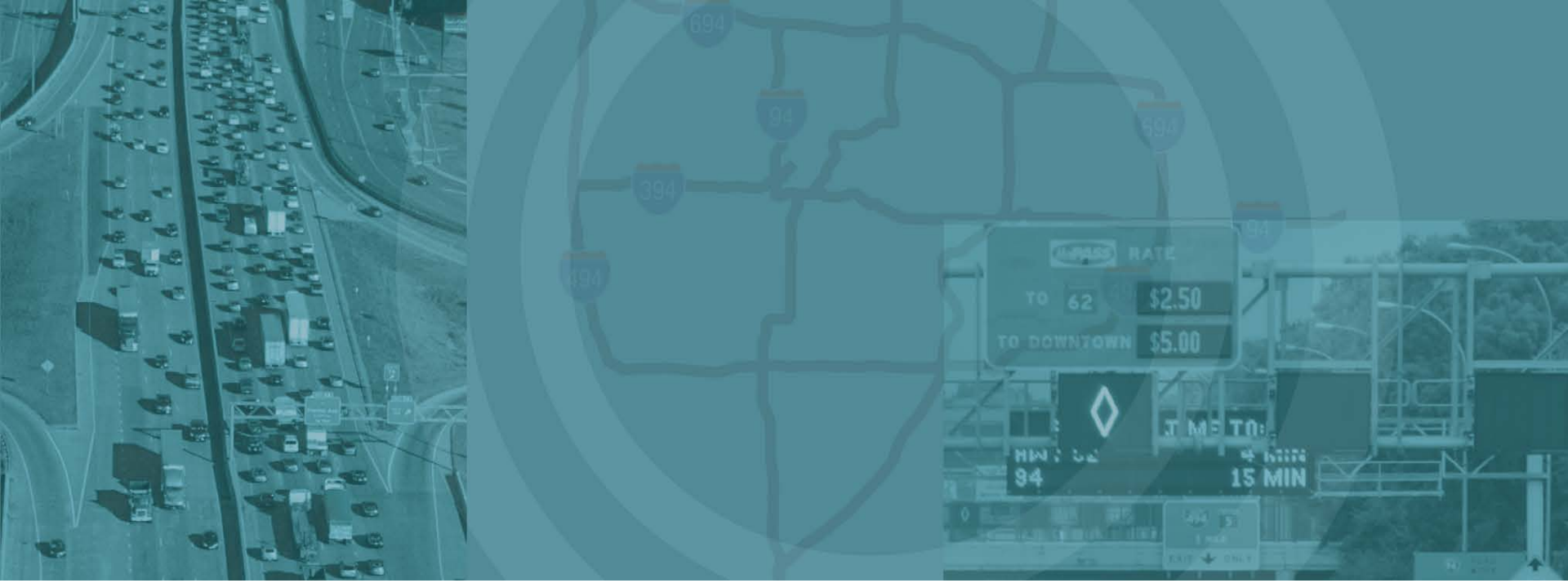
MANAGED LANES SYSTEM STUDY BEST PRACTICES

NOVEMBER 1, 2017

AGENDA (ALL TIMES ARE IN EST)

11:30 PM-11:40 PM	OPENING REMARKS	SHAUN CUTTING, FHWA COLORADO DIVISION DAVID SPECTOR, DIRECTOR OF HPTE
11:40 PM-12:10 PM	PRESENTATION 1:	BRAD LARSON, MNPASS POLICY & PLANNING DIRECTOR
12:10PM-12:40PM	PRESENTATION 2:	KATHLEEN MCCUNE, LA METRO, DEO CONGESTION REDUCTION PHILBERT WONG, LA METRO, SR. MANAGER, TRANSPORTATION PLANNING
12:40 PM-1:10 PM	PRESENTATION 3:	TYLER PATTERSON, WSDOT, TOLL OPERATIONS MANAGER
1:10 PM-1:30 PM	FEDERAL PERSPECTIVE OPEN Q&A/CLOSING	ANGELA JACOBS, FHWA OFFICE OF OPERATIONS



MnPASS

MnPASS System Study Phase 3

November 1, 2017

DEPARTMENT OF TRANSPORTATION

www.dot.state.mn.us/metro/projects/mnpass-study/

Outline

- Background
- MnPASS System Study Phase 3
  - Goals
  - Process and Analysis
  - Results
- Public Outreach
- Lessons Learned

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MnPASS *System Study* – Phase 3

Background

History

- MnPASS = MN's system of priced managed lanes
- MnPASS Express Lanes in operation:
  - I-394 since 2005
  - I-35W since 2009
  - I-35E since 2015

- MnPASS is a strategy for cost-effectively reducing and managing congestion by providing a reliable, congestion-free option for buses, carpools and solo motorists willing to pay a fee during peak-travel times

www.dot.state.mn.us/metro/projects/mnpass-study/

Typical MnPASS Lane Design & Operation

- Single lane w/2 ft. striped buffer (double solid or dashed)
- Peak period operation (M-F 6-10am or 3-7pm)
  - Unrestricted and open to all traffic at all other times
- During peak periods, transit buses, HOV2+, and motorcycles can use for free – solo drivers can use for a fee that varies between 25¢ - $8.00
- All electronic dynamic pricing based on traffic volume/speed in the MnPASS lane – algorithm designed to maximize use and maintain 50-55 mph speed
- Dedicated MN State Patrol enforcement

MnPASS Goals

- **Cost-effectively reduce and manage congestion** in a manner that's more **sustainable over the long term**
- 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
- **Increase** car/van pooling (**HOV use**)

Hierarchy of Regional Highway Mobility Strategies in MnDOT and MPO Long Range Plans

Active Traffic Management

Transportation partners should first work to apply traffic management technologies to improve traffic flow without adding capacity

Spot Mobility Improvements

The next strategy should be to investigate implementing lower cost/high benefit projects that improve safety and traffic flow at spot locations

MnPASS Express Lanes

If more extensive lane capacity is needed, the regional priority is to evaluate the feasibility of MnPASS Express Lanes

Strategic Capacity Enhancements

This strategy includes interchange improvements and in rare instances traditional lane capacity projects if the above strategies cannot address the problem.

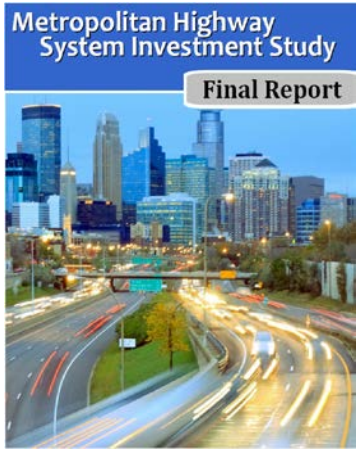
MnPASS Planning & Project Development Process

- System planning studies which help inform the MnPASS system vision and corridor prioritization in the MPO and MnDOT long range plans
- Corridor planning studies that include MnPASS concept development and feasibility analysis
- Project environmental/preliminary design
- Construction & operation

Past MnPASS System Studies

- Phase 1 study completed in 2005

- Phase 2 study completed in 2010
  - In coordination with the Met Council's (MPO's) Metropolitan Highway System Investment Study
  - Results adopted into MPO's and MnDOT's long range transportation plans



MnPASS System Study 3 Goals

- Update the MnPASS system vision for inclusion in the 2017/18 Transportation Policy Plan Update

- Evaluate key MnPASS issues, opportunities, and risks from both a regional needs perspective and a national state-of-the-practice perspective

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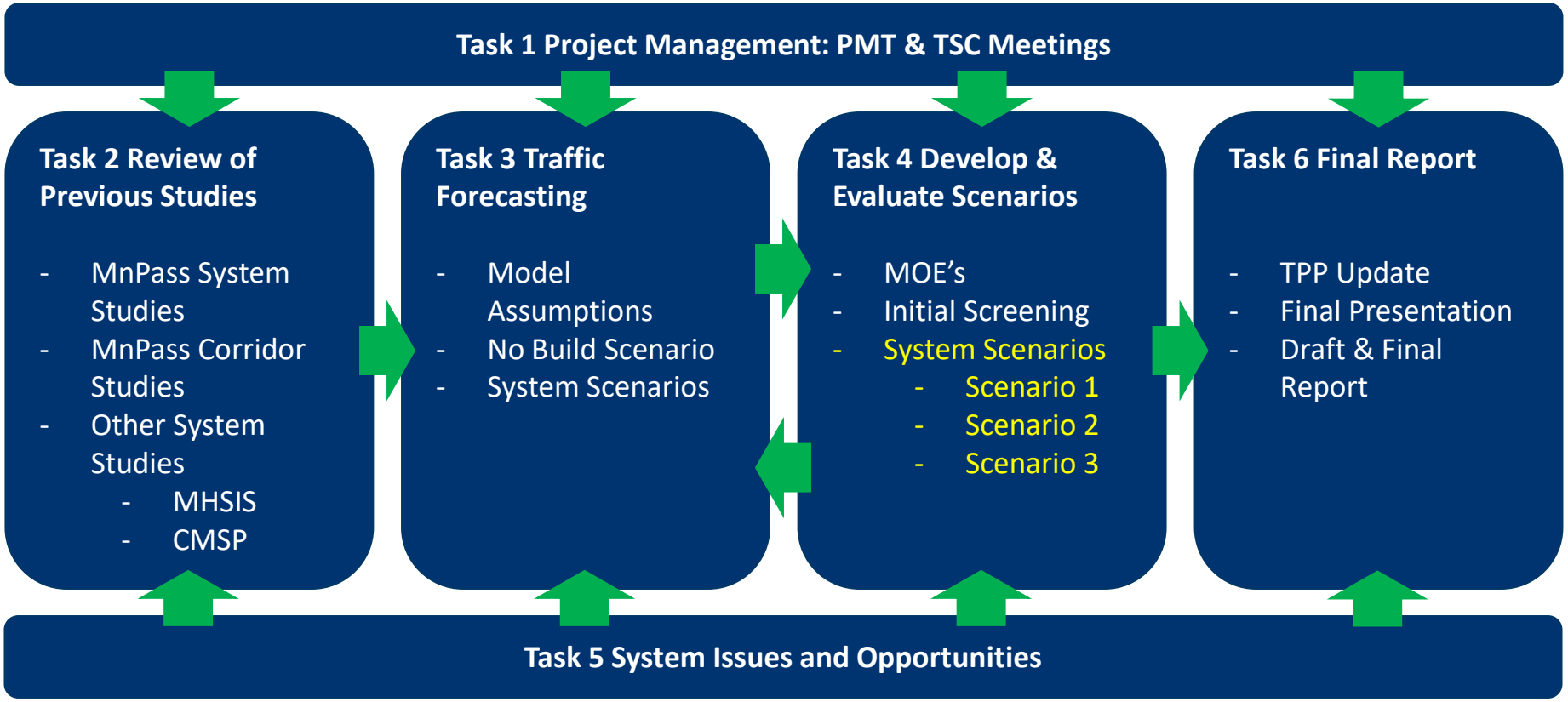
MnPASS *System Study* – Phase 3

