COLORADO
Department of Transportation
Office of the Chief Engineer

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DATE: JANUARY 19, 2017
T0: TRANSPORTATION COMMISSION
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SUBJECT: PROGRAM MANAGEMENT WORKSHOP

Purpose

The Program Management Workshop provides the Transportation Commission with an update on the integration of cash management and program management and RAMP. This update includes Calendar Year 2016 construction expenditure results and the proposed Calendar Year 2017 construction expenditure target range. It also includes discussion of lessons learned based on Fiscal Year 2016 and Calendar Year 2016 performance and risks associated with construction market conditions moving forward.

Action

Review the proposed CY2017 construction expenditure target range and confirm it meets the commission's needs.

Background

Integration of Cash Management and Program Management:

Please see Fund 400 Cash Balance Memo included as a separate information item.

RAMP:

The RAMP program was initiated in November 2012 as a means to reduce the cash balance. Shortly thereafter the TC approved a project list and has since approved groups of projects and individual projects. Given the majority of the RAMP projects are now in construction, PMO updates are now limited to background associated with requested TC actions. There are no requested RAMP actions this month.

Details

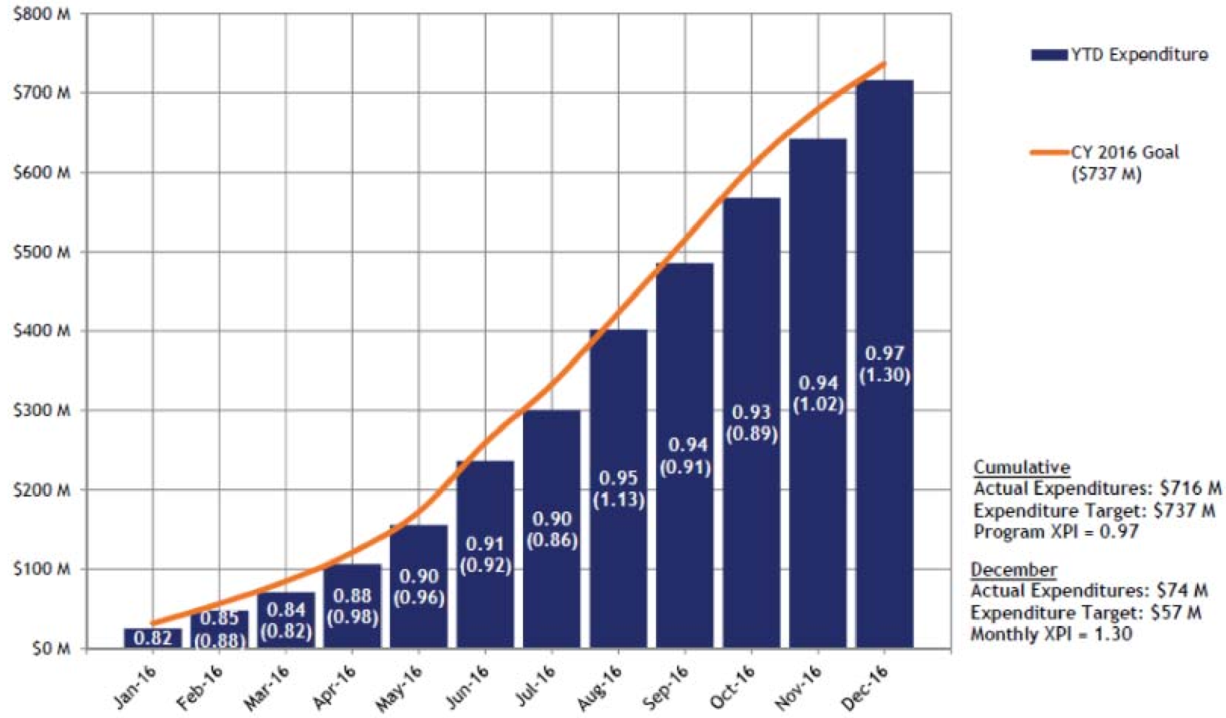
Integration of Cash Management and Program Management:

Calendar Year 2016 Expenditure Results

PMO tracks program delivery at the statewide level using the expenditure performance index (XPI) to evaluate actual construction expenditure performance as compared to planned. As indicated in Figure 1, the Calendar Year End 2016 XPI is 0.97. December's actual expenditures were $17M above the expenditure target (Monthly XPI = 1.3) and we have ended the year about $20M (3%) below the Calendar

Year 2016 Target ($716M in actual expenditures versus the $737M target). It is important to note this is an improvement from Fiscal Year End 2016 results as reported to the TC in July (XPI = 0.95 with actual expenditures of $753M as compared to the target of $790M).

