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# 10-Year Capital Highway Investment Plan 2016 - 2025



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# PURPOSE OF 10-YEAR CAPITAL HIGHWAY INVESTMENT PLAN

MnDOT completed its 20-Year State Highway Investment Plan ([MnSHIP](#)) in December 2013. MnSHIP guides investments on Minnesota's 12,000 miles of state highways. The 10-Year Capital Highway Investment Plan (CHIP) is updated each year to communicate MnDOT's proposed capital investments for the next ten years; it serves as an annual check-in between the 4-year MnSHIP plan update cycle. The primary objectives of the CHIP are to:

- Detail MnDOT capital investments over the next ten years on the state highway network;
- Compare planned and programmed projects with the investment priorities established in MnSHIP, and explain any change in direction or outcomes;
- Allow districts to coordinate with local units of government on future investment.

The CHIP allows MnDOT to be transparent with its proposed capital investment and decision-making process. In addition, it provides the opportunity to track investments compared to the investment guidance established in MnSHIP, ensuring accountability.

Each year MnDOT districts receive investment guidance based on the current MnSHIP; the districts develop their CHIP in accordance with that guidance. The District CHIPs are included in this document to form MnDOT's 10-Year Capital Highway Investment Plan, 2016-2025.

Districts pay for projects through two programs: **District Risk Management Program (DRMP)** and the **Statewide Performance Program (SPP)**. The SPP is designated for projects on the National Highway System (NHS) only, while the DRMP is used to fund projects that are on the non-NHS system. The districts have more flexibility to set priorities for non-NHS pavement projects provided that the state collectively meets the **GASB 34** threshold.

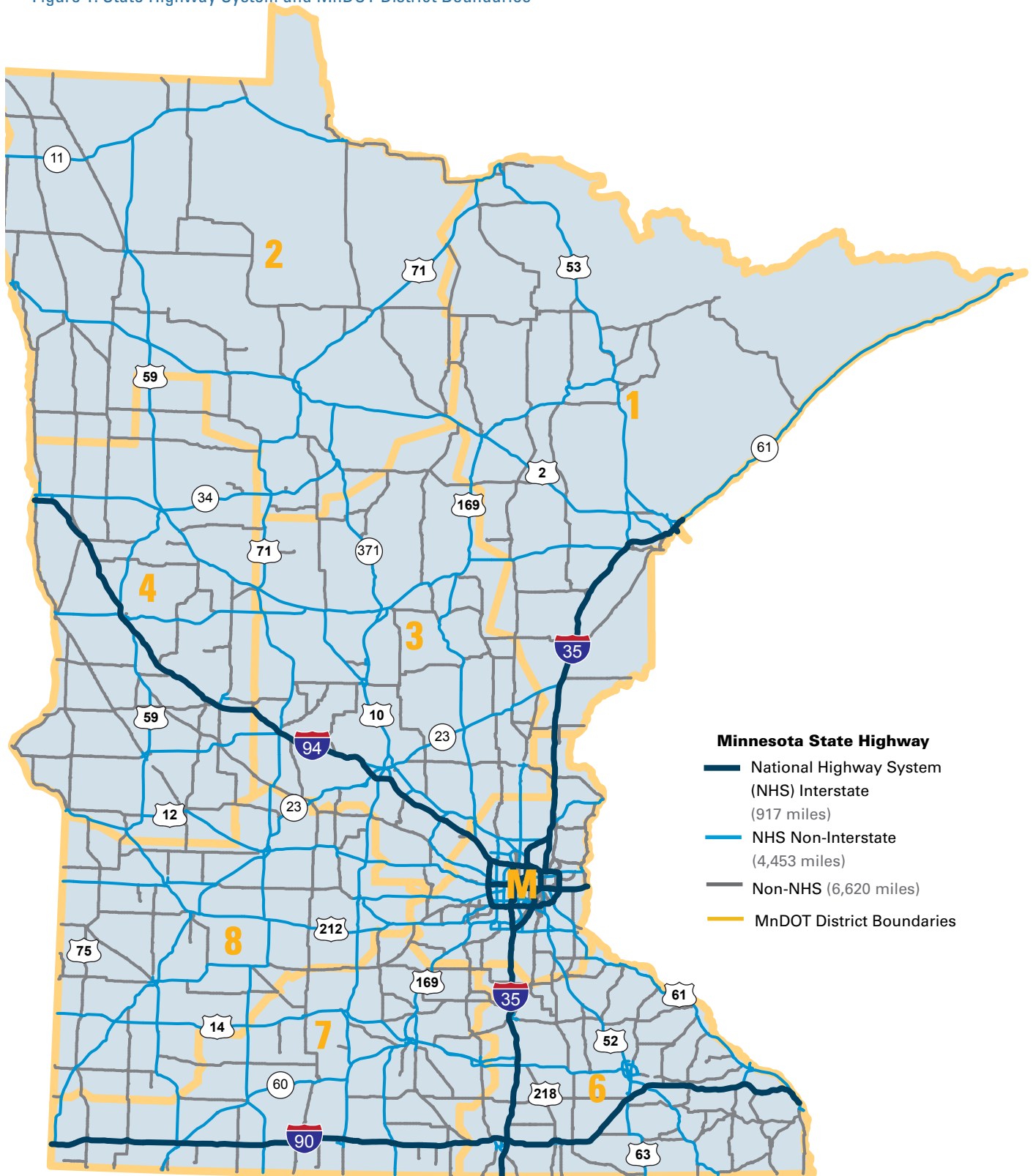
## Changes in Investment Plan

The document title has changed from The 10 year Work Plan to the Capital Highway Investment Plan to reflect that the document outlines capital highway investments only, and does not include operational activities. A major change in investment guidance since the 2013 MnSHIP includes the creation of Corridors of Commerce, passed by the state legislature, which provided \$300 million in bonding (2013 Session Law, Chapter 117). In 2014, the legislature provided an additional \$31.5 million. From this funding, \$6.5 million was to be dedicated strictly to greater Minnesota projects in fiscal year 2014, while the remaining

MnSHIP is MnDOT's vehicle for deciding and communicating capital investment priorities for the state highway system. It is updated every four years.

Each year MnDOT staff develops investment guidance to ensure that collectively MnDOT is achieving the outcomes established in its highway investment document, MnSHIP.

Figure 1: State Highway System and MnDOT District Boundaries



\$25 million is available for projects statewide in fiscal year 2015. In the absence of any new, non-bond revenue, the bonds issued as part of Corridors of Commerce will be repaid, with interest, from available revenue. This revenue was previously considered part of the revenue projections in MnSHIP and statewide outcomes were projected given those resources.

MnDOT solicited projects and selected eight projects for funding, with construction occurring from 2014 to 2016 (**Figure 2**). In 2014, two additional rounds of projects were funded totalling \$31.5 million. For more information, visit <http://www.dot.state.mn.us/corridorsofcommerce/>.

Figure 2: Corridors of Commerce Projects, Funded by FY 2014 and 2015 Legislation

Route	Project	Cost Estimate (millions)	FY Legislation
US 14	Purchase right-of-way for expansion Owatonna to Dodge Center	\$7.3	2015
I-94	Design for lane addition St. Michael to Albertville	\$1.4	2015
MN 34	Mill and overlay Detroit Lakes to CR 29	\$1.8	2015
MN 65	Design work for bridge deck replacement	\$1	2015
I-35W	Design work for Minnesota River crossing	\$5.5	2015
I-94	Design work between Minneapolis and St. Paul	\$2	2015
US 169	Design work bridge replacement at Nine Mile Creek	\$1.5	2015
I-35W	Design work for MnPASS system	\$1.1	2015

## Description of Investment Categories

MnDOT invests in the state highway system through various types of capital projects. Some projects add to or enhance the condition of existing infrastructure, whereas others add new infrastructure to the system. MnDOT's capital investments on the state highway system are separated into five major investment areas; Asset Management, Traveler Safety, Critical Connections, RCIP's and Project Support, and 10 distinct categories, as illustrated in **Figure 3**. These investment categories are the basis by which MnDOT tracks and reports investments for the 10-Year Capital Highway Investment Plan.

