

# Memorandum

Tab 20

To: CHAIR AND COMMISSIONERS

CTC Meeting: Oct 19-20, 2016

Reference No.: 4.9  
Action

From: SUSAN BRANSEN  
Executive Director

Subject: **CAPITAL OUTLAY SUPPORT WORKLOAD FORECASTING PROCESS IMPROVEMENT RECOMMENDATION**

## **ISSUE:**

Should the Commission approve and transmit to the California State Transportation Agency (CalSTA) Secretary a recommendation to assign to the Commission the responsibility and oversight for allocations of Caltrans' Capital Outlay Support (COS) resources by project component for purposes of improving the California Department of Transportation's (Caltrans) methodology in forecasting workload requirements?

## **RECOMMENDATION:**

Staff recommends the Commission approve and transmit to the CalSTA Secretary the attached letter (Attachment A) that includes a recommendation that the Legislature should assign to the Commission the responsibility and oversight to allocate Caltrans' COS resources by project component.

## **BACKGROUND:**

At the request of the CalSTA Secretary, the Commission convened a workgroup of staff from various entities to provide advice and recommendations to the Administration and Legislature on a reasonable methodology for determining adequate COS levels as well as instituting more accountability for Caltrans' COS workload.

The costs Caltrans incurs in developing transportation infrastructure includes: 1) capital outlay, which generally consists of the materials and labor of a construction contract, and 2) COS, which refers to the staff support necessary to prepare a project for construction and provide project oversight during construction. In California, much of the COS workload for transportation projects on the state highway system is completed by Caltrans. On average, approximately 25% of a project's cost is for COS.

As part of the 2013-14 budget package, the Legislature adopted supplemental report language directing the Legislative Analyst's Office (LAO) and the Department of Finance (DOF) to work with Caltrans to review its COS program. In the spring of 2014, the Administration made recommendations to address the concerns raised by the Legislature, while the LAO published a report with alternative recommendations. Since that time, there has remained much debate in the Legislature over how to determine the appropriate COS program staffing level.

Neither the Legislature, the Administration, nor the public is well-served by the impasse over the appropriate level of COS staffing. In its 2015 Annual Report to the Legislature, the Commission recommended that CalSTA continue efforts to develop a workload forecasting process for Caltrans' COS program by convening the appropriate agencies to determine a methodology acceptable to all parties.

On January 22, 2016, the CalSTA Secretary requested that the Commission provide direction and leadership in resolving this challenging issue. Upon this request, the Commission formed the COS Workgroup comprised of experts from the Commission, Caltrans, DOF, LAO, the Legislature, CalSTA, and a regional agency to review current and projected Caltrans COS staffing levels, the forecasting methodology used to arrive at those levels, and identify process improvement solutions. The workgroup divided its initial task into two phases, as described below.

### **Phase I: Defining the Problem**

The COS Workgroup met a number of times in the spring to obtain an understanding of the Caltrans budget estimating process. In an Interim Report ([Attachment B](#)), transmitted to the Transportation Agency in May 2016, the Commission reported two important observations. First, that Caltrans had made improvements in its COS workload forecasting methodology since the 2013 zero-based budgeting review. Second, while the current process is better than it was in 2013-14 and Caltrans appears to continue its commitment in developing the best possible estimates for annual workload, it is evident that there is a limit to the accuracy of the estimate given the vast number of variables involved in the forecast.

### **Phase II: Weighing Potential Solutions**

Following the work described in the Interim Report, the COS workgroup began its second phase to identify potential solutions. Two primary options to improve the Legislature's confidence in Caltrans' budgeting process were identified: 1) Continue to improve and refine the workload estimate to increase the accuracy of Caltrans' budget request, or 2) Identify another means for holding Caltrans accountable not directly related to Caltrans' annual budget request but one that can otherwise ensure Caltrans' completion of the work is reasonably within its estimated budget. Based on the discussions of the COS Workgroup, it was ultimately determined that assigning the Commission responsibility to allocate Caltrans COS resources by project component would provide a means to hold Caltrans accountable for its budget estimates, increasing assurance that the annual budget forecast is reasonable.

The Commission is statutorily required to allocate funding to regional agencies for all project phases including COS or preconstruction costs. However, unlike for regional agency allocations, the law does not authorize the Commission to allocate funding to Caltrans for preconstruction project work. As a result, the Commission is limited to allocating funding to Caltrans only for capital outlay and construction support.

