OFFICE OF THE LEGISLATIVE AUDITOR
STATE OF MINNESOTA

EVALUATION REPORT

MnDOT Highway Project Selection

MARCH 2016

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OFFICE OF THE LEGISLATIVE AUDITOR
STATE OF MINNESOTA • James Nobles, Legislative Auditor

March 2016

Members of the Legislative Audit Commission:

At your request, we evaluated MnDOT's process for selecting trunk highway construction projects. This report presents the results of our evaluation.

We found that MnDOT's standard process for selecting highway projects is not transparent, but it has mostly channeled funding toward projects that meet the department's priorities. However, projects chosen through MnDOT's alternative processes have not always been consistent with departmental priorities, and some have been chosen in an inconsistent and subjective manner. In particular, we raise concerns about MnDOT's selection of projects for the Corridors of Commerce program.

Our evaluation was conducted by David Kirchner (project manager), Ryan Moltz, and Katherine Theisen. MnDOT cooperated fully with our evaluation, and we thank them for their assistance.

Sincerely,

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Summary

MnDOT's process for selecting trunk highway projects lacks transparency, and some decisions have been subjective.

Key Facts and Findings:

- The Minnesota Department of Transportation (MnDOT) expects to spend approximately $18 billion over the next 20 years building projects on the state's trunk highway system. (p. 29)
- MnDOT plans to increasingly focus its spending on preserving existing trunk highways. Its current long-range plan allocates no funding after 2023 for new infrastructure, such as additional lanes or new freeway interchanges. (pp. 30-31)
- New federal legislation in 2012 required that MnDOT concentrate on the National Highway System, a network of major routes that makes up about 44 percent of the state's total trunk highway system. (pp. 12-13)
- In the process MnDOT uses to select most highway projects, staff in MnDOT's eight regional district offices define and select projects using their professional judgment within guidelines set by the central office. (pp. 46-48)
- MnDOT's standard selection process is not transparent to stakeholders or the public; MnDOT does not provide enough information about what it decides *not* to do. (p. 43)
- Besides the standard project-selection process, MnDOT also selects some projects through various alternative processes, most of which are tied to specific funding sources. (p. 53)
- Projects selected through the standard process are consistent with agency priorities, but those selected through alternative processes often are not. (pp. 46, 74-75)
- In particular, MnDOT has selected projects for the Corridors of Commerce program in an inconsistent and subjective manner. (p. 60)
- Alternative selection processes frequently prioritize projects that can start construction quickly. These tight timelines have caused difficulties for MnDOT staff and local jurisdictions, and affected MnDOT's project choices. (pp. 73-74)

Key Recommendations:

- MnDOT should increase the transparency of its decision-making process, particularly by providing information to enable comparisons between projects that are selected and those that are not. (p. 44)
- MnDOT should modify its Corridors of Commerce project-selection process to create greater objectivity and transparency. (p. 61)
- The Legislature should require MnDOT to report detailed information about the Corridors of Commerce selection process. (p. 62)
- The Legislature and MnDOT should limit the use of alternative project-selection methods that require projects to start construction less than three years into the future. (p. 75)
- Because the Legislature has frequently directed funding toward projects that create new infrastructure, MnDOT should develop a planning process that enables it to prepare for such projects. (p. 76)
- MnDOT should track spending by local governments on trunk highway improvements. (p. 71)

Report Summary

Each year, the Minnesota Department of Transportation (MnDOT) spends hundreds of millions of dollars on construction projects on state highways. If current spending patterns continue, MnDOT expects to spend $18 billion constructing and reconstructing state highways over the next 20 years.

MnDOT has great discretion in deciding which projects to pursue. Legislators have long avoided directing MnDOT to build specific road construction projects, though the Legislature occasionally creates special funding programs for particular purposes.

Federal legislation passed in 2012 created new requirements for state transportation departments. The Federal Highway Administration will require states to meet performance standards for roads that are part of the National Highway System (about 44 percent of MnDOT's trunk highways). However, many of the standards have not yet been published.

MnDOT's new project-selection process increases the authority of MnDOT's central office over the regional district offices.

In 2013, MnDOT reformed its standard project selection process; the new process was used to select projects that will start construction in 2017 and later.

Under the old process, MnDOT's eight district offices controlled project-selection decisions. The districts were allocated money based on a simple formula and could use that money as they wanted, though they had to meet centrally set performance targets.

Due to the new federal law, MnDOT introduced a new process that made three important changes: (1) MnDOT began allocating money to the districts based on estimates of need, (2) MnDOT required districts to conform to statewide spending targets, and (3) MnDOT required districts to show that their chosen projects would be at least as effective in meeting performance targets as centrally generated project lists.

These changes have reduced the autonomy of MnDOT district offices. Districts still choose projects, but must fit those choices within narrower guidelines.

MnDOT focuses its highway construction efforts on preserving existing infrastructure.

As outlined in its *20-Year Minnesota State Highway Investment Plan*, MnDOT plans to allocate most of its state road construction funds to repairing or replacing existing infrastructure. MnDOT's plan allocates 67 percent of these funds to preservation in the first ten years (2014-2023) and 89 percent in the second ten years (2024-2033). MnDOT has designated little money for building new highway infrastructure—such as adding lanes or constructing interchanges—and none outside the metropolitan area.

MnDOT's emphasis on infrastructure preservation drives many other programming decisions. MnDOT districts choose pavement and bridge preservation projects before they consider other types of expenditures.

Districts usually do not schedule stand-alone projects to make improvements to roadside infrastructure, bicycling amenities, or pedestrian accessibility. Instead, district staff add such components to the already-selected pavement and bridge preservation projects. It is cost-efficient to do related construction work at the same time.

As a result, MnDOT prioritizes peripheral infrastructure improvements not by the greatest needs in these infrastructure categories, but by where pavement and bridge work is already planned.

Even major expansion projects may be programmed based on preservation needs. In 2015, MnDOT constructed MnPASS lanes on Interstate 35E—and not in another location—because it could do so at the same time as a major bridge replacement project.

MnDOT does not provide sufficient information about its project-selection decisions to the public or interested stakeholders.

In selecting projects, MnDOT district staff interact almost entirely with other MnDOT staff. Local stakeholders do not directly participate in project decisions regarding trunk highways, except for the Metropolitan Council in the Twin Cities metropolitan area.

MnDOT publishes lists of the projects it plans to construct, but it does not publish information about how these decisions were reached or what alternatives were considered. Without that basis for comparison, it is difficult for those outside of MnDOT to understand or assess its decisions.

MnDOT district staff do present information about the project-selection process to local stakeholders, but these efforts have had mixed results. We recommend that MnDOT take steps to improve the transparency of its project-selection process.

In addition to its standard process, MnDOT chooses other highway construction projects using several alternative processes.

MnDOT develops and schedules some projects outside the standard district-based process through such programs as Corridors of Commerce, the Transportation Economic Development program (TED), the Corridor Investment Management Strategy program (CIMS), and the Safety and Mobility Interchange program (SaM). These programs make up a small fraction of MnDOT's overall trunk highway spending.

In most instances, these alternative processes are tied to specific funding sources. Several of these alternative processes are programs in which MnDOT staff select from among competing applicants using certain criteria. Depending on the program, MnDOT districts or local governments may be eligible to apply for funding.

One alternative program, the Corridors of Commerce program, has been characterized by inconsistent and subjective MnDOT decisions.

The Legislature created the Corridors of Commerce program to fund new trunk highway infrastructure in locations meeting certain requirements. Funding has fluctuated dramatically: the Legislature appropriated $300 million in 2013, $6.5 million in 2014, and $25 million in 2015.

The Corridors of Commerce law listed seven selection criteria that MnDOT must use for choosing projects. The law also required MnDOT to solicit and evaluate project suggestions from the public and local stakeholders.

Instead, MnDOT chose projects based on its own preferences. MnDOT did not use all of the criteria listed in the law and added some of its own. Projects nominated by the public were discarded if they did not overlap with internal MnDOT suggestions. MnDOT leadership chose some projects for construction even though MnDOT staff had not evaluated them.

MnDOT should make changes to the Corridors of Commerce program to make project selection more transparent and more closely aligned with the law. Further, the Legislature should require MnDOT to report detailed rankings of candidate projects.

Short timelines for alternative project selection processes have created difficulties and influenced which projects MnDOT selects.

For several of the alternative processes we describe, MnDOT has required that projects be ready to start construction within a short period of time.

Compressing the project development process into short timelines has led to difficulties for both MnDOT districts and local partners. MnDOT district administrators told us they often had to hire consultants to manage such projects because district staff were already occupied with projects selected through the standard process. Districts also reported condensing or eliminating public outreach activities because of lack of time.

Further, shorter timelines have affected which projects are selected for alternative programs. Projects needing more preparation time due to technical complexity or other factors are less likely to be chosen—even if they otherwise might be better projects.

MnDOT should not choose projects that would otherwise be lower priorities simply because it can construct them more quickly. Both the Legislature and MnDOT should avoid creating requirements that projects be delivered in less than three years unless there is a programmatic reason to do so.