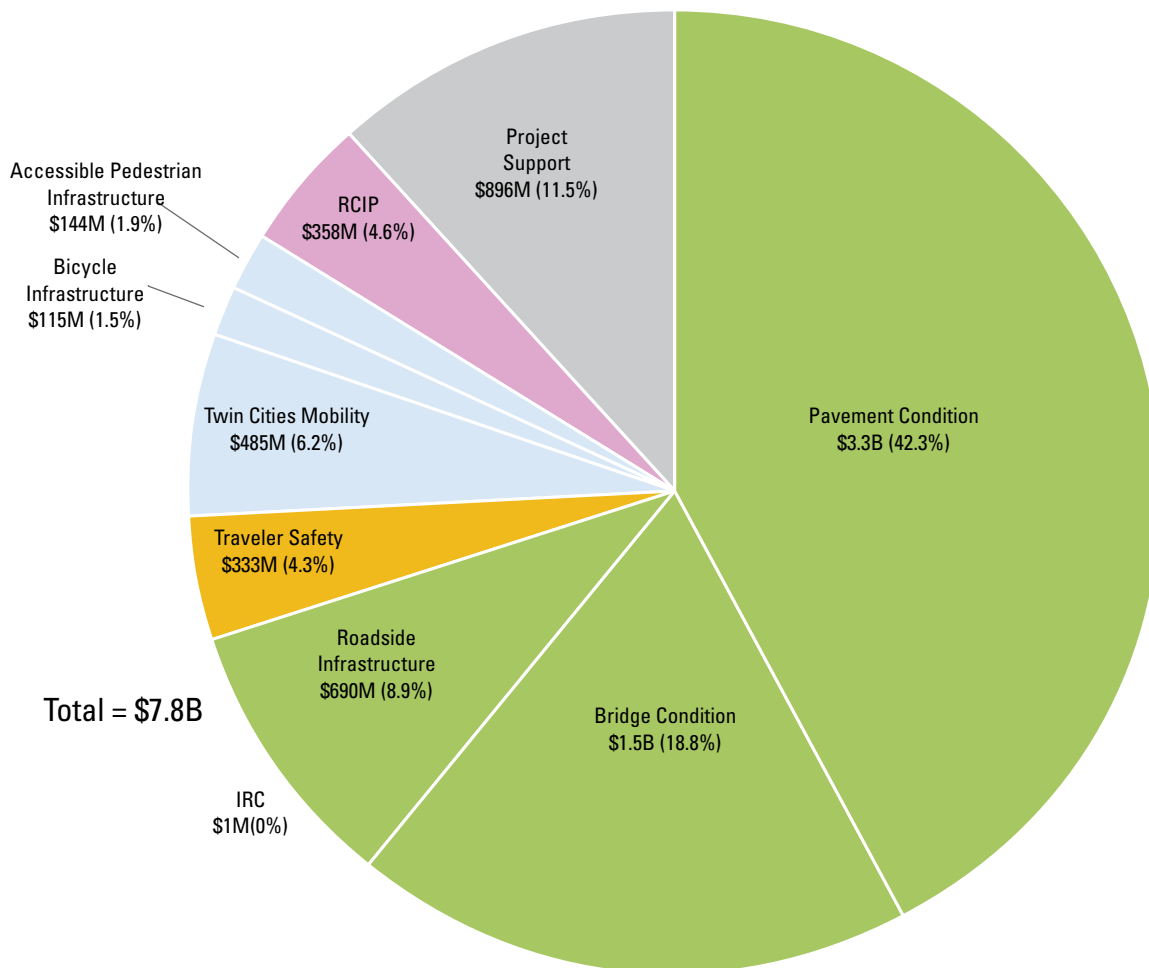
Investment Category	Category Description
<b>Pavement Condition</b>	Projects in this category include overlays, mill and overlays, full-depth reclamations, and reconstructions of existing state highway pavement.
<b>Bridge Condition</b>	Bridge Condition investments include replacements, rehabilitation, and painting. The Bridge Condition category does not include supporting elements for bridges, such as signs, pavement markings, or lighting.
<b>Roadside Infrastructure Condition</b>	Road side Infrastructure Condition elements include drainage and culverts, traffic signals, signs, lighting, retaining walls, fencing, noise walls, guardrails, overhead structures, rest areas, Intelligent Transportation Systems (ITS), and pavement markings.
<b>Traveler Safety</b>	<p>MnDOT currently uses a combination of three types of safety investments in its effort to improve safety and reduce the number of annual fatalities and serious injuries on Minnesota roads:</p> <ul style="list-style-type: none"> <li>• Proactive lower cost, high-benefit safety features</li> <li>• Sustained crash locations treatments</li> <li>• The <a href="#">Toward Zero Deaths (TZD)</a> initiative</li> </ul>
<b>Twin Cities Mobility</b>	<p>MnDOT pursues the following strategies to address regional mobility issues in the Twin Cities metro area:</p> <ul style="list-style-type: none"> <li>• <i>Active Traffic Management (ATM)</i>. Operational improvements to help manage the effects of congestion, which include variable message signs (traveler information systems), freeway ramp metering, dynamic signing, dynamic shoulder lanes, reversible lanes, dynamic speed signs, and lane specific signaling.</li> <li>• <i>Spot mobility improvements</i>. Lower cost, high-benefit projects that improve traffic flow and provide bottleneck relief at spot locations. These projects include freeway and intersection geometric design changes, short auxiliary lane additions, and traffic signal modifications to ease merging and exiting traffic.</li> <li>• <i>Priced managed lanes</i>. Priced managed lane projects that provide a predictable, congestion-free travel option for transit users, those who ride in carpools, or those who are willing to pay. In the Twin Cities, this system is called <a href="#">MnPASS</a>, which currently operates on I-394 and I-35W.</li> <li>• <i>Strategic capacity enhancements</i>. Projects in the form of new interchanges, non-priced managed lanes, and limited general-purpose lanes that may be needed to address corridor congestion and/or provide lane continuity for existing facility or to complete an unfinished segment of the Metropolitan Highway System.</li> </ul>
<b>IRC Mobility</b>	Minnesota's IRC system is a subset of the NHS, connecting the largest regional trade centers in Minnesota with each other, neighboring states, and Canada. This system consists of Greater Minnesota's most heavily traveled roads, accounting for only 2.5 percent (3,000 miles) of the state highway system, yet carrying about 30 percent of all statewide travel. Typical improvements on these corridors include low-cost solutions, such as intersection improvements, as well as major projects, such as roadway capacity improvements.
<b>Bicycle Infrastructure</b>	MnDOT typically constructs bicycle improvements concurrently with pavement and bridge projects, but also implements some stand-alone projects.



Investment Category	Category Description
<b>Accessible Pedestrian Infrastructure</b>	Most pedestrian improvements are implemented as part of a pavement or bridge project. Stand-alone projects, especially ADA improvements, are implemented as well.
<b>RCIP</b>	RCIPs are collaborative investments that respond to regional and local concerns beyond system performance needs. Typical improvements include intersection improvements, projects that support multimodal connectivity, landscape improvements, bypass or turning lanes, access management solutions, improvements that support complete streets, and regional or spot capacity expansion projects.
<b>Project Support</b>	Project Support includes components of projects that are critical to ensure the timely and efficient delivery of highway projects. These components include right-of-way costs, consultant services, supplemental agreements, and construction incentives.

## SUMMARY OF INVESTMENT PLANS

Investments by category in MnDOT's 10-Year CHIP (2016-2025) are shown in the pie chart below (Figure 4).



## MnMAP



Visit [mndot.maps.arcgis.com](https://mndot.maps.arcgis.com) to view MnDOT's planned and programmed projects

MnDOT prioritizes asset improvements on NHS routes (including Interstates) and holds these roads to a higher performance standard than assets on non-NHS routes (see Figure 1).

GASB 34 are financial reporting requirements for the value and condition of MnDOT's highway assets. Not meeting GASB condition thresholds could impact the state's bond rating.

The investment priorities in this Investment Plan are consistent with those established in MnSHIP (see Figure 10 for comparison). As in MnSHIP, investments are focused on asset management (pavement condition, bridge condition, roadside infrastructure condition) with a lesser mix of other investments. The individual projects in the 10-year Investment Plan have been mapped and are available at [MnMAP](https://mndot.maps.arcgis.com), MnDOT's online mapping application. Projects are also displayed in the District Investment Plans starting on page 25.

