



◇ CAR POOLS, BUSES
MOTORCYCLES & 
6AM-10AM ↓ MON-FRI

EXIT 8

82nd St
1 MILE

90th St



50
MPH

50
MPH

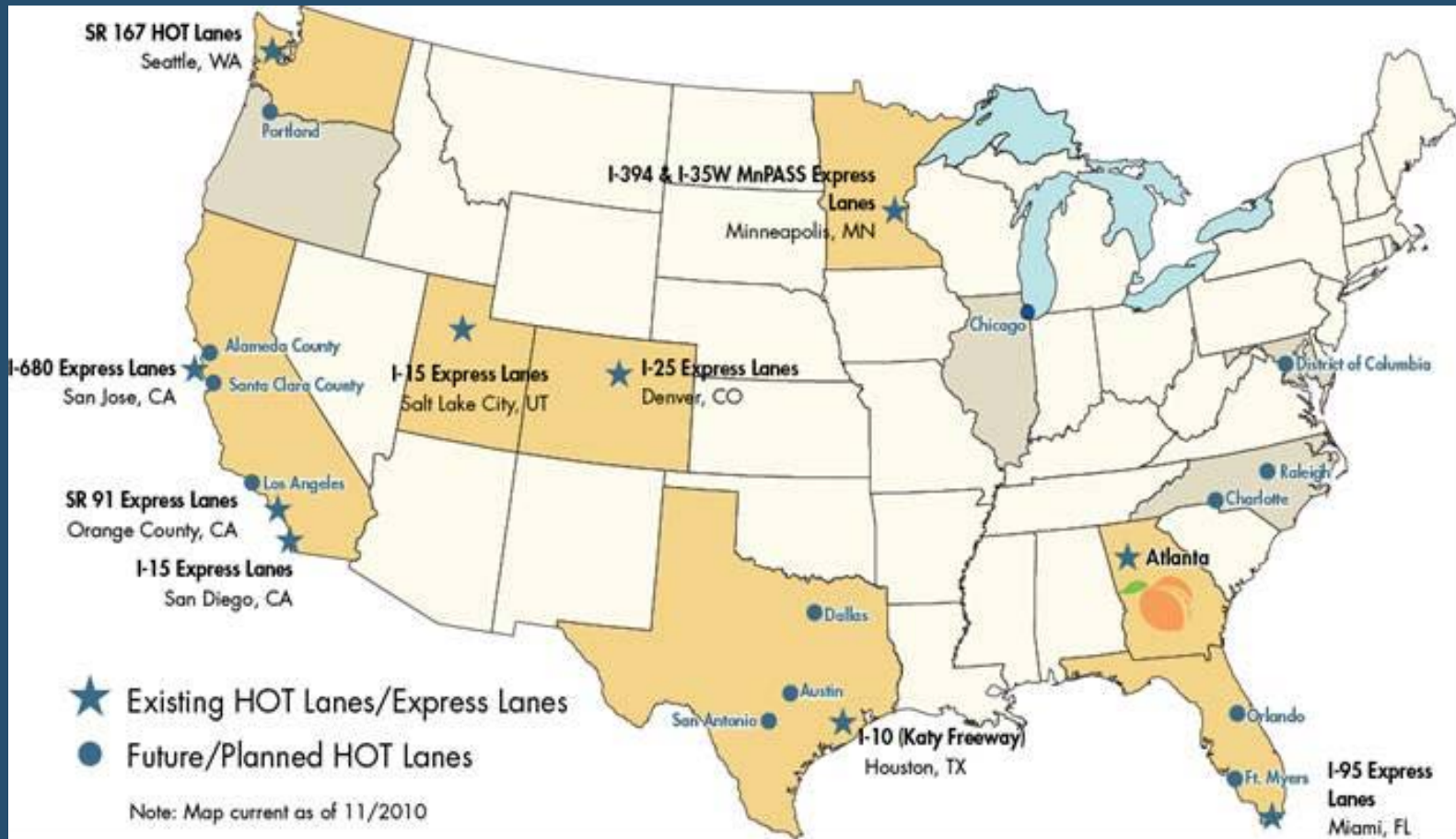
Making the Most of Managed Lanes

Past, Present and Future

Terry Haukom
MnDOT System Architect



Across the Nation





MnPASS Express Lanes

- MnPASS uses market based pricing principles to improve the efficiency of the region's highway and transit systems
 - Purpose of pricing is to maintain a congestion free condition in the MnPASS lane, not to generate revenue
- MnPASS lanes operate during weekday AM & PM peak rush hour periods
 - Revert to general purpose lanes at all other times
 - During peak periods
 - Transit buses, carpools (w/2 or more passengers) and motorcycles use the lanes for free
 - Solo drivers have the option to use for a fee





