

I-5 Express Lanes Toll Feasibility Study

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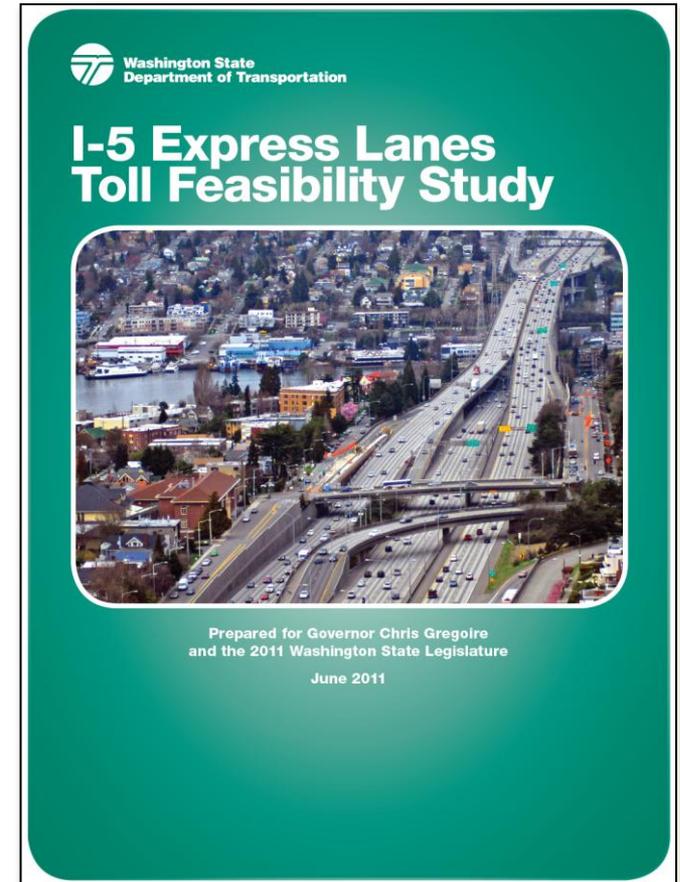
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July 13, 2011

Presentation Summary

- Introduction
 - Legislative Proviso
 - Project Context
 - Study Approach
- Analysis Assumptions
 - Operating Concept
 - Tolling Approach
 - Traffic, Costs and Revenues
 - Financial Analysis
- Findings
- Next Steps



Proviso Background

- Included in FY 2011 transportation budget
- Study feasibility of tolling the I-5 reversible express lane roadway between downtown Seattle and Northgate.
- Specific questions include:
 - The potential to generate funding for needed transportation facilities
 - Maximizing the efficient operation of the corridor
 - Economic considerations for future system investments
 - An analysis of the impacts to the regional transportation system
- Funded by FHWA value pricing grant for a broader study of express toll lane concept in the I-5 corridor, described in the Appendix.



Project Context

- Reversible express lanes between Northgate and downtown Seattle
 - Southbound in AM, Northbound in PM
 - 4 lanes in central portion, 1 at each end
 - 4 downtown exits, 2 are HOV only
 - Closed during overnight hours
- About 270,000 average weekday trips on this segment of I-5 in 2010
 - Mainline: 217,370 (80% of total)
 - Express lanes: 53,720 (20% of total)
- Express Lanes operation issues
 - Bottlenecks in lane returning to mainline
 - Off peak, mainline backups in opposing direction from express lane flow
- Highest freeway transit volumes in region



Regional and Statewide Context

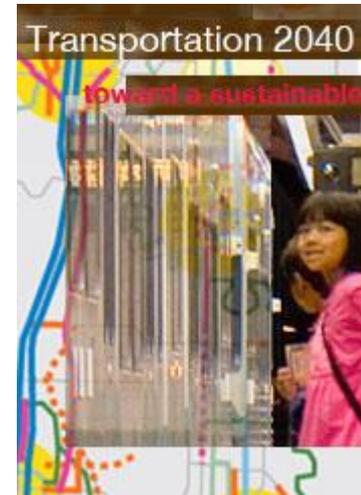


Consistent with WSDOT's Moving Washington Strategies

- More efficient operation by reducing demand at bottlenecks re-entering mainline lanes
- Improves transit reliability through pricing
- Consistent with HOT/express toll lane strategy

Consistent with PSRC Transportation 2040

- Envisions funding future transportation improvements by transitioning to user fees
- Starts with developing high occupancy toll (HOT) lanes, or express toll lanes



Study Approach

- Analysis only; public outreach would occur at later project stage.
- Interagency coordination through project coordinating committee – includes transit, ports, PSRC, Seattle, Washington State Patrol and Transportation Commission staff.
- Beyond toll system expenses, ***no assumption regarding use of toll revenues, or costs associated with mitigating traffic diversion.*** Toll-funded improvements could help reduce diversion impacts.
- Analysis process:
 - PSRC prepared optimal toll rates
 - Consultant team and WSDOT provided capital costs
 - WSDOT produced toll and facility O&M costs
 - Consultant prepared revenue and financial capacity analysis
- Value pricing grant project tasks and budget adjusted to incorporate this analysis and report.