## PAVEMENT CONDITION

### Project Selection

MnDOT's Office of Materials and Road Research uses a **Pavement Management System (PMS)** to predict future pavement conditions and develop a schedule of suggested fixes on NHS and non-NHS routes. The Office of Materials and Road Research manages its program to meet performance targets on both the NHS and non-NHS systems. The Office of Materials and Road Research works with staff from MnDOT's Central Office and district offices to identify priority Pavement Condition investments on NHS and non-NHS routes. The districts suggest modifications to the project list based on a number of considerations, including local knowledge of conditions, input from stakeholders, and timing of other scheduled improvements in the area.

MnDOT's 10-year planned priorities for Pavement Condition keep a lower percentage of NHS pavements in Poor condition compared to non-NHS pavements due to an emphasis on the NHS system established in MnSHIP and reflected in current federal legislation **Moving Ahead for Progress in the 21st Century (MAP-21)**. Investments include more long-term improvements on higher volume roads with more shorter fixes on lower volume roads.

Figure 5: MnDOT Pavement and Bridge Assets

District	Miles of Pavement	Number of Bridges
<b>1</b>	1,556	596
<b>2</b>	1,806	352
<b>3</b>	1,609	408
<b>4</b>	1,607	327
<b>6</b>	1,423	848
<b>7</b>	1,326	479
<b>8</b>	1,433	365
<b>Metro</b>	1,095	1,270
<b>Total</b>	<b>11,859</b>	<b>4,590</b>

## Outcomes

Despite significant investment, pavement condition on the NHS and non-NHS is projected to worsen over the next ten years. Interstate pavements (part of NHS) will be in the best condition but twice as many miles will be in poor condition in 2026 as compared to today. Other NHS pavements are expected to worsen to almost seven percent poor from three percent today. The pavements on non-NHS roads will also see a significant drop in performance relative to today, in large part to accommodate the federal emphasis on higher-volume, NHS roads. Overall, MnDOT expects that projected pavement condition levels will meet assumed MAP-21 targets and GASB 34 thresholds and remain within the agency's risk-based performance target for the entire system. However, NHS is not predicted to meet its target of 4% poor in 2026.

MAP-21 targets for pavement have been preliminarily identified. MnDOT established targets for pavement and bridge in anticipation of final MAP-21 targets.

## BRIDGE CONDITION

### Project selection

As is the case with Pavement Condition, MnDOT's prioritizes more investments in Bridge Condition on high-volume NHS roads than on other state highways.

MnDOT's Bridge Office uses the **Bridge Replacement and Improvement Management (BRIM)** process and statewide goals to recommend future bridge improvements based on condition and risk factors, including length of detour and traffic volume. The Bridge Office and district offices generate a list of bridge projects for both NHS and non-NHS bridges based on the results of the BRIM process. In modifying the BRIM results, districts consider stakeholder input and local expertise to coordinate timing with other planned projects in the region.

Districts primarily choose projects with long-term fixes for NHS bridges and focus investment on non-NHS bridges in the greatest need of repair.

### Outcomes

Performance for bridges on the NHS is projected to remain stable at 2% poor, while performance for non-NHS bridges will slightly worsen to 3% poor. The condition of MnDOT bridges is expected to meet MAP-21 targets and GASB 34 minimum condition thresholds through 2026.

## ROADSIDE INFRASTRUCTURE CONDITION

### Project Selection

In developing a list of projects through Year 10, districts include an estimate of the cost to implement Roadside Infrastructure Condition projects as part of other projects (such as Pavement Condition or Bridge Condition) or as stand-alone investments (such as rest areas). The distribution of MnDOT's Roadside





Infrastructure Condition investment reflects the expectation that districts will implement more projects on NHS roads and bridges than on lower-volume roads.

### Outcomes

In general, the system's roadside infrastructure elements are expected to deteriorate relative to today's standards. However, NHS routes will receive more frequent upgrades to roadside infrastructure elements compared to non-NHS routes due to the relative frequency of pavement and bridge projects on those roads.

## TRAVELER SAFETY

Each district CHIP contains its 10-year Traveler Safety investment on both NHS and non-NHS roadways. The mix of project types varies by district. Districts draw from two main sources to select planned investments:

- **District Safety Plans (DSPs).** Each district uses its DSP to prioritize proactive safety infrastructure projects and determine which strategic improvements to implement. In addition, the 10-Year Capital Highway Investment Plan includes **Highway Safety Improvement Program (HSIP)** investments. HSIP is a federal program that emphasizes data-driven, strategic approaches to improving highway safety. HSIP projects correct a hazardous road location or address a highway safety problem.
- **Sustained crash locations list.** MnDOT's Office of Traffic, Safety, and Technology identifies areas throughout the state that experience a high crash rate over a five-year period. Districts include high-priority projects at some of these locations.

The districts also estimate the costs associated with installing roadway safety infrastructure as part of other projects, namely pavement improvements, and build these into their 10-Year Investment Plans. Examples of these elements include rumble strips, cable median guardrail, and turn lanes.

### Outcomes

MnDOT districts will continue installing safety improvements as part of pavement projects and continue to implement their DSPs at the current rate. Lower cost, high-benefit safety infrastructure will be constructed at priority locations throughout the state highway system, and select moderate to high-cost projects will be funded to address sustained crash rate locations. MnDOT will continue to participate in the **Towards Zero Deaths (TZD)** program.

Fatalities have been reduced substantially over the past 10 years, and MnDOT expects that the number of annual fatalities and serious injuries on state and local roads will continue to decline based on historical performance at the

current level of funding. Funding in non-infrastructure type improvements, including education and enforcement, will help reduce fatalities and serious injuries.

## INTERREGIONAL CORRIDOR MOBILITY

### Project Selection

MnDOT has been meeting the identified performance targets and is expected to do so through 2025. As a result, no projects were funded through IRC Mobility. If additional revenues become available, MnDOT would re-evaluate the feasibility of proactively addressing highest priority needs on the IRC system.

However, there are other projects listed in the 10-Year Investment Plans that will improve safety and mobility on IRCs – these projects are categorized under RCIPs and Traveler Safety, depending on the types of improvements. They are categorized as such because they do not address the IRC performance-based need and are ineligible for IRC funding. An example includes expanding US 14 to four lanes from Highway 218 to Steele County Road 43. Many of these projects were funded through the Corridors of Commerce program after MnSHIP was completed.

### Outcomes

MnDOT's IRC Mobility performance targets are expected to be met through 2025.

## TWIN CITIES MOBILITY

### Project Selection

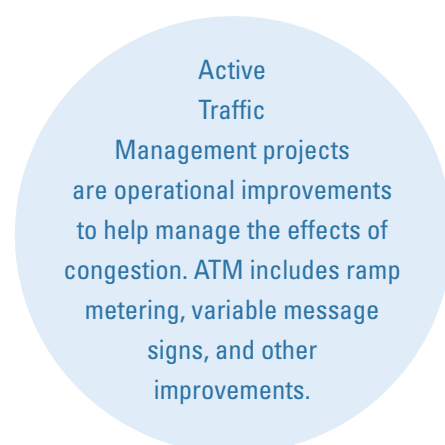
MnDOT's Metro District worked in collaboration with the Metropolitan Council to develop a list of Twin Cities Mobility cost-constrained projects that align with statewide goals within MnSHIP, both in terms of addressing federal and state performance measures and investing in strategies to improve mobility on Twin Cities-area highways through innovation, technology, and multimodal options.

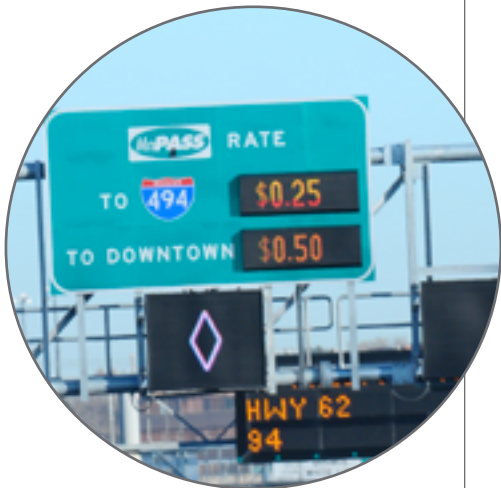
Many identified projects in the Metro District's 10-Year Investment Plan originated in previous planning efforts, such as the Metropolitan Council's **2040 Transportation Policy Plan**, MnDOT's **Congestion Management Safety Plans** (for potential spot mobility projects), and the **MnPASS System Study**.

