



# COLORADO

## Department of Transportation

Office of the Chief Engineer

4201 East Arkansas Avenue, Room 262  
Denver, CO 80222

**DATE:** MAY 18, 2016  
**TO:** TRANSPORTATION COMMISSION  
**FROM:** JOSH LAIPPLY, CHIEF ENGINEER  
MARIA SOBOTA, CHIEF FINANCIAL OFFICER  
JANE FISHER, OFFICE OF PROGRAM MANAGEMENT DIRECTOR  
**SUBJECT:** PROGRAM MANAGEMENT WORKSHOP

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### Purpose

The Program Management Office (PMO) continues to evolve. CDOT is progressing toward better metrics and data to help forecast and manage the business. The asset management program is the largest part of the program that we actively manage. Last month's Transportation Commission presentation identified that we need better and new data/metrics to help the Transportation Commission make informed policy decisions. The data presented here is PMO's proposal to refresh the monthly PMO workshop materials with better business analytics and explain why we believe them to be appropriate.

### Action

- 1) Review new data and determine if suggested metrics meet the commission's needs.
- 2) Please see Budget Supplement for TC action required related to two RAMP Partnership projects. As with past RAMP project approval requests, background information is provided in the PMO Workshop materials.

### Background

#### *Integration of Cash Management and Program Management:*

A primary performance objective related to the integration of Cash Management and Program Management is a reduction of the cash balance. Total program spending has a significant impact on CDOT's cash balance. Included in the PMO deck is a bar chart projecting the impact of total program spending through December 2016 on individual cash fund balances and federal cash equivalents. The attached memorandum gives further details of the accounts in the total cash balance. As has been indicated previously, PMO will continue to monitor and report on both fiscal and calendar year 2016 expenditures through June 2016 after which reporting will be limited to the calendar year.

#### *Asset Management:*

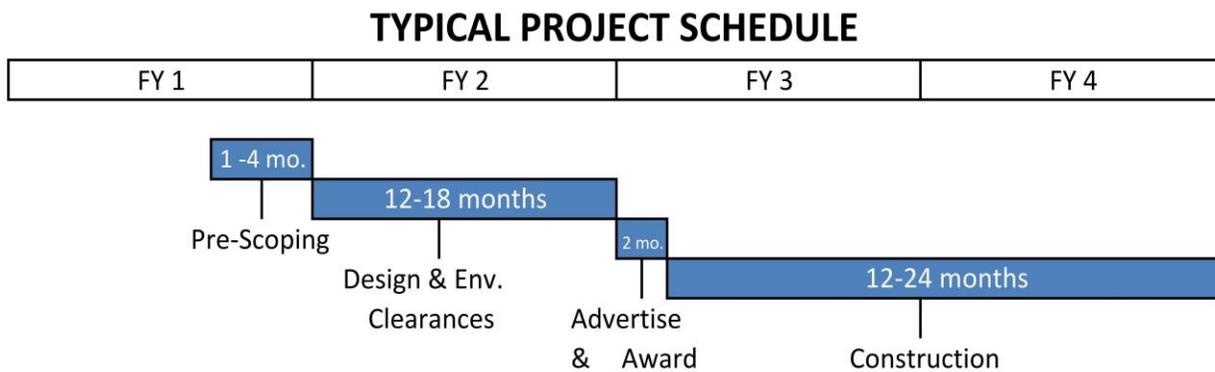
In 2014 and 2015, asset managers and executive management approved various asset management treatment lists. This information included what are commonly referred to as "treatments" for various asset categories (buildings, bridges, culverts, geohazards, intelligent transportation systems (ITS), paving (also known as surface treatments), tunnels, traffic, and walls). The resultant treatment lists for each asset category were distributed to the regions and in most cases bundled to become projects. It is very common for an individual project to be comprised of more than one treatment from an asset



category (e.g. multiple culverts) and also for a project to include items from multiple asset categories (e.g. paving/surface treatment, culverts, bridges, etc.). The resultant bundled projects comprise the Approved Asset Management Program of Projects (aka the Four Year Rolling List of Approved Projects).

In order to meet our annual spending targets, especially given many projects take 18 months to 2 years to complete (see Figure 1), the regions are given flexibility to advance future year projects that are ready for construction. This also helps ensure spending targets are achieved in the event a particular project encounters unforeseen schedule delays. As an illustration of this flexibility, as of mid-FY16, the FY14 List Year of Projects is 75% complete with about 11% currently in construction and the regions have made the decision to initiate construction of about forty FY17, FY18, and FY19 List Year Projects. The flexibility has consistently resulted in expenditure of annual STIP allocations which is aligned with the overall goal of the asset management program.

