



Date: August 19, 2015

To: High Performance Transportation Enterprise Board

From: Brent E. Butzin, HPTE General Counsel
Peter Kozinski, OMPD

Subject: I-70 Mountain Corridor Peak Period Shoulder Lane (PPSL) Toll Rate Ranges

Purpose

The purpose of this memorandum is to summarize staff's planned to approach for variable toll rates for the I-70 Mountain Corridor Peak Period Shoulder Lanes (PPSL), and facilitate a discussion with the Board regarding the establishment of toll rates ranges.

Action

This item is for discussion and preliminary approval only. The toll rate range for the I-70 PPSL as stated will be presented at public outreach events in September and, subject to public input, will be presented to the Board for consideration and approval in October.

Background

I-70 Mountain Corridor Peak Period Shoulder Lane (PPSL) is expected to open for tolled traffic in Winter 2015. The I-70 Mountain Corridor will be the first toll operation in the nation focused exclusively on a recreational corridor. The information that has been collected historically concerning the value of time for travelers, which is used as a basis for setting toll rates, comes mostly from commuter corridor surveys. So there is little comparable data available for setting initial toll rates for the PPSL, or for predicting the flexibility required for adjusting toll rates over the course of a day of operations.

Details

HPTE's consultants recommend setting a base toll rate sufficient to cover toll collection costs, but low enough to attract initial customers to the toll lane, even when traffic in the general purpose lanes is relatively light and the corridor is free flowing. Given the unique travel characteristics of the I-70 Mountain Corridor, traffic volumes can increase by 200% to 300% over a period of 2-3 hours. As a result, PPSL operations will require a high level of flexibility to adjust toll rates, as an increased toll rate is the sole mechanism available to better ensure a reliable through-trip for the toll-paying customer.

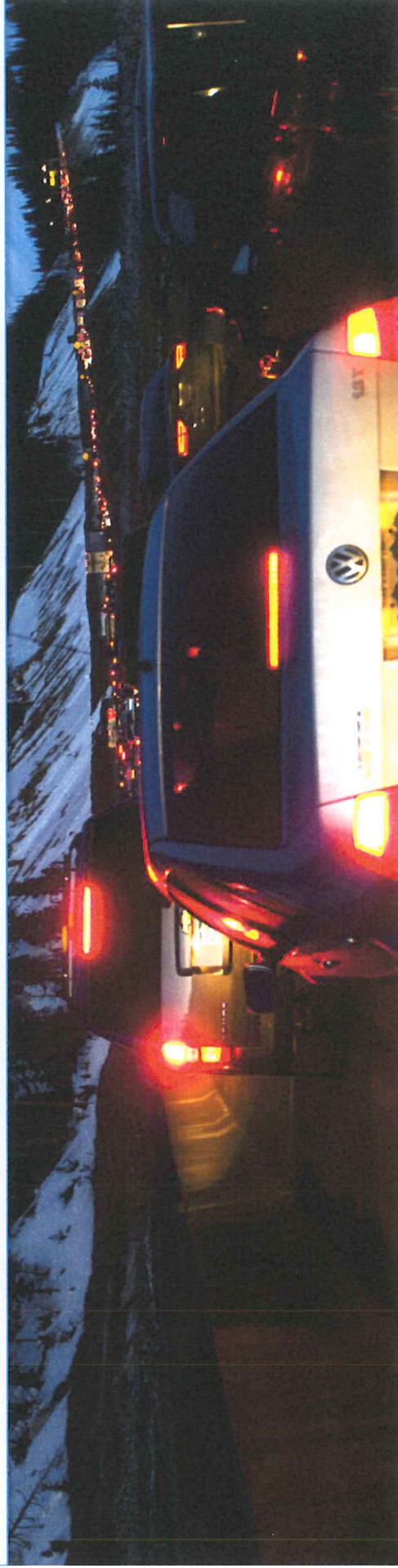
To allow for this flexibility, staff is recommending the establishment of an open toll rate range for the PPSL. Actual toll rate changes will be based on traffic volume in the corridor as compared to volumes being experienced upstream at the EJMT and US 40 Empire. Under this approach, the Board would be asked to approve a minimum and maximum toll rate. The toll would be subject to adjustment by PPSL operations to maintain target operational speeds for traffic in the PPSL. Real-time travel speeds in the PPSL will be monitored by PPSL operations. The specific toll rate ranges to be recommended by staff and HPTE's consultants suggests a toll rate range from a minimum toll of \$3.00 at initial opening to a maximum toll of \$30.00 (at the automated transponder rate). Staff is working to establish guiding metrics and triggers for PPSL operations to use in determining when adjustments to toll rates (increase and decrease) within the approved range should be implemented.