### Outcomes

Over the 10-year period, MnDOT and the Metropolitan Council will invest in Twin Cities Mobility to implement:

- A mix of **Active Traffic Management (ATM)** system improvements (5 percent)





- Approximately three spot mobility improvements per year (35 percent)
- Completion of three MnPASS lanes (40 percent)
- One major strategic mobility enhancement (20 percent)

MnDOT plans to construct MnPASS lanes on I-35W between Minnesota State Trunk Highway 36 in Roseville and County Road 17/Lexington in Blaine and on one other corridor in the region. In addition, MnDOT has under construction a project to complete the extension of Minnesota 610 to Interstate 94 in Maple Grove. While these projects will help mitigate congestion issues and improve reliability, it is still anticipated that congestion and reliability issues are likely to worsen through 2025 relative to today due to the increase in mobility needs across the system.

## BICYCLE INFRASTRUCTURE

### Project Selection

MnDOT districts identify their investments in Bicycle Infrastructure based on their highest risks and planned bridge and pavement projects.

The **Statewide Bicycle System Plan** will identify a state bikeway network. The Plan will provide direction on how to support bicycling on Minnesota state highways through investments, partnerships with locals, and the establishment of a priority bicycle network. The Plan is out for public review and will not substantially change. It is expected to be completed by fall/winter 2015.

### Outcomes

MnDOT will invest in Bicycle Infrastructure through bridge and pavement projects as well as on urbanized priority network roadways. A large number of these investments will be part of urban reconstruction projects. Districts will also construct new bicycle facilities in their highest-priority locations, making progress on key multimodal objectives and outcomes.

## ACCESSIBLE PEDESTRIAN INFRASTRUCTURE

### Project Selection

Each district selected their 10-year planned investments in this category based on planned bridge and pavement projects, ADA needs, and highest-risk pedestrian areas.

The first-ever statewide Pedestrian System Plan is currently under way and will develop a statewide vision for pedestrians. Plan completion is expected by summer 2016 and will help prioritize future investments in this area.

## Outcomes

Districts will fund a range of pedestrian and ADA projects during Years 2016-2025 based on their needs. Investments will be primarily lower cost, high-benefit improvements implemented concurrently with pavement and bridge projects. MnDOT will continue to upgrade most curb ramps and signalized intersections to ADA standards, maintain the percentage of sidewalk miles in poor condition, and complete some stand-alone ADA improvements.

## REGIONAL AND COMMUNITY IMPROVEMENT PRIORITIES

### Project Selection

There are a variety of projects that fall under the category of RCIPs, including major projects of regional significance and leveraging public investments through partnerships with local governments. Each district identified RCIP investments in their 10-Year CHIP based on projects that MnDOT has committed to, projects that have been identified by stakeholders, and projects that address risks associated with regional travel.

## Outcomes

Most investments will be completed through partnerships and design add-ons, but will also include a few stand-alone projects.

Examples of stand-alone expansion projects that MnDOT plans to complete before 2025 include:

- US 14 – Mankato to west of Nicollet
- MN 60 – Windom to Mountain Lake
- MN 60 – Mountain Lake to Butterfield
- MN 371 – Nisswa to Jenkins

MnDOT has implemented statewide and internal solicitations to partner with stakeholders and local jurisdictions to fund non-performance-based projects. MnDOT intends to continue facilitation of these types of programs through the RCIP investment category over the next 10 years.

## PROJECT SUPPORT

MnDOT does not identify projects in this investment area; it estimates the total cost of delivering its planned projects.

## Outcomes

MnSHIP assumes that MnDOT will continue to spend approximately 11 percent of its capital highway funds in Project Support. The 10-Year CHIP has a slightly higher amount for project support at 11.5% as districts undergo the early



Figure 6: Investment Category Strategies

Investment Category	Risk Management Strategies	Optimization Strategies
<b>Pavement Condition</b>	<ul style="list-style-type: none"> <li>Defer long-term fixes.</li> <li>Limit life-cycle fixes to Interstates, high-priority routes, or highest priority non-NHS routes.</li> <li>Focus maintenance activities on avoiding hazardous conditions.</li> </ul>	<ul style="list-style-type: none"> <li>Design and schedule pavement projects to align with a roadway's life-cycle needs whenever possible.</li> <li>Use performance-based design to focus on projects that cost-effectively meet both pavement and safety performance needs.</li> <li>Continue preventive maintenance strategies, such as seal coats, joint seals, micro-surfacing, and thin overlays.</li> <li>Employ lower-cost strategies, such as full depth reclamation or unbonded concrete overlays, to stretch available dollars further.</li> <li>Evaluate innovative contracting methods and assess potential advantages of bundling projects together in order to lower the overall cost.</li> </ul>
<b>Bridge Condition</b>	<ul style="list-style-type: none"> <li>Defer non-critical and/or long-term fixes.</li> <li>Focus maintenance activities on avoiding hazardous conditions.</li> </ul>	<ul style="list-style-type: none"> <li>Conduct frequent and regular inspections.</li> <li>Invest in preventive maintenance.</li> <li>Invest in rehabilitation at appropriate times of a bridge's life-cycle.</li> <li>Refine BRIM to help identify improvements that minimize life-cycle costs, meet performance targets, and address the highest-risk bridges.</li> </ul>
<b>Roadside Infrastructure Condition</b>	<ul style="list-style-type: none"> <li>Repair and replace failed infrastructure on a strategic and reactive basis.</li> <li>Prioritize work on NHS or on roads with greatest exposure to traveling public.</li> <li>Rely on maintenance budget to keep system in good repair.</li> <li>Respond to non-functional or very poor-condition elements only.</li> <li>Close lowest-priority rest areas.</li> </ul>	<ul style="list-style-type: none"> <li>Continue to perform preventive maintenance to extend infrastructure life cycle.</li> <li>Coordinate investments with other projects where economies of scale exist to reduce unit costs.</li> <li>Manage culverts that have failed or are in the poorest condition.</li> <li>Maintain the most critical supporting infrastructure for pavement and bridge projects.</li> <li>Improve process for tracking inventory, performance, and identifying future capital needs for essential system assets, including signals, drainage, retaining walls, signage, and safety rest areas.</li> <li>Develop new ways to track and systematically improve electronic traffic management systems, which include the Regional Traffic Management Centers (RTMC) and Transportation Operations Communication Centers (TOCC).</li> </ul>
<b>Traveler Safety</b>	<ul style="list-style-type: none"> <li>Continue to evaluate crash data to implement the highest-priority lower cost, proactive treatments.</li> <li>Install lighting at highest-risk sustained crash locations.</li> </ul>	<ul style="list-style-type: none"> <li>Update District Safety Plans to identify priority locations for lower cost, high-benefit improvements.</li> <li>Pursue system-wide, cost-effective safety investments on the state highway system that address fatal and severe injury crashes. Investments will be data driven and incorporated into all applicable projects.</li> <li>Address sustained crash locations with appropriate fixes that cost-effectively reduce the identified types of crashes at that location.</li> <li>Support the TZD initiative and its comprehensive approach toward highway safety.</li> </ul>
<b>Twin Cities Mobility</b>	<ul style="list-style-type: none"> <li>Invest primarily in projects that address multiple objectives.</li> </ul>	<ul style="list-style-type: none"> <li>Leverage existing resources for all available transportation modes in order to optimize mobility.</li> <li>Emphasize reliable and predictable travel options.</li> <li>Focus mobility investments on projects that address multiple objectives.</li> </ul>



