



MEMORANDUM

TO: HPTE BOARD OF DIRECTORS
FROM: KELLY BROWN, TOLLING OPERATIONS MANAGER
DATE: JUNE 20, 2018
SUBJECT: REQUEST FOR APPROVAL OF PROPOSED 2018/2019 TOLL RATE ADJUSTMENTS FROM HPTE AND PLENARY ROADS DENVER

Purpose and Requested Action

This memorandum presents a request from HPTE Staff and Plenary Roads Denver that the High Performance Transportation Enterprise (HPTE) Board of Directors approve the 2018/2019 toll rate adjustments for AVI and LPT transactions presented at the June 2018 Board Meeting. HPTE and Plenary Roads Denver each have a separate presentation and supporting documentation for their respective toll rate adjustment approval request.



COLORADO
Department of
Transportation



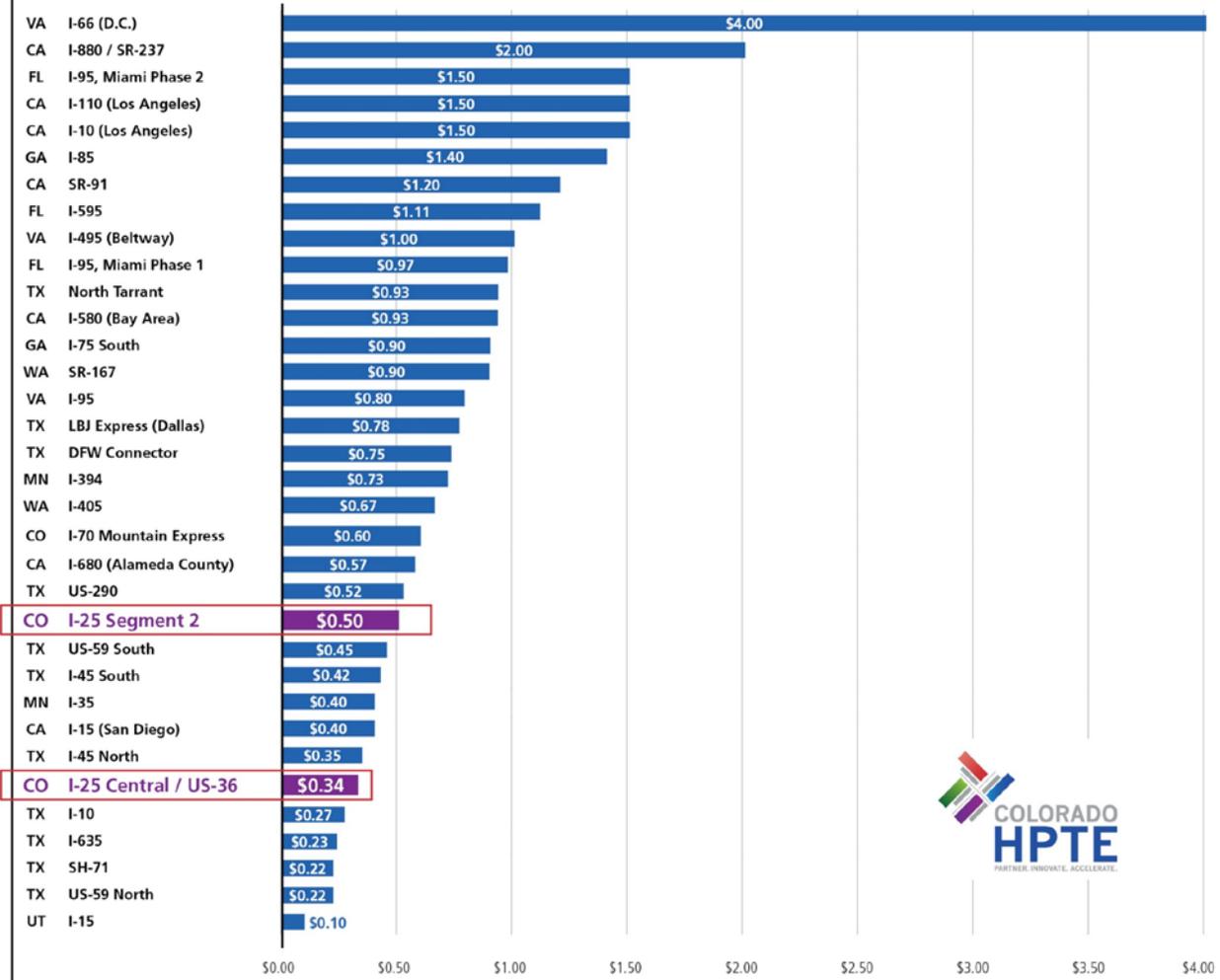
I-25 North Toll Rates Adjustment



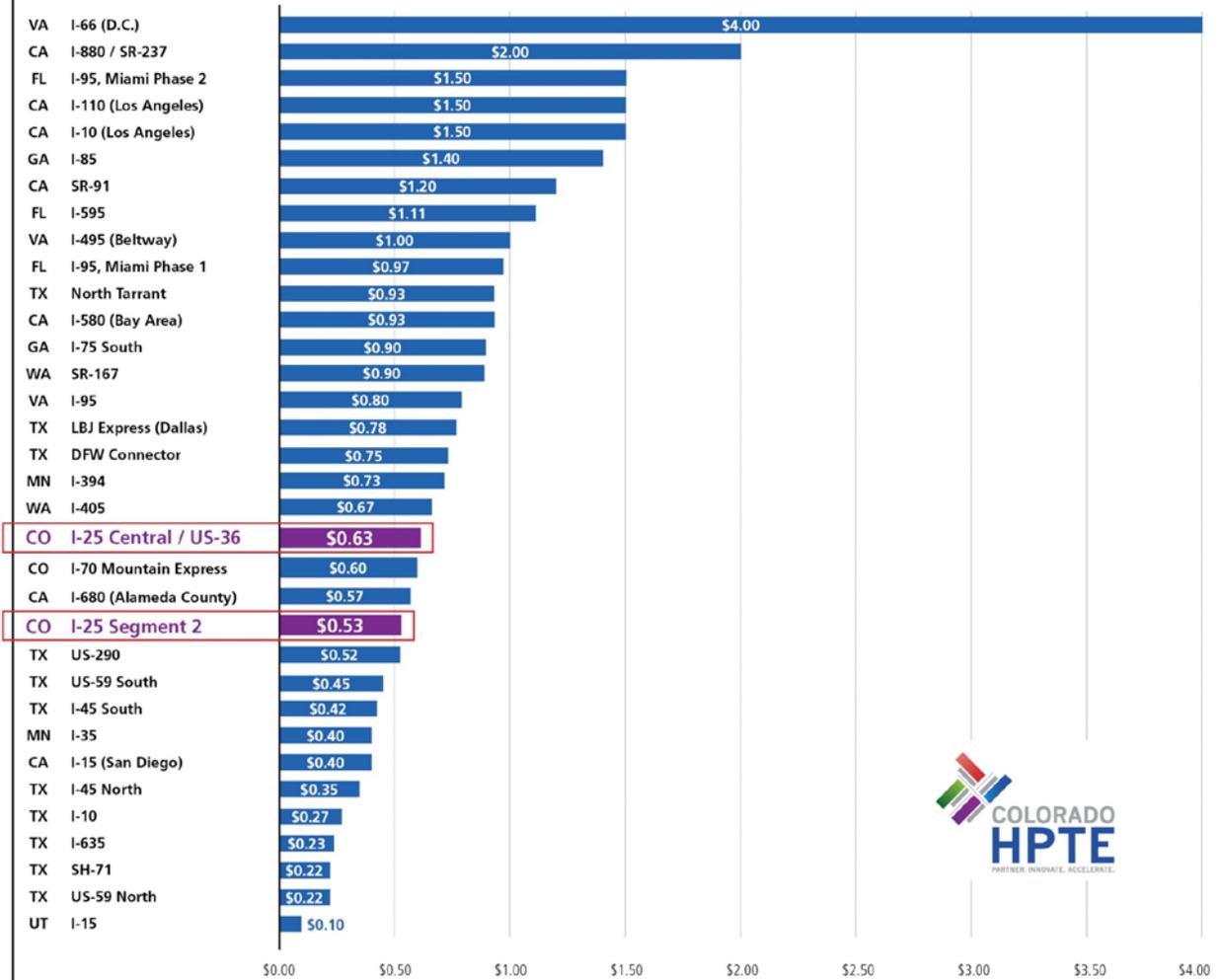
**EXPRESS
LINES**



Maximum Toll Rate per Mile Before Any Toll Rate Adjustments



Maximum Toll Rate per Mile After Proposed Toll Rate Adjustments are Approved





PROPOSED TOLL RATES ON I-25 NORTH

	Northbound				Southbound			
	Current AVI	Proposed AVI	Current LPT	Proposed LPT	Current AVI	Proposed AVI	Current LPT	Proposed LPT
5:00 AM - 6:00 AM	\$1.00	\$1.05	\$3.58	\$3.79	\$1.00	\$1.05	\$3.58	\$3.79
6:00 AM - 6:45 AM	\$1.00	\$1.05	\$3.58	\$3.79	\$1.00	\$1.05	\$3.58	\$3.79
