

I-405 Express Toll Lanes Rate Setting

Craig J. Stone, P.E.

Assistant Secretary
Toll Division

Rob Fellows

Policy and Planning Manager
Toll Division

**Washington State Transportation Commission
December 10, 2013**

Presentation Purpose and Agenda

- Recap I-405 rate setting actions, process and schedule
- Place I-405 express toll lane rate-setting in the broader context of HOV lane policy and program
- Provide information on an “everyone pays” scenario
- Provide additional requested information relevant to carpool policies

I-405 Express Toll Lanes Rate Setting Milestones

	Milestone
November 2013	Executive Advisory Group report out Kickoff rate setting Present funding and phasing draft findings Discuss carpool and motorcycle policies Clarify rate setting information needs
December 2014	Discuss carpool policy Provide information on “everyone pays” scenario File CR 101 (Statement of Inquiry)
January 2014	Discuss minimum and maximum rates Discuss Pay By Mail differential More discussion on exemptions Identify missing information
February 2014	WSTC proposed rates/exemptions
April 2014	Public Input meetings File CR 102 (Proposed Rule)
May 2014	Public Hearing Adopt toll rates/exemptions File CR 103 (Final Rule)

I-405 Rate Setting Actions and Decisions Needed

Express toll lane rates are set dynamically by a computer program, based on traffic conditions

The rate setting process needs to set the framework for dynamic tolls, including:

- Minimum toll rate
- Maximum toll rate
- Pay By Mail differential
- Exemptions

(Note - statute directs transit and vanpools must be exempt on I-405)

- Emergency vehicles/incident response/maintenance vehicles
- Private buses
- Motorcycles
- Carpools (defined as 2+ or 3+ occupancy)

Express Toll Lanes and HOV Lane Policies

- Introduction of I-405 express toll lanes initiates tolling on I-405, but it is also a significant change for existing HOV lanes and their users

HOV Lanes	Express Toll Lanes
Enter or exit anywhere	Enter/exit only at specific locations
Any carpool can enter with correct number of people	<ul style="list-style-type: none">• Anyone can enter for a price• Carpools free only if they declare and have a pre-paid <i>Good To Go!</i> account

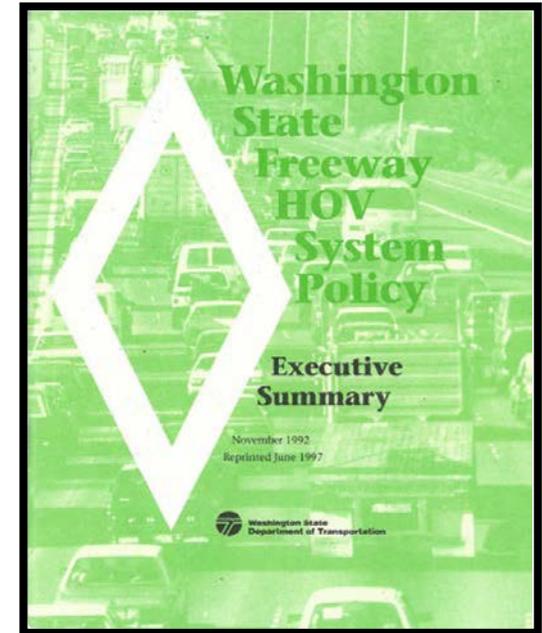
- Rate-setting will also change long-standing policies and practices in HOV lanes affecting current users

Development of HOV Lanes and Policies

- **Metro was formed in King County after 2 unsuccessful rail votes**
 - King County focused instead on an expanded regional express bus system
- **Initial HOV lanes implemented in the 1980's on I-5, I-405 and SR 520**
 - WSDOT and Metro collaborated to build park and ride lots and express stops to support Metro's new suburban services and "blue streak" rapid transit bus from Northgate to downtown Seattle
- **WSDOT added HOV lanes to the federally funded Interstate Cost Estimate program**
 - HOV lanes on I-5, I-90 and I-405 were funded by the Interstate program, along with adjacent park and ride lots
- **WSDOT adopted Core Freeway HOV Program in the mid 1990's**
 - Identified and sought funding for a continuous HOV system both state and interstate highways in the Puget Sound region
 - Subsequent studies proposed system extensions, transit direct access ramps, system connectors, safety and enforcement improvements