Figure 1



It is also important to note that a FY15 and FY16 List Year Project is not necessarily designed or constructed using the fiscal year funds in which the project or treatment was originally approved. It is not uncommon, especially in the case of more complex projects, for an individual project to receive funds from multiple fiscal years and as well as multiple funding sources.

**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 the budgeting of groups of projects and individual projects. Given the majority of the RAMP projects are either now in construction or progressing with design, it is proposed that PMO workshop updates be limited to background associated with requested TC actions without the need to continue to detail overall RAMP program status. This means that the multi-page colored spreadsheet detailing RAMP project status staff has been providing every month, even when limited project changes have occurred, will be discontinued. However, as RAMP projects change, we will continue to notify you through budget supplements and the PMO workshop.

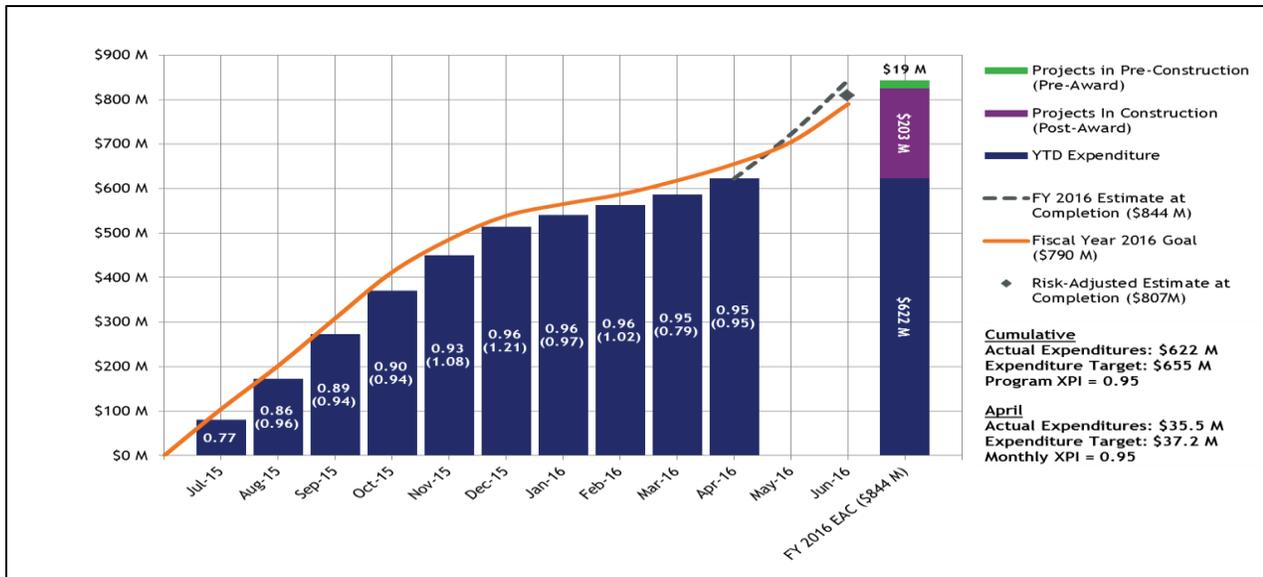
**Details**

*Integration of Cash Management and Program Management:*



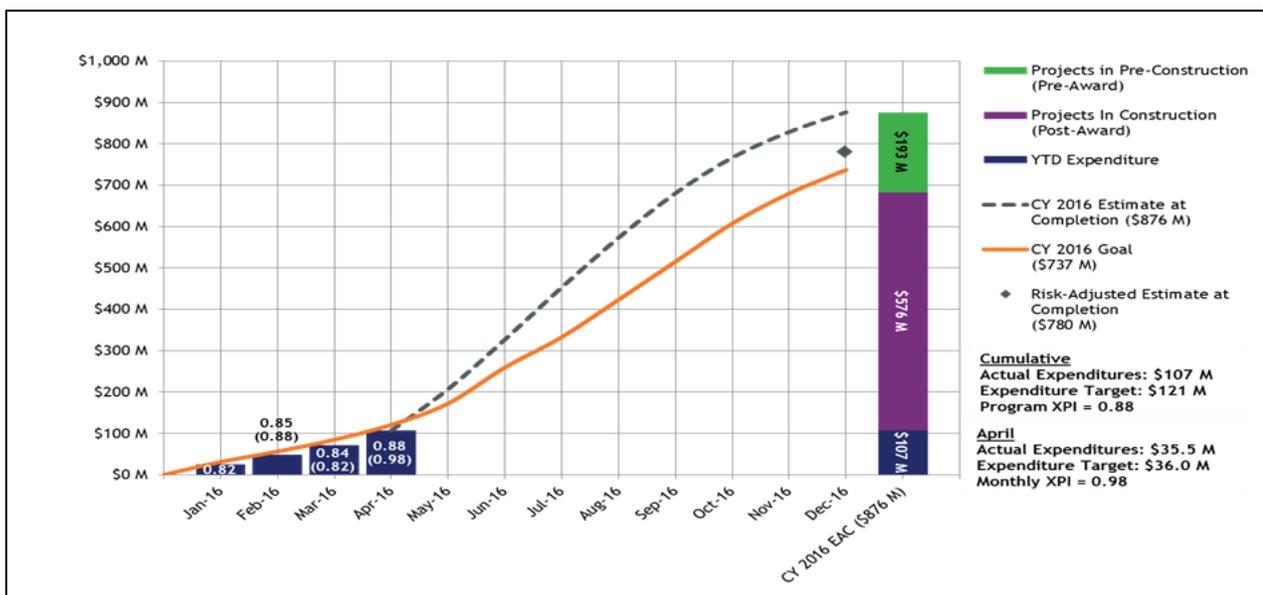
PMO is tracking program delivery at the statewide level using the expenditure performance index (XPI) to evaluate actual construction expenditure performance as compared to planned. In Figure 2 below, the cumulative Fiscal Year 2016 XPI remains at 0.95. April's actual expenditures were slightly below the expenditure target and achieved a monthly XPI of 0.95. The April XPI is less than 1.0 primarily due to delays in project advertisement and construction expenditures when compared to the baseline as established in May 2015. Review of data from the past six years suggests ~20% of total fiscal year expenditures occur in May and June which correlates with an FY16 total expenditure about \$10 million dollars less than the current \$790 million dollar target. A number of actions have been initiated in an attempt to address the potential gap.

Figure 2 - FY 2016 Capital Program Construction Expenditure