Commission allocations are based on project estimates in the Commission's adopted programs. If a project exceeds the Commission's allocation by a certain amount, then Caltrans must request the

Commission to allocate supplemental costs. This level of accountability and transparency encourages Caltrans to develop accurate capital outlay and construction support estimates and to manage budget estimates effectively. Since the Commission does not allocate funding to Caltrans for the costs incurred to carry-out the environmental, design or right of way support project phases, Caltrans is not held to this same level of accountability and transparency for its preconstruction estimates.

The Commission's allocation of funds to Caltrans for all project phases would establish an approved budget for the level of COS required by project. This would increase accountability and transparency in the annual budget request Caltrans submits to the Legislature. However, since this may increase the risk that Caltrans would overestimate needs to avoid requesting supplemental funds, this proposal can only be successful if the Commission is provided resources to implement this new responsibility, including staff to generally assess the reasonableness of Caltrans estimates prior to programming and allocation.

It is important that the Commission continue to partner with Caltrans in developing methods to improve the efficiency and effectiveness of the COS program. Therefore, Commission staff will continue to convene the COS Workgroup to explore ways to further improve Caltrans' budgeting process and provide updates as this effort develops.

Attachment A – Draft Transmittal Letter to the CalSTA Secretary

Attachment B – Interim Report

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October 19, 2016

Secretary Brian Kelly  
California State Transportation Agency  
915 Capitol Mall, Suite 350B  
Sacramento, CA 95814

Re: Capital Outlay Support Workload Forecasting Methodology Process Improvement Recommendation

Dear Secretary Kelly:

Per your request, the Commission convened a workgroup of staff from various entities to review and recommend improvements for the California Department of Transportation's (Caltrans) methodology used to arrive at forecasted capital outlay support (COS) workload levels. Initial conclusions reached by the workgroup were transmitted to you via an Interim Report on May 19<sup>th</sup>, 2016. As discussed in the Interim Report, Caltrans' difficulty in developing accurate annual budget estimates is not for lack of determination. Caltrans dedicates significant resources to develop the most precise estimates possible.

Since release of the Interim Report, the workgroup identified two primary options to improve the level of confidence in Caltrans' budgeting process: 1) Continue to improve and refine the workload estimate to increase the accuracy of Caltrans' budget request, or 2) Identify another means for holding Caltrans accountable not directly related to Caltrans' annual budget request but one that can otherwise ensure Caltrans' completion of the work is reasonably within its estimated budget.

Secretary Brian Kelly

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Based on workgroup discussions, it was ultimately determined that assigning the Commission responsibility to allocate Caltrans COS resources by project component would provide a means to hold Caltrans accountable for its budget estimates, increasing assurance that the annual budget forecast is reasonable. This recommendation is further described in the enclosed report (Attachment A).

The Commission is statutorily required to allocate funding to regional agencies for all project phases including COS or preconstruction costs. However, unlike for regional agency allocations, the law does not authorize the Commission to allocate funding to Caltrans for preconstruction project work. As a result, the Commission is limited to allocating funding to Caltrans only for capital outlay and construction support.

Commission allocations are based on project estimates that align with the Commission's adopted programs. If a project exceeds the Commission's allocation by a certain amount, then Caltrans must request the Commission to allocate supplemental costs. This level of accountability and transparency encourages Caltrans to develop accurate capital outlay and construction support estimates and to manage budget estimates effectively. Since the Commission does not allocate funding to Caltrans for the costs incurred to carry-out the environmental, design or right of way support project phases, Caltrans is not held to this same level of accountability and transparency for its preconstruction estimates.

The Commission's allocation of funds to Caltrans for all project phases would establish an approved budget for the level of COS required by project. This would increase accountability and transparency in the annual budget request Caltrans submits to the Legislature. However, this process may increase the risk that Caltrans would overestimate needs to avoid requesting supplemental funds. Therefore, this proposal can only be successful if the Commission is provided resources to implement this new responsibility, including staff to generally assess the reasonableness of Caltrans' estimates prior to programming and allocation.

While this recommended approach will improve accountability and transparency of Caltrans' workload forecasting methodology and increase confidence in Caltrans' ability to manage its budgetary commitments, this effort is not complete. The Commission intends to include this recommendation in its December 2016 report to the Legislature and continue to partner with Caltrans and the workgroup for purposes of improving the efficiency and effectiveness of the COS program.

