

MEMORANDUM

TO: COLORADO TRANSPORTATION INVESTMENT OFFICE BOARD OF DIRECTORS
FROM: KELLY BROWN, CHIEF TOLL OPERATIONS OFFICER
SUBJECT: I-25 NORTH (120th AVENUE TO STATE HIGHWAY 7 [SH 7]) EXPRESS LANES TOLL RATE ADJUSTMENT
DATE: MAY 15, 2024

Purpose and Requested Action

This memorandum presents the results of the annual toll rate adjustment analysis for I-25 North (120th Ave. to State Highway 7 [SH 7]) (“Segment 3”) Express Lanes based on the CTIO tolling policy that established a framework for toll rate setting and yearly adjustment.

Action

Informational only. No action is needed. The Board will be asked to approve the I-25 North (120th Ave. to State Highway 7 [SH 7]) (“Segment 3”) toll rate adjustment at the June meeting. The updated toll rates would take effect in early July of this year.

Background

Segment 3 originates from the southern boundary at 120th Ave. and terminates at State Highway 7 (SH 7). This segment of the I-25 Express Lanes opened for tolling in June 2020. The current toll rates were adjusted in 2023 based on previous analysis of the Segment 3 Express Lanes. A toll rate adjustment for 2023 was approved by the Board at the May 2023 Board Meeting and went into effect in July 2023.

This memorandum evaluates the performance of the I-25 Segment 3 Express Lane to determine adherence to traffic operations requirements. A flowchart outlining the steps to be followed to determine the need for a toll rate increase is provided in Appendix 1 of Attachment A.

Methodology

A comprehensive examination, including analysis of traffic volumes and speed data, was conducted to evaluate the requirement for toll rate adjustments. The analysis was done separately for the northbound and southbound directions.

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

Second, a traffic demand management analysis was performed to check whether the LOS criterion—meeting Level of Service (LOS) C or better—would be completed in the future from May 2024 to April 2025. The express lane traffic volumes were projected from May 2024 to April 2025 based on a growth rate of 1.4 percent obtained from the Colorado Department of Transportation (CDOT) Online Transportation Information System (OTIS). These projected volumes were then 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. Minor 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.

Summary of Findings

The speed analysis concluded that current toll rates fulfill the travel speed and LOS criteria for the I-25 North Segment 2 Express Lanes.

As reported by the Bureau of Labor Statistics, the Consumer Price Index (CPI) in the Denver-Aurora-Lakewood, CO area increased by 3.5% year-over-year, as of end of January 2024. This inflation rate was factored into the proposed fiscal year (FY) 2025 toll rate adjustment.

Toll collection costs (O & M) are expected to remain stable or increase slightly during 2024. Additionally, anticipated lifecycle costs to replace toll collection equipment along the corridor will be offset by reductions in toll processing costs per transaction.

Given the findings of this analysis, it is recommended that toll rates be increased by 3.5%, rounded up to the nearest \$0.05, for both Automatic Vehicle Identification (AVI) and License Plate Toll (LPT) rates. This increase in toll rates, which relies on CPI-based inflation, will also assist in addressing O&M cost concerns.

Staff Recommendations

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

Table 1 Proposed FY 2024/2025 New Toll Rates for Northbound I-25 Segment 3

			Northbound			
			CURRENT AVI	PROPOSED NEW AVI	CURRENT LPT	PROPOSED NEW LPT
5:00 AM	-	6:00 AM	\$ 1.30	\$ 1.35	\$ 3.91	\$ 4.05
6:00 AM	-	6:45 AM	\$ 1.30	\$ 1.35	\$ 3.91	\$ 4.05
6:45 AM	-	7:15 AM	\$ 1.30	\$ 1.35	\$ 3.91	\$ 4.05
7:15 AM	-	8:15 AM	\$ 1.30	\$ 1.35	\$ 3.91	\$ 4.05
8:15 AM	-	8:45 AM	\$ 1.30	\$ 1.35	\$ 3.91	\$ 4.05
8:45 AM	-	10:00 AM	\$ 1.30	\$ 1.35	\$ 3.91	\$ 4.05
10:00 AM	-	12:00 PM	\$ 1.30	\$ 1.35	\$ 3.91	\$ 4.05
12:00 PM	-	3:00 PM	\$ 1.30	\$ 1.35	\$ 3.91	\$ 4.05
3:00 PM	-	3:30 PM	\$ 2.10	\$ 2.20	\$ 5.17	\$ 5.40
3:30 PM	-	4:30 PM	\$ 2.75	\$ 2.85	\$ 6.17	\$ 6.40
4:30 PM	-	6:00 PM	\$ 2.75	\$ 2.85	\$ 6.17	\$ 6.40
6:00 PM	-	8:00 PM	\$ 2.10	\$ 2.20	\$ 5.17	\$ 5.40
8:00 PM	-	5:00 AM	\$ 1.30	\$ 1.35	\$ 3.91	\$ 4.05
Weekend			\$ 1.30	\$ 1.35	\$ 3.91	\$ 4.05