In Figure 3 below, the cumulative Calendar Year 2016 XPI is 0.88 which is an improvement since March. April's actual expenditures were very close to the expenditure target (monthly XPI = 0.98) and forecasted expenditures are currently tracking above the CY16 goal of \$737 million dollars.

Figure 3 - CY 2016 Capital Program Construction Expenditure



**Asset Management:**

The following information has been prepared in response to questions that came up during the April TC meeting, it is not anticipated that this level of detail will be provided as part of future PMO workshop materials.

Administration of CDOT’s asset management program is a coordinated effort involving asset managers, DTD, DAF, PMO, and the regions. As detailed in Table 1, there are currently over 868 individual treatments included as part of 523 projects currently tracked by PMO. Figure 4 provides a visual representation of the list year project completion status. As indicated previously, several of these projects include multiple treatments and/or appear on multiple list years based on the 2014 - 2019 treatment lists and approved project lists. An individual treatment may occur in multiple list years if the scope is such that more than one construction season is required or if funding availability given competing priorities in a given year is not sufficient to complete the work.

**Table 1 - List Year Treatment and Project Summary/Status**

List Year	Number of Treatments	Number of Projects	In Progress (Projects)				Number of Projects Complete	% Complete	Anticipated % Complete at CY end
			Pre-Con	%	Con	%			
2014	135	104	15	14%	11	11%	78	75%	84%
2015	166	134	42	31%	43	32%	49	37%	68%
2016	159	124	53	43%	47	38%	24	19%	65%
2017	160	116	81	70%	24	21%	11	9%	30%
2018	143	99	89	90%	8	8%	2	2%	10%
2019	105	81	71	88%	7	9%	3	4%	12%
<b>Single List Year</b>	<b>555</b>	<b>411</b>	<b>229</b>	<b>56%</b>	<b>85</b>	<b>21%</b>	<b>97</b>	<b>17%</b>	<b>45%</b>
<b>Multi List Year</b>	<b>313</b>	<b>112</b>	<b>56</b>	<b>50%</b>	<b>23</b>	<b>21%</b>	<b>33</b>	<b>11%</b>	<b>51%</b>
<b>TOTAL</b>	<b>868</b>	<b>523</b>	<b>285</b>		<b>108</b>		<b>130</b>		