Please do not hesitate to contact me or Susan Bransen, Executive Director, at (916) 654-4245, if you have any questions.

Sincerely,

**BOB ALVARADO**

Chair

c: California Transportation Commissioners

## ATTACHMENT A

### CAPITAL OUTLAY SUPPORT WORKLOAD FORECASTING PROCESS IMPROVEMENT RECOMMENDATION

#### **The Commission Should Allocate Caltrans Support Costs.**

The Commission recommends that the Legislature assign to the Commission the responsibility to allocate Caltrans' Capital Outlay Support (COS) work by project component and provide the Commission with the resources necessary to effectively review allocation requests. Given underlying inconsistencies between Caltrans' COS workload estimation process and the Legislature's budget process, a mechanism for holding Caltrans accountable for efficiently managing its COS workload is necessary.

The cost of developing transportation infrastructure is derived from two sources: 1) capital outlay, which generally consists of the materials and labor of a construction contract, and 2) capital outlay support (COS), which refers to the staff support necessary to prepare a project for construction and then oversee the construction of that project. In California, much of the COS workload for transportation projects on the state highway system is completed by Caltrans. On average, approximately one-quarter of a project's cost is for COS.

Caltrans' annual COS budget is roughly \$1.8 billion in funds that, if not spent on staff resources, could be used for other purposes such as maintenance or capacity improvements of the existing system. Everyone agrees, including the Commission, the Legislature, the Transportation Agency, and Caltrans, that improving efficiency in the COS program is an important goal. There is great debate over how efficient the program is currently operating because there is no good method for measuring its efficiency.

In its 2015 Annual Report to the Legislature, the Commission recommended that the Transportation Agency continue efforts to improve Caltrans' COS workload forecasting process by convening the appropriate agencies to determine a methodology acceptable to all parties. In response, the Transportation Agency Secretary requested that the Commission "lend its help and leadership in resolving this challenging issue due to the fact that the Commission has a well-earned reputation for independence and is often called upon to be a fair arbiter." As requested, the Commission convened a workgroup representing various administrative, legislative and regional entities<sup>1</sup> to review current and projected COS staffing levels and the methodology used to arrive at those levels.

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<sup>1</sup> The entities represented in this effort besides Commission staff include CalSTA, Caltrans, the Legislative Analyst's Office, the Department of Finance, the Assembly and the Senate. In addition, the Executive Director of the Sonoma County Transportation Authority participated to provide a regional agency perspective.

Through the efforts of the workgroup, the Commission has determined that the current method of forecasting COS workload makes it difficult for the Legislature to hold Caltrans accountable through the annual budget process. It is imperative that the Legislature implement an alternative way to increase transparency and accountability of the COS program and thus increase confidence in Caltrans budgeting and reporting. At the same time, the Legislature should consider strategies to incentivize accurate workload estimates and reduce Caltrans' tendency to overestimate needs.

In previous reports, both the State Auditor and the Legislative Analyst's Office have recommended that the Commission allocate COS work by project in order to increase accountability for the way Caltrans spends resources. Other California departments delivering large capital projects, as well as most other state departments of transportation, contract with private firms for both support and construction. This contracting relationship allows the departments to hold the contracting entities accountable and responsible for completing the work promised in the contract for the agreed-upon cost. Currently, Caltrans is both the contractor and contract administrator of COS work for transportation projects, resulting in a lack of checks and balances in the system. Assigning the Commission responsibility to allocate COS work by project component, and then requiring Caltrans to request additional funds if costs escalate, would help institute the checks and balances necessary to increase the Legislature's confidence in Caltrans' performance.

This proposal can only be successful, however, if it accompanies the necessary resources for the Commission to have the ability to generally assess the reasonableness of Caltrans estimates prior to programming and allocation. Programming and allocating Caltrans support costs without the appropriate level of Commission staff could lead to worse outcomes than currently exist, as Caltrans project managers could be further incentivized to overestimate needs to avoid requesting additional resources from the Commission in the case of unforeseen circumstances. While Caltrans is responsible for developing and presenting accurate project budgets, if Commission staff is generally assessing the reasonableness of Caltrans project estimates from the beginning, accountability for project estimating accuracy should increase.