Process and Analysis

MnPASS System Study 3 Process



Tools

- **Activity-Based Model (ABM)** – predicts which activities are conducted when, where, for how long, for and with whom, and the travel choices they will make to complete them. The ABM is used to develop forecasts and corridor and system performance measures.
  - Vehicle Miles Traveled (VMT), Vehicle Hours Traveled (VHT), Congested Lane Miles, Mode Shift, Person Throughput, Person Hours Saved
- **Computer-aided Design and Drafting (CADD)** – drawings developed to estimate construction and contingency costs

Screening Criteria

- Severity of congestion
- Proximity to employment centers
- Connections to other MnPASS corridors and major destinations
- Express commuter bus demand
- Total construction cost
- Travel time savings

Management and Advisory Groups

- **Project Management Team (PMT)** – consisted of representatives from MnDOT metro area districts, MnPASS planning staff, and consultant team

- **Technical Steering Committee (TSC)** – consisted of representatives from MnDOT, Met Council, transit providers, metro counties, FHWA, and consultant team

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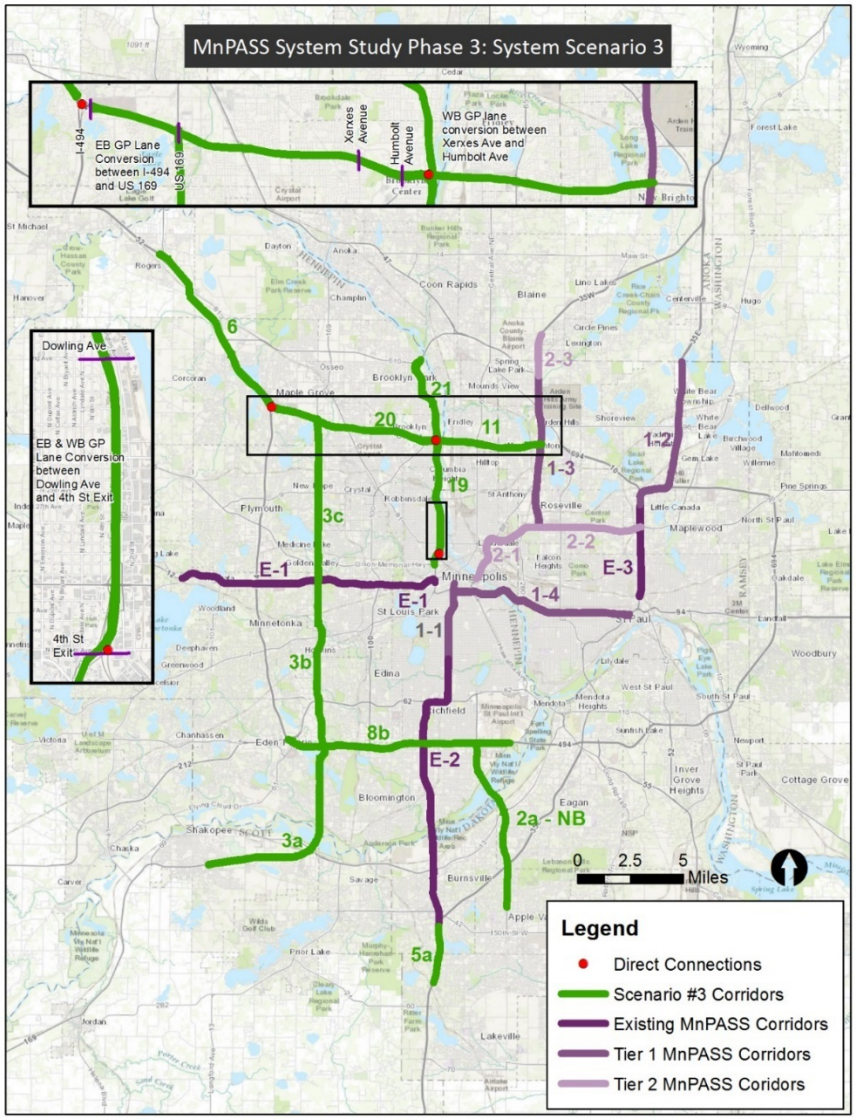
MnPASS *System Study* – Phase 3

