



CRITICAL CONNECTIONS INVESTMENT FOLIO

Twin Cities Mobility

Twin Cities Mobility is one of the ten investment categories in MnSHIP. MnSHIP is a fiscally constrained plan, meaning that it must balance the needs and risks of this category against those of the other investment categories. Each investment category has its own folio describing the trade-offs of different investment levels. Please see page 4 for a list of additional folios.

Why is Twin Cities Mobility important?

Roughly half of all roadway travel in Minnesota occurs within the Twin Cities metropolitan area. Meanwhile, the Twin Cities area was ranked the 7th most congested of 32 metropolitan areas of similar size in 2010, and 16th most congested of 101 metropolitan areas nationwide (measured using the ratio of peak time to free-flow travel time, 2011 Texas Transportation Institute Urban Mobility Report).

Managing congestion in the Twin Cities metropolitan area is important to the entire state of Minnesota as it impacts quality of life, safety conditions, air quality, regional connectivity, and economic competitiveness. Not only is congestion costly to people, freight, and transit traveling on MnDOT roads, the same effects can spill over to local and county roads, leading to greater wear-and-tear on vehicles and pavement, reduced fuel-efficiency and air quality, and slower travel times for all users. Effective congestion management can provide many benefits to those living in and traveling through the region and state.

How does MnDOT's approach to congestion management support the Minnesota GO Vision and the Statewide Multimodal Transportation Plan?

Investing in Twin Cities Mobility supports the guiding principles laid out in the 50-year vision for the state's transportation system, Minnesota GO. These include:

- Emphasizing reliable and predictable options;
- Ensuring regional connections; and
- Leveraging public investments to achieve multiple purposes.

Building upon these principles, investment in Twin Cities Mobility strengthens multiple strategies identified in the Statewide Multimodal Transportation Plan (SMTP), notably:

- Apply multimodal solutions that ensure a high return-on-investment, given constrained resources, and that complement the unique social, natural and economic features of Minnesota;
- Collaborate with partners to provide greater accessibility and

more efficient movement of goods and people throughout the Twin Cities metropolitan area; and

- Work together to support and implement both system-wide and project-specific approaches to avoid, minimize, and mitigate adverse impacts to Minnesota's natural and cultural resources.

What indicators does MnDOT use to track Twin Cities Mobility?

MnDOT has been collecting and processing congestion data since 1993. MnDOT and its partners use a variety of sources, including electronic instrumentation systems, probe vehicles, and field observations to collect data on freeway congestion throughout the Twin Cities.

MnDOT indicators used to track Twin Cities congestion include the percent of urban freeway miles that are flowing below 45 miles per hour during weekday peak periods (5 to 10 a.m.; 2 to 7 p.m.). A similar indicator is being developed for non-freeway arterials. MAP-21 may require MnDOT to develop different or additional mobility indicators.

How is MnDOT performing with respect to Twin Cities Mobility?

Over the past ten years, an average of 19.5% of freeways were congested during peak periods. Today, approximately 21% of Twin Cities freeways are congested.



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What are we currently spending on Twin Cities Mobility?

Based on the Metro District's current fiscally constrained plan, MnDOT is projected to spend an average of \$50 million annually Twin Cities Mobility (see **Performance Level 1/Approach B** in the table below). Despite this investment, congestion is likely to increase and reliability is likely to decrease throughout the Twin Cities.

How much would it cost to "fix" congestion in the region?

A 2007 study by MnDOT and Metropolitan Council estimated that it would cost over \$40 billion in highway investments to "fix" congestion by 2030. The table below provides a range of investment levels that could more realistically be pursued to mitigate congestion over the next 20 years.

Tips for Using This Table

Performance Levels

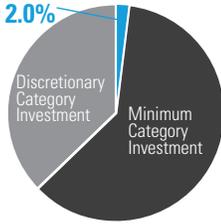
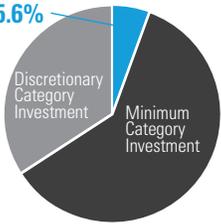
- **Performance Level 0 (or PL 0)** represents a strategy in which Twin Cities Mobility would receive less than current funding. PL 0 corresponds to the most extreme risk level MnDOT would potentially consider.
- MnDOT's current spending in Twin Cities Mobility corresponds to **PL 1**.
- PLs for Twin Cities Mobility are independent of other investment categories, as listed on page 4.