Figure 1. Calendar Year 2016 Construction Expenditure Results



Fiscal Year 2016/Calendar Year 2016 Lessons Learned

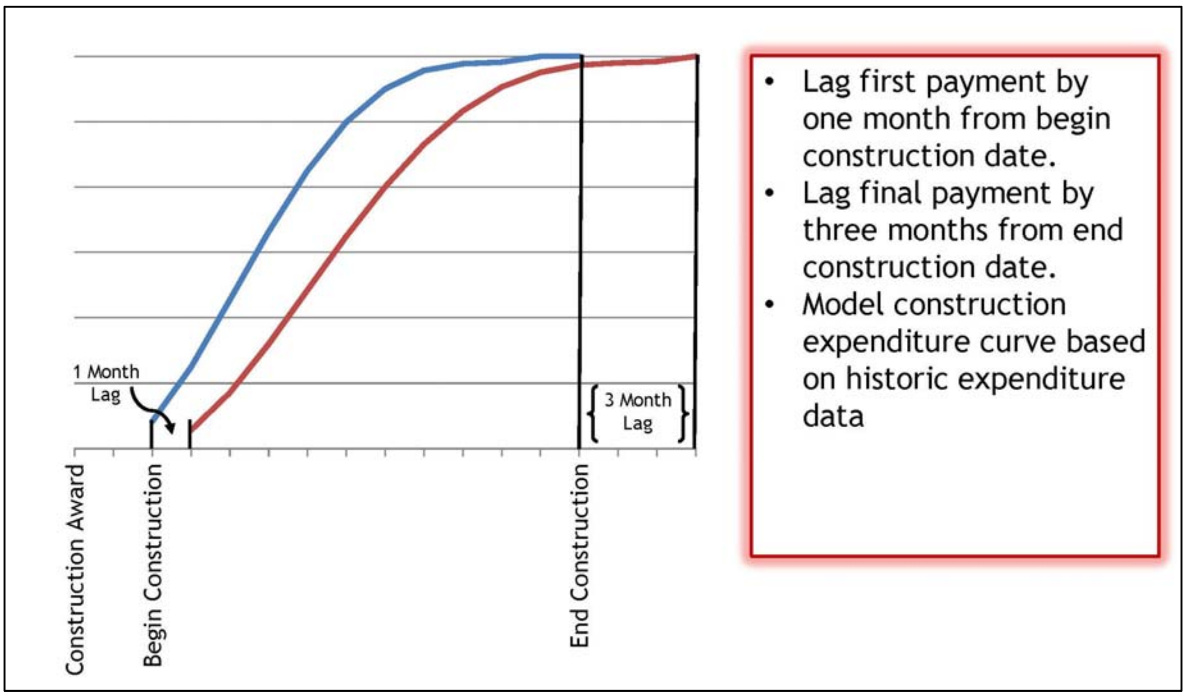
At the completion of Fiscal Year 2016 lessons learned were compiled and integrated into the planning process for establishment of Calendar Year 2017 expenditure target range. Some of the more significant lessons learned included:

1. Timeframe dedicated to the establishment of targets was too compressed and guidelines were not fully flushed out.
2. 2016 Fiscal Year and Calendar Year targets included a number of projects that did not have an identified source of construction funding (e.g. a portion of Region 4 flood related projects).
3. Targets included numerous projects with overly optimistic advertisement dates which when not met resulted in delays to construction expenditures.
4. Contractor drawdown data aligned with begin and end construction milestone dates did not correlate well with actual expenditure data.
5. For a number of reasons, it was recognized there was a need to apply a correction factor to the contractor provided drawdown data, however, the approach for doing so was not consistent amongst the regions and it was not tied to historical data.
6. A substantial portion of the total variance between planned and actual construction expenditures was associated with CM/GC and design/build projects.