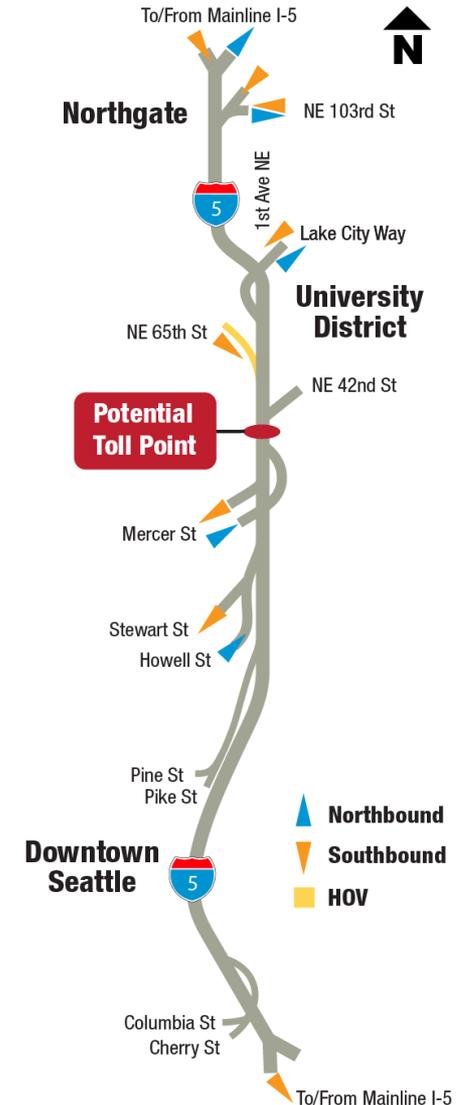
Analysis Assumptions

Operating Concept and Tolling Assumptions

- Single toll point mid-corridor captures all trips
- Both electronic and photo tolling, as on SR 520
- Variable (or dynamic) pricing by time of day
- Modeling assumed no toll for 3+ HOVs
- HOV restrictions on downtown Seattle ramps would be removed

Revenue and Financial Assumptions

- Average tolls analyzed (in today's dollars):
\$4.30 AM Peak, \$5.50 PM Peak, \$1.55 Midday
- Free or closed from 8 PM to 5 AM
- Assume 30 year debt, 7.25-8.5% interest rates
- 2.24x average debt service coverage ratio