**Figure 4 - Fiscal List Year Project Completion Status**

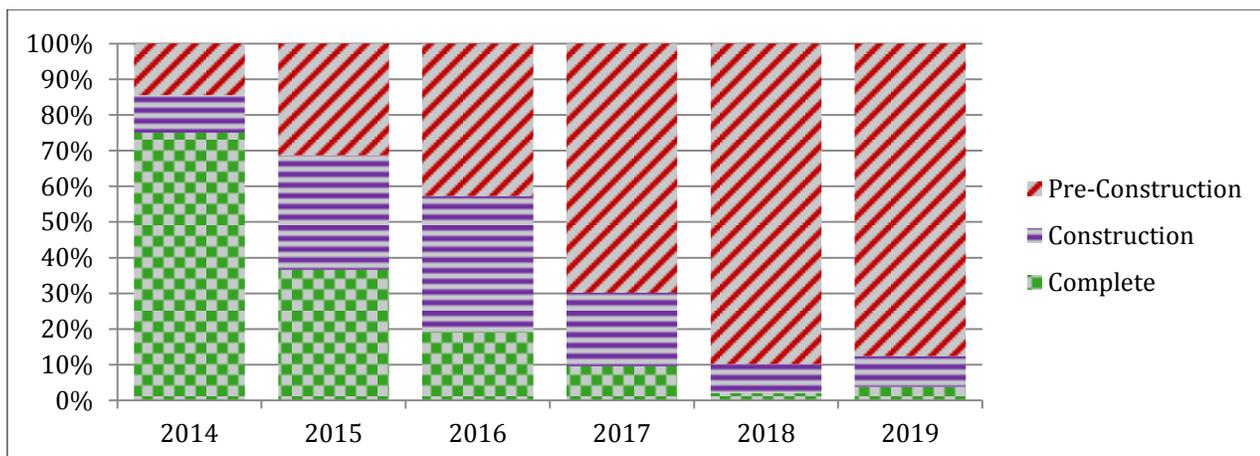


Table 2 summarizes the distribution of the 868 approved treatments across the nine major asset categories by list year.

Table 2 - Distribution of 868 Approved Treatments across Asset Categories by List Year

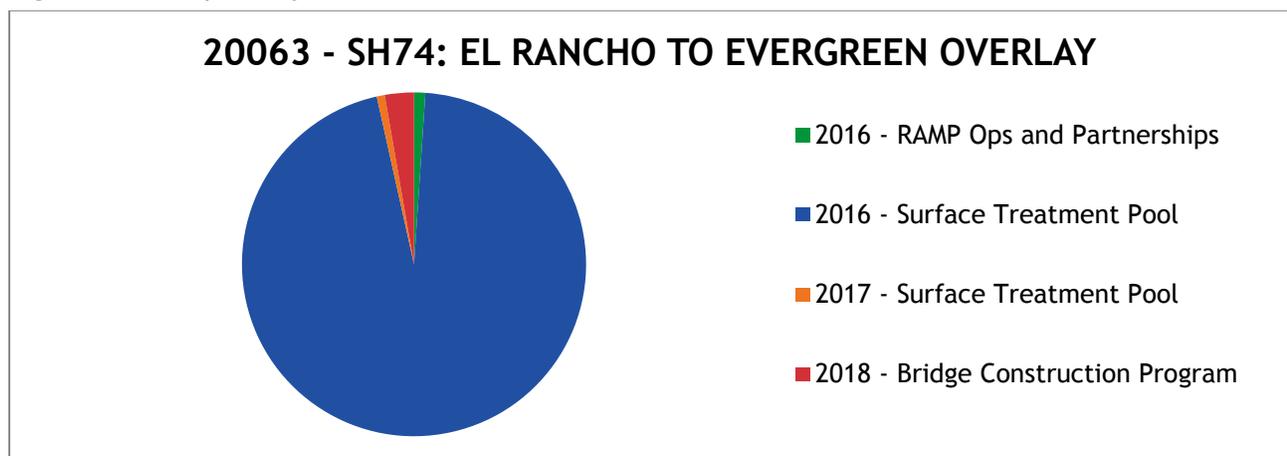
Asset By List Year	Bldg	Bridge	Culvert	GeoHaz	ITS	Surface Treatment	Tunnel	Traffic	Walls	Total Treatments	%
2014	10	50	7	11	5	48	3	0	0	134	16%
2015	6	68	27	8	8	38	10	0	1	166	19%
2016	3	58	18	6	10	45	1	11	7	159	18%
2017	0	60	21	4	2	48	6	15	3	159	18%
2018	0	47	18	2	2	44	7	18	4	142	17%
2019	0	26	10	3	0	47	9	7	3	105	12%
<b>Total</b>	<b>19</b>	<b>309</b>	<b>101</b>	<b>34</b>	<b>27</b>	<b>270</b>	<b>36</b>	<b>51</b>	<b>18</b>	<b>868</b>	
	2%	36%	12%	4%	3%	31%	4%	6%	2%		