6:45 AM - 7:15 AM	\$1.00	\$1.05	\$3.58	\$3.79	\$1.25	\$1.30	\$5.56	\$5.89
7:15 AM - 8:15 AM	\$1.00	\$1.05	\$3.58	\$3.79	\$2.25	\$2.35	\$4.38	\$4.64
8:15 AM - 8:45 AM	\$1.00	\$1.05	\$3.58	\$3.79	\$1.50	\$1.55	\$3.98	\$4.22
8:45 AM - 10:00 AM	\$1.00	\$1.05	\$3.58	\$3.79	\$1.25	\$1.30	\$3.58	\$3.79
10:00 AM - 12:00 PM	\$1.00	\$1.05	\$3.58	\$3.79	\$1.00	\$1.05	\$3.58	\$3.79
12:00 PM - 3:00 PM	\$1.00	\$1.05	\$3.58	\$3.79	\$1.00	\$1.05	\$3.58	\$3.79
3:00 PM - 3:30 PM	\$1.25	\$1.30	\$3.98	\$4.22	\$1.00	\$1.05	\$3.58	\$3.79
3:30 PM - 4:30 PM	\$1.50	\$1.55	\$4.38	\$4.64	\$1.00	\$1.05	\$3.58	\$3.79
4:30 PM - 6:00 PM	\$3.00	\$3.15	\$6.75	\$7.15	\$1.00	\$1.05	\$3.58	\$3.79
6:00 PM - 8:00 PM	\$1.25	\$1.30	\$3.98	\$4.22	\$1.00	\$1.05	\$3.58	\$3.79
8:00 PM - 5:00 AM	\$1.00	\$1.05	\$3.58	\$3.79	\$1.00	\$1.05	\$3.58	\$3.79
Weekend	\$1.25	\$1.30	\$3.98	\$4.22	\$1.25	\$1.30	\$3.98	\$4.22



PLENARY ROADS DENVER
US 36 and I-25 Central
Express Lanes
Dynamic Pricing
Toll Adjustment

June 2018

DYNAMIC PRICING OVERVIEW

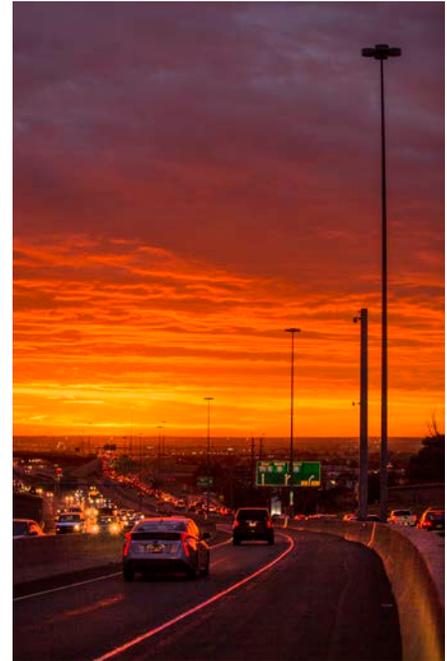
▪ **What is Dynamic Express Lane pricing?**

With dynamic pricing, toll rates are continually adjusted according to real-time traffic conditions to maintain free-flowing levels of traffic in the Express Lanes. Under this system, prices increase when the Express Lanes get congested and decrease when the Express Lanes are less full. The current price is displayed on electronic message boards prior to the beginning of the tolled section.

Similar systems are in place along the I-70 Mountain Express Lane and in Virginia, Florida and Texas.

▪ **What are the benefits?**

- Increased flexibility
- Real-time monitoring
- Optimal traffic flows



DYNAMIC PRICING OVERVIEW

▪ **Why Dynamic Express Lane pricing now?**

Dynamic Express Lane Pricing will integrate the latest mobility technologies available to allow the US 36 and I-25 Central Express Lane corridors to maximize traffic flow, from transit to carpool to toll-paying to the general purpose lanes.

Dynamic Pricing has always been the vision for US 36 and I-25 Central Express Lanes. PRD is working to implement this as traffic, population and the economy grows along this corridor and to meet its public-private partnership requirements.

▪ **What can drivers expect to pay?**

- Drivers can expect toll rates similar to current peak-hour rates, with off-peak rates fluctuating based on traffic congestion.
- Rates are set by using an algorithm that tracks real-time traffic flow and adjusts them to optimize traffic volume within the Express Lanes. If rates are too high, no one will use the Express Lanes. If they are too low, too many people will use them and speeds will slow down.