HOV Policy History

- **WSDOT established HOV system policy document in 1992**
 - Developed by interagency work-group
 - Adopted by a committee of agency executives
 - Updated and republished in 1997
- **Legislature passed budget proviso requiring 2-person carpool definition**
 - Governor vetoed – grounds that operating rules are an executive function
 - Governor then ordered WSDOT to comply except on SR 520
- **Transportation Commission developed HOV policies in 1996**
 - Adopted existing WSDOT policies by reference
 - Addressed objectives, financing, roles and responsibilities
 - Allowed MPO's to develop regional policy variations



Commission HOV Objectives – 1996

Preamble:

“The Transportation Commission views High Occupancy Vehicle (HOV) programs and facilities as elements of a state transportation system that serve to improve overall mobility in congested regions by increasing the people moving efficiency and capacity of freeways and providing incentives for people to choose higher occupancy modes of travel.”

High Occupancy Vehicle Systems Objectives:

The objectives of high occupancy vehicle systems are to:

- improve mobility by increasing the people moving efficiency and capacity of freeways;
- provide reliable travel time savings for people who choose higher occupancy vehicle modes of travel;
- improve efficiency and safety of both transit and highways.

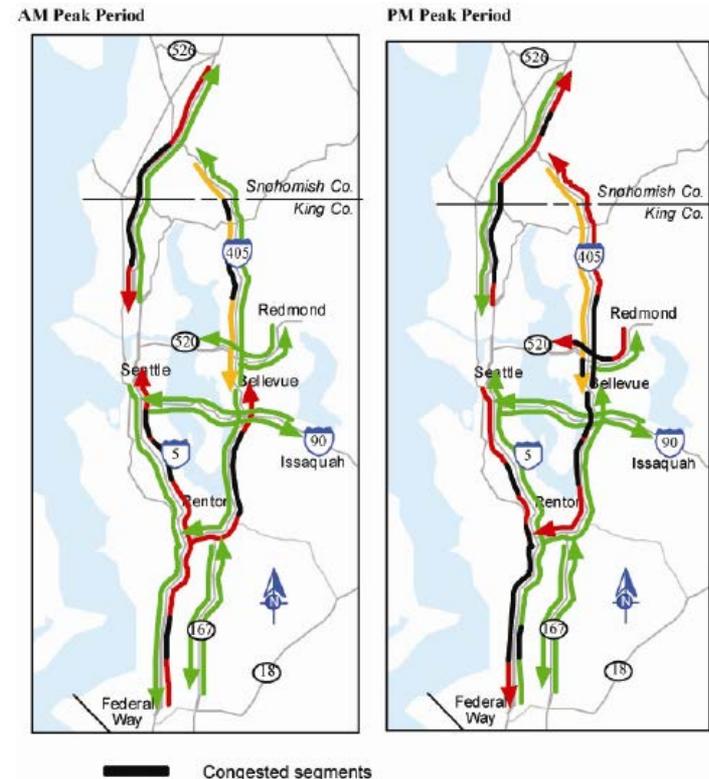
HOV Lanes Performance Standards

- **Biggest policy challenge for HOV lanes has been performance**
 - 3+ carpools: lanes seem empty
 - 2+ carpools: lanes are congested
- **1992 WSDOT standard:**

HOV lane vehicles should maintain or exceed an average speed of 45 mph or greater at least 90 percent of the times they use that lane during the peak hour

 - Subsequently adopted in federal law
 - Red and black lines on map fail to meet this standard
- **1996 Commission language:**

[Regional operating policies must include]
“a speed and reliability standard that ensures that HOV facilities will continue to provide a reliable travel time advantage over traffic in general purpose lanes when congestion is present, and a mechanism to enforce that standard”



