Minnesota GO
A Collaborative Vision for Transportation

20-Year State Highway Investment Plan

Appendix F

FEDERAL AND STATE LEGISLATIVE REQUIREMENTS

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National Goals for Performance Based Planning

Federal statute[1] states that statewide transportation plans must provide for the establishment and use of a performance-based approach to transportation decision-making that support seven national goals. **Table F-1** show how the national goals for performance-based planning influenced the Minnesota State Highway Investment Plan investment categories.

Table F-1: National goals and related MnSHIP investment categories

NATIONAL GOAL	INVESTMENT CATEGORY
Safety – to achieve a significant reduction in traffic fatalities and serious injuries on all public roads	• Traveler Safety
Infrastructure condition – to maintain the highway infrastructure asset system in a state of good repair	• Pavement Condition • Bridge Condition • Roadside Infrastructure • Facilities
Congestion reduction – to achieve a significant reduction in congestion on the National Highway System	• Twin Cities Mobility • Greater Minnesota Mobility • Freight
System reliability – to improve the efficiency of the surface transportation system	• Twin Cities Mobility • Greater Minnesota Mobility • Freight
Freight movement and economic vitality – to improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development	• Freight • Regional and Community Improvement Priorities
Environmental stability – to enhance the performance of the transportation system while protecting and enhancing the natural environment	• Twin Cities Mobility • Regional and Community Improvement Priorities
Reduced project delivery delays – to reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices	• Project Delivery

Federal Planning Factors

Federal statutes[2] states that state transportation plans must also consider ten planning factors. **Table F-2** shows how federal planning factors influenced the development of MnSHIP investment categories.

1 Source: 23 USC 135(d)(2), 23 CFR 450.206(c)
2 Source: 23 USC 135(d)(1); 23 CFR 450.206(a)

Table F-2: Federal planning factors and related MnSHIP investment categories

FEDERAL PLANNING FACTORS	INVESTMENT CATEGORY
Support the economic vitality of the United States, the States, metropolitan areas, and non-metropolitan areas, especially by enabling global competitiveness, productivity and efficiency	• Twin Cities Mobility • Greater Minnesota Mobility • Freight • Regional and Community Improvement Priorities
Increase the safety of the transportation system for motorize and non-motorized users	• Traveler Safety • Bicycle Infrastructure • Accessible Pedestrian Infrastructure • Regional and Community Improvement Priorities
Increase the security of the transportation system for motorized and non-motorized users	• Regional and Community Improvement Priorities
Increase accessibility and mobility of people and freight	• Twin Cities Mobility • Greater Minnesota Mobility • Freight • Regional and Community Improvement Priorities
Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns	• Twin Cities Mobility • Bicycle Infrastructure • Accessible Pedestrian Infrastructure
Enhance the integration and connectivity of the transportation system, across and between modes throughout the State, for people and freight	• Twin Cities Mobility • Greater Minnesota Mobility • Freight • Regional and Community Improvement Priorities
Promote efficient system management and operation	• Pavement Condition • Bridge Condition • Roadside Infrastructure • Jurisdictional Transfer • Facilities • Twin Cities Mobility • Greater Minnesota Mobility • Freight
Emphasize the preservation of the existing transportation system	• Pavement Condition • Bridge Condition • Roadside Infrastructure • Jurisdictional Transfer • Facilities
Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation	• Regional and Community Improvement Priorities
Enhance travel and tourism	• Roadside Infrastructure • Facilities • Small Programs

State Transportation Goals

The Minnesota State Legislature has identified 16 statewide goals for transportation.[3] These goals as a whole have guided transportation planning within the state and for MnDOT, especially the **Minnesota GO Vision** and the **Statewide Multimodal Transportation Plan**. MnSHIP continues their advancement by identifying how investments in various categories strive to address these goals. However, MnDOT's ability to make progress towards all 16 goals is compromised by fiscal constraints and MnSHIP's main priority of maintaining the existing system.

Table F-3 oulines the connections between the goals and the MnSHIP investment direction.

