



Colorado Transportation Investment Office Memorandum

To: CTIO Board of Directors

From: Kelly Brown, Chief Toll Operations Officer
Nathaniel Benton, Toll System Specialist

Date: May 14, 2024

Subject: Recommended Updates to Time-of-Day Pricing and Dynamic Pricing Algorithm Criterion for CTIO Express Lanes

Purpose:

This memorandum presents the results of the annual toll rate adjustment analysis for all CTIO express lanes, based on the CTIO Tolling Policy (November 2023) guidelines. The Tolling Policy establishes a framework for toll rate setting and yearly adjustments to CTIO's legacy corridors, as well as the dynamic pricing corridors.

Staff are presenting recommended updates to the dynamic pricing algorithm criteria for the Central 70 and I-25 South Gap, as well as updates to the toll rates for the I-25 Segment 2, I-25 Segment 3, and C-470 express lanes. No updates to toll rates or the dynamic pricing algorithm criteria are recommended for the I-70 Mountain Express Lanes in either direction.

Requested Action:

This item is informational only and no action is requested at this time. The CTIO Board is being asked to consider the recommended updates to toll rates and dynamic pricing criteria at this month's meeting. The Board will be asked to take action on these recommendations at the June board meeting.

Methodology:

A comprehensive examination, including analysis of traffic volumes and speed data, was conducted to evaluate the requirements for toll rate adjustments. The analysis is done separately for each express lane, as well as each direction of those express lanes.

Average speeds in the express lanes were examined to determine if the express lanes met federal code 23 U.S.C. 166(d)(2), which guides operations of the express lanes on the federal highway system. This policy requires that the speed on the express lanes is at least 45 miles per hour (mph), 90 percent of the time for 180 consecutive days. Additionally, a traffic demand management analysis was performed to check whether the Level of Service (LOS) criterion—meeting LOS C or better—was met over the past year and will continue to be met in the future.

The speed and traffic analysis for each corridor is contained in the Technical Memo, which can be found as an attachment.

Also included within the Technical Memo is an analysis of the Operations and Maintenance (O&M) costs, inflation, toll transaction processing costs, and debt financing covenants to determine whether increases to toll rates were indicated based on these factors.

The toll rate adjustment methodology applies to all express lanes; however, dynamic pricing has three primary criteria that control the toll rate and are adjusted in a similar manner rather than adjusting the toll rates directly. The three criteria are:

- Cap or no Cap
- Rate Change Interval
- Maximum Increment and Decrement

These criteria are the foundation of dynamic pricing and adjusted to allow CTIO to meet traffic operations and financial covenants.

Recommended Adjustments to All Express Lanes:

Although each express lane is unique, there are commonalities across all corridors. The toll rate change factors that apply to all express lanes include operation and maintenance costs as well as inflation.

Operations and maintenance costs have increased by 3.0% on all express lanes, establishing a need to adjust the toll rates and dynamic pricing criteria to account for the increase in the costs of operating and maintaining the express lanes. Inflation was evaluated between March 2024 and March 2025 and was determined to be 2.3% for Denver-Aurora-Lakewood area. Staff recommends an increase of 3.0% to the current toll rates and the dynamic pricing cap to account for the increase in O&M costs and in relation to inflation. This increase will be applied to all express lanes, but other factors in toll adjustments may alter the final toll rate and dynamic pricing criteria based on corridor specific needs on each express lane.

Recommended Adjustments to Toll Rates for I-25 Segment 2 (US 36 to 120th Ave) Express Lanes:

Based on data from July 2024 to April 2025, it was determined that the current toll rates are not effectively managing traffic demand and maintaining desired speeds and traffic levels of service on the I-25 Segment 2 Southbound (SB) express lane. I-25 Segment 2 SB from 6:00 AM to 8:00 AM sees speeds drop below 45 mph on average 6.5% of the time, demonstrating a need to increase the toll rate to ensure compliance with the federal code. Staff is recommending an increase in toll rates from 5:00 AM to 6:45 AM. This change would increase the current toll rates to match the toll rate beginning at 6:45 AM. This can be seen in the I-25 Segment 2 staff recommended toll rate table. Traffic analysis of the northbound direction does not indicate the need for an increase.

Given the increase in O&M and the increase in inflation, staff recommends increasing the toll rates for I-25 Segment 2 by 3%, rounded up to the nearest \$0.05, for both Automatic Vehicle Identification (AVI) and License Plate Toll (LPT) rates. Staff also recommend adjusting the 5:00 AM to 6:45 AM toll rates to account for the decrease in speed during that time.