Investment Levels

- The **pie charts** represent the distribution of MnSHIP's total planned investment (\$14.3 billion) at each PL.
- **Minimum Category Investment** is the amount required to invest at PL 0 in every other category.
- **Discretionary Category Investment** is the remaining revenue available, if any, for additional investment beyond the Minimum Category Investment for all categories in MnSHIP.

Outcomes

- For PLs 0, 1, 2, and 3, congestion and reliability conditions are likely to worsen. At **PL 4**, congestion would not increase as quickly and reliability would not degrade as much.
- See page 4 for more information on **spot mobility improvements, MnPASS, ATDM, and the Hwy 610** project.

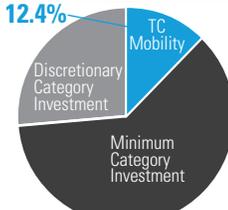
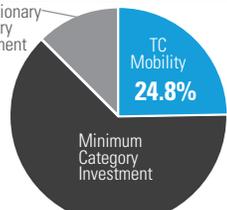
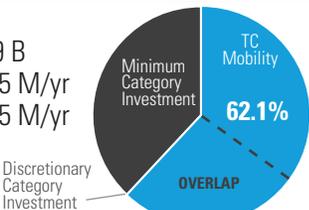
PERFORMANCE LEVEL OPTIONS		
Twin Cities Mobility		
Overarching Goal: Optimize the capacity of the existing system and provide reliable travel alternatives to move people and freight as effectively and as efficiently as possible		
	Performance Level 0 <i>Lowest cost, greatest risk</i>	Performance Level 1 <i>Low cost, high risk</i>
Investment Approach <i>(Scenario Planning Folio)</i>	Approach A	Approach B (approximate)
Investment Level <i>Total</i> <i>Years 5-10 (2017-2022)</i> <i>Years 11-20 (2023-2032)</i>	TC Mobility 2.0% \$400 M \$25 M/yr \$25 M/yr 	TC Mobility 5.6% \$800 M \$50 M/yr \$50 M/yr 
Investment Description	Reduce current investment by 50%	Maintain current investment
Outcomes <i>To what extent would MnDOT be able to mitigate congestion in the Twin Cities area over the next twenty years?</i>	<ul style="list-style-type: none"> • 1+ spot mobility improvements per year (\$15 M/yr in benefits) • Add MnPASS lanes to I-35E • Hwy 610 to I-94 not completed • No interchanges 	<ul style="list-style-type: none"> • 2+ spot mobility improvements per year (\$24 M/yr in benefits) • Add MnPASS lanes to I-35E + 1 other corridor • Hwy 610 to I-94 completed • No interchanges
Risks <i>H = High Risk</i> <i>M = Medium Risk</i> <i>L = Low Risk</i>	<ul style="list-style-type: none"> (H) Travel demand increases congestion (H) Reliable transit/ridesharing options not developed (M) Inability to attract/retain people and businesses (H) Unpredictable travel times (H) Limited improvements to non-motorized travel 	<ul style="list-style-type: none"> (H) Travel demand increases congestion (H) Reliable transit/ridesharing options not developed (M) Inability to attract/retain people and businesses (H) Unpredictable travel times (M) Limited improvements to non-motorized travel
<i>MR = Managed Risk</i> <i>RR = Remaining Risk</i>		
Risk Management Strategies	<ul style="list-style-type: none"> • Invest primarily in projects that address multiple objectives to maximize return on investment 	<ul style="list-style-type: none"> • Invest in projects that address multiple objectives • Complete missing elements of the highway system • Construct a managed lane in two high-priority corridors to provide reliable transit and ride-sharing options

What are the risks to be addressed in the Twin Cities Mobility investment?