Investment Category	Risk Management Strategies	Optimization Strategies
<b>IRC Mobility</b>	<ul style="list-style-type: none"> <li>Focus on traveler information and other travel demand strategies.</li> </ul>	<ul style="list-style-type: none"> <li>Work with transportation partners to maintain and enhance mobility on the IRC system through investment in other categories, such as Traveler Safety and RCIPs.</li> <li>Continue to monitor corridor travel speeds.</li> <li>As MAP-21 rulemaking concludes, consider development of updated measures applying to mobility and freight.</li> </ul>
<b>Bicycle Infrastructure</b>	<ul style="list-style-type: none"> <li>Collaborate with regional, local, and internal partners on bike projects and planning efforts.</li> <li>Focus bike investment on state highways that play a role in local bicycle networks and the state bikeway network.</li> </ul>	<ul style="list-style-type: none"> <li>Construct bicycle infrastructure concurrently with pavement and bridge projects to cost-effectively maintain and improve the bike network.</li> <li>Make stand-alone investments on state highways within the identified state bikeway network.</li> <li>Support regional and local efforts to increase the share of non-motorized commuting trips through the development and maintenance of efficient, safe, and appealing non-motorized transportation systems.</li> <li>Coordinate education and bicycle planning efforts with transportation stakeholders, including the Share the Road campaign</li> <li>Focus 70% of bicycle investments in urban areas and 30% in rural areas.</li> <li>Collaborate with locals on cycletracks and bike lanes on urbanized-priority roadways.</li> </ul>
<b>Accessible Pedestrian Infrastructure</b>	<ul style="list-style-type: none"> <li>Identify, address, and maintain critical intersection and bridge connections.</li> <li>Collaborate with regional, local, and internal partners on pedestrian projects and planning efforts.</li> </ul>	<ul style="list-style-type: none"> <li>Prioritize curb ramp projects to comply with requirements of the ADA.</li> <li>Install Accessible Pedestrian Signals (APS) at all signalized state highway intersections by 2030.</li> <li>Continue to track performance toward curb ramp and APS targets.</li> <li>Refine system for tracking investments and measuring performance.</li> <li>Collaborate with transportation partners in identifying projects and promoting the Share the Road Campaign.</li> </ul>
<b>RCIPs</b>	<ul style="list-style-type: none"> <li>Schedule projects to leverage project timing and resources with that of local partners.</li> <li>Employ low-cost operational strategies (such as improving signal timing and road maintenance) to respond to local concerns.</li> </ul>	<ul style="list-style-type: none"> <li>Work with users of the system to better understand what is important to meet their needs today and what will matter tomorrow.</li> <li>Improve early communication and coordination on projects.</li> <li>Promote partnerships with local agencies to leverage funding.</li> <li>Select projects that emphasize sustainability and high return-on-investment.</li> </ul>



stages of project planning, requiring greater need for right of way acquisition, consultant services and supplemental agreements. However, as the plan transitions to a more asset management based program, the percent allocated to program support is potentially expected to go down.

## Project Highlights by Year

MnDOT will complete many important projects during the next ten years.

The following projects are highlighted for their complexity and/or their advancement of the Minnesota GO Vision. The years listed refer to state fiscal year, which runs July 1 - June 30th. Multi-year projects are listed in their first year of construction.

### 2016

- US 53 Realignment: The project will relocate US 53 near Virginia and reconstruct it outside of a mining company easement.
- I-694: This project will construct a third lane and reconstruct existing lanes between Rice Street and Lexington Avenue.

### 2017

- Lake Street Access Project: This project combines planned work for an improved transit station at Lake Street and I-35W in Minneapolis with the replacement of two major bridges and pavement resurfacing. Hennepin County is the lead agency on this project.
- MN 1: Eagles Nest Lake Area Reconstruction. The highway will be reconstructed and realigned to straighten out curves. The project will also add turn lanes and select passing zones.
- MN 371: The project will consist of the reconstruction of MN 371 from Nisswa to Pine River. The proposed improvements include a four-lane, divided, controlled access highway.

### 2018

- Red Wing Bridge: The project is in the preliminary phase to rehabilitate or replace US 63 bridge over the Mississippi River and the US 63 bridge over US 61, as well as the highway connections. Existing bridge is fracture critical and is being replaced as part of a bridge bonding program.
- US 14: Bridge/interchange in New Ulm

## 2019

- I-94 managed lane: Project will build a managed lane (MnPASS) from downtown St. Paul to downtown Minneapolis. The project will last two years.
- US 12: Pavement urban reconstruction project. Project will repair pavement from 4th street to MN 22 in Litchfield.

## 2020

- I-35W Bridge over Minnesota River: Project will replace the I-35W bridge over the Minnesota River in Bloomington. The project will last over three years.
- I-35: Replace two bridges over the Snake River in District 1.

## 2021

- I-94: Unbonded concrete overlay from Clearwater to Monticello. Project will provide long lasting fix to I-94 pavement.
- US 10: Reconstruction in Elk River from Joplin Street to Norfolk Avenue.

## 2022

- MN 1: Reclaim pavement and replace two bridges in Beltrami County from County Road 18 to MN 219.

## 2023

- I-94: Pavement resurfacing from MN120 to Wisconsin border.
- US 169: Replace 63rd ave bridge over US 169 in Hennepin County.
- MN 210: Replace bridge over Mississippi River in Brainerd.

## 2024

- MN 23: Pavement reconstruction from the Pine-Carlton county line to St. Louis River bridge.
- MN 27: Replace bridge over the Mississippi river in Little Falls.

## 2025

- I-94: Overlay project from Monticello to St. Michael.
- MN 11: Pavement resurfacing in International Falls.



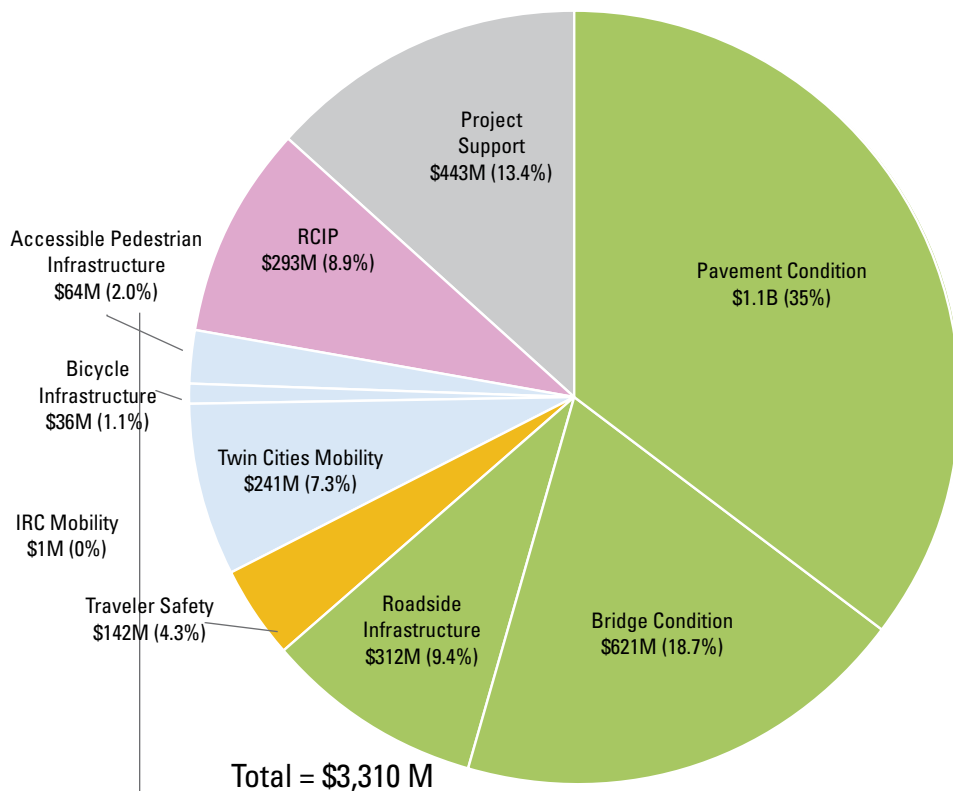
## SUMMARY OF STIP INVESTMENTS

The Statewide Transportation Improvement Program (STIP) is MnDOT's four year program of projects. The projects in the STIP are viewed as commitments by the department. The projects beyond the STIP, in years 5-10, depict the agency's planned investments, though these may change as they move into the STIP.

Taken as a whole, the STIP investment priorities are similar to the priorities set out in MnSHIP (see [Figure 10](#) for comparison).