Table F-3: State transportation goals and related MnSHIP investments

STATE GOALS FOR THE TRANSPORTATION SYSTEM	INVESTMENT DIRECTION
Minimize fatalities and injuries throughout the state	• Investment in **Traveler Safety** focuses on high priority, lower cost proactive projects and installing and reactive lighting projects at sustained crash locations • Investment in **Bicycle Infrastructure** focuses on adding bicycle improvements to existing bridge and pavement projects to improve safety and connectivity of the state bikeway system • Investment in **Accessible Pedestrian Infrastructure** focuses more investment in sidewalks, curb ramps, and accessible pedestrian signals to meet ADA requirements as well as making other pedestrian improvements via complete streets and completing gaps in the network on a limited basis
Accomplish these goals with minimal impact on the environment	• The investment direction focuses investment to maintain the conditions of existing infrastructure such as roads, bridges, and roadside infrastructure over investment to expand the state highway system • Investment in **Bicycle Infrastructure** and **Accessible Pedestrian Infrastructure** continue to promote these non-motorized transportation options
Reduce greenhouse gas emissions from the state's transportation sector	• Investment in **Twin Cities Mobility** provides for two additional corridors with MnPASS express lanes and six spot mobility improvements to address travel time reliability and reduce idling and the emission of greenhouse gases. • Investment in **Bicycle Infrastructure** and **Accessible Pedestrian Infrastructure** continue to promote these non-motorized transportation options
Promote and increase the use of high-occupancy vehicles and low-emission vehicles	• Investment in **Twin Cities Mobility** provides for two additional corridors with MnPASS express lanes that provide advantages to transit vehicles and carpools.

3 Source: Minnesota State Statute 174.01, subd. 2; 174.02, subd. 1a.

STATE GOALS FOR THE TRANSPORTATION SYSTEM	INVESTMENT DIRECTION
Ensure that the planning and implementation of all modes of transportation are consistent with the environmental and energy goals for the state	• The investment direction focuses investment to maintain the conditions of existing infrastructure such as roads, bridges, and roadside infrastructure over investment to expand the state highway system. • Investment in **Twin Cities Mobility** provides for two additional corridors with MnPASS express lanes that provide advantages to transit vehicles and carpools and reduce idling and the emission of greenhouse gases. • Investment in **Greater Minnesota Mobility** focuses on improving travel time reliability through operational improvements that reduce idling and the emission of greenhouse gases at locations in Greater Minnesota. • **Freight** investment will implement improvements for highway freight through the National Highway Freight Program • Investment in **Bicycle Infrastructure** and **Accessible Pedestrian Infrastructure** continue to promote these non-motorized transportation options
Increase access for all persons and businesses and ensure economic well-being and quality of life without undue burden placed on any community	• Investment in **Twin Cities Mobility** provides for two additional corridors with MnPASS express lanes that provide advantages to transit vehicles and carpools and reduce idling and the emission of greenhouse gases • Investment in **Greater Minnesota Mobility** focuses on improving travel time reliability through operational improvements that reduce idling and the emission of greenhouse gases at locations in Greater Minnesota • **Freight** investment will implement improvements for highway freight through the National Highway Freight Program • Investment in **Bicycle Infrastructure** and **Accessible Pedestrian Infrastructure** continue to promote these non-motorized transportation options • Investment in **Regional and Community Improvement Priorities** continues economic development projects on a limited basis through the Transportation Economic Development program
Provide an air transportation system sufficient enough to encourage economic growth and allow all regions of the state the ability to participate in the global economy	• Emphasis on preservation through **System Stewardship** investments on the state highway system allows for safe and reliable transportation to and from airport • **Freight** investment is eligible for investment on highway freight connectors to important multimodal freight hubs such as airports through the National Highway Freight Program

STATE GOALS FOR THE TRANSPORTATION SYSTEM	INVESTMENT DIRECTION
Encourage tourism by providing appropriate transportation to Minnesota facilities designed to attract tourists and to enhance the appeal of tourist destinations across the state	• Investment **Roadside Infrastructure Condition** allows for maintaining wayside pull offs and scenic overlooks popular along scenic byways • Investment in **Facilities** includes maintaining rest areas which are popular among tourists and provide tourist information • Investment in **Small Programs** addresses historic priorities which can include historic overlooks or roadside monuments which have a tourism draw
Enhance economic development and provide for economical, efficient, and safe movement of goods to and from markets by rail, highway, and waterway	• Investment in **Twin Cities Mobility** provides for two additional corridors with MnPASS express lanes and six spot mobility improvements to address travel time reliability • Investment in **Greater Minnesota Mobility** focuses on improving travel time reliability through operational improvements • **Freight** investment will implement improvements highway freight through the National Highway Freight Program • Investment in **Regional and Community Improvement Priorities** continues economic development projects on a limited basis through the Transportation Economic Development program
Increase use of transit as a percentage of all trips statewide by giving highest priority to the transportation modes with the greatest people-moving capacity and lowest long-term economic and environmental cost	• Investment in **Twin Cities Mobility** provides for two additional corridors with MnPASS express lanes that provide advantages to transit vehicles and carpools
Promote and increase bicycling and walking as a percentage of all trips as energy-efficient, nonpolluting, and healthy forms of transportation	• Investment in **Bicycle Infrastructure** and **Accessible Pedestrian Infrastructure** continues to promote these non-motorized transportation options
Provide transit service to all counties in the state to meet the needs of transit users	• MnSHIP's scope does not include transit investments. The Greater Minnesota Transit Investment Plan addresses this state transportation goal

