I-405 Express Toll Lanes Rate Setting

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Washington State Transportation Commission Public Input Meeting
February 3, 2014

Presentation Purpose and Agenda

Purpose

- Rate proposal on I-405 express toll lanes

Agenda

- I-405 express toll lanes project history and background
- I-405 express toll lanes rate setting policies
  - Rate setting timeline
  - Minimum and maximum toll rates
  - Pay By Mail toll increment
  - Toll exemptions
  - Carpool and peak period definitions

I-405 Rate Setting Timeline

Nov 20, 2013: I-405 rate setting began with the Commission

Dec-Feb 2014: Continued work with the Commission to explore policies, including the minimum and maximum rates, exemptions

Mar-Nov 2014: Continued work with the Tolling Subcommittee to explore policy options and develop recommendations

Oct 14, 2014: Report from the Tolling Subcommittee to the full Commission on progress regarding policy recommendations

Jan 21, 2015: Briefing on Tolling Subcommittee policy recommendations

Feb 3, 2015: Commission proposes final recommendations for I-405 rate setting policies

Mar 18, 2015: Commission adopts final recommendations for I-405 rate setting policies

I-405 Express Toll Lane
Project History and Background

I-405 has one of the worst commutes

Bad traffic

- Drivers on I-405 experience some of the worst traffic in the state, up to eight hours of congestion each day
- By 2030, employment will grow by 50% and the area will see 25% more residents

Crowded HOV lanes

- I-405 HOV lanes are not meeting state and federal requirements to operate at 45 miles per hour 90 percent of the time
- I-405 HOV lanes are often just as congested as the regular lanes

Transit suffers

- Congested lanes severely delay transit trips and reduce reliability, requiring more buses and increasing the costs

I-405 Executive Advisory Group History

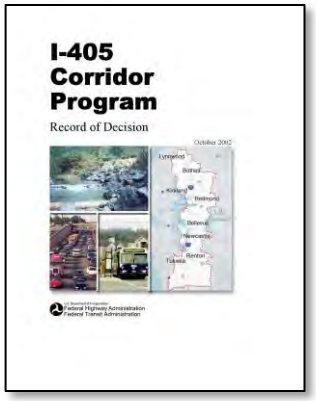
Executive Committee — 1999, 2001, 2002

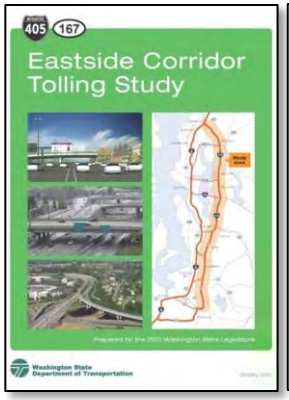
Outreach and coordination — 2003 — 2006

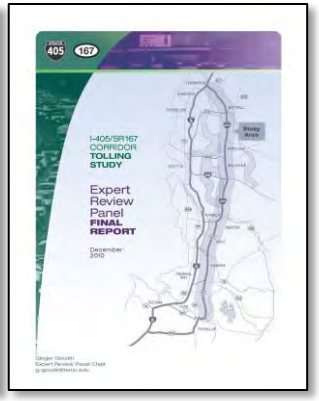
Executive Advisory Group — 2009, 2010, 2011

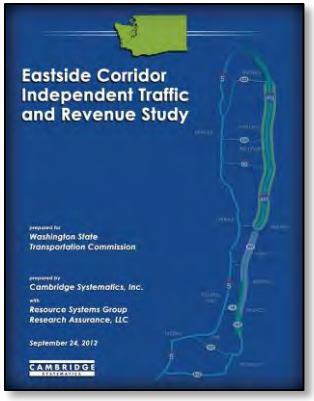
Executive Advisory Group — 2012, 2013, 2014

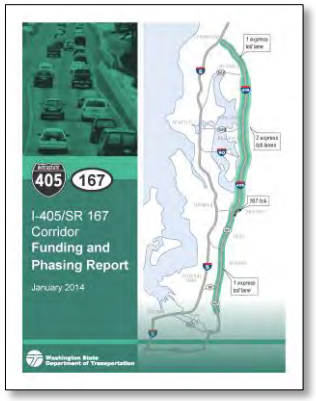
- **1999** — I-405 EIS Notice of Intent
- **2001** — I-405 Managed Lanes Analysis
- **2002** — EIS, ROD, Master Plan
- **2003** — Managed Lanes Technical Analysis
- **2006** — Express Toll Lane Investment Analysis
- **2009** — ESSB 5352 Eastside Corridor Tolling Study
- **2010** — Expert Review Panel Study
- **2011** — EHB 1382 Authorizes Tolling on I-405 and WSTC Study
- **2012** — WSTC Study Complete Sept. 24
- **2013** — WSDOT Funding and Phasing Plan