Alternative project-selection processes circumvent MnDOT's statewide priorities.

MnDOT's standard selection process was designed to deliver projects that fit MnDOT's planning priorities. Using alternative selection processes to advance other projects can lead MnDOT to build projects that would otherwise be deemed lower priorities. In fact, programs such as Corridors of Commerce and TED exist to enable the construction of projects that MnDOT would not otherwise build.

MnDOT does not have a consistent process for planning and programming such projects because it has not identified long-term funding for them. As a result, MnDOT continually reinvents selection processes for expansion projects using the criteria of various special programs.

MnDOT would be better able to implement such programs if it did more planning and prioritizing of potential expansion work, even though funding is not identified.

Local jurisdictions also develop and construct projects on state trunk highways, but the extent to which they do so is unclear.

Local governments sometimes build improvements to or expansions of existing trunk highway infrastructure, such as adding turn lanes or replacing a signaled intersection with an overpass. Local governments have led these projects because the improvement is a much higher priority for the local jurisdiction than it is for MnDOT. MnDOT sometimes contributes funding to such projects.

MnDOT does not currently track how much money local jurisdictions spend every year on state highways. We think that it should start doing so.

Introduction

The Minnesota Department of Transportation (MnDOT) is the principal state agency for developing, administering, and coordinating transportation policies, plans, and programs. The agency spent $1.4 billion from state and federal sources on its state road program in fiscal year 2014. While the Minnesota Legislature generally defers to MnDOT to select transportation projects based on its staff's professional and technical expertise, some legislators and other transportation stakeholders regard MnDOT's project selection process—particularly as it relates to projects on major highways—as unclear.

In April 2015, the Legislative Audit Commission directed the Office of the Legislative Auditor to evaluate the process by which MnDOT selects construction projects on the bridges and highways under its jurisdiction. We addressed the following questions:

- **How does MnDOT select the projects it constructs on state highways?**
- **How transparent is MnDOT's process for selecting highway projects? Who makes decisions and what criteria are used?**
- **How do projects selected through alternative processes, such as through the Corridors of Commerce program, compare with the projects chosen through MnDOT's standard project selection process?**

To answer these questions, we used several different research techniques. We examined relevant state and federal laws, performance measures, and MnDOT's planning documents to understand the underlying constraints MnDOT faces when selecting bridge and highway projects. We analyzed data on pavement and bridge condition to determine how MnDOT uses this data to influence project selection decisions.

To learn how projects are identified, we interviewed administrators at MnDOT's central office and at functional offices such as the Office of Materials and Road Research, the Bridge Office, and the Office of Traffic, Safety, and Technology. To obtain a more in-depth understanding of how project selection decisions are made and who makes them, we also interviewed planners and engineers in all eight MnDOT districts. Some of our questions covered the districts' processes and procedures; others were specific to individual types of projects.

To understand how non-MnDOT transportation professionals perceived MnDOT's project selection process, we spoke with numerous local transportation stakeholders, including county engineers, representatives from local planning organizations, and representatives from advocacy groups. In addition, we surveyed all Minnesota county engineers to gain perspectives on MnDOT's project selection process from this important group of stakeholders. Seventy-five of the 86 county engineers responded.

We limited the focus of this evaluation to MnDOT's state highway programs. We did not evaluate county or municipal projects, nor did we evaluate transit, freight, rail, port, or aeronautic programs.

Chapter 1: Background

The mission of the Minnesota Department of Transportation (MnDOT) is to "plan, build, operate and maintain a safe, accessible, efficient and reliable multimodal transportation system that connects people to destinations and markets throughout the state, regionally and around the world."[1] MnDOT builds and manages routes for many modes of transportation, including automobiles, trains, aircraft, mass transit systems, and bicycles. However, MnDOT's largest and most prominent responsibility has been the construction, maintenance, and management of state highways.

In this chapter, we describe the network of roads that MnDOT manages and maintains, the manner in which the department organizes its work to build and maintain those roads, and the methods the department uses to measure its performance.

MINNESOTA ROADS

Roads within MnDOT's authority are called **trunk highways**. All roads designated as interstates, U.S. Highways, and Minnesota Highways are part of the trunk highway system. Some trunk highways are major arterial streets in cities throughout the state, such as Central Avenue in Minneapolis (Minnesota Highway 65) or 12th Street SW in Austin (Minnesota Highway 105).

In 2015, the trunk highway system consisted of 11,814 miles (also called "centerline miles") of road, of which 915 were interstate miles.[2] Another measure of highway mileage is "lane miles." Under this measure, a four-lane road counts as twice as long as a similar stretch of two-lane road. In 2015, there were 29,256 lane miles of trunk highway, including 4,031 lane miles of interstate. There were 4,757 bridges in the state trunk highway system. The trunk highway system constitutes just 8 percent of total centerline mileage in Minnesota, but accounts for 58 percent of the miles driven.

Some roads in the trunk highway system are also part of the National Highway System (NHS). The NHS is defined by the U.S. Department of Transportation and includes interstates; freeways and other heavily traveled roads in urban and rural areas that provide access to airports, ports, railway stations, bus terminals, and other transit facilities; the strategic highway network (roads important for defense purposes); highways that link major military installations; and roads that connect roads on the NHS with major intermodal facilities.

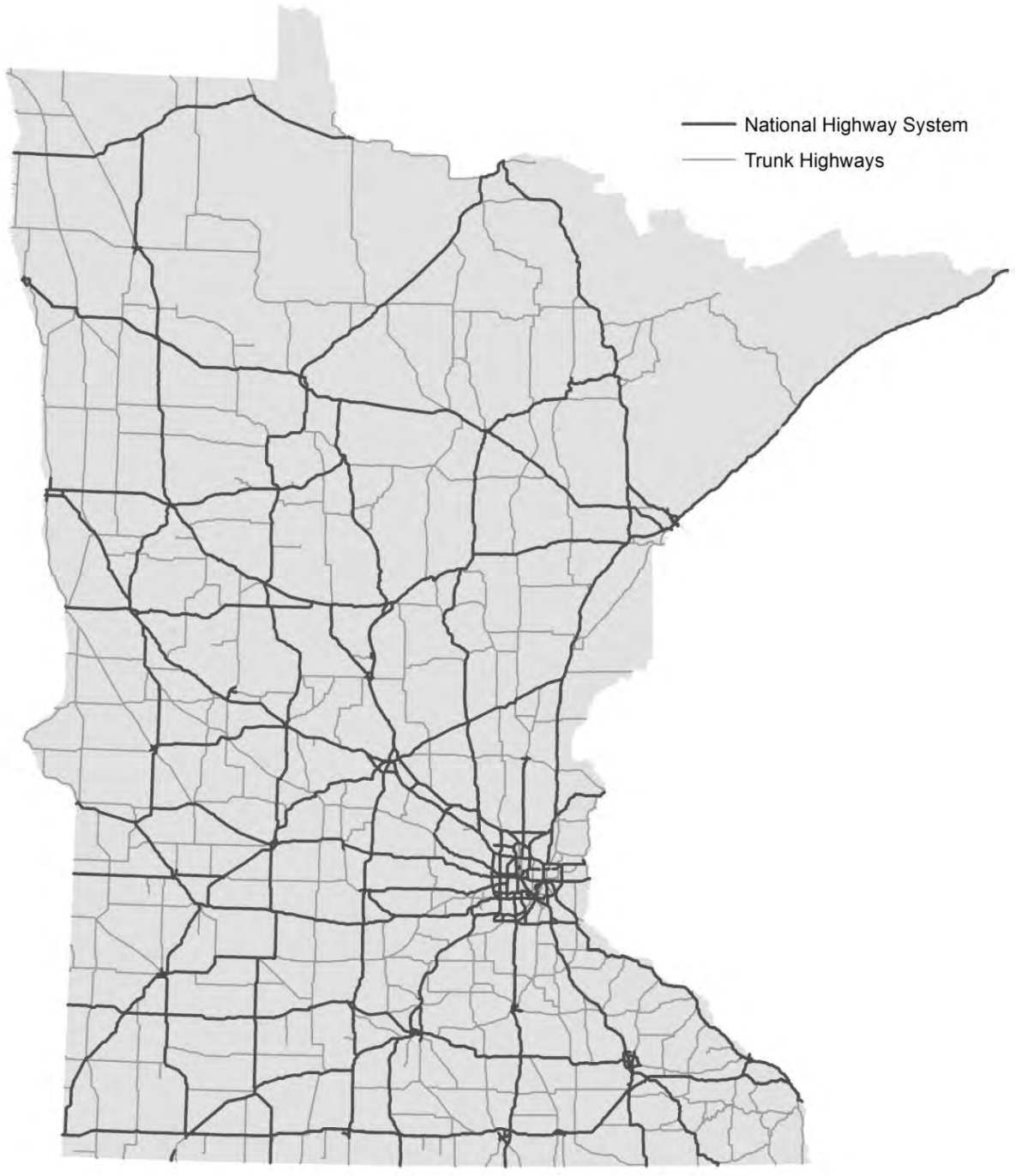
Approximately 44 percent of Minnesota's trunk highway network is part of the National Highway System.

