



## Chapter 4

### DEVELOPMENT OF INVESTMENT DIRECTION

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## DEVELOPMENT OF INVESTMENT DIRECTION

MnDOT used various factors including an extensive public engagement process to develop priorities for investments on the state highway system over the next 20 years. These priorities are reflected in the investment direction, which identifies levels of funding for MnSHIP investment. In developing the investment direction, MnDOT considered many criteria including:

- Federal and state requirements
- MnDOT policy goals and objectives
- Technical information on the condition of the state highway system
- Investment needed to maintain the system in a state of good repair
- Estimated revenue over the 20 years of the plan
- Management of key risks to the system
- Public and stakeholder input

The process helped MnDOT complete several key tasks including communicating future outcomes for the state highway system and gauging the degree to which different investment approaches align with public, stakeholder and agency expectations. The process also adjusted the investment direction to guide future capital investments.

The key messages of Chapter 4 are:

- MnDOT developed three investment approaches that highlight the potential 20-year outcomes on the state highway system to generate feedback and help shape investment priorities.
- The process used innovative strategies for in-person engagement, online engagement, and engagement of traditionally underserved communities.
- Participants in the public outreach process stated that MnDOT should invest in maintaining the existing pavement and bridges while making limited mobility improvements.
- MnDOT used the results of the public engagement process as well as internal MnDOT input to develop a 20-year investment direction.
- During a second round of public outreach, participants communicated they understood the rationale behind the investment decisions in MnSHIP but were generally dissatisfied about the investment direction and outcomes of the plan.

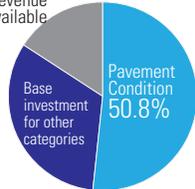
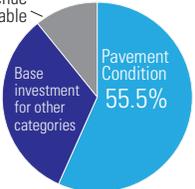
## Development of Investment Approaches

To maintain existing infrastructure at today's condition levels for the next 20 years would require nearly all \$21 billion of MnSHIP's available revenue. Given the limited revenue, MnDOT identified investment trade-off decisions that balance numerous competing priorities. To illustrate these trade-off decisions, MnDOT developed performance levels for each investment category and then packaged different performance levels from each category into three investment approaches.

### DEVELOPMENT OF PERFORMANCE LEVELS

During the summer of 2015, MnDOT formed workgroups for each investment category. These workgroups, composed of planning and engineering staff from MnDOT as well as staff from other agencies, assisted in creating performance levels. Performance levels represent different levels of investment for each investment category to reach specific outcomes identified by the workgroup. Each category had three to five performance levels (Performance Level 0 to Performance Level 2, 3, or 4). MnDOT used both performance measures and risk to define a potential range of investment in each category. The lowest performance level, PL0, represents the minimum level of investment that is acceptable given MnDOT's responsibility for public safety and basic system functionality. The highest investment levels allow MnDOT to meet the goals and objectives for each investment category and to make more progress toward the **Minnesota GO Vision**. Each performance level corresponds with a different set of improvements, outcomes, risks, and risk management strategies (**Figure 4-1**). Refer to **Appendix I: Investment Category Folios** provides more information on how performance levels were developed.

Figure 4-1: Excerpt from the Pavement Condition Investment Category Folio

	<b>Performance Level 0</b> <i>Lowest cost, greatest risk</i>	<b>Performance Level 1</b> <i>Lower cost, higher risk</i>
<b>Investment Approach</b> <i>(See Approach Folio)</i>	<b>Approach C</b> Corresponds with current investment	<b>Approach A, B</b>
<b>Investment Level</b> <i>Total</i>  <i>Years 5-10 (2022-2027)</i> <i>Years 11-20 (2028-2037)</i>	<b>\$8,447 M</b>  \$527.9 M/yr \$527.9 M/yr  	<b>\$9,242 M</b>  \$577.6 M/yr \$577.6 M/yr  
<b>Investment Description</b>	Maintain current investment direction based on 2013 MnSHIP investment direction	Maintain our Interstate at a level compliant with MAP-21. Maintain GASB 34 threshold on the NHS and Non-NHS system.