Results

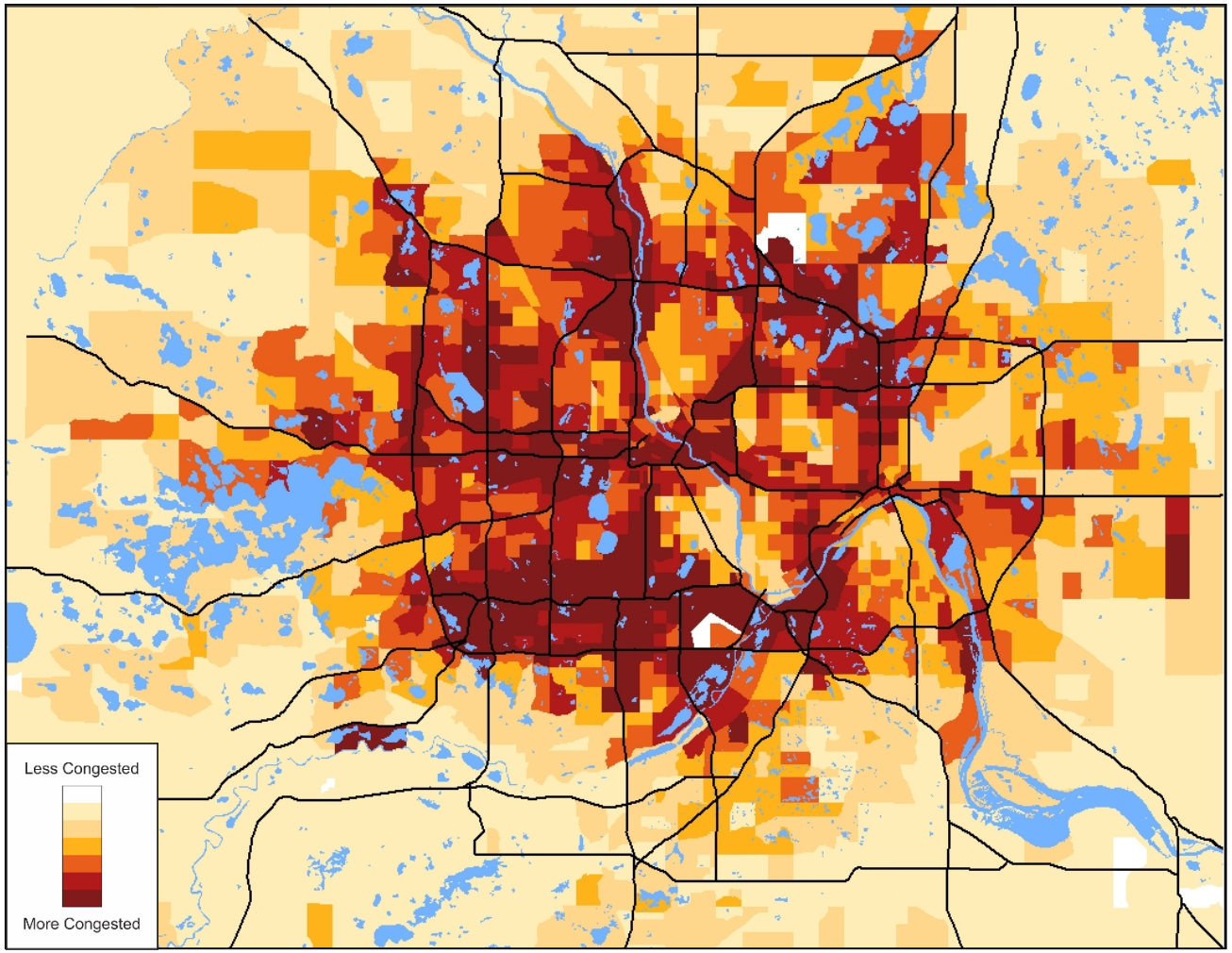
Recommended Corridors



Recommended Corridors

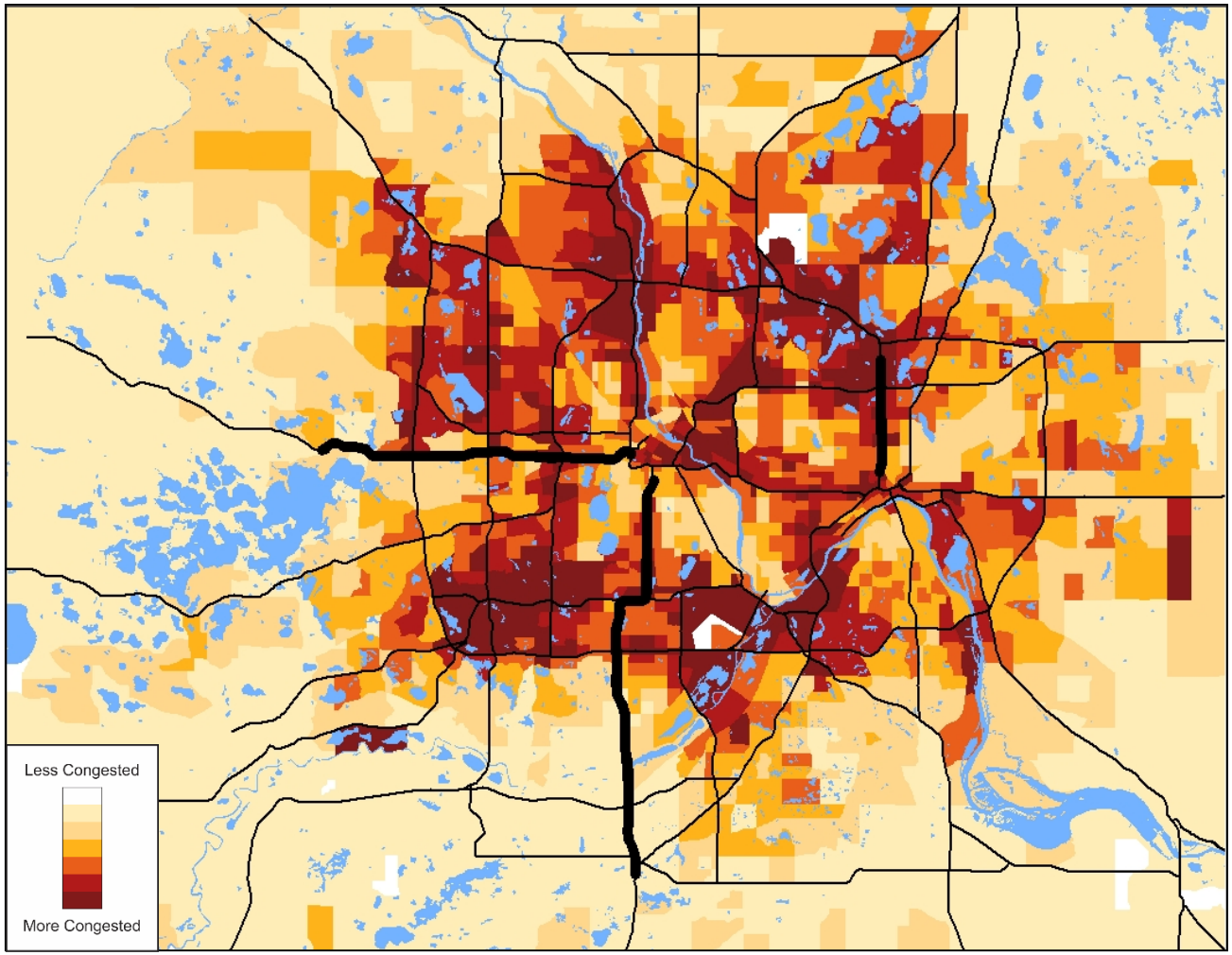
Corridor	Highway	Corridor Limits
Existing MnPASS Corridors		
E-1	I-394	Hennepin Co 15/Carlson Pkwy to Downtown Minneapolis
E-2	I-35W	Crystal Lake Rd/Cliff Rd to 46th St/26th St
E-3	I-35E	Cayuga St/Ramsey Co E to Little Canada Rd
TPP Tier 1 Corridors (Current Revenue Scenario)		
1-1	I-35W	Downtown Minneapolis to 46th St (Under Construction)
1-2	I-35E	Little Canada Rd to Ramsey Co J/Ramsey Co 96 (Completed)
1-3	I-35W	MN 36/280 to US 10
1-4	I-94	Downtown Minneapolis and Downtown St. Paul
TPP Tier 2 Corridors (Increased Revenue Scenario)		
2-1	I-35W	Downtown Minneapolis to MN 36/280
2-2	TH 36 Eastbound	I-35W to I-35E
2-3	I-35W	US 10 to 95th Ave in Blaine (Funded)
Scenario 3 Corridors		
2a-NB	TH 77 Northbound	138th Street to I-494
3a	US 169	Marschall Road to I-494
3b	US 169	I-494 to I-394
3c	US 169	I-394 to I-694
5a	I-35	Crystal Lake Rd/Southcross Dr to Dakota Co 50
6	I-94	I-494 to TH 101
8b	I-494	US 212 to TH 5/MSP Airport
11	I-694	I-94 to I-35W
19	I-94	TH 55 to TH 252
20	I-94	TH 252 to I-494/694
21	TH 252	I-94 to TH 610

Congested Trips (No MnPASS)



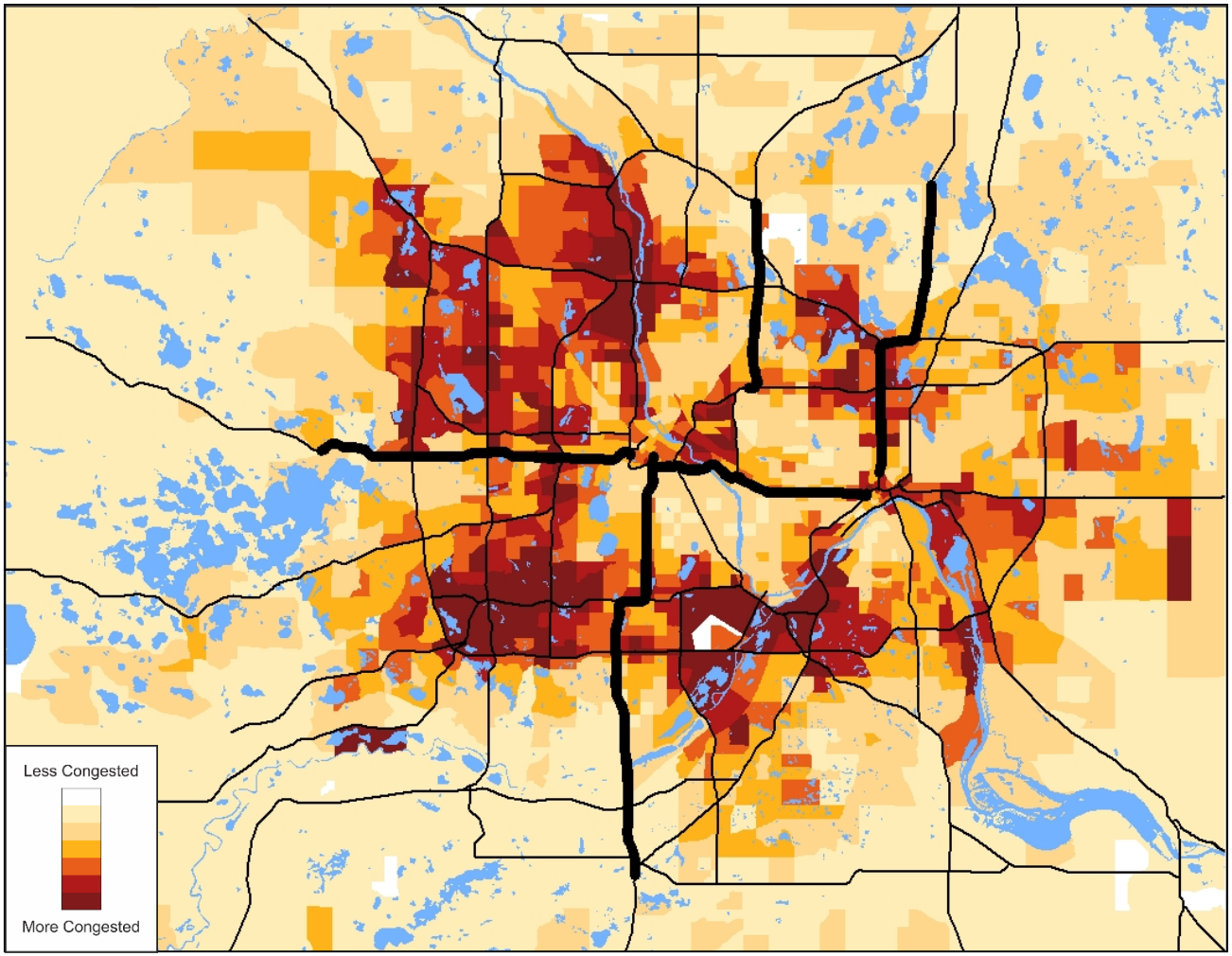
Congested Peak Period Freeway Trips by TAZ

Congested Trips (Existing MnPASS)