[1] Minnesota Department of Transportation, "MnDOT's Vision," http://www.dot.state.mn.us/vision/, accessed January 15, 2016.

[2] A centerline mile is one mile of a single roadway, regardless of the number of lanes. Centerline mileage is not doubled for divided roads.

Exhibit 1.1 shows the extent of the trunk highway system and the NHS in Minnesota. The concentration of NHS roads is higher in urban parts of the state. In the Twin Cities metropolitan area, 62 percent of trunk highway centerline miles are part of the NHS, while in northwestern Minnesota, only 33 percent of trunk highway centerline miles are part of the NHS. As we describe in Chapter 2, maintaining the NHS has become an important factor in MnDOT's selection of highway projects due to a recent federal law.

Exhibit 1.1: Minnesota Trunk Highways, 2014



SOURCE: Office of the Legislative Auditor, analysis of Minnesota Department of Transportation data.

TYPES OF PROJECTS

MnDOT is responsible for maintaining the trunk highway system at an acceptable level of performance. As roads, bridges, and other assets deteriorate over time, they eventually reach a point where MnDOT may plan one or more construction projects to rehabilitate, reconstruct, or replace them.[3] MnDOT may also build new assets, such as interchanges or additional highway lanes.

A **construction project** is a bundle of related construction work that is grouped together and contracted to a private firm. MnDOT assigns staff to each project who organize the work, manage the bidding process, and oversee the work of the company selected to do the project. Large or complex projects may sometimes be split into two or more parts; similarly, two or more simple projects located close together may be combined.

- **Preservation projects** rehabilitate or reconstruct an existing asset; after the project is complete, there will be the same amount of infrastructure that existed before. Applying a new layer of concrete or asphalt to an existing highway is an example of a rehabilitative preservation project.

- **Expansion projects** create a new infrastructure component that did not exist previously. Examples include expanding a two-lane road into a four-lane road, or building an interchange with exit ramps to replace an intersection with stoplights.

- **Preventive maintenance**, frequently completed by MnDOT staff instead of being contracted out, generally involves surface treatments, such as filling and sealing pavement cracks. This work extends the life of an infrastructure asset that is still in good structural condition.

In this evaluation, we focused on preservation and expansion projects and did not closely examine MnDOT's maintenance work. However, we note that the definitions of maintenance, preservation, and expansion projects overlap to some extent.

For example, although construction projects are usually categorized as either preservation or expansion projects, it is not unusual for projects to have both preservation and expansion components. A project whose primary purpose is to repave several miles of highway may also include the addition of a left-turn lane that did not previously exist.

An important component of selecting projects is how MnDOT defines a "project." Projects are defined by MnDOT staff as they seek to organize available resources, and they may include all or parts of a highway segment. For example, some MnDOT constituents have sought the construction of an unbroken stretch of four-lane highway on U.S. Highway 169 from Grand Rapids to Virginia. Currently, about seven miles of U.S. Highway 169 between the two cities is a two-lane highway. In 2016, MnDOT will use funding from the Corridors of Commerce program (discussed more in Chapter 3) to expand 1.6 miles of this section to four lanes. However, that 1.6-mile segment is one of dozens of conceivable projects that could expand the highway somewhere on this seven-mile stretch, including a single project to expand the entire distance to four lanes. MnDOT staff determined that this particular

[3] MnDOT uses the term "assets" to describe a variety of structures under its authority, such as pavement, bridges, rest areas, signage, stormwater systems, noise walls, and guardrails.

segment constituted a "project" by taking into account such factors as an already-completed environmental impact assessment and the amount of work that could be done in the short time frame MnDOT allowed for Corridors of Commerce projects.

Further, in addition to the main purpose of a project (in this instance, expansion from two to four lanes), MnDOT staff may also add other components to the project, often because it is cost efficient to complete additional work at the same time. In the U.S. Highway 169 project, contractors will also install intersection lighting and replace a culvert to improve drainage.[4]

Transportation professionals distinguish between two different project-selection processes: "planning" and "programming." Planning refers to the general, long-range frameworks that MnDOT develops to guide project selection over many years. Programming, by contrast, refers to the selection of specific projects that MnDOT defines, scopes, evaluates, designs, and constructs. In Chapter 2 of this report, we discuss MnDOT's planning process briefly; we primarily focus on its programming process.

MnDOT ORGANIZATION

MnDOT comprises a central office in the Twin Cities and offices in eight districts with responsibility for different regions of the state (see Exhibit 1.2). The district offices manage maintenance activities and the construction of highway projects. As discussed in Chapter 2, the district offices play an important role in the selection of trunk highway projects in their own districts.

Exhibit 1.3 shows how MnDOT is organized. MnDOT is divided into two "administrations:" Engineering and Operations, and Modal and Resource Management.[5]

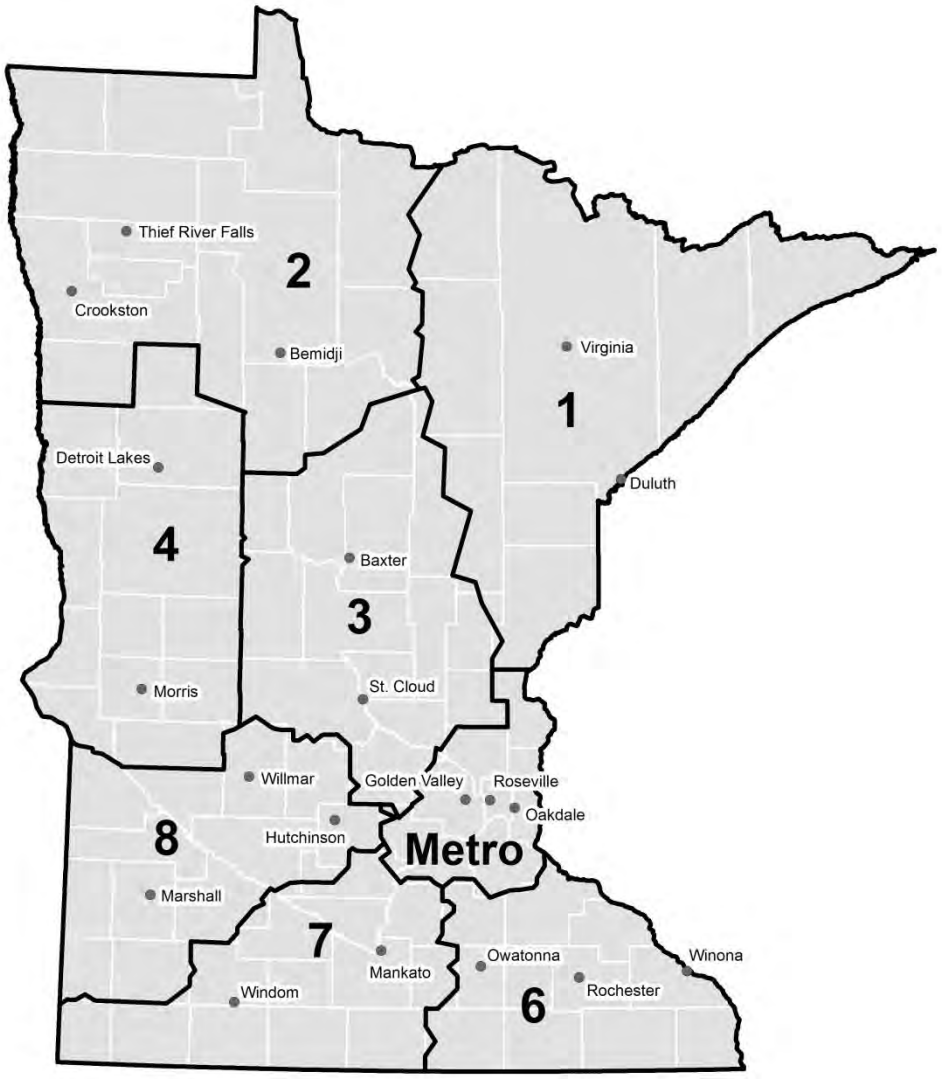
- The **Engineering and Operations Administration** has three divisions: Engineering Services, Operations, and State Aid. The Engineering Services Division contains several functional offices that develop subject matter expertise, such as the Bridge Office, the Office of Materials and Road Research, and the Office of Environmental Stewardship. The Operations Division has authority over MnDOT's district offices; the Office of Maintenance; and the Office of Traffic, Safety, and Technology. The State Aid Division distributes funds for highway maintenance and construction to local governments.

  Several of these offices play an important role in project selection. The Bridge Office and the Office of Materials and Road Research provide the district offices with key data that the districts then use to select projects. The Office of Traffic, Safety, and Technology distributes federal funds for safety-related projects to both MnDOT district offices and local units of government.

[4] A culvert is a structure that carries water underneath a road or railroad to prevent flooding.

[5] This section does not attempt to comprehensively list all major MnDOT offices. In particular, some offices fall outside the two administrations, including the Chief Counsel's Office, the Chief of Staff, and Government Affairs.

