

# 10-Year Capital Highway Investment Plan 2017 - 2026



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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.<sup>1</sup> 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, 2017-2026.

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. The districts have more flexibility to set priorities for non-NHS pavement projects provided that the state collectively meets the set performance targets.

### Changes in Investment Plan

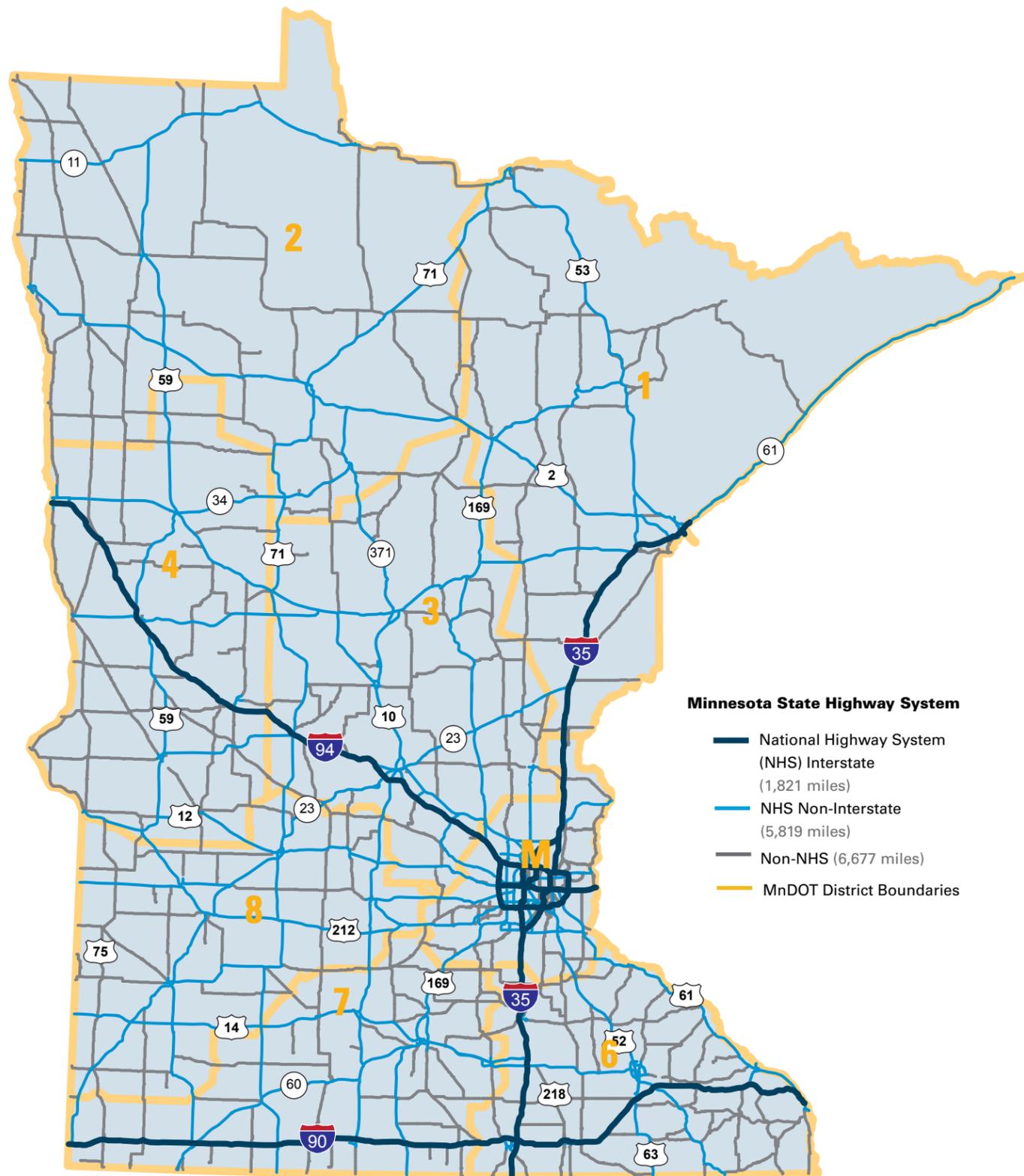
A major change in investment guidance since the 2013 MnSHIP includes the creation of Corridors of Commerce, passed by the state legislature, which provided \$300 million in bonding (2013 Session Law, Chapter 117). In 2014, the legislature provided an additional \$31.5 million. From this funding, \$14 million in projects remain to be completed in years 2017 through 2020.

<sup>1</sup> An update to MnSHIP with new investment direction will be complete by January 2017.

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



Projects are classified as nearly 50% Regional and Community Improvement Priority (RCIP) and 50% Project Support for delivery of projects. The list of remaining projects funded through Corridors of Commerce are below. 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. For more information, visit <http://www.dot.state.mn.us/corridorsofcommerce/>.

## CORRIDORS OF COMMERCE PROJECTS

### 2017

- US 2: Urban reconditioning in Pine River plus survey and design.
- MN 11: Corridor assessment of passing lanes, turn lanes and access management in Greenbush to Roseau/Lake of the Woods county line.
- I-94: Preliminary design for improvements between the downtowns.
- MN 65: Design of major bridge rehab over Mississippi river in Minneapolis.
- US 169: Design build activities for bridge over Nine Mile Creek in Hopkins.