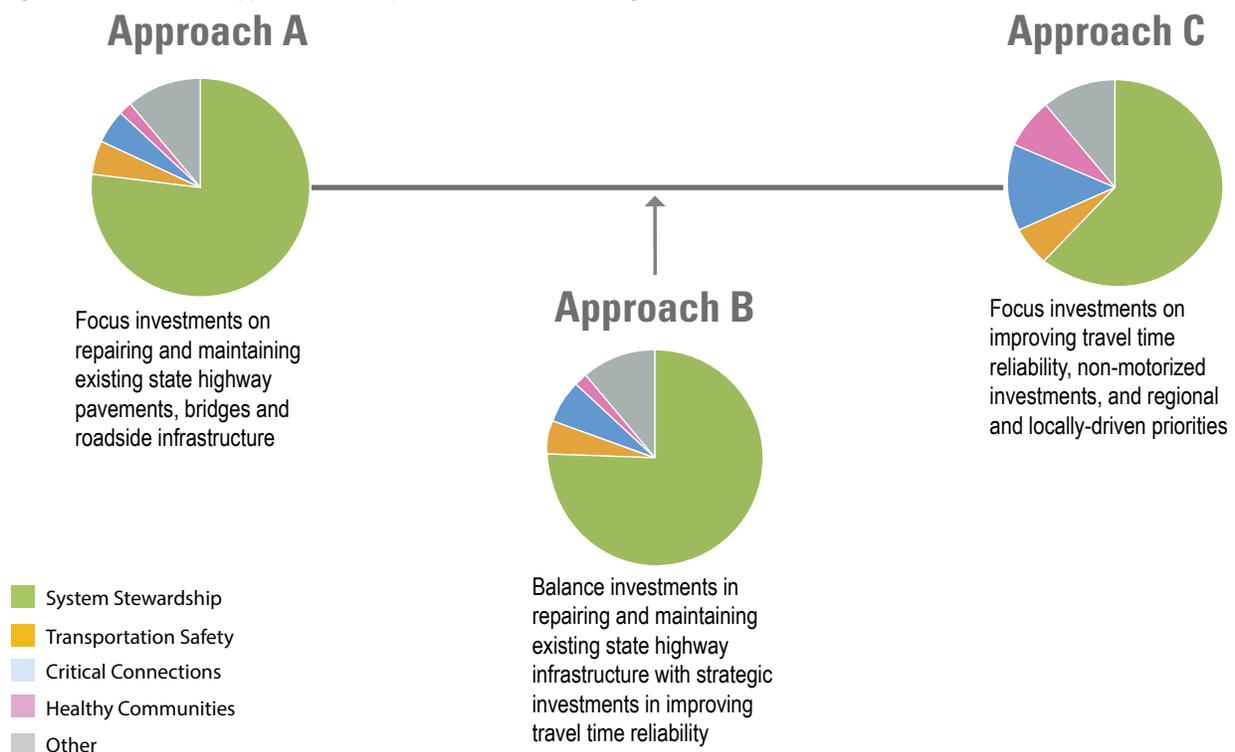
## CONVERSION OF PERFORMANCE LEVELS INTO INVESTMENT APPROACHES

MnDOT packaged different combinations of performance levels for each of the investment categories into three investment approaches: A, B, and C. Each approach used the same baseline assumptions:

