I-405 Express Toll Lanes
Rate Setting

Craig J. Stone, P.E.
Assistant Secretary
Toll Division

Reema Griffith
Executive Director
Washington State Transportation Commission

Washington State Transportation Commission
Public Input Meeting
February 19, 2015

Washington State Department of Transportation

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 implementation
- 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 proposed final recommendations for I-405 rate setting policies and conducts first public meeting in Bellevue
Feb 17, 2015:	Virtual Public Input Meeting
Feb 19, 2015:	Public Input Meeting, Kirkland City Hall
Mar 18, 2015:	Commission holds final public hearing in Kirkland and adopts final recommendations for I-405 rate setting policies

I-405 Express Toll Lane
Project Context and Background

I-405 has one of the worst commutes in the state

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 2+ HOV lanes

- I-405 2+ HOV lanes are not meeting state and federal requirements to operate at 45 miles per hour 90 percent of the time
- I-405 2+ HOV lanes are often just as congested as the regular lanes

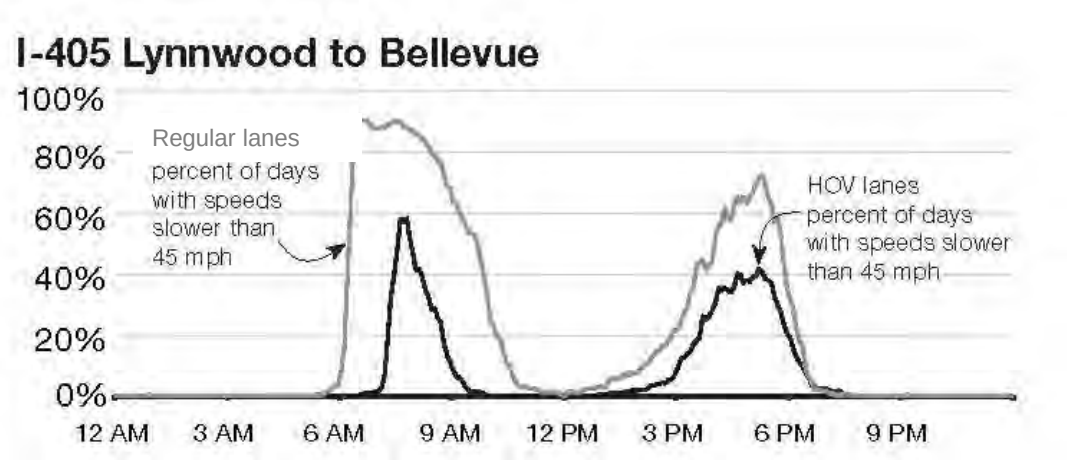
Transit suffers

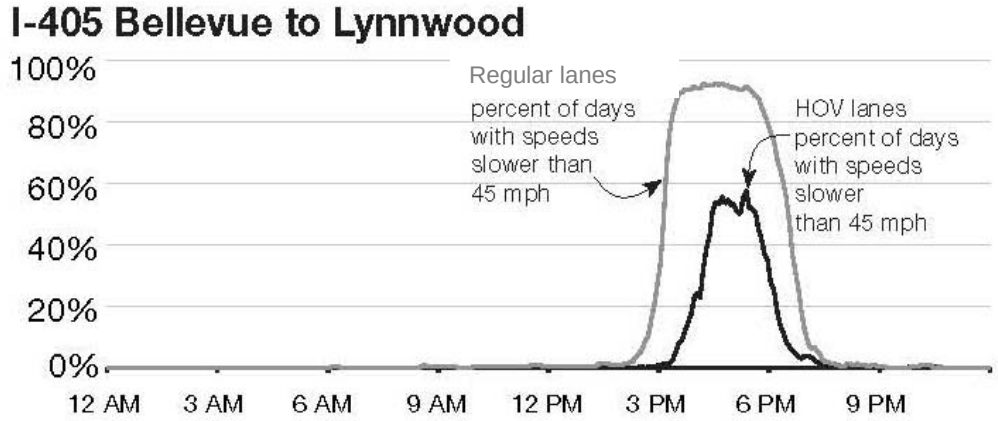
- Congested lanes severely delay transit trips and reduce reliability, requiring more buses and increasing the costs

I-405 Performance (2013)

How Often Are HOV and Regular Lanes Congested?