Generally, the more MnDOT invests in Twin Cities Mobility, the more we are able to reduce these key risks for automobile users, transit users, passengers, freight, and other system users:

- Increase in travel demand creates longer periods of congestion/less predictable travel times;

- Congestion could hinder the development of reliable, efficient transit and ridesharing services;
- Congestion, less reliable routes, and a lack of options compared to peer regions could limit the state's ability to compete in attracting and retaining people and businesses;
- Recurring incidents lead to unreliable travel times; and
- Lack of highway improvements limits non-motorized travel and fails to remove barriers to accessibility.

PERFORMANCE LEVEL OPTIONS			
Twin Cities Mobility			
Performance Objectives: Provide an acceptable level of delay; increase people-moving capacity (throughput); provide reliable alternatives to congested travel; maintain travel time index better than peer region average			
	Performance Level 2 <i>Moderate cost, moderate risk</i>	Performance Level 3 <i>Greater cost, low risk</i>	Performance Level 4 <i>Greatest cost, lowest risk</i>
Investment Approach <i>(Scenario Planning Folio)</i>	Approach C	PL does not correspond with an Investment Approach	<i>PL is not a feasible investment option - exceeds revenue</i>
Investment Level <i>Total</i> Years 5-10 (2017-2022) Years 11-20 (2023-2032)	\$1.8 B \$110 M/yr \$110 M/yr 	\$3.6 B \$225 M/yr \$225 M/yr 	\$8.9 B \$555 M/yr \$555 M/yr 
Investment Description	More than 2x current investment	More than 4x current investment	More than 10x current investment
Outcomes <i>To what extent would MnDOT be able to mitigate congestion in the Twin Cities area over the next twenty years?</i>	<ul style="list-style-type: none"> • 5+ spot mobility improvements per year (\$48 M/yr in benefits) • Add MnPASS lanes to I-35E, I-94, I-35W, Hwy 36 • Hwy 610 to I-94 completed • 2-3 interchanges constructed/reconstructed 	<ul style="list-style-type: none"> • 11+ spot mobility improvements per year (\$100 M/yr in benefits) • Add MnPASS lanes to I-35E, I-94, I-35W, Hwy 36 • Hwy 610 to I-94 completed • 4-6 interchanges constructed/reconstructed 	<ul style="list-style-type: none"> • 11+ spot mobility improvements per year (\$100 M/yr in benefits) • Add MnPASS lanes to I-35E, I-94, I-35W, Hwy 36, + all Tier 3 MnPASS corridors • Hwy 610 to I-94 completed • 40+ interchanges constructed/reconstructed
Risks <i>H = High Risk</i> <i>M = Medium Risk</i> <i>L = Low Risk</i>	<ul style="list-style-type: none"> (H) Travel demand increases congestion (M) Reliable transit/ridesharing options not developed (L) Inability to attract/retain people and businesses (H) Unpredictable travel times (L) Limited improvements to non-motorized travel 	<ul style="list-style-type: none"> (H) Travel demand increases congestion (L) Reliable transit/ridesharing options not developed (L) Inability to attract/retain people and businesses (M) Unpredictable travel times (L) Limited improvements to non-motorized travel 	<ul style="list-style-type: none"> (M) Travel demand increases congestion (L) Reliable transit/ridesharing options not developed (L) Inability to attract/retain people and businesses (L) Unpredictable travel times (L) Limited improvements to non-motorized travel
<i>MR = Managed Risk</i> <i>RR = Remaining Risk</i>			
Risk Management Strategies	<ul style="list-style-type: none"> • Invest in projects that address multiple objectives • Construct a managed lane in four priority corridors to provide reliable transit and ride-sharing options • Allow for more predictable travel times through strategic investment in 2-3 interchanges 	<ul style="list-style-type: none"> • Invest in projects that address multiple objectives • Complete MnPASS vision by constructing managed lanes in all priority corridors • Allow for more predictable travel times through strategic investment in 4-6 interchanges 	<ul style="list-style-type: none"> • Complete MnPASS vision by constructing managed lanes in all priority corridors • Meet all system interchange needs

What is MnDOT currently doing to manage congestion?