STATE GOALS FOR THE TRANSPORTATION SYSTEM	INVESTMENT DIRECTION
Provide a reasonable travel time for commuters	• Investment in **Twin Cities Mobility** provides for two additional corridors with MnPASS express lanes and six spot mobility improvements to address travel time reliability • Investment in **Greater Minnesota Mobility** focuses on improving travel time reliability through operational improvements
Promote accountability through systematic management of system performance and productivity through the utilization of technological advancements	• The investment direction focuses investment on maintaining existing infrastructure such as roads, bridges, and roadside infrastructure over investment to expand the state highway system • Investment in **Twin Cities Mobility** provides for two additional corridors with MnPASS express lanes and six spot mobility improvements to address travel time reliability • Investment in **Greater Minnesota Mobility** focuses on improving travel time reliability through operational improvements
Maximize the long-term benefits received for each state transportation investment	• The investment direction focuses investment on maintaining existing infrastructure such as roads, bridges, and roadside infrastructure over investment to expand the state highway system
Provide for and prioritize funding of transportation investments that ensures the state's transportation infrastructure is maintained in a state of good repair	• The investment direction focuses investment to maintain the conditions of existing infrastructure such as roads, bridges, and roadside infrastructure over investment to expand the state highway system

Previous Five Year Capital Investment Analysis

As a part of state legislative requirements, MnSHIP must summarize the amount and analyze the impact of the department's capital investments and priorities over the past five years on performance targets, including a comparison of prior plan projected costs with actual cost. The five year investment look back analysis covers fiscal years 2012-2015. The analysis has been broken out by fiscal years 2012-2013 and 2014-2016. This is because two different state highway investment plans influenced these fiscal years. Fiscal years 2012 and 2013 were influenced by the 2009 Statewide 20-year Highway Investment Plan. Fiscal years 2014-2016 were influenced by the 2013 Minnesota 20-Year State Highway Investment Plan.

FISCAL YEARS 2012 AND 2013

There were many difficulties in analyzing planned investments compared to actual investment. The 2009 plan divided the 20 year investment direction into three time periods: years 2009-2012, years 2013-2018, and years 2019 to 2028. Each time period divided out the total investment in the time period by four strategic investment priorities: Traveler Safety, Infrastructure Preservation, Mobility, Regional and Community Improvement Priorities. In addition, the first four year period had a total investment set aside for right of way, consultants, and supplemental agreements which represents costs to deliver projects. After 2012 there was no investment identified for these costs.

However, actual investments in 2012 and 2013 were not tracked using these four strategic investment priorities. For this analysis, actual investments were grouped to try to mirror the four strategic investment priorities. Pavement, bridge and roadside infrastructure projects totals were combined to mirror Infrastructure Preservation. Stand alone safety projects and Highway Safety Improvement Program funded projects totals were combined to mirror Traveler Safety. Major construction projects and traffic management projects were combined to mirror Mobility. Municipal agreements costs were combined to mirror Regional and Community Improvement Priorities. Actual costs for right of way, use of consultants, and supplemental agreements were available and used for this analysis. **Table F-4** compares the planned investment in years 2012 and 2013 compared to the actual investment.

Table F-4: Comparison between planned and actual investment in fiscal years 2012 and 2013

STRATEGIC INVESTMENT PRIORITIES	PLANNED INVESTMENT	ACTUAL INVESTMENT
Infrastructure Preservation	$1.21B	$1.34B
Traveler Safety	$179M	$76M
Mobility	$148M	$316M
Regional and Community Improvement Priorities	$84M	$88M
Right of Way, Consultants, Supplemental Agreements	$93M	$366M
Total	$1.72B	$2.19B

Total investment is off for two reasons. The first reason is in fiscal year 2013, the 2009 plan did not try to estimate any investment for right of way, consultants or supplemental agreements. However, actual investments for these items are made for 2013. The second reason is that a new federal transportation bill (MAP-21) was passed in 2012 which slightly increased the amount of federal revenue to Minnesota.

FISCAL YEARS 2014, 2015, AND 2016

Starting in 2014, MnDOT began tracking investments by ten investment categories for planned investments as a part of 2013 Minnesota 20-Year State Highway Investment Plan and programming of investments in the Statewide Transportation Improvement Program. **Table F-5** compares the planned investment in years 2014 to 2016 compared to the actual investment.

