



COLORADO

Department of Transportation

Office of the Chief Engineer

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MEMORANDUM

TO: TRANSPORTATION COMMISSION
FROM: PETER KOZINSKI, ROADX PROGRAM DIRECTOR
DATE: JANUARY 21, 2016
SUBJECT: ROADX: FIRST TWO PROJECTS & UPDATE

Purpose

This memorandum is in response to the November 2015 Transportation Commission request to be kept apprised of RoadX efforts that exceed \$1 million.

Action

The RoadX Program is asking the Transportation Commission to review the scope of the first two projects and be aware that expenditures in excess of \$1 million are pending.

Background & Details

When the Transportation Commission approved the RoadX FY 16 budget in November 2015 the Commission asked to be apprised when RoadX intends to spend more than \$1 million on a given project or effort. The RoadX team looks to advance the I-25 Managed Motorway and I-70 Mountain Corridor Connected Vehicle projects. Each project is in excess of \$1 million.

I-25 South Metro/Managed Motorway Demonstration Project (Ridge Gate Parkway to University Blvd.) - Managed Motorways is a concept that has been successfully implemented on the M1 in Melbourne, Australia. For five years this concept has reduced recurring congestion, optimized the capacity of the freeway and recaptured the benefits of taxpayer investment in the existing roadway. The Colorado Managed Motorways project would build upon the Intelligent Transportation Systems (ITS) applications already present in the I-25 corridor, including ramp metering and traveler information systems, to improve the overall average speed and vehicular throughput in the corridor during peak demand (rush hour).

To perform properly, Managed Motorways require very precise data on real time traffic conditions to operate advanced computer algorithms. For this pilot project, the computer algorithms will be housed in Australia and the data will be exchanged via the cloud. To collect the needed data, the Project will install detection loops in I-25 and the ramps so that very accurate speed and density readings can be obtained. Once the algorithms identifies where and when to best let additional vehicles enter the system it will communicate that to the updated ramp meters (vehicle access) throughout the corridor. New ramp meters will be added at additional locations and any video blind spots will be addressed. At key arterial connections to I-25 real-time options will be presented to drivers on VMS boards that will be installed.

After the I-25 Managed Motorway Demonstration Project installs the equipment necessary to provide precise real time data and traffic flow control, the project will operate the Managed Motorways concept for 6 months, evaluate the effectiveness of the system, and determine if the concept performance is compelling enough for broader implementation throughout Colorado.

Professional Services - \$2 million
Construction (including CE & Indirects) - \$5.6 million
Total Project Estimate - \$7.6 million



I-70 Mountain Corridor Connected Vehicle (CV) Project (I-70 Mtn. Corridor C-470 to Vail) -

The primary goal of the CV Pilot Program is to maximize safety and mobility on the I-70 mountain corridor through probe data collection, vehicle-to-infrastructure (V2I) communication, and related decision support analysis to enable real-time traffic management and traveler information and safety applications. This project will:

- Equip more than 700 CDOT, first responder, ski shuttle, and commercial vehicles on I-70 with Dedicated Short Range Communication (DSRC) devices to facilitate data collection
- Install more than 24 DSRC devices on the roadside to enable data collection and timely V2I safety alerts

This data will then be used to provide travelers with real-time, hands-free, text-to-voice safety and travel alerts via smartphone mobile application technology. These alerts could include: curve speed warning, queue warning, virtual variable speed limits, spot weather advisories, motorist advisory warnings, advanced traveler information systems, freight travel information systems, smart truck parking, work zone warning, hazard warning (historical), incident advisory, avalanche warning, rock fall warning, sun glare warning, low visibility warning, managed lanes info, travel time, chain law activation, loss of friction, wrong way driver warning, emergency response vehicle warning.

Professional Services - \$5.9 million

Construction (including CE & Indirects) - \$5.3 million

Total Project Estimate - \$11.2 million

