Highway 169 Mobility Study

Metropolitan Council Transportation Committee

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Evaluating the potential for Bus Rapid Transit and MnPASS Express Lanes in the southwest Metro

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Scott

METROPOLITAN COUNCIL

Background Studies/Plans

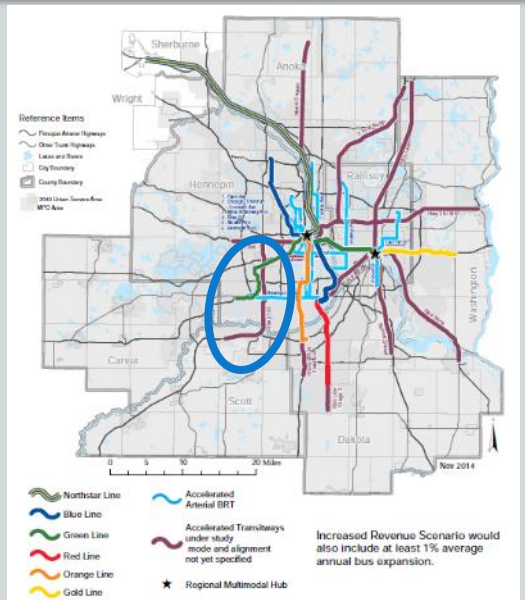
Highway Transitway Corridor Study (2014)

MnPASS System Study Phase 2 and Metropolitan Highway System Investment Study (2010)

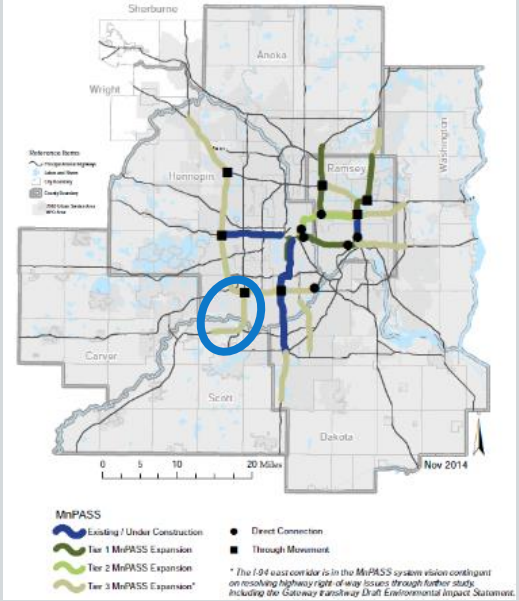
Scott County Transit Operations and Capital Plan (2013)

2040 Transportation Policy Plan (2015)

- Highway 169 in the Increased Revenue Scenario for MnPASS and BRT



2040 TPP Transitways



2040 TPP MnPASS

Study Purpose

Identify and evaluate cost-effective options for improving transit and reducing congestion on Highway 169

Options will include:

- Bus Rapid Transit (BRT)
- Coordinated MnPASS improvements
- Spot mobility improvements
- Other phased improvements