Table 2 Proposed FY 2024/2025 New Toll Rates for Southbound I-25 Segment 3

			Southbound			
			CURRENT AVI	PROPOSED NEW AVI	CURRENT LPT	PROPOSED NEW LPT
5:00 AM	-	6:00 AM	\$ 1.30	\$ 1.35	\$ 3.90	\$ 4.05
6:00 AM	-	6:45 AM	\$ 1.30	\$ 1.35	\$ 3.90	\$ 4.05
6:45 AM	-	7:15 AM	\$ 2.50	\$ 2.60	\$ 5.71	\$ 5.95
7:15 AM	-	8:15 AM	\$ 2.75	\$ 2.85	\$ 6.16	\$ 6.40
8:15 AM	-	8:45 AM	\$ 2.75	\$ 2.85	\$ 6.16	\$ 6.40
8:45 AM	-	10:00 AM	\$ 1.65	\$ 1.75	\$ 4.35	\$ 4.55
10:00 AM	-	12:00 PM	\$ 1.30	\$ 1.35	\$ 3.90	\$ 4.05
12:00 PM	-	3:00 PM	\$ 1.30	\$ 1.35	\$ 3.90	\$ 4.05
3:00 PM	-	3:30 PM	\$ 1.30	\$ 1.35	\$ 3.90	\$ 4.05
3:30 PM	-	4:30 PM	\$ 1.30	\$ 1.35	\$ 3.90	\$ 4.05
4:30 PM	-	6:00 PM	\$ 1.30	\$ 1.35	\$ 3.90	\$ 4.05
6:00 PM	-	8:00 PM	\$ 1.30	\$ 1.35	\$ 3.90	\$ 4.05
8:00 PM	-	5:00 AM	\$ 1.30	\$ 1.35	\$ 3.90	\$ 4.05
Weekend			\$ 1.30	\$ 1.35	\$ 3.90	\$ 4.05

Next Steps

- The Board is being asked to review CTIO staff recommendations.
- CTIO staff will integrate any requested changes to the recommended proposed AVI and LPT toll rates for I-25 North Segment 3 and will return to the Board in June for final adoption of FY 2024-2025 AVI and LPT toll rates for I-25 North Segment 3.

Attachments

Attachment A: AtkinsRealis Toll Rate Adjustment Analysis for I-25 North Segment 3.

ATTACHMENT A

AtkinsRealis Toll Rate Adjustment Analysis for I-25 North Segment 3

MEMO

TO:

Kelly Brown, Chief Toll Operations Officer, Colorado Transportation Investment Office

FROM

Rami Harb, Atkins

EMAIL

Rami.Harb@atkinsglobal.com

REF

I-25 North (Segment 3) Express Lanes
(120th Avenue to E-470)

DATE

26 April 2024

PHONE

720-258-0163

CC

SUBJECT

Toll Rate Adjustment Analysis I-25 North Segment 3

1. Introduction

AtkinsRéalis and the Colorado Transportation Investment Office (CTIO) 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 3 Express Lanes (120th Avenue to E-470). The current toll rates were set in 2023 based on previous analysis of the Segment 3 Express Lanes.

2. Methodology

A flowchart outlining the steps to be followed to determine 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 3. For the period May 2023 to April 2024, 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 were examined to determine if the express lanes met 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 was analyzed to assess the performance of the express lanes.

Second, a 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 May 2024 to April 2025. The express lane traffic volumes were projected from the period May 2024 to April 2025 based on a growth rate of 1.4 percent obtained from the Colorado Department of Transportation (CDOT) Online Transportation Information System (OTIS). These projected volumes were then 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

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- 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

The express lanes average speeds satisfied the criterion of operating at higher than 45 miles per hour at least 90 percent of the time (1% below 45 mph from May 2023 to April 2024).

