



## MEMORANDUM

**TO:** HPTE BOARD OF DIRECTORS  
**FROM:** KELLY BROWN, TOLLING OPERATIONS MANAGER  
**DATE:** JUNE 16, 2021  
**SUBJECT:** REQUEST FOR APPROVAL OF PROPOSED 2018/2019 TOLL RATE ADJUSTMENTS FROM HPTE FOR I-25 NORTH (US 36 to 120<sup>th</sup> Ave.)

---

### Purpose and Requested Action

This memorandum presents a request from HPTE Staff that the High-Performance Transportation Enterprise (HPTE) Board of Directors **approve** the proposed 2021-2022 toll rate adjustments for Automatic Vehicle Identification (AVI) and License Plate Toll (LPT) transactions for I-25 North (US 36 to 120<sup>th</sup> Ave.) ("Segment 2") that were presented at the May 2021 Board Meeting.

### Policy Implications

The HPTE Board of Directors would be approving the recommended toll rate adjustment and proposed new toll rates for AVI and LPT transactions for Segment 2 per authority given by C.R.S. 43-4-806(2)(c)(I):

- If the proposed toll rate adjustments are approved by the Board, the new toll rates would go into effect on **July 11, 2021**.
- If the Board does not adopt the proposed toll rate adjustment, the current toll rates would remain unchanged.

### Background and Details

HPTE has an annual toll rate adjustment process per the June 2019 Toll Rate Setting Policy where Express Lane rate adjustments are considered. The current toll rates were set in July 2018 based on previous analysis of the Segment 2 Express Lanes. A toll rate adjustment for 2020 was approved by the Board at the March 2020 Board Meeting that would have gone into effect in June 2020. However, in response to the COVID-19 pandemic, the Board reversed their decision at the May 2020 Board meeting and toll rates on Segment 2 remained at 2018 rates. Staff presented to the Board at the May 2021 Board Meeting the supporting documentation for the proposed 2021-2022 toll rate adjustment. The materials from the May Board meeting are attached as Attachment A.

### Recommended New Rates

Staff recommends an adjustment to AVI and LPT toll rates. The recommended increase in toll rates is an average of eight (8) percent for AVI toll rates and five (5) percent for LPT toll rates due to a combination of inflation and increasing toll transaction processing costs. Due to the COVID-19 pandemic, and the resulting lower traffic volumes in the express lanes, transaction processing costs increased by over 30 percent in 2020. Adjusting toll rates will allow HPTE to cover increasing operations and maintenance costs and will significantly reduce the likelihood of HPTE having to ask for a backup loan from the Transportation Commission. The AVI toll rate adjustments range from fifteen cents to twenty cents. The LPT toll rate adjustments range from nineteen cents to twenty-eight cents (depending on the time of day).

### Board Options and Recommendations

1. Act on Resolution #361 adopting the proposed FY 2021-2022 AVI and LPT toll rates for I-25 North Segment 2.
  - a. HPTE Staff recommends adopting the proposed toll rates.
2. Deny the request. Rates on I-25 North Segment 2 would remain unchanged.

### Next Steps

- If adopted, HPTE staff will implement the approved FY 2021-2022 AVI and LPT toll rates for I-25 North Segment 2 effective **12:00 AM, July 11, 2021**.

**Attachments**

Attachment A: 2021-05-19 Board Memo May 2021\_Annual I25N Seg 2 Toll Rate Adj Analysis HPTE\_FINAL



## **Attachment A**

2021-05-19 Board Memo May 2021\_Annual I25N Seg 2  
Toll Rate Adj Analysis HPTE\_FINAL



## MEMORANDUM

**TO:** HPTE BOARD OF DIRECTORS  
**FROM:** KELLY BROWN, TOLLING OPERATIONS MANAGER  
**DATE:** MAY 19, 2021  
**SUBJECT:** FY2021/2022 ANNUAL TOLL RATE ADJUSTMENT ANALYSIS FOR I-25 NORTH (US 36 to 120<sup>th</sup> Ave.)

### Purpose and Requested Action

This memorandum presents the results of the annual toll rate adjustment analysis for I-25 North (US 36 to 120<sup>th</sup> Ave.) ("Segment 2"). Staff requests that the High-Performance Transportation Enterprise (HPTE) Board of Directors review the analysis and provide comments. The purpose of this memo is informational only.