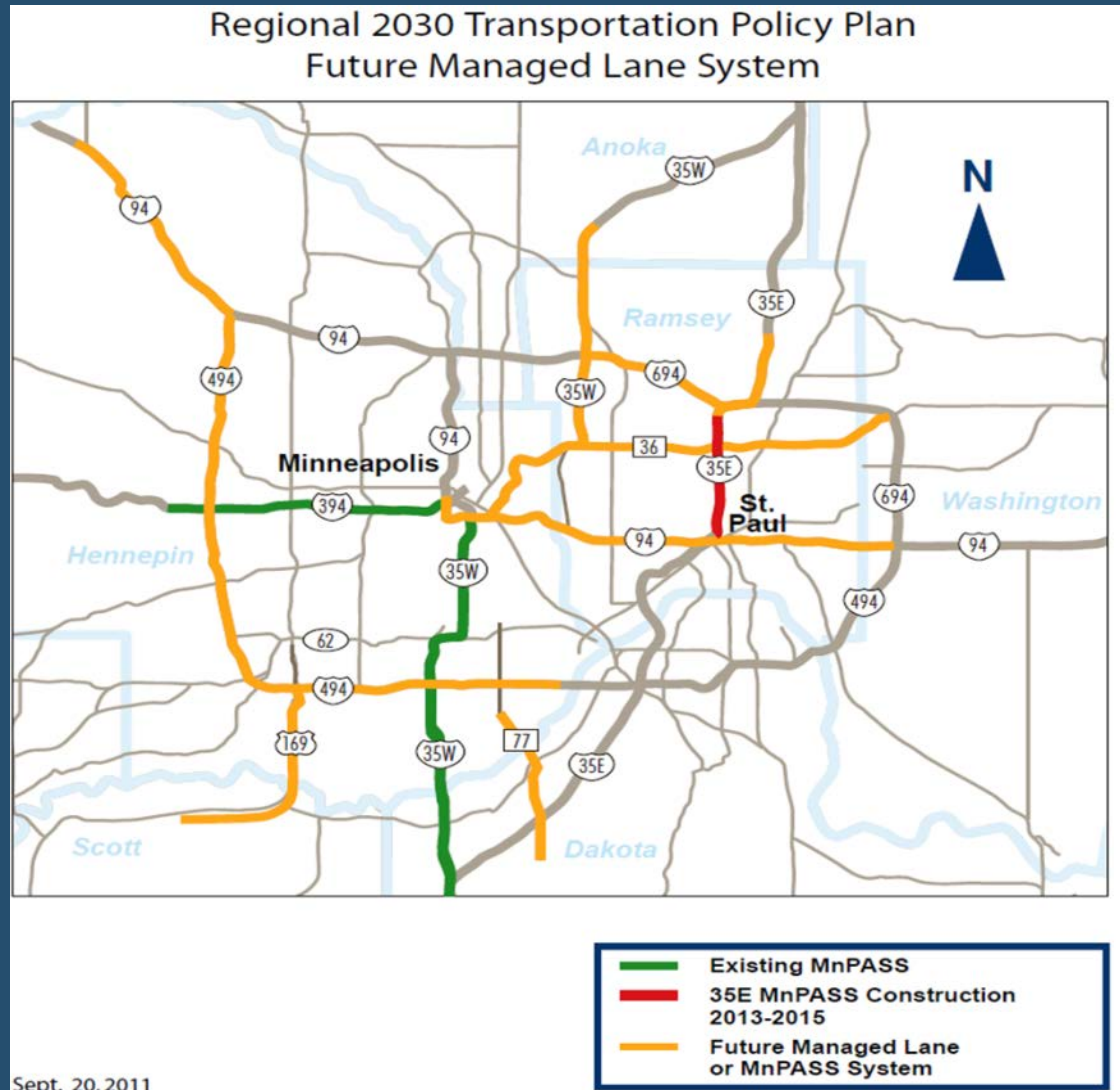
MnPASS Express Lane Objectives

- Improve the movement of people through highway corridors during peak periods (increase person throughput)
- Offer a faster, more reliable congestion-free choice for commuters
- Improve bus transit service and increase ridership
- Improve Park & Ride performance and increase car/van pooling



MnPASS System

- Opened 11 miles HOT lane on I-394 in 2005
- Opened 16 mile HOT lane on I-35W in 2009/2010
- Proposed 4 mile HOT lane on I-35E in 2015

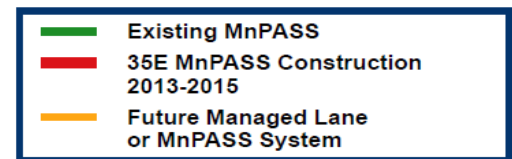
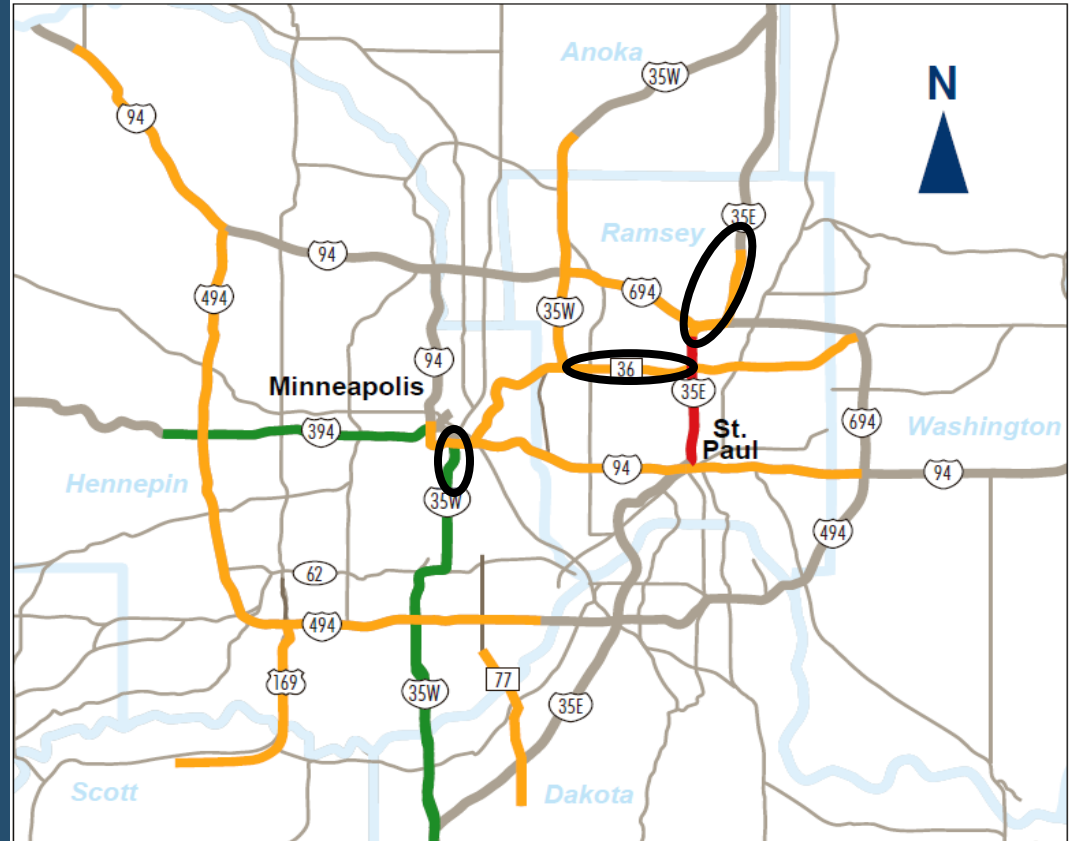




MnPASS System

- ▶ MnPASS has proven successful on I-394 & I-35W
- ▶ MnPASS lanes under construction on I-35E north of St. Paul – opening in Nov. 2015
- ▶ Eight other corridors in various stages of MnPASS planning and development - expansion anticipated on 2-3 more corridors within next 5 yrs.