Table 3 provides an example of the complexities associated with asset management treatment lists, funding years, and funding sources for an individual project (SH-74 El Rancho to Evergreen). As indicated, the project includes multiple list years, treatments, funding sources, and construction seasons. The complexities are illustrated graphically in Figure 5.

Table 3 - Example Project

Region 1 - SH-74: El Rancho to Evergreen	BUDGETED	EXPENDED	ENCUMBERED	BALANCE
List Year(s): 2014-RO, 2015-BX/ST, 2015-ST				
	\$5,499,293	\$95,263	\$0	\$5,404,030
Surface Treatment Pool	\$5,291,000	\$91,000	\$0	\$5,200,000
2016	\$5,250,000	\$50,000	\$0	\$5,200,000
2017	\$41,000	\$41,000	\$0	\$0
Bridge Construction Program	\$150,346	\$4,263	\$0	\$146,083
2018	\$150,346	\$4,263	\$0	\$146,083
RAMP Ops and Partnerships	\$57,947	\$0	\$0	\$57,947
2016	\$57,947	\$0	\$0	\$57,947

Figure 5 - Example Project



**RAMP:**

Table 4 details RAMP Partnership and Operations projects that have not yet been awarded. As detailed in the Budget Supplement, TC approval of the US50/Dozier project is requested. If approved, this will reduce the remaining RAMP Contingency to \$1,744,839. However, it is important to note that the contingency fund will be replenished as projects are completed and project savings are realized. Also as detailed in the Budget Supplement, TC approval of additional FASTER Safety funds for the US50/SH45 project in construction is requested primarily due to an unforeseen site condition and an asphalt quantity calculation error. (See attached RAMP Budget Request Memorandums for more detail)

Table 4 - RAMP Program Controls (remaining unawarded CDOT administered projects only)

Project Name	Project Budget	RAMP Request	Local Contribution	Other CDOT Funds	Status
US 50 / SH 45 Interchange ** (Budget Supplement Request)	\$12,275,452 + \$1,200,000	\$6,200,000	\$0	\$6,075,452 + \$1,200,000	In Construction
US50/Dozier/Steinmeier (Budget Supplement Request)	\$2,500,000 +\$560,000	\$2,200,000 + \$560,000	\$300,000	\$0	In Bid/Award
US 24 Enhancement Project in Buena Vista	\$2,497,090	\$1,997,090	\$500,000	\$0	Ad in May
Adaptive Traffic Signals System in Longmont	\$5,500,000	\$4,670,000	\$770,000	\$60,000	Ad in May
SH 74 South of El Rancho Safety Shoulders	\$57,947	\$57,947	\$0	\$0	Ad in June
Crossroads Bridge Replacement @ I-25	\$37,000,000	\$35,000,000	\$2,000,000	\$0	Ad in July
New Traffic Signal Controllers in Denver Metro	\$1,060,000	\$1,060,000	\$0	\$0	Ad in August
Maintenance Decision Support System (MDSS)	\$250,000	\$250,000	\$0	\$0	Operations Procurement
HPTE P3 Development Fund †	\$40,000,000	\$15,400,000†	\$0	\$0	Requires Staff Development

\*\* This project has already been awarded and currently under construction.

† This total represents the remaining RAMP Development funding still available. HPTE staff has prepared a HPTE Development Fund Policy and Evaluation Criteria guidance document which the Executive Committee is in the process of reviewing.