### Background and Details

Segment 2 originates from the southern boundary at US 36 and terminates at 120<sup>th</sup> Ave. This segment of the I-25 Express Lanes opened for tolling in July 2016. The current toll rates were set in 2019 based on previous analysis of the Segment 2 Express Lanes. A toll rate adjustment for 2020 was approved by the Board at the March 2020 Board Meeting that would have gone into effect in June 2020. However, in response to the COVID-19 pandemic, the Board reversed their decision at the May 2020 Board meeting and toll rates on Segment 2 remained at 2019 rates.

### Methodology

A three-fold analysis was undertaken to analyze the need for toll rates increases.

First, average speeds in the express lanes are examined to determine if the express lanes meet the criterion of travel going at least 45 miles per hour (mph) for 90 percent of the time for a period of 180 consecutive days. In addition, the traffic Level of Service (LOS) for this segment of I-25 is analyzed to assess the performance of the express lanes.

Second, the traffic demand management analysis was performed to check whether the LOS criterion—meeting LOS C or better—would be met in the future for the period April 2021 to December 2021. The express lane traffic volumes were projected from the period April 2019 to December 2019 based on a growth rate of 1.3 percent obtained from the Colorado Department of Transportation (CDOT) Online Transportation Information System (OTIS). These projected volumes then were used to determine the future LOS in 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 (crashes, lane closures, maintenance, etc.) that occurred along the segment of I-25 as identified in the corridor's Event Audit Report. Nominal occurrences of adverse weather or crashes in the general-purpose lanes were taken as part of normal operations and included in the data. However, major events (those lasting more than two hours per the Manual on Uniform Traffic Control Devices [MUTCD, 2009]) whose impact was identified as severe in the corridor's Event Audit Report were excluded from the data.
- Growth rate calculated from CDOT's OTIS traffic volume projections

Third, the Operations and Maintenance (O&M) cost, inflation, and toll transaction processing cost increases were evaluated to consider increases in toll rates based on costs and inflation. Inflation was evaluated between 2019 and 2021 using the Denver-Aurora-Lakewood Consumer Price Index (CPI). The inflation adjustment was estimated as 2.4 percent. In addition, the increase in toll transaction processing costs were evaluated to determine the corresponding increase in toll rates.

### Summary of Findings

Based on the above analysis, the current toll rates are managing traffic demand in the express lanes as intended based on the LOS and the average speeds requirements. The recommended increase in toll rates is an average of eight (8) percent for Automatic Vehicle Identification (AVI) toll rates and five (5) percent for License Plate Toll (LPT) toll rates due to a combination of inflation and transaction processing costs. Due to the COVID-19 pandemic, and the resulting lower traffic volumes in the express lanes, transaction processing costs increased by over 30 percent in 2020.

**Staff Recommendation**

Based on the results noted in the previous section, HPTE staff recommends revised AVI and LPT toll rates for the toll schedule shown in the table below. The multi-axle (4+) surcharge remains unchanged at \$25.

**Proposed New Toll Rates for I-25 North Segment 2**

Time	Northbound				Southbound			
	AVI	NEW AVI	LPT	NEW LPT	AVI	NEW AVI	LPT	NEW LPT
5:00 AM-6:00 AM	\$1.05	\$1.20	\$3.79	\$4.05	\$1.05	\$1.20	\$3.79	\$4.05
6:00 AM-6:45 AM	\$1.05	\$1.20	\$3.79	\$4.05	\$1.05	\$1.20	\$3.79	\$4.05
6:45 AM-7:15 AM	\$1.05	\$1.20	\$3.79	\$4.05	\$1.30	\$1.45	\$4.22	\$4.44
7:15 AM-8:15 AM	\$1.05	\$1.20	\$3.79	\$4.05	\$2.35	\$2.55	\$5.89	\$6.17
8:15 AM-8:45 AM	\$1.05	\$1.20	\$3.79	\$4.05	\$1.55	\$1.70	\$4.64	\$4.83
8:45 AM-10:00 AM	\$1.05	\$1.20	\$3.79	\$4.05	\$1.30	\$1.45	\$4.22	\$4.44
10:00 AM-12:00 PM	\$1.05	\$1.20	\$3.79	\$4.05	\$1.05	\$1.20	\$3.79	\$4.05
12:00 PM-3:00 PM	\$1.05	\$1.20	\$3.79	\$4.05	\$1.05	\$1.20	\$3.79	\$4.05
3:00 PM-3:30 PM	\$1.30	\$1.45	\$4.22	\$4.44	\$1.05	\$1.20	\$3.79	\$4.05
3:30 PM-4:30 PM	\$1.55	\$1.70	\$4.64	\$4.83	\$1.05	\$1.20	\$3.79	\$4.05
4:30 PM-6:00 PM	\$3.15	\$3.35	\$7.15	\$7.42	\$1.05	\$1.20	\$3.79	\$4.05
6:00 PM-8:00 PM	\$1.30	\$1.45	\$4.22	\$4.44	\$1.05	\$1.20	\$3.79	\$4.05
8:00 PM-5:00 AM	\$1.05	\$1.20	\$3.79	\$4.05	\$1.05	\$1.20	\$3.79	\$4.05
Weekend	\$1.30	\$1.45	\$4.22	\$4.44	\$1.30	\$1.45	\$4.22	\$4.44