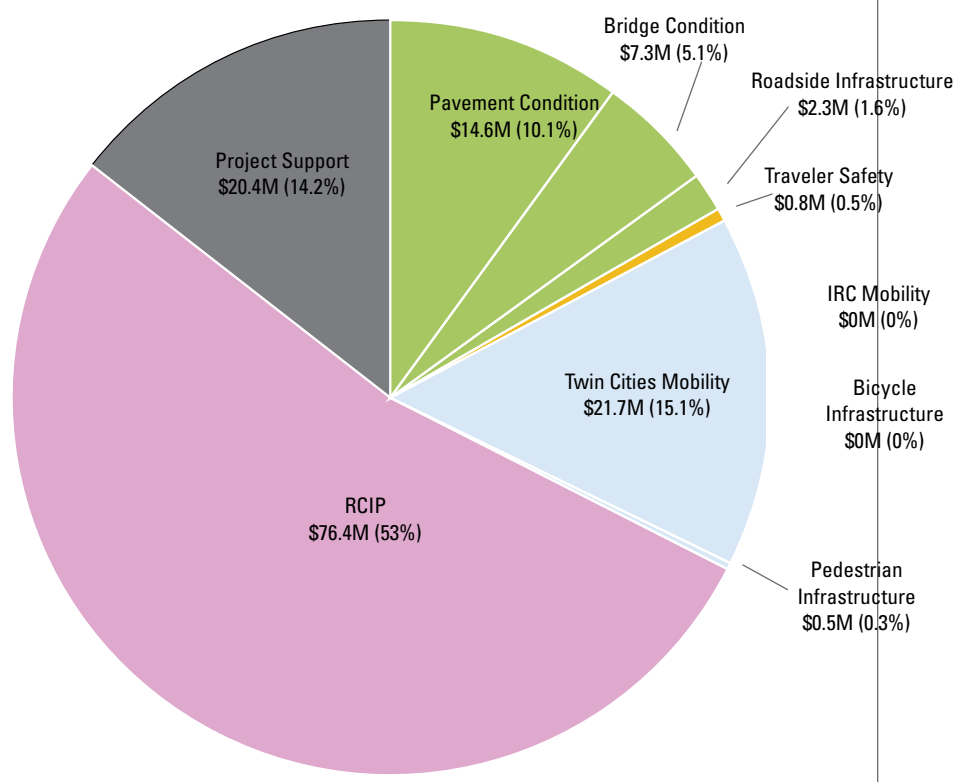
The investments in the 2016-2019 and 2017-2020 STIP are influenced by guidance from the 2013 MnSHIP. STIP projects in the 2018-2021 STIP will begin to follow 2037 MnSHIP guidance.

Figure 7: STIP Investments, 2016-2019



Total = \$144 M

Figure 8: Corridors of Commerce



# PERFORMANCE OUTCOMES

As part of the 10-Year CHIP process, MnDOT projects performance outcomes based on planned project. **Figure 9** displays projected performance through 2025.

With the investments in the 10-Year CHIP, MnDOT is expecting to achieve most of the results planned for in MnSHIP. Bridge Condition outcomes and spending levels are in-line with those established in MnSHIP. The performance outcomes in other categories are more difficult to project as they are subject to changes in the economy, driving behavior, and demographics, and are not in the direct control of MnDOT investments. Given that the spending levels for these categories are similar to the levels established in MnSHIP, MnDOT expects the outcomes in these categories for the 10-Year CHIP to be similar.

Pavement condition is the exception. Pavement condition on the Interstate system and Other NHS is projected to be worse than the anticipated outcomes in MnSHIP. However, it is anticipated that the increasing shift towards an asset management based plan starting in year 2024 will improve the pavement outcomes for future iterations of the 10-Year CHIP as a greater percentage of investment will be pavement improvements.

Figure 9: Investment Plan Performance Summary

	Result 2014	2013 MnSHIP Target	Projected Result 2019	Projected Result 2025	10-Year Trend
<b>Asset Management</b>					
<b>Pavement Condition</b> Interstate: % Poor	1.9%	2%	▲ 4.8%	▲ 4.4%	▼ Better Performance expected to decline through the STIP but improve in later years
<b>Pavement Condition</b> Non-Interstate NHS: % Poor	3.0%	4%	▲ 4.7%	● 6.6%	▼ Better Performance expected to worsen
<b>Pavement Condition</b> Non-NHS: % Poor	4.4%	10%	▲ 11.1%	● 9.9%	▼ Better
<b>Pavement Condition</b> All State Highway Miles: % Poor	3.5%	5%-9% performance band	▲ 7.7%	▲ 7.9%	▼ Better Performance expected to worsen but remain within the MnSHIP performance band
<b>Pavement % poor</b>  Source: MnDOT					▼ Better The percent of pavements in Poor condition decreased slightly in 2014, continuing a trend from 2012. However, pavement condition is expected to decline on all systems through 2025. NHS pavements are expected to decline at the fastest rate through 2019. However, the overall pavement condition in 2024 falls within the 5-9% MnSHIP target range.
<b>Bridge Condition:</b> NHS, % Poor	4.5%	2%	● 0.8%	▲ 2.1%	▼ Better Performance expected to remain at a desirable level
<b>Bridge Condition:</b> Non-NHS, % Poor	1.3%	8%	● 0.7%	● 2.9%	▼ Better
<b>Bridge % poor</b>  Source: MnDOT					▼ Better The percent of bridge deck area on the National Highway System and non-NHS in Poor condition dropped in 2014 due to continued repairs on bridges. As future investments prioritize the NHS, the condition of bridges on non-NHS routes is expected to decline but still remain below target.
<b>Traveler Safety</b>					
Minnesota Traffic Fatalities: All state and local roads	387	300 by 2020	N/A	N/A	▼ Better Performance expected to improve, but at a slower rate
<b>Fatalities</b>  Source: MN Department of Public Safety					▼ Better Fatalities resulting from vehicle crashes decreased from 387 in 2013 to 361 in 2014. After a slight increase in traffic fatalities in 2012, the past two years is a return to a declining historical trend. MnDOT anticipates this trend to continue over the next ten years given current Traveler Safety funding.

	Result 2014	MnSHIP Target	Projected Result 2019	Projected Result 2025	10-year Trend	
Critical Connections						
<b>Twin Cities Mobility:</b> % of metro freeway miles below 45 mph in AM or PM peak	21.1%	Tracking Indicator	N/A	N/A	<div>▼ Better</div> <div>↔</div>	Performance expected to continue at current levels
<div><div><div>21.5</div><div>21.0</div><div>21.4</div><div>19.9</div><div>21.1</div></div><div>20102011201220132014</div></div> <div>▼ Better</div> <div>Source: MnDOT</div>				<div>Congestion is affected by economic conditions, population growth, fuel prices and other factors that increase travel demand. Freeway congestion increased slightly in 2014, returning to its stable five-year average.</div>		
<b>Inter-Regional Corridor (IRC) Mobility:</b> % of IRC centerline miles more than 2 mph below travel time target	2%	5%	2%		<div>▼ Better</div> <div>↔</div>	Performance expected to continue at current levels
<div><div><div>2.0</div><div>2.0</div><div>2.0</div><div>2.0</div><div>2.0</div></div><div>20102011201220132014</div></div> <div>▼ Better</div> <div>Source: MnDOT</div>				<div>98% of major interregional routes in Greater Minnesota can be driven within 2 mph of the corridor target speed. This performance is expected to remain stable through the Investment Plan period. MN 210 from Motley to Aitkin is the only corridor that currently performs below the average travel time target for that corridor.</div>		
Miles of sidewalk in Poor condition	4%	Tracking Indicator	N/A	N/A	<div>▼ Better</div> <div>↔</div>	Performance expected to continue at current levels
ADA: % of state highway intersections with accessible pedestrian signals	36%	100%	<div>▲</div> <div>70-80%</div>	<div>▲</div> <div>70-80%</div>	<div>▲ Better</div> <div>↗</div>	Target expected to be achieved by 2030
<div><div><div>21</div><div>28</div><div>33</div><div>36</div></div><div>2011201220132014</div></div> <div>▲ Better</div> <div>Source: MnDOT</div>				<div>Accessible pedestrian infrastructure is typically addressed as part of highway reconstruction projects. As a result, the percentage of sidewalks in Poor condition is likely to improve as mill and overlay projects still address ADA compliance. Accessible pedestrian signals (APS) will continue to be installed at state highway intersections as existing signals reach the end of their useful life. MnDOT anticipates achieving system-wide APS compliance by 2030.</div>		