Regional 2030 Transportation Policy Plan Future Managed Lane System



Sept. 20, 2011





MnPASS Typical Lane Design

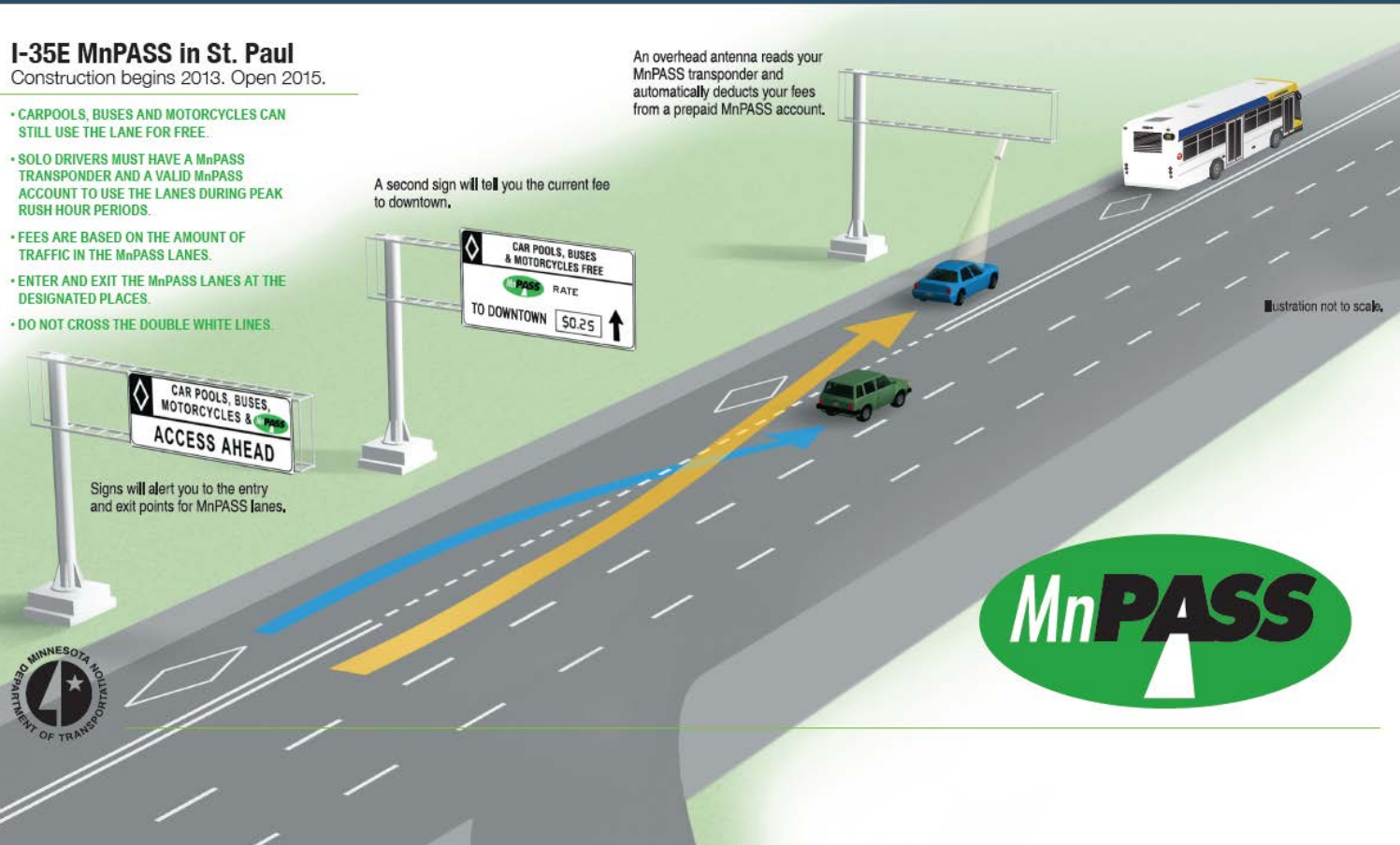
I-35E MnPASS in St. Paul

Construction begins 2013. Open 2015.

- CARPOOLS, BUSES AND MOTORCYCLES CAN STILL USE THE LANE FOR FREE.
- SOLO DRIVERS MUST HAVE A MnPASS TRANSPONDER AND A VALID MnPASS ACCOUNT TO USE THE LANES DURING PEAK RUSH HOUR PERIODS.
- FEES ARE BASED ON THE AMOUNT OF TRAFFIC IN THE MnPASS LANES.
- ENTER AND EXIT THE MnPASS LANES AT THE DESIGNATED PLACES.
- DO NOT CROSS THE DOUBLE WHITE LINES.

An overhead antenna reads your MnPASS transponder and automatically deducts your fees from a prepaid MnPASS account.

A second sign will tell you the current fee to downtown.



Signs will alert you to the entry and exit points for MnPASS lanes.

CAR POOLS, BUSES, MOTORCYCLES & ACCESS AHEAD

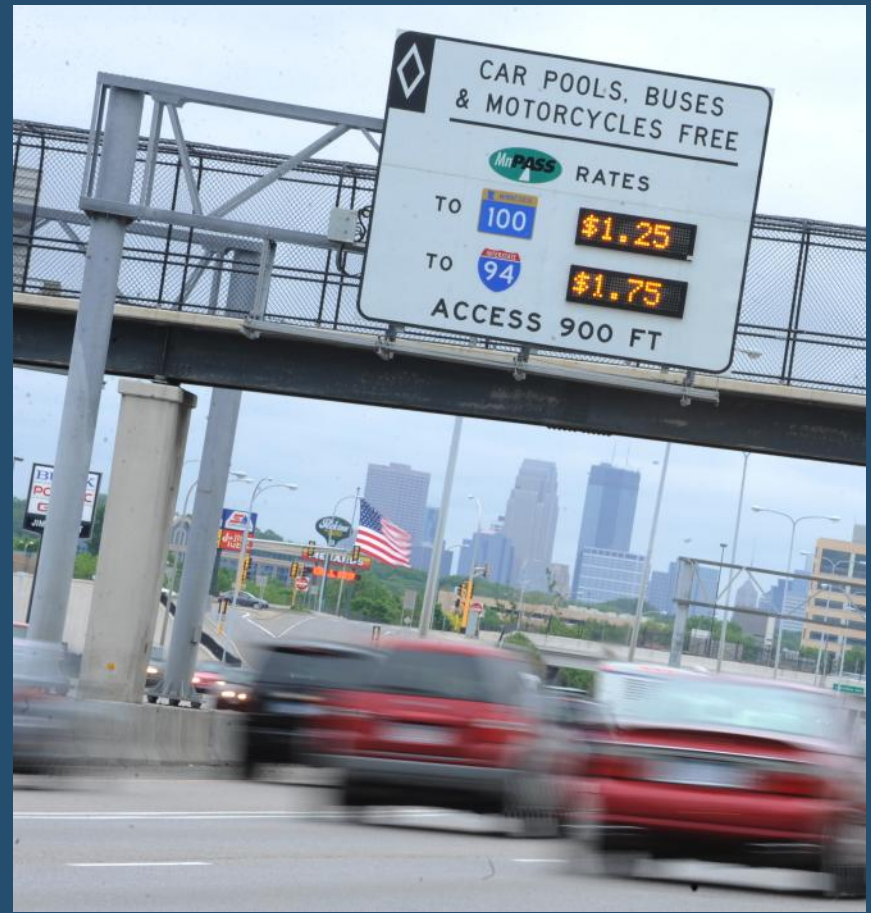
CAR POOLS, BUSES & MOTORCYCLES FREE
 RATE
TO DOWNTOWN \$0.25 ↑