Percent of Weekdays Experiencing Congestion (<45 mph) by Lane and Time of Day



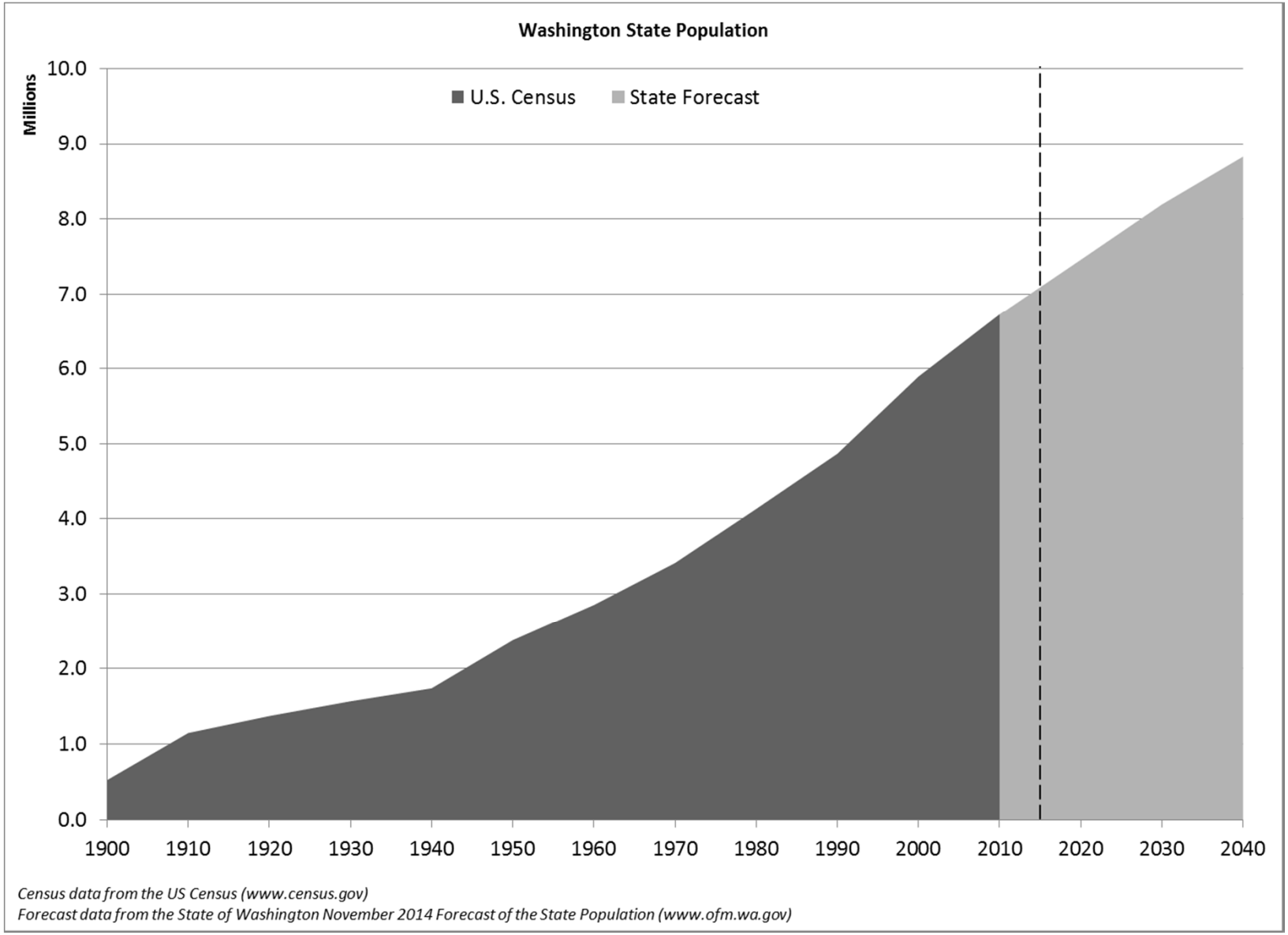


On I-405 between Bellevue and Lynnwood during peak commute periods:

- **Regular lanes experience congestion on 90% of weekdays**
- **HOV lanes experience congestion on 60% of weekdays**
- **This performance does not meet state and federal standards for HOV lanes**

Washington State Population Growth

Rapid population growth lead to more traffic



I-405 Executive Advisory Group History

Executive Committee (1999 – 2002)

- 1999: I-405 EIS Notice of Intent
- 2001: I-405 Managed Lanes Analysis
- 2002: EIS ROD Master Plan

Outreach and coordination (2003 – 2006)

- 2003: Managed Lanes Technical Analysis
- 2006: Express Toll Lane Investment Analysis

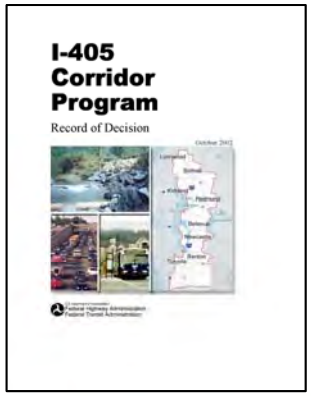
Executive Advisory Group (2009 – 2011)

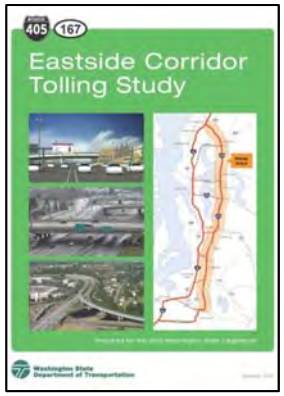
- 2009: ESSB 5352 Eastside Corridor Tolling Study
- 2010: Expert Review Panel Study
- 2011: EHB 1382 Authorizes Tolling on I-405 and WSTC Study

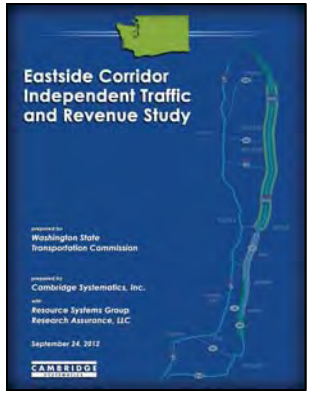
Executive Advisory Group (2012 – 2013)

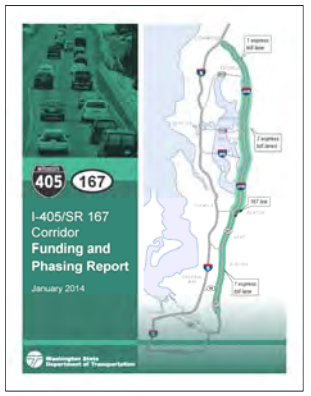
- 2012: WSTC Study Complete Sept. 24
- 2013: WSDOT Funding and Phasing Plan

