



Date: January 8, 2016  
To: High Performance Transportation Enterprise Board  
From: Brent E. Butzin, HPTE General Counsel  
Joe Mahoney, OMPD  
Subject: Informal review of initial I-70 Mountain Express Lane Operations

Purpose

To provide initial operating and performance data for the first 11 days of I-70 Mountain Express Lane operations.

Action

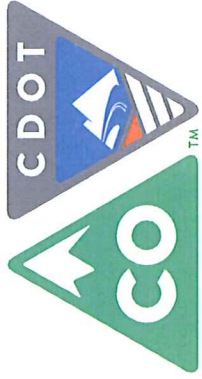
This item is for information and discussion.

Background

The I-70 Mountain Express Lane opened on December 13<sup>th</sup>, 2015 for operations. The Express Lane opened on eleven days between December 13<sup>th</sup> and January 3<sup>rd</sup>.

Details

See attached presentation.



**COLORADO**  
Department of  
Transportation



# I-70 Mountain Express Lane – Update January 2016



## I-70 Mtn. Express Lane – Agenda

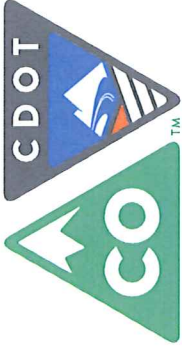
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- **Overview of First 11 Days of Operation**
- **Findings**
- **Next Steps**



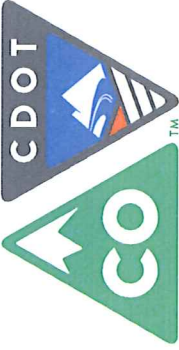
## I-70 Mtn. Express Lane – Overview

- **Operations Overview:**
  - ❖ Opened on December 13<sup>th</sup> – soft opening with no toll.
  - ❖ 11 days of operation between December 13, 2015 and January 3, 2016
  - ❖ Over the 11 days 240,000 vehicles traveled the EB corridor when the Express Lane was open.
  - ❖ All E-470 Toll Systems operated as expected. Toll Rate overrides were 12 minutes to process.
  - ❖ CTMS Systems, ATM, VTMS Signs all operated as expected



## I-70 Mtn. Express Lane – Overview

- **Operations Overview:**
  - ❖ Eight incidents occurred on four separate days. Six were in GP lanes / 2 in Express Lane. Incidents were efficiently cleared.
  - ❖ Incident Management protocols were followed and worked well.
  - ❖ In response to incidents the Express Lanes were closed and then reopened. Express Lanes initially opened at \$0.00 toll to clear corridor back-ups that stretched for 4 – 6 miles. Once the back-up clears tolls are reinstated
  - ❖ Prior to the Mountain Express Lane corridor speeds started to degrade at 2,000 VPH at 3,000 VPH speeds degrade to 5 – 10 mph. On January 2<sup>nd</sup> 3<sup>rd</sup> the corridor handled peak hourly flows of 4,400 and 4,500 VPH respectively at 65 mph.