Exhibit 1.2: MnDOT Districts and District Offices

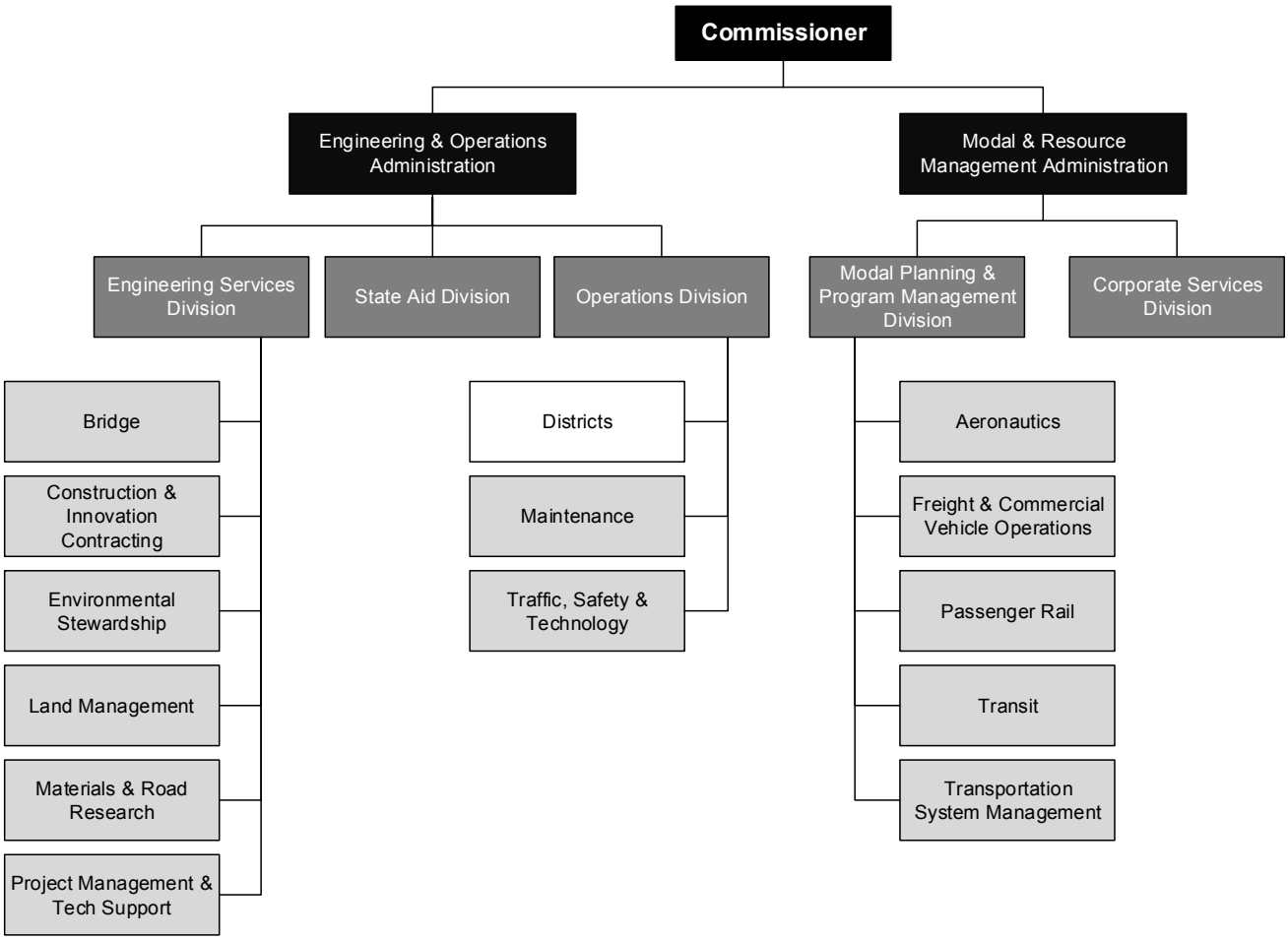


SOURCE: Minnesota Department of Transportation.

- The **Modal and Resource Management Administration** has two divisions: Modal Planning and Program Management, and Corporate Services. The Modal Planning and Program Management Division contains offices that address major modes of transportation, such as highways, aeronautics, rail, and transit. The Corporate Services Division handles human resources, finances, and other matters. Within the Modal Planning and Program Management Division, the Office of Transportation Systems Management manages all of MnDOT's systemwide highway planning. Within the Corporate Services Division, the Office of Financial Management evaluates MnDOT's programmed projects to ensure that they are within the budget and match the available funding sources.

At the leadership level, the **Transportation Programming and Investment Committee (TPIC)** makes, approves, or confirms most major policy and spending decisions related to construction on trunk highways. TPIC has eight voting members, including the department's two deputy commissioners (who each head one of the administrations), the five division directors, and the director of Metro District (the district engineer). TPIC's decisions are recommendations to the MnDOT commissioner, who has ultimate decision-making authority.

Exhibit 1.3: MnDOT Organizational Structure



NOTES: The diagram does not list every office at each organizational level.

SOURCE: Minnesota Department of Transportation.

FUNDING

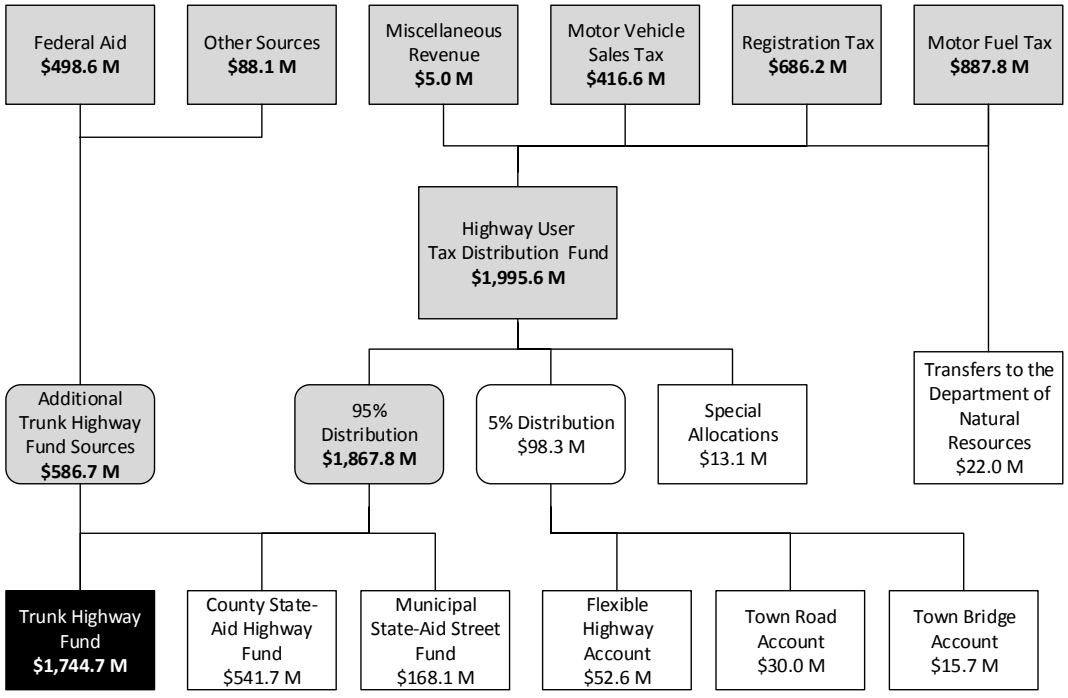
MnDOT's funding for trunk highway projects comes almost entirely from the Trunk Highway Fund, established by the Minnesota Constitution.[6] The fund may only be used for the construction, improvement, and maintenance of trunk highways, or for debt service on trunk highway bonds.

Revenues

As shown in Exhibit 1.4, the two main sources of revenue for the Trunk Highway Fund are the state's Highway User Tax Distribution (HUTD) Fund and federal aid. The HUTD is primarily funded by three highway user taxes: a tax on motor fuels, a registration tax on motor vehicles, and a tax on the sale of motor vehicles. These taxes generated approximately $2 billion in revenue for the HUTD fund in fiscal year 2015. There are a few other comparatively smaller sources of revenue for the HUTD fund. These include fees and investments. In fiscal year 2015, these other sources collectively generated $5 million in revenue.

Exhibit 1.4: Trunk Highway Fund Revenues, Fiscal Year 2015

Gray cells indicate sources of revenue for the Trunk Highway Fund



NOTES: As required by the Minnesota Constitution, the Trunk Highway Fund receives 62 percent of the 95 percent distribution from the Highway User Tax Distribution Fund. Special allocations (for example, for tax collection) are made prior to the 95 percent and 5 percent distributions. The chart does not include proceeds from trunk highway bonds.

SOURCE: Minnesota House Research Department.

[6] *Minnesota Constitution*, art. XIV, sec. 6.

HUTD funds are distributed based on an allocation formula specified in the Minnesota Constitution.[7] Following some special allocations (such as for tax collection costs), 58.9 percent of HUTD funds are allocated to the Trunk Highway Fund. The County State-Aid Highway and Municipal State-Aid Street funds together receive an allocation of 36.1 percent of HUTD funds. The remaining 5 percent of HUTD funds are currently distributed to the County State-Aid Highway fund and then divided for specific local purposes.