I-405 Master Plan - 10 Year Implementation Strategy

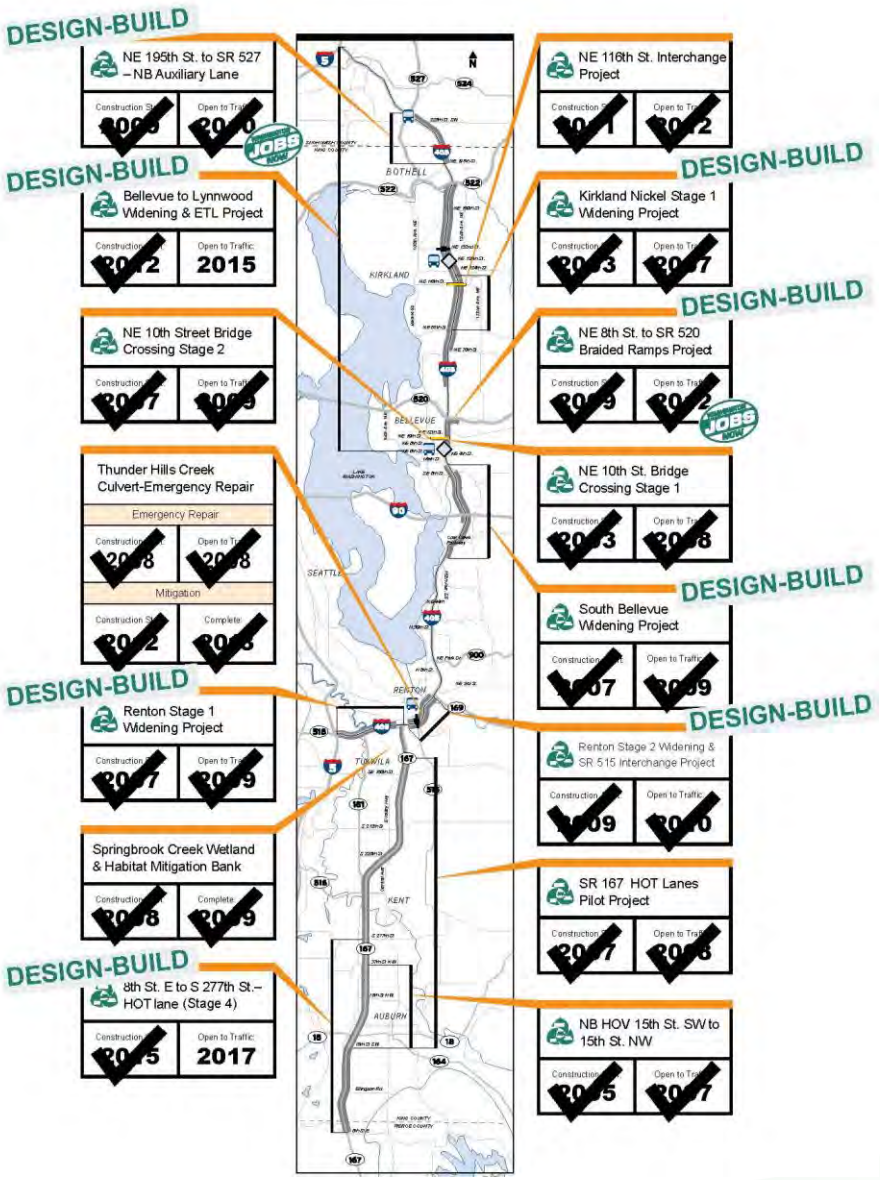
Adopted Plan

I-405/SR 167 Interchange Direct Connector

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Current Schedule	Bellevue to Lynnwood Construction (funded)			Opens 2015	Toll Collection		Renton to Bellevue & SR 167 Direct Connector (unfunded)				Opens 2021

We've delivered 13 projects throughout the corridor on time, under budget

- Initial program investments addressed high-priority chokepoints in Bellevue, Bothell, Kirkland and Renton.
- Bellevue to Lynnwood project (expected completion in 2015) is the second step towards a 40-mile corridor managed lanes system.
- $1.2 billion delivered on schedule, under budget



Washington State Department of Transportation

Express Toll Lanes from Bellevue to Lynnwood is the next step of the 40-mile system

Improve traffic performance

- Provides sustainable reliability
- Moves more people and vehicles throughout the entire freeway
- Improves transit speed and reliability
- Provides a bypass around congestion for the trips users feel are important

Fund future improvements

- Dynamic toll rates adapt for growth in corridor traffic
- Provides funding for improvements
- Supplements gas tax revenue
- Market-based direct user fee