Staff Recommended Toll Rate Adjustments:

Based on the results of the analysis, staff recommends the proposed AVI and LPT toll rates per the toll schedule shown in the tables below.

Proposed FY 2025-26 Automatic Vehicle Identification (AVI) and License Plate Toll (LPT) Toll Rates for I-25 Segment 2:

Table 1: I-25 Seg 2 Northbound Proposed Toll Rates

Time-of-Day Toll Rate Schedule	2025 Current AVI	2025 Current LPT	Proposed New AVI	Proposed New LPT
5:00 AM - 6:00 AM	\$1.45	\$4.85	\$1.50	\$5.00
6:00 AM - 6:45 AM	\$1.45	\$4.85	\$1.50	\$5.00
6:45 AM - 7:15 AM	\$1.45	\$4.85	\$1.50	\$5.00
7:15 AM - 8:15 AM	\$1.45	\$4.85	\$1.50	\$5.00
8:15 AM - 8:45 AM	\$1.45	\$4.85	\$1.50	\$5.00
8:45 AM - 10:00 AM	\$1.45	\$4.85	\$1.50	\$5.00
10:00 AM - 12:00 PM	\$1.45	\$4.85	\$1.50	\$5.00
12:00 PM - 3:00 PM	\$1.45	\$4.85	\$1.50	\$5.00
3:00 PM - 3:30 PM	\$1.80	\$5.30	\$1.90	\$5.50
3:30 PM - 4:30 PM	\$2.05	\$5.80	\$2.15	\$6.00
4:30 PM - 6:00 PM	\$4.00	\$8.85	\$4.15	\$9.15
6:00 PM - 8:00 PM	\$1.80	\$5.30	\$1.90	\$5.50
8:00 PM - 5:00 AM	\$1.45	\$4.85	\$1.50	\$5.00
Weekend	\$1.80	\$5.30	\$1.90	\$5.50

Table 2: I-25 Seg 2 Southbound Proposed Toll Rates

Time-of-Day Toll Rate Schedule	2025 Current AVI	2025 Current LPT	Proposed New AVI	Proposed New LPT
5:00 AM - 6:00 AM	\$1.45	\$4.85	\$1.90	\$5.50
6:00 AM - 6:45 AM	\$1.45	\$4.85	\$1.90	\$5.50
6:45 AM - 7:15 AM	\$1.80	\$5.30	\$1.90	\$5.50
7:15 AM - 8:15 AM	\$3.15	\$7.40	\$3.25	\$7.65
8:15 AM - 8:45 AM	\$2.05	\$5.80	\$2.15	\$6.00
8:45 AM - 10:00 AM	\$1.80	\$5.30	\$1.90	\$5.50
10:00 AM - 12:00 PM	\$1.45	\$4.85	\$1.50	\$5.00
12:00 PM - 3:00 PM	\$1.45	\$4.85	\$1.50	\$5.00
3:00 PM - 3:30 PM	\$1.45	\$4.85	\$1.50	\$5.00
3:30 PM - 4:30 PM	\$1.45	\$4.85	\$1.50	\$5.00
4:30 PM - 6:00 PM	\$1.45	\$4.85	\$1.50	\$5.00
6:00 PM - 8:00 PM	\$1.45	\$4.85	\$1.50	\$5.00
8:00 PM - 5:00 AM	\$1.45	\$4.85	\$1.50	\$5.00
Weekend	\$1.80	\$5.30	\$1.90	\$5.50

Multi-Axle (4+) Surcharge:

The multi-axle (4+) surcharge remains unchanged at \$25.

Recommended Adjustments to Toll Rates for I-25 Segment 3 (120th Ave to Northwest Pkwy/E-470) Express Lanes:

Based on data from July 2024 to April 2025, it was determined that the current toll rates are effectively managing traffic demand and maintaining desired speeds and traffic levels of service.

Given the increase in O&M and the increase in inflation, staff recommends increasing the toll rates for I-25 Segment 3 by 3%, rounded up to the nearest \$0.05, for both Automatic Vehicle Identification (AVI) and License Plate Toll (LPT) rates.

Staff Recommended Toll Rate Adjustments:

Based on the results of the analysis, staff recommends the proposed AVI and LPT toll rates per the toll schedule shown in the tables below.