2014









I-405 Master Plan

Regional Consensus

- EIS Record of Decision, 2002

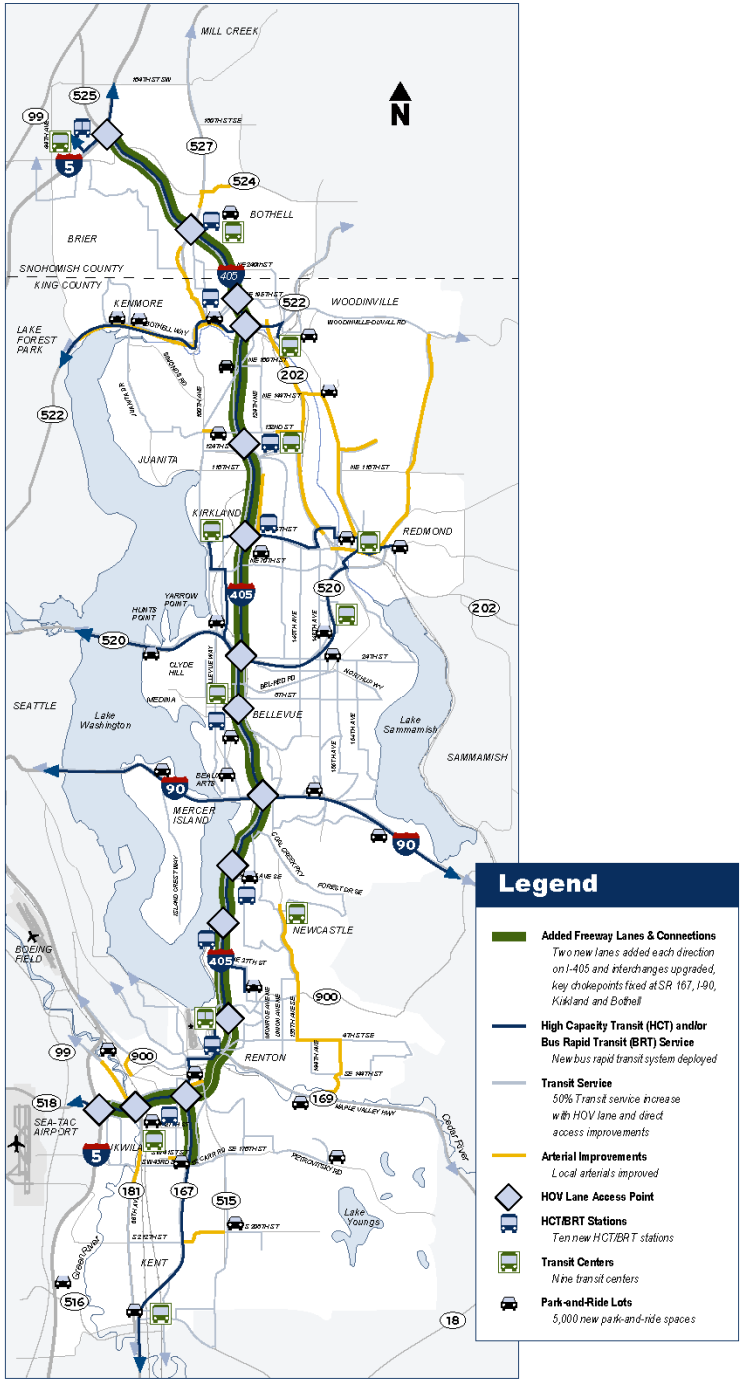
Roadways

- 2 new lanes in each direction
- Local arterial improvements

Transit & Transportation Choices

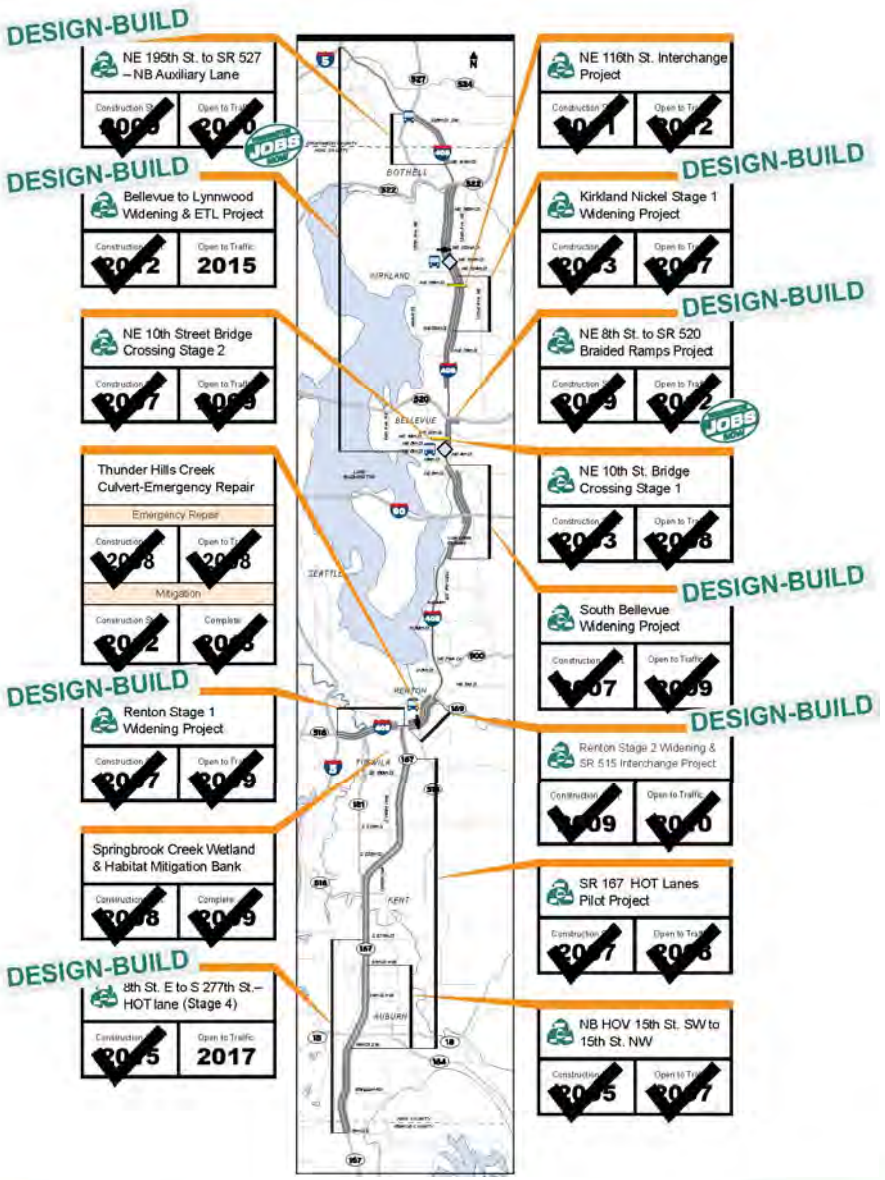
- Bus Rapid Transit system
- 9 new transit centers added
- 50% transit service increase
- HOV direct access ramps and flyer stops
- Potential managed lanes system
- 5000 new Park & Ride spaces
- 1700 new vanpools

Environmental Enhancements



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



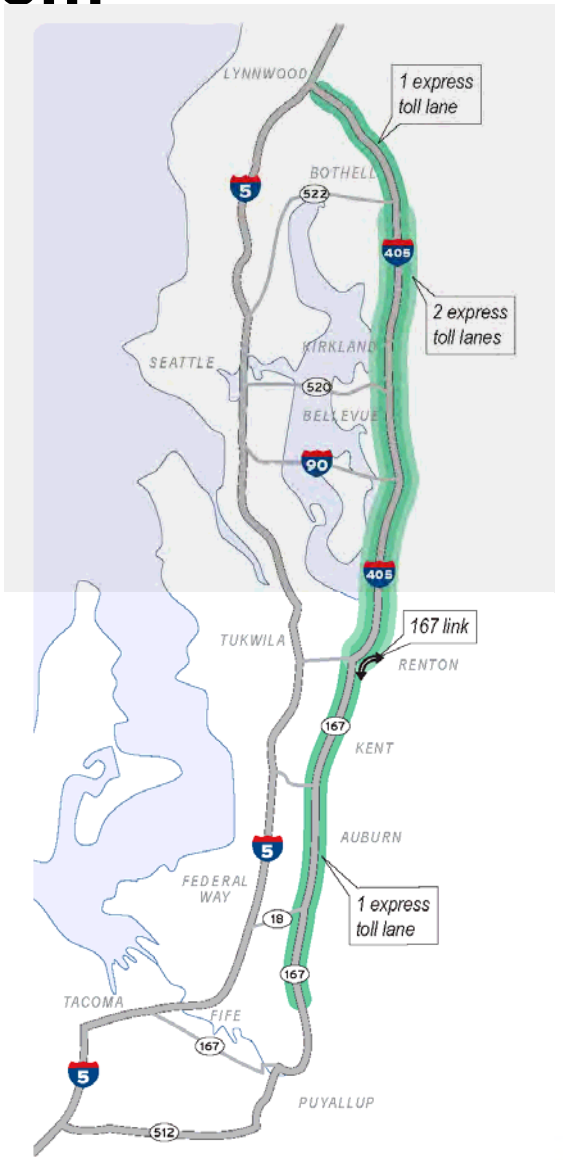
Express Toll Lanes from Bellevue to Lynnwood is the next step of the 40-mile system

