



2013 MNSHIP ASSESSMENT

The Minnesota State Highway Investment Plan (MnSHIP) is a 20-year plan that guides future capital investments on the state's 12,000-mile highway system. It supports the guiding principles of the Minnesota GO Vision and links the Statewide Multimodal Transportation Plan (SMTP)'s objectives and strategies to improvements on the highway system.

Reasons for conducting an assessment

This assessment evaluates the planning process and the implementation of the 2014-2033 MnSHIP recommendations. It also identifies areas where the current update can be improved.

Assessment process

The MnSHIP project team conducted an internal assessment of three major items identified in the 2013 MnSHIP: proposed investment recommendations; risks to implementing the capital investment priorities; and implementation of risk mitigation strategies. The project team consulted MnDOT staff members involved in implementation of the 2013 MnSHIP to identify areas of progress.

2013 MnSHIP guidance and CHIP investment levels

The 10-year Capital Highway Investment Plan (CHIP) identifies projects up to ten years in advance of construction and six years before incorporation into the 4-year Statewide Transportation Investment Plan (STIP). On an annual basis, the CHIP reviews investments and their alignment with the MnSHIP guidance. The following table compares the most recent CHIP (2015-2024) with investment direction established in the 2013 MnSHIP. It shows that CHIP investment levels are very near MnSHIP recommendations.

Investment Category	2013 MnSHIP Guidance	10-Year CHIP	Difference from MnSHIP (%)	Reasons for Difference
Pavement Condition	40.2%	41.4%	1.2%	Increased investment through Corridors of Commerce and from RCIPs for pavement projects
Bridge Condition	20.2%	19.4%	-0.8%	Increased investment through Ch. 152 and alignment of bridge projects with pavements projects by districts has led to more efficient use of funds and decreased number of bridge projects in post-STIP years
Roadside Infrastructure Condition	8.8%	8.9%	0.1%	Meeting investment goals
Traveler Safety	4.1%	4.4%	0.3%	Meeting investment goals
Twin Cities Mobility	6.2%	7.2%	1.0%	Increased investment through Corridors of Commerce
IRC Mobility	0.0%	0%	0%	N/A
Bicycle Infrastructure	1.4%	1.3%	-0.1%	Meeting investment goals
Accessible Pedestrian Infrastructure	1.6%	1.6%	0%	Meeting investment goals
Regional & Community Investment Priorities	6.7%	4.1%	-2.6%	Increased investment demand in other categories such as Pavement and Project Support decreased investment in RCIPs
Project Support	10.8%	11.7%	0.9%	Underestimation in 2013 MnSHIP of investment needed for project delivery
Total	100%	100%		

NOTABLE CHANGES SINCE MNSHIP 2014-2033

Since the publication of MnSHIP in 2013, the planning context has changed within and outside of MnDOT. Some of these changes have been a direct result of MnSHIP and others are due to external factors like MAP-21; together they influence the development and implementation of the current and future investment direction. The following are some of the key changes which have occurred.

External

- **Corridors of Commerce (2013 & 2014)** - Created by the state legislature, this program authorizes the sale of bonds specifically for the construction, reconstruction, and improvement of state highways. \$331.5 million was approved for use in 2013, 2014 and 2015. This enlarged the size of the planned program significantly during those years, with both bond repayments scheduled throughout the MnSHIP years.
- **Governor Dayton's 2015 Transportation Funding Package/NexTen** - Initiated by Governor Dayton, this proposal identified specific projects for completion in the case of additional funding from the legislature and included three new types of investment areas not previously discussed in MnSHIP: facilities, main streets, and alignment of roadway ownership (i.e. jurisdictional transfer).

Internal

- **Updates to MnDOT Family of Plans** - Since the 2013 MnSHIP, statewide plans for rail, freight, bicycle, pedestrian, and ports and waterways systems have been updated or are in progress.
- **10-Year Capital Highway Investment Plan (CHIP)** - Districts began identifying specific projects beyond the 4-year Statewide Transportation Improvement Program (STIP) with the 2013 MnSHIP, and have continued to do so since 2014. This has allowed for greater coordination with local units of government due to a longer planning time frame. Projects are now planned for the next 10 years.
- **Transportation Asset Management Plan (TAMP)** - The TAMP created performance measures and targets for assets not identified in federal legislation, MAP-21, or the 2013 MnSHIP, including many roadside infrastructure assets like culverts, deep stormwater tunnels, overhead sign structures, and non-NHS pavements.
- **Annual Balancing Meetings** - Annual meetings with districts to balance planned investments for years 4-10 of the CHIP has allowed for early assessment of districts' spending alignment with MnSHIP guidance. Years 1-3 are already balanced as part of the previous STIP.
- **State Performance Program Project Coordination** - MAP-21's focus on NHS has increased coordination between districts and the state's materials and bridge offices in order to better coordinate and meet statewide performance targets for NHS pavements and bridges.