Proposed FY 2025-26 Automatic Vehicle Identification (AVI) and License Plate Toll (LPT) Toll Rates for I-25 Segment 3:

Table 3: I-25 Seg 3 Northbound Proposed Toll Rates

Time-of-Day Toll Rate Schedule	2025 Current AVI	2025 Current LPT	Proposed New AVI	Proposed New LPT
5:00 AM - 6:00 AM	\$1.35	\$4.05	\$1.40	\$4.20
6:00 AM - 6:45 AM	\$1.35	\$4.05	\$1.40	\$4.20
6:45 AM - 7:15 AM	\$1.35	\$4.05	\$1.40	\$4.20
7:15 AM - 8:15 AM	\$1.35	\$4.05	\$1.40	\$4.20
8:15 AM - 8:45 AM	\$1.35	\$4.05	\$1.40	\$4.20
8:45 AM - 10:00 AM	\$1.35	\$4.05	\$1.40	\$4.20
10:00 AM - 12:00 PM	\$1.35	\$4.05	\$1.40	\$4.20
12:00 PM - 3:00 PM	\$1.35	\$4.05	\$1.40	\$4.20
3:00 PM - 3:30 PM	\$2.20	\$5.40	\$2.30	\$5.60
3:30 PM - 4:30 PM	\$2.85	\$6.40	\$2.95	\$6.60
4:30 PM - 6:00 PM	\$2.85	\$6.40	\$2.95	\$6.60
6:00 PM - 8:00 PM	\$2.20	\$5.40	\$2.30	\$5.60
8:00 PM - 5:00 AM	\$1.35	\$4.05	\$1.40	\$4.20
Weekend	\$1.35	\$4.05	\$1.40	\$4.20

Table 4: I-25 Seg 3 Southbound Proposed Toll Rates

Time-of-Day Toll Rate Schedule	2025 Current AVI	2025 Current LPT	Proposed New AVI	Proposed New LPT
5:00 AM - 6:00 AM	\$1.35	\$4.05	\$1.40	\$4.20
6:00 AM - 6:45 AM	\$1.35	\$4.05	\$1.40	\$4.20
6:45 AM - 7:15 AM	\$2.60	\$5.95	\$2.70	\$6.15
7:15 AM - 8:15 AM	\$2.85	\$6.40	\$2.95	\$6.60
8:15 AM - 8:45 AM	\$2.85	\$6.40	\$2.95	\$6.60
8:45 AM - 10:00 AM	\$1.75	\$4.55	\$1.85	\$4.70
10:00 AM - 12:00 PM	\$1.35	\$4.05	\$1.40	\$4.20
12:00 PM - 3:00 PM	\$1.35	\$4.05	\$1.40	\$4.20
3:00 PM - 3:30 PM	\$1.35	\$4.05	\$1.40	\$4.20
3:30 PM - 4:30 PM	\$1.35	\$4.05	\$1.40	\$4.20
4:30 PM - 6:00 PM	\$1.35	\$4.05	\$1.40	\$4.20
6:00 PM - 8:00 PM	\$1.35	\$4.05	\$1.40	\$4.20
8:00 PM - 5:00 AM	\$1.35	\$4.05	\$1.40	\$4.20
Weekend	\$1.35	\$4.05	\$1.40	\$4.20

Multi-Axle (4+) Surcharge:

The multi-axle (4+) surcharge remains unchanged at \$25.

Recommended Adjustments to Toll Rates for C-470 Express Lanes:

Based on data from July 2024 to April 2025, it was determined that the current toll rates are effectively managing traffic demand and maintaining desired speeds and traffic levels of service.

Given the increase in O&M and the increase in inflation, staff recommends increasing the toll rates for C-470 by 3%, rounded up to the nearest \$0.05, for both Automatic Vehicle Identification (AVI) and License Plate Toll (LPT) rates.

Staff Recommended Toll Rate Adjustments:

Based on the results of the analysis, staff recommends the proposed AVI and LPT toll rates per the toll schedule shown in the tables below.

Proposed FY 2025-26 Automatic Vehicle Identification (AVI) and License Plate Toll (LPT) Toll Rates for C-470:

Table 5: C-470 Eastbound - Zone 1 Platte Canyon East

Monday Through Sunday Time-of-Day Toll Rate Schedule	2025 Current AVI	2025 Current LPT	Proposed New AVI	Proposed New LPT
12:00 AM - 6:00 AM	\$0.85	\$2.45	\$0.90	\$2.55
6:00 AM - 7:00 AM	\$0.85	\$2.45	\$0.90	\$2.55
7:00 AM - 9:00 AM	\$1.35	\$3.25	\$1.40	\$3.35
9:00 AM - 2:00 PM	\$0.85	\$2.45	\$0.90	\$2.55
2:00 PM - 3:00 PM	\$0.85	\$2.45	\$0.90	\$2.55
3:00 PM - 6:00 PM	\$1.15	\$2.80	\$1.20	\$2.90
6:00 PM - 7:00 PM	\$1.15	\$2.80	\$1.20	\$2.90
7:00 PM - 12:00 AM	\$0.85	\$2.45	\$0.90	\$2.55