Collaborative effort between MnDOT, Scott County, and Metropolitan Council

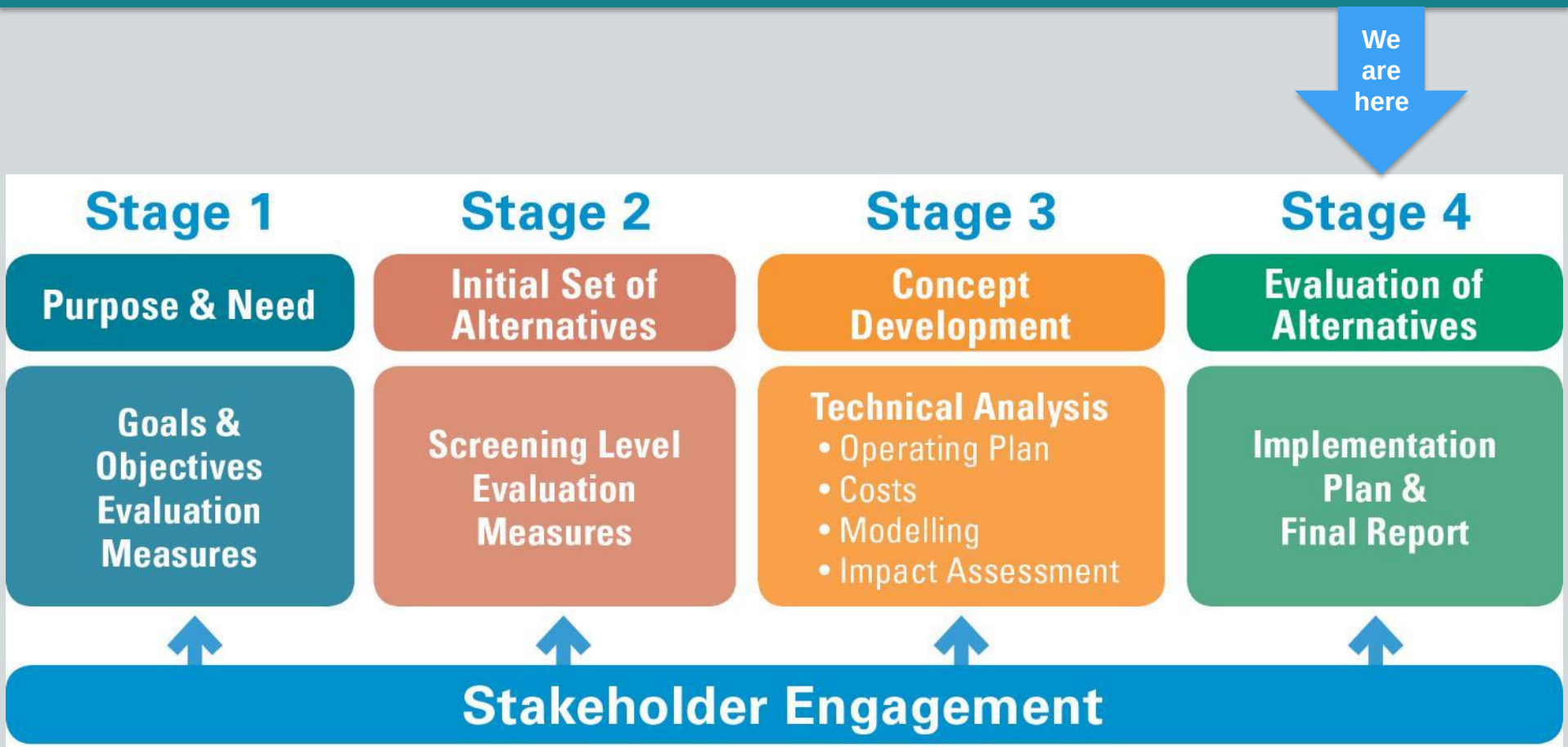
Funding partners also include Shakopee, Prior Lake, and Highway 169 Corridor Coalition

Study Outcome

Results of the study will be used to determine whether to:

- Advance recommended improvements into environmental/design phase;
- Add specific recommended improvements to already programmed projects; or
- Prepare recommended improvements should additional funding become available

Study Process



Study Decision-Making

Project Management Team

- Provide project oversight and overall work direction
- Council, MnDOT, Scott and Hennepin counties

Technical Advisory Committee

- Provide technical input on study work efforts
- Staff representing: State and federal agencies, counties, cities and transit providers along the corridor