Table F-5: Comparison between planned and actual investment in fiscal years 2012 and 2013

INVESTMENT CATEGORIES	PLANNED INVESTMENT	ACTUAL INVESTMENT
Pavement Condition	$867M	$988M
Bridge Condition	$459M	$537M
Roadside Infrastructure	$201M	$268M
Traveler Safety	$96M	$108M
Twin Cities Mobility	$156M	$221M
Interregional Corridor Mobility	$0M	$0M
Bicycle Infrastructure	$30M	$23M
Accessible Pedestrian Infrastructure	$36M	$47M
Regional and Community Improvement Priorities	$171M	$386M
Project Support	$261M	$436M
Total	$2.28B	$3.01B

Looking back to compare planned investment versus actual investment, the amount of total investment increases. This is due to two main factors:

- The state legislature created the Corridors of Commerce program in 2013 and provided $300 million in trunk highway bonds for projects to be completed in fiscal years 2014 and 2015
- Truck highway bonds for the US Highway 53 relocation project
- Additional funding from the state legislature for creation of an Advanced Preservation Program
- A new federal transportation bill which increased federal revenues to the state

These additional funds are mainly reflected in the increase between planned investment and actual investment in Pavement Condition, Bridge Condition, Regional and Community Improvement Priorities and Twin Cities Mobility with some investment increases in other categories including Traveler Safety, and Project Support.

PERFORMANCE TARGETS

Pavement Condition Measures

Due to slight over investment in pavement from planned investment versus actual investment, condition of state highway pavements have generally improved in the past five years.

Table F-6: Pavement Condition from 2011-2015

MEASURES	TARGETS	2011	2012	2013	2014	2015
Interstate Poor Ride Quality (RQI)	**2%**	3.9%	2.4%	2.4%	1.9%	2.1%
Non-Interstate NHS Poor Ride Quality (RQI)	**4%**	5.1%	4.3%	2.9%	3.0%	2.7%
Non-NHS Poor Ride Quality (RQI)	**10%**	8.6%	7.5%	6.8%	4.4%	5.1%

Bridge Condition Measures

Over the past five years, bridge investments have limited the amount of bridges in poor condition between 3.0% and 4.7% on National Highway System (NHS) bridges and between 1.3% and 3.1% on non-NHS bridges.

Table F-7: Bridge Condition from 2011-2015

MEASURES	TARGETS	2011	2012	2013	2014	2015
NHS Bridges in Poor Condition	**2%**	3.3%	4.7%	3.3%	4.5%	3.0%
Non-NHS Bridges in Poor Condition	**8%**	2.0%	2.1%	3.1%	1.3%	3.1%

Traveler Safety Measures

While traffic fatalities have declined in recent years, it is difficult to tie the outcome directly to the investment in new safety improvements. MnDOT and the Department of Public Safety have also invested in the Towards Zero Death program which includes investment in non-engineering strategies including education, enforcement, and emergency response. However, through engineering improvements and non-engineering strategies, traffic fatalities have been decreasing over time. In year 2015, there was a sharp increase in traffic fatalities indicating that more still needs be done to accomplish the goal of zero traffic fatalities on Minnesota roads.

Table F-8: Traffic fatalities on Minnesota roadways from 2010-2015

MEASURE	2010	2011	2012	2013	2014	2015	2020
Traffic Fatalities	411	368	395	387	361	411	N/A
Targets	**400**	**-**	**-**	**-**	**350**	**-**	**300**

Twin Cities Mobility

Investment in Twin Cities Mobility have managed the growth of congestion on the state highway system. In 2015, congestion increases were mainly attributed to major construction projects in the Twin Cities on US Highway 169, MN Highway 100, and I-35E.

Table F-9: Congestion on Twin Cities Freeways from 2011-2015

MEASURE	2011	2012	2013	2014	2015
Twin Cities Freeway Congestion	21.0%	21.4%	19.9%	21.1%	23.4%

Accessible Pedestrian Measures

Accessible Pedestrian Infrastructure investments have mainly targeted bringing existing pedestrian infrastructure into compliance with the Americans with Disabilities Act. **Tables F-10, F-11, and F-12** show the compliance rates of sidewalks, curb ramps, and accessible pedestrian signals. Recent investments have not allowed MnDOT to make progress towards ADA compliance. One of the commitments in this MnSHIP update is to increase the amount of investment to reach ADA substantial compliance by 2037.

Table F-10: ADA sidewalk compliance from 2014 and 2015

MEASURES	TARGET	2014	2015
Percent of State Highway Sidewalk Miles Compliant with ADA Requirements	**100%**	54%	46%
Percent of State Highway Sidewalk Miles in Greater MN Complaint with ADA Requirements	**100%**	45%	41%
Percent of State Highway Sidewalk Miles in Metro District Compliant with ADA Requirements	**100%**	59%	55%

Table F-11: ADA curb ramp compliance from 2012 -2014

MEASURES	TARGET	2012	2013	2014
Percent of State Highway Curb Ramps Compliant with ADA Requirements	**100%**	18%	30%	28%

Table F-12:Accessible Pedestrian Signals compliance from 2011 -2015

MEASURES	TARGETS	2011	2012	2013	2014	2015
Percent of Eligible State Highway Intersections with APS Installed	**100%**	21%	28%	33%	36%	40%

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