



November 7, 2007

HOT Lanes Peer Review

Sponsored by



Final Report

By [Noel Brady](#), WSDOT Communications Consultant

Overview

Leading transportation officials from California, Minnesota and Colorado recently joined members of WSDOT's [SR 167 HOT Lanes Pilot Project](#) team to share their experience and offer critiques and recommendations for high-occupancy toll lanes (HOT). The forum provided WSDOT planners, engineers and communicators with additional information about an innovative tool for solving congestion. The experts advised the SR 167 HOT Lanes team on what to expect and ways to improve their project as they prepare for launch in spring 2008.

Members of the expert panel included Derek Toups of the San Diego Association of Governments; Ken Buckeye of Minnesota Department of Transportation, Peggy Catlin of the Colorado Department of Transportation and her colleague Dave Kristick, director of Colorado's E-470 Public Highway Authority. The event was hosted by Patty Rubstello, Traffic Policy Engineer in WSDOT's Urban Corridors Office, and James Colyar, ITS/Mobility Engineer for the Federal Highway Administration.

Each of the experts has planned, developed, launched and maintained a metropolitan-area HOT lanes facility. Their projects represent three of six HOT lane projects currently operating in the United States. Of the three, Minnesota's [MnPASS system](#) on I-394 near Minneapolis most closely matches WSDOT's planned HOT lane pilot program on SR 167. The MnPASS facility includes 11 miles of mostly single-HOT lane separated by a buffered double-white line. It was converted from HOV in 2005.



Peer Review expert panel members Derek Toups, Ken Buckeye and Peggy Catlin listen to a presentation about SR 167 HOT Lanes Pilot Project

Unlike the SR 167 HOT lanes, SANDAG's [I-15 FasTrak Express Lanes](#) are a reversible, two-lane HOT facility. Colorado's [I-25 Express Lanes](#) consist of two-concurrent flow, barrier-separated, reversible lanes. CDOT

contracts the E-470 Public Highway Authority to manage its I-25 Tolled Express Lanes.

The experts provided detailed experiences from pre-opening marketing and education to opening day events. They outlined the pros and cons of multiple approaches to enforcement and toll pricing, and they openly divulged valuable lessons learned on practically every level of the enterprise.

At the conclusion of the two day meeting in Seattle, the experts discussed their observations, opinions and recommendations among one another, before reconvening with the SR 167 HOT Lanes team to offer their conclusions. Although they were not short on elements of the WSDOT project that could be improved upon, all four experts were congratulatory on the planning, progress and foresight the team has shown. "I think they're ready to open in the spring," Toups said.

Catlin agreed, adding, "I think they've done more planning and development than any of us."

Expert Discussion Summary

Peer Review Experts

Derek Toups, Associate Regional
Planner/Value Pricing Program Manager
San Diego Association of Governments
619-699-1907
dto@sandag.org



Peggy Catlin, Deputy Executive Director
Colorado Department of Transportation
303-757-9208
peggy.catlin@dot.state.co.us



Ken Buckeye, Program Manager
Minnesota Department of Transportation
651-366-3737
kenneth.buckeye@dot.state.mn.us



Dave Kristick, Director of Operations
E-470 Public Highway Authority
303-537-3702
DKristi@e-470.com



Federal Highway Administration panel representatives

James P McCarthy
Minnesota Division + RC
James.McCarthy@fhwa.dot.gov

Greg Jones
FHWA - Resource Center
GregM.Jones@fhwa.dot.gov

James Colyar
James.Colyar@fhwa.dot.gov

Top 5 Recommendations

- **Time-of-day backup pricing mechanism:** A time-of-day pricing mechanism should be established as a fallback measure in case dynamic pricing fails. Tolls rates would be based on rolling time-of-day data from previous periods. The panel also stressed the need for upper and lower toll-rate limit as soon as possible. The team should ensure the top toll rate is in line with what the Transportation Commission sets.
- **HOT lanes champion:** The panel placed great emphasis in the importance of a political champion to relay messages about the transportation and social benefits of HOT lanes to the public and to the Legislature. With former Transportation Secretary Doug McDonald now out of the picture, the HOT lanes team should enlist active support from other lawmakers and agency heads.
- **Contingency plans:** Panel members agreed more work could be spent on planning for blocking incidents in and around the HOT lanes. They suggested better defining contingency plans for managing unexpected backups in the HOT lanes, including plans to get traffic out of the HOT lane smoothly and efficiently when necessary. Explore what scenarios might occur in SR 167 HOT operations and be prepared to react to any possible outcomes, including bottlenecks and queues at the terminus of HOT lanes. Unnecessary delay will breed bad public opinion for the project
- **Communications & Messaging:** WSDOT should emphasize to the public that HOT lanes is a pilot project and that planners and engineers will be continuously analyzing the system and making changes to improve it. The experts suggested an up-front and honest message about the future of HOT lanes: "This is a demonstration period to fine tune the system; more HOT lanes are on their way." The panel also recommended promoting the project launch and operation actively. "Be proud of the project and pose it as a pre-cursor to a regional strategy (I-405 Express toll lanes). That should be your message – that more is coming and this is to demonstrate the benefits and traffic relief that is on the way!!!" (*Toups)
- **The Media:** Project communicators should work toward preparing for the questions that data that reporters will request at opening. The panel suggests asking members of the media what they'll want to know. They also suggest meeting with editorial boards before

roll out to ensure media outlets, both new departments and editorial, have a clear understand of HOT lanes and how they work.

What We're Doing Right

Communications/Education/Enforcement

- The project's focus on the customer, including community meetings, focus groups, workshops, surveys and stakeholder involvement, is very good. The panel stressed the need to keep the public informed and manage expectations.
- The panel liked our plan to use HOT lanes revenue for increased enforcement and incident response teams (IRT).
- Our HOT messaging is good. Continue to stress that transit and HOV service won't be degraded.
- The panel liked our "honest statement of congestion reduction" targets. We shouldn't oversell the benefits to the GP lanes.
- Continue to educate about successful HOT lane projects across the country. "A tried and tested tool."
- Our customer focus is very good. Continue to educate the public about congestion pricing. Value pricing is not intuitive to the public.
- Our information graphics are good.
- The panel said it is important to have communications plan with time table, which we have.
- Continue to thoroughly state how the HOT lanes revenue is being used,
- Continue message that WSDOT is looking to make operational changes during pilot project.

Good To Go!! Customer Service

- Information graphics on GTG Web site are good.
- The panel offered high praise for "Rachel's Drive" with some tips for improving the video content. Follow up videos for Rachel's Drive should include the HOV customer experience, shields and enforcement.
- GTG customer service showed good awareness of educational and promotional needs when opening the new Narrows Bridge in Tacoma.
- Highly beneficial is the project's model of having a single point of payment for both HOT and TNB.

Operations

- Overall operations plan is very good.
- The project shows well defined performance parameters for minimum operating speeds.

Enforcement

- It is important that we have a good relationship with Washington State Patrol (WSP). Ask troopers for their concerns and recommendations. So far, panel members agreed, the HOT team is doing a good job involving WSP early on.

- The project's visible beacon to confirm transactions and handheld readers benefit enforcement and compliance.
- The project has a good plan for routine WSP patrols to deter cheating. Also, the HERO program (Washington State's hot-line for HOV/HOT violations) will help promote compliance.