### 2019/2020

- I-35W: Design build activities for replacement of bridge over Minnesota River.

## NEW MNSHIP INVESTMENT DIRECTION

This plan follows the investment direction that was set in the 20-year state highway investment plan released in 2013. MnDOT is currently in the process of updating its 20-year state highway investment plan, expected to be completed in January 2017, which will set the investment direction for subsequent 10-Year Capital Highway Investment Plans.

## 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, RCIPs and Project Support, and 10 distinct categories, as illustrated in Figure 2. These investment categories are the basis by which MnDOT tracks and reports investments for the 10-Year Capital Highway Investment Plan.

Figure 2: Investment Category Descriptions

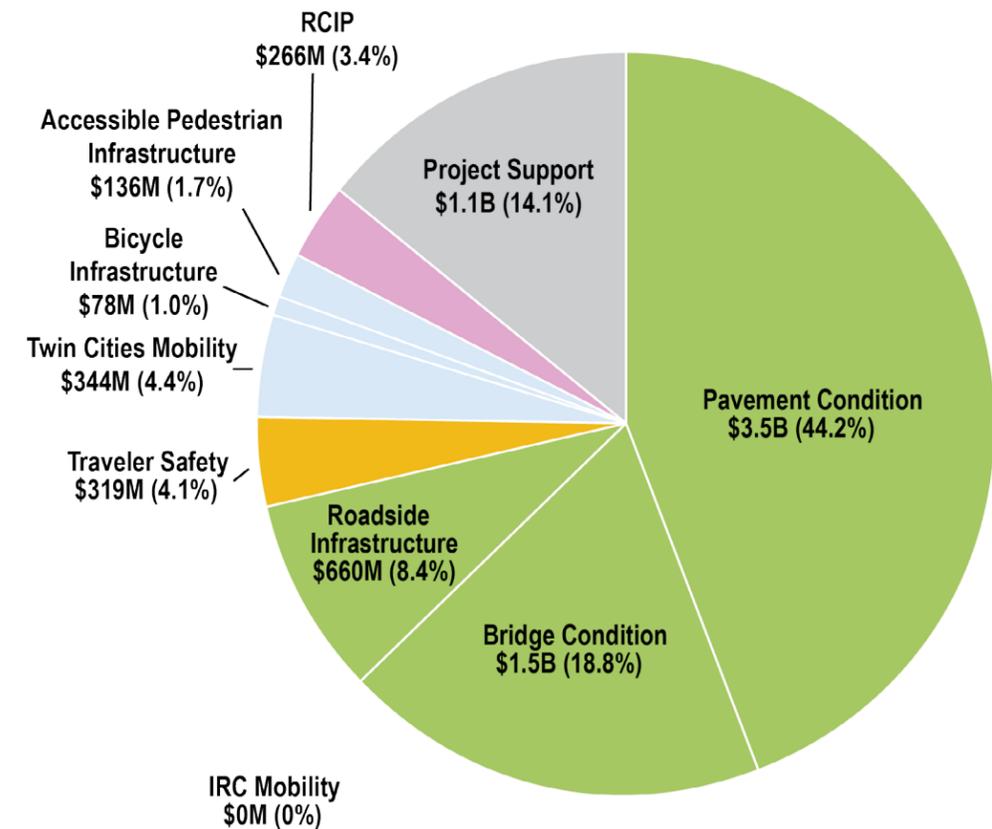
INVESTMENT CATEGORY	CATEGORY DESCRIPTION
Pavement Condition	Projects in this category include overlays, mill and overlays, full-depth reclamations, and reconstructions of existing state highway pavement.
Bridge Condition	Bridge Condition investments include replacement, rehabilitation, and painting of state highway bridges. The Bridge Condition category does not include supporting elements for bridges, such as signs, pavement markings, or lighting.
Roadside Infrastructure Condition	Roadside Infrastructure Condition elements include drainage and culverts, traffic signals, signs, lighting, retaining walls, fencing, noise walls, guardrails, overhead structures, rest areas, <b>Intelligent Transportation Systems (ITS)</b> , and pavement markings.
Traveler Safety	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: <ul style="list-style-type: none"> <li>Proactive lower cost, high-benefit safety features</li> <li>Sustained crash locations treatments</li> <li>The <b>Toward Zero Deaths (TZD)</b> initiative</li> </ul>
Twin Cities Mobility	MnDOT pursues the following strategies to address regional mobility issues in the Twin Cities metro area: <ul style="list-style-type: none"> <li><b>Active Traffic Management.</b> Operational improvements to help manage the effects of congestion, which include variable message signs (traveler information systems), freeway ramp metering, dynamic signing, bus-only shoulder lanes, reversible lanes, dynamic speed signs, and lane specific signaling.</li> <li><b>Spot mobility improvements.</b> 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><b>Priced managed lanes.</b> 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 <b>MnPASS</b>, which currently operates on I-394, I-35E, and I-35W.</li> <li><b>Strategic capacity enhancements.</b> 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 an existing facility or to complete an unfinished segment of the Metropolitan Highway System.</li> </ul>
IRC Mobility	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.
Bicycle Infrastructure	MnDOT typically constructs bicycle improvements concurrently with pavement and bridge projects, but also implements some stand-alone projects.
Accessible Pedestrian Infrastructure	Most pedestrian improvements are implemented as part of a pavement or bridge project. Stand-alone projects, especially ADA improvements, are implemented as well.