Priced Managed Lanes



- High Occupancy Toll Lanes
- Provide for faster, safer and more reliable travel options
- Travel benefits for transit, carpoolers, motorcycles and MnPASS customers





Hazardous Materials
PROHIBITED FROM
EAST TUNNEL

DOWNTOWN

WEST

EXIT 8B
EAST
94
ONLY

EXIT 8A
Dunwoody Blvd
Hennepin Ave
PROHIBITED VEHICLES
EXIT ONLY

G.O. Gutters
612-701-8066



CAR POOLS, BUSES
MOTORCYCLES &
ACCESS 1/4 MILE

EXIT
100 SOUTH NORTH
Xenia-Park
↓

northAmerican

673 DOWNTOWN



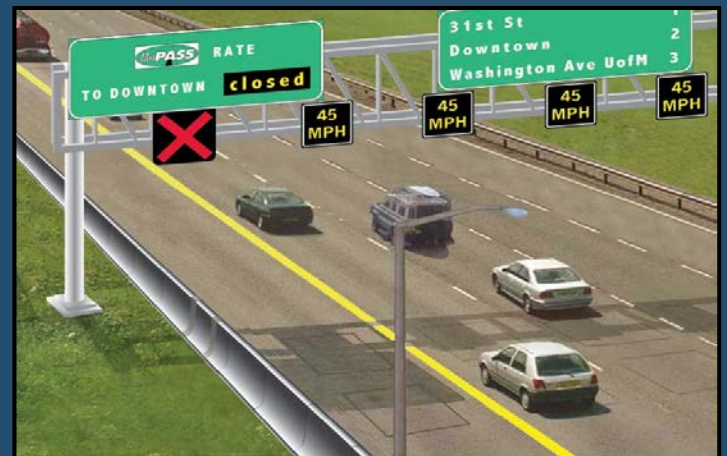
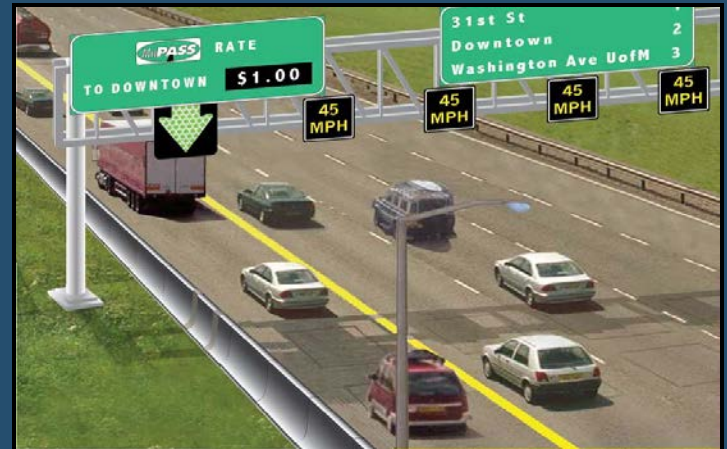
Dynamic Pricing Overview

- Adjust the toll rate dynamically to encourage or discourage users
- Maintain free flowing traffic in MnPASS lane (speeds greater than 50 MPH) at all times
- Rates determined based on:
 - Number of vehicles in lane
 - Speed of the vehicles
 - Rate of change of traffic conditions



I-35W PDSL Operations

- Monday – Friday
 - 6:00 AM to 7:00 PM
- Can be open on weekends or evenings for special events, weather or incidents.



I-35W MnPASS: PDSL Closed





Dynamic MnPASS Sign on I-35E





Dynamic MnPASS Sign on I-35E





Dynamic MnPASS Sign on I-35E



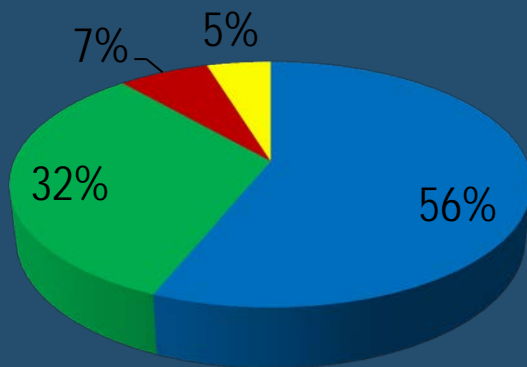


MnPASS Use & Performance

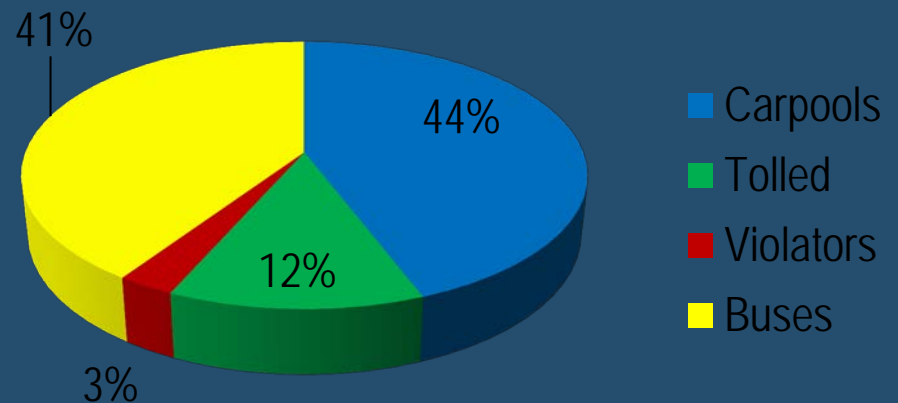
People Movement

- The majority of people using MnPASS are carpooling or riding transit
- Single occupant MnPASS customers make up 32% of the total vehicles in the lane, but are only 12% of the total people in the lane