Cost and Revenue Analysis Process

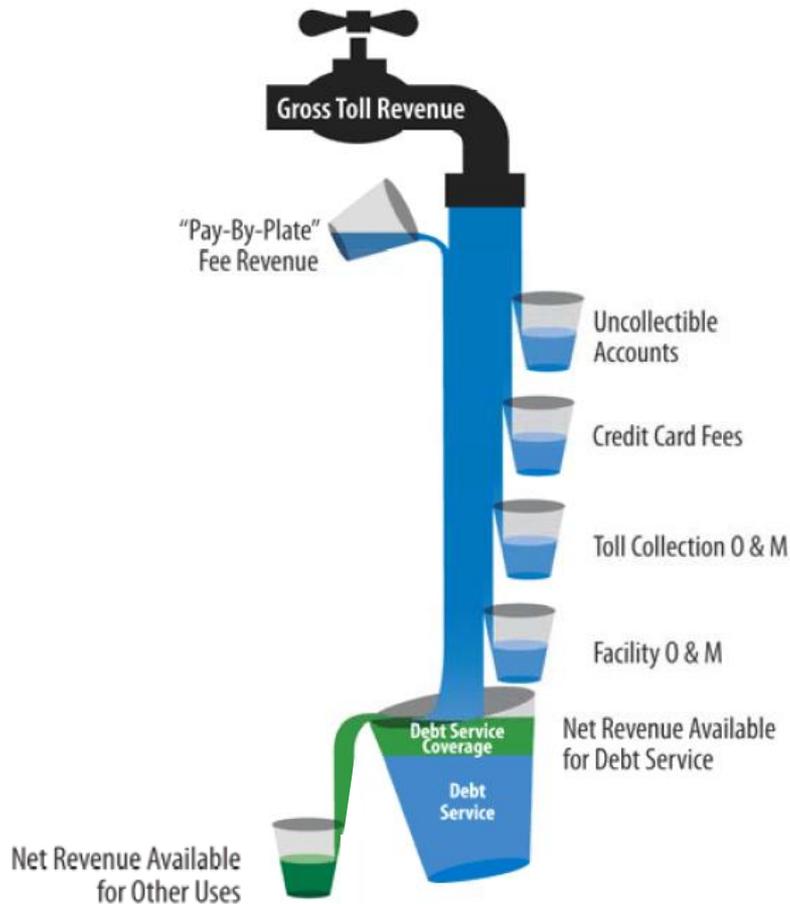
Cost estimating

- Toll system costs based on recent procurements
- Facility O&M costs based on current expenses
- Toll system O&M based on projections for other current projects
- All costs are preliminary and conceptual

Revenue estimating and funding analysis

- Used PSRC travel model to assess traffic volumes and impacts
- Determined optimal toll rates through multiple travel model iterations
- Gross revenues less O&M costs yields net revenues for funding
- Financial modeling determined potential toll funding contribution
- Very high level analysis to determine if further study is warranted

Deductions from Gross Revenues



Uses of Gross Toll Revenues:

- Credit card fees
- Toll collection O&M
 - Customer service center
 - Toll collection system
 - State operations
- Routine Facility O&M
 - Roadway O&M
 - Incident Response Team (IRT)
- O&M reserve account
- Uncollectible accounts

Uses of Net Toll Revenues:

- Debt service on borrowed construction funding
- Other pay-as-you-go uses

Findings – Traffic Effects

Express Lane performance improves

- 16-17 mph speed increase for through-trips, or 6 minutes savings
- 7-17 mph speed increase for trips to/from downtown Seattle
- Improved reliability assumed but not modeled

Some diversion to mainline I-5 and other routes

- Express lane volumes would decrease ~14,000 per day (21%)
- Mainline traffic would increase ~12,000 daily (4% of total I-5 volume)
- Less than 1% of I-5 traffic would choose a different route

Effects of shifts between ramps requires further study

- Removing HOV restrictions increased traffic using HOV ramps
- Alternative policies and potential mitigations need more analysis

Lower tolls would result in less delay and diversion, but would generate less revenues

- Peak toll rates about $\frac{3}{4}$ as high would result in least system delay

Findings – Costs

Capital Costs = \$16M (year of expenditure dollars)

- \$5M for environmental, outreach and engineering, \$11M capital
- Includes toll system and rate signs at each entrance

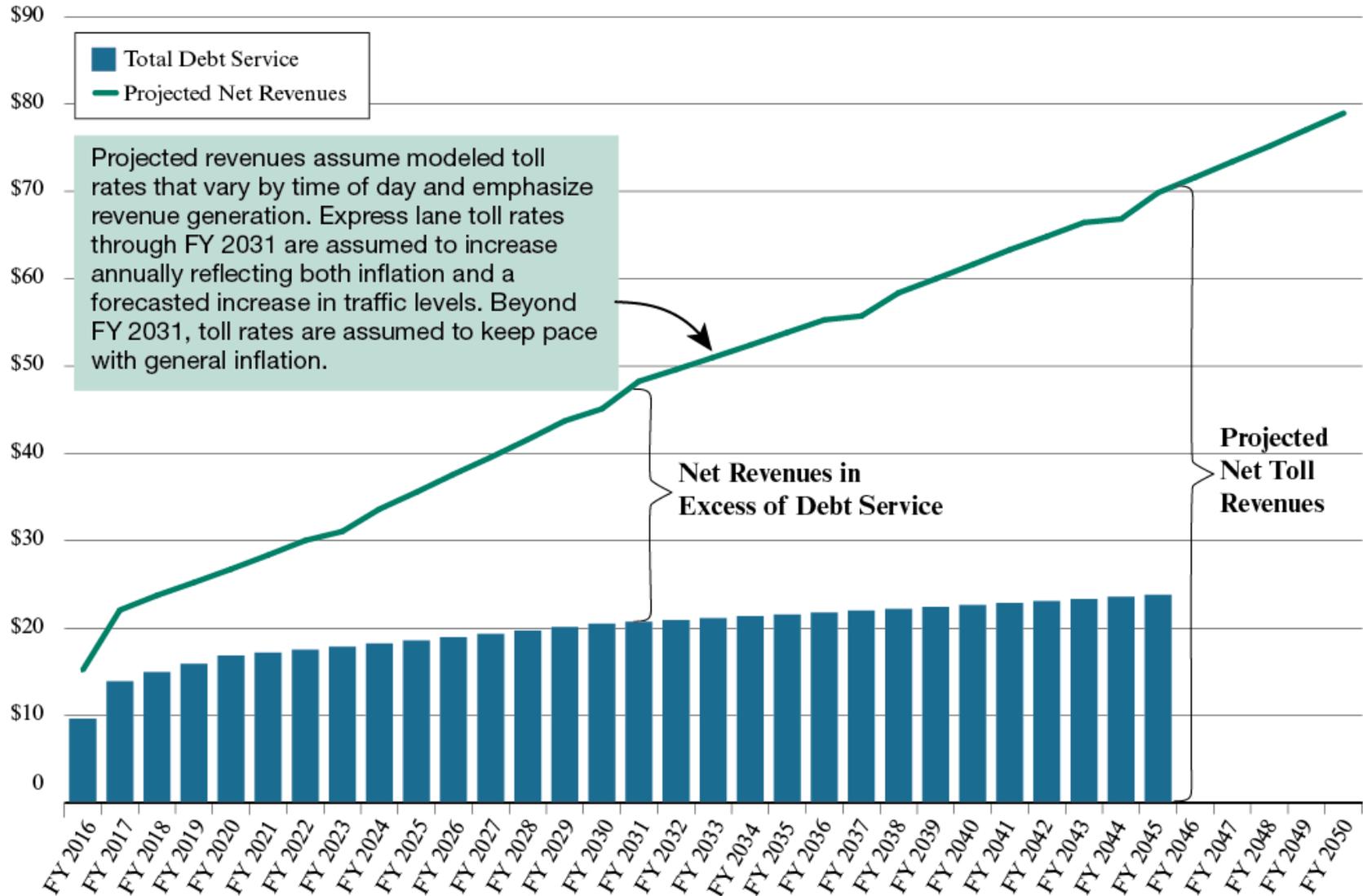
Operating and Maintenance (O&M) Costs, and other deductions from gross revenues = ~\$9.6M/yr. in 2015 dollars