INVESTMENT CATEGORY	CATEGORY DESCRIPTION
RCIP	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 projects.
Project Support	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.

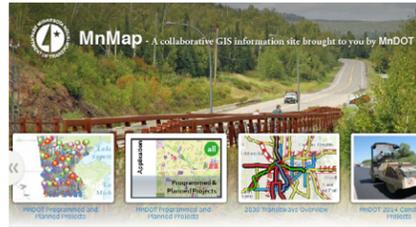
## SUMMARY OF INVESTMENT PLANS

Investments by category in MnDOT's 10-Year CHIP (2017-2026) are shown in the pie chart below (Figure 3).

Figure 3: Summary of Investment Plans



## MnMAP



Visit [mndot.maps.arcgis.com](http://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).

The investment priorities in this investment plan are consistent with those established in MnSHIP (see **Figure 9** 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](#), 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 **Fixing America's Surface Transportation Act (FAST Act)**. Investments include more long-term improvements on higher volume roads with more short-term fixes on lower volume roads.

Figure 4: 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	484
<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 (**Figure 7**). Other NHS pavements are expected to worsen to almost seven percent poor from two 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. However, non-NHS roads will still meet its ten percent target. Overall, MnDOT expects that projected pavement condition levels will meet assumed targets and performance measures 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.

## Bridge Condition

### PROJECT SELECTION

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.

As is the case with Pavement Condition, MnDOT prioritizes bridge investments on high-volume NHS roads. 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 nearly 5% poor. The condition of MnDOT bridges is expected to meet state performance targets through 2026 (**Figure 7**).

MnDOT established targets for pavement and bridge in anticipation of final MAP-21 performance measures.

## 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

### PROJECT SELECTION

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.

In 2015, Minnesota saw a large increase in the number of fatalities on roadways in the state. However, 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.

## Interregional Corridor Mobility

### PROJECT SELECTION

MnDOT has been meeting the identified performance targets and is expected to do so through 2026. 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 adding passing lanes and turn lanes to MN 11 in Greenbush to the Roseau/Lake of the Woods county line. 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 2026. The MnSHIP update, to be complete in 2017, has retired the IRC mobility measure in response to federal performance requirements. The NHS is now the priority network for mobility in Greater Minnesota. Once finalized, MnDOT will use the federal performance measures on the NHS to track mobility and reliability in Greater Minnesota.



## 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. The projects address federal and state performance measures and invest in strategies to improve mobility on Twin Cities-area highways through innovation, technology, and multimodal options. In the CHIP, investments in strategic mobility enhancements adhere to department policy and guidance that prioritizes MnPASS lanes over general purpose lanes.

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 and transit-advantage projects like bus only shoulder lanes
- Approximately three spot mobility improvements per year
- Completion of two MnPASS lanes
- One major strategic mobility enhancement, such as strategic interchanges

MnDOT plans to construct MnPASS lanes on I-35W between State 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 help mitigate congestion issues and improve reliability, it is still anticipated that congestion and reliability issues are likely to worsen through 2026 relative to today due to the increase in mobility needs across the system and the loss of mobility funding after 2023 as directed by the 2013 MnSHIP guidance.



Active Traffic Management projects are operational improvements to help manage the effects of congestion. ATM includes ramp metering, variable message signs, and other improvements.

## 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**, completed in August 2016, identifies a state bikeway network. The plan provides direction on how to support bicycling on Minnesota state highways through investments, partnerships with locals, and the establishment of a priority bicycle network.

### OUTCOMES

MnDOT will invest in Bicycle Infrastructure through bridge and pavement projects and on priority state bikeways. 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 plan, Minnesota Walks, was completed in partnership with the Minnesota Department of Health. The plan is a collaborative effort designed to be a shared roadmap for how all Minnesotans can have safe, desirable, and convenient places to walk to. Minnesota Walks will be followed by a Statewide Pedestrian System Plan, to be completed in summer 2017, which will identify a pedestrian priority network to help guide investments.

### OUTCOMES

Districts will fund a range of pedestrian and ADA projects during Years 2017-2026 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 2026 include:

- US 14 – Mankato to west of Nicollet
- MN 60 – Windom to Mountain Lake
- 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. Since MnSHIP was completed in 2013, districts have been seeing increases in their Project Supports costs to account for added project complexity and requirements. This 10-year CHIP

includes expected district costs for Project Support that are well above the 11% of all funds as recommended in MnSHIP. This increased amount more accurately reflects the amount MnDOT spends in Project Support.