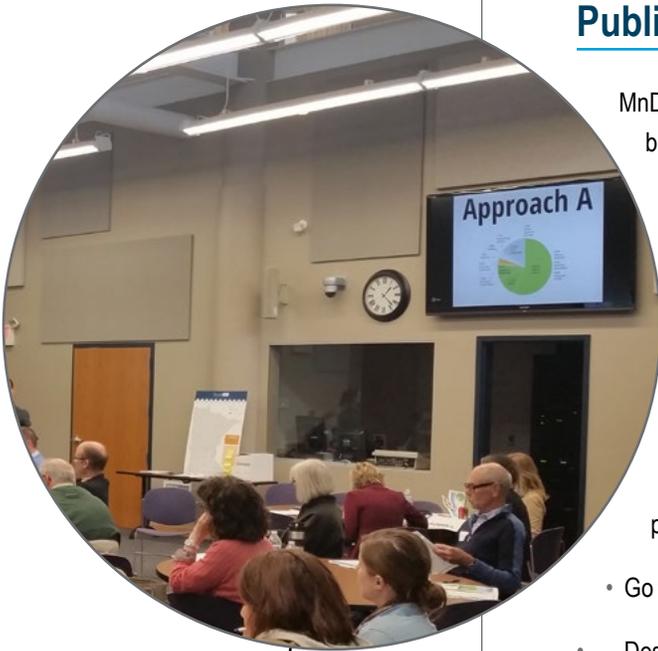
- \$21 billion in revenue is available over the next 20 years (2018-2037)
- The size of the state highway system will not change
- Each investment category must be funded to at least the lowest performance level (PL 0)
- The Project Delivery investment category requires a constant amount of funding to deliver the program based on historical spending patterns
- MnDOT will meet Americans with Disabilities Act substantial compliance standards for pedestrian infrastructure by 2037
- MnDOT needs to meet federal and state legislative requirements

MnDOT used these three approaches to show how available funding could be divided among the investment categories over the next 20 years based on different priorities. This demonstrates a range of possible outcomes and risks (Figure 4-2).

Figure 4-2: Investment Approach Developed for Scenario Planning



## Public Engagement Summary



MnDOT conducted an eight-month joint public outreach process for both MnSHIP and the Statewide Multimodal Transportation Plan.

The process used innovative strategies for in-person engagement, online engagement, and engagement of traditionally underserved communities. MnDOT expanded its use of public engagement techniques from the 2013 plan including piloting several new tools to gather input from transportation partners, stakeholders and the public on priorities for investment. This feedback helped MnDOT identify priorities for developing the 20-year investment direction.

The MnSHIP engagement approach was based on the following principles:

- Go to the public and partners. Don't make them come to us
- Design tools to facilitate different levels of engagement. Individuals vary in interest and knowledge but everyone should be able to participate
- Be responsive and adaptive. Tailor tools and techniques to the needs of each specific group or event
- Partner with traditionally underserved communities to design an engagement approach that works for them
- Focus on involving more individuals and trying new things, but don't forget about traditional stakeholders and tested tools
- Collect data, regularly report on outreach activities, implement lessons learned, and fine-tune the approach



MnDOT made the decision to track demographics as a part of this outreach effort. All engagement tools that were completed anonymously asked participants to identify their zip code, age, gender, and race/ethnicity.

Answering these questions was optional and voluntary. The project team collected and analyzed the data throughout the engagement effort to determine if certain populations were missed. The data helped refine the engagement strategy from month-to-month to address any shortfalls. After analyzing the data, MnDOT adjusted the engagement focus to increase the participation from traditionally underserved communities through targeted Facebook ads and a partnership with Emergency, Community, Health and Outreach (ECHO). The intended outcome was to reach a population that is representative of Minnesota's demographic makeup.



## PUBLIC ENGAGEMENT

### In-Person Engagement

MnDOT created multiple in-person opportunities for the public, stakeholders, and transportation partners to provide input on the priorities for the investment direction. MnDOT relied heavily on attending existing meetings, workplaces, and community events to seek input. In some cases, MnDOT had an hour on a meeting agenda to present. In other cases, MnDOT only had a few seconds to interact with people. With this in mind, MnDOT prepared multiple tools for various engagement settings to seek in-person input. Below are four different in-person settings used to gather input.

