



# Portland Metro Area Value Pricing Feasibility Analysis

Final

## Technical Memorandum #1: Objectives and Performance Measures



December 15, 2017





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## Final Technical Memorandum #1 Objectives and Performance Measures

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# Portland Metro Area Value Pricing Feasibility Analysis

## Objectives and Performance Measures

### 1 BACKGROUND

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Oregon House Bill 2017 from the 2017 Legislative session directs the Oregon Transportation Commission (OTC) to seek approval from the Federal Highway Administration (FHWA) by December 2018, to implement value pricing on the Interstate 5 (I-5) and Interstate 205 (I-205) corridors, from the state line to their intersection in Oregon. Per the legislation, value pricing would be used to reduce traffic congestion in the Portland metropolitan region. If FHWA approves, the OTC is required to implement value pricing.

The **goal** of the Value Pricing Feasibility Analysis is to develop a value pricing program that will reduce congestion on I-5 and I-205 and meet the Oregon legislature's schedule for submittal to FHWA by the end of 2018. Some tolling options that could be considered would be allowed under FHWA's Section 129 General Tolling or the Section 166 HOV/HOT Lanes program. These programs have no restrictions on the number of projects or states that may receive tolling authority through them. In addition, tolling agreements with FHWA are not required with these programs.

Another FHWA tolling program is the Value Pricing Pilot Program (VPPP). ODOT currently has an active slot in this program and will be applying to maintain this status. This provides the OTC with broad flexibility to implement a wide variety of congestion pricing applications beyond those allowed in the two programs mentioned above. To gain FHWA approval for pricing scenarios authorized through the VPPP, ODOT would need to demonstrate that the pricing application addresses a congestion issue and that it uses variably priced tolls.

Value pricing, also known as congestion pricing or peak-period pricing, is tolling in which a higher price is set for driving on a road when demand is greater, usually in the morning and evening rush hours. The purpose is to reduce congestion by encouraging people to travel at less congested times or to change travel mode, thereby providing more reliable travel time. The main types of value pricing tools that will be considered include:

- priced lanes, which give drivers a choice to pay to use the lane to save time or to use the "general purpose" (unpriced) lane; and
- priced roadways, a mainline concept under which all lanes would be priced.



Both types of value pricing tools could be applied to the entire facility or to discrete interstate segments, which could include bridges. Implementation of priced lanes requires a decision about whether to construct new lanes or convert general purpose lanes.

Additional variants of value pricing that would not be applicable to these two corridors include non-freeway pricing concepts, such as cordon pricing of defined areas, zonal pricing of segment screen lines, and parking pricing. Not all concepts are currently in operation; some remain theoretical. The Portland Area Value Pricing Feasibility Analysis will determine where value pricing could be successfully applied on the I-5 and I-205 corridors and what the impacts of each option would be. Throughout this feasibility analysis, ODOT will work with local government officials, community based organizations, business representatives and other stakeholders, and conduct extensive public engagement to gather community input about value pricing.

## **Purpose of Memorandum**

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The purpose of Technical Memorandum #1 is to establish a shared understanding of the project goals and the policy considerations for which the OTC specifically seeks input from the PAC. For these considerations, objectives and potential performance measures have been identified to inform future discussions and PAC input on the alternatives being considered.

This memorandum identifies objectives and potential performance measures to set the foundation for the evaluation framework. For context, here is a definition of objectives and performance measures within the context of this feasibility analysis:

- Objectives describe how project goals will be achieved; these are developed to specifically address the issues that the PAC is asked to consider in the Charter.
- Performance measures are the criteria that will provide quantitative or qualitative data to describe how and the extent to which each value pricing option addresses a specific objective; performance measures illustrate the pros and cons of differing concepts when compared with each other.

Clearly defining value pricing objectives and performance measures is essential to establishing a framework for all subsequent evaluation and analysis, and is the critical first step to evaluate the effectiveness of value pricing concepts based on community and stakeholder values.



The Portland Area Value Pricing Feasibility Analysis objectives draw largely from the OTC's charge for the PAC. The project team will review the objectives and proposed performance measures at the first PAC meeting. If there are modifications, the project team will revise and bring them back to the PAC at their second meeting for approval. If there are no changes, the PAC will be asked to approve this document at their first meeting.

## 2 Portland Area Value Pricing Considerations

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The PAC Charter identifies the following 10 considerations for evaluating value pricing options. These considerations will serve as the basis for the evaluation framework for all examined concepts in the feasibility analysis. Other factors may also be considered during analysis.