Figure 5: Investment Category Strategies

INVESTMENT CATEGORY	RISK MANAGEMENT STRATEGIES	OPTIMIZATION STRATEGIES
Pavement Condition	<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>
Bridge Condition	<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>
Roadside Infrastructure Condition	<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>
Traveler Safety	<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>

INVESTMENT CATEGORY	RISK MANAGEMENT STRATEGIES	OPTIMIZATION STRATEGIES
Twin Cities Mobility	<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>
IRC Mobility	<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>Track federal performance measures for mobility on the NHS once federal rules are finalized.</li> </ul>
Bicycle Infrastructure	<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 bike improvements on priority state bikeways.</li> </ul>
Accessible Pedestrian Infrastructure	<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 <b>Accessible Pedestrian Signals (APS)</b> 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>
RCIPs	<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>

## 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.

### 2017

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- Lake Street Access Project: This project combines planned work for an improved transit station at Lake Street and I-35W in Minneapolis with the extension of MnPASS lanes, replacement of 12 major bridges and pavement resurfacing. MnDOT is now the lead agency on this project. This will be a 4 year 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

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- 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

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- I-35W North managed lane: Project will build a managed lane (MnPASS) from Roseville to Blaine in the northern Twin Cities suburbs. This will be a 2 year project.
- US 12: Pavement urban reconstruction project. Project will repair pavement from 4th street to MN 22 in Litchfield.

### 2020

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- 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

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- 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.
- I-94: Managed lane project between downtown Minneapolis and St. Paul. This will be a two year project.

### 2022

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- US 75: Reclaim pavement and replace two bridges in Kittson County from Hallock to Canadian border.

### 2023

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- US 169: Replace 63rd ave bridge over US 169 in Hennepin County.
- MN 210: Replace bridge over Mississippi River in Brainerd.

### 2024

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- 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

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- US 169: Pavement resurfacing from Winnebago to Amboy.

### 2026

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

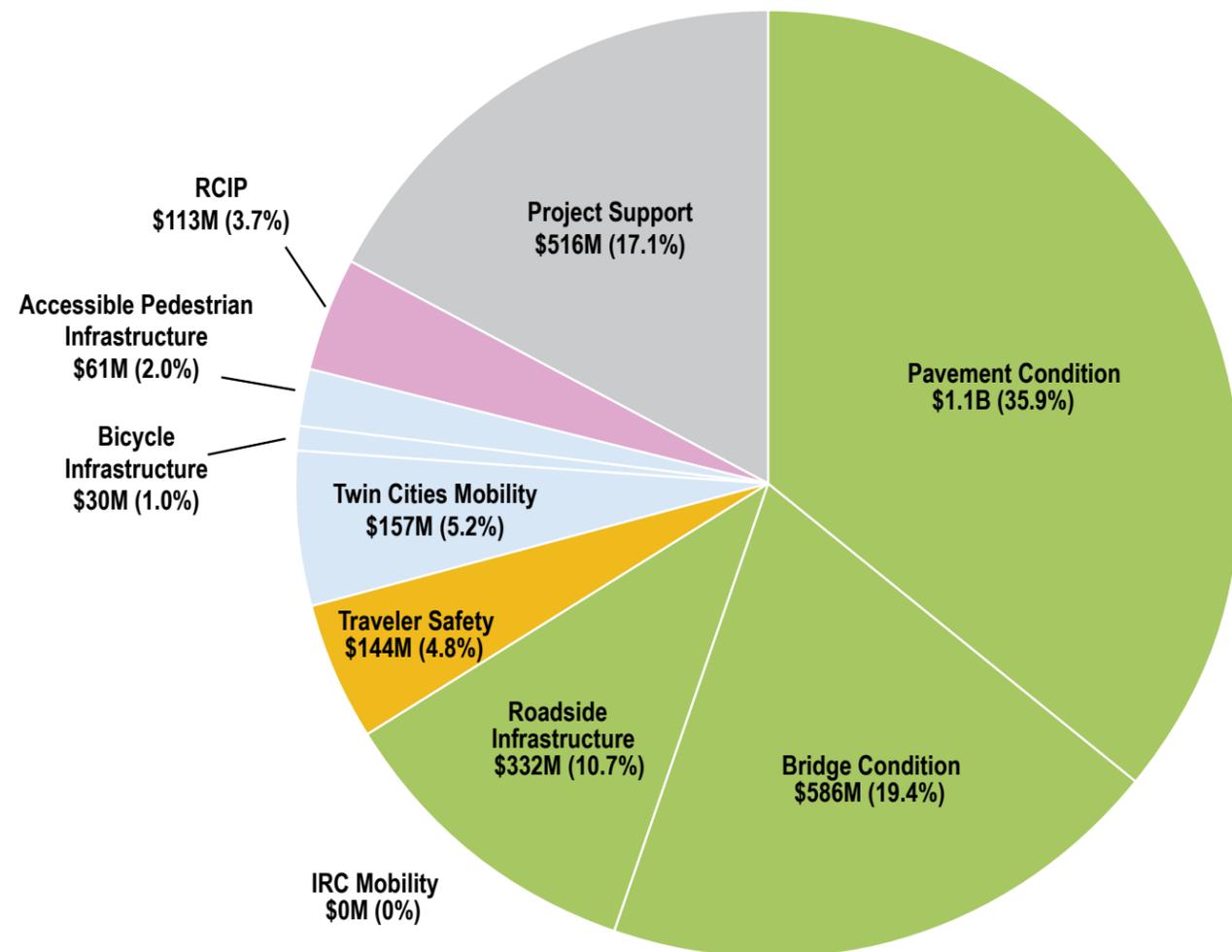
## SUMMARY OF STIP INVESTMENTS

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 9](#) for comparison).