In response to the lessons learned a much more systematic approach has been followed in establishing the proposed 2017 Calendar Year Target Range. In summary it has included the following:

1. Development and application of comprehensive guidance to address many of the lessons learned (e.g. target only includes projects with identified construction funding, statistical modelling based on historic data used to estimate construction expenditures integrating typical payment lags unless a manager approves otherwise, consistent correction factor applied to total construction expenditure snapshot and percentage (10%) based on historical data (See Figure 2 below), management review and approval required of all expenditure data associated with CM/GC and Design/Build projects, etc.)
2. Five rounds of monthly SAP data review and comment incorporation beginning in August to ensure guidance is applied correctly and consistently

Figure 2. Graphical Representation of Comprehensive Guidance Application (Blue = 2016 approach and Red = 2017 approach)

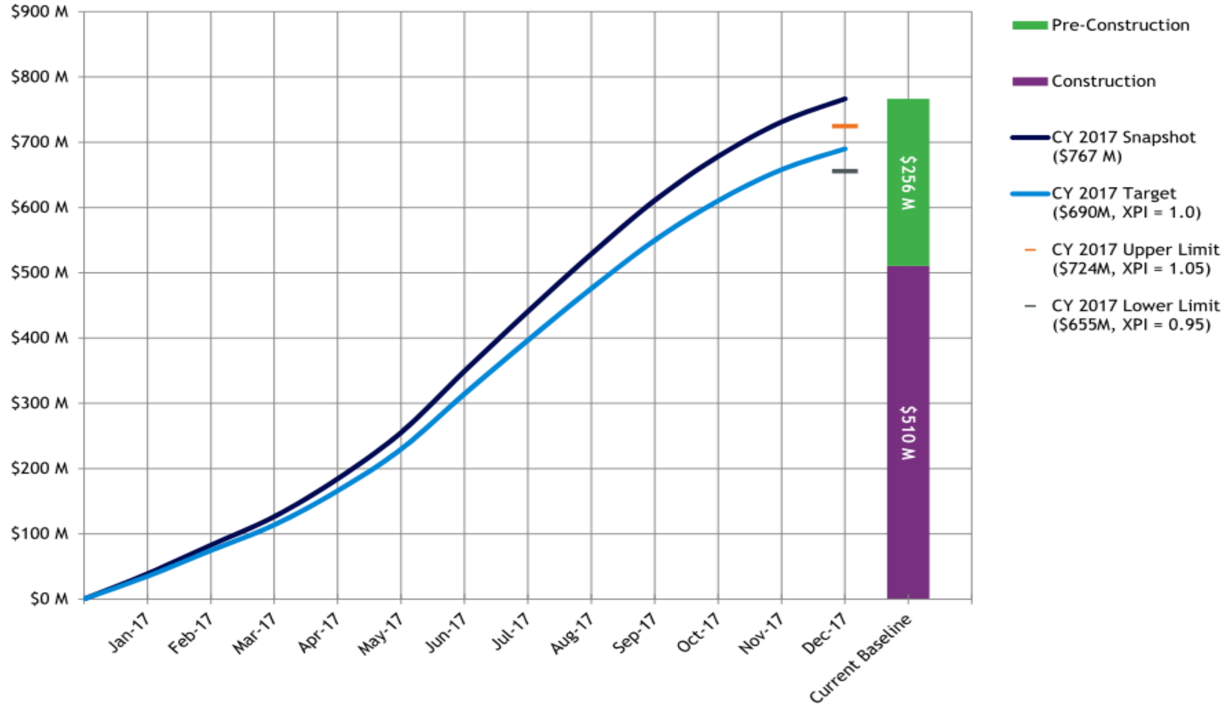


Calendar Year 2017 Construction Expenditure Target Range

Figure 3 details the resultant proposed Calendar Year 2017 construction expenditure target range. As indicated the total calendar year snapshot value of $767M has been reduced by 10% to $690M. This value correlates with an XPI of 1.0. Moving forward, expenditure status is planned to be tracked on a monthly basis (including rolling statistical projection of calendar year end expenditure results) and adjustments made with the goal of achieving a calendar year end XPI between 0.95 and 1.05.
As further detailed in the market/economic risk section below, there is some cost risk associated with projects included in the target that have not yet been awarded (currently valued at $256M per green bar in Figure 3 below). Historic results suggest this cost risk can correlate with as high as a 6% increase in