RISK ASSESSMENT

There were seven key risks to implementing the capital investment priorities identified in MnSHIP. Since 2013, MnDOT has mitigated some of these risks through investments and specific initiatives. The following table compares risk grades established for years 1-10 of MnSHIP at the time of adoption to where it is believed MnDOT stands several years post-plan.

Risk	MnSHIP Grade	Current Grade	Reason for Grade
GASB 34: pavement and bridge conditions deteriorate, jeopardizing state bond rating	Fair	Fair	While MnDOT continues to fall within GASB 34 thresholds, the ability for the agency to continue to do so becomes increasingly difficult with constrained projected revenues and competing investment priorities.
Federal policy: failure to achieve MAP-21 performance targets on NHS reduces funding flexibility	Good	Good	Because MAP-21 performance measures and targets have not been finalized, MnDOT is still using assumed performance measures and targets. MnDOT continues to address impacts and provides regular feedback to FHWA as MAP-21 guidance is formalized.
MnDOT policy: misalignment with Vision and Statewide Multimodal Transportation Plan results in loss of public trust	Fair	Good	MnDOT's multimodal priorities are well served by MnSHIP's investment categories like accessible pedestrian infrastructure and bicycle infrastructure. The creation of these categories in the current MnSHIP has better allowed the agency to demonstrate its intentions and coordinate with statewide bicycle and pedestrian plans.
Bridges: deferring bridge investments viewed as an unwise/unsafe strategy	Good	Good	Risk and condition are adequately addressed through investment levels over 20-year planning horizon. Information indicates an increased bridge need during the last 10 years of MnSHIP.
Responsiveness: rigid investment priorities limits ability to support local economic development and quality of life opportunities	Fair	Fair	The last ten years of 2013 MnSHIP (2024-33) allocates significantly more funds to pavement and bridge assets. As these years are being planned for in the CHIP, some concerns are rising about decreased funding in other investment categories such as Twin Cities Mobility and Regional & Community Investment Priorities to be able to address urban reconstruction needs.

RISK ASSESSMENT (CONTINUED)

Risk	MnSHIP Grade	Current Grade	Reason for Grade
Operations budget: untimely or reduced capital investment leads to unsustainable maintenance costs	Fair	Fair	As part of TAMP development, life cycle cost analysis (LCCA) was completed for pavements, bridges, and several roadside infrastructure assets. Based on the LCCA, MnDOT is working to better incorporate appropriate capital and maintenance investments made over the life of analyzed assets to achieve the best cost effectiveness and return on investment.
Public input: investment inconsistent with MnSHIP public outreach results in loss of public trust	Fair	Fair	Numerous stakeholders consulted during outreach of 2013 MnSHIP indicated desire for higher investment in local investment priorities and increased mobility. MnSHIP investment guidance prioritized asset management in years 2024-2033 but continues to deliver a more balanced program through 2023 at the expense of preserving assets.

RISK MITIGATION STRATEGIES

The 2013 MnSHIP identified fifteen risk mitigation strategies to collectively address the risks outlined above - eight for internal MnDOT planning and operations and seven for MnDOT's interactions with external entities like other jurisdictions. The scorecard below shows the assessment of those strategies.

Internal Risk Mitigation Strategy	Grade	Reason for Grade
Adjust performance expectations , where possible, to better match customer expectations with system performance.	Good	MnDOT has set condition targets for pavements based on public expectations for ride quality and to meet anticipated MAP-21 National Highway System (NHS) expectations. The TAMP also identified a condition target of 10 percent poor for non-NHS pavements.
Pursue research and innovation to improve efficiency and minimize impacts to the traveling public.	Good	Specific recent projects have improved efficiencies with minimal impacts to the traveling public: I-494 concrete median mover and pavement treatments to optimize remaining service life is one example. Several research projects have also been initiated to define asset management best practices.
Continue to employ high return-on-investment strategies that deliver the majority of benefits at a reduced cost.	Fair	The Transportation Economic Development program (TED) and Corridor Investment Management Strategies (CIMS) both employ return-on-investment in selection criteria. TED is currently funded at \$10M/year. CIMS was last funded in 2013 and is not currently funded.
Report life-cycle cost of highway system improvements so stakeholders and policy makers can better understand the long-term costs of highway improvements	Fair	Through TAMP, life cycle costs on highway system improvements have been collected and will be used to better communicate long-term costs. MnSHIP 2037 will begin to address remaining service life as a performance for pavements and bridges and start to bridge the gap between capital and maintenance investment.
Evaluate the capital and operations revenue split to best use revenues in keeping state highways safe and operable.	Poor	MnDOT is collecting how maintenance and operations (M/O) treatments are being applied to pavements, bridges, culverts, overhead sign structures, and high-mast tower lights based on condition and/or age. This data allows MnDOT to better link capital and M/O investments to outcomes, however only a single year of collected in-the-field M/O data exists at this time.
Focus one-time additional funding on the highest risks in each category instead of relying on conventional distribution.	Fair	MnDOT developed an Investment Opportunity Plan in 2014, which uses risk to redistribute capital funds on an 'as-available' basis. The 2015 legislative session provided funding for advanced pavement preservation projects.
Manage investments to achieve multiple purposes like improvements to transportation, economic competitiveness, public health, and energy independence.	Fair	TED is an example of MnDOT managing investments to achieve multiple purposes. The purpose of the TED program is to fund construction, reconstruction, and improvement of state and local transportation infrastructure in order to create and preserve jobs, improve the state's economic competitiveness, increase the tax base, accelerate transportation improvements to enhance safety and mobility, and promote partnerships with the private sector. There is \$30 million for the 2015 TED solicitation.
Increase attention given to analyzing and accurately tracking investments and performance measures in several investment categories.	Good	The TAMP developed performance measures and targets for several roadside infrastructure assets and new measures are being developed in several MnDOT modal plans such as the bicycle, freight, and pedestrian plans. MnDOT also developed a uniform process for adopting performance measures and targets to ensure that all MnDOT performance measures and targets proposals are evaluated in the context of competing priorities for agency resources.