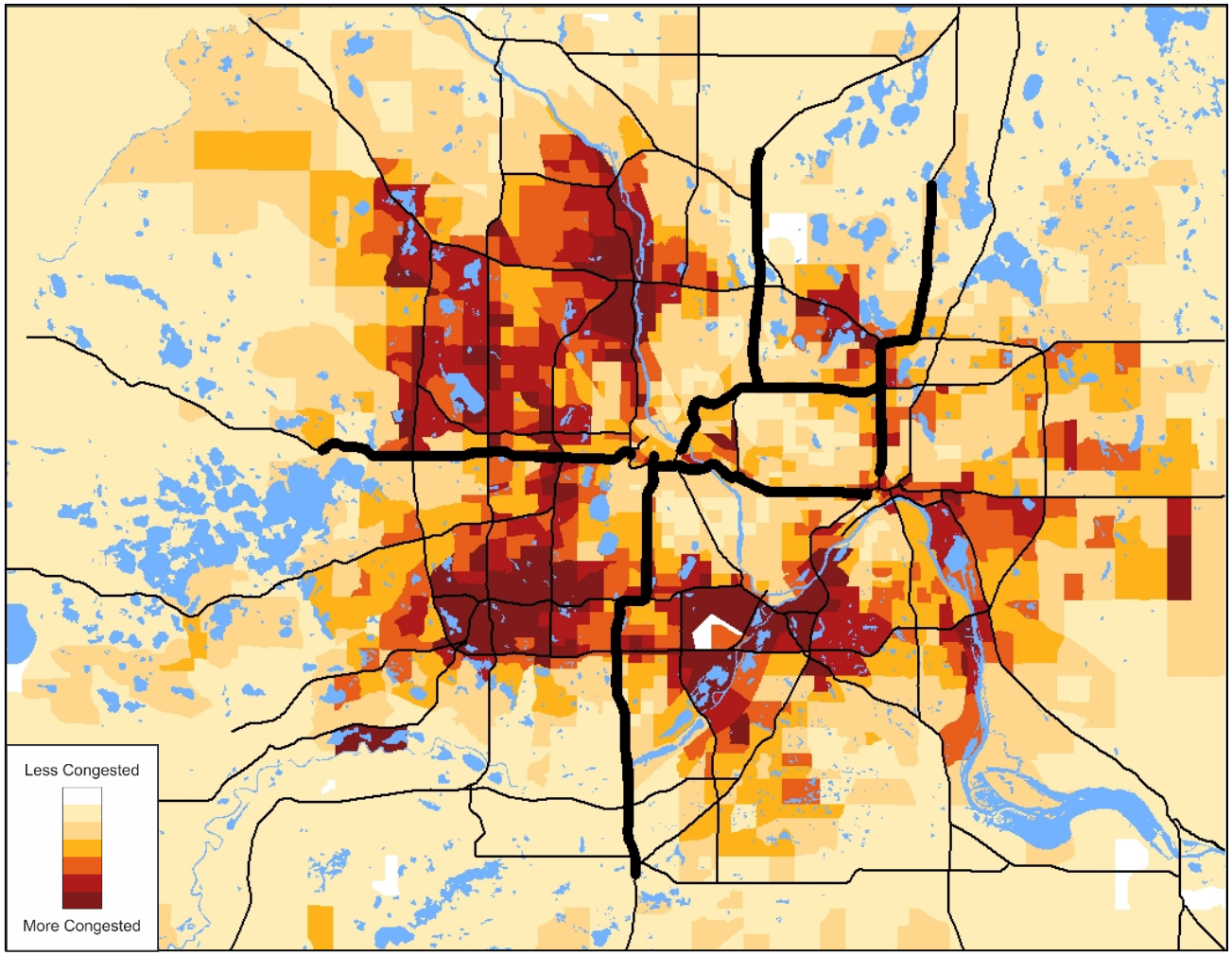
Congested Peak Period Freeway Trips by TAZ

Congested Trips (Existing and Tier 1 MnPASS)



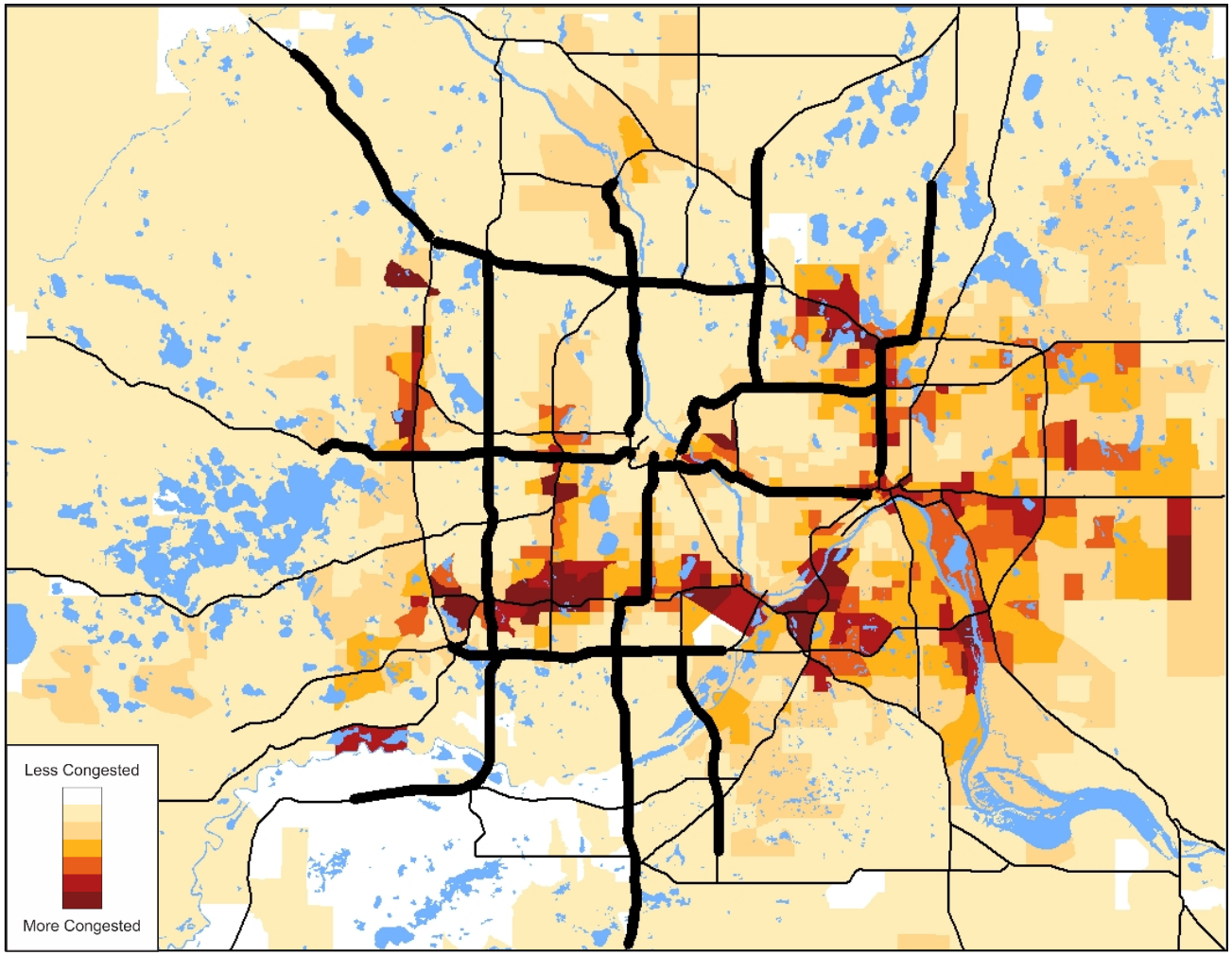
Congested Peak Period Freeway Trips by TAZ

Congested Trips (Existing, Tier 1, and Tier 2 MnPASS)



Congested Peak Period Freeway Trips by TAZ

Congested Trips (Existing, Tier 1, Tier 2, and Scenario 3 MnPASS)



Congested Peak Period Freeway Trips by TAZ

Public Outreach

- System study outreach focused on small group of key stakeholders (MPO, MnDOT, metro counties and cities, public transit providers, FHWA)
  - More technical/professional focused
- Corridor study outreach focused on key corridor stakeholders, as well as the people who live along and use the corridor
  - Generally higher level, less intensive public outreach
  - Includes technical/professional staff and elected officials
- Environmental/preliminary design outreach also focused on key corridor stakeholders, as well as the people who live along and use the corridor
  - More detailed, intensive public engagement
  - Includes technical/professional staff and elected officials

Lessons Learned

- MnPASS planning and project development approach is working
  - Most corridors from the 2010 MnPASS System Study Phase 2 have undergone or are planned for some type of improvement
  - MnPASS System Study Phase 3 results are currently being used to update the MPO's long range plan
- Collaboration is key
  - Engaging key stakeholders throughout the planning and project development process is essential
  - Constant close collaboration with transit providers is critical
  - MPO/MnDOT planners work as a team
- Supportive leadership is also essential
- Establishing goals – drive evaluation criteria and the process
- Understand the tools – capabilities and limitations

METRO EXPRESSLANES

FHWA Managed Lanes System Study – Best Practices Webinar

November 1, 2017

Metro

Background – Existing ExpressLanes

- Converted 66 lane miles of HOV Lanes to HOT
- 1st HOT Lanes in LA County
- One-year demo in each corridor
- $290 M Program Budget ($210 M UPA/CRD Grant)
  - $150M Transit
  - $125M Toll/Roadway
  - $15M LA ExpressPark
- I-110 ExpressLanes opened 11/10/12
- I-10 ExpressLanes opened 2/23/13