Vehicles Moved



People Moved



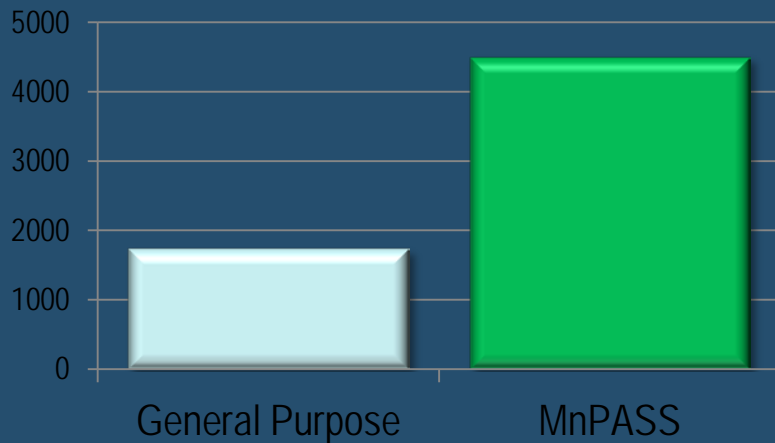


MnPASS Use & Performance

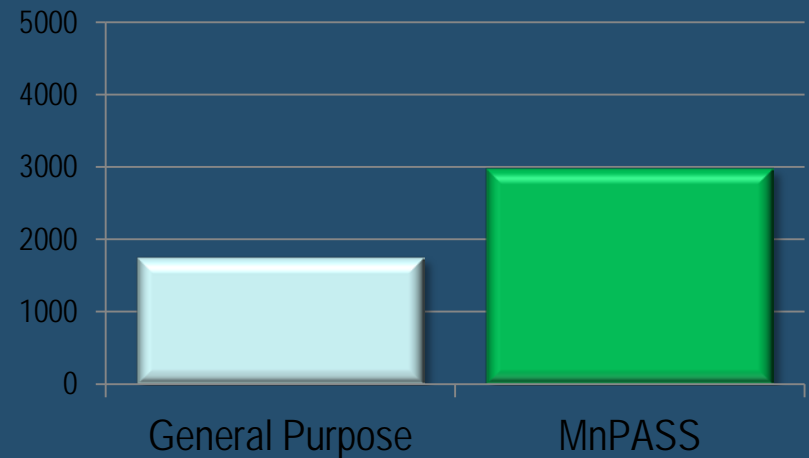
People Movement

- A MnPASS lane can move twice as many people as a single general purpose lane during congestion

NB I-35W at Lake Street
AM Peak Hour



EB I-394 at Penn Ave
AM Peak Hour





MnPASS Use & Performance

Vehicle Speeds

- Average speeds in the MnPASS lanes are between 55 and 60 MPH during peak periods
- Average speeds in the general purpose lanes are 15-20 MPH during peak periods
- Federal law requires priced managed lanes to operate at speeds above 45 MPH for 90% of the time during peak periods
- MnPASS is currently operating at speeds above 45 MPH 95% of the time

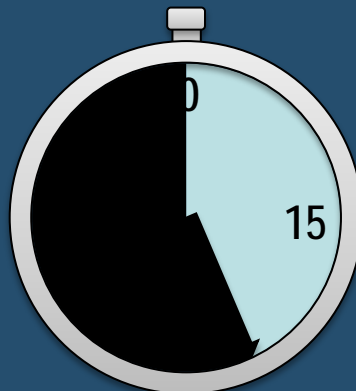


MnPASS Use & Performance

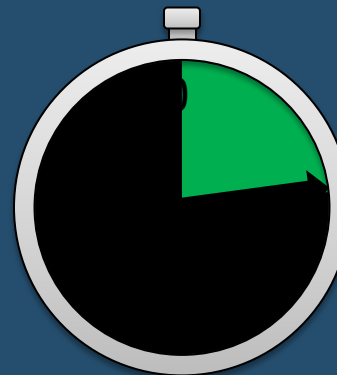
Reliability & Time Savings

- General purpose lanes are prone to congestion and are therefore unpredictable, which requires more time when planning a trip
- MnPASS lanes can be relied on to provide a predictable trip time
- A commuter on NB I-35W traveling from Lakeville to downtown Minneapolis must plan for a 28 minute commute, while a MnPASS commuter only needs to plan for 14 minutes

General Purpose Lane Time



MnPass Lane Time





MnPASS Use & Performance

Transit Improvement

- ▶ I-35W Express Bus Service since 2009
 - Efficiency and reliability of service has greatly improved
 - Metro Transit service increased 11%
 - Metro Transit Ridership up 55%