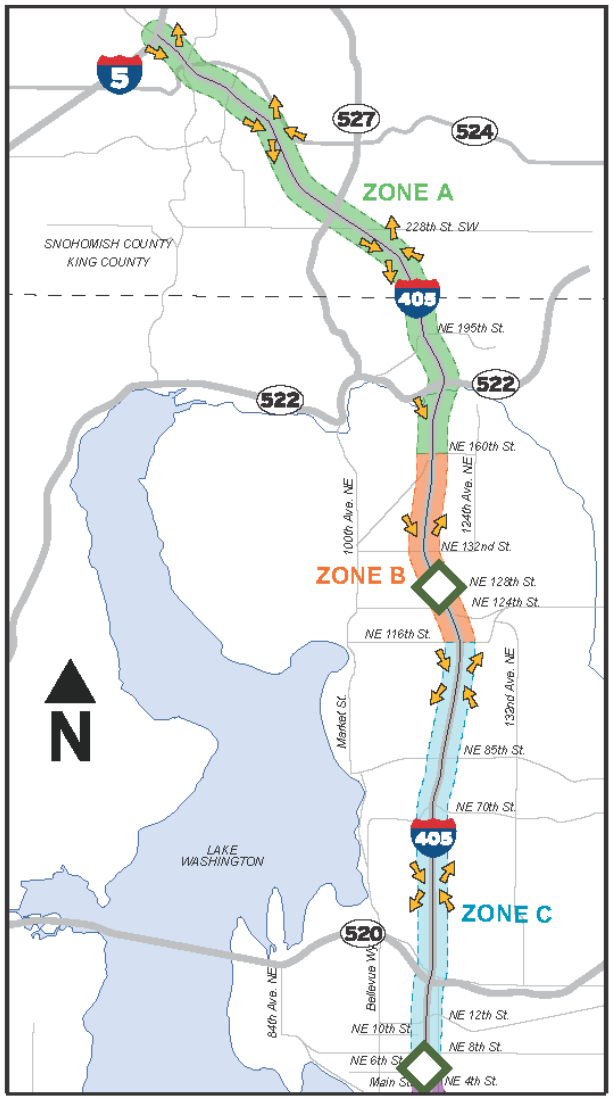
Bellevue to Lynnwood Express Toll Lanes Project

Project Description

- Adds capacity between NE 6th Street in Bellevue and SR 522 in Bothell
- Builds noise walls
- Constructs northbound braided ramps at NE 160th Street
- Two lane express toll lane system from NE 6th Street in Bellevue to SR 522
- One lane express toll lane system from SR 522 to I-5 in Lynnwood

Awarded to Flatiron Constructors, Inc. for $155 million

Project schedule	2012	2013	2014	2015
Bellevue to Lynnwood				



Washington State Department of Transportation

2013 Executive Advisory Group Consensus Recommendations

Carpool Policy

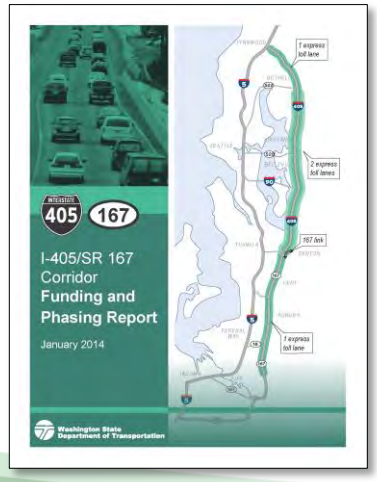
Bellevue to Lynnwood express toll lanes

3+ Carpool Free Peak/2+ Carpool Free Off-peak

Funding and Phasing

Next segment: Renton to Bellevue

EAG preferred High Traditional Funding scenario ($1,175 million from traditional sources such as gas tax). However, understanding competing statewide needs, the EAG endorsed the ***Medium Funding scenario*** ($960 million from traditional sources, $215 million from toll revenues).



Cities

- Bothell – Mayor Mark Lamb
- Kirkland – Mayor Joan McBride
- Bellevue – Councilmember Kevin Wallace
- Newcastle – Mayor Rich Crispo
- Renton – Councilmember Randy Corman
- Tukwila – Mayor Jim Haggerton
- Kent – Mayor Suzette Cooke
- Auburn – Mayor Pete Lewis
- Sumner – Mayor Dave Enslow
- Puyallup – Mayor Rick Hansen
- Algona – Mayor David Hill
- Pacific – Vacant

Agencies

- Community Transit – Carol Thompson
- Sound Transit – Board member Fred Butler
- King County Metro Transit – Harold Taniguchi
- Puget Sound Regional Council – Dave Gossett
- Washington State Transportation Commission – Charlie Royer
- Federal Highway Administration – Dan Mathis
- Federal Transit Authority – Rick Krochalis
- Washington State Department of Transportation

Counties

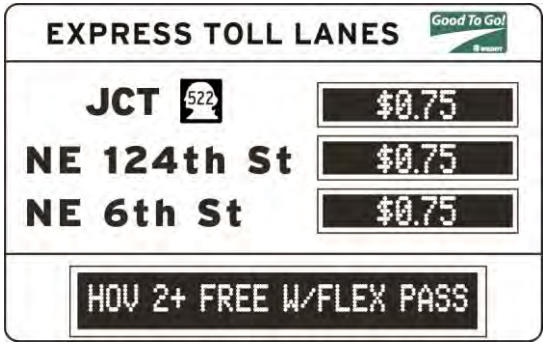
- Snohomish County – Councilmember Dave Gossett
- King County – Councilmember Reagan Dunn
- Pierce County – Councilmember Jim McCune