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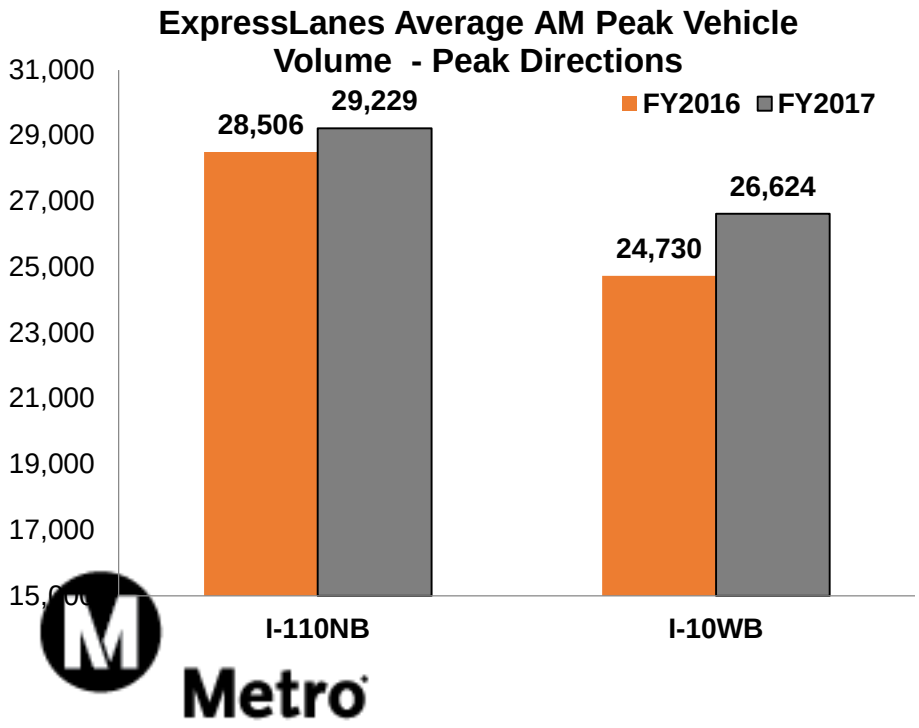
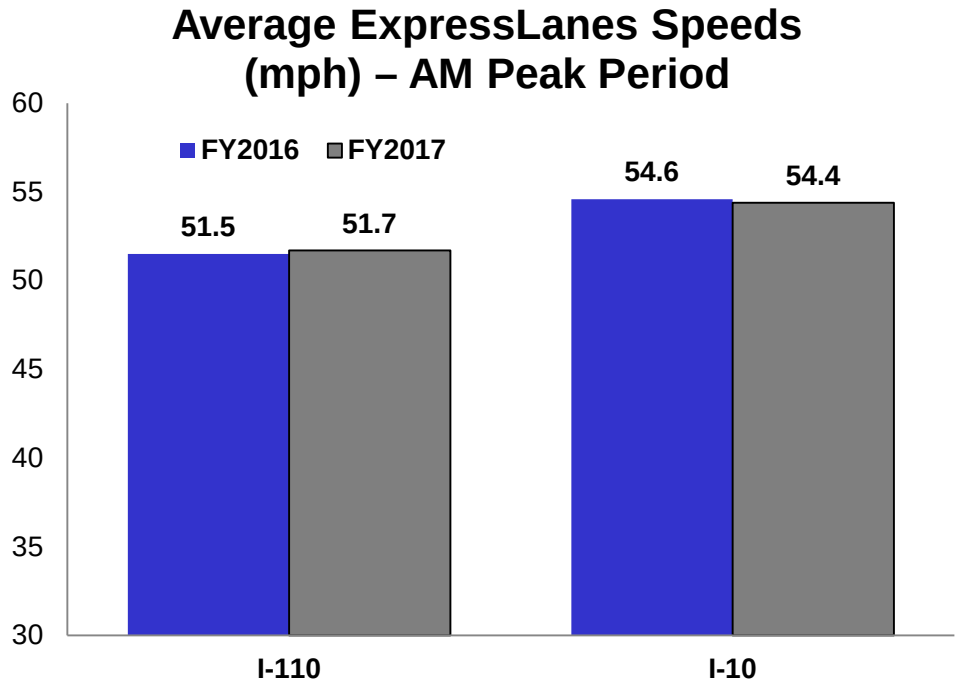
Existing ExpressLanes Performance

- From inception through June 30, 2017:
  - 721,183 transponders issued ; 608,784 accounts opened
  - 154,684,893 trips
  - Gross Revenue - $248,817,919





Build Upon Success

- Because of the success of the I-10 and I-110 ExpressLanes, in November 2014, the Metro Board directed staff to prepare an ExpressLanes Strategic Plan
- The Strategic Plan was to identify and recommend corridors that could benefit from ExpressLanes conversion
- The Strategic Plan was presented to the Board in January 2017 and the Board approved moving forward with the Tier 1 list of projects
- And in March 2017, the Board requested an acceleration strategy for constructing both Tier 1 and Tier 2 projects

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Methodology

- The Strategic Plan includes mobility benefits, financial feasibility, and qualitative factors such as,
  - Connectivity with other existing and potential Express Lane corridors
  - Transit benefits
  - Funding availability
  - Ability to provide two ExpressLanes in each direction

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Mobility Analysis

- The Plan evaluated existing, in construction, and planned HOV lanes
- Compared single ExpressLane vs HOV lane assuming 3+ occupancy requirement
- Methodology:
  - Forecast travel demand using SCAG (Southern California Association of Governments) regional model
  - SCAG forecast used as the basis for tolling model
  - Evaluation Metrics :
    1) Value of travel time savings
    2) HOT lane person throughput
    3) Average peak period vehicle speeds in the general purpose lanes

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Financial Feasibility

Included two steps:

1) Estimated gross revenue generation for each corridor
   - Equivalent to a Level 1 Traffic & Revenue Study
2) Estimated net revenue
   - Calculated by subtracting construction and operation/maintenance costs from projected gross revenue (O & M based on actual costs incurred on the I-10 and I-110 ExpressLanes)

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Financial Feasibility (cont'd)

- The financial analysis considered 8 scenarios
  - Different packages of projects
  - Funding/no funding from existing 10/110 ExpressLanes
  - HOV 3+ or HOV 3+ peak/HOV 2+ off peak

- Purpose was to identify funding gaps and needs

Metro

Funding Scenarios

	1	2	3	4	5	6	7	8
Tier 1, 2 and 3 Projects	Included	Included	Included	Included	Included	Included	Included	Included
I-110 Extension and I-110/I-405 direct connector	No	No	No	No	Included	Included	Included	Included
I-5 (SR-14 to Parker Road), SR-14 (I-5 to SR-138), SR-118 (I-5 to LA Co Line)	No	No	No	No	Included	Included	No	No
HOV Exemption Policy	HOV 3+ peak/2 off peak	HOV 3+ peak/2 off peak	HOV 3+	HOV 3+	HOV 3+	HOV 3+	HOV 3+ peak/2 off peak	HOV 3+
Toll revenue from I-10/110 ($10M/year)	No	Yes	Yes	No	Yes	No	Yes	Yes
Total Construction Cost	$711M	$737M	$737M	$711M	$1,870M	$1,776M	$1,578M	$1,578M
Funding Gap	$199M	$92M	$88M	$193M	$1,074M	$1,299M	$781M	$782M

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Evaluation Process

- Each corridor was ranked into quintiles (top 20%, second 20%, third 20%, fourth 20%, and fifth 20%) for the three corridor evaluation metrics and financial screening
- The ranks were averaged to get a composite score. For example, if a project scored in the top 20% in each criteria then the composite ranking would be in the first quintile.

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Project Tiers

- Based on the mobility benefits, financial feasibility, and the refinement criteria, projects were placed into three tiers:
  - Tier 1 – near-term (within 5-10 years)
  - Tier 2 – mid-term (within 15 years)
  - Tier 3 – longer-term (within 25 years)

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Recommended Tier 1 Projects (5 to 10 Years)

Project	Measure M Funding	Funding Availability
I-405 from I-10 to US-101	$260,000,000	2024
I-105 from I-405 to I-605	$175,000,000	2027
I-405/I-110 Int. HOV Connect Ramps and Interchange Improvements	$250,000,000	2042
I-605/SR-60 Interchange HOV Direct Connectors	$130,000,000	2043
I-110 ExpressLane extension south to I-405/I-110 interchange	$51,500,000	2044
I-605 from I-10 to I-405	None	N/A
I-405 from I-10 to LA/Orange County line	None	N/A
I-10 from I-605 to LA/San Bernardino County line	None	N/A

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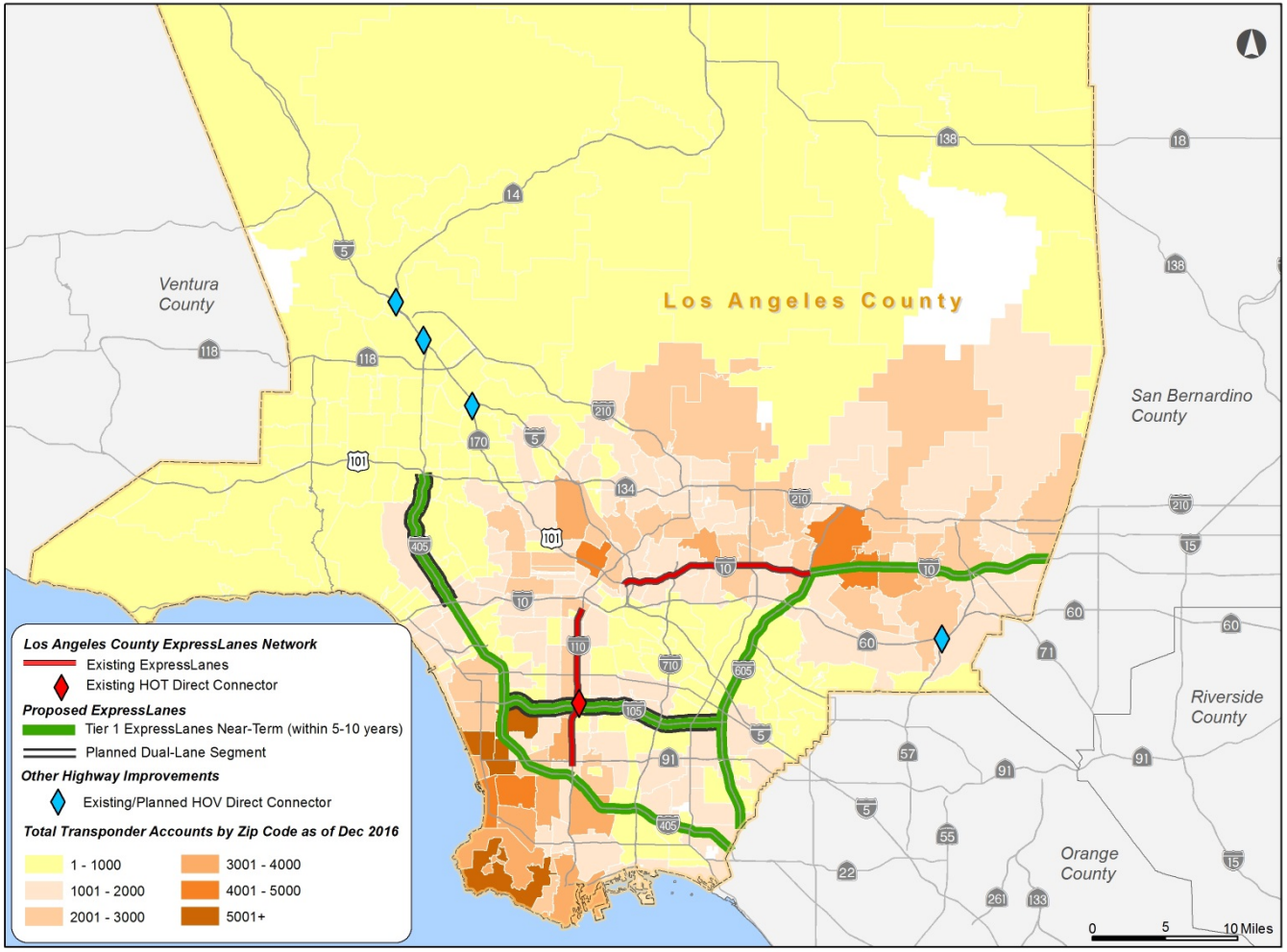
Recommended Tier 1 Projects (5 to 10 Years)