DYNAMIC PRICING TIMELINE

▪ Estimated timeline

(A more-detailed timeline will be shared prior to testing and roll-out)

- **Early fall 2018:** Begin dynamic pricing testing on US 36 and I-25 Central Express Lanes
 - **2019:** Continued testing along the corridor
 - **2020:** Roll out Dynamic Pricing on US 36 and I-25 Central Express Lanes
- ## ▪ Contingencies
- PRD will need to install additional traffic-monitoring technology along the entire corridor
 - Based on traffic use, the algorithm will need to be fine-tuned to ensure optimal use in the Express Lanes



DYNAMIC PRICING COMMUNICATIONS

- **Outreach:** Each phase of the transition will include an outreach component, including today's decision.
 - **Media and social media:** In conjunction with HPTE's communications team, leading up to board meeting last month we sent out a media release on the dynamic pricing and toll adjustment request.
 - We tracked multiple reports from four Denver metro television stations, as well as print and digital media outlet coverage
 - **Community:** We shared the press release and fact sheet with community organizations, including Commuting Solutions, as well as with elected officials
 - **Eblast:** Sent to 200,000 toll customers
- **For each stage of the transition:**
 - **Overhead message boards:** PRD will use the overhead message boards to inform drivers about changes and updates.
 - **Online communications:** CDOT Express Lanes website, social media
 - **Stakeholder outreach:** E-mail communications, outreach through Corridor organizations

CONTACT

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Estimated Timeline: Dynamic Tolling Implementation Plan

Version: June 13, 2018

May 2018

Request authority to implement Dynamic Tolling through Proposed Toll and Penalty Schedule from the HPTE Board

June 2018

HPTE Board to vote on Proposed Toll and Penalty Schedule

Fall 2018 through 2019

Begin Dynamic Express Lane Testing and Implementation

Activities in this period include:

- Network survey
- Fiber network architecture and development
- Device network design
- Infrastructure capacity verification, design new infrastructure for hardware (if necessary)
- Lanes hardware installation
 - New lane controllers
 - New servers
 - New cameras
 - New transponder readers
 - New lane level OCR equipment
 - New loop installations
- GP lanes volume sensing equipment installation and testing
- GP lanes speed sensing equipment installation and testing
- ML calibration with new hardware to sense speeds
- ML calibration with new hardware to sense volume
- Algorithm development and testing
- User Interface/Software development
- Back office/billing testing
 - Development of transaction records and formatting for distribution to Tolling Services Provider
 - Testing of processing capacity for transactions
- VMS/VTMS display calibration
- HOV calibration with transponders
- LPT testing of new hardware for LPT recognition,
 - Camera calibration

Late 2019/Early 2020

- Finalize testing phase and back-office/billing procedures
- Finalize Algorithm, provide Algorithm and parameters to HPTE for review

2020

Roll out Dynamic Tolling to Express Lane customers

Key Assumptions

- Some activities are dependent on the vendor/service provider/system capability; there are some activities that are subject to change through the process and development. PRD will provide update to HPTE tolling team on an ongoing basis and can assist in providing HPTE Board updates through interim milestones in the development.
- Once Dynamic Tolling testing and implementation has commenced, Dynamic Tolling can be in place for varying amounts of time dependent on the various processes or procedures that are being tested. In the event that Dynamic Tolling testing is not occurring, toll rates will default to a Time of Day tolling state. Live algorithm testing on the Corridor will only occur after algorithm testing has occurred in a test/lab environment.
- There will not be a Time of Day toll rate adjustment on July 1, 2018, if necessary during the interim phase prior to roll out of Dynamic Tolling, PRD will request similar to what has been done in prior rate adjustments.

Plenary Roads Denver: Dynamic Tolling Communications Plan

May 2018

PRD worked in conjunction with HPTE communications team coordinated a media release and FAQ documentation on dynamic tolling and I-25 toll adjustment request; followed up with media; shared press release with community and elected stakeholders; shared information on CDOT's digital and social media properties.

June 2018

PRD has worked with the HPTE communications team to deliver an E-blast to approximately 200,000 customers of the US 36 and I-25 Express Lanes.

Fall 2018

PRD in coordination with HPTE's communications team will send another media release to initiate the Dynamic Tolling testing and implementation process once a firm date has been secured. Information will also be shared on CDOT's digital and social media properties.

The media release will also be reinforced with VMS signs on the roadways informing users of the commencement of Dynamic Pricing testing and implementation, and show a website for more information. The signs will count down to the commencement for 7 days, and remain on for 7 days after commencement.

2020

Prior to roll out of Dynamic Tolling, PRD in coordination with HPTE's communications team will develop and distribute a media release to inform users of the start date of Dynamic Tolling on the US-36 and I-25 Central Express Lane facilities, VMS signs will also be used to convey information to the public.

PRD will provide updates to HPTE during the implementation process and remain available to help answer any questions from the public, stakeholders and the media.