Introducing Multi-Mode Carpool Transponders

A Washington State Case Study

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- Existing & Planned HOT Lane Systems
- HOV Declaration Options
- Removing Transponders from System
- Updates to Memory Map
- Other System Changes
- Next Steps

Washington's Tolling Network
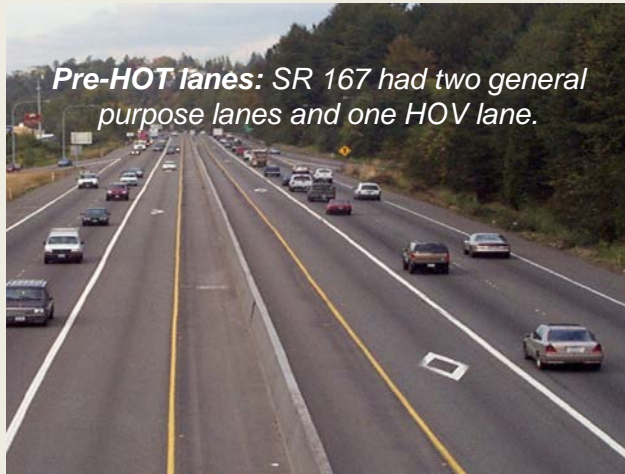

Current tolled facilities

- Tacoma Narrows Bridge (2007)
- **SR 167 HOT Lanes (2008)**
- SR 520 Bridge (2011)

Authorized tolled facilities

- **I-405 Express Toll Lanes (2015)**
- SR 99 Alaskan Way Tunnel (2016)

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LEGEND
— Express Toll Lanes
— Full Tolling

I-405 Express Toll Lanes 2015

SR 520 Bridge opened 2011

SR 99 Tunnel 2016

SR 167 HOT Lanes opened 2008

Tacoma Narrows Bridge opened 2007

SR 167 HOT Lanes Stage 4 2017

Existing HOT Lanes: SR 167

Pre-HOT lanes: SR 167 had two general purpose lanes and one HOV lane.
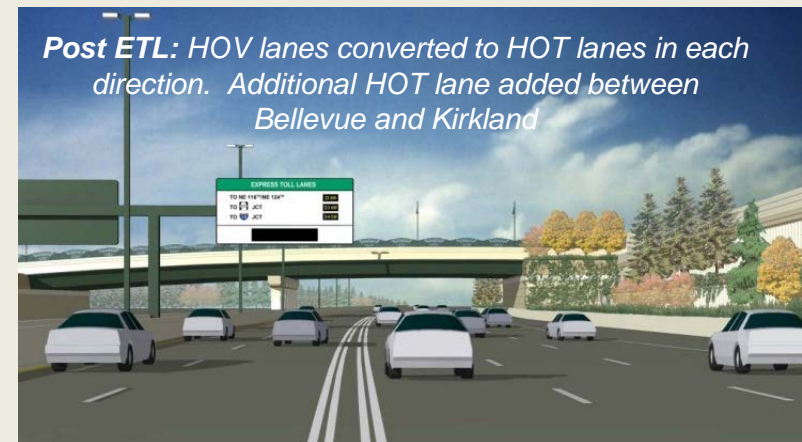

Post HOT lanes: HOV lanes were converted to a single HOT lane in each direction.