Table 6: C-470 Eastbound - Zone 2 University East Quebec East

Monday Through Sunday Time-of-Day Toll Rate Schedule	2025 Current AVI	2025 Current LPT	Proposed New AVI	Proposed New LPT
12:00 AM - 6:00 AM	\$0.85	\$3.45	\$0.90	\$3.60
6:00 AM - 7:00 AM	\$2.50	\$6.05	\$2.60	\$6.25
7:00 AM - 9:00 AM	\$3.95	\$8.40	\$4.10	\$8.70
9:00 AM - 2:00 PM	\$2.00	\$5.25	\$2.10	\$5.45
2:00 PM - 3:00 PM	\$2.60	\$6.25	\$2.70	\$6.45
3:00 PM - 6:00 PM	\$3.65	\$7.90	\$3.80	\$8.08
6:00 PM - 7:00 PM	\$3.15	\$7.05	\$3.25	\$7.30
7:00 PM - 12:00 AM	\$0.85	\$3.45	\$0.90	\$3.60

Table 7: C-470 Westbound - Zone 1 Quebec West

Monday Through Sunday Time-of-Day Toll Rate Schedule	2025 Current AVI	2025 Current LPT	Proposed New AVI	Proposed New LPT
12:00 AM - 6:00 AM	\$0.85	\$2.45	\$0.90	\$2.55
6:00 AM - 7:00 AM	\$1.15	\$2.80	\$1.20	\$2.90
7:00 AM - 9:00 AM	\$2.00	\$4.25	\$2.10	\$4.40
9:00 AM - 2:00 PM	\$0.85	\$2.45	\$0.90	\$2.55
2:00 PM - 3:00 PM	\$1.25	\$3.05	\$1.30	\$3.12
3:00 PM - 6:00 PM	\$2.40	\$4.90	\$2.50	\$5.05
6:00 PM - 7:00 PM	\$1.85	\$3.95	\$1.95	\$4.10
7:00 PM - 12:00 AM	\$0.85	\$2.45	\$0.90	\$2.55

Table 8: C-470 Westbound - Zone 2 University West Lucent West

Monday Through Sunday Time-of-Day Toll Rate Schedule	2025 Current AVI	2025 Current LPT	Proposed New AVI	Proposed New LPT
12:00 AM - 6:00 AM	\$0.85	\$3.45	\$0.90	\$3.60
6:00 AM - 7:00 AM	\$1.15	\$3.90	\$1.20	\$4.05
7:00 AM - 9:00 AM	\$2.00	\$5.25	\$2.10	\$5.45
9:00 AM - 2:00 PM	\$0.85	\$3.45	\$0.90	\$3.60
2:00 PM - 3:00 PM	\$1.25	\$4.05	\$1.30	\$4.20
3:00 PM - 6:00 PM	\$2.40	\$6.00	\$2.50	\$6.05
6:00 PM - 7:00 PM	\$1.85	\$5.00	\$1.95	\$5.15
7:00 PM - 12:00 AM	\$0.85	\$3.45	\$0.90	\$3.60

Table 9: C-470 Westbound - Zone 3 Santa Fe West:

Monday Through Sunday Time-of-Day Toll Rate Schedule	2025 Current AVI	2025 Current LPT	Proposed New AVI	Proposed New LPT
12:00 AM - 6:00 AM	\$0.85	\$2.45	\$0.90	\$2.55
6:00 AM - 7:00 AM	\$1.15	\$2.80	\$1.20	\$2.90
7:00 AM - 9:00 AM	\$2.00	\$4.25	\$2.10	\$4.40
9:00 AM - 2:00 PM	\$0.85	\$2.45	\$0.90	\$2.55
2:00 PM - 3:00 PM	\$1.25	\$3.05	\$1.30	\$3.12
3:00 PM - 6:00 PM	\$2.40	\$4.90	\$2.50	\$5.05
6:00 PM - 7:00 PM	\$1.85	\$3.95	\$1.95	\$4.10
7:00 PM - 12:00 AM	\$0.85	\$2.45	\$0.90	\$2.55

Multi-Axle (4+) Surcharge:

The multi-axle (4+) surcharge remains unchanged at \$25.