- Community Events
- Stakeholder Forums
- Partner and Stakeholder Briefings
- Workplace-Based Outreach

### Online Engagement

MnDOT used several online tools to supplement the in-person engagement techniques. Online engagement was critical to reaching a larger audience. Online tools mirrored those used for in-person engagement. MnDOT created its first Online ADA Plan as part of the Public Participation Plan to ensure that all web-based engagement was accessible to persons with visual impairments. Below is a summary of the tools used for online engagement.

- Online Surveys
- Project Website
- Social Media
- Facebook Targeted Ads
- Stakeholder E-mail Updates

### Traditionally Underserved Community Engagement

MnDOT provided specific outreach opportunities for traditionally underserved populations by piloting new engagement tools and techniques.

- Tribal Outreach
- Facebook Targeted Ads
- ECHO Outreach

A full public outreach summary is available in [Appendix G: Public Outreach Summary](#).

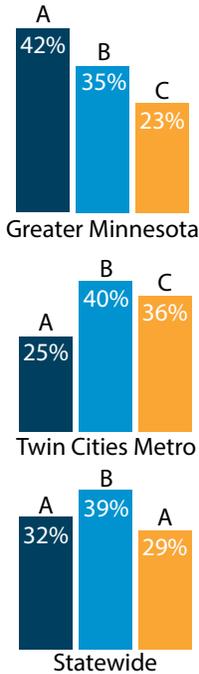


## PUBLIC ENGAGEMENT RESULTS

### Scenario Preference

On average statewide, participants in the public outreach process preferred Approach B, no matter if they were transportation partners/stakeholders or the public. However, there were noticeable differences between the preferences of Twin Cities Metro Area and Greater Minnesota participants. As shown in **Figure 4-3**, Greater Minnesota preferred Approach A while the Twin Cities Metro Area preferred Approach B.

Figure 4-3: Most Frequently Selected Approach by Area



### Scenario Rating

Participants who completed the roving survey rated Approach A the highest (**Figure 4-4**). However, Approach B rated very close to Approach A, only 1.7 lower. Similar to the results from the scenario preference, there were differences in the highest rated approach between Greater Minnesota and the Metro Area. Greater Minnesota rated Approach A highest while the Twin Cities Metro Area rated Approach B slightly higher than Approach A.

### Most Important Investment Categories

At all outreach events, people selected their most important investment categories. The results are shown in **Figure 4-5**. Pavement Condition and Bridge Condition were the top two categories overall among both stakeholders and the public.

Figure 4-4: Highest Rated Approach by Area

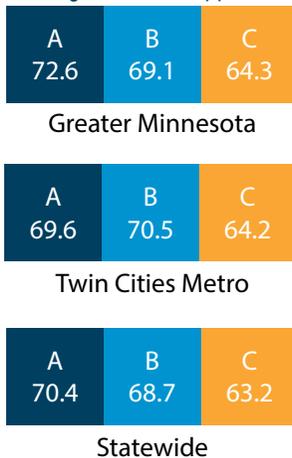


Figure 4-5: Most Selected Investment Categories

-  #1 - Pavement Condition
-  #2 - Bridge Condition
-  #3 - Roadside Infrastructure Condition
-  #4 - Regional/Community Improvement Priorities
-  #5 - Traveler Safety

### Key Themes from Public Engagement

Participants provided a short statement that captured their preferred investment priorities. The following are the key themes identified from the results. **Figure 4-6** also summarizes comments received into a word cloud. The larger the word appears, the more often participants mentioned the word in comments



then identified where they might make adjustments to Approach B.

## New Factors Influencing Investment Direction

MnDOT used the investment priorities in Approach B as the starting point to develop the investment direction based on the results of public outreach and internal analysis. To create an investment direction, MnDOT needed to address two new factors not considered in the development of the three approaches: a new federal transportation bill and a revised analysis of the amount of funding needed for Project Delivery.