- **Traffic operations improvements:** To what extent the option will improve the traffic operations of the priced facility, including but not limited to increasing reliability and mitigating congestion.
- **Diversion of traffic:** To what extent the option will cause diversion to other routes and modes that will impact the performance and operations of other transportation facilities, including both roads and transit service.
- **Adequacy of transit service:** To what extent public transportation service is available to serve as an alternative, non-tolled mode of travel.
- **Equity impacts:** Whether the option will disproportionately impact environmental justice households or communities and to what extent mitigation strategies could reduce the impact.
- **Impacts on the community, economy, and environment:** Whether and how the option will impact the surrounding community, economy, and/or environment and the economy of the state in general.
- **Public input:** To what extent the public supports a particular pricing option as a way to address congestion.
- **Consistency with state and regional law and policy:** Whether the option will comply with existing Oregon Transportation Commission policies, state laws, and regional planning regulations.
- **Feasibility under federal law:** Whether the option is allowable under federal tolling laws or will require a waiver under the Value Pricing Pilot Program or some other authority.



- **Project delivery schedules:** Whether a value pricing option has the potential to alter the expected delivery schedule for a project on the corridor.
- **Revenue and cost:** To what extent the option will raise sufficient revenue to cover the cost of implementing value pricing as well as the ongoing operational expenses, including the costs of maintenance and repairs of the facility.

### 3 VALUE PRICING OBJECTIVES AND PROPOSED PERFORMANCE MEASURES

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The overall goal of the feasibility analysis is to develop a value pricing program that will manage traffic on I-5 and I-205 and will meet the Oregon legislature's schedule for submittal to FHWA by the end of 2018.

As stated in the OTC's charge for the Portland Area Value Pricing Policy Advisory Committee (PAC),<sup>1</sup> the Commission intends to evaluate value pricing options that will address congestion through one or more of the following means:

- **Managing congestion:** Value pricing used to manage demand and encourage more efficient use of the transportation system by shifting trips to less congested times or designated lanes through pricing and/or maximizing the use of other modes to improve freeway reliability.
- **Financing bottleneck relief projects:** Value pricing used as a means to finance the construction of roadway improvements that address identified bottleneck projects that will improve the efficient movement of goods and people.

The **REVISED DRAFT** objectives and proposed performance measures listed in Table 3-1 address the considerations listed in the PAC Charter. The evaluation of value pricing concepts against the performance measures identified in the table will take place in two rounds. The first evaluation will be presented to the PAC at their third meeting and the second evaluation will be presented at their fourth meeting.

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<sup>1</sup> ODOT. Portland Region Value Pricing. Portland Region Value Pricing Policy Advisory Committee. [http://www.oregon.gov/ODOT/Documents/Value\\_Pricing\\_PAC\\_charge.pdf](http://www.oregon.gov/ODOT/Documents/Value_Pricing_PAC_charge.pdf). Accessed October 14, 2017.





**Table 3-1. REVISED DRAFT Value Pricing Objectives and Potential Performance Measures<sup>2</sup>**

Factors for Consideration	Objectives	Performance Measures	First-Round Evaluation	Second-Round Evaluation
Traffic operations improvement on I-5 and I-205	<ul style="list-style-type: none"> <li>I-5 and I-205:               <ul style="list-style-type: none"> <li>Manage travel demand and traffic congestion for all users</li> <li>Evaluate travel time and improve travel time reliability for passenger vehicles and public transportation</li> <li>Evaluate travel time and improve travel time reliability for freight modes</li> <li>Reduce delay at key bottlenecks to optimize efficiency</li> <li>Consider value pricing’s ability to contribute to safer travel conditions</li> <li>Consider additional congestion mitigation measures</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Vehicle and person throughput on I-5 and I-205 during the PM peak 2-hour period</li> </ul>	x (vehicles)	x (persons)
		<ul style="list-style-type: none"> <li>Freight truck throughput on I-5 and I-205 during the PM peak 2-hour period</li> </ul>	x	x
		<ul style="list-style-type: none"> <li>Travel time on I-5 and I-205 (full corridor) during the PM peak 2-hour period</li> </ul>	x	
		<ul style="list-style-type: none"> <li>Freight truck travel time on I-5 and I-205 (full corridor) during the PM peak 2-hour period</li> </ul>	x	x
		<ul style="list-style-type: none"> <li>Assessment of change in duration of peak vehicle traffic conditions</li> </ul>		x (qualitative)
		<ul style="list-style-type: none"> <li>Delay on priced facility</li> </ul>		x
		<ul style="list-style-type: none"> <li>Safety impacts</li> </ul>		x (qualitative)
		<ul style="list-style-type: none"> <li>Trip length distribution</li> </ul>		x
Diversion of traffic	<ul style="list-style-type: none"> <li>Evaluate traffic diversion onto other routes, modes, or time periods and the implications to overall system operations</li> <li>Include evaluation of traffic diversion through neighborhoods, business districts, and along key pedestrian and bicycle routes near priced facilities</li> </ul>	<ul style="list-style-type: none"> <li>Level of diverted trips onto adjacent facilities</li> </ul>	x (qualitative)	
		<ul style="list-style-type: none"> <li>Mode share (HOV, SOV, light rail, and bus) <i>used for multiple objectives</i></li> </ul>	x (qualitative)	
		<ul style="list-style-type: none"> <li>Trip length distribution</li> </ul>		x
		<ul style="list-style-type: none"> <li>Safety impacts to all modes of transportation on routes with diversion</li> </ul>	x (qualitative)	