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



I-405 Master Plan - 10 Year Implementation Strategy

40-mile System - Phase 1 **$ .4 billion**

40-mile System - Phase 2 **$1.2 billion**

I-405/SR 167 Interchange Direct Connector

40-mile System - Complete **$1.6 billion**

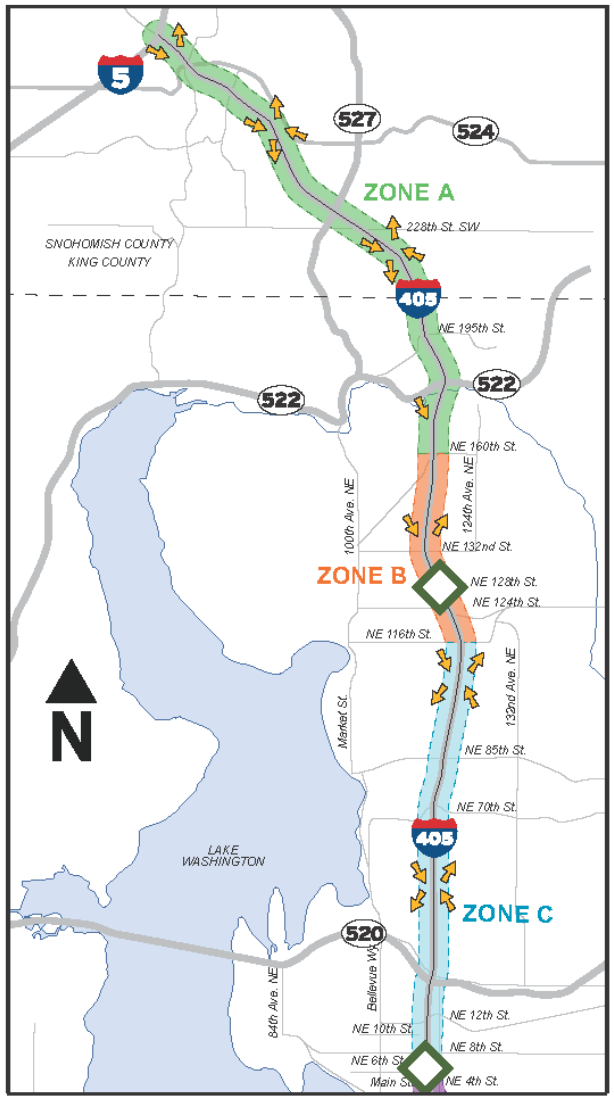
Bellevue to Lynnwood Express Toll Lanes Project

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

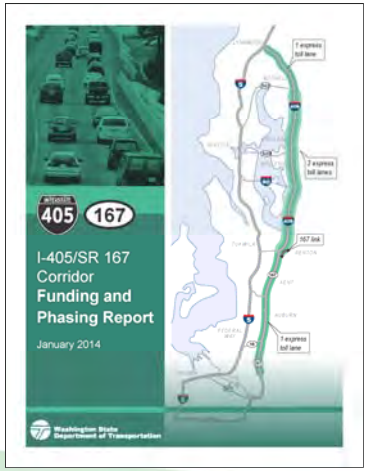
Bellevue to Lynnwood express toll lanes

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)

I-405 Express Toll Lane Implementation

How Express Toll Lanes Will Work

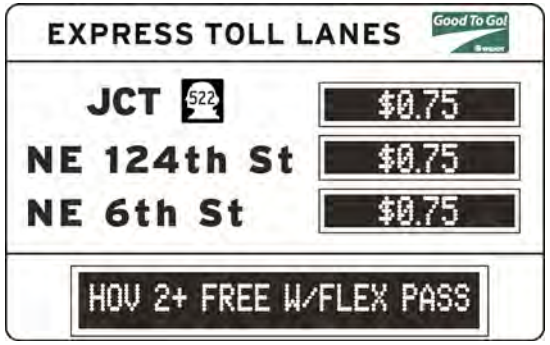
Toll rates adjust based on demand

- 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

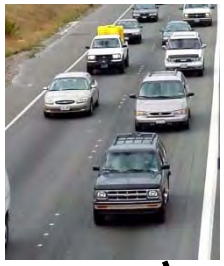
Carpools will need new Flex Pass to use the lanes for free

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

Dynamic Pricing Solution

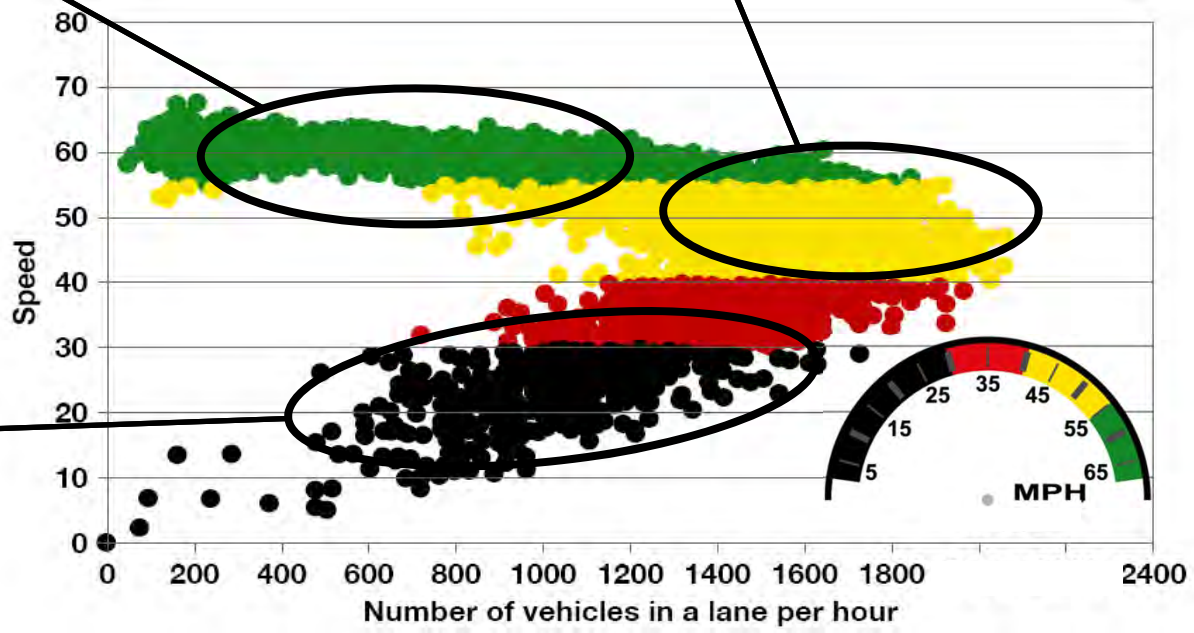
The most effective price to move the most traffic