Reporting

- Data needed is well defined, and the project has good systems for evaluating HOT lane performance. We have identified good facility reporting data points.
- The panel suggests using an independent evaluation to report on the facility.
- The project shows a good sense of the need to develop performance measures that will accurately provide system performance indicators.

Need to improve

Communications/Education/Enforcement

- Panel members discouraged the use of the project's goal message of "45 mph at least 90% of the time." They said it could conflict with WSDOT's promise not to degrade service levels for HOV. They suggested using something like "Lanes will operate at free-flow speed virtually all the time."
- Create an easily definable brand for HOT lanes, such as Express Toll Lanes.
- Develop a plan and time table for roll out. "You don't want to peak too soon before going live."
- The panel suggests that the project should move toward creating customer materials that are "generic" to GTG, TNB and other future uses.
- Add HOT lane content to GTG Web page.
- Use well defined and educational messaging: HOT lanes is selling surplus carpool lane capacity. Say lanes will go HOV when maximum capacity is reached. If there's excess capacity, solo drivers can buy in.
- Public may have issue with much higher toll for lane management compared to TNB, which pays for construction of the bridge.
- Compare and contrast HOT tolls with cost of public utilities, Federal Express, air fare, etc.
- Ask media what information they'll be looking for at HOT lanes opening and beyond.
- Stress and explain the dynamic pricing algorithm to the public before going live.
- Conduct ongoing focus groups and surveys with HOT users after opening.
- Meet with reporters and editorial boards before HOT lanes open to ensure the press has a clear understanding of how HOT lanes will work, what their intended purpose is and what the benefits will be.

GTG/Customer service

- Create a script for customer service representatives to use in dealing with customers, so they can provide users will all the necessary information about using all facilities.
- Develop one-page information sheets on each facility to insert in the welcome package.
- The panel suggests customer service center (CSC) representatives receive one to two

- months of training before opening.
- Simplify and streamline the application process with easy to read application instructions that apply to use of all facilities.
- Know the baseline number of HOV users and transit vehicles that use SR 167 HOV/HOT as soon as possible.
- Pretest the system with WSDOT employees and GTG transponder holders.
- Add HOT information to GTG Web site.
- Cross train CSC representatives on TNB and HOT and make the application process more generic and centralized.
- The panel suggests conducting periodic customer roundtables to maintain high level of service.
- HOT project needs more walk-in distribution centers for GTG transponders.

Environmental Justice

- Be prepared for issues to arise.
- Prepare a response to opposition and social equality issues.

Operations

- Better define incident management plans and protocol, i.e. when to close lanes or open to all traffic in the event of a traffic incident or other blocking situation.
- Establish a well-defined line between policy and operational management.
- Refine hours of operations. Consider extending hours of operation.
- Move toward real-time data integration between the lanes and the back office, and further define the time that it takes for information from the lanes to reach the back office.
- Prior to opening, test travel times for typical bus time for “high quality” trips and required bus times.
- Also, test entry and exit point weaving, volumes and speed differentials.
- Overhead signing should include a “HOT” or “Express Toll Lanes” logo.

Enforcement

- Don't kickoff enforcement until the project team is confident that public education is adequate.
- Plan for a grace period of perhaps six weeks, during which time troopers distribute information with warnings. Remain mostly silent about the grace period, but answer press questions without making promises about the grace period. Offer amnesty for payment and offer to sign them up.
- Start enforcing the double white striping at least two weeks before opening.
- The panel foresaw problems with left-side traffic stops. They could slow down traffic in the HOT lanes.
- Panel members suggested the project team work with WSP to develop the most effective traffic-stop procedures and the best locations for pullouts.
- McCarthy recommended additional reader enforcement lights, but other panel members said that might be too costly.
- Ask WSP for their observations, apprehensions and suggestions. Are their needs being met?

- Have regular follow up meetings with WSP, both before and after opening.
- Panel members expressed concern about how WSP will deal with the number of stops that end with no citation – small children in the back seat, for example.
- Enlist confidence and support of WSP and the courts by reaching out to them and informing them of the HOT lane rules, enforcement, performance expectations and any anticipated problems.
- One panel member suggested mobile transponder-reader technology so troopers don't have to stop a vehicle to determine if it has a working transponder.
- WSDOT should develop a long-term HOT lanes enforcement plan as soon as possible. Panelists suggested our current plans seem to be focused on opening. The team should consider how enforcement will adapt to the unforeseen.
- Obtain the most reliable HOV enforcement data during morning and afternoon rush hour before the HOT lanes open.

Reporting

- Data and reporting information should be graphical, easy to understand and meaningful.
- Determine how to present operational data to WSDOT decision makers, management and the media.
- The panel recommended conducting independent evaluations of the system.
- Ask media what information they'll be looking for in advance of HOT lanes opening.
- The panel suggested the team work with FHWA and the other existing HOT projects to develop universal performance metrics for HOT lanes, including CSC quality and customer satisfaction, freeway performance, safety and accidents, revenue and effectiveness of enforcement.

Other Comments

- Catlin: "If you're looking at a congestion management tool, why did you pick your least congested lanes?"
- Toups: SR 167 Fact sheet should explain why that corridor was selected (for the pilot project) over other HOV lane corridors in the Seattle area.
- Catlin: Higher volume HOV should charge for HOV 2 – HOV 3 uses for free.
- Toups: T: "I thought their customer focus is really good. They have good materials and they should keep getting out into the community."
- Kristick: Don't be afraid of bad press; it's inevitable. Referring to TNB bad press, "Take it to heart that every agency that does these facilities goes through some bad press. There's ways in which you can mitigate it and get it out."
- Buckeye: "It surprises me that you really have to refresh their minds about why we're doing it. ...Educated people will say it at least needs to pay for itself." "...Value pricing is just not intuitive to the public."

SR 167 HOT Lanes Pilot Project Peer Review Summary of Presentation and Discussions

Attendees Expert Panel

Derek Toups
San Diego Association of Governments
dto@sandag.org

Peggy Catlin
Colorado Department of Transportation
peggy.catlin@dot.state.co.us

Ken Buckeye
Minnesota Department of Transportation
kenneth.buckeye@dot.state.mn.us

Dave Kristick
E-470 Public Highway Authority
DKristi@e-470.com

Federal Highway Administration staff

Jessie L. Yung
Freeway Management Program
Manager
Jessie.Yung@dot.gov

James P McCarthy
Minnesota Division + RC
James.McCarthy@fhwa.dot.gov

Greg Jones
FHWA - Resource Center
GregM.Jones@fhwa.dot.gov

James Colyar
James.Colyar@fhwa.dot.gov

WSDOT/Project Team Staff:

Craig Stone
WSDOT Urban Corridors Deputy
Administrator
StoneC@wsdot.wa.gov

Greg Selstead
WSDOT Director of Toll Operations
SelsteG@wsdot.wa.gov

Patty Rubstello
WSDOT Project Manager
RubsteP@wsdot.wa.gov

David Pope
WSDOT Toll Systems Manager
PopeD@wsdot.wa.gov

Susan Everett
WSDOT Engineering Manager
EveretS@wsdot.wa.gov
Lucinda Brousard
WSDOT Toll Operations Manager
BroussL@wsdot.wa.gov