<sup>2</sup> All performance measures will be evaluated in future year 2027. Much of the performance measures evaluation will provide information as a comparison to the 2027 baseline concept. To the extent possible, information will be presented geographically.

Factors for Consideration	Objectives	Performance Measures	First-Round Evaluation	Second-Round Evaluation
Transit service and active transportation	<ul style="list-style-type: none"> <li>▪ Evaluate benefits to transit service resulting from overall traffic operations improvements</li> <li>▪ Evaluate transit service availability and user costs as a potential mode alternative to priced roadways</li> <li>▪ Evaluate adequacy of bicycle and pedestrian infrastructure</li> </ul>	▪ Transit travel time		x
		▪ Mode share shift (HOV, SOV, light rail and bus)	x (qualitative)	x
		▪ Adequacy of transit service	x (qualitative)	
		▪ Adequacy of bicycle and pedestrian infrastructure	x (qualitative)	
Equity impacts	<ul style="list-style-type: none"> <li>▪ Evaluate the benefits and burdens to communities identified by federal Environmental Justice and Title VI regulations</li> <li>▪ Include travel costs, travel time, and options between employment centers and residential neighborhoods</li> </ul>	▪ Changes in travel times based on geographic zones		x
		▪ Changes in travel times and costs from key origin/destination pairs on the I-5 and I-205 facilities	x	
		▪ Access to jobs		x
Impacts on the community, economy, and environment	<ul style="list-style-type: none"> <li>▪ Evaluate impacts to freight movement and access to industrial areas and job centers</li> <li>▪ Evaluate physical impacts to existing development</li> <li>▪ Evaluate changes in social, time, monetary, and physical costs of travel, including:                             <ul style="list-style-type: none"> <li>○ Economic attractiveness of the Portland area</li> <li>○ Air pollution</li> </ul> </li> </ul>	▪ Physical impacts to existing residences and businesses	x (qualitative)	x (qualitative)
		▪ Regional impact to state highways outside of Metro area	x	
		▪ Regional travel time		x
		▪ Regional travel time savings		x
		▪ Diversion impacts on non-tolled facilities		x
		▪ Regional vehicle miles traveled (VMT) per capita (including non-freeway)		x
		▪ Change in air pollution		x (qualitative)
		▪ Value of travel time savings		x
Public input	<ul style="list-style-type: none"> <li>▪ Understand and consider public input on value pricing as one of the tools to address vehicle traffic congestion</li> </ul>	▪ Public opinion research is conducted and results are shared with the PAC and made publicly available	x	



Factors for Consideration	Objectives	Performance Measures	First-Round Evaluation	Second-Round Evaluation
		<ul style="list-style-type: none"> <li>Opportunities are provided for public input; the project team identifies how public input is incorporated into the project</li> </ul>		x
Consistency with state and regional law and policy	<ul style="list-style-type: none"> <li>Identify and confirm compliance with existing OTC policies, state laws, and regional planning regulations for consideration by the PAC</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>		
Feasibility under federal law	<ul style="list-style-type: none"> <li>Verify option is allowable under federal tolling laws or if it will require a waiver under the Value Pricing Pilot Program or some other authority</li> <li>Seek input from FHWA for specific alternatives being considered</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>		
Project delivery schedules	<ul style="list-style-type: none"> <li>Confirm whether a project option has the potential to alter the expected delivery schedule for another project on the corridor</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>		
Revenue and cost	<ul style="list-style-type: none"> <li>Evaluate expected costs and revenue and the sufficiency to cover the cost of implementing value pricing and ongoing operational expenses</li> </ul>	<ul style="list-style-type: none"> <li>Estimated revenue from tolled facility</li> </ul>		x
		<ul style="list-style-type: none"> <li>Capital expenditure on facility</li> </ul>	x (order of magnitude)	x (order of magnitude)
		<ul style="list-style-type: none"> <li>Estimated operational and maintenance costs</li> </ul>		x (order of magnitude)