the University of California, Davis.

***Caltrans' Action: Pending.***

Caltrans stated that it has been moving away from using the support-to-capital ratio as a measure of performance but will continue to use it as an indicator. Caltrans stated that it is on track to develop an additional metric by July 2012.

**Recommendation 1.3—See pages 37—39 of the audit report for information on the related finding.**

To better develop and manage project budgets for support, Caltrans should instruct project managers to submit requests to update the budget when assumptions on which the budget was based are no longer valid, regardless of the phase of the project. Additionally, it should direct its project managers to use a detailed approach based on project tasks, such as those included in a project work plan, when finalizing project support budgets before construction.

***Caltrans' Action: Fully implemented.***

Caltrans issued a project management directive titled “Management of Capital Outlay Support,” in August 2011. The directive gives direction on updating budgets for construction on or before the date the project is voted on by the CTC and proceeds to the construction phase. Further, the directive includes instruction to update estimated hours in the project’s work plan when hours change and to review and update—if needed—resource estimates on an ongoing basis, and at least quarterly. Further, the directive requires that the project development team review and update support budgets at the completion of each major milestone.

**Recommendation 1.4.a—See pages 38 and 39 of the audit report for information on the related finding.**

To ensure that it monitors the status of projects, Caltrans should continue to implement the policies described in its February 2010 memorandum to the districts describing an approach Caltrans will take to monitor support costs within budget. Moreover, Caltrans should direct its project managers to monitor budgets for all projects according to both hours and costs.

***Caltrans' Action: Fully implemented.***

Caltrans issued a project management directive in August 2011 clarifying the responsibility of project managers in the development and maintenance of project workplans, including planned hours and support costs throughout the life of the project. Further, Caltrans stated that it has added a standing agenda item to a quarterly teleconference to discuss support budget corrective action plans.

**Recommendation 1.4.b—See pages 48—50 of the audit report for information on the related finding.**

To ensure that it monitors the status of projects, Caltrans should implement earned value management throughout its districts in a manner similar to the implementation in the Los Angeles district. To allow for performance evaluation of project work, Caltrans should ensure that these performance metrics are available at the task level for both active and completed projects. Caltrans should instruct districts to aggregate this information for all projects by task level, to better assess the effectiveness and efficiency of support costs by task level. Caltrans should also make available to project managers graphical displays of project cost and schedule performance.

***Caltrans' Action: Partially implemented.***

In its 60-day response, Caltrans stated that it was reviewing policies, business processes, existing systems and data, to implement a statewide standard approach to earned value management in advance of the implementation of its Project Resource and Schedule Management (PRSM) system. In its six-month response, Caltrans stated that it is on track for having a standard approach to earned value management in place by December 31, 2011. Caltrans issued a "Project Delivery Directive" effective 2012 stating that Caltrans utilizes earned value management as one of the tools to manage capital outlay projects' cost and schedule. The directive provides definitions of earned value management measures and indicates the responsibilities of managers at various levels to implement earned value management. However, the directive does not indicate whether there are reports available for managers to use in implementing earned value management, such as reports on metrics at the task level for both active and completed projects and graphical displays of project cost and schedule performance available to managers. Finally, past responses tied Caltrans' implementation of earned value management to its adoption of the PRSM system; however, Caltrans' one-year response does not mention the PRSM system in relation to earned value management.

**Recommendation 1.5.a—See pages 46—48 of the audit report for information on the related finding.**

To better address costs associated with the support program, Caltrans should ensure that the PRSM system contains strong controls that ensure employees only charge time to projects and phases for which they are assigned.

***Caltrans' Action: Pending.***

Caltrans stated that when the PRSM system is fully implemented, only those employees with approved cost centers will be allowed to charge to projects. According to Caltrans, it initially expected full implementation of the PRSM system to be complete by the summer of 2012; however, several factors have contributed to a delay in the system's implementation including data conversion and a change in approach to training. Caltrans expects full implementation of the PRSM system by June 2013.

**Recommendation 1.5.b—See pages 50—52 of the audit report for information on the related finding.**

To better address costs associated with the support program, Caltrans should commission an independent study of the costs and benefits of using consultants to address temporary increases in workload and, if the study reveals cost savings, use consultants. To the extent possible, Caltrans should also use temporary staff appointments for temporary increases in workload when consultants are unavailable.

***Caltrans' Action: Partially implemented.***

Caltrans Division of Research and Innovation contracted with CTC and Associates LLC to compare in-house staff and consultant costs for highway design and construction. Caltrans has received two reports, one dated July 2011 and another dated October 2011, from CTC and Associates LLC, which compared the use of in-house staff and consultants. In general, according to Caltrans, these reports concluded that cost should not be an overriding factor in deciding whether to outsource. Caltrans explained that other factors such as expediting project delivery and managing workload should be taken into consideration when determining when and what work to outsource. Caltrans stated it is in the process of contracting for an independent study to identify options or tools to improve decision-making processes regarding resource mix during workload peaks and valleys. Caltrans stated in its one-year response that it expects the final report to be complete within six to 12 months.

**Recommendation 1.6—See pages 42 and 43 of the audit report for information on the related finding.**

To ensure that it receives more complete information on the support program, the Legislature should require Caltrans to include in its annual report an expanded methodology for reporting support to capital ratios to include, in addition to a support-to-cost ratio analysis based on costs incurred up to the award of the construction contract of STIP projects, a separate support-to-capital ratio analysis for STIP projects that have completed construction. Further, the Legislature should require Caltrans to report on similar ratios for SHOPP projects based on costs incurred up to the award of the construction contract and for those projects that completed construction.

***Legislative Action: Legislation enacted.***

Chapter 6, Statutes 2011 (Assembly Bill 105), requires the department to submit to the Legislature information to substantiate the proposed capital outlay budget. In addition, Chapter 38, Statutes 2011 (Assembly Bill 115), requires the department to include in that submittal the capital-to-support ratio for all projects completed in the prior fiscal year.

**Recommendation 1.7—See page 40 of the audit report for information on the related finding.**

To increase accountability for budget overruns of support costs, the Legislature should consider legislation that would expressly require CTC to review and approve project construction support costs when they differ from the amount budgeted by 20 percent or more.

***Legislative Action: Legislation enacted.***

Chapter 272, Statutes of 2012 (Senate Bill 1102), among other things, requires the department, no later than November 15, 2014, and annually thereafter, to report the difference between the original allocation made by the CTC and the actual construction capital and support costs at project close for all state transportation improvement program projects completed during the previous fiscal year.

**Recommendation 1.8—See pages 50—52 of the audit report for information on the related finding.**

To ensure that Caltrans does not hire permanent state staff beyond its need for such staff, the Legislature should consider appropriating funding for consultants to address temporary increases in Caltrans' workloads when Caltrans requests such funding.

***Legislative Action: Unknown.***

The state auditor is not aware of any action taken by the Legislature as of December 18, 2012.