Recommended Adjustments to the Dynamic Pricing Algorithm Criterion for the Central 70 Express Lanes:

Based on data from May 1, 2024, to March 31, 2025, it was determined that the current dynamic pricing parameters are not effectively managing traffic demand and maintaining desired speeds and traffic LOS on the Central 70 Westbound (WB) express lane. Central 70 WB from 5:00 PM to

6:00 PM sees speeds drop below 45 mph 5% of the time, demonstrating a need to increase the maximum cap on dynamic pricing to ensure compliance with the federal code. Dynamic pricing is effectively managing and maintaining the desired speeds and levels of service for the Central 70 Eastbound (EB) express lane.

Given the performance of the express lane, the increase in O&M, and the increase in inflation, staff is recommending increasing the minimum Automatic Vehicle Identification (AVI) toll cap by 3%, rounded up to the nearest \$0.05, for both WB and EB Central 70. Due to the speed of Central 70 westbound, staff is recommending an increase of \$0.50 to the maximum roll rate to improve speed in the express lane. No changes are suggested to the maximum increment and decrement, or the rate change interval.

Table 10: Dynamic Pricing Algorithm Criterion Summary Central 70

	Eastbound	Westbound
Minimum Current AVI Toll Rates	\$ 1.50	\$ 1.50
Minimum Proposed AVI Toll Rates	\$ 1.55	\$ 1.55
Minimum Current LPT Toll Rates	\$3.75	\$3.75
Minimum Proposed LPT Toll Rates	\$3.89	\$3.89
Maximum Current AVI Toll Rates	\$ 5.50	\$ 5.50
Maximum Proposed AVI Toll Rates	\$ 6.00	\$ 6.00
Maximum Current LPT Toll Rates	\$13.75	\$13.75
Maximum Proposed LPT Toll Rates	\$15.00	\$15.00

License Plate Tolling (LPT) Surcharge:

There is no change to the LPT surcharge of 150% of the Central I-70 express lane AVI toll rates.

Multi-Axle (4+) Surcharge:

The multi-axle (4+) surcharge remains unchanged at \$25.

Recommended Adjustments to the Dynamic Pricing Algorithm Criterion for the I-25 South Gap Express Lanes:

Based on data from May 1, 2024, to March 31, 2025, it was determined that the current dynamic pricing parameters are effectively managing traffic demand and maintaining desired speeds and traffic levels of service.

Given the increase in O&M and the increase in inflation, staff recommends increasing the maximum AVI toll cap by 3%, rounded up to the nearest \$0.05, for I-25 South Gap. No changes are suggested to the maximum increment and decrement, or the rate change interval.

Table 11: Dynamic Pricing Algorithm Criterion Summary I-25 South Gap

	Northbound	Southbound
Minimum Current AVI Toll Rates Zone 1	\$ 2.00	\$ 1.75
Minimum Proposed AVI Toll Rates Zone 1	\$ 2.10	\$ 1.85
Minimum Current LPT Toll Rates Zone 1	\$ 5.00	\$ 4.38
Minimum Proposed LPT Toll Rates Zone 1	\$ 5.25	\$ 4.65
Minimum Current AVI Toll Rates Zone 2	\$ 1.75	\$ 2.00
Minimum Proposed AVI Toll Rates Zone 2	\$ 1.85	\$ 2.10
Minimum Current LPT Toll Rates Zone 2	\$ 4.38	\$ 5.00
Minimum Proposed LPT Toll Rates Zone 2	\$ 4.65	\$ 5.25

License Plate Tolling (LPT) Surcharge:

There is no change to the LPT surcharge of 150% of the I-25 South Gap express lane AVI toll rates.

Multi-Axle (4+) Surcharge:

The multi-axle (4+) surcharge remains unchanged at \$25.

Recommended Adjustments to the I-70 Mountain Express Lanes:

Staff are recommending no changes in toll rates or dynamic pricing criteria for the I-70 Mountain Express Lanes in either direction.

Next Steps:

- The CTIO Board is encouraged to provide feedback on the recommended updates to the toll rates and dynamic pricing algorithm criteria for all corridors.
- CTIO staff will integrate any requested changes and return at the next board meeting with a resolution for CTIO Board approval of the updated toll rates and dynamic pricing algorithm criterion.

Attachment A: Toll Rate Adjustment Analysis Memo

Attachment B: Toll Rate Adjustment PowerPoint