Todd Merkens
WSDOT Planner
MerkeTo@wsdot.wa.gov

Mark Bandy
WSDOT Traffic Engineer
BandyM@wsdot.wa.gov

Michael Forbis
WSDOT Traffic Engineer
ForbisM@wsdot.wa.gov

Martin Dedinsky
WSDOT Traffic Engineer
DedinsM@wsdot.wa.gov

Victoria Tobin
WSDOT Communications Manger
TobinV@wsdot.wa.gov

Janet Matkin
WSDOT Communications
MatkinJ@wsdot.wa.gov

Jessica Yasenchak
GTG Customer Service Manager
YasencJ@wsdot.wa.gov

Noel Brady
WSDOT Communications
BradyN@wsdot.wa.gov

Greg Phipps
WSDOT Communications
PhippsG@wsdot.wa.gov

Michael Sallis
WSDOT EJ Manager
SalliM@wsdot.wa.gov

Russ McCarty , consultant
Carter and Burgess
russ.mccarty@c-b.com

Tyler Milligan, consultant
Carter and Burgess
Tyler.Milligan@c-b.com

Bart Cima, consultant
IBI Group
bcima@ibigroup.com

Jill MacKay, consultant
IBI Group
JMackay@bigroup.com

Linda Mullen, consultant
Enviroissues
LMullen@enviroissues.com

Washington State Patrol

Capt. Bill Hilton
William.hilton@wsp.wa.gov

Lt. Dave Scherf
dave.scherf@wsp.wa.gov

November 5, 2007

Day 1 Agenda

<i>WSDOT Presenter</i>	<i>Topic</i>
Patty Rubstello, James Colyar Patty Rubstello	Introductions/Goals and Objectives Project Overview <ul style="list-style-type: none">• Construction & Software Development• Operational Scheme• Business Rules
Victoria Tobin	Education & Communication <ul style="list-style-type: none">• Communication Plan• Challenges and Risks• Lessons Learned – Pre & Post Opening
Mike Sallis	Environmental Justice <ul style="list-style-type: none">• Lessons Learned
Jessica Yassenchak	Customer Service Issues <ul style="list-style-type: none">• FAQs• Lessons Learned
Todd Merkens	Reporting <ul style="list-style-type: none">• Overview• Lessons Learned

Introductions

Presenter: Patty Rubstello

Why SR 167 for the Pilot Project?

- Peak hour congestion in regular lanes
- Available capacity in existing HOV lane
- Existing roadway could accommodate modifications
- Modeling shows HOT lanes would move more vehicles and increase throughput of vehicles in the corridor

Peer Review Goals & Objectives

- ❖ Is WSDOT ready to operate a HOT Lane?
- ❖ Get new perspectives from our Experts
- ❖ Are we doing it all wrong?

Pricing concept

- Each length of roadway between access points is a *segment*
- A *section* is one or more *segments*

- Tolls are assigned separately for each *section*
- Tolls are valid for a trip from that entrance through to the end of the system

Key Features

Rules of the Road

No double-crossing

- It is against the law to cross the double-white line separating the HOT lane from regular lanes

Know your ins and outs

- Signs and a dashed white line will indicate where HOV and paying solo drivers are allowed to enter and exit the HOT lane

Watch the signs

- New electronic signs will tell you the toll amount, if the lane is open only to carpools and transit, or if the lane is closed

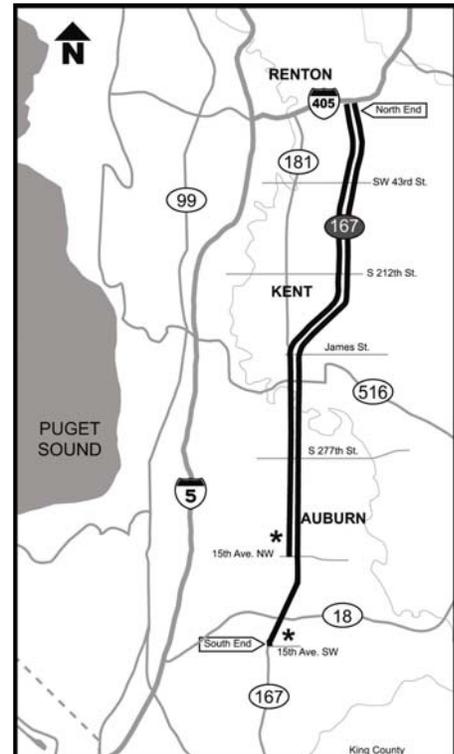
Heavy fines for HOT lane violators

- The project will pay for extra State Troopers who will be monitoring HOT lane traffic. Fines will be issued for crossing the double-white line, not paying a toll and violating the carpool requirement

Get Good to Go!™

- No toll booths
- Electronic transponders in cars
- Electronic readers above the HOT lane read transponders
- When drivers pass under an electronic reader upon entering the HOT lane, a toll will debit from their pre-set account electronically. A white light will flash so that state patrol can see they are legally entering the lane.
- A shield will be available to customers so that when they drive in a carpool, they can deactivate their transponder

SR 167 HOT Lanes Pilot Project



Good To Go! transponder

Education & Communication

Presenter: Victoria Tobin

Education-based project outreach

- Inform drivers how to: Use HOT lanes, especially the double-white line and dashed access areas
- Rachel's Drive video
- Set up *Good to Go!* accounts
- Communicate new rules of the road
- Explain operational differences between HOT lanes, The Narrows Bridge tolls and HOV lanes on other highways

Risks

- HOT lanes increase HOV/transit drive time (or perception)
- Too many cheaters—compromise integrity of system and pilot project
- Drivers ignore double-stripe restriction
- Driver confusion; Accidents
- Too many drivers want to get a transponder/transponders run out
- Too many drivers want to use the HOT lanes resulting in high tolls or HOV only restrictions during opening
- Not keeping education in line with expectations and reality—setting our performance measures/expectations too high internally and externally
- Shields don't work; people lose them, and they can't use the lane
- Public outrage at concept of toll lanes before HOT lanes open
- Benefits remain unclear - DOT employees/contractors don't understand benefits
- Customer service is not ready to handle flood—backlash, HERO calls, complaints, questions, et al
- HOT Lanes system will be tested and tweaked during the first several months after opening. Drivers may notice changes or need to adjust their drives.

What will HOT lanes look like?



Goals

- Educate SR 167 drivers about the new rules of the road
- Inform legislators, policy makers, SCATBd and staff about the project, its projected benefits and long-range potential
- Partner with WSP on driver education and outreach
- Engage low-income and minority communities

- Connect with the media early and often
- Coordinate and share language for consistent messaging statewide
- Expand 167 HOT lane messages to other drivers in the region
- Continue to gather and retain HOT lane research in and outside the state

Discussion

Communications plan

The communications plan is an essential component of all WSDOT projects. For SR 167 HOT lanes the plan focuses on educating the traveling public and keeping other stakeholders informed, not on marketing HOT lanes.

- What are your impressions of our communications and education plan?
- Do our key messages make sense? If not, why?
- Are our benefits believable? If not, why?
- What was your communications and education budget? Was it planned or an after thought?
- Was construction in the communications planning as well, or a separate entity?
- Did you market for or educate about your HOT lane projects?
- What interesting or creative ideas did your team use to connect with the public?
- Did your project take different approaches before and then after opening?