bid amounts when projects are advertised after April 1st. It is currently anticipated that about 74% of the $256M (~$188M) will be advertised prior to April 1st. In the meantime, all projects not yet advertised will be closely monitored over the next few months with the objective of minimizing the impact of this risk as much as possible.

Figure 3. Calendar Year 2017 Construction Expenditure Target Range



Market/Economic Risks

It is recognized that despite the development and application of comprehensive guidance incorporating lessons learned in establishing the calendar year 2017 construction expenditure target range there are market and economic factors that must be considered as expenditures are tracked throughout the year. The Colorado construction industry is dominated by a few large contractors. In the past five years, ten large contractors have won more than 26% of the awarded projects and they accounted for more than 42% of the total amount awarded.

Due to the nature of the market and contractor capacity limitations, projects advertised later in the season (April to September) will cost more relative to projects advertised earlier. Analysis of historic results suggests this late season premium can be as high as 6%. Over time, the number of contractors that bid CDOT projects has declined slightly, while the average number of bidders on an individual project has decreased significantly. Recently, increasing demands in the Colorado real estate market have created more outside opportunities for contractors. There is a high correlation between the number of building permits in Colorado and bidding on CDOT projects which provides insight into contractor bidding patterns. Historic data suggests as the number of building permit rises award amounts for CDOT projects increase relative to the engineering estimates.

The sustained economic recovery in Colorado has also had a significant effect on project bids. Although oil price is low and likely to stay the same in 2017, the shortage of skilled workers in the construction industry and rise in wages will increase construction costs. Colorado's unemployment rate is at its lowest since the last recession (3.2%) and continues to be much lower than the national average (4.6%). Additionally, a steady increase in construction spending over the past few years contributes to inflationary pressures. With the prospect of a federal infrastructure bill in 2017 and a windfall of additional transportation in Colorado, CDOT is expected to face a tougher construction market and higher bid amounts.

RAMP:

Table 1 details RAMP Partnership and Operations projects (CDOT & Locally Administered) that have not yet been awarded. There are no requested TC actions this month. TC Contingency RAMP Reserve and RAMP Operations Contigency are currently $1,619,838 , and $2,212,724 respectively.

Table 1. RAMP Program Controls Table (remaining unawarded CDOT & Locally Administered projects)

Project Name	Project Budget	RAMP Request	Local Contibution	Other CDOT Funds	Status
CDOT ADMINISTERED					
HPTE P3 Development Fund [1]	$40,000,000	$4,000,000[1]	$0	$0	Under Staff Development
LOCALLY ADMINISTERED					
SH 119 Boulder Canyon Trail Extension	$5,466,350	$4,373,080	$1,093,270	$0	Ad in Jan '17 [2]
SH 392 & CR 47 Intersection Safety Improvements	$3,685,180	$1,842,590	$1,842,590	$0	Ad in Feb '17 [3]
Federal Blvd: 6th to Howard Reconstruction and Multimodal Improvements	$29,181,821	$23,341,821	$5,840,000	$0	Ad in Feb '17 [3]
SH 14 / Greenfields Ct. - Frontage Rd. Relocation and Intersection Improvements	$2,100,000	$1,680,000	$420,000	$0	Ad in Mar '17 [3]
SH 392 & CR 74 Intersection Safety Improvements	$2,249,875	$1,000,000	$1,249,875	$0	Ad in Mar '17 [3]
Loveland I-25 and Crossroads Blvd. Anti-Icing Spray System	$250,000	$200,000	$50,000	$0	Ad in Dec '17 [4]

[1] This total represents the remaining RAMP Development funding still available. Staff has prepared a HPTE Development Fund Policy and Evaluation Criteria guidance document.

[2] Intergovernmental Agreement delayed Ad; [3] ROW delay; [4] Value-Engineering in progress to match available funds.