



Date: January 15, 2020
To: High Performance Transportation Enterprise Board
From: Kelly Brown, Tolling Operations Manager
Subject: I-25 North Segment 3 (120th to E-470/NWP) Initial Toll Rate Ranges and I-25 North Segment 2 (US 36 to 120th) Toll Rate Adjustment

Purpose

The purpose of this memorandum is, (1) to summarize HPTE staff's planned approach for time of day toll rates for the I-25 North Segment 3 (120th to E-470/NWP) toll lanes, and to commence and facilitate a discussion with the Board and the public regarding the establishment of toll rates ranges; and, (2) request Board review of the proposed adjusted toll rates for I-25 North Segment 2 (US 36 to 120th) Automatic Vehicle Identification via a transponder (AVI) and License Plate Toll via camera (LPT) transactions and provide comments.

Action

This item is for information and discussion only. Approval for the proposed toll rates will be sought from the Board in March of this year.

Background

The I-25 North Segment 3 (120th to E-470/NWP) Express Lanes are expected to open for tolled traffic in April 2020. Similar to the I-25 North Segment 2 (US 36 to 120th), Segment 3 operates as a commuter corridor with fixed time-of-day toll rates.

Details

I-25 North Segment 3: HPTE staff recommends setting a base toll rate sufficient to cover toll collection costs and debt service, but low enough to attract customers to the Express Lane, even when traffic in the general purpose lanes is relatively light and the corridor is free flowing.

I-25 Segment 3 Toll Rates Setting: At the time of the January 2020 HPTE Board Meeting, analysis of the I-25 Segment 3 Initial toll rates and time of day time slots for the toll schedule, including a sensitivity analysis is still ongoing. Preliminary recommended fixed time of day toll rates for I-25 North Segment 3 will range from no lower than 17 cents per mile (off peak) and no higher than 53 cents a mile for the AVI Toll rates (peak). LPT toll rates will be calculated as a surcharge added to the AVI toll rate. A multi-axle surcharge of \$25 will be assessed on vehicles with 4 or more axles. This surcharge is in addition to the applicable AVI or LPT toll rate.

A proposed initial fixed time of day toll rates and toll schedule for I-25 North Segment 3 are presented in Table 1 and Table 2 below. These toll rates and this toll schedule is subject to change slightly pending the completion and outcomes of the ongoing toll rate Sensitivity Analysis.

Final proposed Toll Rates and Toll Schedule for I-25 North Segment 3 will be presented to the Board at the March 2020 meeting.

Table 1: Proposed Initial Fixed Time of Day Toll Rates and Toll Schedule For I-25 North Segment 3 Northbound

Seg. 3			Northbound	
			AVI	LPT
5:00 AM	-	6:00 AM	\$1.05	\$3.79
6:00 AM	-	6:45 AM	\$1.05	\$3.79
10:48 AM	-	7:15 AM	\$1.05	\$3.79
7:15 AM	-	8:15 AM	\$1.05	\$3.79
8:15 AM	-	8:45 AM	\$1.05	\$3.79
8:45 AM	-	10:00 AM	\$1.05	\$3.79
10:00 AM	-	12:00 PM	\$1.05	\$3.79
12:00 PM	-	3:00 PM	\$1.05	\$3.79
3:00 PM	-	3:30 PM	\$1.30	\$4.22
3:30 PM	-	4:30 PM	\$1.55	\$4.64
4:30 PM	-	6:00 PM	\$1.75	\$4.75
6:00 PM	-	8:00 PM	\$1.30	\$4.22
8:00 PM	-	5:00 AM	\$1.05	\$3.79
Weekend			\$1.05	\$3.79

Table 2: Proposed Initial Fixed Time of Day Toll Rates and Toll Schedule For I-25 North Segment 3 Southbound