Discussion highlights

- Catlin: Would be a good message to say toll revenue increasing incident response for everyone.
- Catlin: "I think what you'll have to manage is that there isn't any excess revenue."
- Mark Banding: Important messaging – "We really have to talk about how and why we're doing what we're doing."
- Kristick: "When you open these lanes to people who are will to pay a toll, you're then in the business of providing a service...one that it reliable and you can count on. You have to provide them with a safe transportation alternative. ...The ability to buy time in the transportation realm today has great marketability. ...Eventually what you're going to find is that your payers out number your HOV people."
- Catlin: "We said we're making adjustments as this thing goes on, but we never said it was a pilot, because that suggests it might go away."
- Buckeye: Called it a pilot demonstration and said if it wasn't successful it would end.
- Bandy: The minute you have paying customers, the complaint is going to be that HOvers are in my way."
- Buckeye: MnPASS promised no diminished service for HOV, transit.
- Catlin: Suggests if lane becomes too congested make HOV-2 pay, and HOV-3 drive free.

- *Branding*: HOT Lanes – Express Lanes – Express Toll Lanes?
- Catlin: For branding they used surveys and focus groups. People asked what does HOT mean. They preferred Express Lanes. “It just didn’t resonate with people what a HOT lane is.”
- Toups: I-15 HOT lanes are known as I-15 Express Lanes.
- Buckeye: Used MnPASS. Toll lanes and express lanes unclear. Made signs with clearly stated rules.
- Kristick: If you use the same technology for TNB and HOT, you should make that clear.
- Catlin: Stated public education two months before opening. Offered HOT as a choice: “Buy some time.” Used educational video, earned media.
- Toups: For education, used video, media, community meetings.

Web site

A primary strategy for our communications plan is to lead with the web. We plan to make the Web site a single stop for all project information.

- What are your impressions about our project Web page?
- Did you watch *Rachel’s Drive*, our HOT Lanes how-to video?
- What suggestions would you have for improving *Rachel’s Drive*?

Discussion highlights

- Buckeye: On ‘Rachel’s Drive’ – What about transponder disabling device and enforcement

Media

There has been some media interest in the HOT lanes project as this is such a new concept for the region. Most media coverage has been positive or neutral on the project. We expect there will be heavy media interest as we get closer to opening the HOT lanes and then during the first days and weeks of operations.

- Did you have heavy media interest?
- Was the media supportive of the project?
- Did they play up the tolls or the technology?
- How did your team make sure the media was getting what they needed in a timely manner?

Discussion highlights

- Buckeye: At first media didn’t fully understand value pricing.
- Catlin: Media asked for violation rates and totals.
- Toups: Media questioned ‘Lexus Lanes.’ How many rich people are using HOT?
- Buckeye: Media wanted number of toll payers, effect on congestion and lane speed.

Market research

We have conducted focus groups and other survey efforts during the planning and design stages of this project. We are considering additional survey and research efforts.

- How much market research did you do?
- Before and after?
- Given budget constraints, what do you feel in the most important market research?

Discussion highlights

- Toups: Conducted extensive pre-during-post market research with focus groups and surveys, including phone surveys and park-n-ride lot surveys.
- Catlin: Used focus groups and surveys beginning six months before opening. Tracked hotline comments and comments to customer service center. Comments mostly about user confusion.
- Kristick: Got the best response from Web-based surveys. “Why is E470 important to you?” Coordinate search words between both HOT project Web sites.

Public and elected officials

To this point, public opinion of the project is mixed. Public officials, however, have been generally supportive of the project.

- Was the public supportive of your project?
- What about local and state officials and other agencies?
- How did you work through uncertainties and objections?
- What special reporting was done for politicians verses the general public?

Discussion highlights

- Catlin: Had an issue with free access for hybrid cars. Legislators wanted hybrids free, but there were too many registered hybrids around Denver. Legislation now says hybrids can't be charged.
- Buckeye: MnPASS benefited greatly from having the state's governor as a champion of the project. It could be a risk to go forward without adequate support from politico.
- Toups: SANDAG had good legislative support.
- Buckeye: Governor greatly supported HOT. Lt. Governor got on board later. Formed a community advisory committee for oversight. It helped shape the project, had substantial impact. “Without the advisory committee, I think the project would've been pulled before it ever got started.” Held scan tours around the country for legislators and other officials. “They immediately saw the benefit.
- Buckeye: “The notion of making a free-flowing system by charging a price is not intuitive to most people.”

Transit

There has been concern raised by vanpool and carpool drivers that the performance in the HOT lanes will be less than in today's carpool lane.

- How did you reassure transit, vanpools and carpools that their drive wouldn't be affected?
- Were their drives affected by the project?

Discussion highlights

- Toups: Transit was onboard, receiving matching funds. SANDAG gave transit \$7 million from revenues in first 10 years.
- McCarthy: Used traffic modeling to demonstrate changes for transit to come.
- Buckeye: Half of excess revenue goes to transit. However, revenue has not been as high as expected.
- Catlin: "Everybody was at the table." Transit didn't communicate to its customers about HOT; CDOT did. CDOT collaborates on operations with transit.

Lessons learned

- Are we missing anything?
- If you could give us the top three to five communications and education lessons learned, what would they be?
- Where were there any unexpected champions or opposition to your project?

Discussion highlights

- Toup: Expanded I-15 HOT lanes will include GP lane data in the algorithm. SANDAG currently uses only Express Lane volume data for setting toll rates.
- Toup: "You should be able to offer a value proposition that's related to the price."
- Toup: "Value pricing works. ... Assuming that you get a maximum toll amount or range that the public accepts, it will free the lane." "... You need to manage what the agreement is. The HOV community is the one that you really need to focus on helping through the transition."
- Toup: Need to monitor and adjust pricing algorithm quickly. SANDAG price range is .50-\$8, but public sees only .50-\$4.
- Catlin: CDOT targets posted speed-limit traffic flows. "Setting it higher initially is OK; because it gives you room to reduce the speed as it adjusts."
- Toup: "People's willingness to pay for the time is high."
- Toup: Too many transponders? "That should never be a risk, because it can be easily calculated."

- Buckeye: You can have a large number of accounts but a very small number of daily users. MnPASS experiences 25-30% daily users of total accounts.
- Troups: Low-cost transponders are good, because half of transponder holders only use it once or twice a year. HOT lanes users will open account as “insurance policy” and never use. SANDAG recently implemented monthly fee.
- Troups: SANDAG is about to pilot test automated enforcement. Automatic enforcement should be a goal down the road. “Don’t try to overwhelm yourself in the beginning.” Enforcement can evolve over time and initially routine law enforcement patrol will be a strong deterrent to violators.
- Buckeye: At first MnPASS was priced 24/7, but they miscalculated the response to off-peak hours and direction. Previously HOV was open in off peak hours. “We miscalculated our patrons’ willingness to pay for what they used to get for free.” “...Within 72 hours of opening a legislative bill to scrap the program was filed. Within a week, we changed the plan to peak hour/direction pricing only. When you think you have your market figured out, you might not.”
- Catlin: HOV users had a sense of personal ownership. “We underestimated the lack of willingness of HOV users to be at all flexible.”
- Troups: Toll price vs. distance traveled. Might want to ratchet the price down with distance. “I would feel slighted if I had to travel a mile and pay the same toll as someone who traveled the whole nine miles.”
- Buckeye: It’s a non-issue in Minn. There’s good reason to charge the same price regardless of distance. You want to discourage short trips in HOT lane.
- Troups: Cost-benefit should be a consideration.
- Both SANDAG and MnPASS experienced gradually increasing volume following opening day.
- MnPASS currently has 11,000 transponders/open accounts.
- Kristick: Experience a bump in transponders in first nine months. Coloradoans were used to paying tolls.