**CALIFORNIA TRANSPORTATION COMMISSION****INTERIM REPORT****INITIAL CONCLUSIONS TO INFORM THE CAPITAL OUTLAY SUPPORT  
WORKLOAD FORECASTING DEVELOPMENT PROCESS**

May 19, 2016

As part of the 2013-14 budget package, the Legislature adopted supplemental report language directing the Legislative Analyst's Office (LAO) and the Department of Finance (DOF) to work with the Department of Transportation (Caltrans) to review its Capital Outlay Support (COS) program. In response, representatives from the LAO, DOF, and Caltrans met on a regular basis to discuss the COS program during the summer and fall of 2013. Although the review group reached general consensus on initial steps to improve efficiency and accountability, the group was unable to reach consensus on solutions to address many of the issues identified in the review. In the spring of 2014, the Administration made recommendations to address the concerns raised by the Legislature, while the LAO published a report with alternative recommendations. Since that time, there has remained much debate in the Legislature over how to determine the appropriate COS program staffing level.

Neither the Legislature, the Administration, nor the public is well-served by the ongoing dispute over the appropriate level of Caltrans' COS staffing. In its 2015 Annual Report to the Legislature, the California Transportation Commission (Commission) recommended that the California State Transportation Agency (CalSTA) continue efforts to develop a workload forecasting process for Caltrans' COS program by convening the appropriate agencies to determine a methodology acceptable to all parties.

On January 22, 2016, the CalSTA Secretary requested that the Commission "lend its help and leadership in resolving this challenging issue due to the fact that the Commission has a well-earned reputation for independence and is often called upon to be a fair arbiter." Secretary Kelly further requested that the Commission form a workgroup with experts from the Commission, Caltrans, DOF, LAO, the Legislature, and CalSTA to review current and projected COS staffing

levels at Caltrans and the methodology used to arrive at those levels. In response to the Secretary's request, Commission staff convened a group of experts from various entities to begin a review of Caltrans' annual COS workload forecasting methodology. Appendix A is a list of participants in the workgroup.

The COS Workload Forecasting Methodology Workgroup (workgroup) has met three times. At the first meeting, the workgroup focused on identifying and agreeing on the problem to be resolved. After much discussion, the workgroup generally agreed that a key objective of the overall effort was to resolve the ongoing concern related to the accuracy of Caltrans' annual COS budget request for staffing. It was agreed that resolution of this issue was necessary before the more substantive policy questions related to Caltrans workload could be addressed. It was also agreed that, following this phase, the workgroup would continue to meet to consider potential ways to improve the existing budget process and develop an alternative process to increase transparency and accountability and thus increase the Legislature's confidence in Caltrans budgeting and reporting. Through a multi-phased effort, the workgroup intends to move the discussion beyond simply a validation of the accuracy of Caltrans budget projections to broader policy questions involving the reasonableness of the methodology to estimate annual staffing needs to deliver the transportation program.

At its second and third meetings, the workgroup received and discussed information presented by Caltrans on the development of its annual COS budget request estimate. This exercise illustrated that Caltrans has worked diligently since the zero-based budget effort in 2013 to improve its workload forecasting process. Driving this improvement is the implementation of the Project Resource and Schedule Management (PRSM) software with which Caltrans is able to more effectively track and project workload for tasks of every phase for every project. With PRSM, Caltrans is able to aggregate significant amounts of data and is now working to improve the quality of this data as well as analyze the data in order to inform future estimating efforts.

The workgroup's discussion focused on how Caltrans estimates workload, how the workload informs the budget request, and the challenges of improving the accuracy of the final budget estimate despite the growing precision of Caltrans' estimating process. It became clear that

Caltrans' difficulty in developing accurate annual budget estimates is not for lack of effort. Based on its presentations, Caltrans dedicates significant resources attempting to develop the most precise estimates possible. Unfortunately, Caltrans' efforts have not resulted in an accurate representation of the workload Caltrans staff accomplishes in a given year. The inaccuracy in Caltrans' projected workload forecast is derived from a variety of factors including many that are outside Caltrans' control. These factors include:

- The annual workload estimate is the sum of tens of thousands of inputs. This is based on the fact that Caltrans is working on more than 2,900 active projects at any given time.
- The budget request is a moment-in-time snapshot of a twelve-month workload estimate beginning roughly six months after the snapshot is taken. Project schedules inevitably shift, impacting the work actually completed within a fiscal year.
- The basis for building the estimate from the very lowest level (i.e., development of the unit estimate) is not based on uniform data, but instead varies as it is based on the judgment of subject matter experts taking into account a variety of risks and assumptions.
- The nature of project development is fluid, dependent on a number of relatively unpredictable activities such as the timing of right-of-way purchases and state and federal permitting processes.