Express Toll Lanes and HOV Policy

- **Express toll lanes were originally proposed as a means to achieve HOV speed and reliability standards needed to serve as an effective transit right-of-way and carpooling incentive**
 - Changing occupancy requirements is politically challenging
 - Removing 2+ carpools adds to congestion in the general purpose lanes, while HOV lane seems empty
- **Provides an opportunity to meet HOV objectives, while improving utilization and adding value for other users**
 - Managing volumes effectively ensures reliable speeds
 - Other users can benefit when arriving on time has high value
- **Express toll lanes provide tools to manage both vehicle and person throughput**
 - Dynamic pricing manages vehicle flow and throughput
 - But HOV objectives focus on person-throughput, not just vehicles
 - Transit and carpool exemptions provide incentive to fill empty seats to maximize person throughput overall

Carpool Policy – Legislative Intent

From RCW 47.56.810:

(2) "Express toll lanes" means one or more high occupancy vehicle lanes of a highway in which the department charges tolls primarily as a means of regulating access to or use of the lanes to maintain travel speed and reliability.

From RCW 47.56.880:

It is the intent of the legislature to improve mobility for people and goods by maximizing the effectiveness of the freeway system. ... An express toll lanes network could provide benefits for movement of vehicles and people, as well as having the potential to generate revenue for other improvements in the Interstate 405 and state route number 167 corridor, also known as the eastside corridor.

From RCW 47.56.886:

(3) The department and the transportation commission must consult with a committee consisting of local and state elected officials from the Interstate 405 and state route number 167 corridor and representatives from the transit agencies that operate in the Interstate 405 and state route number 167 corridor while developing the performance standards, traffic and revenue analysis, and finance plan.

Carpool Policy – Federal Requirements

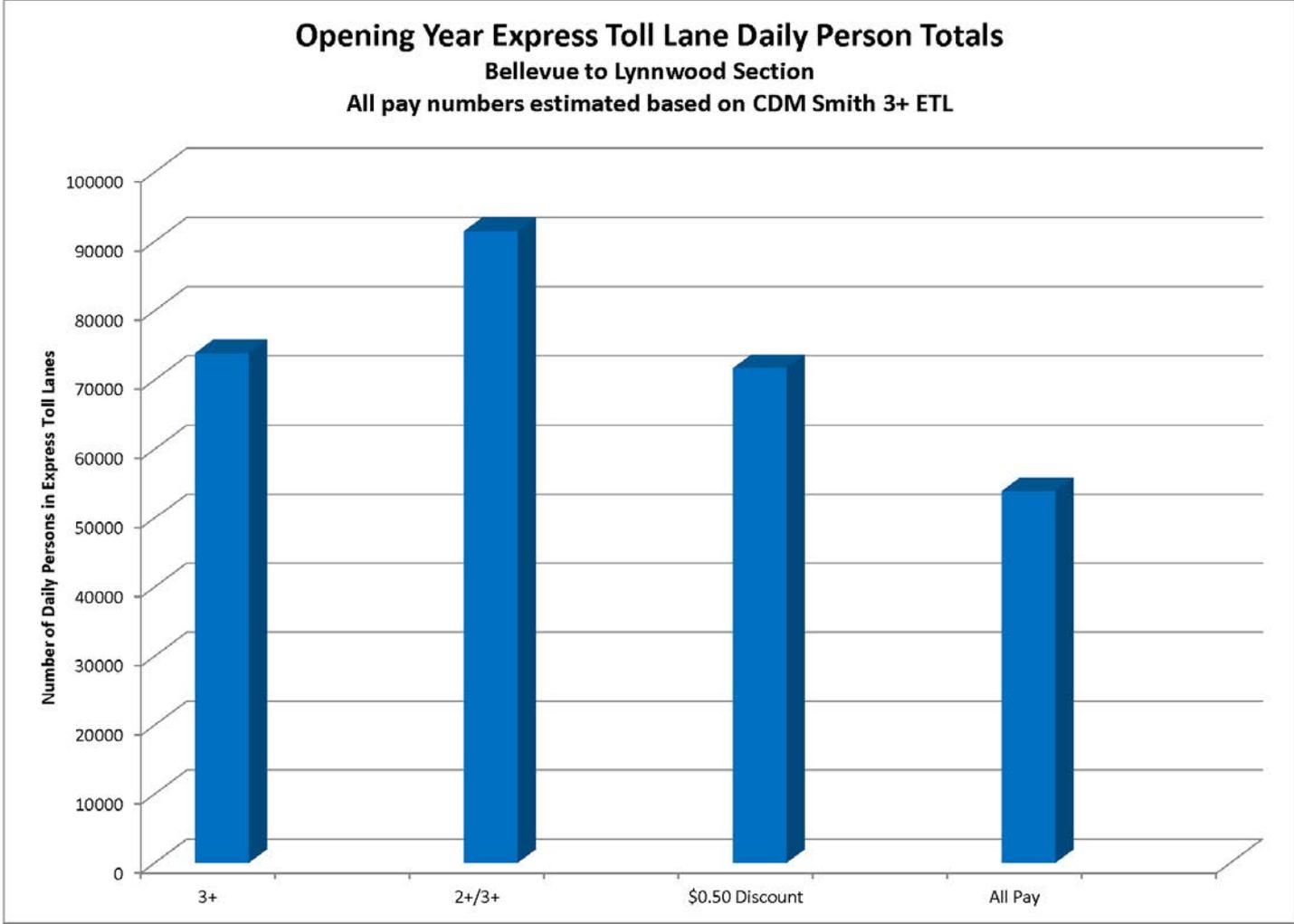
- **MAP-21 directs the USDOT Secretary to subject states to “appropriate program sanctions” for HOV or HOT facilities that do not meet 45 MPH speed during 90 percent of peak periods**
 - Performance standard is not new, but sanctions for failure added
- **Federal law allows States to toll vehicles for access to HOV lanes only when they do not meet the established occupancy requirements of the lane**