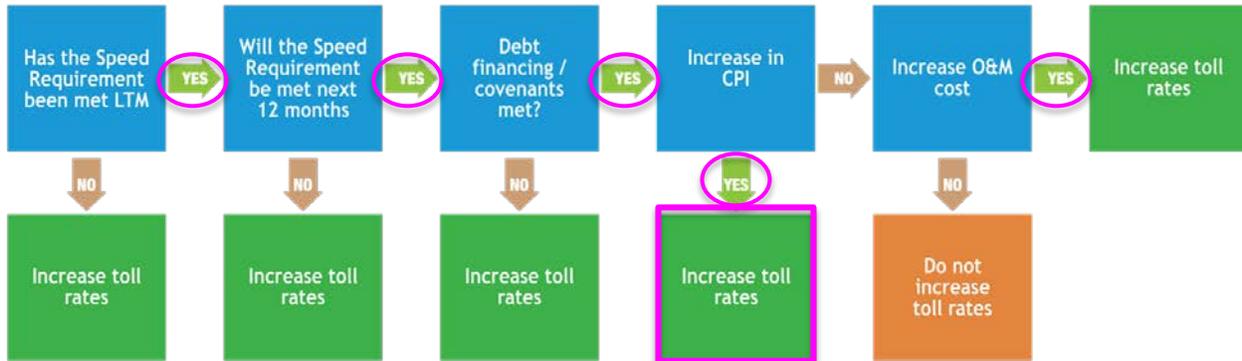
Seg. 3			Southbound	
			CURRENT AVI	CURRENT LPT
5:00 AM	-	6:00 AM	\$1.05	\$3.79
6:00 AM	-	6:45 AM	\$1.05	\$3.79
6:45 AM	-	7:15 AM	\$1.30	\$4.22
7:15 AM	-	8:15 AM	\$1.75	\$4.75
8:15 AM	-	8:45 AM	\$1.55	\$4.64
8:45 AM	-	10:00 AM	\$1.30	\$4.22
10:00 AM	-	12:00 PM	\$1.05	\$3.79
12:00 PM	-	3:00 PM	\$1.05	\$3.79
3:00 PM	-	3:30 PM	\$1.05	\$3.79
3:30 PM	-	4:30 PM	\$1.05	\$3.79
4:30 PM	-	6:00 PM	\$1.05	\$3.79
6:00 PM	-	8:00 PM	\$1.05	\$3.79
8:00 PM	-	5:00 AM	\$1.05	\$3.79
Weekend			\$1.05	\$3.79

I-25 North Segment 2: HPTE has an annual toll rate adjustment process every year where Express Lane toll rate adjustments are considered. During the annual toll rate adjustment process in summer 2019, HPTE staff recommended that the annual toll rate adjustments for Segment 2 be deferred until I-25 North Segment 3 opened for operations. Then at that time, initial toll rates for Segment 3 and a proposed toll rate adjustment for Segment 2 would be jointly presented to the HPTE Board. Going forward, Segments 2 and 3 will be put on the same toll rate adjustment schedule. Therefore, the next time staff will possibly come to the Board with a toll rate adjustment on this corridor is spring 2021.

If approved by the Board at the March 2020 meeting, the Segment 2 adjusted toll rates would go into effect on the same date that Segment 3 opens for tolling.

Methodology for I-25 Segment 2 Toll Rates adjustment: HPTE staff analyzed the potential need for toll rate adjustments on Segment 2 using the matrix shown in Figure 1. The factors contributing to the proposed toll rate adjustment for Segment 2 are circled.

Figure 1: Segment 2 Toll Rate Adjustment Decision Matrix for 2020 Toll Rate Adjustment



Summary of Findings

Based on the below analysis, HPTE staff recommends an adjustment of AVI and LPT toll rates of six and a half percent (6.5%). The multi-axle (4+) surcharge remains unchanged at \$25.

Traffic Management: The Express Lanes average speeds met the speed requirement for the last 12 months and are expected to meet the speed requirement for the next 12 months.

In addition, the traffic Level of Service (LOS) for I-25 North Segment 2 was analyzed to assess the performance of the Express Lanes. The data used for this analysis included:

- Average speed in the general purpose and Express Lanes
- Traffic volumes in the general purpose and Express Lanes
- Information on events (lane closures, maintenance etc.) that occurred along the segment of I-25 as identified in the corridor's Event Audit Report
- Historic weather data

Based on the data studied, the Express Lanes are performing as intended in providing reliable speeds and travel times.

Inflation: To estimate inflation adjustment, HPTE staff evaluated the changes in the Denver-Aurora-Lakewood Consumer Price Index (CPI). The Consumer Price Index increased by 3.1 percent between April 2018 and November 2019. This is the CPI data for the period between the last toll adjustment analysis and the latest data available for the current toll rate adjustment analysis.

Operations/Maintenance Costs: HPTE staff analyzed the costs of operations/maintenance on Segment 2. CDOT O&M costs are expected to increase by 1.9 percent for the 2020/2021 operating period based on projected inflation rates for the Denver-Aurora-Lakewood Consumer Price Index.

Toll Transaction Processing Costs: HPTE staff analyzed the costs of toll collections on Segment 2. Toll collection costs increase by five percent yearly per the Tolling Services Agreement with E-470.

