

Regional Mobility Pricing Project

Date	July 31, 2023
To	Equity and Mobility Advisory Committee (EMAC)
From	RMPP Project Team
Subject	Regional Mobility Pricing Project Options, Evaluation Process, and Initial Cost Comparison

Introduction

This memorandum describes three Regional Mobility Pricing Project (RMPP) options that have been developed for discussion prior to conducting modeling for the regional pricing project for I-5 and I-205 in the Portland metro area. The document describes how input from partner agencies and the public will inform the evaluation process leading up to environmental review in fall 2023.

Evolution of Regional Mobility Pricing Project

The Regional Mobility Pricing Project (RMPP) has been in development since the Value Pricing Feasibility Assessment (VPFA) in 2018, when it was called Concept C and identified as a long-term implementation scenario for regional congestion pricing. The concept was further refined during the 2021-2022 Planning and Environmental Linkages (PEL) phase under the National Environmental Policy Act (NEPA). The project options included in this memorandum build on concepts previously studied while incorporating partner and public feedback received thus far and taking into consideration increased knowledge of cost, design, constructability, and implementation realities. The fundamental elements¹ of the project have not changed and include:

- Congestion pricing applied to all lanes of I-5 and I-205.
- Project study area extents include I-5 and I-205 from the Columbia River to the I-5 Boone Bridge.
- All electronic tolling with gantries and transponders.
- Toll rates will be on a set schedule (not dynamic pricing) based on congestion and traffic patterns.
- Toll rates will be monitored and adjusted after implementation.
- A low-income toll program will be available the first day tolling begins.

The options included in this transmittal also all fit within the purpose of the RMPP: *to use congestion pricing on all lanes of I-5 and I-205 to manage travel demand and traffic congestion on these facilities in the Portland, Oregon metropolitan area in a manner that will generate revenue for transportation system investments.*

Since the NEPA scoping period concluded in January 2023, we have gained a greater understanding of what will be required to implement the project taking into consideration multiple factors, particularly:

- Design constraints of the interstate system and ramps, including limitations on where toll gantries and cameras can be installed.
- Costs, including annual operating costs, such as facility maintenance, system operations, and toll collection costs, and implementation capital costs based on the physical infrastructure required.
- Compatibility with the I-205 Toll Project and Interstate Bridge Replacement Program.
- Implementation schedule constraints, with a goal to begin RMPP toll collection as close to the start of toll collection at Abernethy Bridge as possible.

¹ Documented in the November 2022 NEPA Proposed Action Technical Memorandum.

Draft Considerations for Evaluating Project Options

The project options described in this document will be shared with agency staff from the Transportation Technical Report (TTR) Workgroup and Regional Modeling Group (RMG) in July 2023 and with the Equity and Mobility Advisory Committee (EMAC) in early August 2023. The options will be evaluated between August-September 2023 and the results, including corresponding toll rate assumptions, will be shared with the TTR Workgroup, RMG, EMAC, and Regional Toll Advisory Committee for input and discussion in September 2023. Public outreach will occur throughout the evaluation process to understand community priorities for regional congestion pricing.

The project options will be evaluated based on performance, equity, and financial considerations, listed below. The performance and financial considerations will be evaluated using travel demand modeling. The proposed considerations and associated criteria are being developed in coordination with partner staff:

- **Proposed Considerations – Model Performance:**
 - Congestion & Demand Management on I-5 and I-205
 - Regional System Performance
 - Diversion to Non-Priced Facilities
 - Multimodal Travel (mode share shift)
- **Proposed Considerations:**
 - Equity (*EMAC to provide input*)
 - Revenue Potential, including construction and operating costs
 - Customer Experience
 - Compatibility and ease of integration
 - Construction feasibility, cost, and schedule

Table 1. Draft Considerations and Proposed Model Performance Criteria for Evaluating Project Options

Consideration	Model Performance Criteria
Congestion & Demand Management on I-5 and I-205	Share of Vehicle Speeds on I-5 and I-205 within Modeling Target Range (40-60 MPH)
	Through Trip Time Savings on I-5 and I-205
Regional System Performance	Regional VMT
	Regional VMT per Capita
	Regional Vehicle Time Savings (VHT)
Diversion to Non-Priced Facilities	Diversion to Non-Priced Facilities (VMT)
	Freight Diversion to Non-Priced Facilities (Freight VMT)
Multimodal Travel	Mode Share Shift (HOV, SOV, Transit, Bike/Walk)

Following the evaluation and discussions with project partners in September, RTAC will provide a recommendation on a single Proposed Action (“Build Alternative”) to analyze in the Environmental Assessment. Additional financial scenarios may be analyzed as part of the traffic and revenue study.