The Trunk Highway Fund also received approximately $500 million in federal aid in fiscal year 2015 and approximately $88 million from other sources.[8]

Appropriations

Exhibit 1.5 shows legislative appropriations from the Trunk Highway Fund to MnDOT for fiscal years 2016 and 2017.

Exhibit 1.5 Trunk Highway Fund Appropriations to the Department of Transportation, Fiscal Years 2016 and 2017

Category	Fiscal Year 2016 (in millions)	Fiscal Year 2017 (in millions)	Category Percentage
Multimodal Systems			
Aviation Support and Services[a]	$ 1.4	$ 1.4	0.1%
Transit[a]	0.8	0.8	0.0
Freight[a]	5.0	5.2	0.3
Multimodal Systems Subtotal	**$ 7.2**	**$ 7.4**	**0.4%**
State Roads			
Operations and Maintenance	$ 288.4	$ 290.9	17.3%
Program Planning and Delivery	237.5	231.3	14.0
State Road Construction	779.7	744.2	45.5
Highway Debt Service	197.4	231.2	12.8
Statewide Radio Communications[a]	5.3	5.5	0.3
State Roads Subtotal	**$1,508.3**	**$1,503.0**	**90.0%**
MnDOT Management			
Agency Services	$ 42.7	$ 43.5	2.6%
Buildings[a]	18.7	19.3	1.1
Tort Claims	0.6	0.6	0.0
MnDOT Management Subtotal	**62.0**	**63.4**	**3.7**
MnDOT Total	**$1,577.5**	**$1,573.8**	**94.2%**

NOTES: Trunk Highway Fund appropriations to the Department of Transportation for the 2016-2017 biennium account for 94.2 percent of appropriations from that fund. The remaining 5.8 percent of trunk highway funds are appropriated to the Department of Public Safety, primarily for patrolling highways. Percentages in the table reflect the percentage of the category's share of the entire Trunk Highway Fund.

[a] These categories receive additional appropriations from other sources, such as the General Fund.

SOURCE: *Laws of Minnesota* 2015, chapter 75, art. 1.

[7] *Minnesota Constitution*, art. XIV, sec. 5.

[8] The other sources of revenue include construction work MnDOT performed under agreements with local units of government, equipment sales, and penalties and fines.

State road construction is the largest appropriation category from the Trunk Highway Fund, comprising approximately 46 percent of appropriations in the 2016-2017 biennium.

The appropriation for state road construction is approximately $780 million for fiscal year 2016, including both state and federal funds. The appropriation must be used for the "actual construction, reconstruction, and improvement of trunk highways," including contracts and consultant agreements, purchasing materials, and right-of-way acquisition.[9]

Other large categories of appropriations are state road operations and maintenance, program planning and delivery, and highway debt service. Operations and maintenance includes activities such as snowplowing, roadway repairs, and maintaining guardrails and signs. The program planning and delivery appropriation includes scoping, engineering, and environmental analysis for projects; project management; and statewide system planning. Highway debt service funds are used to repay the principal and interest on previously issued trunk highway bonds.

LEGAL REQUIREMENTS

MnDOT generally has a lot of discretion in deciding which projects to construct. Nevertheless, state and federal laws place certain requirements on the agency.

State Requirements

The Legislature has not directed MnDOT how to prioritize overall construction spending except for some broad goals outlined in state law. For example, MnDOT must:

- "enhance economic development and provide for the economical, efficient, and safe movement of goods to and from markets by rail, highway, and waterway";
- "provide for and prioritize funding of transportation investments that ensures that the state's transportation infrastructure is maintained in a state of good repair"; and
- "ensure that the planning and implementation of all modes of transportation are consistent with the environmental and energy goals of the state."[10]

The Legislature has also set broad requirements that require MnDOT to develop a Statewide Multimodal Transportation Plan and a statewide highway 20-year capital investment plan, and to revise them every four years. State law requires that MnDOT's projects be consistent with these plans, but it does not direct MnDOT how to prioritize specific projects. Instead, the law requires MnDOT to develop transportation goals, objectives, and policies; to create performance measures and targets for assessing progress and achievement of those goals, objectives, and policies; and to identify the investments required to meet those performance targets over a 20-year period.[11] For example, the plan

[9] *Laws of Minnesota* 2015, chapter 75, art. 1, sec. 3, subd. 3(c). "Right-of-way" is a strip of land used as a transportation corridor. MnDOT acquires right-of-way through easements or absolute ownership.

[10] *Minnesota Statutes* 2015, 174.01, subd. 2.

[11] *Minnesota Statutes* 2015, 174.03.

identifies meeting federal performance targets as a goal, but it does not name specific projects that would accomplish that goal.[12]

State law has some requirements regarding the selection of bridge projects. As part of an ongoing bridge improvement program that started in 2008, MnDOT must classify bridges into a three-tier scheme and prioritize work sequentially according to tier.[13] The bridge improvement program will end in 2018, but bridge repairs and replacements after that must be prioritized according to a risk-based system that MnDOT has established.

There are few, if any, programming requirements attached to transportation appropriations bills. A rare example of such a requirement was the 2015 Legislature's appropriation of $1 million for fiscal year 2016 to complete projects related to the American Recovery and Reinvestment Act of 2009.[14] However, the Legislature has influenced programming in other ways by directing MnDOT to use specific appropriations for particular purposes. We explore such direction in Chapter 3.

Federal Requirements

MnDOT receives substantial federal funding every year. For fiscal years 2016 to 2019, federal-aid highway funding to MnDOT is expected to total approximately $1.6 billion, about 23 percent of the Trunk Highway Fund's revenue. In order to receive this funding, MnDOT must meet federal requirements. Many of these requirements are tied to individual projects that use federal funding, not to the state's overall highway construction program. For example, when constructing federally funded projects that make certain changes to roads, MnDOT must conduct a noise analysis and determine whether noise barriers should be built.[15]

MAP-21

The Moving Ahead for Progress in the 21st Century Act (MAP-21), a federal law passed in 2012, enacted new requirements for state transportation departments that affect the programming of highway construction projects.[16]

As a condition of receiving federal highway funds, federal law requires MnDOT to prioritize construction projects on the National Highway System.

Under the MAP-21 framework, federal funding is tied to the performance of state transportation departments in maintaining the NHS. States must measure the condition and function of their NHS highways and regularly report those measurements to the Federal Highway Administration (FHWA). If a state does not meet federally set minimum thresholds for NHS pavement and bridge condition, FHWA may force the state to dedicate some federal funds to NHS highways until the minimum performance thresholds are achieved. Further,

[12] Technically, the Capital Highway Investment Plan (CHIP), which does include specific projects, is an appendix to the 20-year highway plan. But because the CHIP is created through a different process and is updated annually, we treat it as a separate document in this report. We discuss the CHIP further in Chapter 2.

[13] *Minnesota Statutes* 2015, 165.14.

[14] *Laws of Minnesota* 2015, chapter 75, art. 1, sec. 3, subd. 3(c).

[15] See Office of the Legislative Auditor, Program Evaluation Division, *MnDOT Noise Barriers* (St. Paul, 2014).

[16] *Moving Ahead for Progress in the 21st Century*, Public Law 112-141. U.S. Statutes at Large 405 (2012): 126.

every state must set its own targets for the performance of its NHS roads based on the FHWA measures. If a state repeatedly fails to meet its targets, FHWA may force the state to adjust its planning and programming processes in an effort to achieve the state-defined targets.

MAP-21 requires FHWA to define performance measures for the following categories:

- Pavement condition on the interstate highway system and the remainder of the NHS
- Bridge condition on the NHS
- Fatalities and serious injuries on all public roads (state and local)
- Traffic congestion
- Vehicle pollution emissions
- Freight movement on the interstate highway system

MAP-21 is a significant change in the allocation of federal funding. Prior to its passage, states could treat NHS and non-NHS roads similarly. Once the law is fully implemented, states must prioritize preservation of NHS highways or risk losing spending flexibility with federal funds.

As of February 2016, the Federal Highway Administration had not established many of the performance measures or targets required by a 2012 federal law.

The Federal Highway Administration (FHWA) was supposed to establish performance measures within 18 months of MAP-21's enactment (that is, by January 2014). Minimum thresholds for each measure were supposed to have been established within one year of FHWA's final rule on performance measures (that is, by January 2015).

However, as of the publication of this report, FHWA still has not created final definitions for the performance measures that were not specified in MAP-21.[17] Due to the delay, the law's requirements regarding these measures have not yet taken effect. Nonetheless, MAP-21 has still had a significant effect on MnDOT's approach to selecting projects. Because measures of pavement and bridge condition are similar across states, MnDOT planners and administrators have felt confident predicting what measures will be used and the approximate thresholds FHWA will set. To meet those thresholds, MnDOT reconfigured its project-selection process in 2013 to place greater emphasis on NHS roadways and on achieving statewide goals for pavement and bridge condition.