### FAST ACT

In December 2015, the federal government passed a new federal transportation bill. **Fixing America's Surface Transportation Act**. The FAST Act increased federal revenue projections in MnSHIP and created a new national freight program. MnDOT revised the 20-year revenue projections to account for these changes. The three approaches assumed \$20 billion. The new revenue projections assumed \$21 billion in available revenue over 20 years.

Roughly, two thirds of the projected revenue increase is dedicated to the National Highway Freight Program. The FAST Act requires a freight investment plan to identify how funds from the National Highway Freight Program will be spent. Until then, MnSHIP is setting aside projected revenue from the National Highway Freight Program into a separate category called Freight Investment. This category was not a part of the three approaches.

### PROJECT DELIVERY REVISED ANALYSIS

A review of the investment needed to deliver projects determined that the funding used in the three approaches was too low. During the past few years, bond programs such as Corridors of Commerce have supplemented MnDOT's program. Projects funded by bonds tend to need additional investment in Project Delivery for right-of-way and project design. Including these projects in the analysis boosted the amount of investment in Project Delivery. MnDOT revised the analysis based on this additional information and determined that spending needed to deliver projects was 16 percent of the capital program.

The final investment direction reflects this change. If the Legislature does not provide new bonding in the future, MnDOT will use any efficiency in Project Delivery to program additional



projects to maintain bridge and pavement conditions.

## Setting of 20-Year Investment Direction

### INVESTMENT CATEGORY ADJUSTMENTS

MnDOT needed to make changes from Approach B to handle the increase in Project Delivery in the MnSHIP investment direction. Several areas received lower amounts of investment to avoid any one category from receiving all of the impact. Changes included reducing Pavement Condition, Bridge Condition, Traveler Safety, Jurisdictional Transfer, Greater Minnesota Mobility and Bicycle Infrastructure.

### SETTING A 20-YEAR INVESTMENT DIRECTION

In the 2013 MnSHIP, MnDOT divided the 20-year investment direction into two 10-year periods with different investment priorities. This allowed MnDOT to balance investment in expanding and maintaining the highway system in the first 10 years (2014-2023). During the second 10 years (2024-2033), a shift occurs as MnDOT focuses solely on maintaining the state highway system since the investment needed to preserve the system increases.

With this update to MnSHIP, the investment needed to maintain the system has grown. Likewise, MnDOT's ability to balance investments between expanding and maintaining the system is limited. If MnDOT were to continue with two separate 10-year investment periods, the differences between the two periods would be small. In addition, moving towards a 20-year investment direction eliminates the abrupt shift in investment priorities that existed in the 2013 version of MnSHIP. This change makes it easier for MnDOT Districts to plan and deliver projects. For these reasons, MnDOT chose to develop a full 20-year investment direction instead of two 10-year investment periods.

The 20-year investment direction focuses on maintaining the existing state highway system while making limited mobility investments. Maintaining existing roadways surfaces, bridges, and other supporting infrastructure continues to make up more than two-thirds of total investment. Limited mobility investments are made in the Twin Cities Metro Area and Greater Minnesota. **Figure 4-7** shows a comparison between this investment direction and the 2013 investment direction and outlines the factors for changes made with this MnSHIP update. **Chapter 5** describes the investment direction and the outcomes that are projected.