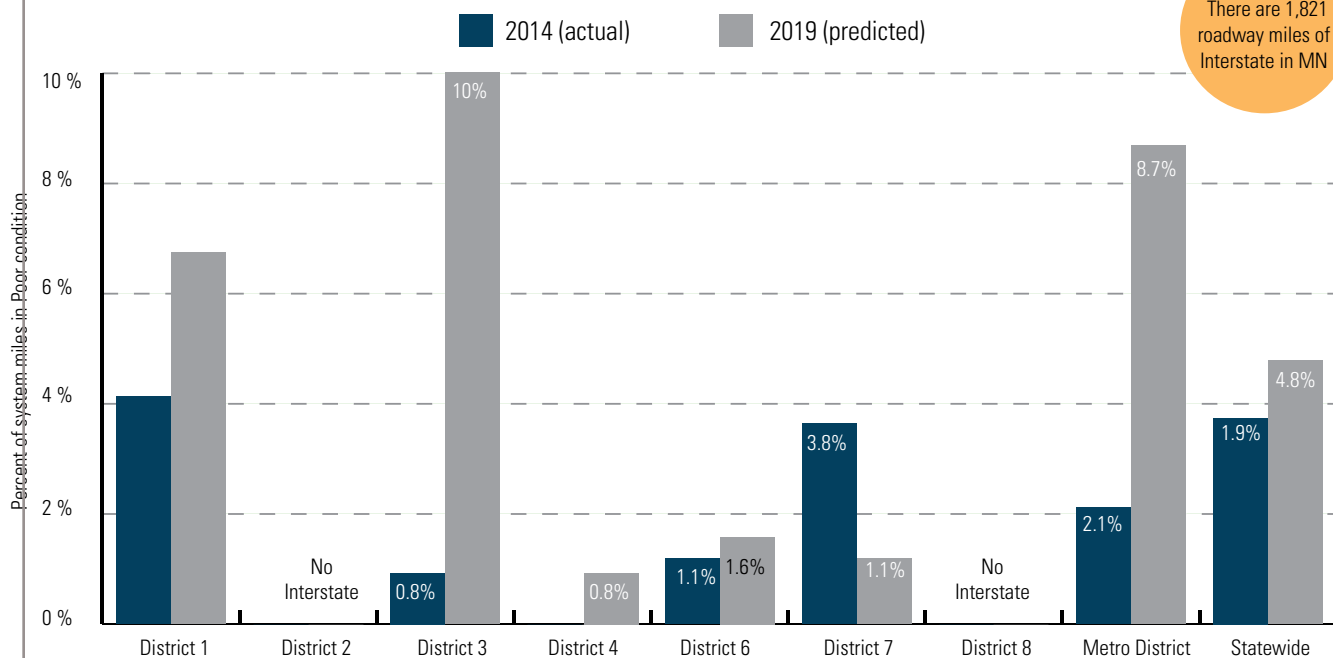
● Meets or exceeds target
▲ Moderately below target
● Significantly below target

# DISTRICT PERFORMANCE OUTCOMES

## Interstate Poor Ride Quality Index (RQI)

-miles with an RQI of 2.0 or less-

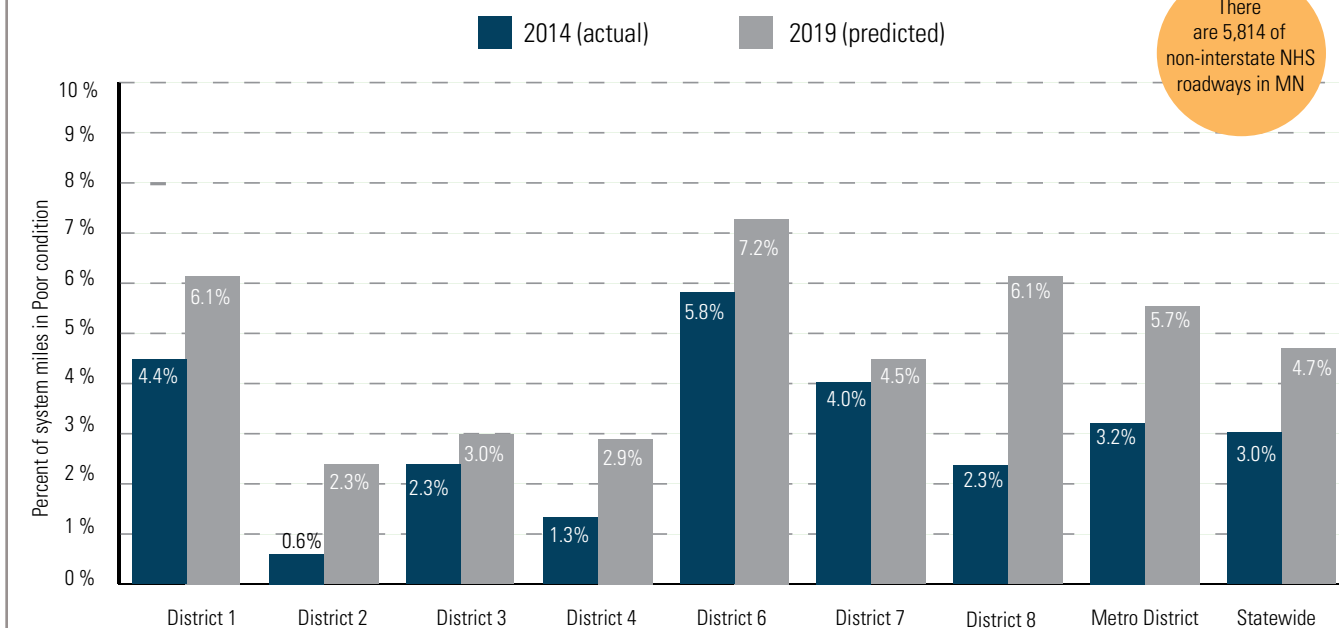
Current (2014) -vs- Predicted Conditions (2019)



## Non-Interstate NHS Poor Ride Quality Index (RQI)

-miles with an RQI of 2.0 or less-

Current (2014) -vs- Predicted Conditions (2019)



\*District performance outcomes are reported based on Area Transportation Partnership boundaries

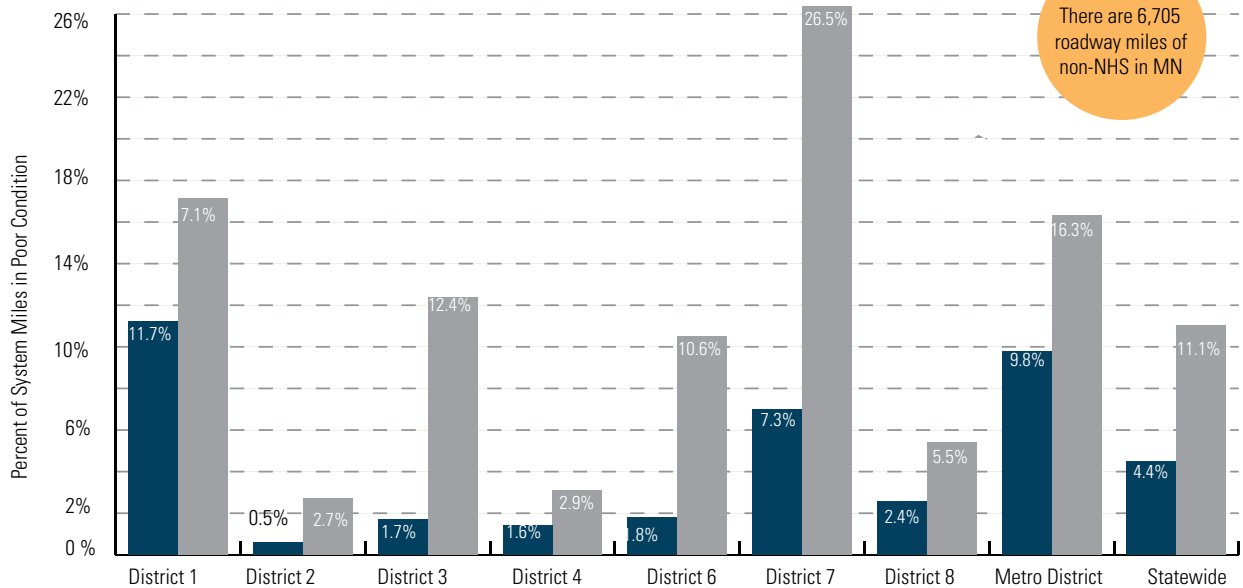


## Non-NHS Poor Ride Quality Index (RQI)

-miles with an RQI of 2.0 or less-

Current (2014) -vs- Predicted Conditions (2019)