Policy Advisory Committee

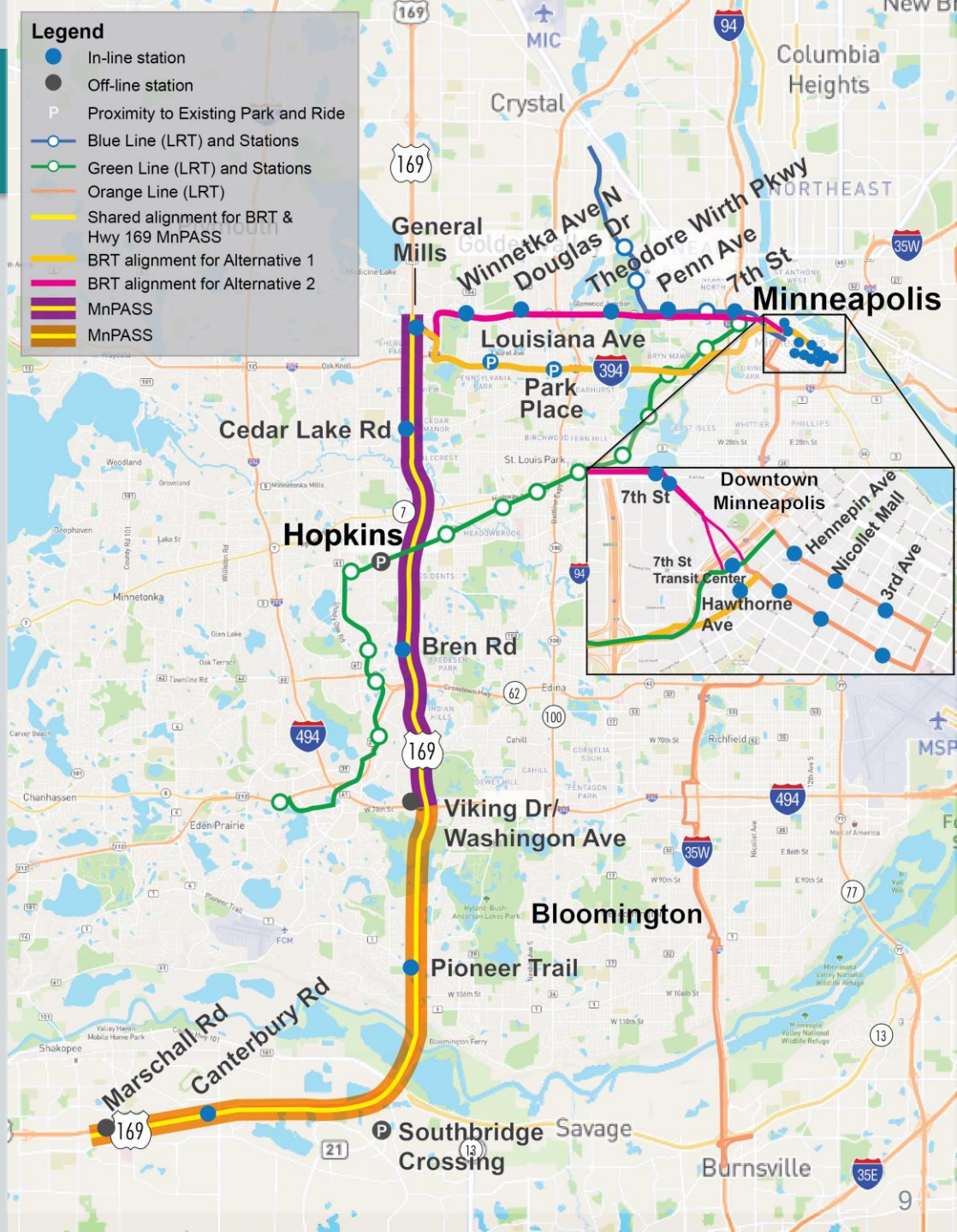
- Provide policy input and direction and make study recommendations
- Elected or appointed members representing: State and federal agencies, counties, cities, other key agencies & stakeholders

Project Goals

Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6
Improve Access	**Mobility**	**Ridership**	**Return on Investment**	**Supportive Conditions**	**Preserve Environment**
Current Population	Peak-Hour Congestion	BRT Ridership	Capital Costs	Multi-Modal Policies	Natural Environment
Current Employment	Delay Per User	Transit-Dependent Ridership	Operations and Maintenance Costs	Bicycle and Pedestrian Connections	Built Environment
Travel Time Reliability	Vehicle Hours Traveled	Reverse-Commute Ridership	Cost per Reliable Trip	Forecast Population	
Employment Centers	Crash Risk Factor Reduction	Off-Peak Ridership	Cost Effectiveness	Forecast Employment	
		SW Transit Routes Shift	Operations and Maintenance factors		
		Total Corridor Ridership			

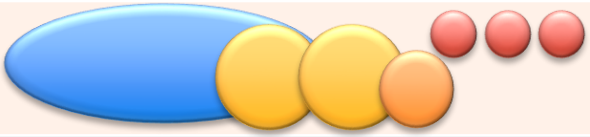
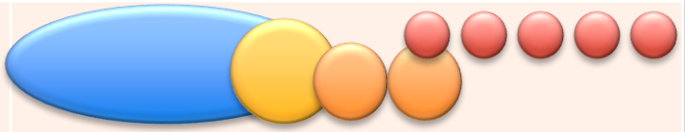
ALTERNATIVES

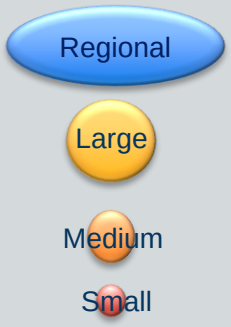
Alternatives



Goal 1 – Improve Access

Improve access to local and regional destinations, activity centers, and employment concentration

Measure	Alternative 1: I-394	Alternative 2: TH 55
Current Population	16,300	21,900
Current Employment	38,100	32,800
Travel Time Reliability (Peak Period Trips)	28,100	28,100
Employment Centers		



- Alternative 2 has 5,600 more residents and Alternative 1 has 5,300 more jobs within ½ mile of station areas
- Alternative 2 serves more employment centers