(or if they are inherently low emission vehicles or low emission and energy-efficient vehicles - not relevant in Washington)
- **Other federal considerations:**
 - Environmental commitments – FHWA has advised that any carpool policy other than 3+ will require a reevaluation of the I-405 express toll lane project NEPA documentation
 - Funding requirements – Federal funds utilized to construct HOV lanes may need to be repaid to FHWA if carpools have no preferential treatment

“Everyone Pays” Scenario

- **Commissioners have requested information on implications of not providing carpool exemption, were most everyone pays**
- **Information has been drawn from existing forecasts and analyses and extrapolated where required**
 - Federal requirements
 - Traffic and revenue implications
 - Other carpool policy evaluation measures
- **Detailed modeling, and public and stakeholder opinion research has not been done on this scenario**
 - Neither the Commission’s nor WSDOT’s study evaluated this option
 - The Executive Advisory Group did not evaluate this option
- **The legislature and WSDOT both have a policy interest in maintaining a strong incentive to move more people, not just vehicles**

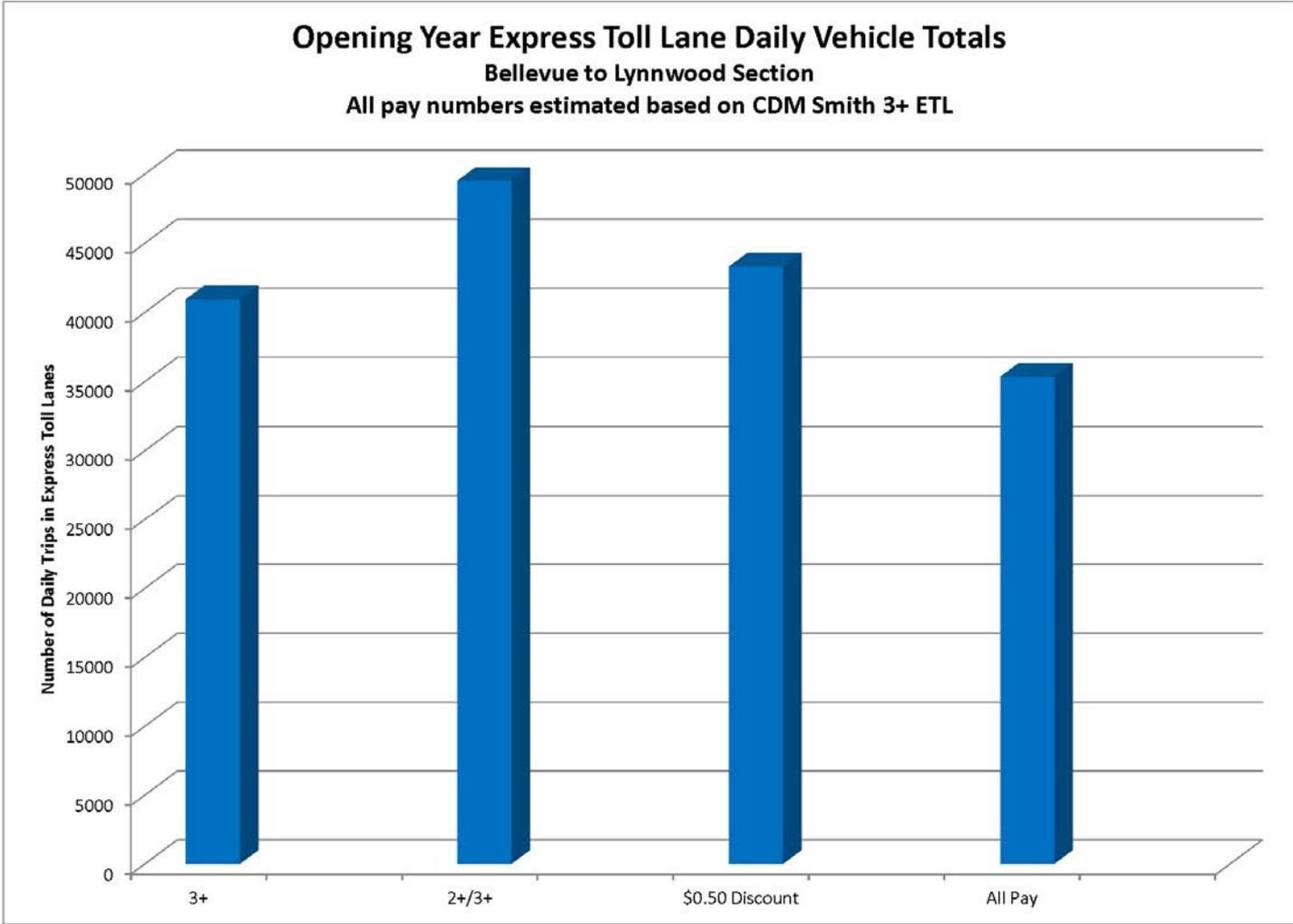
Scenario Results – Person throughput



Data does not reflect ramp-up

12/02/2013

Scenario Results – Vehicle throughput



Data does not reflect ramp-up