2014 (actual) 2019 (predicted)

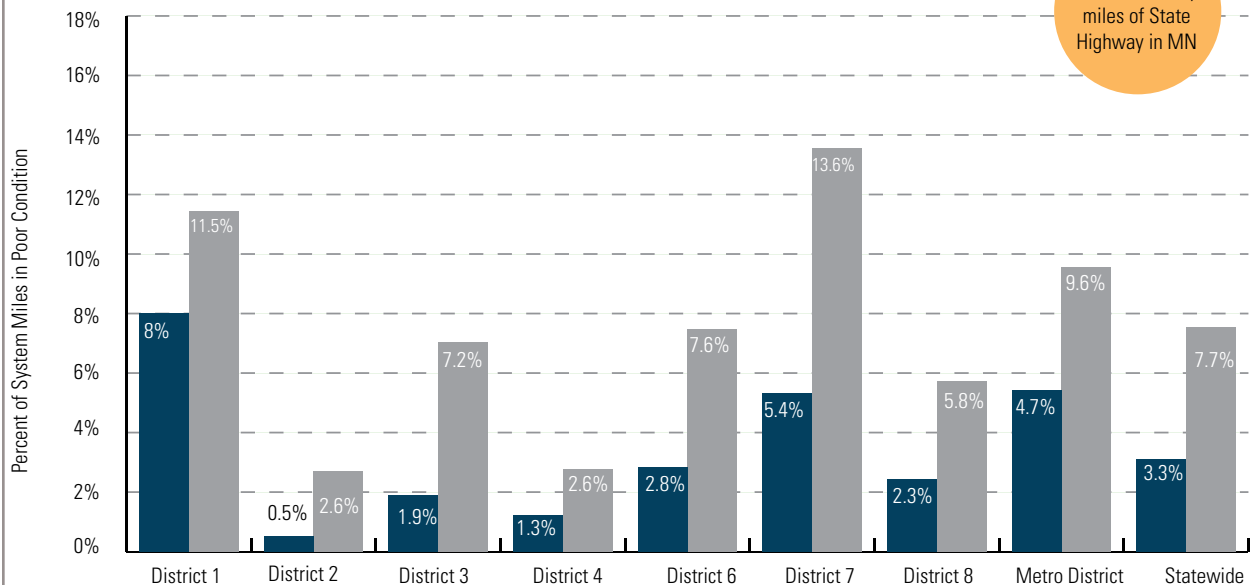


## State Highway Poor Ride Quality Index

-miles with an RQI of 2.0 or less-

Current (2014) -vs- Predicted Conditions (2019 & beyond)

2014 (actual) 2019 (predicted)



\*District performance outcomes are reported based on Area Transportation Partnership boundaries

## COMPARISON TO MNSHIP

Each year the 10-Year Capital Highway Investment Plan compares planned and programmed investments to the guidance established in MnSHIP. Figure 10 (pg. 22) shows the comparison between the 10-Year CHIP investment and the investment in years 3-12 of MnSHIP (2016-2025). The investment mix for this ten year period is very similar to the investments identified in MnSHIP with only a few exceptions. These are:

- Project Support is significantly higher in the 10-Year Investment Plan than 2013 MnSHIP direction. MnDOT districts identified this category as growing in the coming years. In the next few years, MnDOT will be delivering a large program of projects. As the program grows and one-time funding occurs such as Corridors of Commerce and the recently passed Omnibus bonding bill, MnDOT must increasingly rely on consultants to design and deliver projects.
- RCIP investment is much lower in the 10-Year Investment Plan as compared to MnSHIP guidance. While working through the Investment Plan process this year, MnDOT districts were presented with many constraints to funding their core assets and projects. Given the needs in these categories, RCIPs were not seen as needing as great a level of funding as identified in MnSHIP.
- A shift towards asset management activities and meeting pavement and bridge performance targets.
- Increased investment through Ch. 152 and alignment of bridge projects with pavement projects by districts has led to more efficient use of funds and fewer bridge projects in post-STIP years.

Figure 10: Investment Plan Investment Comparison

Investment Category	10-Year CHIP	MnSHIP Guidance	Difference from MnSHIP	Difference from MnSHIP
Pavement Condition	42.3%	42.3%	0.0%	-\$92 M
Bridge Condition	18.8%	20.3%	-1.5%	-\$159 M
Roadside Infrastructure Condition	8.9%	8.8%	0.1%	-\$13 M
Traveler Safety	4.3%	4.0%	0.3%	\$14 M
Twin Cities Mobility	6.2%	5.5%	0.7%	\$48 M
IRC Mobility	0.0%	0.0%	0.0%	\$1 M
Bicycle Infrastructure	1.5%	1.3%	0.2%	\$11 M
Accessible Pedestrian Infrastructure	1.9%	1.7%	0.2%	\$12 M
RCIPs	4.6%	6.0%	-1.4%	-\$117 M
Project Support	11.5%	10.2%	1.3%	\$86 M
<b>Total (\$ in millions)</b>	<b>7,774</b>	<b>7,981</b>		<b>-\$207 M</b>

## DISTRICT INVESTMENT COMPARISON

The chart in figure 11 displays the investment percentages for each district over the ten year period. Each district has different needs and the mix of investment varies from district to district. MnDOT is committed to meeting performance outcomes on a statewide level but each district has the flexibility to prioritize its own projects, particularly on the non-NHS.

Remaining Risks (common across multiple Districts)

High

- Not enough funding for project support
- Not enough funding for preventive maintenance

Medium

- Incorporating full ADA into urban reconstruct projects results in changes to roadway cross section and increased costs
- Use of DRMP funds on NHS system

Low

- RCIPs and non-performance based improvements left unaddressed

Figure 11 District Investment Comparison

Investment Category	1	2	3	4	6	7	8	Metro	Total (\$ in millions)
Pavement Condition	45%	47%	50%	49%	41%	49%	59%	34%	3,285
Bridge Condition	13%	23%	16%	9%	30%	19%	8%	22%	1,460
Roadside Infrastructure Condition	10%	9%	9%	12%	8%	9%	10%	8%	691
Traveler Safety	4%	4%	4%	5%	5%	5%	5%	4%	333
Twin Cities Mobility	0%	0%	0%	0%	0%	0%	0%	16%	485
IRC Mobility	0%	0%	0%	0%	0%	0%	0%	0%	0
Bicycle Infrastructure	2%	2%	1%	1%	1%	1%	1%	2%	115
Accessible Pedestrian Infrastructure	2%	2%	2%	2%	2%	2%	2%	2%	145
RCIPs	14%	3%	8%	3%	0%	4%	6%	2%	358
Project Support	12%	10%	11%	19%	13%	12%	9%	10%	896
<b>Total (\$ in millions)</b>	<b>1,032</b>	<b>398</b>	<b>879</b>	<b>507</b>	<b>739</b>	<b>752</b>	<b>388</b>	<b>3,074</b>	<b>7,770</b>

## DISTRICT INVESTMENT PLANS

Project-specific information from each of MnDOT's eight districts is displayed in each district's 10-Year CHIP. The selected projects reflect investment priorities established by MnDOT through the development of MnSHIP and the creation of the Corridors of Commerce program.

District 10-Year CHIPs were developed for two distinct time periods: STIP Years 1-4 (2016-2019) and Years 5-10 (2020-2025).

Project lists do not represent the entirety of any district's planned investments for either planning period. Along with identified projects, districts also have non-project-specific funds that will eventually be spent on projects not yet identified within certain defined investment categories. For instance, districts have setaside funds that will be spent on highway projects to improve ADA accessibility. However, the location of those ADA improvements may not have been identified in a District's 10-Year CHIP. Districts also have cooperative or municipal agreement setasides. These funds are used to support locally led projects that benefit the state highway system and are categorized as RCIPs. In the years beyond the STIP, these project have not yet been identified.

Projects identified in Years 5-10 (2020-2025) are planned projects based on current information. These projects are anticipated to change as project development progresses and the projects move into the STIP. Once a project enters the STIP, it is viewed as a commitment by MnDOT.

## CONTACT INFORMATION

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