MnDOT planners told us that they have less confidence in predicting some of the other measures to be defined by FHWA, such as those for traffic congestion and freight movement. For those measures, MnDOT has adopted more of a wait-and-see approach.

[17] MAP-21 only specified performance measures and targets for interstate pavements and NHS bridges.

FAST Act

In December 2015, Congress passed a new transportation law, the Fixing America's Surface Transportation (FAST) Act.[18] As of the publication of this report, MnDOT is still analyzing the impact of the new law. However, senior MnDOT planners told us that the new law does not undo any of the key MAP-21 requirements that affect the project-selection process. The FAST Act will, however, require MnDOT to place additional emphasis on transportation projects that benefit the movement of freight.

OTHER STATES

We did not conduct a detailed study of the planning and programming processes of other states. However, a review of existing literature suggests that states have used a wide variety of processes to select highway transportation projects. One review commented that "there are nearly as many forms of linkage between planning and programming as there are states."[19]

As an example of the variation, a 2010 report by the Government Accountability Office provided a snapshot of state programming practices at the time. Of 52 state transportation departments surveyed (including the District of Columbia and Puerto Rico), 21 reported that they had updated their long-range transportation plans within the past five years, but 7 reported that they had not updated their plans for at least eleven years and 5 reported they had never done so.[20]

The same report noted that while most states made some use of performance measures to program projects, in many states the programming process was strongly influenced by the preferences of elected officials. Thirty-five states said that the governor's transportation priorities were of great or very great importance in project-selection decisions, and at least 30 states cited public or political support. Conversely, only 11 states said that economic analysis of projects was of great or very great importance.[21]

As in Minnesota, nearly all states used pavement, bridge, and safety performance measures to help make decisions on which projects to program. However, states have struggled with adopting and effectively using measures of other characteristics, such as traffic congestion and freight movement. The Government Accountability Office report noted that unlike pavement and bridge measures, no clear consensus exists on which measures to use. Further, many states reported that obtaining resources to track such measurements was a significant challenge. However, MnDOT staff we spoke with expressed few concerns about the department's ability to gather key data. In some areas—particularly in the measurement of traffic in the Twin Cities metropolitan area—Minnesota is far ahead of other states.

The passage of MAP-21 has forced a reorientation of transportation planning and programming for all states. Most states are taking steps to change their selection processes

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[18] *Fixing America's Surface Transportation Act*, Public Law 114-94, December 4, 2015.

[19] Cambridge Systematics, Inc., with HDR, Inc., *Factors that Support the Planning-Programming Linkage*, National Cooperative Highway Research Program Report 591 (Washington, DC: Transportation Research Board, 2007), "Forward" (no page number).

[20] Government Accountability Office, *Statewide Transportation Planning* (Washington, DC: Government Accountability Office, 2010), 35.

[21] *Ibid*., 18.

to reflect MAP-21's priorities. However, in the absence of final rulemaking by FHWA, it is difficult for states to determine how much their processes will have to change in order to meet the new federal requirements. Minnesota would appear to be better suited than other states to adapt to the MAP-21 requirements. The study we cited at the beginning of this section noted that "Minnesota has been known for some time as a state that is pushing the envelope on performance-based planning and programming."[22]

RECENT TRUNK HIGHWAY PROJECTS

To determine whether MnDOT has constructed trunk highway projects on schedule, we tracked the progression of projects across annual versions of the State Transportation Improvement Program (STIP) dating back to 2006. The STIP identifies the schedule and funding of transportation projects for the next four fiscal years. It includes all state and local transportation projects with federal highway and/or federal transit funding and some projects that are entirely state funded.[23]

MnDOT views projects listed in the STIP as "commitments" that it tries to honor. The STIP does not include short-term projects that arise unexpectedly (for example, bridge repairs due to a major traffic accident). Funding amounts for such unexpected needs are listed as "set-asides" in the STIP.

Since 2011, MnDOT has increasingly started the construction of trunk highway projects on schedule.

As shown in Exhibit 1.6, we analyzed the pace at which trunk highway projects, excluding set-asides, have advanced through successive STIPs since fiscal year 2006. Our analysis confirmed the statements of MnDOT leadership that they treat projects in the STIP as commitments. Since 2006, at least 79 percent of projects in the STIP have started on time or ahead of schedule. More than 90 percent of projects that first appeared in the 2013 or 2014 STIPs have started, or are on pace to start, on time or ahead of schedule.

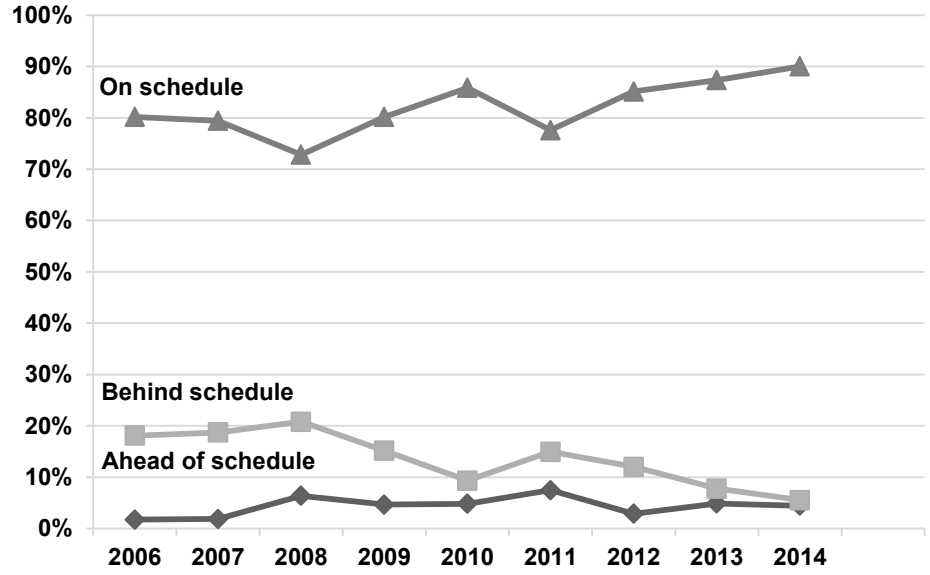
PERFORMANCE MEASURES

As we discuss in Chapter 2, MnDOT bases many of its project-selection decisions on a few key measurements that illustrate the performance of state highways and bridges. In this section, we describe those measurements and explain why MnDOT has chosen to use some measures and not others.

[22] Cambridge with HDR, *Factors that Support*, 43.

[23] Prior to fiscal year 2008, the STIP listed the projects scheduled over a three-fiscal-year cycle (for example, 2006-2008). The STIP must be approved by the Federal Highway Administration and the Federal Transit Authority.

Exhibit 1.6: Timeliness of Trunk Highway Projects, Fiscal Years 2006 to 2014



NOTES: The year shown in the graph is the first year of projects listed in the STIP. For example, 2014 refers to the STIP listing projects to be constructed in 2014-2017.

SOURCE: Office of the Legislative Auditor, analysis of Minnesota Department of Transportation data.

Creating Performance Measures

MnDOT records large amounts of data about the state's transportation system. In general, this information can be classified into four broad types: (1) information about physical infrastructure, such as the condition of pavements; (2) information about activity, such as traffic speed or crashes; (3) information about past experience, such as roads that have frequently sustained flood damage; and (4) information about attitudes, such as survey questions about public trust in MnDOT.

A "performance measure" combines certain pieces of these data together to create a statistic that is tracked over time and used to assist decision making. The large amount of data recorded by MnDOT means that there are almost countless ways to combine data into performance measures, each of which could provide a different perspective to decision makers. For example, the MnDOT Materials Office uses several different performance measures to quantify the condition of highway pavements, including ride-quality index, surface rating, pavement-quality index, the international roughness index, and remaining service life. Exhibit 1.7 provides a brief description of each of these measures.

Exhibit 1.7: MnDOT Measures of Pavement Quality

Measure	Description
Ride Quality Index (RQI)	A measure of pavement smoothness on a scale from 0 to 5. Based on quantitative measures of pavement roughness, it reflects an average person's perception of ride quality.
Surface Rating (SR)	A measure of pavement distress that quantifies the extent of defects, such as cracks and faults.
Pavement Quality Index (PQI)	A measure of overall pavement quality based on ride quality and surface ratings.
International Roughness Index (IRI)	A scale for roughness based on the simulated response of a generic motor vehicle to the roughness in a single wheel path of the road surface.
Remaining Service Life (RSL)	Estimated time, in years, until the RQI reaches a value of 2.5, the point at which most pavements will need significant rehabilitation.

SOURCES: Minnesota Department of Transportation; and Office of the Legislative Auditor, Program Evaluation Division, *State Highways and Bridges* (St. Paul, 2008), 23.

In general, our conversations with MnDOT staff suggest that there is greater consensus on how to measure physical assets like roads, and more controversy over measuring user activity like traffic congestion. That being said, there is currently an ongoing technical debate within MnDOT about whether the department should pay greater attention to remaining service life when making pavement programming decisions.