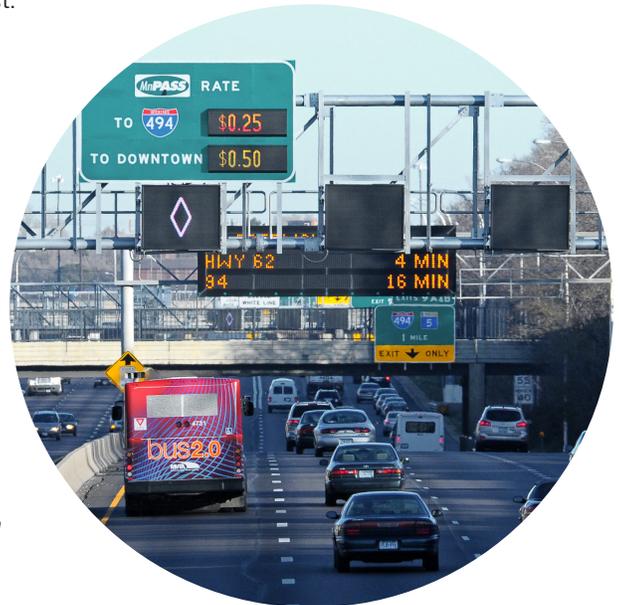
While it is not realistic to eliminate congestion altogether, MnDOT aims to use available revenue sources to slow the growth of congestion and to provide alternative travel options through the region.

MnDOT's Metro District completed an update to its 20-year Highway Investment Plan in 2011 to coincide with the Twin Cities Metropolitan Area's Transportation Policy Plan update. Both plans emphasize innovation, technology, and multimodal options as important congestion management strategies. They aim to address regional mobility issues through Active Traffic and Demand Management (ATDM), "lower cost, high benefit" improvements, strategic capacity enhancements, transit, and alternative mode choice. These system-wide strategies include implementation of:

- **Active Traffic and Demand Management (ATDM)** — ATDM applications help to manage some of the effects of congestion, such as increasing reliability and reducing the number of incidents. Examples: traffic cameras, ramp meters, and changeable message signs that recommend speeds or alert freeway users to incidents ahead.
- **"Lower cost, high benefit" improvements** — MnDOT can apply "lower cost, high benefit" projects to improve traffic flow and provide bottleneck relief at spot locations, called spot mobility locations. Examples include addressing safety hazards, improving geometric design, and constructing additional lanes to ease merging and exiting freeway traffic.

MnPASS is an example of a priced managed lane. The number of managed lanes in the metropolitan area is expected to increase over time.

- **Managed lanes** — Priced managed lanes provide a predictable, congestion-free travel option for those who are willing to pay, who ride transit, or who ride in carpools. **MnPASS** (www.mnpass.org) is an example of a Twin Cities program that gives solo drivers the option to buy their way into managed lanes as long as the level of service does not deteriorate for transit. MnDOT currently operates two MnPASS express lanes on I-394 and I-35W. The number of managed lanes in the metropolitan area are expected to increase over time.
- **Strategic Capacity enhancements** — Strategic capacity enhancements are projects which add general purpose lanes rather than priced managed lanes. These projects are often implemented to extend existing roads or to complete unfinished segments of the metropolitan area highway system. MnDOT, the Metropolitan Council, and their partners identify strategic capacity improvements that will support the economy and planned growth of the region. The unfinished connection between **Trunk Highway 610** and I-94 in Maple Grove is an example of a high-priority strategic capacity enhancement project.



Look for these additional folios!

Overview + Background

- What is MnSHIP?
- **Investment Category Folios**
 - Pavement
 - Bridge Condition
 - Roadside Infrastructure Condition
 - Traveler Safety
 - Interregional Corridor Mobility
 - Bicycle Infrastructure
 - Accessible Pedestrian Infrastructure
 - Regional + Community Improvement Priorities
 - Project Support
- **Scenario Planning**
 - MnSHIP Investment Approaches

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