Environmental Justice

Presenter: Mike Sallis

The HOT Lanes team conducted research and analysis to ensure all members of the community are equally served by HOT lanes.

The effort included:

- An environmental justice analysis – summary provided in binders
- Analysis focused on identifying
 - Criteria used to choose HOT lanes as an option

- Obstacles to drivers to use HOT lanes
- Any disproportionate impact to EJ populations after project opened
- Analysis Committed to continued evaluation

In early 2006 the team conducted 6 focus groups (84 participants)

- 3 low income specific focus groups
- 2 typical commuter focus groups
- 1 small/service businesses focus group

Findings:

- Low-income drivers generally as supportive, if not more supportive, of the HOT lane concept than typical drivers
- Business leaders and service business leaders see and value the benefit of trip reliability
- Trip reliability and time savings are important

“I will use the HOT lanes if I am running late; getting to a job site is worth more than the cost of the toll.” – SR 167 Commuter

Discussion

Equity concerns and mitigation

As part of the HOT lanes project planning, an environmental justice review was completed to identify any issues or concerns.

- Did you have environmental justice and equity concerns on your project?
- Were there any outcomes that required mitigation? What kind of mitigation?
- Did you project alter fees or other possible hurdles for EJ populations?

Outreach and accessibility

One aspect that was identified in the environmental justice review was providing additional access and outreach to different demographics.

- How did you deal with accessibility issues on getting transponders/passes to low income populations?
- How did you reach different demographics - low income, non-English speaking, rural populations, et al?
- Did you do anything innovative to reach different demographics?
- What information or how did you communicate with EJ populations from both the roadway and the region?

Discussion Highlights

- Buckeye: Prior to launch MnPASS produced an EJ memo. I-395 is not considered a low-income or minority corridor. Users need a credit card to lease a transponder. Must have at least \$45 credit to begin. So far, the credit card requirement has not been an issue. Privacy, however, has been an issue. Some people don't want their names associated with the transponder.
- Kristick: No EJ issues. No credit card required - accepts check-based accounts. Can open account and get transponder at 72 grocery stores (two regional chains). May opt for auto replenishment credit card accounts or call in.
- Kristick: In focus groups, working class users wanted to avoid being late for work. They valued being able to spend additional time with families. Celebrated the 250,000 customer, who was a working mom with a new career and twins in daycare. She was a great spokesperson. E-470 gave her free toll credits, sent her to a spa and detailed her car. Good, cheap promotion; great press.
- Kristick: CDOT reached a diverse audience by promoting with billboards, locating service centers in grocery stores. The stores don't charge them to set up shop (but Costco would). No materials translated multilingual, but 75 percent of CS reps are bilingual.
- Toups: SANDAG completed a full EJ report for expansion, based on user surveys. Small business, tradesmen biggest users. There was broad support for managed lanes within San Diego county/I-15 corridor. Trades and small business accounts are good customers, but they are only part of the user base.

Good To Go! Customer Service

Presenter: Jessica Yasenchak

Background:

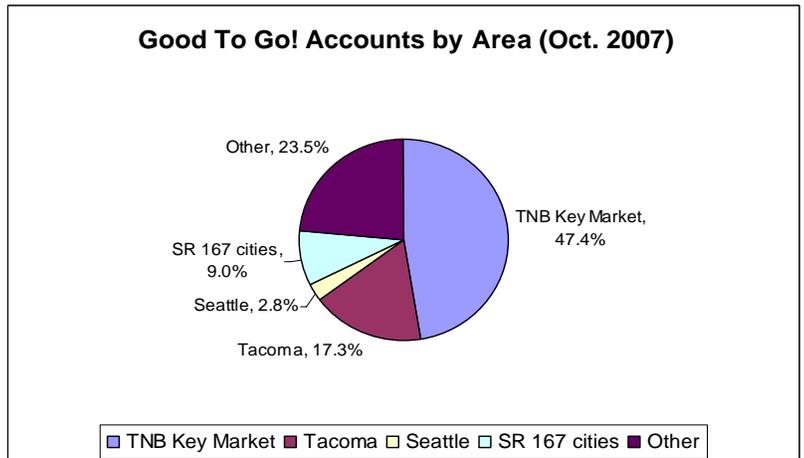
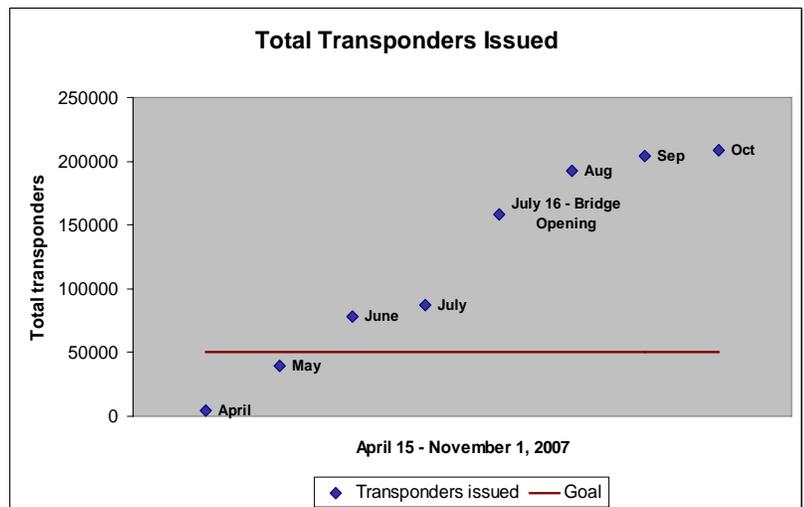
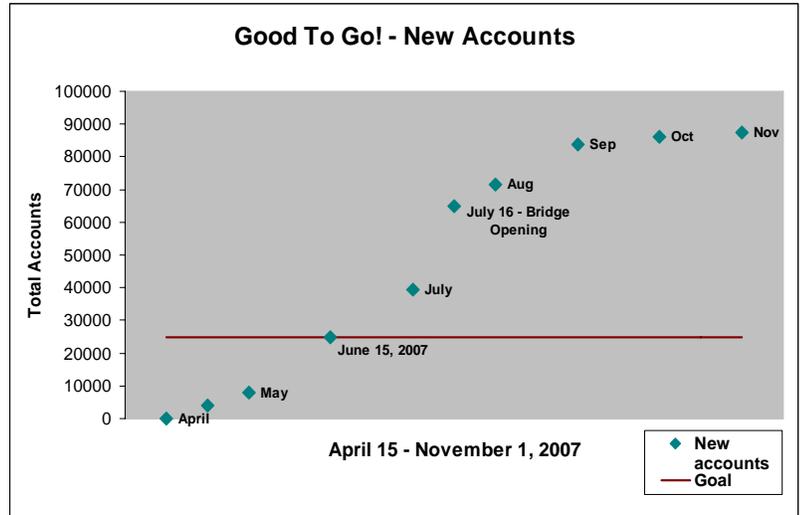
- *Good To Go!* launched in April 2005
- Traffic and revenue studies estimated no less than 50% of regular commuters needed *Good To Go!* for traffic management along the corridor.
- WSDOT set the goal at 60% of commuters translated to 25,000 accounts.
- Customer service centers opened April 25, 2007.
- The new Tacoma Narrows Bridge opened July 16, 2007.
- Customer service is available by phone every day from 7 a.m. to 7 p.m.
- There are two walk-in locations (Gig Harbor and Tacoma) that are open from 7 a.m. to 7 p.m. during the week and 9 a.m. to 1 p.m. on Saturday.