**Next Steps**

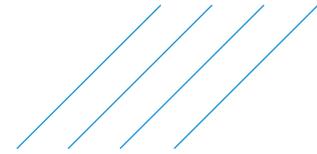
- The Board is being asked to review HPTE staff recommendation.
- HPTE staff will integrate any requested changes to the recommended proposed AVI and LPT toll rates for I-25 North Segment 2 and will return to the Board in June for final adoption of FY 2021-2022 AVI and LPT toll rates for I-25 North Segment 2.

**Attachments**

Attachment A: Toll Rate Adjustment Analysis memorandum

## Attachment A:

Toll Rate Adjustment Analysis memorandum



## Memo

To: Kelly Brown, High Performance Transportation Enterprise (HPTE)	
From: Rinal Chheda, Atkins Solomon Nyanhongo, Atkins	Email: rinal.chheda@atkinsglobal.com solomon.nyanhongo@atkinsglobal.com
Date: May 12, 2021	Phone: 720-258-0163
Ref: I-25 North (Segment 2) Express Lanes (US 36 to 120th Avenue)	cc: Rami Harb, Atkins
Subject: Toll Rate Adjustment Analysis- I-25 North Segment 2	

## 1. Introduction

Atkins North America, Inc. (Atkins) and the Colorado High Performance Transportation Enterprise (HPTE) developed this Toll Rate Adjustment Analysis memorandum to document the methodology used to evaluate the need for toll rate increases on Interstate 25 (I-25) North Segment 2 Express Lanes (U.S. Highway 36 [US 36] to 120th Avenue). The current toll rates were set in 2019 based on previous analysis of the Segment 2 Express Lanes. Toll rates were not increased in 2020.

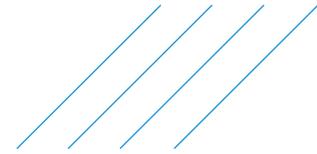
## 2. Methodology

A flowchart outlining the steps to be followed for determining the need for a toll rate increase is provided in **Appendix 1**. This flowchart was used as guidance to decide if a toll rate increase is required for I-25 North Segment 2. For the period April 2021 to December 2021, a three-step process was undertaken to analyze the need for toll rates increases. The analysis was done separately for the northbound and southbound directions.

First, average speeds in the express lanes are examined to determine if the express lanes meet the criterion of travel going at least 45 miles per hour (mph) for 90 percent of the time for a period of 180 consecutive days. In addition, the traffic Level of Service (LOS) for this segment of I-25 is analyzed to assess the performance of the express lanes.

Second, the traffic demand management analysis was performed to check whether the LOS criterion—meeting LOS C or better—would be met in the future for the period April 2021 to December 2021. The express lane traffic volumes were projected from the period April 2019 to December 2019 based on a growth rate of 1.3 percent obtained from the Colorado Department of Transportation (CDOT) Online Transportation Information System (OTIS). These projected volumes then were used to determine the future LOS in 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 (crashes, lane closures, maintenance, etc.) that occurred along the segment of I-25 as identified in the corridor's Event Audit Report. Nominal occurrences of adverse weather or crashes in the general-purpose lanes were taken as part of normal



operations and included in the data. However, major events (those lasting more than two hours per the *Manual on Uniform Traffic Control Devices* [MUTCD, 2009]) whose impact was identified as severe in the corridor’s Event Audit Report were excluded from the data.

- Growth rate calculated from CDOT’s OTIS traffic volume projections

Third, the Operations and Maintenance (O&M) cost, inflation, and toll transaction processing cost increases were evaluated to consider increases in toll rates based on costs and inflation.