If demand < capacity, speeds are high and demand equals throughput

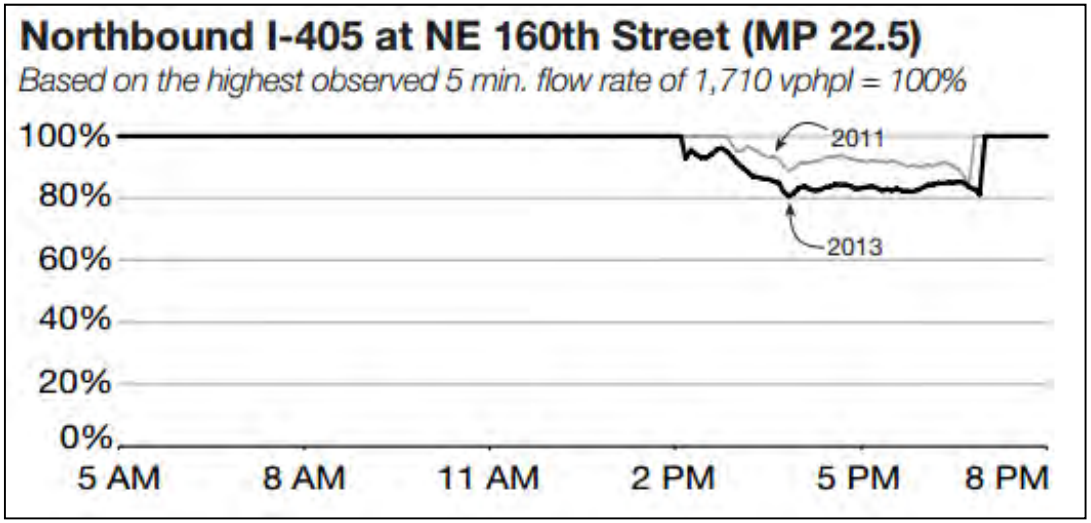


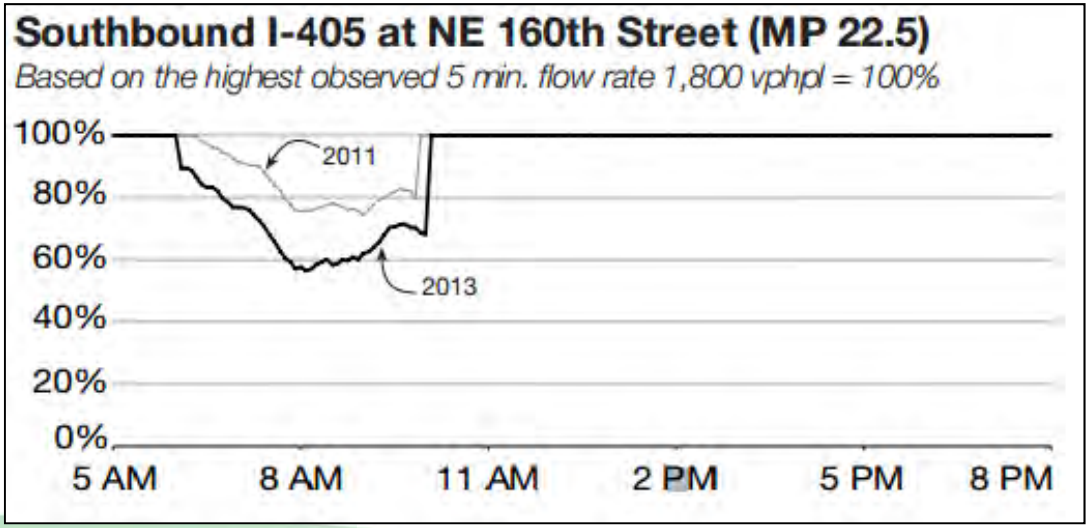
If demand = capacity, speeds are around 45 MPH and throughput is highest