All Corridor State Legislators (Invited)

How Express Toll Lanes Will Work

Toll rates adjust based on demand

- Keeps lanes moving at 45mph+
- Signs display toll rates based on your destination
- Non-carpool drivers pay rate posted upon entry – even if rate changes during trip



Transit, vanpools, motorcycles and carpools are free

Ways to pay

- Use a *Good To Go!* pass to pay the lowest toll rate
- *Good To Go!* Pay By Plate
- Short Term Account
- Pay By Mail at a higher toll rate

How Express Toll Lanes Will Work

Converting HOV lanes to express toll lanes

- One express toll lane between I-5 and SR 522
- Two express toll lanes between SR 522 and NE 6th St

Dedicated entry and exit points

- Northbound: five entries, six exits
- Southbound: six entries, five exits

Carpools will need new Flex Pass to use the lanes for free

- Declare status as a carpool by switching the pass into HOV mode
- Red on pass indicates driver is an HOV

I-405 Toll Rate Proposal

Proposal Components

- **Minimum Toll Rate**
- **Maximum Toll Rate**
- **Pay By Mail Toll Increment**
- **Exemptions**
- **Carpool Policy**
  - Occupancy requirement
  - If applicable, peak period definition

Minimum Toll Rate

The Commission must set a minimum toll rate for I-405 express toll lanes

Average toll will be between 75 cents and $4.00

Significant contribution to revenue for the initial I-405 segment

Recommendation:

$0.75 minimum *Good To Go!* toll rate

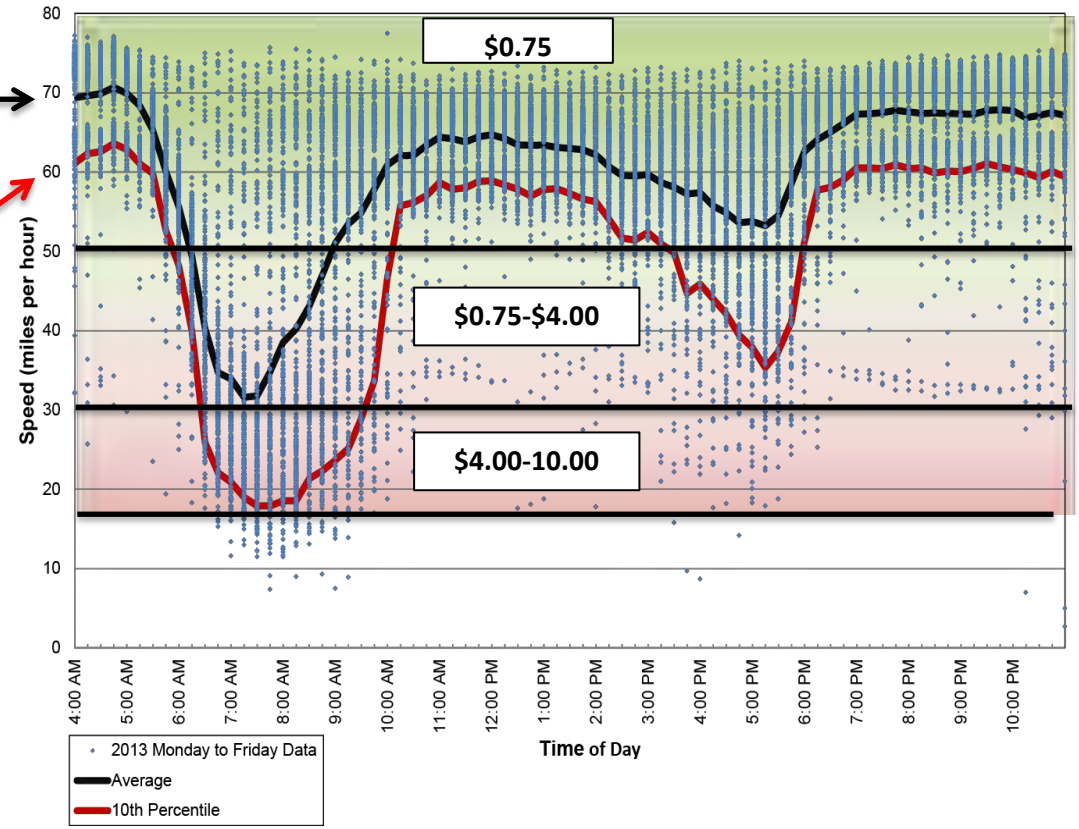
- 77 percent of trips are anticipated to be below $1.00
- A lower minimum toll reduces the barrier to entry
- Consistent with average collection costs of $0.70