## 3. Summary of Findings

### 3.1. Traffic Management

**Table 1** shows the percentage of time that the average express lane speed was below 45 mph at different times of the weekdays during the am and pm peak hours of the analysis period. **The express lanes average speeds satisfied the criterion of operating at higher than 45 miles per hour at least 90 percent of the time.**

**Table 1: Percentage of Time the Express Lane Speed Falls below 45 MPH each Hour**

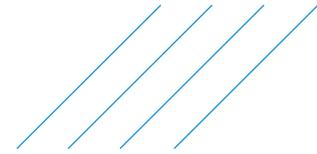
Hour	6	7	8	16	17	18	19
NB (%)	1	2	1	0.5	0.4	0.5	0.9
SB (%)	2	2	1	0.8	0.9	1	1

**Table 2** shows the average LOS for the express lanes at different weekday times between April 2019 and November 2019. The 2019 volumes were used instead of 2020 volumes because of the impact of the COVID-19 travel restrictions on traffic volumes. The LOS in the express lanes, based on average density of vehicles, was at LOS C or better for each hour of the day. Based on the traffic parameters above, the express lanes in 2019 were performing as intended in providing acceptable LOS. For the hours at LOS C, the traffic volumes were projected two years into the future to determine if the LOS criterion (LOS C or better) would be met during the year 2021. As shown in **Table 2**, the future LOS is LOS C for the hours analyzed. Therefore, the current toll rates are managing traffic demand in the express lanes as intended based on the LOS.

**Table 2: Level of Service by Hour**

Hour	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
<b>Northbound</b>																								
2019 LOS	A	A	A	A	A	A	A	A	A	A	A	A	A	B	A	B	C	C	A	A	A	A	A	A
Projected 2021 LOS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	C	C	-	-	-	-	-	-
<b>Southbound</b>																								
2019 LOS	A	A	A	A	A	A	C	C	B	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Projected 2021 LOS	-	-	-	-	-	-	C	C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Based on the traffic operations results above, it was determined that current toll rates fulfil the travel speed and LOS criteria for the I-25 North Segment 2 express lanes.



## 3.2. Inflation and Operations and Maintenance Costs

Inflation was evaluated between 2019 and 2021 using the Denver-Aurora-Lakewood Consumer Price Index (CPI). The inflation adjustment was estimated as 2.4 percent. In addition, the increase in toll transaction processing costs were evaluated to determine the corresponding increase in toll rates. The recommended average increase in toll rates due to a combination of inflation and transaction processing costs is 8 percent for Automatic Vehicle Identification (AVI) toll rates and 5 percent for License Plate Toll (LPT) toll rates across all express lanes.

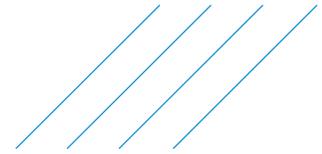
## 4. Recommendation for New Rates

Based on the results noted in the previous section, HPTE recommends revised AVI and LPT toll rates for the toll schedule shown below in Table 3. There is no change to the multi-axle (4+) surcharge; it remains at \$25.