It is also the above-signed attorney's opinion as counsel to HPTE that the Board is legally permitted to approve an open toll range that will allow staff to adjust toll rates based on real-time corridor conditions. Particularly, Section 43-4-408(3)(b), C.R.S. authorizes HPTE to incorporate congestion pricing into a schedule of user fees imposed by the enterprise.



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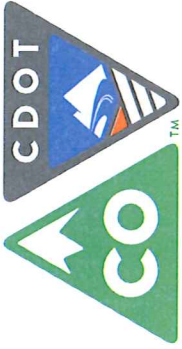
I-70 Mountain Express Lanes Project



I-70 Mtn. Express Lanes – Agenda

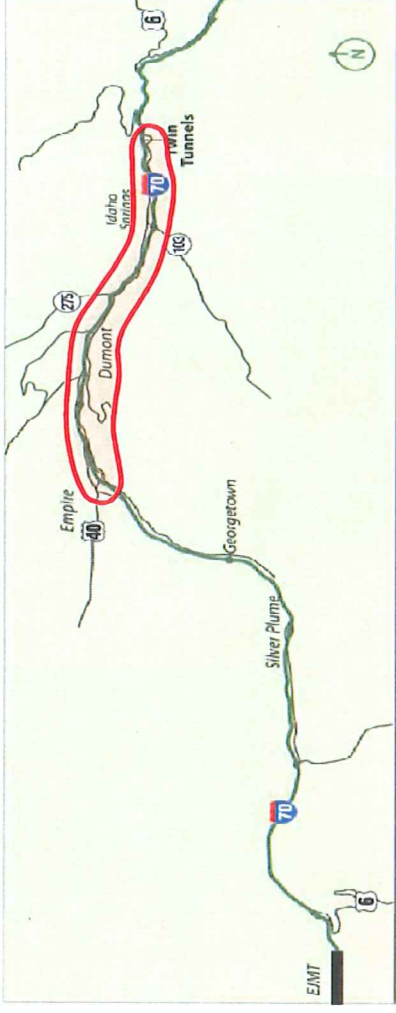
- **Project Overview**
- **Proposed Operations**
- **Proposed Toll Rates**
- **Next Steps**





I-70 Mtn. Express Lanes – Project Overview

- **Project is unique:**
 - ❖ Inside shoulder used as an Express Lane during peak congestion periods
 - ❖ Recreational corridor
 - ❖ Eastbound, only 10 miles from Empire Junction to Memorial Tunnel
- **FHWA MOU:**
 - ❖ Operations are not to exceed 72 days or 657 hours per year
 - ❖ Anticipate operations during weekends and holidays
 - ❖ Hours of operation vary but usually between 9 AM to 9 PM





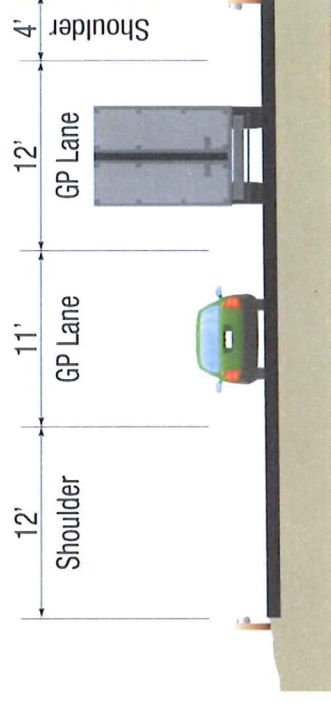
I-70 Mtn. Express Lanes – Project Overview