- Includes toll collection costs and uncollectible accounts
- Toll equipment O&M and periodic replacement
- Facility O&M including maintenance, incident response, etc.

Future environmental assessment would also include costs (and benefits) of improvements or mitigations to be funded from toll revenues.

Findings - Toll Revenues and Debt Service

dollars in millions (YOE)



Financial Analysis Results

- **Toll funding contribution of up to \$185 million**
 - Total net bond proceeds available for capital investments in FY 2015
 - Toll implementation cost could be covered by toll bond proceeds
- **Excess toll revenues available for pay-as-you-go uses**
 - Excess revenues come from debt service coverage
 - Assumed to be available in the year after they are generated
 - Cannot be used to support additional borrowing
 - Up to \$6 million in FY 2017
 - Up to \$40 million in FY 2045
 - Amount generated from last year of debt service
 - Assumes toll escalation occurs as modeled

Response to Proviso Questions

Revenue Generation Potential of Value Pricing

- Up to \$22M annually net revenue in 2017, growing over time.
- Could finance up to \$185M in capital improvements in FY 2015.
- Excess net revenues not used to pay debt service would be available for other pay-as-you-go uses.
- Tolls also assumed to pay for facility operation and maintenance (but not major preservation), freeing up existing funds for other uses.

Maximizing Efficient Operation of the Corridor

- Congestion pricing will improve express lane speeds and reliability.
- Eliminating HOV ramp restrictions will balance distribution of traffic between ramps and between lanes.
- Reduced queuing at bottlenecks at lanes to/from mainline I-5.
- Some traffic shifted to mainline lanes or other facilities, reducing speeds.

Response to Proviso Questions

Economic Considerations for Future Corridor Investments

- Provides revenues available for transportation use
- Benefits depend on how revenue is used
 - Could provide seed money for I-5 capacity in Seattle or corridor build-out of express toll lanes (described in report appendix)
 - Could address preservation, maintenance and safety backlog in corridor

Regional Transportation System Impacts

- Model shows no significant impact on other major regional facilities
- Moderate increases in volumes on nearby corridors due to 1% shift of traffic from I-5 to other routes
 - University Bridge and SR 99 Aurora Avenue Bridge

Next Steps

Define/develop proposal and assess public support

- Define the proposal – what will tolls pay for?
- Develop and refine the proposal
- Prepare tolling concept of operations
- Prepare environmental studies
- Prepare more detailed traffic operation and financial analysis
- Conduct public outreach

If the Legislature grants tolling authority, implement tolls:

- Request Federal tolling authority
- Prepare and issue toll system procurement

Questions?

For more information,
please contact

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