Maximum Toll Rate

- **The Commission must set a maximum toll rate for I-405 express toll lanes**
- **Variability is Responsible for Highest Rates**
  - For initial operation, rates would range between $0.75 and $4.00 on the average day
  - For more congested days, the highest toll rates would fall between $4.00 and $10.00
  - Toll rates are projected to reach the $10.00 maximum on less than 10% of travel days

The black line shows volumes on the average day

The red line shows volumes on the more congested days



I-405 Southbound
Bothell area

2013
General Purpose
Speed
Monday - Friday

Maximum Toll Rate

Recommendation:

$10.00 maximum *Good To Go!* toll rate

- Allows for congestion management on all but extremely congested days
- According to WSDOT operational policy: When the maximum toll rate is reached, the system will remain at the maximum rate instead of switching to HOV-only to continue to allow customers access to the lanes when they are needed most
- WSDOT and the Transportation Commission will monitor performance and could adjust the maximum rate if warranted

Pay By Mail Increment

The Commission may set a toll differential for Pay By Mail transactions

- Increment would be added to dynamic *Good To Go!* toll rate
- Intent to cover incremental costs and losses of payment method, including printing and postage and out-of-state license plate lookup
- Signs would tell customers an additional charge applies

Recommendation:

$2.00 Pay By Mail increment

- Consistent with SR 16 Tacoma Narrows Bridge Pay By Mail increment
- Long-range objective to have Pay By Mail increment consistent across all facilities

Exemptions

Recommendation:

Exemption for the following vehicles:

- Transit buses and vanpools as defined in RCW 46.56.880
- High occupancy vehicles: Carpools, motorcycles and private buses with 16 or more seats as defined in WAC 468.510.010
- Washington state patrol vehicles directly providing service to the express toll lane facility
- Authorized emergency vehicles on bona fide emergencies
- Department maintenance vehicles directly involved in roadway maintenance on the I-405 express toll lanes, including the department's incident response vehicles responding to incidents
- Tow trucks authorized by Washington state patrol responding to clear blocking vehicles from the toll facility

Carpool Occupancy

Executive Advisory Group Recommendations

- Exempt 3+ carpools at peak times, 2+ carpools at off-peak times
- Some EAG members stressed this should be an interim measure, assuming an eventual need to go to a 3+ carpool definition at some point in the future

Policy Choices Evaluated

- 3+, 3+ peak / 2+ off-peak, and 2+ toll exemptions
- 2+ fixed-rate discount
- No carpool exemption (everybody pays)