Table 1 shows the average LOS for the express lanes at different weekday times between May 2023 and April 2024. 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 as of April 2023 are performing as intended in providing acceptable LOS. The traffic volumes were projected one year into the future to determine if the LOS criterion (LOS C or better) would be met during the year 2025. As shown in Table 1, the future LOS is LOS B and 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 1: 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
Northbound																								
2023-2024 LOS	A	A	A	A	A	A	C	C	C	B	B	C	C	C	C	C	C	C	C	B	A	A	A	A
Projected 2025 LOS	-	-	-	-	-	-	C	C	C	C	C	C	C	C	C	C	C	C	C	B	B	-	-	-
Southbound																								
2023-2024 LOS	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Projected 2025 LOS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	B	-	-	-	-	-	-

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 3 express lanes.

3.2 Inflation and Operations and Maintenance Costs

Inflation was evaluated between May 2023 to April 2024 using the latest data available for the Denver-Aurora-Lakewood Consumer Price Index (CPI). The inflation adjustment was estimated at 3.5% based on data from the U.S. Bureau of Labor Statistics. The final escalation from 2023 to 2024 is 3.5%.

4. Recommendation for New Rates

Based on the results noted in the previous section, CTIO recommends revising the AVI and LPT toll rates per the toll schedule shown below in Table 2. There is no change to the multi-axle (4+) surcharge; it remains at \$25.

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

			Northbound			
			CURRENT AVI	PROPOSED NEW AVI	CURRENT LPT	PROPOSED NEW LPT
5:00 AM	-	6:00 AM	\$ 1.30	\$ 1.35	\$ 3.91	\$ 4.05
6:00 AM	-	6:45 AM	\$ 1.30	\$ 1.35	\$ 3.91	\$ 4.05
6:45 AM	-	7:15 AM	\$ 1.30	\$ 1.35	\$ 3.91	\$ 4.05
7:15 AM	-	8:15 AM	\$ 1.30	\$ 1.35	\$ 3.91	\$ 4.05
8:15 AM	-	8:45 AM	\$ 1.30	\$ 1.35	\$ 3.91	\$ 4.05
8:45 AM	-	10:00 AM	\$ 1.30	\$ 1.35	\$ 3.91	\$ 4.05
10:00 AM	-	12:00 PM	\$ 1.30	\$ 1.35	\$ 3.91	\$ 4.05
12:00 PM	-	3:00 PM	\$ 1.30	\$ 1.35	\$ 3.91	\$ 4.05
3:00 PM	-	3:30 PM	\$ 2.10	\$ 2.20	\$ 5.17	\$ 5.40
3:30 PM	-	4:30 PM	\$ 2.75	\$ 2.85	\$ 6.17	\$ 6.40
4:30 PM	-	6:00 PM	\$ 2.75	\$ 2.85	\$ 6.17	\$ 6.40
6:00 PM	-	8:00 PM	\$ 2.10	\$ 2.20	\$ 5.17	\$ 5.40
8:00 PM	-	5:00 AM	\$ 1.30	\$ 1.35	\$ 3.91	\$ 4.05
Weekend			\$ 1.30	\$ 1.35	\$ 3.91	\$ 4.05

			Southbound			
			CURRENT AVI	PROPOSED NEW AVI	CURRENT LPT	PROPOSED NEW LPT
5:00 AM	-	6:00 AM	\$ 1.30	\$ 1.35	\$ 3.90	\$ 4.05
6:00 AM	-	6:45 AM	\$ 1.30	\$ 1.35	\$ 3.90	\$ 4.05
6:45 AM	-	7:15 AM	\$ 2.50	\$ 2.60	\$ 5.71	\$ 5.95
7:15 AM	-	8:15 AM	\$ 2.75	\$ 2.85	\$ 6.16	\$ 6.40
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8:45 AM	-	10:00 AM	\$ 1.65	\$ 1.75	\$ 4.35	\$ 4.55
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12:00 PM	-	3:00 PM	\$ 1.30	\$ 1.35	\$ 3.90	\$ 4.05
3:00 PM	-	3:30 PM	\$ 1.30	\$ 1.35	\$ 3.90	\$ 4.05
3:30 PM	-	4:30 PM	\$ 1.30	\$ 1.35	\$ 3.90	\$ 4.05
4:30 PM	-	6:00 PM	\$ 1.30	\$ 1.35	\$ 3.90	\$ 4.05
6:00 PM	-	8:00 PM	\$ 1.30	\$ 1.35	\$ 3.90	\$ 4.05
8:00 PM	-	5:00 AM	\$ 1.30	\$ 1.35	\$ 3.90	\$ 4.05
Weekend			\$ 1.30	\$ 1.35	\$ 3.90	\$ 4.05

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APPENDIX 1: Toll Rate Increase Flowchart