Park & Ride Improvement

- ▶ I-35W Park & Ride use is up 35% since 2009



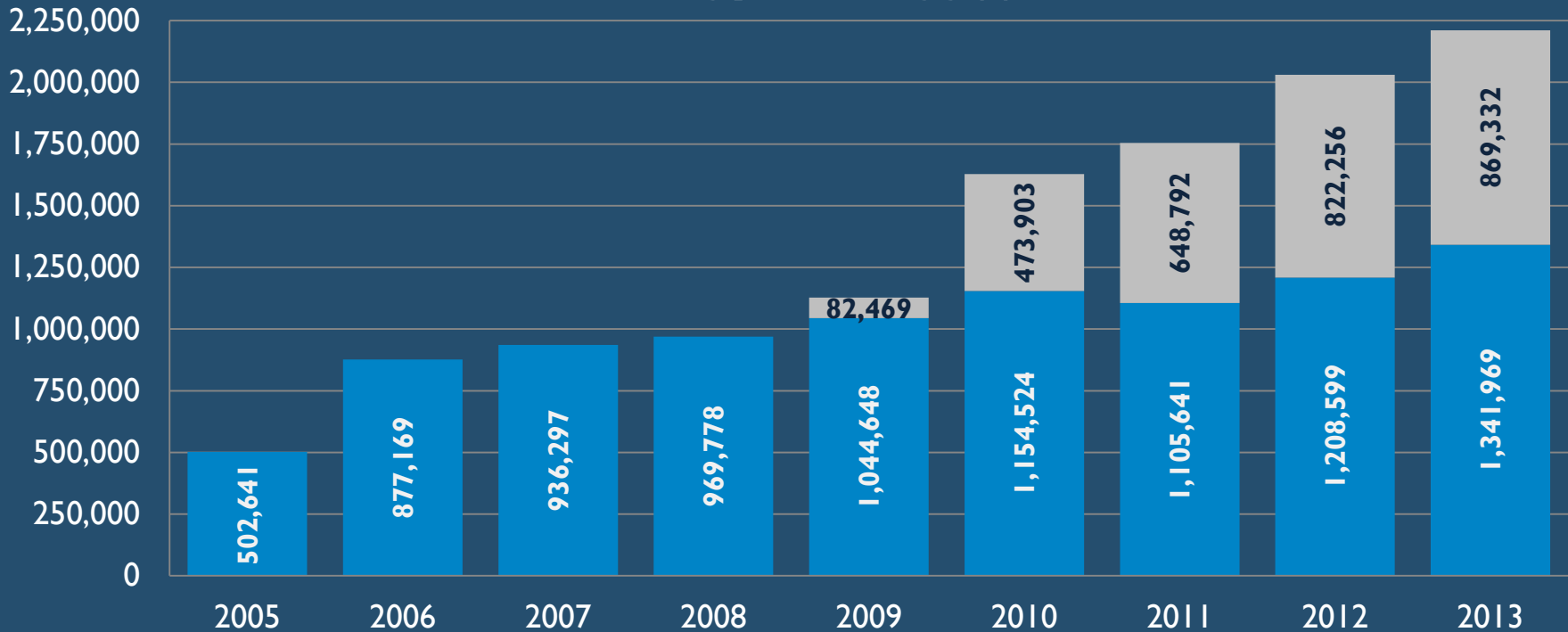


MnPASS Use & Performance

Growth in Use

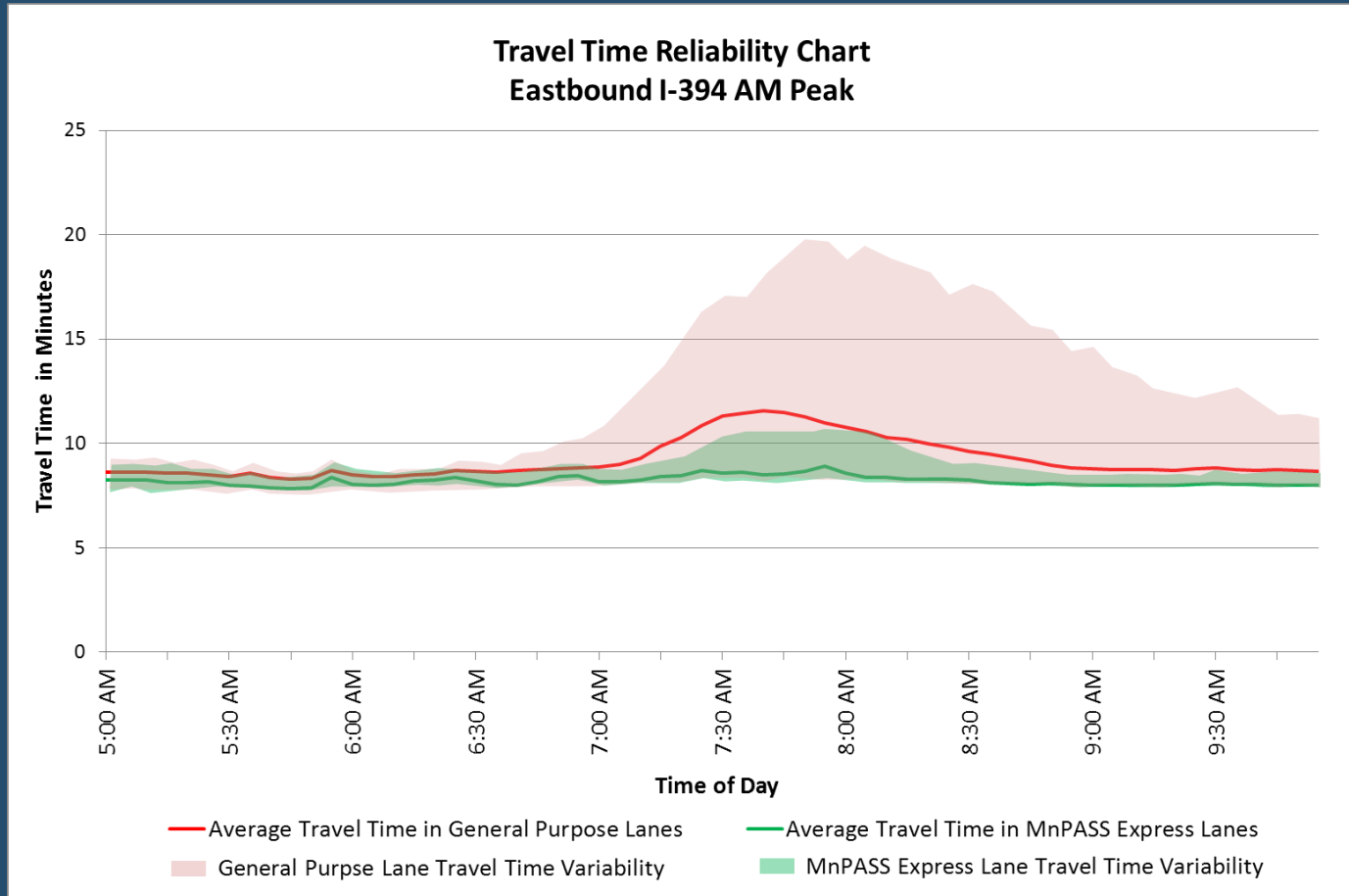
MnPASS Trips

■ I-394 ■ I-35W





MnPASS Reliability





MnPASS Use & Performance

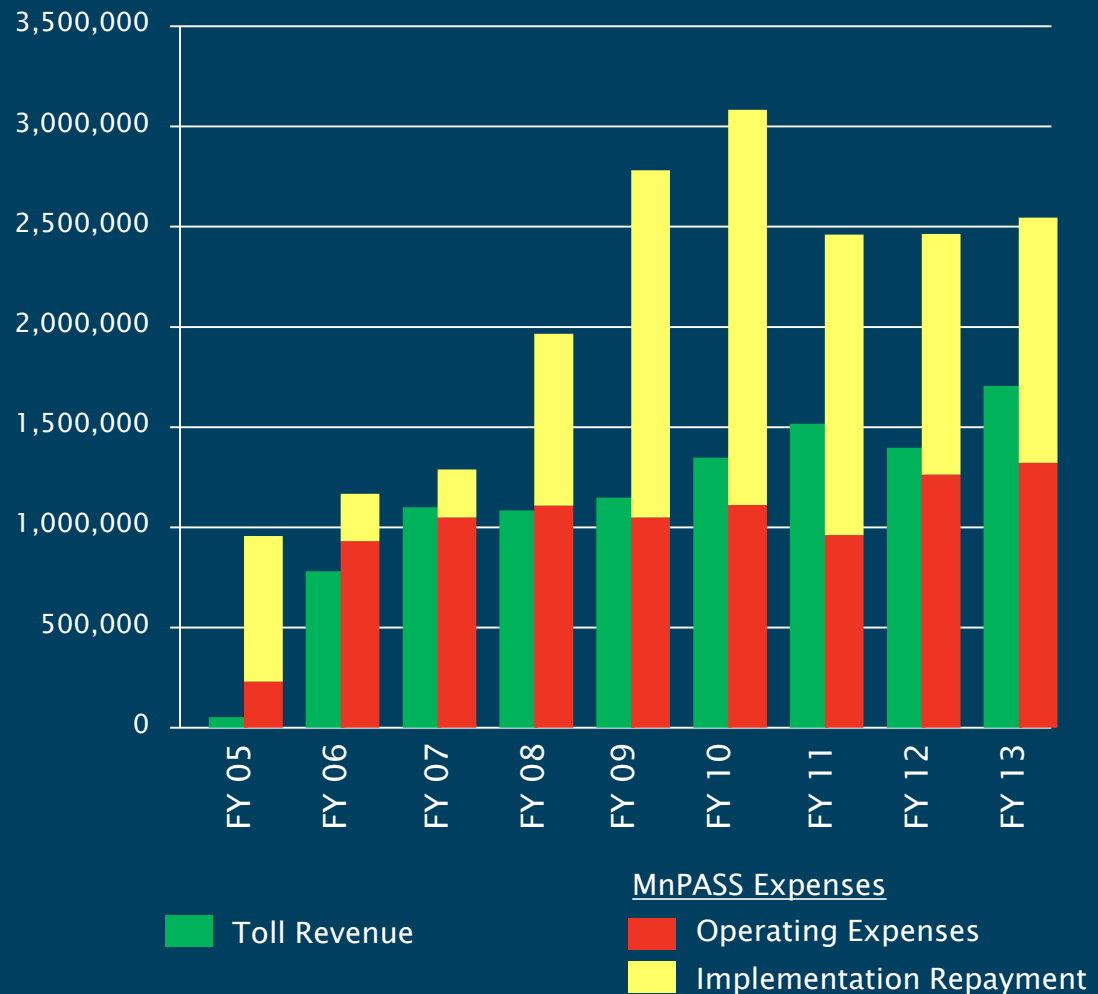
- Customer Satisfaction
 - Greater than 80% satisfaction rate among customers
 - Time saved, congestion avoidance, choice and reliability valued most
 - Customers stay customers
 - Transit operators and users strongly support
 - Car/vanpoolers strongly support



MnPASS Financial Update

I-394 Account

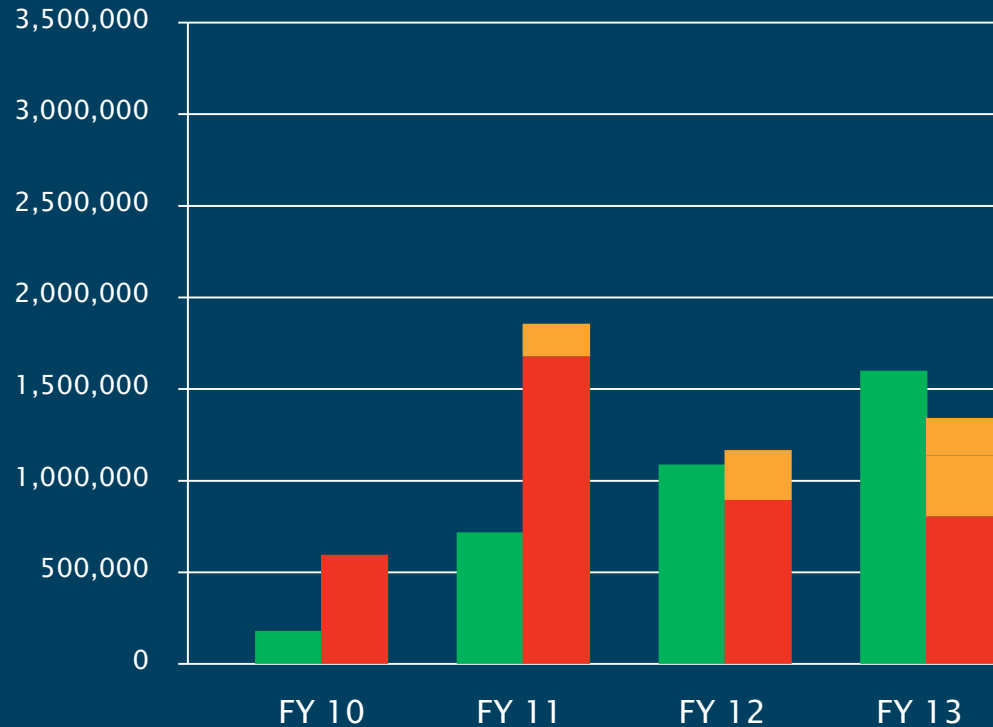