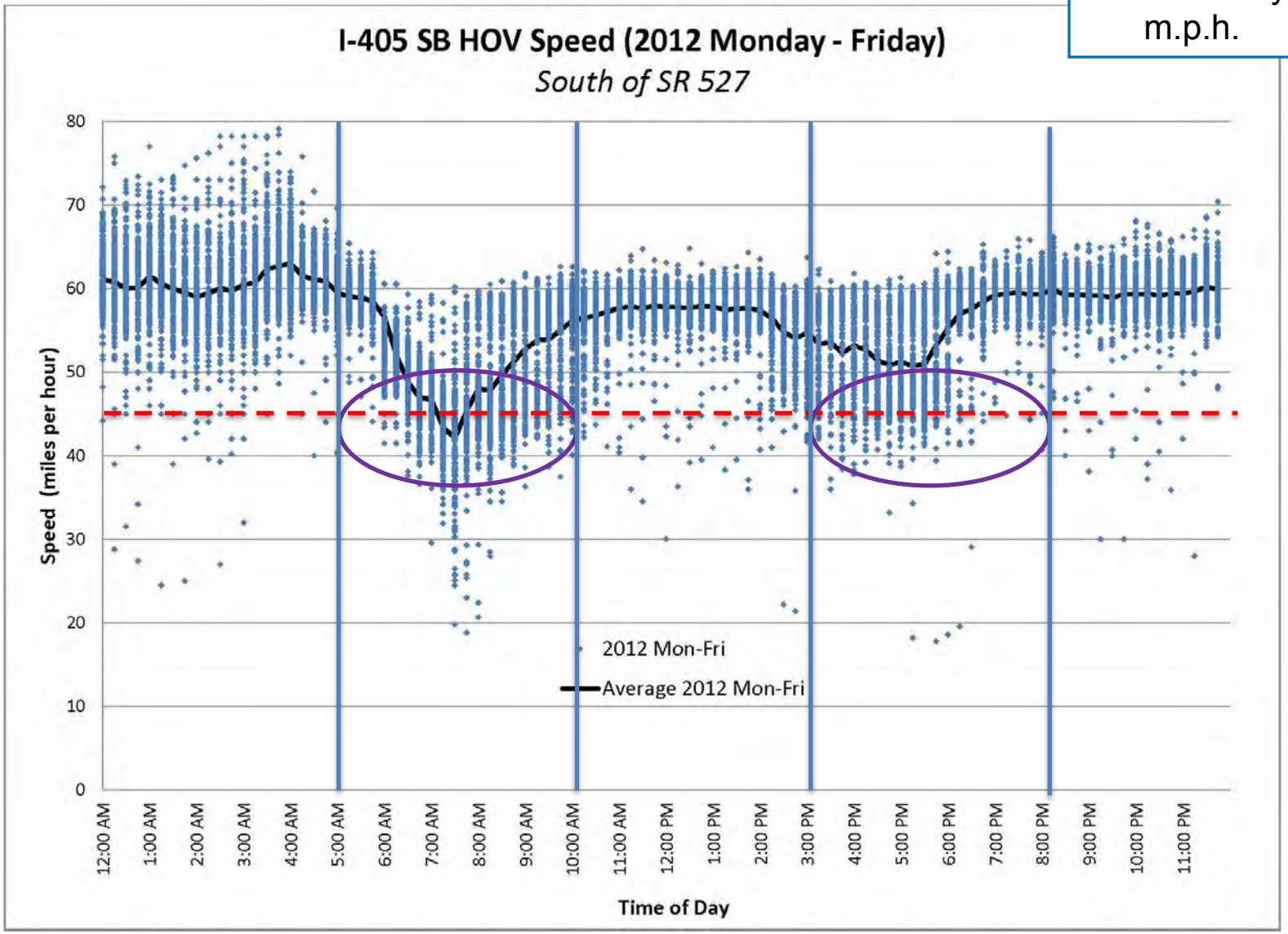
Considerations

- Must meet performance and revenue requirements of RCW 47.56.880
- Carpools will need an account and Flex Pass to get an exemption
- Complexity of messaging/education and public acceptance
- Ability to transition to 3+ in future when/if needed

System reliability today – I-405

Current *performance issues during peak periods*

- Performance of existing 2+ HOV lane is already degraded
- 200+ days below 45 m.p.h.



Early Year Net Revenue Projections

2+ carpool free scenario does not meet financial objectives

Millions of Dollars — Assumes Renton to Bellevue Opens 1/1/2022

Fiscal Year	Scenario A — 2+ Carpool Free | Photo Tolling*					
	Toll Trips	Toll-Free Trips	Potential Gross Toll Revenue[1]	Adjusted Gross Toll Revenue[2]	Less: Operations & Maintenance Costs[3]	Net Toll Revenue (before R&R)
2016	2.4 M	7.8 M	$2.8 M	$2.6 M	($5.0 M)	($2.4 M)
2017	3.9	12.2	4.7	4.3	(6.4)	(2.1)
2018	4.5	13.7	5.6	5.2	(7.1)	(2.0)
2019	4.7	14.0	6.1	5.6	(7.3)	(1.7)
2020	4.9	14.1	6.6	6.1	(7.6)	(1.5)
2021	5.2	14.3	7.2	6.6	(8.0)	(1.4)
2022	10.4	28.3	22.0	20.2	(19.4)	0.9
2023	18.3	50.9	44.1	40.5	(27.5)	13.0

Fiscal Year	Scenario B — $1.00 Carpool Discount*					
	Full Toll Trips	Discount Toll Trips	Potential Gross Toll Revenue[1]	Adjusted Gross Toll Revenue[2]	Less: Operations & Maintenance Costs[3]	Net Toll Revenue (before R&R)
2016	3.1 M	10.2 M	$3.9 M	$3.3 M	($6.2 M)	($2.8 M)
2017	3.9	12.7	5.3	4.5	(6.9)	(2.4)
2018	4.3	14.1	6.3	5.3	(7.4)	(2.1)
2019	4.5	15.4	7.0	6.0	(7.8)	(1.8)
2020	4.6	16.8	7.9	6.7	(8.3)	(1.6)
2021	4.8	18.4	8.9	7.5	(9.0)	(1.5)
2022	10.5	28.5	35.7	30.4	(19.1)	11.3
2023	19.1	45.7	77.7	66.0	(25.9)	40.1

Fiscal Year	Scenario B-2 — $0.50 Carpool Discount | Photo Tolling*					
	Full Toll Trips	Discount Toll Trips	Potential Gross Toll Revenue[1]	Adjusted Gross Toll Revenue[2]	Less: Operations & Maintenance Costs[3]	Net Toll Revenue (before R&R)
2016	4.1 M	4.7 M	$6.9 M	$6.4 M	($5.9 M)	$0.4 M
2017	5.2	6.0	9.3	8.5	(6.7)	1.8
2018	6.0	6.9	11.2	10.3	(7.6)	2.7
2019	7.0	8.4	13.5	12.5	(8.5)	4.0
2020	8.0	10.1	16.3	15.0	(9.6)	5.4
2021	9.3	12.2	19.6	18.0	(11.1)	7.0
2022	16.0	18.4	46.5	42.7	(22.5)	20.2
2023	26.4	29.1	88.4	81.3	(30.5)	50.8