Recommended Tier 2 Projects (15 Years)

Project	Measure M Funding	Funding Availability
I-5 from I-605 to LA/Orange County line	None	N/A
I-5 from SR-134 to SR-170	None	N/A
SR-57 from SR-60 to LA/Orange County line	None	N/A
SR-91 from I-110 to LA/Orange County line	None	N/A
SR-134 from SR-170 to I-210	None	N/A
I-210 from SR-134 to LA/San Bernardino County line	None	N/A
I-405 from I-101 to I-5	None	N/A

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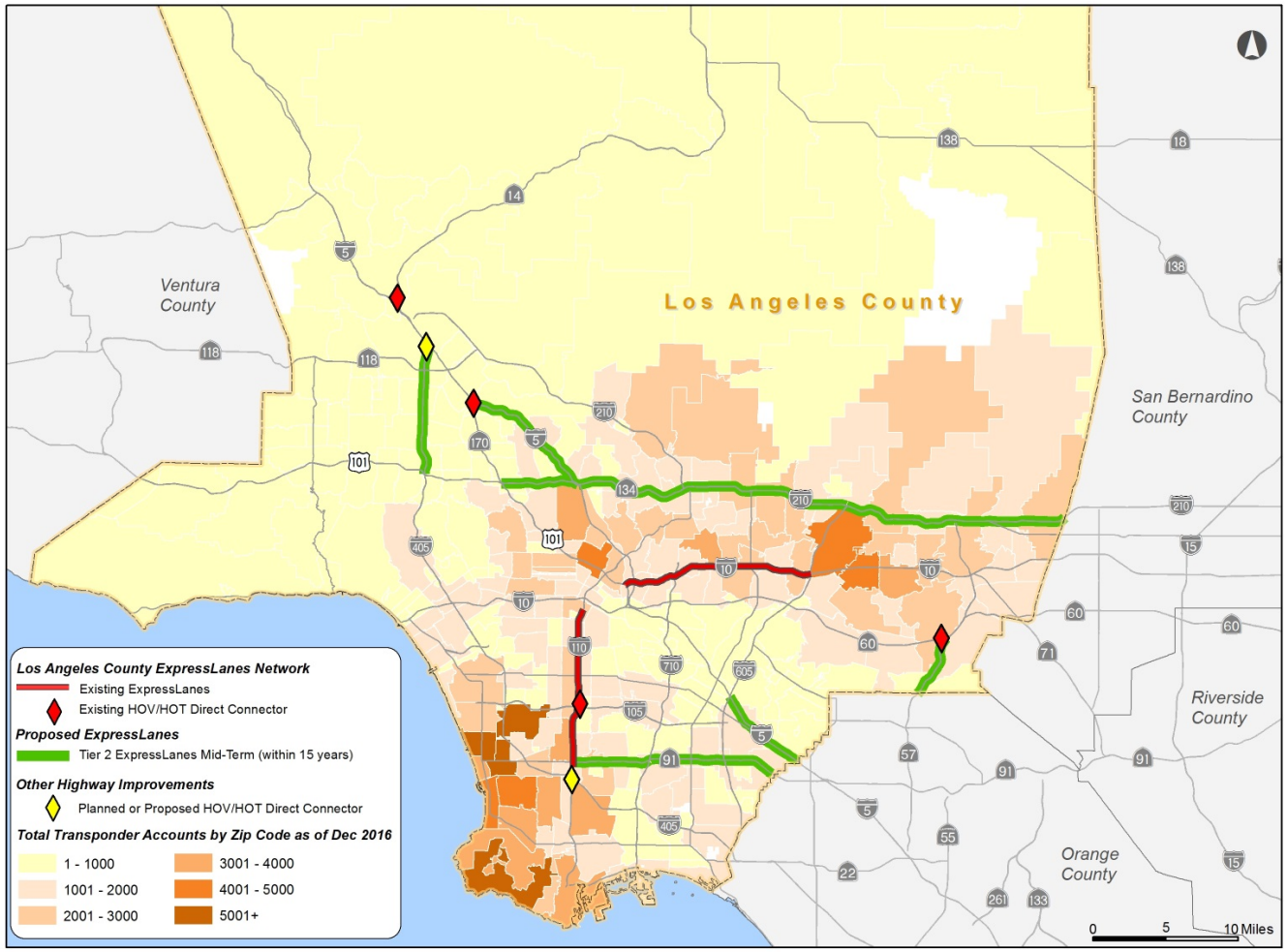
Recommended Tier 2 Projects (15 Years)



Recommended Tier 3 Projects (25+ Years)

Project	Measure M Funding	Funding Availability
I-5 from SR-170 to SR-14	None	N/A
SR-60 from I-605 to LA/San Bernardino County line	None	N/A
SR-170 from I-5 to SR-134	None	N/A
I-5 from SR-14 to Parker Road	None	N/A
SR-14 from I-5 to Avenue P8	None	N/A
SR-118 from I-5 to LA/Ventura County line	None	N/A

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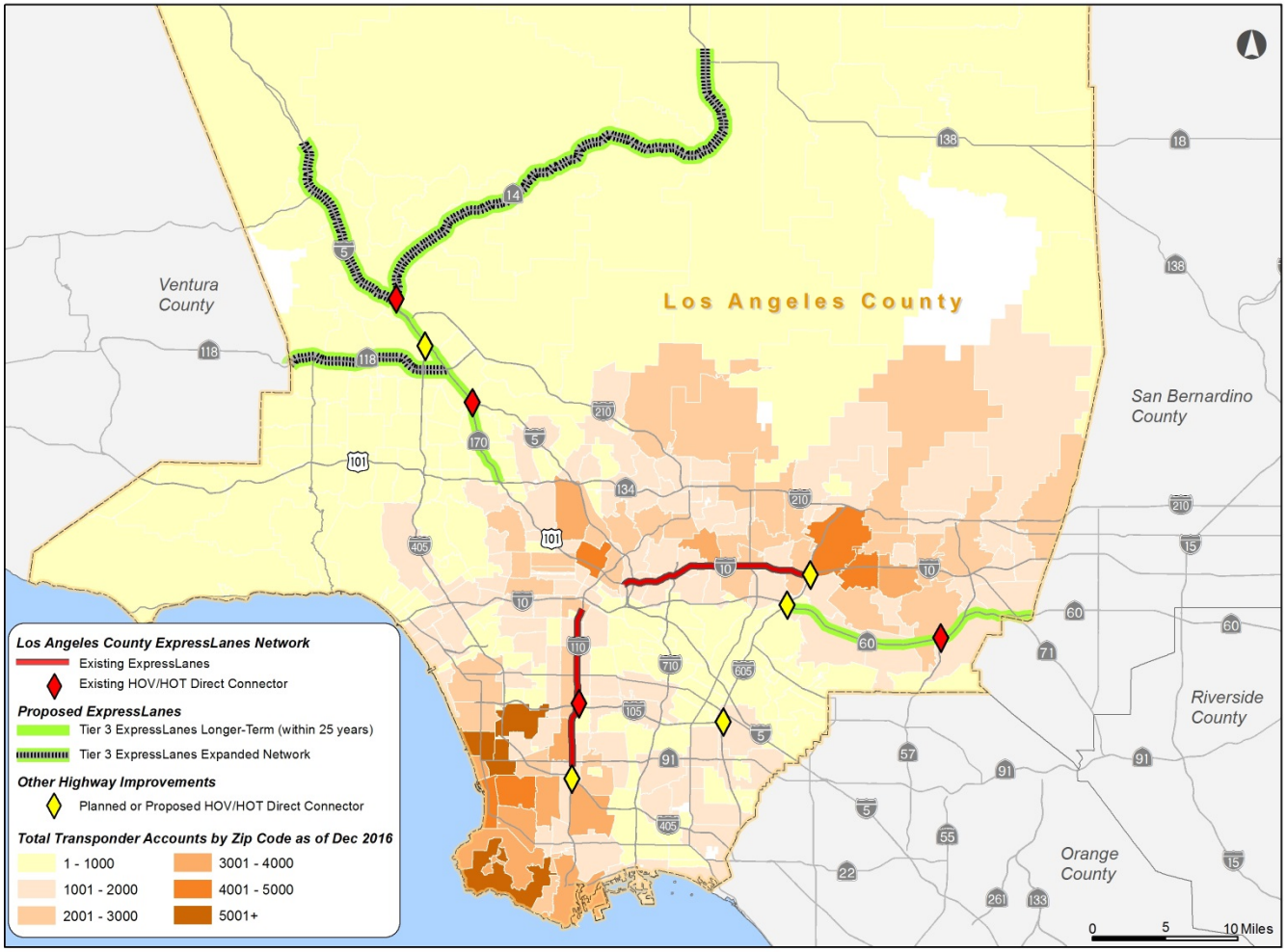
Recommended Tier 3 Projects (25+ Years)



Outreach and Coordination

- Strategic Plan Technical Advisory Committee
  - MPO (SCAG)
  - California Department of Transportation
- Metro committees (Technical Advisory Committee, Streets and Freeways Subcommittee)
- Sub-regional Councils of Government (COGs) Transportation Committees
- Strategic Plan consistent with SCAG Regional ExpressLanes Strategic Plan

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Current Status

- Studies underway/beginning for Tier 1 Projects:
  I-105 – Environmental Document, ConOps, T&R underway
- I-605 – Environmental Document, ConOps, T&R underway
- I-405 from US-101 to I-10 – Project Study Report to begin in 2018
- Tolling Authority- Submit CTC application for I-105 in 2018 and the remainder of the Tier 1 projects in 2019