Recommended New Rates

HPTE staff recommends the proposed new AVI and LPT toll rates for the toll schedule shown below in Tables 3 and 4 below. The recommended proposed toll rate for AVI was made by multiplying the current AVI toll rate by 6.5 percent then taking that figure and rounding down to the nearest multiple of \$0.05. For example, in the table below, the new AVI toll rate of \$1.10 was rounded down from \$1.12. The new recommended proposed LPT toll rate was made by multiplying the current LPT toll rate by 6.5 percent and has not been rounded. There is no change to the multi-axle (4+) surcharge; it remains at \$25.

Table 3: Proposed New Adjusted AVI and LPT toll rates for I-25 North Segment 2 Northbound

6.5% INCREASE			Northbound			
			CURRENT AVI	PROPOSED NEW AVI	CURRENT LPT	PROPOSED NEW LPT
5:00 AM	-	6:00 AM	\$1.05	\$1.10	\$3.79	\$4.04
6:00 AM	-	6:45 AM	\$1.05	\$1.10	\$3.79	\$4.04
10:48 AM	-	7:15 AM	\$1.05	\$1.10	\$3.79	\$4.04
7:15 AM	-	8:15 AM	\$1.05	\$1.10	\$3.79	\$4.04
8:15 AM	-	8:45 AM	\$1.05	\$1.10	\$3.79	\$4.04
8:45 AM	-	10:00 AM	\$1.05	\$1.10	\$3.79	\$4.04
10:00 AM	-	12:00 PM	\$1.05	\$1.10	\$3.79	\$4.04
12:00 PM	-	3:00 PM	\$1.05	\$1.10	\$3.79	\$4.04
3:00 PM	-	3:30 PM	\$1.30	\$1.35	\$4.22	\$4.49
3:30 PM	-	4:30 PM	\$1.55	\$1.65	\$4.64	\$4.94
4:30 PM	-	6:00 PM	\$3.15	\$3.35	\$7.15	\$7.61
6:00 PM	-	8:00 PM	\$1.30	\$1.35	\$4.22	\$4.49
8:00 PM	-	5:00 AM	\$1.05	\$1.10	\$3.79	\$4.04
Weekend			\$1.30	\$1.35	\$4.22	\$4.49

Table 4: Proposed New Adjusted AVI and LPT toll rates for I-25 North Segment 2 Southbound

6.5% INCREASE			Southbound			
			CURRENT AVI	PROPOSED NEW AVI	CURRENT LPT	PROPOSED NEW LPT
5:00 AM	-	6:00 AM	\$1.05	\$1.10	\$3.79	\$4.04
6:00 AM	-	6:45 AM	\$1.05	\$1.10	\$3.79	\$4.04
6:45 AM	-	7:15 AM	\$1.30	\$1.35	\$4.22	\$4.49
7:15 AM	-	8:15 AM	\$2.35	\$2.50	\$5.89	\$6.27
8:15 AM	-	8:45 AM	\$1.55	\$1.65	\$4.64	\$4.94
8:45 AM	-	10:00 AM	\$1.30	\$1.35	\$4.22	\$4.49
10:00 AM	-	12:00 PM	\$1.05	\$1.10	\$3.79	\$4.04
12:00 PM	-	3:00 PM	\$1.05	\$1.10	\$3.79	\$4.04
3:00 PM	-	3:30 PM	\$1.05	\$1.10	\$3.79	\$4.04
3:30 PM	-	4:30 PM	\$1.05	\$1.10	\$3.79	\$4.04
4:30 PM	-	6:00 PM	\$1.05	\$1.10	\$3.79	\$4.04
6:00 PM	-	8:00 PM	\$1.05	\$1.10	\$3.79	\$4.04
8:00 PM	-	5:00 AM	\$1.05	\$1.10	\$3.79	\$4.04
Weekend			\$1.30	\$1.35	\$4.22	\$4.49

Next Steps

- The Board is being asked to review the recommended proposed AVI and LPT toll rates range for I-25 North Segment 3 and provide feedback.
- The Board is being asked to review the recommended proposed AVI and LPT toll rate adjustments range for I-25 North Segment 2 and provide feedback.
- HPTE staff will update the Segment 3 toll rates and/or toll schedule if necessary once the ongoing Traffic and Revenue Study and ongoing Sensitivity Analysis are complete and present the updated toll rates and/or toll schedule at the March Board meeting.
- HPTE staff will integrate any requested changes to the recommended proposed AVI and LPT toll rates for I-25 North Segment 2 and Segment 3 and will return to the Board in March for final adoption of AVI and LPT toll rates for I-25 North Segment 2 and Segment 3.
- HPTE staff will begin the Public Outreach process.