Fiscal Year	Scenario C — 2+ Carpool Free Off-Peak | 3+ Carpool Free Peak | Photo Tolling*					
	Toll Trips	Toll-Free Trips	Potential Gross Toll Revenue[1]	Adjusted Gross Toll Revenue[2]	Less: Operations & Maintenance Costs[3]	Net Toll Revenue (before R&R)
2016	4.4 M	3.5 M	$4.9 M	$4.5 M	($5.0 M)	($0.5 M)
2017	7.1	5.5	8.2	7.6	(6.4)	1.2
2018	8.0	6.1	9.9	9.1	(7.1)	2.1
2019	8.3	6.2	10.8	10.0	(7.2)	2.8
2020	8.5	6.3	11.8	10.8	(7.4)	3.4
2021	8.7	6.3	12.8	11.7	(7.8)	3.9
2022	18.2	14.5	40.8	37.5	(19.8)	17.7
2023	32.8	27.7	83.7	76.9	(28.7)	48.2

Fiscal Year	Scenario D — 3+ Carpool Free | Photo Tolling*					
	Toll Trips	Toll-Free Trips	Potential Gross Toll Revenue[1]	Adjusted Gross Toll Revenue[2]	Less: Operations & Maintenance Costs[3]	Net Toll Revenue (before R&R)
2016	5.0 M	1.3 M	$5.3 M	$4.9 M	($4.6 M)	$0.3 M
2017	7.9	2.1	9.0	8.3	(5.8)	2.5
2018	9.0	2.3	10.8	9.9	(6.4)	3.5
2019	9.2	2.3	11.7	10.8	(6.5)	4.3
2020	9.5	2.4	12.6	11.6	(6.7)	4.9
2021	9.7	2.4	13.6	12.5	(7.1)	5.5
2022	21.2	7.3	44.2	40.5	(19.3)	21.2
2023	39.1	15.3	91.1	83.7	(28.3)	55.4

Fiscal Year	Scenario E — 3+ Carpool Free*					
	Toll Trips	Toll-Free Trips	Potential Gross Toll Revenue[1]	Adjusted Gross Toll Revenue[2]	Less: Operations & Maintenance Costs[3]	Net Toll Revenue (before R&R)
2016	4.9 M	1.3 M	$4.8 M	$4.1 M	($3.8 M)	$0.3 M
2017	7.8	2.1	8.1	6.9	(4.5)	2.3
2018	8.8	2.3	9.7	8.3	(4.9)	3.3
2019	9.0	2.3	10.6	9.0	(5.0)	4.0
2020	9.1	2.3	11.4	9.7	(5.1)	4.6
2021	9.2	2.4	12.4	10.5	(5.4)	5.1
2022	21.0	7.0	40.1	34.1	(14.9)	19.2
2023	39.1	14.2	82.6	70.2	(21.0)	49.2

NOTES:

* CDM Smith traffic and revenue projections.

† Cambridge Systematics "50th Percentile" traffic and revenue projections.

[1] Year of collection dollars.

[2] Adjusted for potential uncollectible revenue. Excludes rebilling fees.

[3] Includes facility O&M costs starting in FY 2022, plus toll collection costs and credit card fees in all years.

11/13/2013

Meets revenue requirement in EHB 1382

Does not meet EHB 1382 revenue requirement

Note: Net revenue projections are from 2013. Scenario C (2+/3+ carpool occupancy) results have since been refined based on latest data and subcommittee proposals and are not reflected here. However, factoring in the latest data and subcommittee toll policy proposals would not alter the conclusions from the 2013 analysis.

Carpool Occupancy

Recommendation:

3+ vehicles exempt during peak periods, 2+ vehicles exempt at all other times

- Executive Advisory Committee recommended the 2+ off-peak free / 3+ peak free carpool definition
- 3+ is needed in peak periods
- 2+ during peak periods does not meet federal performance requirements nor provide sufficient revenue to cover operating costs
- 2+ during midday minimizes the impact to existing carpools while making better use of the express toll lanes capacity
- 2+/3+ carpool definition provides a transition period until such time that 3+ is needed even during off-peak periods to ensure express toll lane performance