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Lessons Learned

- To gain approval, important to emphasize mobility benefits and connectivity with a network approach, rather than just focusing on revenue generation
- Leverage the project tiers to obtain tolling authority for each tier, rather than project by project authority
- May also be useful for grant applications and other funding opportunities
- Strategic Plan identified funding gaps and analyzed various funding scenarios, but ultimately no financing plan was presented to the Board (5 projects have funds from local sales tax measure and the remainder of the plan is unfunded)
  - In retrospect, should have presented a financing plan
  - The Board later authorized a process to borrow revenues from each completed project to allow us to build out the network
- You can never run too many financing scenarios – so build this into your process and your budget

Metro

I-405 Express Toll Lanes

Tyler Patterson, Systems Manager

November 1, 2017

Roger Millar, Secretary of Transportation

Keith Metcalf, Deputy Secretary of Transportation

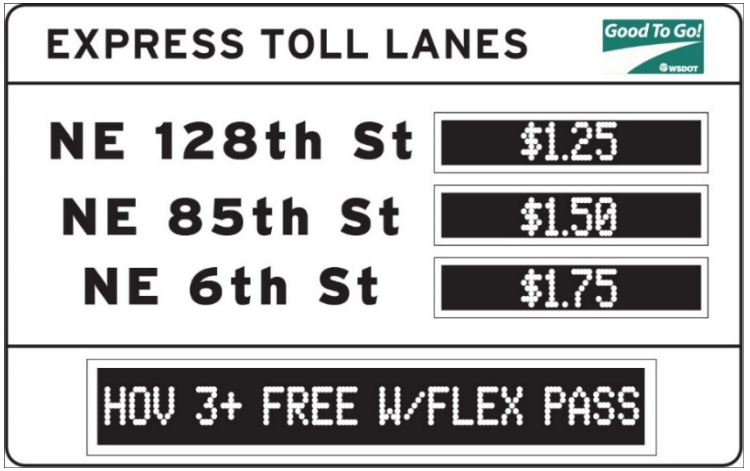
I-405 Express Toll Lanes

- **Opened Sept. 27, 2015**
- **15 miles of express toll lanes**
- **Operation hours:**
  - **Originally: 24/7**
  - **Adjusted 2016: 5 a.m. to 7 p.m. Mon – Fri**
- **Dynamic Toll Rates**
  - Minimum Toll Rate $ 0.75
  - Maximum Toll Rate $ 10.00
- **Carpool Policy**
  - 3+ carpools with Flex Pass exempt at all times
  - 2+ carpools with Flex Pass exempt except 5-9 a.m. and 3-7 p.m. on weekdays

I-405 Express Toll Lanes
Policy and Operational Changes

WSDOT introduced new tolling policies during launch.

- **3+ carpool during peak periods**
  Only 2+ occupancy required to use other HOV facilities in WA.
- **New passes**
  WSDOT introduced new Flex Pass that carpools must use to avoid paying a toll.
- **Trip-based toll system**
  First toll facility in WA to that priced tolls for multiple destination locations.
- **Access points**
  Vehicles can only enter and exit lanes at designated areas, unlike SR 167 HOT Lanes facility.



I-405 Express Toll Lanes

Difficult sign system integration

Challenges	Results
Difficulty integrating signs: New design required single controller to communicate with multiple signs. Design builder procured untested controller capable of controlling multiple signs.	Multiple documented issues with controller during maintenance testing and installation.
NTCIP specification interpretation: Toll lane vendor and sign manufacturer used different formats for sign information.	Difficulty coordinating technical troubleshooting, required daily staff call with vendors to resolve issues and track action items.
Lack of end-to-end signal testing: No integration testing with vendor prior to installation	Go-live date delayed due to integration issues

I-405 Express Toll Lanes

Traffic Management Center (TMC) involvement

- Funded toll liaison position to coordinate operations and monitoring activities
- Held response coordination workshops before go-live to:
  - ✓ Review standard operating procedures and scenarios
  - ✓ Clarify responsibilities
  - ✓ Delegate authority
  - ✓ Determine escalation and communications procedures
- Toll algorithm tuning coordination with TMC and Toll Division

I-405 Express Toll Lanes
Public Outreach

Outreach: grass roots and earned media

- ✓ 135 presentations and events reaching nearly 11,000
- ✓ 89 earned media stories

Paid media

- ✓ 230 million advertising impressions during 15-week media buy
- ✓ $1.2 million in total paid media added value in additional donated media

Social media

- ✓ Facebook reach: 216,924 users
- ✓ Twitter reach: 557,998 users
- ✓ YouTube: 104,000 total views on four animated videos
- ✓ WSDOT Blog: 29 blogs with 125,126 views

Website

- ✓ GoodToGo405.org campaign landing page and other informational pages: 1.8 million page views

Incentive programs for carpools and motorcyclists

- ✓ 33,871 free Flex Passes distributed through RideshareOnline.com
- ✓ 11,741 free motorcycle passes distributed

I-405 Express Toll Lanes
Scenario testing

Tabletop: Review disaster/emergency scenarios

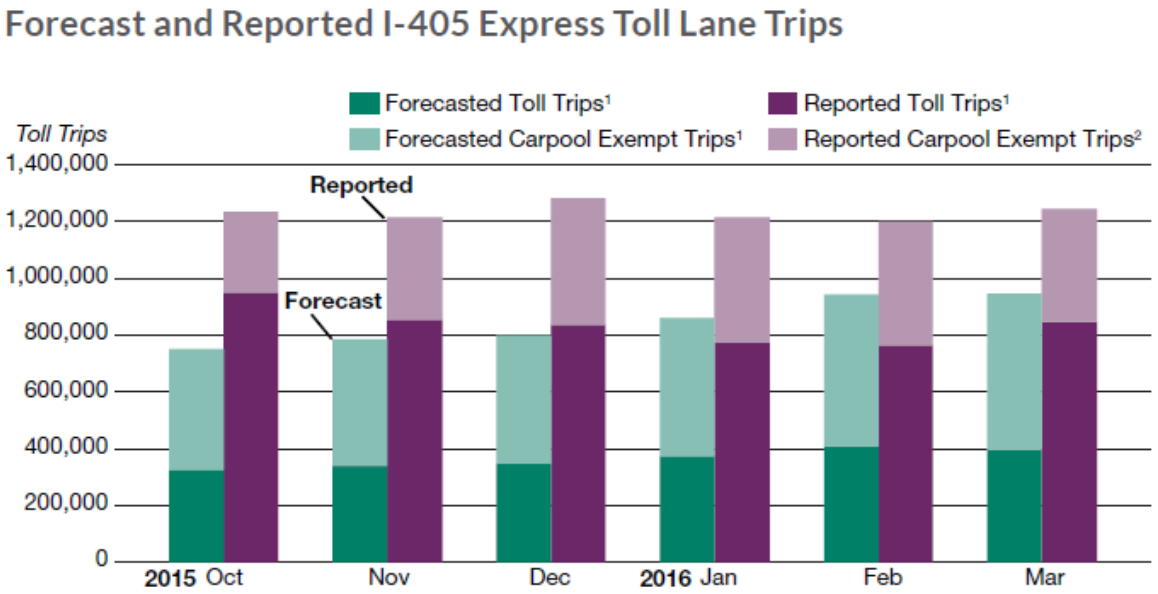
- Introduce stakeholders
- Communicate expectations

Lane vendor Roundtable: WSDOT and lane vendor maintenance staff reviewed maintenance and operations scenarios

- Clarify error or omissions in standard operating procedure
- Clarify maintenance responsibilities
- Discussed demarcation point for equipment maintenance by WSDOT vs. vendor

I-405 Express Toll Lanes
Traffic and revenue

During the first months of operation, I-405 express toll lane use was much higher than forecasted. Drivers adapted to system quickly and utilized it more than original projections had assumed.