12/02/2013

Scenario Results — Net Revenues and Vehicle Trips

Fiscal Year	Toll and Toll-Free/Discounted Vehicle Trips in the Express Toll Lanes†															
	Scenario A¹		Scenario B¹		Scenario B-2¹		Scenario C¹		Scenario D¹		Scenario E¹		Scenario F²		Scenario G³	
	2+ Carpool Free Photo Tolling¹		\$1.00 Carpool Discount¹		\$0.50 Carpool Discount Photo Tolling¹		2+ Carpool Free Off-Peak 3+ Carpool Peak Photo Tolling¹		3+ Carpool Free Photo Tolling¹		3+ Carpool Free¹		3+ Carpool Free (WSTC Indep. Forecast)²		No Exemptions Photo Tolling³	
	Toll Trips	Toll-Free Trips	Full Toll Trips	Discount Toll Trips	Full Toll Trips	Discount Toll Trips	Toll Trips	Toll-Free Trips	Toll Trips	Toll-Free Trips	Toll Trips	Toll-Free Trips	Toll Trips	Toll-Free Trips	Toll Trips	Toll-Free Trips
2016	2.4 M	7.8 M	3.1 M	10.2 M	4.1 M	4.7 M	4.4 M	3.5 M	5.0 M	1.3 M	4.9 M	1.3 M	5.4 M	0.8 M	5.4 M	0.0 M
2017	3.9	12.2	3.9	12.7	5.2	6.0	7.1	5.5	7.9	2.1	7.8	2.1	6.1	0.8	8.6	0.0
2018	4.5	13.7	4.3	14.1	6.0	6.9	8.0	6.1	9.0	2.3	8.8	2.3	7.0	0.8	9.8	0.0
2019	4.7	14.0	4.5	15.4	7.0	8.4	8.3	6.2	9.2	2.3	9.0	2.3	7.8	0.9	10.1	0.0
2020	4.9	14.1	4.6	16.8	8.0	10.1	8.5	6.3	9.5	2.4	9.1	2.3	8.7	0.9	10.3	0.0
2021	5.2	14.3	4.8	18.4	9.3	12.2	8.7	6.3	9.7	2.4	9.2	2.4	9.5	0.9	10.5	0.0
2022	10.4	28.3	10.5	28.5	16.0	18.4	18.2	14.5	21.2	7.3	21.0	7.0	45.4	4.6	N/A	
2023	18.3	50.9	19.1	45.7	26.4	29.1	32.8	27.7	39.1	15.3	39.1	14.2	47.4	4.6	N/A	