- Automated customer service is available at anytime online or through the IVR.
- The same back-office will support *Good To Go!* at the Tacoma Narrows Bridge and SR 167 HOT lanes.

Discussion

Customer outreach

- What was your customer service budget? Was this part of your marketing or communications budget?
- Is your electronic toll collection system used statewide? *Good To Go!* will be used statewide for bridge tolls and other pricing.
- Did you need to notify customers/drivers how to obtain a transponder shield or the correct transponder type? What approach did you use?
- Did you need to educate the public on the correct use of a transponder and/or a transponder shield? What approach did you use?
- Please provide feedback on the welcome packet customers receive in the mail after ordering a transponder. (Included in binder).
- How did your project team ensure that the customer service center was notified in advance of any public outreach messages?



Discussion Highlights

- Troups: Use multiple transportation modes for cross marketing. Reward HOV users with HOT credit. Cross promote HOT lanes/tolls with other transportation services and modes, e.g., parking and transit highway facilities.
- Catlin: For opening CDOT provided tours and speakers, including the owner of Rockies baseball team, politicians and an infamous HOV scofflaw who used a dummy. He traded the dummy for a transponder. Also marketed with a pill bottle and candy – “cure for congestion.” About 200 attended opening. Opened on a Friday afternoon to fix bugs over the weekend.
- Buckeye: MnPASS held grand opening for customer service center. Used testimony from first customer. Opened at 9 a.m. and only operated for an hour that morning.
- Catlin: Suggests an opening grace period for violators. Troopers could hand out warning/info cards.
- Buckeye: MnPASS began enforcing double-white lane a month before opening.

Conveying a clear message

- How much training should be provided to customer service staff? How many weeks/months in advance of the SR 167 HOT lanes launch and opening?
- How are refunds handled in your state? Are there circumstances where a customer is credited for a trip? When and why? What about refund for the transponder cost?
- How did you balance policy information distribution within the agency? For instance, when should an inquiry be passed from the customer service center to WSDOT? What about questions re: economic justice, future HOT lanes, or other toll projects?
- Is privacy a big issue for your customers? What do you do to protect their information? How do you assure them that their personal information is secure?
- What are the top calls or complaints related to HOT lanes that come into your customer service department?

Discussion highlights

- Kristick: 2007 marketing budget was \$360,000.
- Catlin: Customer Service Center budget was a proportional percentage of E-470 contract.
- Buckeye: More than \$200,000 marketing budget for initial launch.
- Kristick: State Farm sponsors MnDOT's Highway Safety Patrol.
- Kristick: GTG welcome packet needs a map with access points and how-to-use one-pager.
- Troups: Simplify Good To Go message so it is consistent for all account types and have separate "kits" for different types of users, e.g., motorcycles, trucks, persons preferring/needing 'bumper tags', etc. A consistent message is important.

- Kristick: Suggests involving the customer service manager in constructing the HOT lanes message.
- Toups: Suggests creating FAQs and a fact sheet for public distribution (Web and post hard copies at GTG Service Center).
- Buckeye: MnPASS receives complaints on level of service but offers no refund.
- Toups: SANDAG has a no refund policy, except when an accident turns HOT lanes to GP – automatic toll reversal. Refunds are very rare. He says 91 Express Lanes offers refunds for unusual congestion.
- Catlin: CDOT overrides toll system for traffic incidents that delay traffic. They do in on a case-by-case basis.
- Kristick: A signed affidavit frees customers from paying violation fine when they dispute it in court. It works well.
- Toups: Suggests periodic outreach to courts concerning HOT lanes/ETC system operation, business rules, standard operating procedures, etc.
- Kristick: Outline security provisions.
- Kristick: E-450 releases information only for criminal investigations and civil subpoena.

Reporting

Presenter: Todd Merkens

Reporting Requirements

Authorizing legislation identified specific areas for monitoring the SR 167 HOT lanes pilot project:

- Facility use data
 - Freeway efficiency and safety
 - Effectiveness for transit
 - Person and vehicles movements by mode
 - Ability to finance improvements and transportation services through tolls
 - The impact on all highway users
- ❖ WSDOT is required to operate the HOT lanes at 45 mph at least 90 percent of the time during peak hours

Discussion

Regular reporting

The project team is planning to generate an annual report to satisfy statute requirements.

This annual report would be presented to the Washington Legislature, the State Transportation Commission, and FHWA. Project information will also be provided to the public via the project website.

- What did you do for an annual report? – What was in them and who did you present them to?
- Who completed your reporting?
- What baseline data did you find especially effective? Was there baseline data you wished you could have included?

Additional efforts

The project team is planning to complete public surveys of both HOT lane customers and the public at large.

- What survey efforts did you do after opening?

Discussion highlights

- Buckeye: Conducted surveys nine months before opening and again six months and a year after. Legislative reports are not mandated, but legislators occasionally request reports. Quarterly and annual reports are contracted out.
- Toups: SANDAG publishes data every two months (@ 40 pages). They get a lot of data: traffic, revenue, enforcement stats, customer comment logs. Routine review of lessons learned has been very helpful.
- Buckeye: MnPASS does not conduct independent reviews.
- Catlin: Colorado Tolling Enterprise requests annual report of Legislature. Also provide monthly report to transit and to Board. Monthly reports posted online.
- Catlin: Prior to opening should've collected more baseline GP lane data. It's important to collect traffic data in small intervals to observe peak time changes. CDOT collects data every 15 minutes. Communications team has access to real-time CCTV of lanes.
- Catlin: CDOT is planning a new attitudinal study.
- Buckeye: After launch of HOT lanes, there was a significant decline in traffic accidents in the corridor.
- Toups: Should also collect customer service and service quality metrics.

Lessons learned

- What were some of the important reporting resources or statistics that you didn't have but would have liked to capture early and often?
- What were some of the reporting pitfalls?

Discussion highlights

- Toups: Not having a well-defined data set will cause problems.
- Buckeye: HOT lanes could divert some people from carpooling or using transit.
- Catlin: Toll price should be competitive with bus/transit fares.
- Buckeye: "Tolls should be enough to cover operations costs at a minimum." However, that will increase usage. Tolls should be just enough to cover operation.

Public data

We are planning to provide data to satisfy statute requirements, inform the traveling public and to manage or modify the HOT lanes system. There are certainly many data points that can be tracked in a HOT lanes system.

- What were your most popular statistics?
- What data did the media want the most?
- How did you handle informal data requests?
- Did agencies, media or the public ask for personal or account information?
- What reports did you have online and available for the public and how often were they updated?

Discussion highlights

- Catlin: Responded to many media requests immediately after opening.
- Buckeye: Opening day story was "Off-peak hour congestion on MnPASS."
- Both CDOT and SANDAG suffered from low interdepartmental support at startup.
- Buckeye: Had broad support from internal agencies and FHWA.