Generally, much of the workgroup's discussion centered on the underlying problem that, when comparing the prior year's proposed workload by phase or project to the actual workload accomplished by Caltrans staff, it appears that Caltrans is not doing what it committed to in the workload estimate. The sheer number of variables involved in each individual project prohibits the ability to determine at the end of the year whether the assumptions used to develop the budget estimate were accurate. In its presentation, Caltrans demonstrated that it accurately estimates its needs within a 40 percent range only 38 percent of the time. Clearly, the current method of justifying staffing levels does not work for managing the department's resources. Without the ability to compare the resources and workload promised with the resources utilized and workload accomplished, the Legislature cannot use the current methodology to hold Caltrans accountable for the development of accurate budget workload estimates.

Some workgroup members also raised concerns about Caltrans' apparent trend of overestimating resource needs. There appears to be no penalty but instead an incentive to overestimate project budgets to avoid requesting supplemental funds. This systemic problem may be another facet the workgroup should try to resolve in order to address the ongoing concern related to the accuracy of Caltrans' annual COS budget request.

## **CONCLUSION:**

As the workgroup concluded the first phase of this effort, Commission staff has made two important observations. First, staff concluded that Caltrans has made improvements in its COS workload forecasting methodology since the 2013 zero-based budgeting review. These improvements include:

- Implementing PRSM, integrating task management and enabling the Department to track planned versus expended resources in one system.
- Implementing error reports and quality checks in the system to improve data quality and reduce the number of mistakes in the annual estimate.
- Tracking the initial budget estimate for each project phase to better report Caltrans' performance.
- Initiating new change control rules to ensure resource estimates are not arbitrarily changed or manipulated.
- Developing a Resource Staffing Mix Evaluation methodology to evaluate the best use of consultants to accomplish Department work.
- Presenting a plain-language project delivery report to the Commission to increase the transparency of Caltrans' workload and begin to identify potential issues with projects before they become problems.

Second, while the current process is better than it was in 2013-14 and Caltrans appears committed to continuing its efforts in developing the best possible estimates for annual workload, it is evident to the workgroup that there is a limit to the accuracy of the estimate given the vast number of variables involved in the forecast. A primary hindrance to accuracy is that,

while Caltrans manages its workload across budget years through each phase of the project development process, the workload forecast submitted to the Legislature to inform the budget process is based on a projection taken at a point in time. As a result, since project workload forecasts represent a point in time despite the dynamic nature of project workload, the current methodology is not useful for purposes of actual-workload-to-forecast comparisons. Therefore, the current method of forecasting COS workload makes it difficult to hold Caltrans accountable by budget year.

Moving into the second phase of this effort, the workgroup intends to develop recommendations to increase Caltrans' accountability for how it estimates and manages its COS resources. Coupled with this aim, the workgroup may consider strategies to incentivize accurate estimates and reduce the tendency to overestimate needs.

## Appendix A

### COS Workload Forecasting Methodology Workgroup Members

As of May 2016

Daniel Ballon	Assembly Republican Caucus
Farra Bracht	Senate Budget and Fiscal Review Committee
Susan Bransen	California Transportation Commission
Russia Chavis	California State Transportation Agency
Jim Davis	California Department of Transportation
Janet Dawson	Assembly Transportation Committee
Christian Griffith	Assembly Budget Committee
James Hacker	Department of Finance
Steven Keck	California Department of Transportation
Paul Jacobs	Legislative Analyst's Office
Ted Link-Oberstar	Senate Office of Research
Stephen Maller	California Transportation Commission
Erin Matalka	Department of Finance
Mark Monroe	Department of Finance
Ted Morley	Senate Republican Caucus
Jessica Peters	Legislative Analyst's Office
Suzanne Smith	Sonoma County Transportation Authority
Karla Sutliff	California Department of Transportation
Eric Thronson	California Transportation Commission
Steve Wells	Department of Finance
Heather White	Senate Republican Caucus