Normal Operations

- **Project Template:**

- ❖ **During normal operations:**

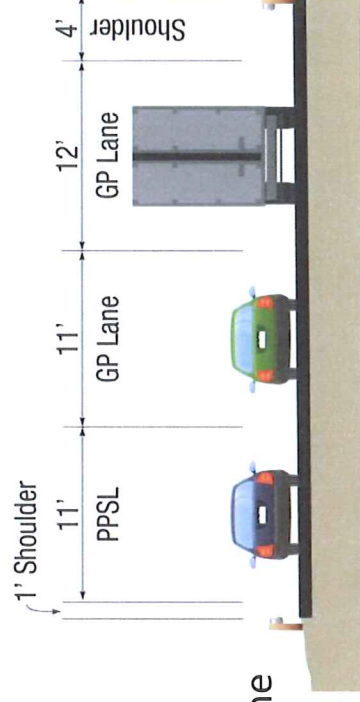
- The inside left shoulder is 12 feet wide
 - The outside right shoulder is 4 feet wide



Peak Period Operations

- ❖ **During Peak period operations:**

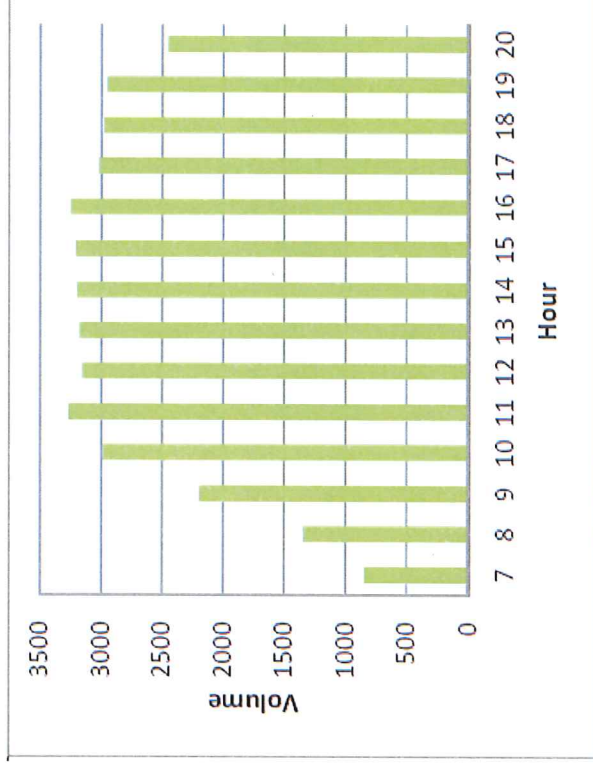
- The inside left shoulder is 1 foot wide
 - The outside right shoulder is 4 feet wide
 - PPSL is 11 feet wide with no buffer to GP Lane





I-70 Mtn. Express Lanes – Project Overview

- **Typical peak period volumes:**
 - ❖ Posted speed limit is 55mph
 - ❖ Depending on the day, traffic volumes start building anywhere from 7:30 AM to 10 AM
 - ❖ Speeds start degrading at 2,000 VPH. Speeds at 3,000 VPH are 5 – 10 mph
 - ❖ The majority of trips are through-trips from Empire Junction to the Memorial Tunnels



Data Source: CDOT Twin Tunnels ATR



I-70 Mtn. Express Lanes – Operations

- **Operating guidelines:**
 - ❖ Monitor upstream traffic at EJMT and US 40 Empire on-ramp
 - ❖ Early sweep of shoulder for debris is needed before opening for use
 - ❖ Target traffic volume on shoulder ranges 750 - 900 vph – LOS C
 - ❖ Rules that will need to be formalized before first opening:
 - Not operated as an HOV Facility (average occupancy in this corridor is 3.2)
 - Motorcycles will be subject to tolls
 - No trailers of any kind
 - Also to be determined:
 - Number of axles
 - Length limitations
 - ❖ I-70 Mountain Express Lanes designed to provide additional capacity in times of heavy demand, therefore it will likely not open when demand does not materialize. Not opening will likely correlate to weather & snow storms.



I-70 Mtn. Express Lanes – Operations

- The I-70 Mountain Express Lane is scheduled to open by year end
- Successful operations depend upon providing reliable travel-time through the Corridor
 - ❖ Too many vehicles in the Express Lane will reduce reliability
 - ❖ Too few vehicles give the perception of wasted capacity
 - ❖ Demand will fluctuate from weekend to weekend
- Establishing a proper toll rate/range for the congestion and level of demand being experienced will provide the operating flexibility required to meter how vehicles use the I-70 Mountain Express Lane.