Fiscal Year	Net Toll Revenue (before R&R Expenditures)*															
	Scenario A¹		Scenario B¹		Scenario B-2¹		Scenario C¹		Scenario D¹		Scenario E¹		Scenario F²		Scenario G³	
	2+ Carpool Free Photo Tolling¹		\$1.00 Carpool Discount¹		\$0.50 Carpool Discount Photo Tolling¹		2+ Carpool Free Off-Peak 3+ Carpool Peak Photo Tolling¹		3+ Carpool Free Photo Tolling¹		3+ Carpool Free¹		3+ Carpool Free (WSTC Indep. Forecast)²		No Exemptions Photo Tolling³	
2016	(\$2.4 M)		(\$2.8 M)		\$0.4 M		(\$0.5 M)		\$0.3 M		\$0.3 M		\$1.4 M		\$0.9 M	
2017	(2.1)		(2.4)		1.8		1.2		2.5		2.3		3.3		3.4	
2018	(2.0)		(2.1)		2.7		2.1		3.5		3.3		5.7		4.6	
2019	(1.7)		(1.8)		4.0		2.8		4.3		4.0		7.0		5.5	
2020	(1.5)		(1.6)		5.4		3.4		4.9		4.6		8.3		6.1	
2021	(1.4)		(1.5)		7.0		3.9		5.5		5.1		9.5		6.8	
2022	0.9		11.3		20.2		17.7		21.2		19.2		25.8		N/A	
2023	13.0		40.1		50.8		48.2		55.4		49.2		63.5		N/A	

NOTES:

* Year of collection dollars after uncollectible revenue, credit card fees, toll collection O&M, and starting in FY 2022, facility O&M expenditures.

¹ Based on WSDOT / CDM Smith traffic and gross revenue projections.

² Based on WSTC / Cambridge Systematics "50th Percentile" traffic and gross toll revenue projections. ○ Meets legislative net revenue requirement (RCW 47.56.880)

³ Based on WSDOT preliminary, sketch-level traffic and gross revenue projections. ○ Does not meet legislative net revenue requirement



Summary of Everyone Pays Option

- **Pros:**
 - Higher Revenue
 - Simple - Easy to understand
- **Cons:**
 - Federal Implications
 - Pay back cost of Lane
 - Environmental NEPA reevaluation- Delay and environmental justice issue
 - State Implications
 - Counter to current HOV policy
 - Counter to ETL Legislative Direction
 - Move more people and vehicles
 - Effectiveness for transit
 - Lower Person Throughput in Peak
 - Lower overall Use of ETL
 - Not supported by Executive Advisory Group
 - No analysis by WSDOT or WSTC

Options for Future Transition from 2+ to 3+ Carpools

Some approaches, if the Executive Advisory Group recommendation is accepted:

- **WSDOT makes changes to hours to maintain federal and state performance standards**
- **Commission adopts WAC with performance triggers, a date or event (completion of I-405 facility, for example) that would trigger a change**

Considerations:

- **Legislature of citizen initiative could set specific occupancy or definition of peak hours if public acceptance is low**
- **Change can be harder when it's needed if more traffic would be diverted to general purpose lanes that are already slower**

Additional Information Requested by Commissioners

- **Transit and Park-and-Ride data**
- **Carpool and Fam-pool data**
- **Options for Future Transition from 2+ to 3+ Definition**
- **Customer experience and Express Toll Lanes**

For questions or further information...

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