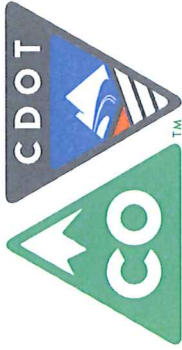


# I-70 Mtn. Express Lane – Overview

## I-70 Mountain Express Lane Operations Summary December 12th, 2015 - January 3rd, 2016

| Date                     | Express Lane Volume | General Purpose Lanes Volume | Total Corridor Volume | Peak Hour | Peak Hour Volume | Express Lane Hours of Operation | Notes               |                      |
|--------------------------|---------------------|------------------------------|-----------------------|-----------|------------------|---------------------------------|---------------------|----------------------|
|                          |                     |                              |                       |           |                  |                                 | Did Not Open - Snow | Soft Opening No Toll |
| Saturday, December 12th  | 105                 | 20,389                       | 20,494                | 5PM-6PM   | 2,332            |                                 | Did Not Open - Snow |                      |
| Sunday, December 13th    | 7,039               | 26,794                       | 33,833                | 2PM-3PM   | 3,480            | 9AM-7:00PM                      | No Incidents        | Soft Opening No Toll |
| Saturday, December 19th  | 769                 | 14,248                       | 15,017                | 2PM-3PM   | 1,748            | 11AM-6PM                        | No Incidents        | Toll Rate \$4.00     |
| Sunday, December 20th    | 424                 | 14,192                       | 14,616                | 1PM-2PM   | 1,482            | 9AM-6:00PM                      | No Incidents        | Toll Rate \$3.00     |
| Saturday, December 26th  | 403                 | 12,463                       | 12,866                | 2PM-3PM   | 1,270            | 11AM-6PM                        | No Incidents        | Toll Rate \$3.00     |
| Sunday, December 27th    | 874                 | 14,937                       | 15,811                | 2PM-3PM   | 1,951            | 9AM-6:00PM                      | 2 incidents         | Toll Rate \$3.00     |
| Monday, December 28th    | 548                 | 9,711                        | 10,259                | 2PM-3PM   | 1,385            | 3:50PM-5:20PM                   | 1 incident          | Toll Rate \$3.00     |
| Wednesday, December 30th | 742                 | 29,244                       | 29,986                | 3PM-4PM   | 3,430            | 1PM-7PM                         | No Incidents        | Toll Rate \$3.00     |
| Thursday, December 31st  | 297                 | 16,382                       | 16,679                | 2PM-3PM   | 2,963            | 1PM-6PM                         | No Incidents        | Toll Rate \$3.00     |
| Friday, January 1st      | 710                 | 16,521                       | 17,231                | 2PM-3PM   | 3,151            | 2:30PM-6:30PM                   | No Incidents        | Toll Rate \$3.00     |
| Saturday, January 2nd    | 3,203               | 43,565                       | 46,768                | 2PM-3PM   | 4,392            | 9AM-8:30PM                      | 2 incidents         | Toll Rate \$3.00     |
| Sunday, January 3rd      | 2,224               | 36,966                       | 39,190                | 12N - 1PM | 4,540            | 9AM-6:00PM                      | 3 incidents         | Toll Rate \$3.00     |

| Season Totals       | Current | Allowable | Percent |
|---------------------|---------|-----------|---------|
| Days of Operations  | 11      | 73        | 15%     |
| Hours of Operations | 79      | 657       | 12%     |

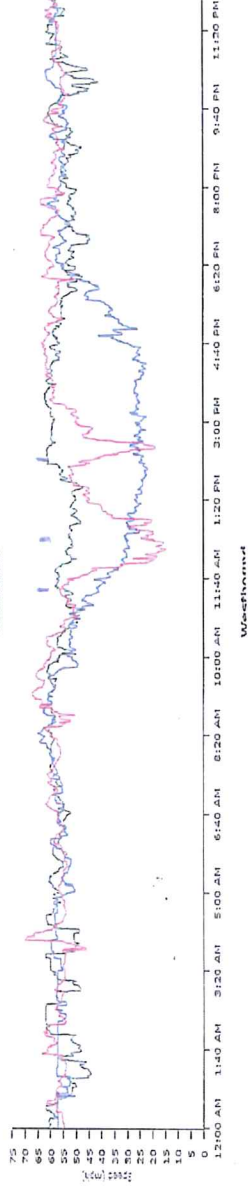


## I-70 Mtn. Express Lane – Overview

- ❖ Use of Express Lane to clear back-up resulting from incidents is substantially improved. Graph below shows incident at 11:31 cleared at 12:18 / second incident at 2 PM (January 3 is purple)

### Sunday, January 3 Speed and Travel Time Empire to Central City Parkway

Speed for I-70 between US-40/Exit 252 and CR-314/Exit 243  
Averaged by 1 minute in January 02, 2016; January 04, 2015, and January 03, 2016  
Eastbound

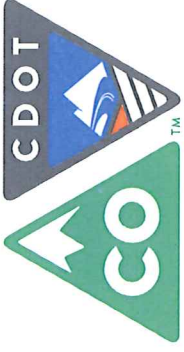




## I-70 Mtn. Express Lane – Findings

- **Findings:**
  - A wide range in EB corridor volumes: 10,200 on the 28<sup>th</sup> / 46,750 on the 2<sup>nd</sup>, 40,450 in the eleven hours between 9AM and 8PM
  - Express Lane provides throughput volume on par with GP Lanes
  - The Express Lane is a resource to clear congestion resulting from an incident. Once opened and the congestion cleared, the Express Lane remains open charging a toll.
  - Some lane dipping is occurring but most abide by the solid white line
  - Use restrictions of less than 25 feet and 2 axles seem to be holding
  - LPT transactions are @ 60%
  - Stakeholders have been supportive.
  - The Frontage Road is not congested.
  - Media reports have been positive.





## I-70 Mtn. Express Lane – Next Steps

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- Refinements in Operating SOPs
- Additional Stakeholder meetings to further refine operating SOPs
- Project is still being completed. MVRDs are not yet operational
- See how corridor behavior adjusts with predictable free flow conditions from Empire to Denver.



## I-70 Mtn. Express Lane –



- Questions??