If demand > capacity, speeds drop, and less traffic gets through overall



North End of I-405 – Lost Productivity

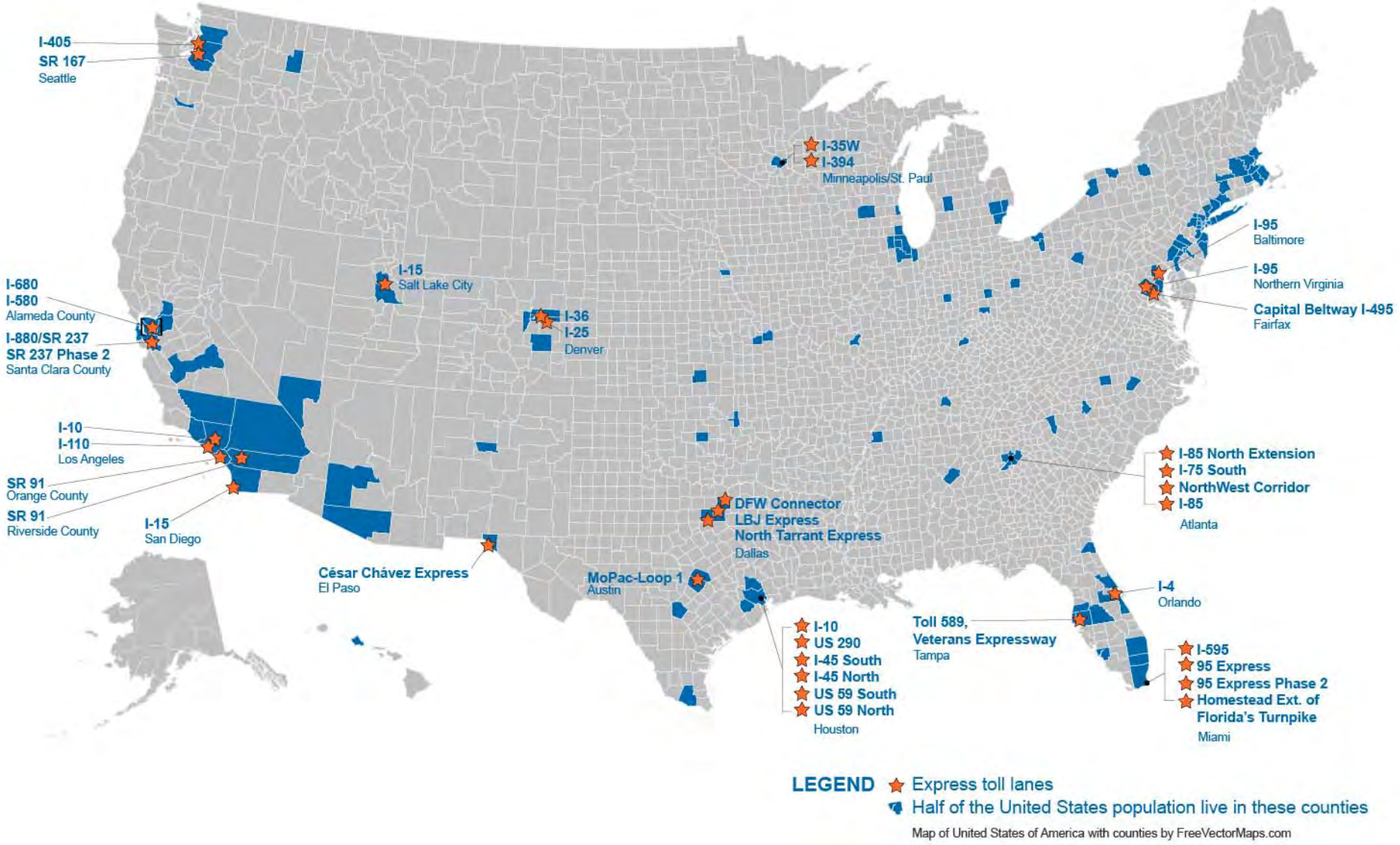




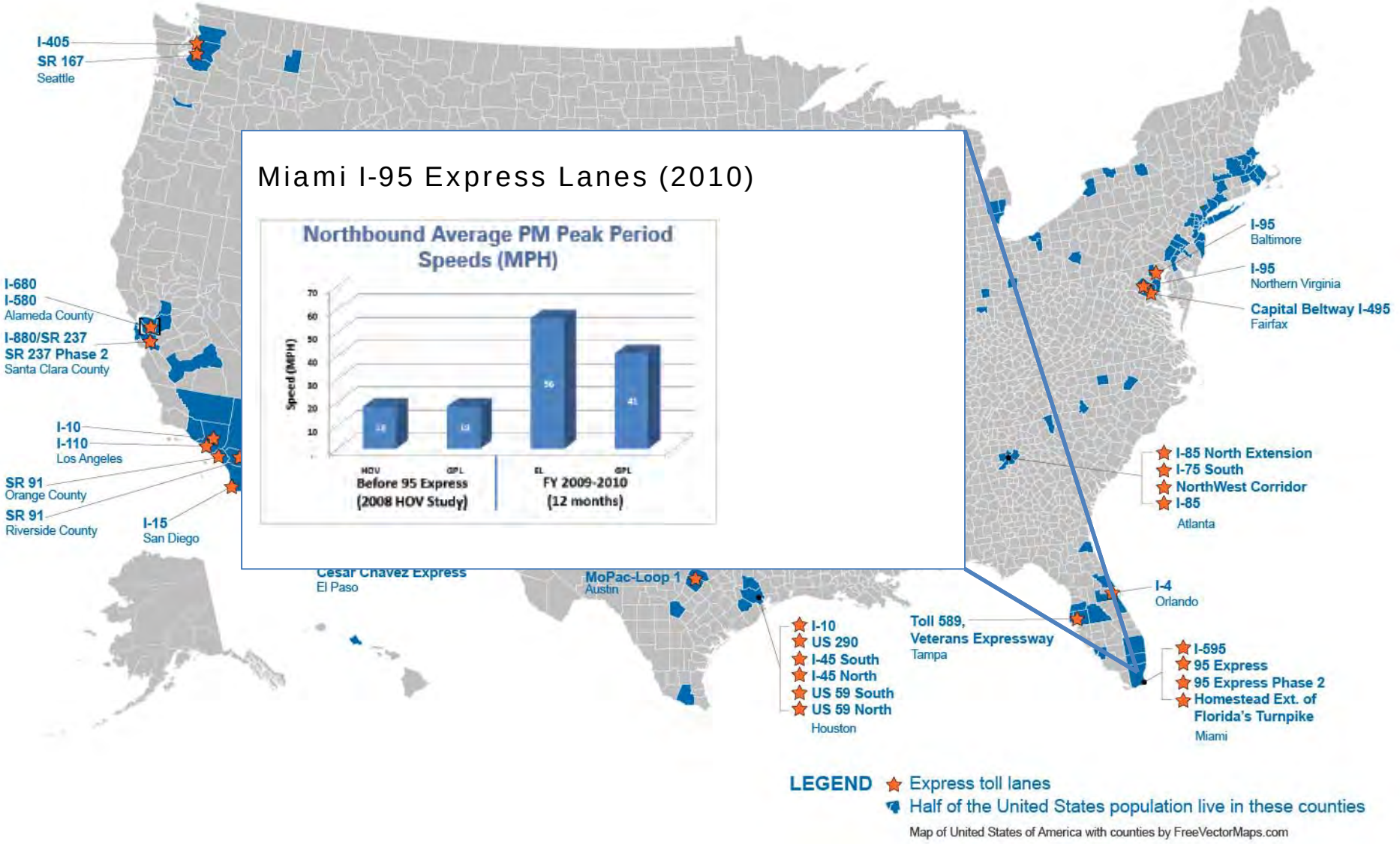
- These charts show how congestion reduces productivity on I-405 today
- During congested periods, productivity is reduced, and less traffic gets through

Based on the highest observed 5-minute flow rates (vehicle-per-mile-per-lane) during 2011 and 2013

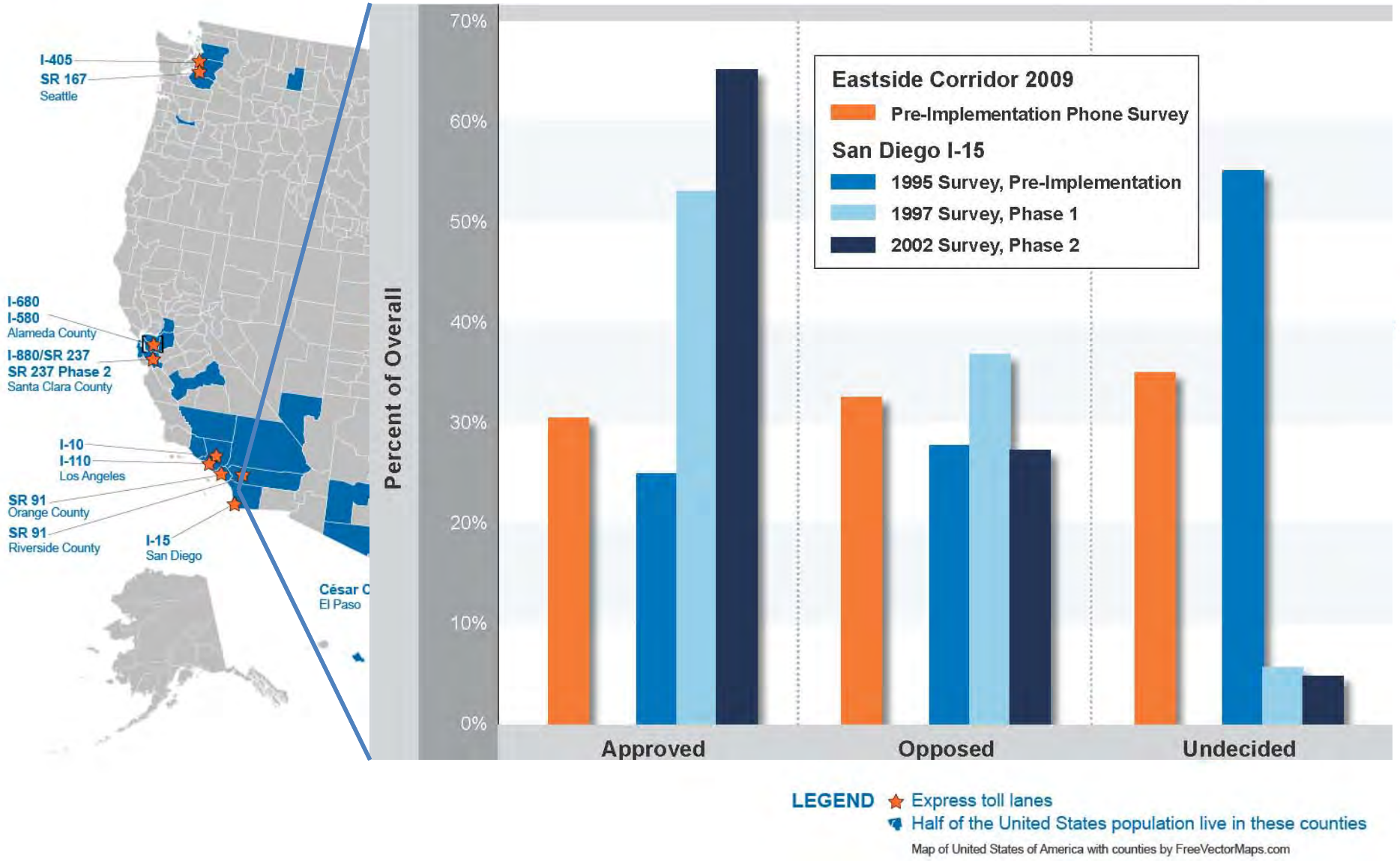
Express Toll Lanes are used across the country as part of the solution to urban congestion



