

# MEMO

To: Kelly Brown, Chief Toll Operations Officer, Colorado Transportation Investment Office (CTIO)

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<b>DATE</b>	<b>PHONE</b>	<b>CC</b>
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<b>SUBJECT</b>	Dynamic Pricing Parameters Setting - I-25 GAP	

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## 1. Introduction

AtkinsRéalis has been tasked by the Colorado Transportation Investment Office (CTIO) with dynamic pricing parameters setting on the I-25 GAP Express Lanes. The operations policies are summarized in Appendix 1.

## 2. Project Limits and Tolling

The I-25 South Gap project adds approximately 15-miles of express lanes in each direction between Monument and Castle Rock. The express lanes are divided into two zones. Zone 1 extends from north of Palmer Divide Road to Upper Lake Gulch Road and is 8.1 miles long. Zone 2 extends from Upper Lake Gulch Road to south of Plum Creek Parkway and is 7.1 miles long. There are two entry/exit points in each direction, and drivers pay a toll rate depending on whether they drive through one zone or both. Overhead signs indicate toll prices which change by time of day.

## 3. Operations Policy

The operations policy for the I-25 GAP Express Lanes is summarized below:

- Hours of operation: 24 hours a day, 7 days a week, 365 days a year.
- High occupancy vehicles with three or more passengers (HOV3+) use the Express Lanes for free.
- Motorcycles use the Express Lanes for free.
- Vehicles with four or more axles pay a surcharge of \$25 per zone.

- The current tolling regime is Time-of-Day (TOD) pricing. The tolling regime will become dynamic on November 01 of 2024.

## 4. Dynamic Pricing Parameters

Pursuant to the CTIO amended toll rate setting and adjustment policy (November 2023), three primary criteria of the dynamic pricing algorithm will be evaluated for each Express Lane. The three criteria include:

1. Minimum and maximum toll rates
2. Rate change interval
3. Maximum AVI increment and decrement

These three dynamic pricing algorithm criteria will function as a framework so that the goals of the CTIO Tolling Policy listed in *Section 4 Express Lanes toll rates setting objectives (revenue versus throughput maximization)* continue to be met.

### 4.1 Minimum and Maximum Toll Rates

- **Minimum toll rate:** The minimum AVI toll rate of \$1.50, for the entire trip, is set to cover the AVI toll systems and operation costs (the same minimum AVI rate applies to the current TOD pricing).
- **Maximum toll rate:** The maximum AVI toll rate is set to manage demand during peak hours to maintain the desired traffic level of service in the Express Lanes. Based on current traffic conditions a maximum AVI toll rate of \$4.75, for the entire trip, is recommended. The current maximum AVI rate is \$3.75. The increase in the maximum toll rate accounts for traffic ramp-ups and peak hours.

### 4.2 Rate Change Interval

The rate change interval is set to allow the dynamic pricing algorithm to respond to rapid demand fluctuations. A range of 5 min to 15 min is recommended based on current traffic patterns and speed of traffic volume ramp-ups.

### 4.3 Maximum Increment and Decrement

- **Maximum increment:** the maximum increment is set to manage an abrupt increase in traffic demand. Based on our analysis, a maximum AVI increment of \$3.25 is recommended.

- **Maximum decrement:** the maximum decrement is set to attract vehicles to the Express Lanes once the desired level of service is reached. A maximum AVI decrement rate of \$3.25 is recommended.

## 5. License Plate Tolling (LPT) Surcharge

License plate tolling (LPT) costs more than AVI tolling due to additional back-office costs and LPT leakage. Therefore, LPT rates are developed by imposing a surcharge on the AVI toll rates.

- LPT surcharge covers back-office additional cost and LPT leakage.
- LPT leakage is assumed at 40 percent based on historical data.
- LPT leakage includes uncollectable and unbillable LPT transactions.
- LPT additional costs are related to image review and other systems.
- The LPT surcharge is recommended at 150%.

## 6. Summary Recommendations

- Minimum toll rate: \$1.50
- Maximum toll rate: \$4.75
- Rate change interval: 5-15 minutes
- Maximum AVI increment: \$3.25 (LPT surcharge applies)
- Maximum AVI decrement: \$3.25 (LPT surcharge applies)

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## APPENDIX 1: Express Lanes Operations Policies

	C-70 Express Lanes	C-470 Express Lanes	US 36 Express Lanes	I-25 North Express Lanes	I-25 Central Express Lanes (reversible)	I-70 Mountain Express Lane	I-25 S GAP Express Lanes
<b>Open 24/7</b>	Yes	Yes	Yes	Yes	No <sup>2</sup>	No <sup>1</sup>	Yes
<b>Tolling Regime</b>	Dynamic	Time-of-day (TOD)	Time-of-day (TOD)	Time-of-day (TOD)	Time-of-day (TOD)	Time-of-day (TOD)	Dynamic
<b>HOV Discount</b>	HOV3+ free <sup>3</sup>	No discount	HOV3+ free <sup>3</sup>	HOV3+ free <sup>3</sup>	HOV3+ free <sup>3</sup>	No discount	HOV3+ free <sup>3</sup>
<b>Motorcycle Policy</b>	Free	Free	Free	Free	Free	No discount	Free
<b>Trucks / Trailers</b>	\$25 surcharge for 4+ axles	\$25 surcharge per zone for 4+ axles	\$25 surcharge per toll point for 4+ axles	\$25 surcharge for 4+ axles (for each Segment 2 and 3)	\$25 surcharge for 4+ axles	Not allowed	\$25 surcharge for 4+ axles (2 zones per direction, per zone)
<b>Transit Buses</b>	Allowed	Allowed, but no transit routes exist currently	Allowed	Allowed	Allowed	Not allowed	Allowed

<sup>1</sup>Open on weekends, holidays, and on special occasions.

<sup>2</sup>On weekdays, southbound travel is open from 5 a.m. to 11 a.m., northbound travel is open from noon to 3 a.m. On weekends, northbound lanes are open from Friday noon until Monday 3 a.m.

<sup>3</sup>HOV3+ vehicles must have an ExpressToll account and Switchable HOV transponder to avail discount.