Figure 4-8: Factors that Influenced the MnSHIP Investment Direction

INVESTMENT CATEGORIES	OBJECTIVE AREA	EXISTING INVESTMENT DIRECTION	UPDATED INVESTMENT DIRECTION	RATIONALE FOR ADJUSTING EXISTING DIRECTION
Pavement Condition	System Stewardship	48.6%	49.4%	Increase investment to maintain the system, though conditions decline. The NHS system is the priority network for investment and is held in better condition. MnDOT accepts more miles of non-NHS in Poor condition. Public and internal feedback was to prioritize investment in maintaining the existing highway system.
Bridge Condition	System Stewardship	20.5%	11.4%	Recent increased investment has improved the condition of bridges. Greater accuracy of deterioration model and forecasted condition has led to increased efficiency of investments to maintain bridge condition. Able to invest less while maintaining acceptable bridge conditions.
Roadside Infrastructure Condition	System Stewardship	8.9%	7.7%	Maintain approximate current investment amount. Prioritize investment concurrent with pavement and bridge projects. Proactively address high-risk elements with stand-alone projects.
Jurisdictional Transfer	System Stewardship	N/A	0.4%	Invest in properly aligning the ownership of the system to provide the right level of service and better meet customer expectations.
Facilities	System Stewardship	N/A	0.4%	Maintain historical investment amount. Previously investment was split between Roadside Infrastructure and Small Programs
Traveler Safety	Transportation Safety	3.8%	3.2%	Slight reduction in investment in new safety improvements as many new improvements have been completed over the past decade. Primary factors in crashes include distracted driving which is difficult to address through capital investments. Rely on TZD program to focus on education and enforcement strategies to address these primary factors in crashes.
Twin Cities Mobility	Critical Connections	3.5%	1.1%	Maintain current investment through 2023 to deliver programmed and planned mobility projects. Consistent with Approach B, the most preferred approach.
Greater Minnesota Mobility	Critical Connections	0.0%	0.1%	Include investment to address mobility in Greater Minnesota as MnDOT develops the NHS performance measure. Consistent with Approach B, the most preferred approach.
Freight	Critical Connections	N/A	2.9%	Setaside for investment from the National Highway Freight Program.
Bicycle Infrastructure	Critical Connections	1.2%	0.6%	Reduced investment in this category due to increased needs for maintaining the existing highway system, Project Delivery, and ADA improvements.
Accessible Pedestrian Infrastructure	Critical Connections	1.8%	2.5%	Increased investment needed to reach substantial ADA compliance with existing pedestrian infrastructure by 2037.
Regional and Community Improvement Priorities	Healthy Communities	3.8%	1.5%	Reduced investment in this category due to increased needs for maintaining the existing highway system, Project Delivery, and ADA improvements. Investment limited to the Transportation Economic Development program as well as cooperative agreements and minimal post-project landscaping needs.
Project Delivery	Other	8.3%	15.6%	Increased investment based on revised Project Delivery analysis.
Small Programs	Other	N/A	3.0%	Not included in overall investment direction in previous version of MnSHIP as investment was taken off the top. Reduced overall investment in Small Programs as several funding programs such as rest areas and weigh stations have been included in other investment categories.

## Public Outreach on Draft Investment Direction

MnDOT conducted a second round of public outreach in spring 2016. This phase included four meetings across the state and one webinar to report on the results of fall 2015 outreach and gauge participants' understanding and acceptance of the content and outcomes of the draft investment direction.

Participants were generally dissatisfied about the investment direction and outcomes of the plan but understood why the trade-off decisions were made. The majority of participants thought the rationale behind the decisions was clear or very clear, signifying that MnDOT made progress toward a more transparent and accountable process. Although participants had differing priorities and did not agree with all of MnDOT's decisions, they frequently stated their appreciation for the structure, conversation, and transparency of both the fall and spring outreach processes.



### WHAT IS POSITIVE ABOUT THE PLAN?

- It prioritizes maintaining the existing system first
- Mobility categories still get some level of funding
- It is the most responsible way to invest while still responding to the public's concerns
- MnDOT's continued, albeit limited, ability to partner with local agencies and stakeholders is preserved

### WHAT IS NEGATIVE ABOUT THE PLAN?

- Funding levels are insufficient to meet stakeholder expectations
- No ability to meet most of the established targets for MnDOT's assets
- Not enough funding to complete urban reconstruction projects and improve main streets in towns across Minnesota
- Less funding for bicycle improvements than originally expected

### OTHER TAKEAWAYS

- Need to educate stakeholders and legislators about funding shortfall
- Coordination with local partners is critical
- Pursue strategies to stretch available resources

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