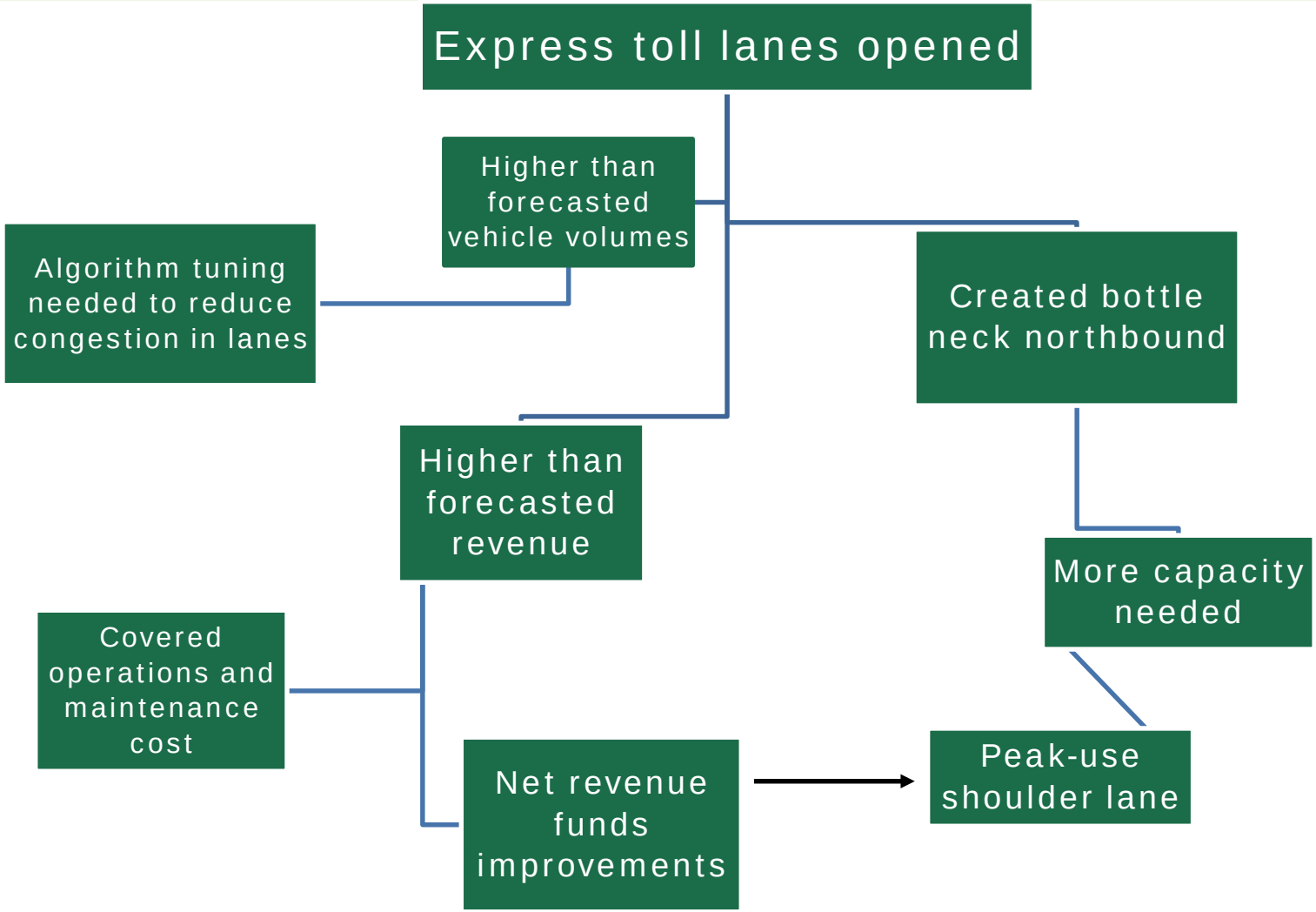


WSDOT conducted an initial study but did not conduct final study with revised assumptions, e.g. access location, 2/3+ carpool with updated operational hours, $10 vs. $15 max toll rate, etc.

Study was not accurate in predicting performance.

Revised T&R study for final assumptions would improve accuracy of traffic and revenue predictions.

I-405 Express Toll Lanes
Performance challenges



I-405 Express Toll Lanes
Peak-use shoulder lane

Problem

Change of capacity from to express toll lanes created bottleneck northbound in 3 lane section.

Solution

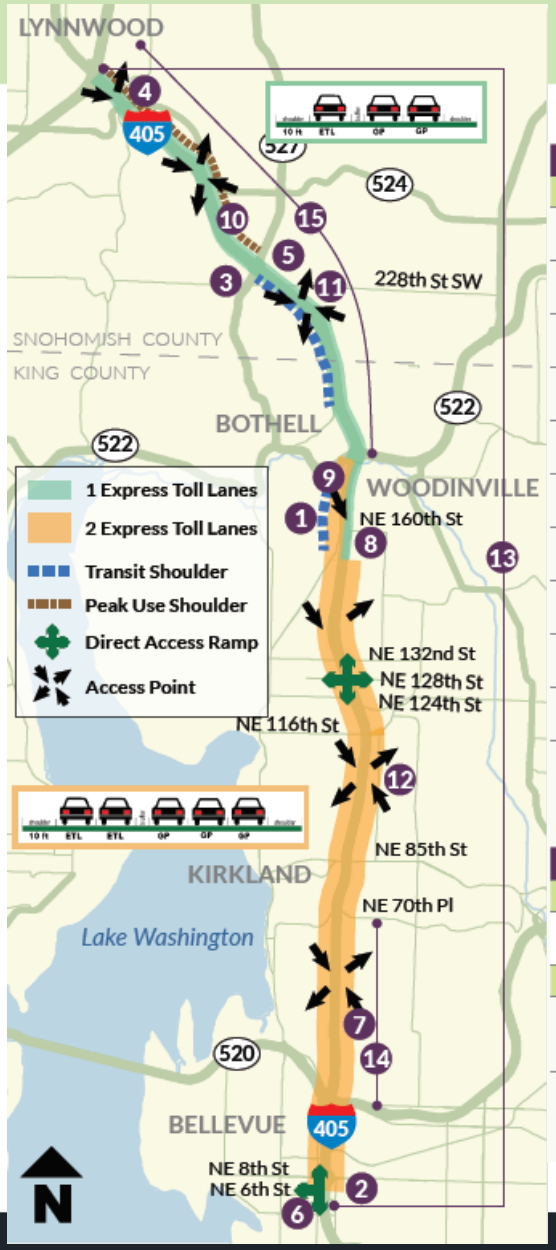
Peak-use shoulder lane project

- Convert right shoulder to general purpose lane
- Build new noise wall
- Improvements to express toll lanes signage and access
- Generally open during afternoon peak period

Results

- Reduced congestion
- Improved travel times
- Lower toll rates

I-405 Express Toll Lanes Improvements



COMPLETED ADJUSTMENTS	
Location	**Adjustment**
1 **SB I-405 at NE 160th St**	Added skip stripes to better define the start of second express toll lane and inside general purpose lane.
2 **NB I-405 at NE 6th St**	Added clarifying pavement markings to eliminate driver confusion and extended existing access point.
3 **SB I-405 at SR 527**	Lengthened access point to the north to allow drivers more time to merge into and out of the express toll lanes.
4 **NB I-405 at I-5**	Lengthened access point to allow drivers additional time to merge to I-5.
5 **NB I-405 access at SR 527**	Lengthened access point to allow drivers additional time to merge in and out of the express toll lanes.
6 **SB I-405 at NE 6th St**	Added pavement markings to clarify for drivers the exit to NE 6th St and which lane continues onto I-405 southbound.
7 **NB I-405 at SR 520**	Lengthened access point and changed from weave lane to skip stripe to provide more open access to the express toll lanes.
8 **NB at NE 160th St**	Added additional signage and lengthening access point to provide driver clarity and more time to merge to SR 522.
9 **SB SR 522 to NE 160th St**	Adjusted access to address demand during morning peak commute.
10 **NB I-405 between SR 527 and I-5**	Added a new peak-use shoulder lane, which opens the shoulder lane as a regular travel lane during times with heaviest traffic. Construction ($10 million) funded with I-405 express toll lane revenue.
11 **NB I-405 north of NE 195th St**	Added weave lane to access point for drivers to use in for transitioning to the general purpose lanes.
12 **NB at NE 85th St**	Adjusted the access length on two occasions to provide more open access to the express toll lane.

MONITORING	
Location	**Description of Monitoring Activity**
13 **Entire Corridor**	WSDOT continues to make changes to the algorithm which calculates toll rates to respond to the demand for the lanes
Location	**Location**
14 **NB I-405 between SR 520 and NE 70th Pl**	WSDOT is evaluating whether the northbound I-405 auxiliary lane is needed. Per the Legislative schedule, preliminary engineering is currently scheduled to begin in the 2017-19 biennium.
15 **NB and SB 3 lane section between SR 522 and I-5**	Evaluate options to address limited capacity in section of I-405 with single express toll lane. *Timeline:* Initial study began in spring 2016. The 2017-19 transportation budget includes $5 million to continue preliminary engineering.

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Consideration of a Systemwide Approach of the Application of Congestion Pricing Strategies

Federal Highway Administration

Why are States Considering a Systemwide Approach to Congestion Pricing

- **The first congestion pricing project opened in the United States on the SR 91 in Orange County, CA in 1995. Over time, as the strategy gained traction, States sought to develop a more strategic approach to planning for expansion of congestion pricing projects in their region.**

- **The North Central Texas Council of Governments (NCTCOG) conducted one of the sytemwide congestion pricing studies in the Dallas Fort Worth region. The regional study established criteria, policies, and procedures to identify potential candidates for short-term and long-term value pricing projects, and studied the applicability of value pricing concepts in existing and future corridors.**

- **Since that time, a number of State, regional and transportation authorities have conducted systemwide studies.**

States That Have Studied Systemwide Approach

Metropolitan Washington Council of Governments (MWCOG)

National Capitol Region Transportation Planning Board (TPB) evaluated a regional network of value priced lanes. The plan included four new high-occupancy toll (HOT) lanes along 15 miles of the Capital Beltway in Virginia, and a study of the conversion of existing HOV lanes into HOT lanes along 47 miles of the I-95/395 corridor in Virginia.

VDOT has successfully implemented projects on the Capital Beltway and I-95. MDOT created express lanes on I-95 MD 100. MDOT is also considering HOT lanes on I-270.

States That have a Studied Systemwide Approach to Congestion Pricing

San Francisco Bay Area

The Metropolitan Transportation Commission (MTC) conducted a regional HOT Network Study. MTC is now moving forward with an 800 mile Regional HOT network.

Washington State DOT

Washington State operates a 225 mile HOV lane system. 16 WSDOT, completed Express Lanes System Concept Study that considered a system-level program staging that could be applied to complete the evolution from HOV lanes to tolled express lanes. WSDOT evaluated conversion of the HOV and express lane system into a network of tolled express lanes that would continue to serve transit and carpools at no cost, while allowing paying customers to enter the lanes for trips where timely arrival is particularly important. The price would be set dynamically based on traffic conditions in order to maintain high throughput and reliable speeds.

States That have a Studied Systemwide Approach to Congestion Pricing

- **Florida**
  - **Florida's Turnpike Enterprise of the Florida Department of Transportation (FDOT) evaluated the potential for implementing congestion pricing along the Turnpike System. The Integrated Congestion Pricing Plan (ICPP) included three primary phases developed over several years to determine where, when, and how congestion pricing could be used on the Turnpike to improve mobility. The study also explored the opportunity to incorporate carpooling and transit services into the overall congestion pricing solution. Much of this effort focused on the large urban areas of the State that experience extended periods of congestion, including Southeast Florida, Tampa, and Orlando.**

Summary

- Conducting a systemwide congestion pricing evaluation has been a successful step towards many State DOTs implementing regional networks of priced managed lanes (also referred to as express toll lanes).

- While this webinar has included presentations about how two states developed a systemwide approach to implementing congestion pricing strategies, there are many examples of other states available as well.

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