Generally, experts within MnDOT's functional offices, such as the Bridge Office and the Office of Materials and Road Research, develop the performance measurements the department uses. In some instances, the department must use measurements defined by federal agencies for reporting purposes. However, that does not prevent the department from using its own measurements for internal decision making. For example, the international roughness index mentioned above is a federally required reporting standard. MnDOT configures the same data somewhat differently to form the ride quality index, which is used internally.

Within MnDOT, the Performance Measures, Risk Analysis, and Investment Analysis unit coordinates the reporting of performance measures across the agency, with particular attention to those measures that are reported to the public and to the Legislature. Among other roles, this office pays particular attention to whether publicly reported measures are readily understandable to those without technical expertise.

Key Measures

MnDOT reports a number of key performance measures in its Annual Minnesota Transportation Performance Report. In this section, we discuss historical performance measures for pavements, bridges, safety, and congestion. We also discuss current measures for certain other infrastructure whose condition MnDOT has only recently begun to assess systematically. Exhibit 1.8 summarizes the measures MnDOT uses to make programming decisions.

Exhibit 1.8 Key MnDOT Performance Measures Used in Project Selection

Category	Measure	How Measured
Pavement	Ride Quality Index	Specialized van drives over pavement
Bridge	Bridge Planning Index	Annual or semi-annual inspection
Safety	Number of crashes involving fatalities or serious injuries	Fatalities and serious injuries reported to the Department of Public Safety
Twin Cities Congestion	Percentage of freeways with average traffic speed less than 45 miles per hour	Travel speed measured on selected freeways in October

SOURCES: Office of the Legislative Auditor, and Minnesota Department of Transportation, *Annual Minnesota Transportation Performance Report* (St. Paul, 2014), 9-16.

Pavement Condition

The MnDOT Materials and Road Research Office collects pavement-roughness and digital-image data on an annual basis. The data are collected using an inspection vehicle that is driven along the entire trunk highway system in both directions. The vehicle is a van equipped with two cameras that capture front and side images of the roadway, a three-dimensional laser/camera system that captures images of the pavement surface, and laser height sensors to measure roughness.

MnDOT uses these data to construct several indices that quantify the condition of trunk highway pavements on a mile-by-mile basis. The key performance measure used by MnDOT to measure pavement is the ride quality index (RQI). RQI is used to categorize pavement condition as "good," "fair," or "poor." MnDOT has separate statewide targets for the percentage of miles that should be "good" and "poor" on interstates, other NHS highways, and non-NHS trunk highways.

As is shown in Exhibit 1.9, MnDOT has set different targets for pavement condition (using the RQI measure) on three types of trunk highways: interstate highways, NHS highways not in the interstate system, and non-NHS trunk highways. For each type of highway, MnDOT sets a minimum target for the percentage of miles in "good" condition and a separate target for the maximum percentage of miles in "poor" condition.

MnDOT is currently meeting its performance targets for pavement condition.

Exhibit 1.10 shows the percentages of pavements statewide in poor condition from 2008 to 2014. Overall, MnDOT has performed fairly well across all three trunk highway systems and the percentage of pavements in poor condition is currently meeting MnDOT's target.

However, viewing performance at a statewide level masks differences that appear when examining individual districts. For example, District 7 in south-central Minnesota is performing far worse than the other districts with regard to pavement condition on interstate highways. In 2008, 85 percent of its interstate pavement miles were in good condition; by 2014, that level had dropped to 49 percent. Conversely, District 6 in southeastern

Exhibit 1.9: MnDOT's Pavement and Bridge Performance Targets

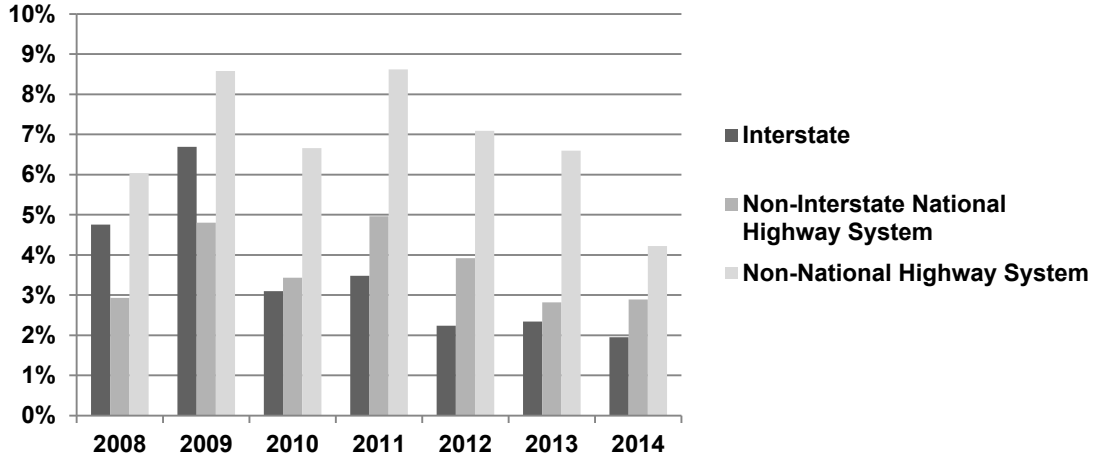
Pavement Condition	Interstate Highways	Non-Interstate National Highway System	Non-National Highway System
Good	≥ 70%	≥ 65%	≥ 60%
Poor	≤ 2%	≤ 4%	≤ 10%

Bridge Condition	National Highway System	Non-National Highway System
Good or Satisfactory	≥ 84%	≥ 80%
Fair or Poor	≤ 16%	≤ 20%

NOTES: Pavement performance targets refer to the percentage of centerline highway miles that meet a given threshold on the Ride Quality Index (RQI). RQI ranges from 0 to 5.0. Pavement with a value of 2.0 or lower is in "poor" condition. Pavement with a value of 3.1 or higher is in "good" condition. Bridge condition is calculated from the results of inspections performed at least every two years on all state highway bridges. Ratings combine deck, substructure, and superstructure evaluations. Measures are reported as percentages of deck area.

SOURCES: Minnesota Department of Transportation, *Annual Minnesota Transportation Performance Report 2014* (St. Paul, 2015), 13-14; and Minnesota Department of Transportation, *2014 Pavement Condition Annual Report* (St. Paul, 2015), 9-10.

Exhibit 1.10: Trunk Highway Pavement in Poor Condition, 2008-2014



NOTES: The above graph shows the amount of trunk highway pavement in poor condition, measured as a percentage of roadway miles. For undivided highways, one roadway mile is the same as one centerline mile. For divided highways, one roadway mile is two centerline miles. A centerline mile is one mile of a single highway, regardless of the number of lanes. The performance targets for poor condition are no more than 2 percent for Interstates, 4 percent for non-Interstate National Highway System roads, and 10 percent for non-National Highway System roads. A small percentage of data is missing for some roadway miles. The largest percentage of missing data occurs in 2008, when 1.8 percent of roadway miles have missing data.

SOURCE: Office of the Legislative Auditor, analysis of Minnesota Department of Transportation data.

Minnesota improved dramatically over the same time period, going from 54 percent of interstate miles in "good" condition to 90 percent.

Further, one of the drawbacks to using RQI is that it captures pavement condition at one point in time; it does not indicate whether roads that are currently in good condition are likely to deteriorate rapidly or slowly. As we note in Chapter 2, MnDOT has acknowledged that it sometimes does cheaper paving projects with short lifespans due to limited resources. Such roads may have strong RQI numbers at the moment, but may deteriorate rapidly.

Bridge Condition

The MnDOT Bridge Office is responsible for the overall supervision and management of inspections for every bridge in the state on an annual or semiannual basis.[24] MnDOT's inspection data is compiled in a database that includes key bridge characteristics (for example, the age, geometry, and material of the bridge), traffic volume, and information about expected deterioration rates based on MnDOT's past experience. The data are used to calculate the Bridge Planning Index (BPI), a measure of the probability and consequences of a service interruption (that is, the risk that MnDOT would have to close the bridge, restrict traffic, or limit heavy loads).

As shown earlier in Exhibit 1.9, MnDOT has set four targets for bridge condition: minimum percentages of bridge deck area in good or satisfactory condition on NHS and non-NHS highways, and maximum percentages of bridge deck area in poor condition on NHS and non-NHS highways.

MnDOT is currently meeting some of its performance targets for bridge condition but not others.