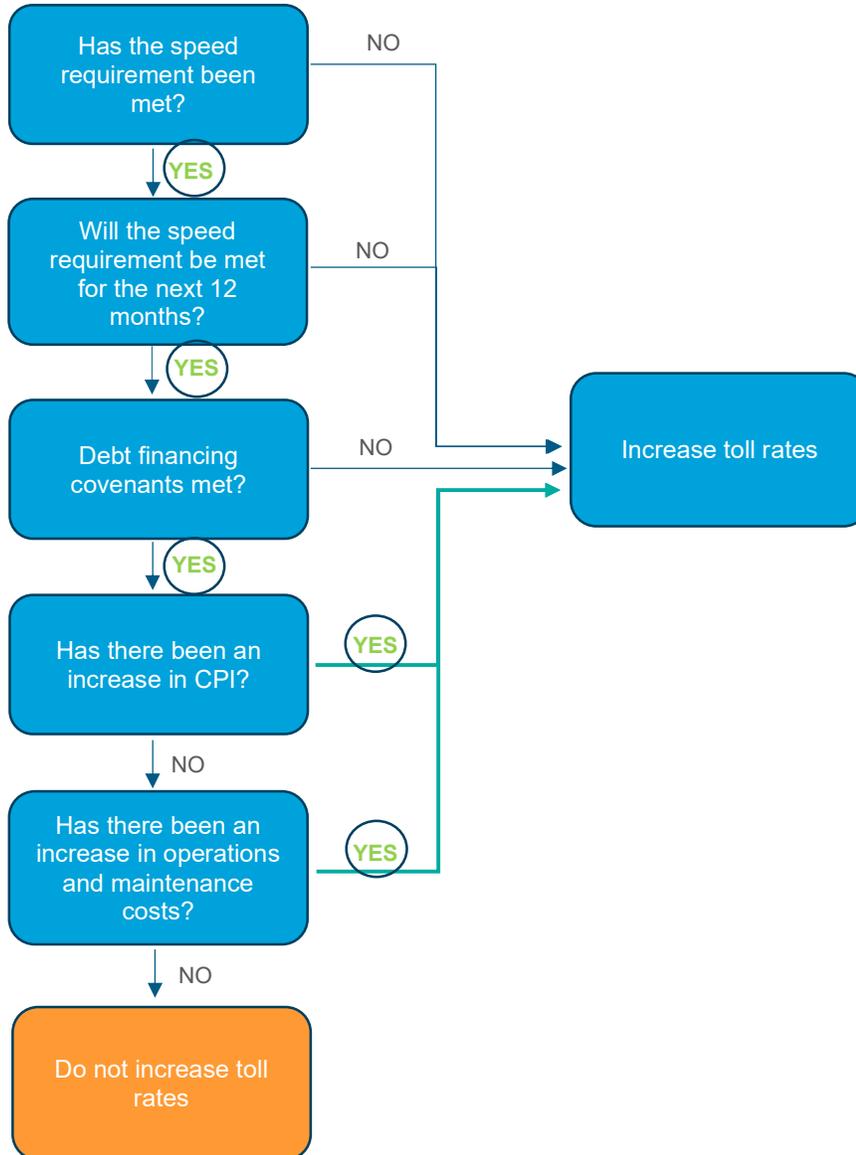
**Table 3: Proposed New Toll Rates for I-25 North Segment 2**

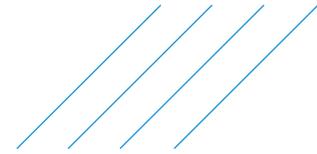
Time	Northbound				Southbound			
	AVI	NEW AVI	LPT	NEW LPT	AVI	NEW AVI	LPT	NEW LPT
5:00 AM-6:00 AM	\$1.05	\$1.20	\$3.79	\$4.05	\$1.05	\$1.20	\$3.79	\$4.05
6:00 AM-6:45 AM	\$1.05	\$1.20	\$3.79	\$4.05	\$1.05	\$1.20	\$3.79	\$4.05
6:45 AM-7:15 AM	\$1.05	\$1.20	\$3.79	\$4.05	\$1.30	\$1.45	\$4.22	\$4.44
7:15 AM-8:15 AM	\$1.05	\$1.20	\$3.79	\$4.05	\$2.35	\$2.55	\$5.89	\$6.17
8:15 AM-8:45 AM	\$1.05	\$1.20	\$3.79	\$4.05	\$1.55	\$1.70	\$4.64	\$4.83
8:45 AM-10:00 AM	\$1.05	\$1.20	\$3.79	\$4.05	\$1.30	\$1.45	\$4.22	\$4.44
10:00 AM-12:00 PM	\$1.05	\$1.20	\$3.79	\$4.05	\$1.05	\$1.20	\$3.79	\$4.05
12:00 PM-3:00 PM	\$1.05	\$1.20	\$3.79	\$4.05	\$1.05	\$1.20	\$3.79	\$4.05
3:00 PM-3:30 PM	\$1.30	\$1.45	\$4.22	\$4.44	\$1.05	\$1.20	\$3.79	\$4.05
3:30 PM-4:30 PM	\$1.55	\$1.70	\$4.64	\$4.83	\$1.05	\$1.20	\$3.79	\$4.05
4:30 PM-6:00 PM	\$3.15	\$3.35	\$7.15	\$7.42	\$1.05	\$1.20	\$3.79	\$4.05
6:00 PM-8:00 PM	\$1.30	\$1.45	\$4.22	\$4.44	\$1.05	\$1.20	\$3.79	\$4.05
8:00 PM-5:00 AM	\$1.05	\$1.20	\$3.79	\$4.05	\$1.05	\$1.20	\$3.79	\$4.05
Weekend	\$1.30	\$1.45	\$4.22	\$4.44	\$1.30	\$1.45	\$4.22	\$4.44

**Appendix 2** shows a comparison of maximum toll rate per mile for all tolled roadways operating in the United States, including I-25 North Express Lanes.



## APPENDIX 1: Toll Rate Increase Flowchart





## APPENDIX 2: Toll Rates Per Mile