**Attachments**

1. Attachment A - Cash Balance Memorandum
2. RAMP Budget Request Memorandums



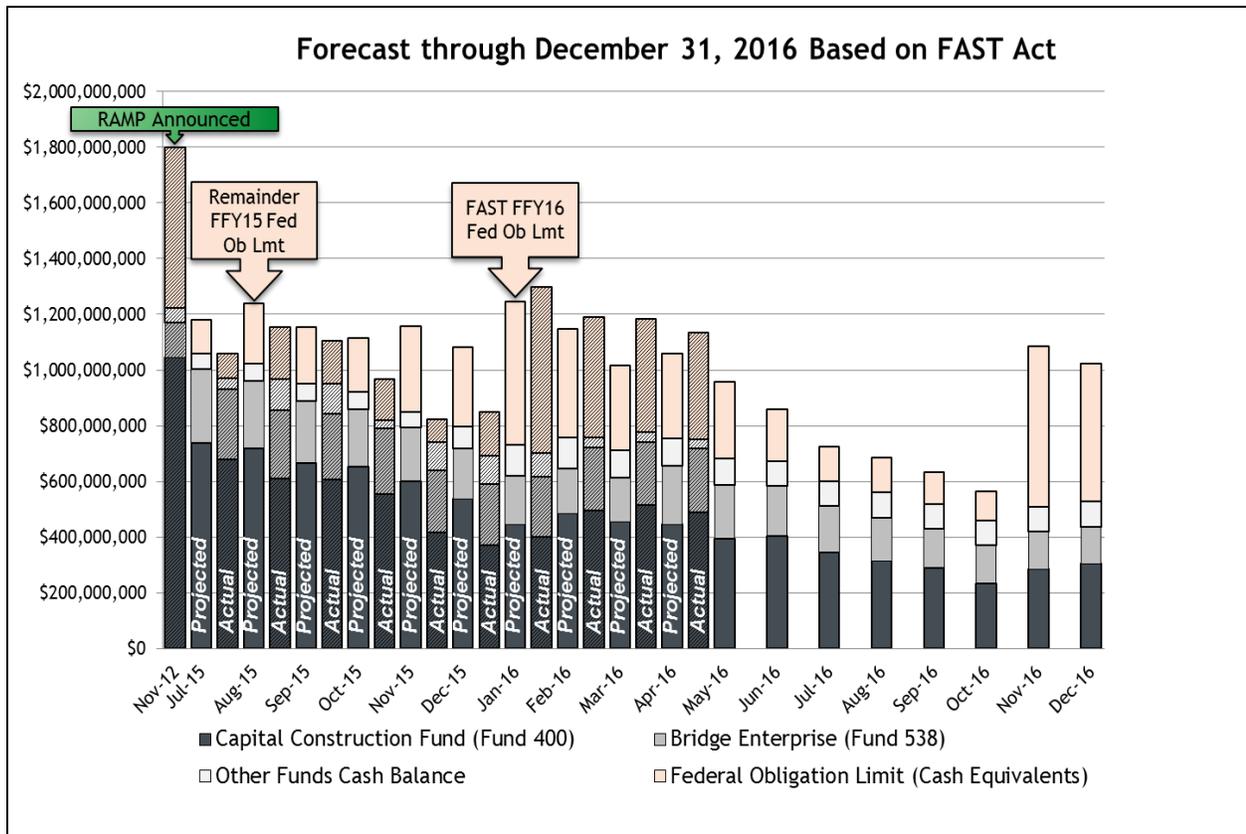


**DATE:** May 18, 2016  
**TO:** Transportation Commission  
**FROM:** Maria Sobota, Chief Financial Officer  
 Josh Laipply, Chief Engineer  
 Jane Fisher, Office of Program Management Director  
**SUBJECT:** Attachment A - Cash Balance Memorandum

Details of Cash Balance Charts

A primary performance objective related to the integration of Cash Management and Program Management is a reduction of the cash balance. Total program spending has a significant impact on CDOT's cash balance. Table 1 below is the cash balance forecast bar chart through December 2016 considering the impacts of the FAST Act on the cash balance and factoring in the construction program expenditure projections provided by the Program Management Office.

Table 1 - Cash & Federal Obligation Target Balance



### Capital Construction Fund (Fund 400)

The cash balance in the chart is split out by fund with the Capital Construction Fund (Fund 400) being the most relevant as its activity includes the receipt of Highway User Tax Fund (HUTF) transfers, receipt of FHWA reimbursements, and the majority of CDOT's construction spending. The projected Fund 400 cash balance at April 30, 2016, was \$445 million. The actual Fund 400 cash balance at April 30, 2016, was \$488 million - a difference of \$43 million. The increase in the cash balance resulted from CDOT actively billing FHWA to convert federal obligation limitation to cash.