The investments in the 2017-2020 and 2018-2021 STIP are influenced by guidance from the 2013 MnSHIP. Beginning in 2022, projects will follow 2017 MnSHIP guidance.

Figure 6: STIP Investments, 2017-2020



## PERFORMANCE OUTCOMES

As part of the 10-Year CHIP process, MnDOT projects performance outcomes based on planned projects. [Figure 7](#) displays projected performance through 2026.

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 7: Investment Plan Performance Summary

	Result 2015	2013 MnSHIP Target	Projected Result 2020	Projected Result 2026	10-Year Trend	
<b>Asset Management</b>						
<b>Pavement Condition</b> Interstate: % Poor	2.1%	2%	▲ 3.7%	● 5.1	▼ Better ↗ Performance expected to worsen through the full 10 year plan	
<b>Pavement Condition</b> Non-Interstate NHS: % Poor	2.7%	4%	▲ 5.2%	● 6.8%	▼ Better ↗ Performance expected to worsen	
<b>Pavement Condition</b> Non-NHS: % Poor	5.1%	10%	● 8.9%	● 9.5%		
<p>Source: MnDOT</p>					▼ Better	The percent of pavements in Poor condition increased slightly in 2015 for the first time since 2012. Pavement condition is expected to decline on all systems through 2026. NHS pavements are expected to decline at the fastest rate through 2020.
<b>Bridge Condition: NHS, % Poor</b>	1.2%	2%	● 1.1%	● 1.8%	▼ Better ↔ Performance expected to remain at a desirable level	
<b>Bridge Condition: Non-NHS, % Poor</b>	0.3%	8%	● 0.7%	● 4.7%		
<p>Source: MnDOT</p>					▼ Better	The percent of bridge deck area on the National Highway System in Poor condition dropped in 2015 due to continued repairs on NHS 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	424	300 by 2020	N/A	N/A	▼ Better ↘ Performance expected to improve, but at a slower rate	
<p>Source: MN Department of Public Safety</p>					▼ Better	Fatalities resulting from vehicle crashes increased sharply from 361 in 2014 to 424 in 2015, ending a three year decline. MnDOT anticipates fatalities to decline again to previous levels but at a slower rate due to a decrease in Traveler Safety funding.