What happened in Miami on I-95?
Improved Performance in all Lanes



What happened in San Diego on I-15?
Public Support



I-405 Toll Rate Proposal

Toll Responsibility is Shared

The Legislature, Commission and WSDOT each play a role

	Washington State Legislature	Transportation Commission	Department of Transportation
Responsibility	Establish tolling, designate toll corridors and use of toll revenues	Set toll rates and related fee	Plan, analyze and construct facilities, collect tolls, build and operate toll collection systems
Roles	• Establish legal toll framework • Authorize tolling in designated corridors • Approve financing plans • Enable tolling practices • Appropriate toll operation budget	• Set toll rates within funding requirements • Set toll exemptions • Establish advisory committees	• Develop toll collection systems and procedures • Collect tolls • Finance improvements • Operate tolled corridors • Assess financial feasibility of toll projects

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

Modeling showed that the average toll will be between 75 cents and $4.00

Significant contribution to revenue for the initial I-405 segment

Proposal:

$0.75 minimum *Good To Go!* toll rate

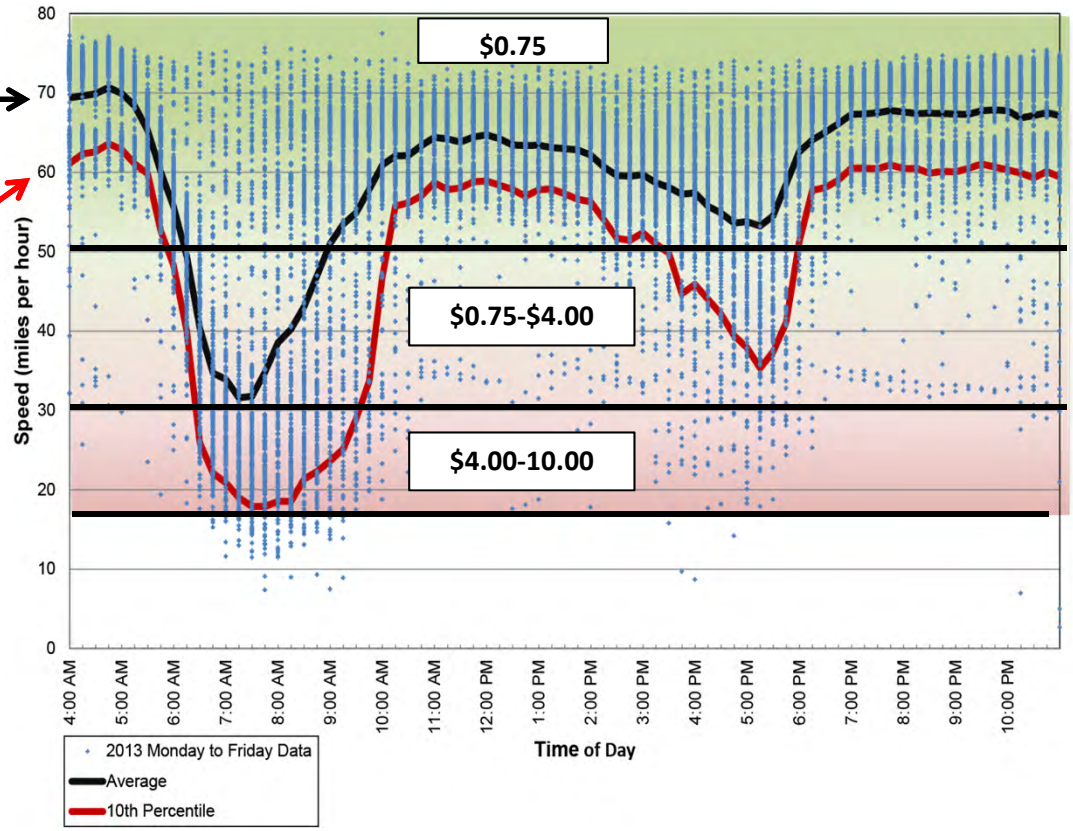
- 77 percent of trips are anticipated to be below $1.00
- A lower minimum toll reduces the barrier to entry
- Consistent with average collection and enforcement costs of $0.70

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

Proposal:

$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

Proposal:

$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

Proposal:

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)