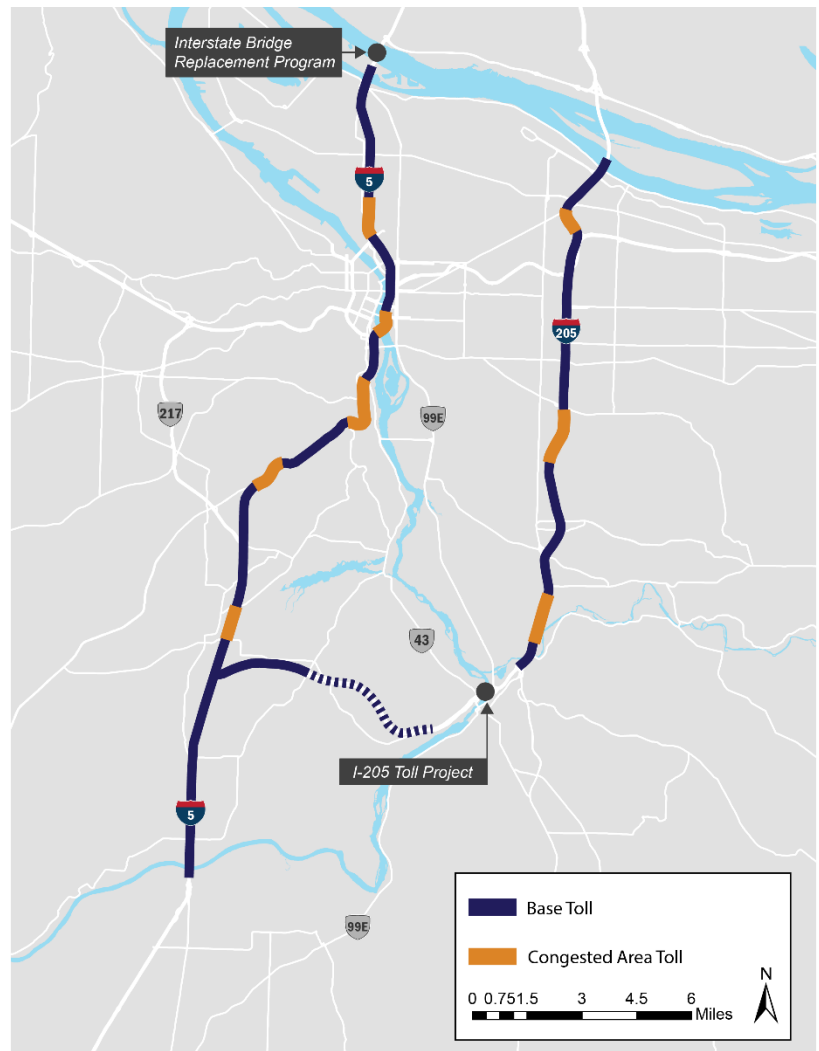
Option 1: Base Toll + Congested Area Tolls

How it Works

The base toll + congested area toll option would use cameras located on ramps in combination with multiple electronic toll collection gantries on I-5 and I-205 within the project extents. All drivers who use I-5 or I-205 within the project extents would pay a base toll during daytime hours (5 a.m. to 9 p.m.). Drivers that use an area of the highway that is prone to high congestion levels would pay a higher toll during peak hours, called a “congested area toll.” The price of the base toll would remain fixed during daytime hours. The price of the “congested area” tolls would change according to a set schedule over the course of the day based on congestion and traffic patterns. The price for any trip would be \$0 overnight (9 p.m. to 5 a.m.).

Key Elements and Expected Outcomes

- All trips using I-5 and I-205 within the RMPP extents during daytime hours would pay the base toll, and trips traveling through congested areas would pay a higher toll during peak hours.
- Infrastructure includes ramp cameras on all entrance ramps within the project extents to charge the base toll and mainline gantries in each congested area to charge the congested area toll. The number of gantries in each congested area will depend on final design of the system.
- Pricing the full system reduces the incentive to divert off the highway to avoid specific “congested area toll” gantries. However, it may result in more trips diverting to completely avoid the interstate.
- The base toll is expected to reduce the number of short trips on I-5 and I-205.
- A multi-tier rate system is likely to be more complex to communicate to drivers than the toll zone options described on the next page.