Source: MN Department of Public Safety

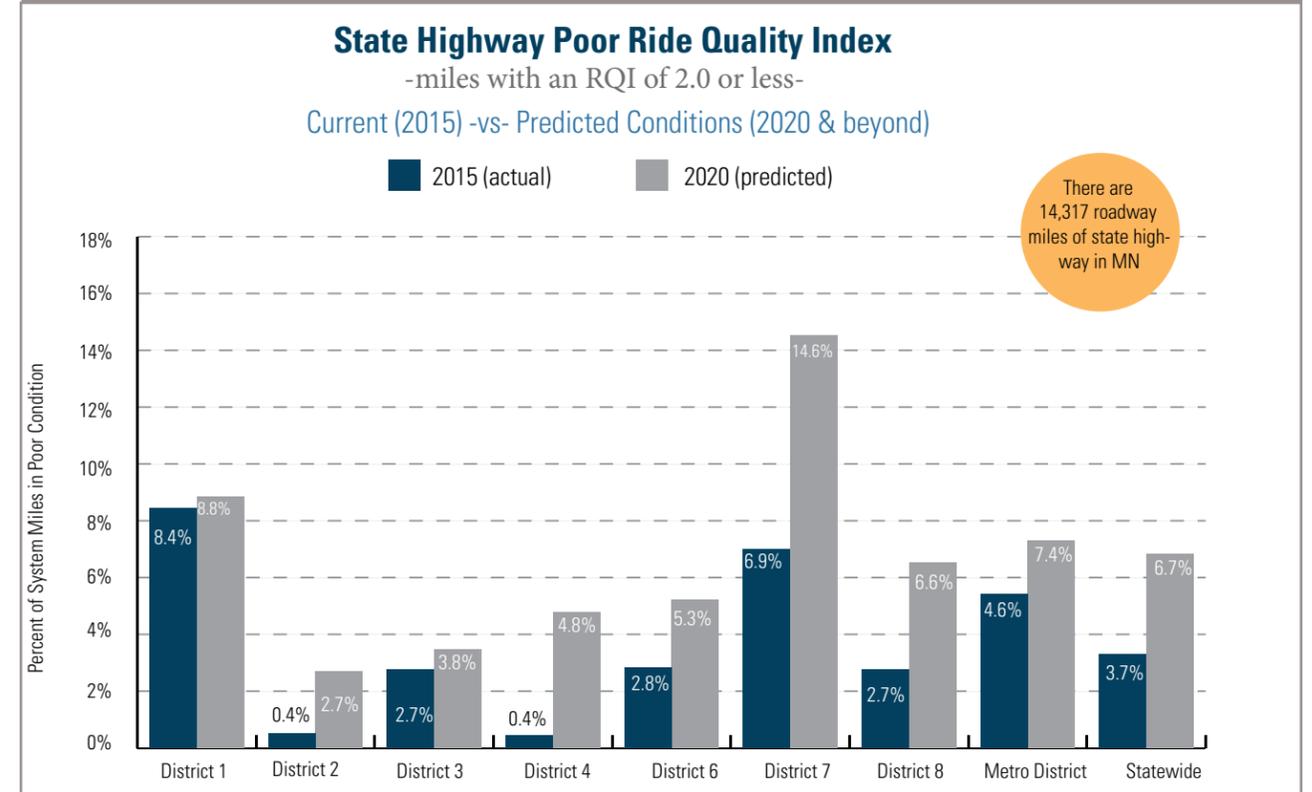
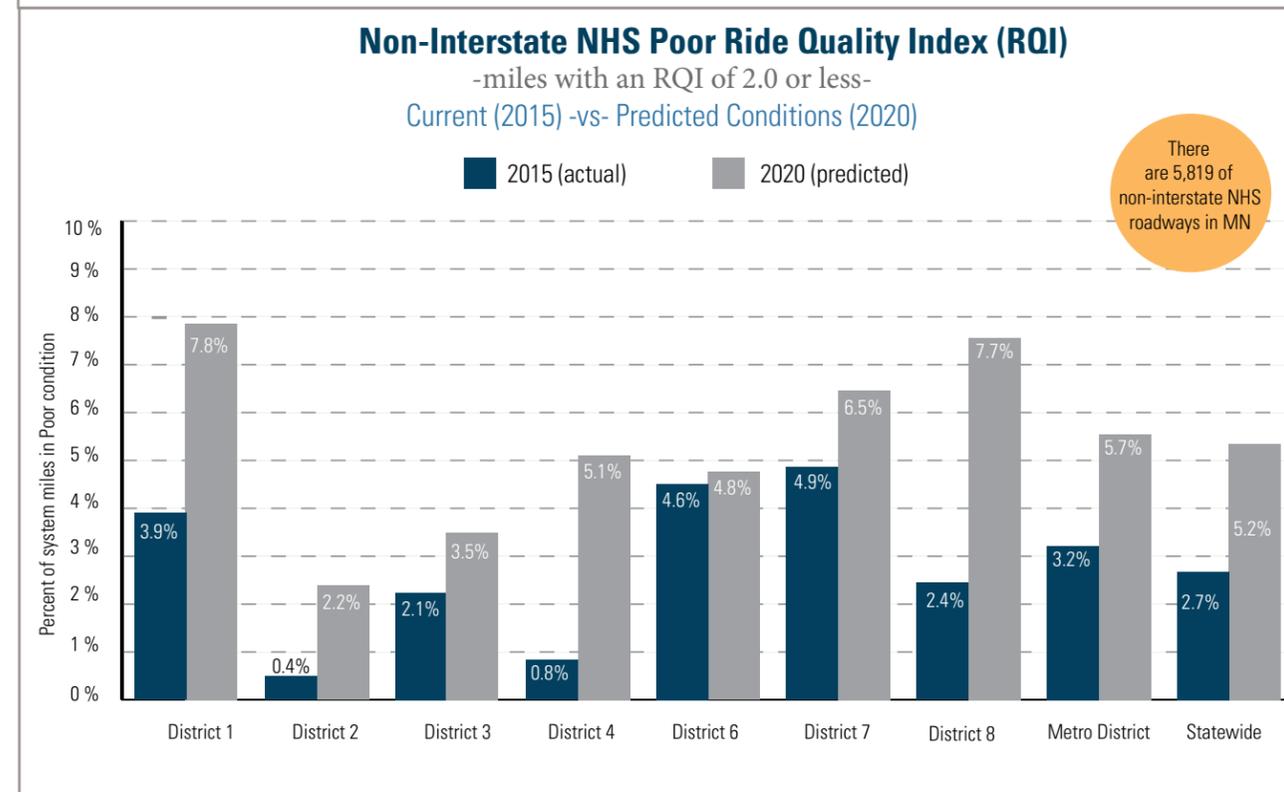
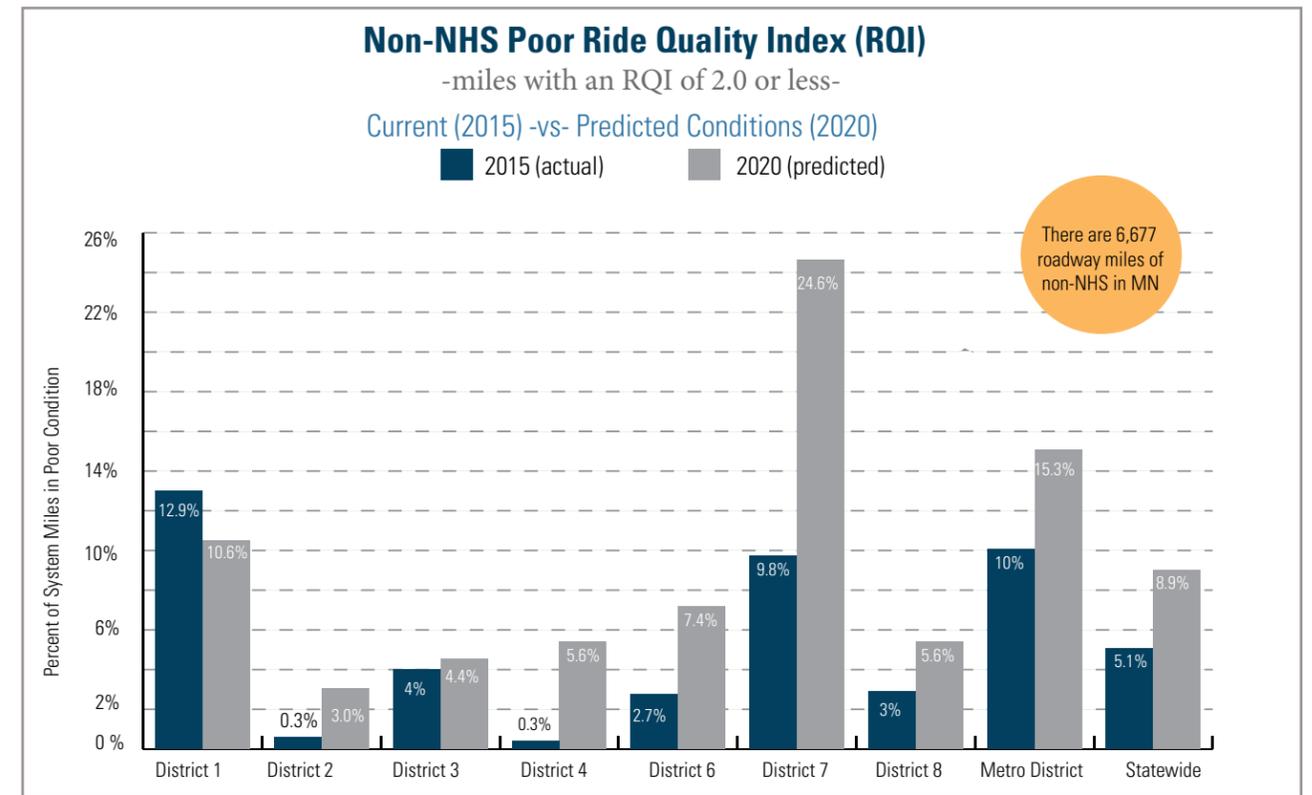
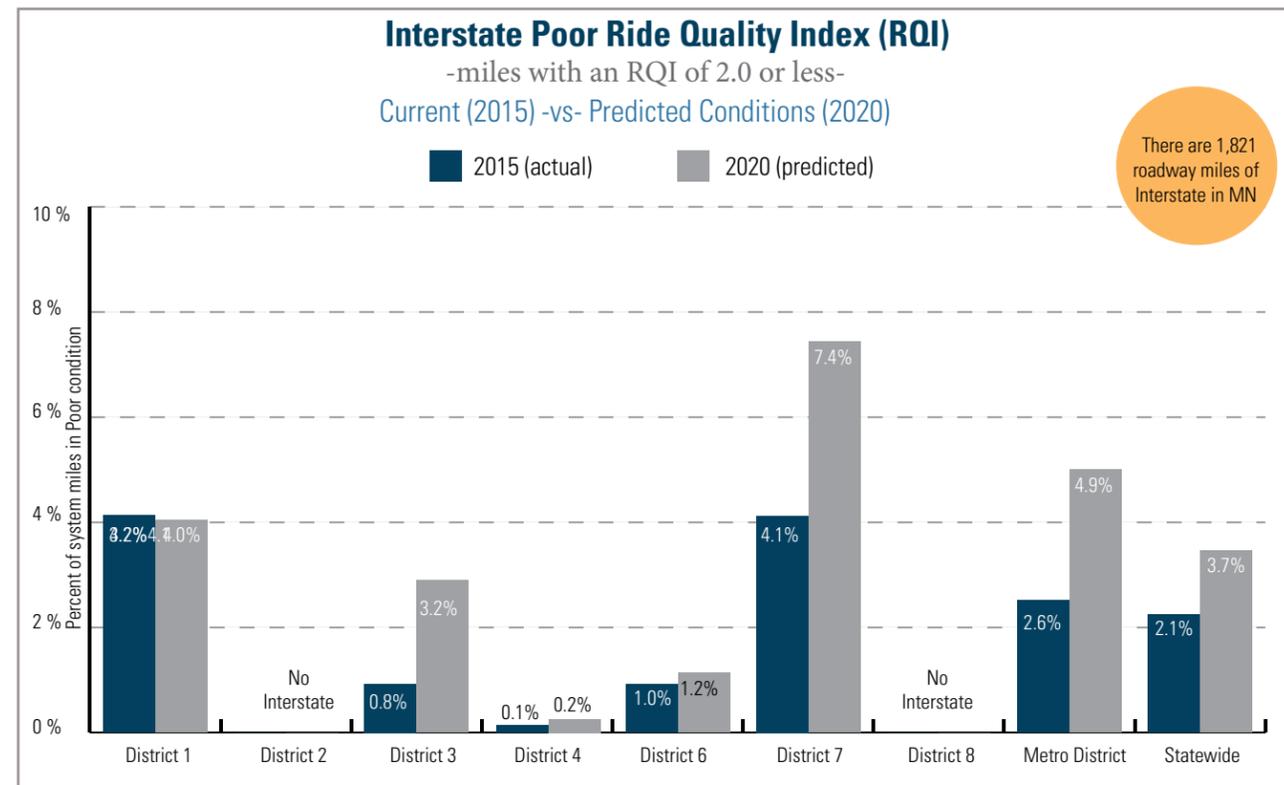
	Result 2015	MnSHIP Target	Projected Result 2020	Projected Result 2026	10-year Trend	
<b>Critical Connections</b>						
<b>Twin Cities Mobility:</b> % of metro freeway miles below 45 mph in AM or PM peak	23.4%	Tracking Indicator	N/A	N/A	▼ Better ↔ Performance expected to continue at current levels	
<p>Source: MnDOT</p>					▼ Better	Congestion is affected by economic conditions, population growth, fuel prices and other factors that increase travel demand. Freeway congestion increased in 2015 to its highest level in the past five years.
% of sidewalks miles in poor condition	4%	Tracking Indicator	N/A	N/A	▼ Better ↔ Performance expected to continue at current levels	
ADA: % of state highway intersections with accessible pedestrian signals	40%	100%	▲ 70-80%	▲ 70-80%	▲ Better ↗ Target expected to be achieved by 2030	
<p>Source: MnDOT</p>					▲ Better	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.