- State's first HOT lanes

- Seventh year of Pilot Project

- Free to buses, 2+ carpools & motorcycles

- Solo drivers pay single toll to travel any distance on 11 mile route

- Electronic signs indicate toll rate before each entry point

- **Not photo tolled**

- **Vehicles without transponder considered HOV by default**

I-405 Express Toll Lanes: Under Construction

- Only north-south alternative to I-5

- Heavily congested

- Scheduled to open Fall 2015

- Free to buses, carpools & motorcycles

- Solo drivers pay single toll to travel any distance on 15+ mile route

- **Photo tolled**

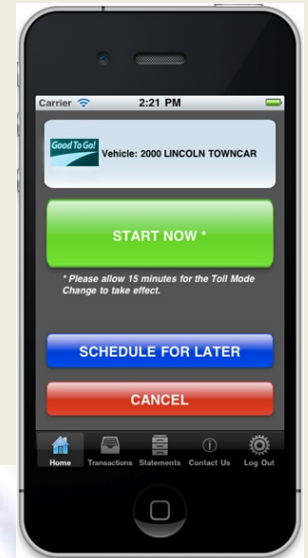- **HOVs must actively declare status to receive exemption; otherwise considered SOV by default**
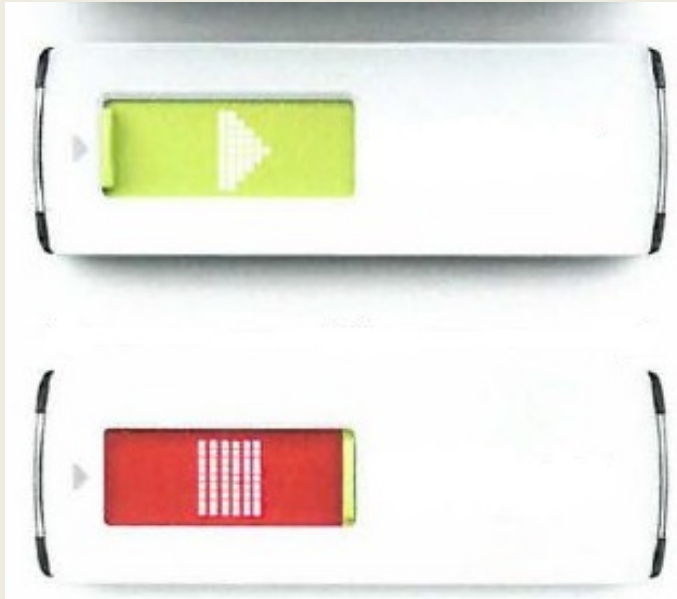

Pre-ETL: I-405 has 3-4 general purpose lanes and one HOV lane.

Post ETL: HOV lanes converted to HOT lanes in each direction. Additional HOT lane added between Bellevue and Kirkland

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SR 167 HOT lanes vs I-405 Express Toll Lanes

SYSTEM ATTRIBUTES	SR 167 HOT lanes	I-405 Express Toll Lanes
Goal: Improve traffic performance?	✓	✓
Goal: Fund future improvements?	X	✓
Photo tolling?	X	✓
HOVs exempt?	✓	✓
Transponders required for exemption?	X	✓
Do current transponders "work" for HOVs?	✓	X

Declarable Options

Declarable Transponder vs. Carpool Registration

Out with the Old, In with the New

Transition Plan Goals

- ✓ Customers have the right pass
- ✓ Continue good customer service
- ✓ Minimize impacts to existing customers
- ✓ Implement a cost effect solution

Transponder Type	Projected (Spring 2015)	
	Amount Active	Amount in Inventory
Switchable	58,000	66,000

Going Forward

- ✓ Offer 100% discount on the price of a declarable transponder for switchable customers
- ✓ Estimate cost = $1.58M

Mapping for the Future

Programming Standard	Year Introduced	Maintain	Add
SeGo	2007	✓	
WSDOT 6C (v1)	2011	✓	
WSDOT 63 (v2)	2015		✓

North American 6c (v1)

Header   State   Agency

WSDOT 63 (v2)

Header   Reserved   HOV   Agency

System Changes

- Three systems – three vendors

- Reports
  - Interface Control Documents
  - System Design Documents
  - Daily Transaction Reports
  - Tag Validation List (TVL)

- Database & Inventory

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Initial Testing Complete

- >1000 reads on 3 systems
- All variations tested
- Old memory map used
- Continuing to work with 3M

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Next Steps

- Accounting updates
- Purchasing Declarable Transponders
- Coordination with back-office vendor
- Marketing/Education

Thank you to WSDOT Toll Division for contributions to this presentation!

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