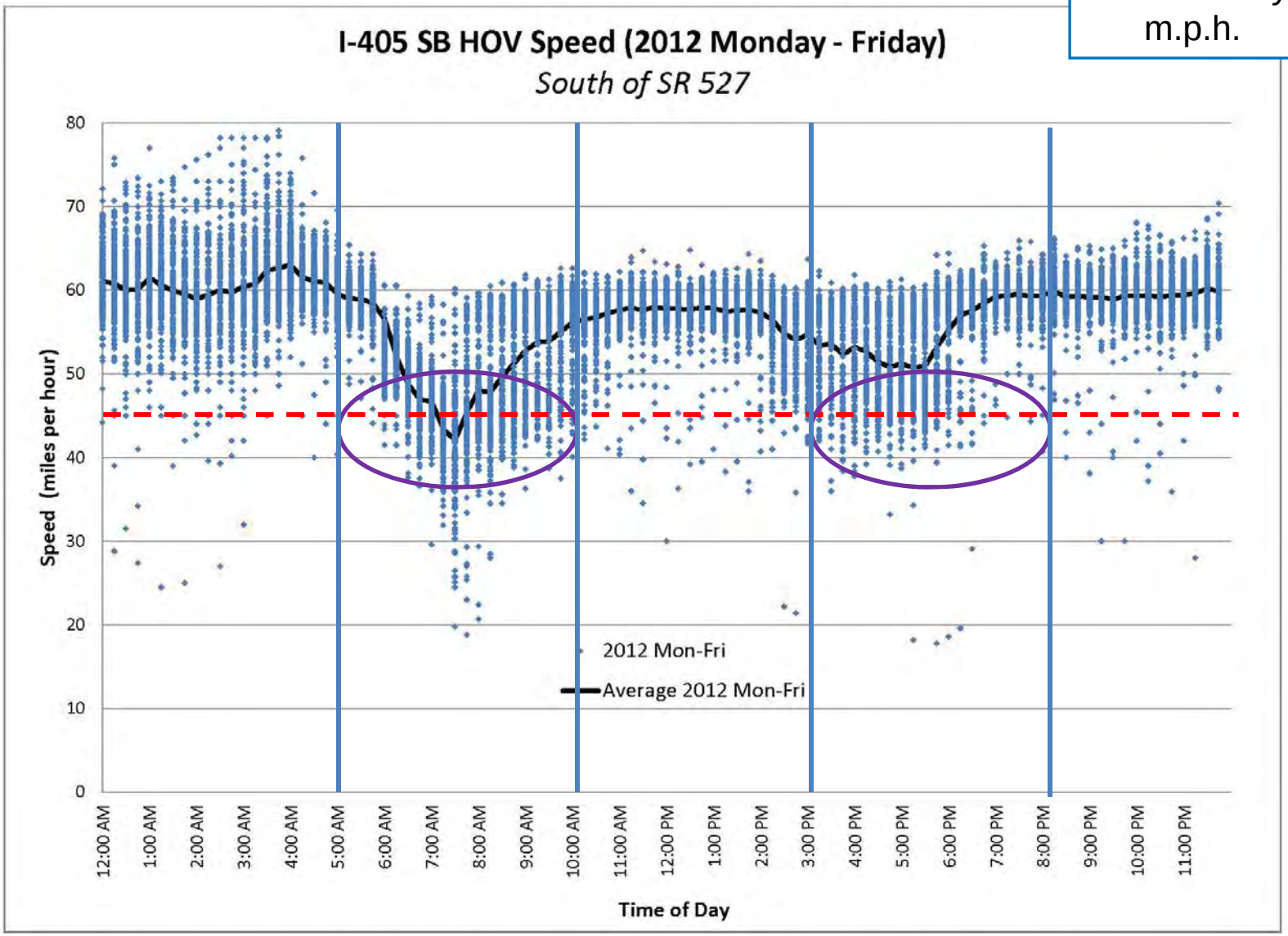
Considerations

- 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

Proposal:

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

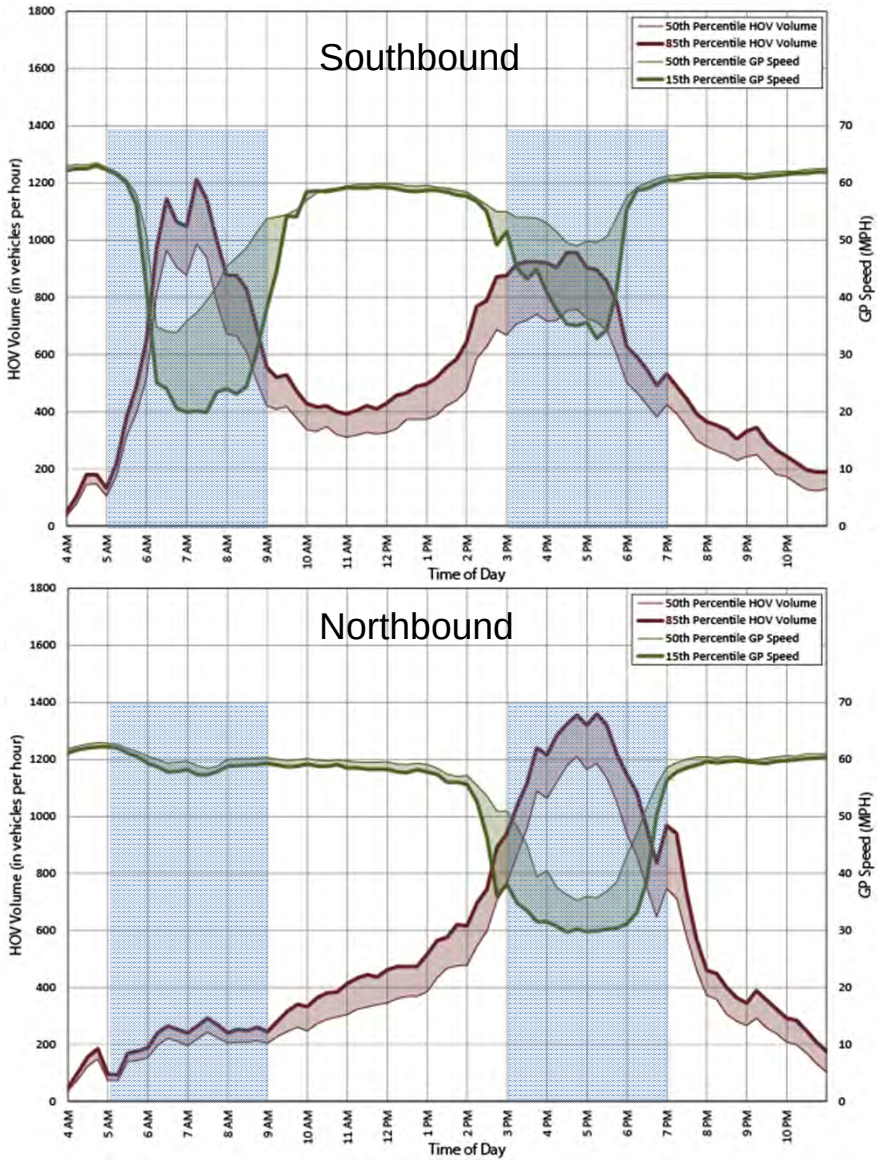
WSDOT traffic engineers recommend considering the following factors to define when 3+ carpool definition should apply:

- 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

Proposal:

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…

Craig J. Stone, P.E.
Assistant Secretary, Toll Division
206-464-1222 or StoneC@wsdot.wa.gov

Reema Griffith
Executive Director
Washington State Transportation Commission
360-705-7070 or GriffiR@wstc.wa.gov