RISK MITIGATION STRATEGIES (CONTINUED)

External Risk Mitigation Strategy	Grade	Reason for Grade
Reevaluate the jurisdictional alignment of the state highway system to ensure transportation decisions occur at the right level of government	Good	The Jurisdictional Realignment Study was completed in 2014. MnSHIP 2037 will include jurisdictional transfer as a separate investment category that enters into the trade-off discussion.
Initiate a review of GASB 34 thresholds to see if changes are feasible	Fair	MnDOT did undertake a review of GASB 34 requirements and determined that taking action to seek a change in asset valuation method at the time was not desired.
Review the final rules of MAP-21 and allocation of revenues as MAP- 21 rule-making concludes.	Good	Review of final MAP-21 rules are on-going and MnDOT has responded to the final rule-making. MnDOT will update performance measures and targets as needed to align with MAP-21.
Pursue public-private partnerships as an opportunity to improve the delivery, maintenance, and operations of highway improvements.	Fair	Due to the nature of the program, opportunities have been limited to pursue public-private partnerships to a large degree. Despite this, MnDOT has worked to improve the delivery, maintenance, and operations of highways by partnering with design-build contractors to deliver projects.
Coordinate with locals and other state agencies to best leverage funds to achieve better transportation outcomes for the public, transportation stakeholders, and partners.	Fair	Most MnDOT Districts include an annual 'cooperative agreement' set-a-side to coordinate with cities and counties on local priorities on the state highway system. Significant additional funds have not been leveraged through coordination with the locals and other state agencies. The one exception was the \$10 million in federal Economic Development Agency funding awarded for the US 169 flood mitigation project between Mankato and St. Peter in 2016.
Advocate for flexible design standards and specifications that maintain or improve safety but decrease the cost of pavement reconstruction and maintenance	Fair	Lower cost, high return safety investment strategies are being implemented. The 2015 State Transportation Bill allowed flexible design standards.
Broaden the education of stakeholders and policy makers on the increasing fiscal limitations facing MnDOT.	Good	MnDOT has initiated the Get Connected effort to increase our customer's understanding of our transportation systems and the growing funding need to maintain and operate it. MnDOT is also broadening the education of stakeholders and policy makers through the involvement of the Area Transportation Partnerships during the creation of the STIP and local outreach for the 10-year CHIP.

IMPLICATIONS AND ACTION ITEMS FOR THE MNSHIP 2037 UPDATE

- **Reassess Project Support investment category guidance.** The MnSHIP/CHIP comparison showed that project support was above the MnSHIP guidance level by 1.4 percent. Re-evaluate program needs and determine if more resources are needed.
- **Identify additional investment categories as needed.** Since the 2013 MnSHIP, the potential benefits of new investment categories have been recognized, like facilities, urban reconstructions/main streets, and jurisdictional transfers. Including these investment categories would improve the investment trade-off discussion.
- **Incorporate life-cycle cost considerations and new performance measures in specific asset category discussions.** The repair or replacement of existing assets is included in the Roadside Infrastructure, Traveler Safety, Bicycle Infrastructure, and Accessible Pedestrian Infrastructure investment categories. Since the 2013 MnSHIP, new performance measures and targets have been developed. In particular, performance measures and targets for Roadside Infrastructure assets such as culverts, deep stormwater tunnels, and overhead sign structures have been identified via the TAMP.
- **Successfully use innovative ways to reach underserved populations and other stakeholders in the public participation process.** The 2013 plan engaged with the public and other stakeholders through open houses, online surveys, and a project advisory committee. MnSHIP 2037 should continue previous engagement techniques while also effectively reaching a broader pool of stakeholders through placed-based engagement opportunities - where our customers live, work, and play.
- **Incorporate transportation-related emerging trends identified in SMTP 2037.** MnSHIP 2037 will discuss emerging trends and their potential implications for state highway investment direction. Emerging trends will inform final investment directions.
- **Investigate and better understand the relationship between capital investment decisions and operations/maintenance budget.** This complex relationship has important implications for what is the best use of agency funds when managing an increasingly aging infrastructure system.