- ▶ Supplemental TH Funds cover expenses in years when expenses exceed revenue
- ▶ Final implementation repayment made in 2013 (total implementation repayments: \$10 million)
- ▶ Toll infrastructure replacement costs will begin on I-394 in 2015 as specific infrastructure reaches the end of its useful life
- ▶ Average I-394 toll last quarter: \$1.48



MnPASS Financial Update

I-35W Account

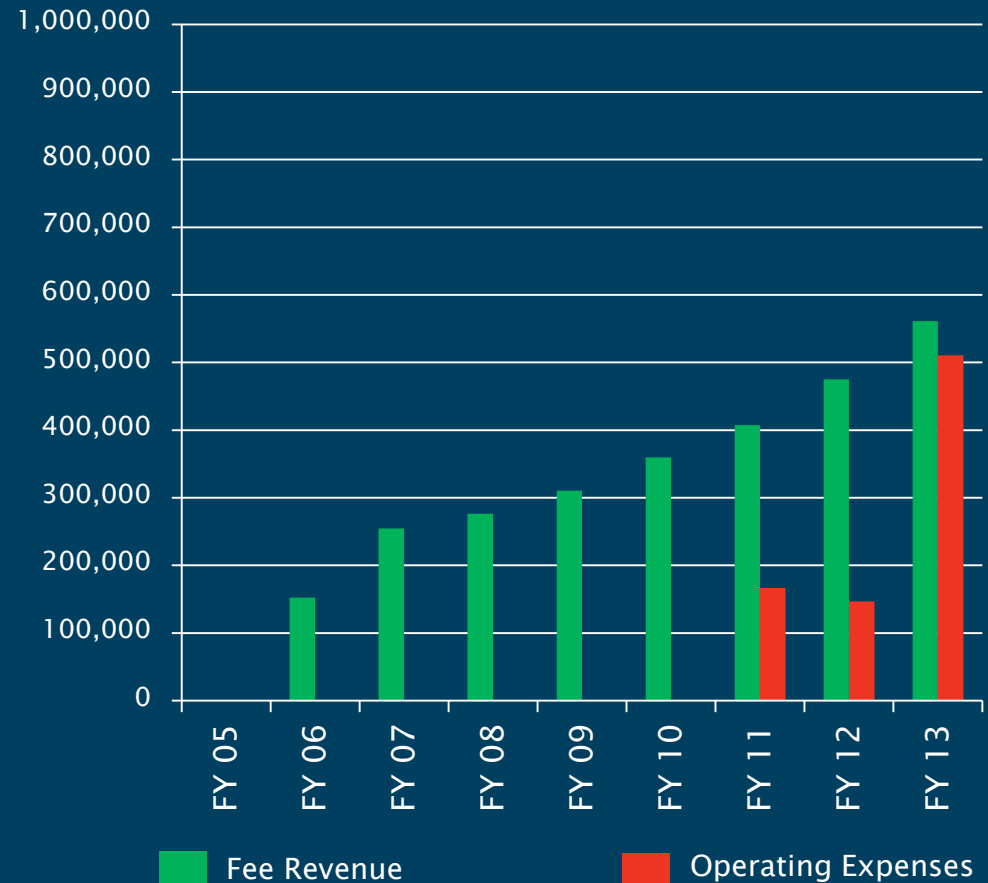
- ▶ Supplemental TH Funds cover expenses in years when expenses exceed revenue
- ▶ Toll infrastructure replacement costs will begin on I-35W in 2019 as specific infrastructure reaches the end of its useful life
- ▶ Average I-394 toll last quarter: \$1.94