The federal obligation limitation, which is CDOT's authorization to bill FHWA for reimbursement of expenditures, is an important driver of cash balance increases and decreases. In general, CDOT begins to spend down the Fund 400 cash balance when the federal obligation has been exhausted. This is because as long as CDOT has federal obligation available, it will receive reimbursement for approximately 80 percent of any qualifying expenditure.

With the passage of the Fixing America's Surface Transportation (FAST) Act, CDOT received its full federal obligation limitation of \$496 million for the year on January 11, 2016. The projected ending balance for federal obligation at April 30, 2016, was \$305 million. The actual ending balance for federal obligation at April 30, 2016, was approximately \$384 million - a difference of \$79 million. Out of the \$496 million in federal obligation received, CDOT has consumed approximately \$360 million, leaving a remaining balance of \$136 for the rest of the year.

As of the end of April, CDOT was holding approximately \$201 million of expenditures in anticipation of billing FHWA. CDOT expects to bill FHWA for the remaining obligation limitation by early Summer 2016. Once the obligation limitation is exhausted, the Capital Construction Fund (Fund 400) cash balance will be spent down until the next fiscal year's new obligation limitation is received in late Fall 2016.

While the passage of the FAST Act reduces uncertainty regarding federal obligation receipts in 2016, it will continue to be important for CDOT to closely monitor the cash balance as the Cash Management initiative progresses. In April, Department staff provided the Transportation Commission with a recommendation of a cash balance threshold to sustain an increased capital construction program while effectively managing expenditure timing and related risks.

### Bridge Enterprise Fund (Fund 538)

The projected Bridge Enterprise Fund (Fund 538) cash balance at April 30, 2016, was approximately \$210 million. The actual Fund 538 cash balance at April 30, 2016, was approximately \$231 million - a difference of \$21 million. The cash balance projections for Fund 538 for April 2016 through December 2016 were updated to reflected additional information received related to the the timing of spending on projects such as Grande Avenue, ILEX, and Central 70. The majority of the Fund 538 cash balance is needed to commit to Central 70 milestone payments during construction to limit CBE's long term debt obligation.

### Other CDOT Funds

Included in Other Funds are cash balances related to Aeronautics, HPTE, and the State Infrastructure Bank, among other smaller funds. Other Funds generally do not fluctuate significantly from month to month.



# STATE OF COLORADO

## DEPARTMENT OF TRANSPORTATION

Region 2 – Region 2 Transportation Director  
902 N. Erie Avenue  
Pueblo, CO 81001  
(719) 546-5452



## MEMORANDUM

**TO:** COLORADO TRANSPORTATION COMMISSION  
**FROM:** KAREN ROWE, REGION 2 TRANSPORTATION DIRECTOR  
**CC:** JOSH LAIPPLY, CHIEF ENGINEER, MARIA SOBOTA, CHIEF FINANCIAL OFFICER  
JANE FISHER, PMO DIRECTOR, MIKE LEWIS, DEPUTY EXECUTIVE DIRECTOR  
**DATE:** APRIL 28, 2016  
**SUBJECT:** ADDITIONAL RAMP CONTINGENCY FUNDS FOR RAMP PROJECT - US50 / DOZIER (#19906)

### Purpose

The purpose of this memorandum is to request \$560,000 of RAMP Contingency funds to award a RAMP Partnership (Canon City)/Operations project - US 50/Dozier/Steinmeier Intersection Improvement and Signal Improvements which had bids open on April 21, 2016.

### Action

Transportation Commission is being asked to approve use of RAMP Contingency Funds so that CDOT can award the project to the low bid contractor. Per Policy Directive 703.0, dated August 27, 2014, Appendix C states that Transportation Commission approval is needed for RAMP Partnership/Operational projects of greater than or equal to 7.5% if more than \$100,000 above the original approved amount. The original total approved amount was \$2,500,000 (\$2,425,000 construction funds) and the award bid amount over run is \$560,000 which equates to 23%. The current remaining RAMP Contingency amount is \$2.3 million. The project has a fixed completion date of December 2, 2016.

### Background

This is a combination of RAMP Operation and RAMP Public-Public Partnership project with Canon City. The local's match is \$225,000 cash and \$75,000 in-kind service (The local provided survey work for the design). The total original construction budget of the project is \$2,425,000. Bids were opened on April 21st. An additional \$560,000 (rounded up from \$557,200) is needed in order to award the project. Regional Priority Program (RPP) funds were not used on this project.

### Details

The project was advertised with the engineer estimate higher than construction budget. There was a low interest in the project because of its small size resulting in only two bidders. The low bid came in higher than the engineer's estimate and was 23% over the construction budget.