Option 2a and 2b: Toll Zones

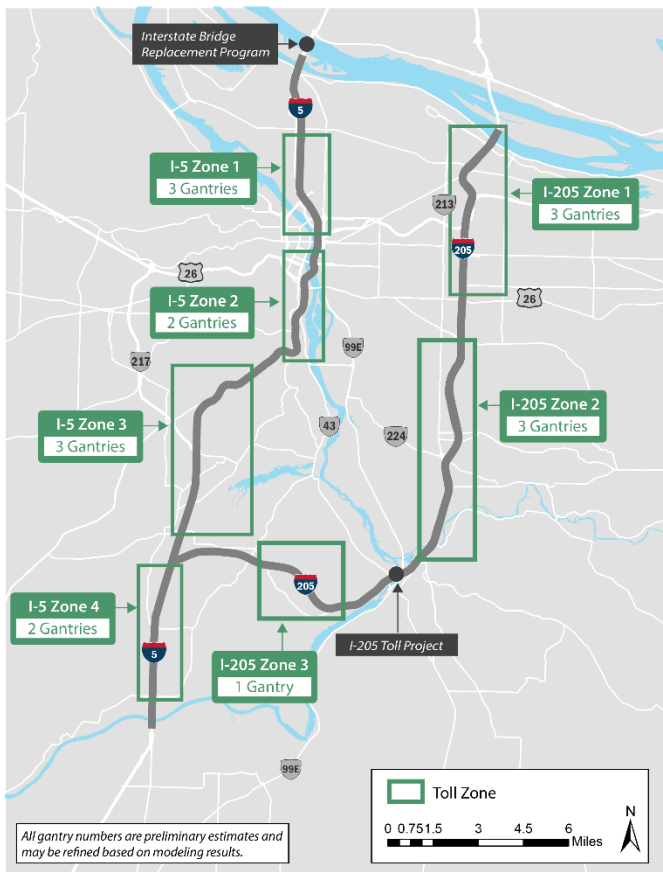
How it Works

The toll zone options would use multiple electronic toll collection gantries to charge drivers that enter toll zone(s) on I-5 and I-205 within the project extents. The price for each zone would change according to a set schedule over the course of the day based on congestion and traffic patterns, with higher prices during peak travel hours and lower prices or no toll during off-peak travel hours. The price for any trip would be \$0 overnight (9 p.m. to 5 a.m.) Drivers would only pay one fee for each specific zone, regardless of how many gantries they pass under within that zone.

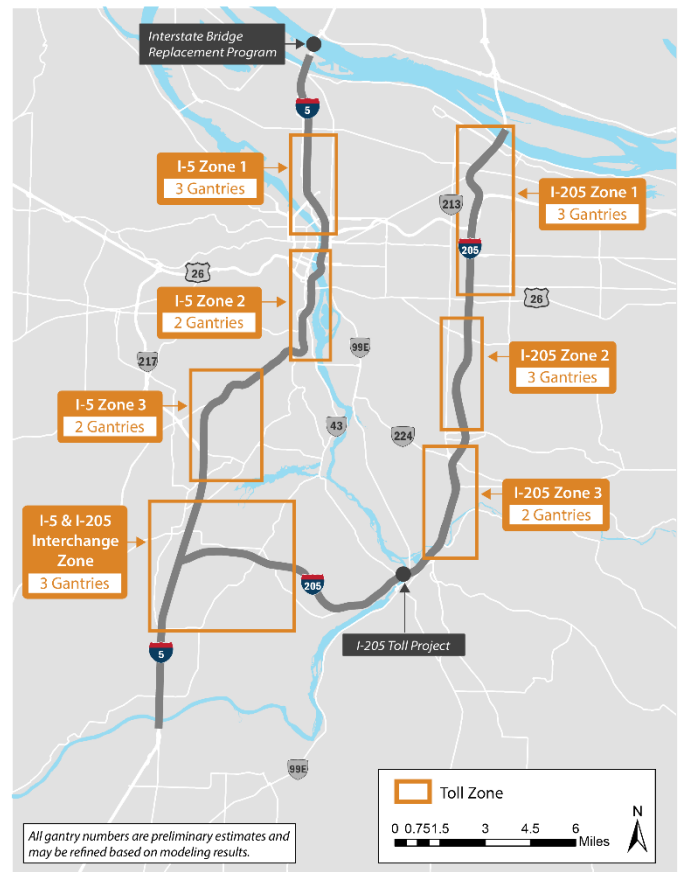
Key Elements and Expected Outcomes

- Infrastructure includes mainline gantries, with approximately 1–3 gantries in each toll zone, tolling all lanes of traffic.
- Tolls are applied within the most congested areas of I-5 and I-205 to provide congestion management across the system.
- The majority of trips on I-5 and I-205 would pay a toll, including almost all trips traveling over 2 miles on I-5 and I-205.
- Because drivers are only charged once within a zone, they are incentivized to stay on the system once they enter a zone and are discouraged from diverting to avoid gantries.

“Toll zones” are short, congested segments of I-5 and I-205 where drivers are charged a fee to travel within that specific zone. Some vehicles may go through multiple zones and would be charged for each.



Option 2a



Option 2b

Option 1: Cost of Construction and Operations

- Capital costs are estimated at \$120M to \$150M, depending on number of gantries and where they are located. Additional design work is needed to refine the capital cost estimate.
- Operationally, the Option 1 system is more complex than Options 2a and 2b. Operating costs are likely to be higher. This option requires substantial infrastructure to toll all trips, and the logistics of system implementation are more complicated.

Options 2a and 2b: Cost of Construction and Operations

- Capital costs are estimated at \$150 million to \$200 million, depending on number of gantries and where they are located. Additional design work is needed to refine the capital cost estimate.
- However, operating costs are anticipated to be lower – possibly substantially lower – than Option 1.
- By placing toll collection gantries at the highest traffic locations and reducing operating costs, the anticipated net revenue generated by each gantry is maximized.

Initial Comparison of Risks

Options 2a and 2b may require more mainline toll gantry construction but require less overall infrastructure compared to Option 1. There is greater certainty about schedule and capital, operations, maintenance, and administrative costs and less risk for schedule delay.

Overall, compared with Options 2a and 2b, Option 1 is more complex, and there is greater uncertainty about ongoing operations, maintenance, and administrative costs. This option is an experimental design approach that has not been done before, meaning there is a limited pool of vendors and a higher likelihood of schedule delay.