Goal 2 – Mobility

Provide better mobility in the corridor and options to lessen congestion

Measure	Alternative 1: I-394	Alternative 2: TH 55
Person throughput	12,300-13,400	12,400-13,600
Delay per user	0:30 to 6:10 (-60%, m:ss)	0:30 to 6:10 (-60%, m:ss)
Change in VHT	-5,500	-5,500
Reduction in crash risk	-44% congestion (mi-hr) -35% bottleneck conflicts	-44% congestion (mi-hr) -35% bottleneck conflicts

- MnPASS improvements are effective in achieving the mobility goal and associated measures:
  - Increased person throughput along corridor
  - Meaningful reductions in delay
  - Reduction in VHT (important for benefit-cost)
  - Improvement to bottlenecks and congestion

Goal 3 – Ridership

Improve the attractiveness of transit to serve more people in the corridor

Measure	Alternative 1: I-394	Alternative 2: TH 55
Station-to-Station BRT	7,400	6,600
Transit-Dependent	2,000	2,400
Reverse Commute	2,800	3,600
Off-Peak	3,100	2,700
Express Bus	+1,000	+1,000
Guideway Total	8,400	7,600
Express Bus Routes w/ potential to use 169	+2,500	+2,500

Goal 4 – Return on Investment

Provide a high long-term return on the transportation investment

Measure	Alternative 1: I-394	Alternative 2: TH 55
BRT Capital Cost	$67 million	$69.0 million
BRT Operating & Maint Costs	$16.5 million	$17.1 million
Annualized Capital + Operating Costs per Trip (BRT only)	$8.85	$10.25

- Cost Range for MnPASS: $329 million to $591 million
- Alternative 1 is slightly more cost effective for BRT

Goal 5 – Supportive Conditions

Prioritize service to existing transit-supportive areas and to those committed to implementing development patterns that support transit service

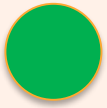
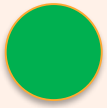
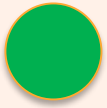
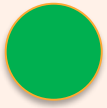
Measure	Alternative 1: I-394	Alternative 2: TH 55
Projected Population	26,300	30,400
Projected Employment	57,100	49,800
Transit-Supportive Plans & Policies	Somewhat supportive policies	Somewhat supportive policies
Bicycle/Pedestrian Policies & Connections	Supportive policies More difficult to implement overall	Slightly less supportive policies Existing infrastructure easier to supplement

Goal 6 – Preserve Environment

Preserve and enhance the quality of the built and natural environments

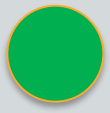
- Very few sites with hazardous material near the alternatives
- Alternative 2 has fewer locations that are sensitive to noise and vibration receptors
- No cultural or historic resources impacts expected for either alternative
- Few/no property acquisition impacts expected for both alternatives
- Alternative 2 serves greater concentrations of minority populations and low-income residents than Alternative 1

Results Summary

Goal	Alternative 1: I-394	Alternative 2: TH 55
1. Improve Access		
2. Mobility		
3. Ridership		
4. Return on Investment		
5. Supportive Conditions		
6. Preserve Environment		

 Does not satisfy goal

 Satisfies goal

 Best satisfies goal

Additional Analysis

- Ridership sensitivity tests
  - Allows us to test different variables to understand impact on ridership
  - Purpose is to refine alternatives to maximize ridership
- Refining concepts to reduce capital and operating costs
  - Remove low-performing, high-cost, or difficult to access stations
  - Reduce the peak frequency from 10 to 15 minutes

NEXT STEP: IMPLEMENTATION PLAN

Implementation Plan Development

1. Precisely Define the Vision and Optimized Scenario

Define the ultimate vision for the corridor, identify the optimized scenario, and note the additional components needed to realize the ultimate vision.

2. Prioritize Investments

Order preservation and mobility investments to optimize cost, timing, operational benefits, and construction impacts.

3. Identify Interim Steps

Consider funding mechanisms available to begin building towards the ultimate vision and identify interim steps that can be taken deploy portions of the ultimate vision that can improve mobility.

Staging of Service and Improvements

- Transit Service
  - Interim Service, building a market
  - Preliminary market tests (Shakopee to Green Line)
- Highway and Transit Infrastructure
  - Coordinate local improvements with planned/programmed projects
  - Promote local pedestrian and bicycle connections
  - Initiate engineering work on substantial improvements
  - Target gaps for transit advantages
- Cost Summary

QUESTIONS?

Project Contact

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