The project has a fixed completion date of December 2, 2016. The Contractor will hold the bids if the funds can be approved at the May 2016 TC meeting. CDOT has contacted the local entity (Canon City) for additional matching funds. The local responded said they did not have additional funds for the project. Currently the region does not have any other funding source available to offset this deficit other than the RAMP contingency funds. The project is not scalable to reduce scope and re-advertise within the budget.

### Key Benefits

Additional funding will ensure the award of the project this year and have the project to be built by the end of 2016.

### Recommendations

- 1.) Approve RAMP Contingency funding in the amount of \$560,000 to award the project (Staff Recommendation).
- 2.) Decline the request, look for ways to add other sources of funds which will most likely require the need to re-advertise the project in the near future to change phasing so that construction that is completed in 2017.
- 3.) Decline the request and cancel the project

### Next Steps

If the Transportation Commission approves the RAMP Contingency funding request, CDOT will complete the necessary steps to award the project. If the request is denied, CDOT with the Central Front Range TPR will consider what funds could be added to the project and whether the contractor can hold the bids.

# STATE OF COLORADO

## DEPARTMENT OF TRANSPORTATION

Region 2 – Region 2 Transportation Director  
902 N. Erie Avenue  
Pueblo, CO 81001  
(719) 546-5452



## MEMORANDUM

**TO:** COLORADO TRANSPORTATION COMMISSION  
**FROM:** KAREN ROWE, REGION 2 TRANSPORTATION DIRECTOR  
**CC:** JOSH LAIPPLY, CHIEF ENGINEER, MARIA SOBOTA, CHIEF FINANCIAL OFFICER  
JANE FISHER, DIRECTOR - PMO, MIKE LEWIS, DEPUTY EXECUTIVE DIRECTOR  
**DATE:** APRIL 28, 2016  
**SUBJECT:** ADDITIONAL FASTER SAFETY FUNDS FOR RAMP PROJECT - US50 WEST (#19751)

### Purpose

The purpose of this memorandum is to request the Transportation Commission approval on the use of \$1,200,000 of Faster Safety funds to complete the construction of US50 West EB Widening project by June 2016.

### Action

Per Policy Directive 703.0, dated August 27, 2014, Appendix C states that Transportation Commission approval is needed for RAMP Partnership/Operational projects over \$1,000,000 after award of the project.

### Background

This is a combination of RAMP Operations and RAMP Public-Public Partnership project. The local's match is by taking over the maintenance responsibilities of several state highways (Devolution). The initial approved RAMP budget was \$11,200,000 (\$5 Million RAMP partnership, \$1.2 Million RAMP operational, \$5 Million Faster Safety ). Later additional funds were added for surface treatment and the current total budget of the project is \$13,427,903. There were no Regional Priority Program funds used in this project.

Due to unforeseen field conditions and a quantity calculation error for asphalt, it is projected that the worst case total funding shortage of the project will be \$1.2 million. The request of the additional \$1.2 million Faster Safety funds was approved by the Faster Safety Mitigation Executive Committee on April 21, 2016 per the requirements identified by the new PD guidelines for use of FASTER safety funds.

### Details

The construction started on January 29, 2015. The top layer of asphalt is scheduled to be placed in the middle of May 2016 and the project is scheduled to be completed in June, 2016. During the construction, subgrade issues and fiber optic line conflicts were found which added costs which were covered by the Minor Contract Revision funds. Near the end of the project, a quantity error in asphalt was found that caused the final projected project cost over-run.

CDOT has contacted local entity for additional match fund. The locals responded with no money available or additional highways to get devolved for the matching funds. The project team has carefully reviewed the remaining work, and concluded that the project will need additional funding of \$1.2 million if the contractor meets all the asphalt incentive payments for the project although it could be less. Any project savings will be immediately returned to the Statewide FASTER Safety program.

### Key Benefits

Funding will ensure the completion of the project without cutting the original scope of the work which is critical to the success of the project.

### Recommendations

- 1.) Approve the FASTER safety funding in the amount of \$1.2 million to complete the project (Staff Recommendation). Any possible project savings will be returned to the FASTER safety funding pool.
- 2.) Deny this fund and CDOT works with Pueblo and looks at other ways to pay for the additional work.

### Next Steps

If the Transportation Commission approves the funding request, the CDOT will complete the necessary steps to encumber the funds and complete the project. If it does not, CDOT will continue to look for other options