Definition of Peak Periods

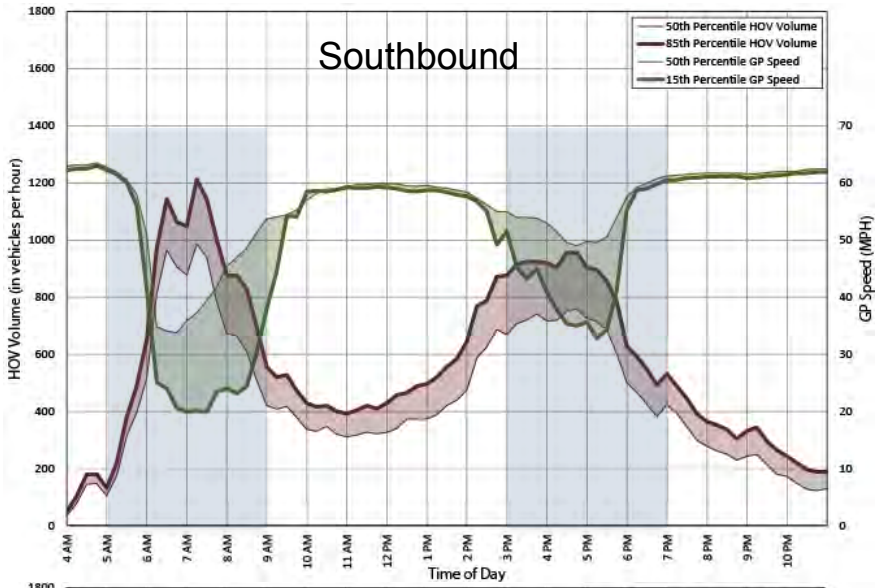
WSDOT traffic engineers recommend considering the following factors to define when 3+ carpool definition should apply:

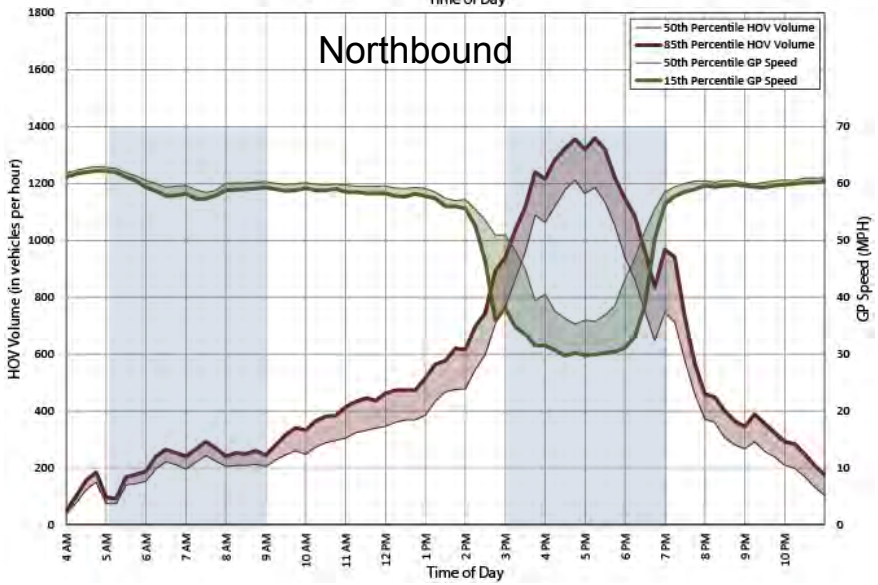
- Timing for changes in the occupancy requirement should avoid abrupt changes in traffic performance and toll rate changes
- Peak period hours should:
  - Apply corridor-wide and in both directions
  - Consider peak period hours of transit use
  - Optimize total highway performance
- Facility Performance Impacts
  - HOV volumes frequently exceed 800 vehicles per hour
  - General purpose lane speeds frequently drop below 55 mph
  - Impact on meeting revenue objectives
- Consistency with I-405 HOV operating hours (currently 5 a.m. to 7 p.m.)

Definition of Peak Periods

2013 2+ HOV Volumes/GP Speeds

Weekday, Zone A, Bothell area (north of SR 527)





- Red lines are HOV volumes
- Green lines are general purpose lanes speeds

Southbound:

- Starting at the north heading southbound, congestion and high HOV volumes occur both AM and PM in the single-lane section

Northbound:

- Starting at the south heading northbound, HOV volumes and general purpose lanes congestion are both high in the PM leaving Bellevue and SR 520
- HOV volumes decrease but congestion broadens through Kirkland
- Moving past SR 522 into the single-lane section, HOV volumes decrease
- No significant AM congestion is shown

Definition of Peak Periods

- **If peak periods are defined too tightly,** high volumes of toll-free vehicles may reduce express toll lane reliability and revenue
- **If peak periods are defined too broadly,** general purpose congestion could persist or worsen initially, while the express toll lanes appear underutilized

Recommendation:

Peak periods: 5 a.m. to 9 a.m. and 3 p.m. to 7 p.m.

- Recommendation made in conjunction with WSDOT traffic engineers using data analysis of the corridor
- Consistent with traffic trends
- Consistent with HOV operating hours (currently 5 a.m. to 7 p.m.)

Summary of Proposed Policy Decisions

Minimum Toll Rate:	**$ 0.75**
Maximum Toll Rate:	**$ 10.00**
Pay By Mail Toll Increment:	**$ 2.00**

Exemptions:

- Transit
- Vanpools
- HOV's including carpools, motorcycles and 16-passenger buses
- In-service emergency vehicles, maintenance, enforcement, and incident management vehicles, including private tow-trucks when directed by WSP

Carpool Policy

- 3+ carpools exempt at all times
- 2+ carpools exempt except 5-9 a.m. and 3-7 p.m. on weekdays

For questions or further information…

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