November 6, 2007

Day 2 Agenda

WSDOT Presenter

Topic

Patty Rubstello
Russ McCarty

Re-cap from Day 1 Enforcement

- Operations
- Communication
- Lessons Learned

Mark Bandy

Traffic Operations

- Toll Operations
- Incident Response Team
- Traffic Management Center
- Traffic Safety
- System Access
- Lessons Learned

Expert Panel Review

Expert Panel Report Out

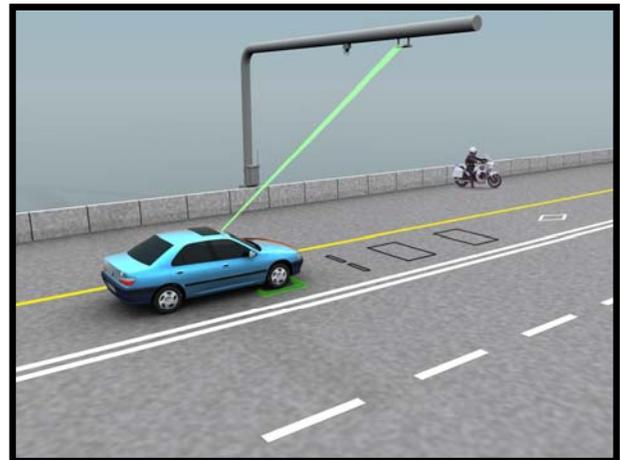
Enforcement

Presenter: Russ McCarty

**Guests: WSP Capt. Bill Hilton
WSP Lt. Dave Scherf**

Planned HOT Lane enforcement elements

- Project will hire additional state troopers to provide enforcement
- No video enforcement
- Enforcement light on reader gantry will turn on for valid transactions
- When enforcement light does not turn on, trooper will verify vehicle occupancy
- Upon stopping vehicle, trooper can use handheld reader to verify status of transponder



WSP Troopers will patrol HOT lanes and enforce toll collection by watching transponder reader light.

Planned enforcement policy

- Consistent enforcement is important to build public trust in the fairness of the HOT lanes
- WSDOT is working with the Washington State Patrol to enforce the new rules of the road.
- Traffic citations can be issued for the following violations:
 - Illegal use of HOT lane by single-occupancy vehicle
 - Attempt to avoid paying required toll
 - Crossing double white lines
 - Three possible citations, each citation amount is \$124
- Drivers can use the HERO system to report violators



Handheld transponder reader

Discussion

Coordination with law enforcement

The project is coordinating with state patrol to increase and focus enforcement on SR 167 for the HOT lanes Pilot project.

- Did you work with law enforcement to gather operational, traffic and citation information in real time during the first days and weeks of operation?
- What kind of reporting did you expect from law enforcement? What kinds of data did you want from them and how often?
- What prep work did you do with law enforcement before opening the lanes?
- How much training did you provide to law enforcement?
- What kinds of materials did you provide law enforcement?
- Did you provide any educational materials for law enforcement to hand out to drivers?
- Was there any kind of leniency given to drivers? If so, for how long and for what?

Discussion highlights

- Catlin: Traffic stops CDOT worked with State Patrol in design phase and modified striping for enforcement pullout areas. How will you enforce?
- Scherf: We will watch light and pull off on left shoulder. "It is challenging." Inside shoulder is 10 feet wide and narrows at the north end. Troopers are trained to find the best spots for pull-overs.
- Hilton: Most drivers will pull to left; some will pull to right. WSP is considering use of a spotter.
- Kristick: Trooper presence might slow traffic flow. Suggests plate checks. "We've put a pretty heavy emphasis on repeat violators. That's a reality in tolling violations; they don't just do it once – they do it many times."
- Touns: SANDAG considering asking carpoolers to register their vehicle's license plate and/or carry a transponder to enable use of video toll enforcement (of single occupant vehicles).
- Buckeye: Can beacon be seen from both sides? (Answer: Yes) MnPASS cannot, so troopers don't use it much. Being able to see beacon from both

sides is good.

- Troups: Sensor light gives users a sense of confidence that system working.

Lessons learned

- What important lessons have you learned?
- What enforcement tools have worked and what have not worked?
- Have there been noticeable disruptions to traffic flow when law enforcement make a HOT lanes traffic stop along the roadway?
- What violation rates has your project experienced?

Discussion highlights

- Troups: CHP looks at vehicle first, then light. Uses spotters. Troopers should first look inside the cars for solo drivers, then look for sensor light flash.
- Scherf: Troopers already are trained to pay attention to the car.
- WSP receives about 250 HERO calls a month.
- Troups: When you have trailing vehicles it can be difficult associating the light with the correct vehicle.
- James Colyar: Suggests testing with troopers on light duration.
- Russ McCarty: Reader detects whether account is valid only.
- Washington toll violation is civil infraction.
- Good transponders get white light
- Scherf: Concerned about picking out the white light with solo driver when they're mixed in a row of HOV traffic.
- Catlin: Unlikely to have several violators on a row.
- Troups: Device in patrol car can detect valid reads by tailing driver.
- Buckeye: Minnesota troopers found device difficult to use. Hard to get close enough to vehicle. Proximity is an issue.
- Dave Pope: HOT is a four-year pilot. Enforcement will evolve. "This is probably the aspect that we are the most unsure about."
- Scherf: Good public info program will help. Like seatbelt click it or ticket.
- Patty Rubstello: Testing in live traffic will be a challenge.
- New cell phone laws might reduce HERO calls.
- Catlin: Spent first month troopers educating with warnings.
- Scherf: Assigned troopers dedicated to HOT lane enforcement as priority.
- Troups: Suggests dedicating certain troopers to the task. So they're experts in rules technology.
- Catlin: CDOT troopers come from one unit, peak hours. Works well except when there's a crisis.
- Troups: "It's hard to sustain the level of interest (among State Patrol) eight, nine, 10 years down the road."
- Troups: CHP Department policy discourages enforcement stops during peak commute times to minimize 'rubbernecking.'

- Scherf: No toll during night, but double-white still enforced. Restrictive signs will be important.
- Rubstello: hours won't be posted. Reader will say "Open to all"
- Buckeye: "We haven't had a lot of instances where we've had to close the lane. It's just not that common."
- Buckeye: MnPASS Shoulder width not comfortable for traffic stops. A lot of enforcement occurs in wider areas. At the end of the facility, officers can pull people over."
- Hilton: Standard practice is to pullover HOV violations all the way to the right shoulder.
- Catlin: We don't have a problem because we have dedicated enforcement zones.
- Toups: Data shows motorcycle-mounted police are twice as productive in traffic enforcement.
- Scherf: Law exempts on duty law enforcement or safety in government vehicle.
- Scherf: Contesting why transponder didn't read will be a challenge for judges and WSP.
- Kristick: Don't want to waste money with troopers going to court over toll disputes.
- Kristick: The simple way to do it is have trooper call into service center to resolve on the spot.
- Bart Cima: Account information isn't available real time.
- Kristick: It should be available real time.
- T: Troopers should be able to call and have unread tags charged on the spot.
- Cima: Can't work. No real time info. TNB tags get read virtually 100 percent, haven't had a problem. Should assume they used a shield and cite them.
- Cima: There are ways to get this info closer to real time.
- Jessica Yasenchak: "If you have to ask which way to tip the scale, I would go with most people are trying to do the right thing."
- Rubstello: We need to build confidence in the system among WSP and courts as well as users.
- Kristick: Whenever possible always drive down your resolution to the lowest possible level. You have to work with your state patrol to use their judgment to best resolve the issue."
- Handheld readers might be able to charge active tolls and filter out if toll was paid.
- Kristick: Don't give users lots of options for using transponders. "Any option for customers to use transponders will affect revenue."
- Kristick: Problem with users disabling transponders. They only open an account to show troopers they have a transponder after their pulled over. "That is one definite benefit for having a sticker tag."
- Buckeye: Having a problem with removable transponder, because it has to

be tilted upward toward windshield to activate. "I'm sorry, officer. I didn't know."