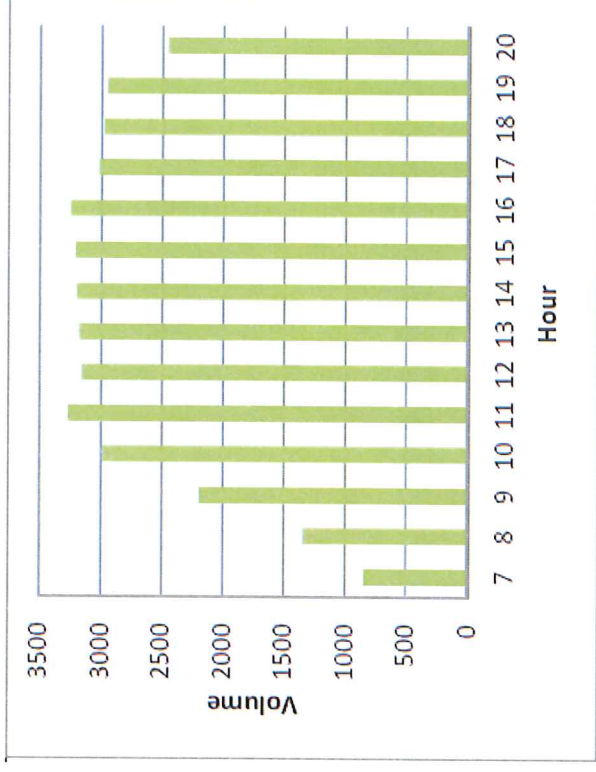
I-70 Mtn. Express Lanes – Toll Rate Range

- The I-70 Mountain Express Lane is:
 - The first toll operation focused on a recreational corridor and has a high level of national interest
 - Only open during peak periods, and the opening toll rate should be sufficient to cover toll collection costs but low enough to attract a customer even though traffic in the GP lanes is light and the corridor is free flowing
- The mountain corridor offers summer recreation, concerts, sporting events as well as winter recreation as the primary access to seven world class ski resorts
 - As a result, depending on weather and competing events, highway traffic volumes can increase by 200% to 300% over 2 – 3 hours or remain light for the entire day
 - The Express Lane operations will require a high level of flexibility. Adjusting the toll rate is the sole mechanism to better ensure a reliable through-trip for the toll customer.



I-70 Mtn. Express Lanes – Toll Rate Range

- **Typical peak period volumes:**
 - ❖ Depending on the day, traffic volumes start building from 7:30 AM to 10 AM
 - ❖ Speeds start degrading at 2,000 VPH
Speeds at 3,000 VPH are 5 – 10 mph
 - ❖ The majority of trips are through-trips from Empire Junction to the Memorial Tunnels



Data Source: CDOT Twin Tunnels ATR



I-70 Mtn. Express Lanes – Toll Rate Range

Stated time frames demonstrate a typical day. Actual toll rate changes will be based on traffic volume in the corridor as compared to volumes being experienced upstream at the EJMT and US 40 Empire.

		ExpressToll			License Plate Tolling		
From	To	MIN	MAX	MIN	MAX		
9:00 AM	10:15 AM	\$ 3.00	\$ 30.00	\$ 5.00	\$ 30.00		
10:15 AM	12:15 PM	\$ 4.00	\$ 30.00	\$ 6.00	\$ 30.00		
12:15 PM	5:00 PM	\$ 5.00	\$ 30.00	\$ 7.00	\$ 30.00		
5:00 PM	6:15 PM	\$ 6.00	\$ 30.00	\$ 8.00	\$ 30.00		
6:15 PM	11:00 PM	\$ 4.00	\$ 30.00	\$ 6.00	\$ 30.00		

Because demand fluctuates heavily from weekend to weekend, toll rates need to be flexible within a Min & Max Range to Ensure Trip Reliability. We are requesting the authority to operate between \$3.00 at opening and an upper limit toll rate of \$30.00 to address those days that generate unusually heavy corridor demand.



I-70 Mtn. Express Lanes – Next Steps

- Next steps in establishing toll rates/range for the I-70 Mountain Express Lanes Project:
 - ❖ September 2015: Public outreach on operating guidelines and toll range
 - Two Telephone Town Hall Meetings – *September 21 Tentative*
 - Open House in Clear Creek County – *September 24 Tentative*
 - ❖ October 2015: Seek HPTA Board Approval on operating guidelines and toll rate range