MnPASS Financial Update

Administrative Account

- ▶ Operating expenses associated with this account were included in I-394 and I-35W accounts 2005-10
- ▶ Spike in operating expenses in 2013 due to transponder replacement cost
- ▶ Total Number of Transponders: 30,500



MnPASS Enforcement





Enforcement

- Currently high rate of violators on I-35W
- Increased enforcement thru partnerships with:
 - Minnesota State Patrol
- Petty misdemeanor with \$142 fine
- Initial planning and equipment cost of \$250K
- Increased enforcement on weekdays
 - 1 Additional Trooper on I-394 in each peak period
 - 2 Additional Troopers on I-35W in each peak period
 - Annual cost of \$450K



Flexibility

Smarter Highways

These overhead active traffic management signs will display **speed limits**, **lane status**, and **MnPass messages** so drivers know what's happening ahead.





Making it all work together

- ▶ Designing managed lanes forced the different groups involved to work together at a level never achieved before. These groups are:
 - ▶ RTMC Design
 - ▶ RTMC Operations
 - ▶ Roadway Design
 - ▶ Metro Signing
 - ▶ CO Signing
 - ▶ DOT Area Engineers
 - ▶ Metro Foundations Engineer
 - ▶ FHWA
 - ▶ Hydraulics
 - ▶ Bridge Structural Metals
 - ▶ Consultants





MnPASS Project Development

- **I-35E MnPASS Project** – This project is currently under construction. It will add a MnPASS lane in each direction on I-35E between Little Canada Road and the new Cayuga St. interchange. Project completion and MnPASS opening is anticipated Nov. 2015. For more information, see <http://www.dot.state.mn.us/metro/projects/35estpaul/mnpass.html>
- **I-35W/I-94/Lake St. Transit Station/MnPASS Extension Project** – This project includes the extension of the southbound I-35W MnPASS lane (42nd St. - 26th Street) in Mpls., as well as the conversion of the Priced Dynamic Shoulder Lane on I-35W to a typical MnPASS lane. Components of the project are in various stages of planning and engineering, and construction is anticipated in 2017. For more information, see <http://www.35lake.com/>
- **I-35W North MnPASS Project** – MnDOT recently completed a managed lanes study on I-35W between downtown Minneapolis and TH 97 in Columbus/Forest Lake. The study recommended implementation phases for adding MnPASS lanes in the corridor - the first of which between TH 36 and Lexington Ave. have entered the environmental and pre-design process. Construction on the segment between TH 36 and TH 10 is anticipated to begin by 2022-23 or earlier if funding becomes available. The study can be viewed at <http://www.dot.state.mn.us/metro/projects/i35wstudy/index.html>
- **I-94/280 Managed Lanes Concept Development Study** – This study is developing and evaluating concepts for adding a MnPASS lane in each direction on I-94 between Mpls. and St. Paul, as well as direct connections into each central business district. The study is expected to be complete late spring/early summer 2014. Funding is identified for this project in the 2020-21 timeframe.
- **TH 77 Managed Lane & Cedar Grove Access Engineering Study** – This preliminary engineering study is essentially complete. The study recommended adding a northbound MnPASS lane between 138th St. in Apple Valley and Old Shakopee Rd. in Bloomington. However, the study concluded that the benefits of the MnPASS lane cannot be fully achieved without improvements to manage or reduce congestion along westbound I-494 between TH 77 and I-35W. For more information, see <http://www.dot.state.mn.us/metro/projects/hwy77managedlanes/>





- **I-35E MnPASS Extension Study** – This study is developing and evaluating conceptual options for extending MnPASS on I-35E between Little Canada Road and CR 96. It is also identifying and evaluating methods for improving bus transit and carpool use in the MnPASS lanes on I-35E. Preliminary results from the study will be available in spring 2014, and the study will be complete by the end of 2014. Funding is set aside for this project in 2016. For more information, see <http://www.dot.state.mn.us/metro/projects/i35emnpassextension/>
- **TH 36 EB (I-35W – I-35E) Project Scoping** – The addition of an eastbound MnPASS lane on TH 36 between I-35W and I-35E is beginning to be scoped for potential construction in 2019.
- **Studies under consideration** – MnPASS managed lane studies are currently under discussion on I-494/I-94 (MSP Airport – Albertville)
TH 169 (I-394 – Shakopee)
- **Other studies on TPP designated MnPASS corridors:**
I-94 Gateway Corridor EIS Scoping – A recent Alternative Analysis evaluated several transit alternatives on I-94 between St. Paul and Wisconsin for Federal New Starts transit funding. The recommendation from the study includes BRT and LRT alternatives along the Hudson Rd. route (north of I-94 between St. Paul and Manning Ave.). The recommendation does not include the managed lane BRT alternative that was evaluated. For more information, see <http://www.thegatewaycorridor.com/>

Other MnPASS Studies - Current Studies

- **I-394 & I-35W MnPASS Access Control Study** – This study is evaluating access control issues on the existing MnPASS Express Lanes. The final report is anticipated spring 2014.
- **MnPASS Modeling and Pricing Algorithm Enhancement Study** – This study is evaluating enhancements to the MnPASS pricing algorithm. The final report is anticipated summer 2014.
- **MnPASS Enforcement Enhancement Study** – This study is developing and testing new technologies to assist with MnPASS enforcement. The final report is anticipated spring 2015.



Questions