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

Source: MnDOT

# DISTRICT PERFORMANCE OUTCOMES

Figure 8: District Performance Outcomes



## COMPARISON TO MNSHIP

Each year the 10-Year Capital Highway Investment Plan compares planned and programmed investments to the guidance established in MnSHIP. **Figure 9** shows the comparison between the 10-Year CHIP investment and the investment in years 4-13 of MnSHIP (2017-2026)<sup>2</sup>. 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 CHIP than the 2013 MnSHIP direction. Since MnSHIP was completed in 2013, districts have been seeing increases in their Project Support costs. For this CHIP, districts included the expected costs for Project Support which were well above the 2013 MnSHIP guidance. Project Support costs include right-of-way, consultant services, supplemental agreements, and construction incentives.
- RCIP investment is much lower in the 10-year CHIP as compared to MnSHIP guidance. While working through the 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.
- Alignment of bridge projects with pavement projects by districts has led to more efficient use of funds.

<sup>2</sup> An update to MnSHIP with new investment direction will be complete by January 2017

Figure 9: Investment Plan Investment Comparison

INVESTMENT CATEGORY	10-YEAR CHIP	2013 MNSHIP GUIDANCE	DIFFERENCE FROM MNSHIP	DIFFERENCE FROM MNSHIP
Pavement Condition	44.2%	44.4%	-0.2%	-\$69 M
Bridge Condition	18.8%	20.3%	-1.6%	-\$136 M
Roadside Infrastructure Condition	8.4%	8.8%	-0.4%	-\$39 M
Traveler Safety	4.1%	3.9%	0.2%	\$11 M
Twin Cities Mobility	4.4%	4.8%	-0.4%	-\$27 M
IRC Mobility	0.0%	0.0%	0.0%	\$0 M
Bicycle Infrastructure	1.0%	1.3%	-0.3%	-\$21 M
Accessible Pedestrian Infrastructure	1.7%	1.7%	0%	\$1 M
RCIPs	3.4%	5.2%	-1.8%	-\$137 M
Project Support	14.1%	9.5%	4.5%	\$360 M
<b>TOTAL (\$ IN MILLIONS)</b>	<b>7,850</b>	<b>7,906</b>		<b>-\$57 M</b>

## DISTRICT INVESTMENT COMPARISON

Figure 10 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 10: District Investment Comparison

INVESTMENT CATEGORY	1	2	3	4	6	7	8	METRO	TOTAL (\$ IN MILLIONS)
Pavement Condition	45%	47%	52%	55%	42%	47%	54%	40%	3,469
Bridge Condition	19%	19%	16%	7%	33%	18%	12%	19%	1,472
Roadside Infrastructure Condition	11%	10%	9%	10%	7%	10%	11%	7%	660
Traveler Safety	4%	5%	4%	5%	4%	5%	6%	3%	319
Twin Cities Mobility	0%	0%	0%	0%	0%	0%	0%	12%	343
IRC Mobility	0%	0%	0%	0%	0%	0%	0%	0%	0
Bicycle Infrastructure	2%	1%	1%	1%	1%	1%	1%	1%	77
Accessible Pedestrian Infrastructure	2%	3%	3%	2%	2%	2%	3%	1%	136
RCIPs	5%	2%	2%	2%	1%	4%	2%	1%	266
Project Support	12%	13%	13%	18%	11%	14%	11%	16%	1,104
<b>TOTAL (\$ IN MILLIONS)</b>	<b>902</b>	<b>453</b>	<b>836</b>	<b>529</b>	<b>857</b>	<b>845</b>	<b>405</b>	<b>2,918</b>	<b>7,8503</b>

3 The total includes \$105 M in statewide solicitation programs which are included in RCIP.

## 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 (2017-2020) and Years 5-10 (2021-2026).

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 compliance. 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 (2021-2026) 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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