- Toups: 60-70 percent of citations in HOT lanes have nothing to do with toll violations. One in 1,000 violators gets stopped. "Ultimately, in the long run, the bottom line is you got to have automatic enforcement. Routine law enforcement will serve as a deterrent, but it will not be able to completely eliminate toll and carpool violators."
- Toups: At first had about 15 percent violation rate, later dropped to 2 percent, now back to about 15 percent.

Traffic Operations

Presenter: Mark Bandy

Traffic operation components

- Traffic Management
- TSMC hours of operation
- HOV lane hours of operation
- ITS:
 - Cameras (media has access)
 - Loops
 - Ramp meters
- IRT
- Congestion levels



WSDOT Traffic Management Center

Discussion

Hours of operation

Our current HOV lane hours of operation are 5 a.m. to 7 p.m. Outside of these hours the lanes are open to all traffic. Once we convert them to HOT lanes, we intend to operate them 24 hours per day, seven days a week. However, this does not mean that we will price the lanes 24 hours per day. We expect that we will "operate" the lanes as "OPEN" to all during late night and early morning hours. Our rationale is that we get the benefit of extending the hours beyond the current 7 p.m. cutoff so we can ensure HOT lane benefits, but we don't incur as many late night operational issues that might come with 24 hour pricing (e.g. incidents driving the price way up).

- What do you think about our proposal to operate the lanes in the "OPEN" state during night and early morning hours?

Discussion highlights

- Catlin: Hours of operation. We frequently have peaks that extend beyond 7 p.m.
- Buckeye: "24/7 pricing just makes public mad. You don't generate revenue, and fundamentally it's not really value pricing."
- Bandy: Let it run its course until it goes down to zero toll.
- Buckeye: We use our hard hours 6-10 a.m.
- Question: What if incident in HOT lane. Bandy: Would close or go HOV only. If blocking in other two lanes would open to all traffic.
- Buckeye: Customers have expectation of being able to use facility, but won't pay over \$5. Should we go HOV only? The problem with going HOV only, you do it when customers most need. We decided not to go HOV only.
- McCarthy: In Minn. State Patrol can override. Our biggest money days are snow days.

Manual overrides

Our initial standard operating procedure for manual override due to incidents will be to override when there's an incident in the HOT lane or blocking any two lanes on the corridor. Manual override would apply to a segment and all upstream segments (for "CLOSED" and "HOV ONLY"). Manual override for "OPEN" would apply to entire facility in one direction.

- How does your agency deal with incident overrides?
- Do you see any pitfalls with our approach?

Dynamic sign failure

Power or communications loss to a DMS are treated the same. A transaction will still occur at the calculated rate. Obviously, *Good to Go!* customers will need to be educated about this exception case.

- How do you deal with sign failures in terms of building transactions?

Discussion highlights

- Bandy: If signs fail, we'll still bill the transaction.
- Toups: SANDAG uses wireless communications and charges when sign is down. Stated clearly up front.
- Bandy: WSDOT will build a time of day estimated toll price table.
- Buckeye: Has had issues with their signs. Signs often fail after thunderstorms.

Initial startup parameters

We will conservatively set our algorithm parameters for initial startup so that the pricing is higher than we might expect once the system and users "settle down". This way we can

reduce the potential for lane performance failures in those critical first days.

- Did you approach initial startup in a similar manner? Any problems?

Discussion highlights

- Initial startup parameters. How long should it be?
- Buckeye: Changed initial algorithm after six months.
- Toups: SANDAG started with low toll price and ramped up. SANDAG had lots of capacity. Never changed pricing algorithm.
- Buckeye: Will there be a pricing algorithm override?
- Pope: We can switch to time of day or HOV only.
- Toups: Find out early what changes are authorized. SANDAG never changed pricing because they didn't know who decides.

HOV only

Ensuring the HOV travel time advantage and reliability is an underlying tenet within our testing of HOT lanes. By statute, we are to meet a performance goal of 45 mph in the HOT lanes. What this means is that the pricing algorithm needs to be able to go to "HOV ONLY". Our approach will be to go to this condition after a certain time period at maximum toll.

- What, if any criteria, do you use to determine when to go to HOV Only?
- How often do you need to stop allowing SOV buy-in?

Discussion highlights

- What are the drawbacks to going HOV only?
- Toups: Pricing should alleviate the need to close the HOT facility to single-occupant vehicles. If you have excess demand increasing the price should have the same effect as closing the facility to HOVs only without sending confusing message to the motoring public.
- Buckeye: MnPASS may have to use HOV only if demand rises.

Performance goal and measurement

As mentioned, by statute we are to meet a performance goal of 45 mph in the HOT lanes. Knowing that incidents, weather, volume fluctuations, and other factors will affect the lane performance, our intent is to aim for 50 mph as the optimum operating speed, measured over the length of the facility.

- What is your performance goal and how is it measured?

Discussion highlights

- How to ensure 45 mph 90 percent of time? Do you go HOV only?
- McCarthy: Minnesota hasn't failed speed factor yet.
- Toups: Level of Service (vehicle density) to gauge flow and ensure we meet our legislative mandate of LOS C or better ("free flow") conditions at

all times. Price is a good indicator of flow/density in this case since it is inverse of our toll algorithm (density derives price).

-
- How did WSDOT set 45 mph 90 % performance goal?
- Buckeye: MnPASS goal based on speed limit.
- Catlin: CDOT based travel time, trip reliability. Currently 97-99 percent on time for buses.
- Toups: SANDAG uses level of service C -- 304 vehicles every six minutes.

Organization

- How is your agency organized to change operations or address problems?
- What additional level of staffing or support did your project use for traffic operations?

Discussion highlights

- Toups: I-15 Project Management Team meets bimonthly with Caltrans management: Not very productive after more than 10 years in operation.
- Toups: Never changed price ranges after phase in period .50-\$8. Toll range might increase with new expansion of HOT program.
- Rubstello: Opening preparedness. Emergency Operations Center. We predict high awareness among media and public. What was your prep?
- Toups: SANDAG had a good spokesman, accessibility to communicators. About a week after project opened, TV station ran HOT lanes for a week and saved an hour. It cost them a little more than \$10. Positive news coverage at no cost to SANDAG. "It was probably our best marketing. We also created a customer orientation video explaining how to use FasTrak (electronic toll collection) and how the HOT lanes work."
- Catlin: Reporter wanted to be first through. Anticipated data requests. Got hourly reports on data.
- Toups: SANDAG was proactive for launch with marketing and promotions. Opening not huge. "It was treated like a research project."

Toll operations

- Did you have rate that was high enough when you opened the system?
- What changes did you make to the tolling plan after operations began?

Discussion highlights

- Kristick: Suggests using current GTG transponder holders to test HOT lanes before opening. "It's the only way you can ease your comfort level that everything goes right." ... "We were able to record well before the start date what kind of data the system was going to spit out."
- Catlin: Buses are equipped with non-revenue transponders to monitor travel times. Buses are 97 percent on time with 5,000 bus trips in the HOT

lanes each month.

- Catlin: CDOT has 500,000 transponders. Has installed readers on GP lanes to calculate actual speed and estimate travel time. Compliments loop system. “We use both, but we’ve found that the tag readers are the most accurate.”
- Catlin: Private contractor to remove snow in HOT lanes.

###