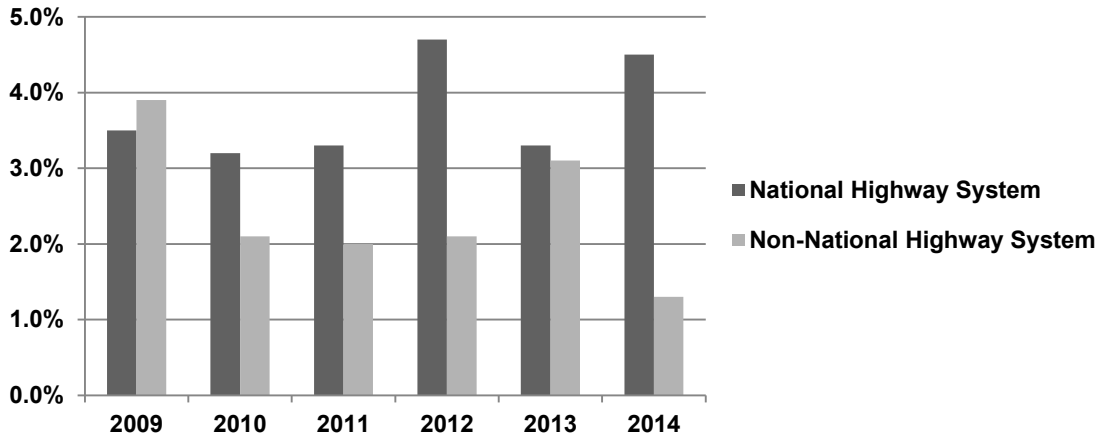
Exhibit 1.11 shows that the percentage of NHS bridge deck area in poor condition has stayed relatively stable at around 4 percent. In 2014, 4.5 percent of NHS bridge deck area was in poor condition, more than double MnDOT's target of 2 percent. However, this measurement was a temporary spike due to a problem with the large Blatnik bridge connecting Duluth and Superior. According to MnDOT, resolving that problem should drop the percentage of poor bridge deck area to 3.1 percent, a level that still does not meet the performance target. As of 2014, 1.3 percent of non-NHS bridge deck area was in poor condition, well below the target of 8 percent for such bridges.

Traffic Safety

The Department of Public Safety collects extensive data from local law enforcement agencies on every automobile crash in the state (on both state and local roads) involving a death or serious injury. MnDOT cross-references the crash data with numerous other factors, such as the type of road, the age of the driver, the involvement of pedestrians or bicyclists, and whether or not the crash was in a work zone. MnDOT uses the crash data in determining where to construct safety-related projects (discussed further in Chapter 2).

[24] Rail bridges are an exception; they are only partially inspected by MnDOT. MnDOT does not inspect any railroad bridges passing over waterways. For railroad bridges passing over roadways, MnDOT inspects only the substructure, not the bridge deck.

Exhibit 1.11: Percentage of Trunk Highway Bridges in Poor Condition, by Deck Area, 2009-2014



NOTES: Ratings combine deck, substructure, and superstructure evaluations. Measures are reported as percentages of deck area. Although MnDOT's definition of bridges includes structures 10 feet or longer, the above data only include bridges 20 feet or longer as required by federal reporting standards. The data, therefore, omit the condition of an additional 376 bridges. MnDOT's target is to have no more than 2 percent of National Highway System bridge deck area and no more than 8 percent of non-National Highway System bridge deck area in poor condition.

SOURCE: Minnesota Department of Transportation, *Annual Minnesota Transportation Performance Report 2014* (St. Paul, 2015), 13-14.

However, MnDOT safety staff acknowledge that this measurement is influenced by factors outside of MnDOT's control. Importantly, safety improvements in automobile design could play a significant role in improved safety outcomes. Nonetheless, MnDOT administrators think that this measurement is both easily understandable and has high priority for members of the public.

Minnesota is not currently meeting MnDOT-established targets for limiting the number of fatalities resulting from crashes on all roads.

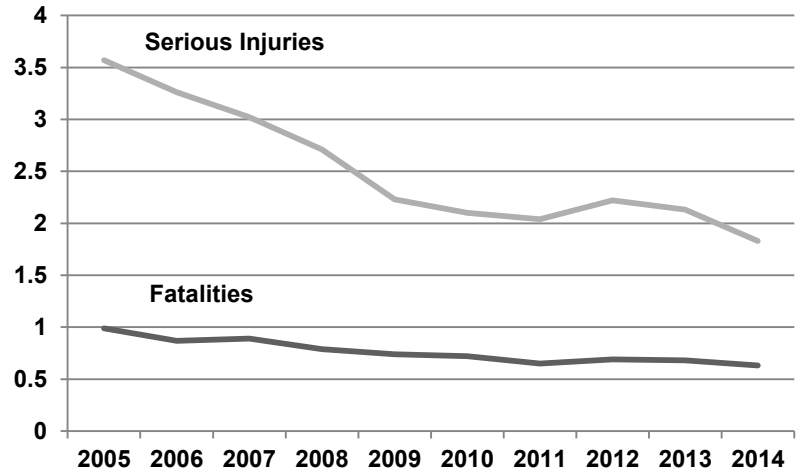
As shown in Exhibit 1.12, the rate of fatalities and serious injuries on Minnesota roads has decreased over time. Over the past decade, the serious injury rate decreased from 3.6 serious injuries per 100 million vehicle miles traveled to 1.8.[25] During that same time period, the fatality rate decreased from 1.0 fatality per 100 million vehicle miles traveled to 0.6 fatalities per 100 million vehicle miles traveled. Until 2015, these declines generally kept pace with the traffic safety goals established by Minnesota's Toward Zero Deaths

[25] The safety data and goals presented in this section refer to all Minnesota roads, not just trunk highways. However, there is some evidence that trunk highways are safer than most other roads. As of 2013, the serious injury rate on trunk highways was 1.4 injuries per 100 million vehicle miles traveled, which was lower than the rate on county, town, and city roads. The fatality rate on trunk highways was 0.6 fatalities per 100 million vehicle miles traveled in 2013, which was lower than the fatality rate on county and town roads but slightly higher than the rate on city roads.

(TZD) initiative.[26] Minnesota's TZD target is to have no more than 300 fatalities per year by 2020, with an intermediate goal of no more than 350 fatalities in 2014. The intermediate goal was not met for 2014 or 2015, when there were 361 and 409 fatalities on Minnesota roads, respectively. MnDOT has set a TZD target of no more than 850 serious injuries by 2020. In 2014, there were 1,044 serious injuries on Minnesota roads.

Exhibit 1.12: Fatality and Serious Injury Rates on Minnesota Roads, 2005-2014

Rate per 100 million vehicle miles traveled



NOTE: Data are collected from crash reports provided to the Department of Public Safety by local law enforcement agencies and reflect all Minnesota roads, not just trunk highways.

SOURCE: Minnesota Department of Transportation, *Annual Minnesota Transportation Performance Report 2014* (St. Paul, 2015), 10.

Traffic Congestion

Compared with the elements of the transportation experience discussed above, congestion is difficult to capture in a performance measure. There is no single, universally accepted definition of traffic congestion, and the release of federal rules to define congestion for the purposes of complying with MAP-21 has been delayed.

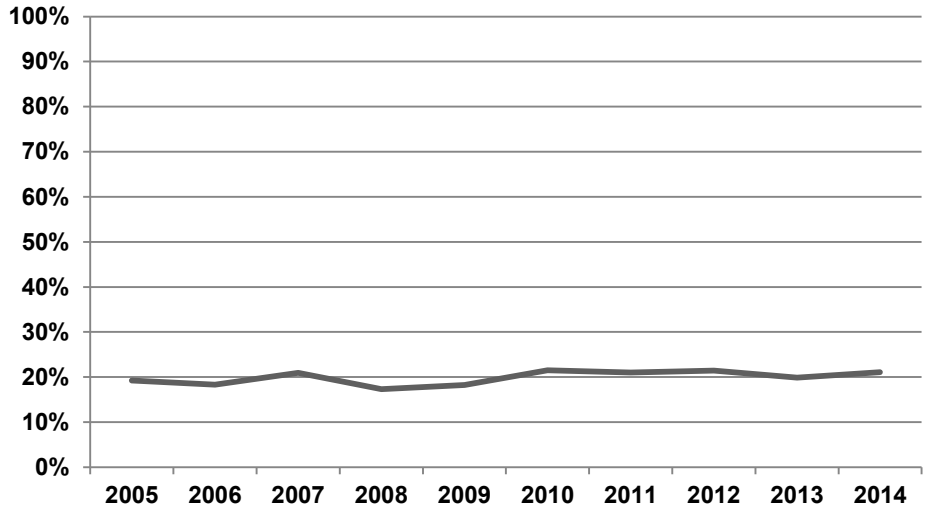
Further, congestion can be affected by many factors that cannot be easily addressed in long-term planning, such as the state of the economy, fluctuations in gas prices, or changes in local land use. For example, MnDOT recently redecked the Snelling Avenue bridge over Interstate 94 in St. Paul. At the time that work was planned, MnDOT had no way of knowing that a soccer stadium would be built next to that interchange, and could not take possible increases in congestion from stadium traffic into account in its planning.

[26] TZD is an approach to safety improvements that integrates driver education, law enforcement, engineering, and emergency medical and trauma services. It is a collaboration of multiple state, federal, and local agencies in which MnDOT's Office of Traffic, Safety, and Technology plays a leading role.

Twin Cities Metropolitan Area

Currently, MnDOT measures congestion only on some freeways and other heavily traveled roads in the Twin Cities metropolitan area, and defines congestion as traffic flowing for a sustained period at average speeds less than or equal to 45 miles per hour. MnDOT measures congestion each October, and does not measure it during other months. MnDOT deems October to have the most standardized traffic patterns. Exhibit 1.13 shows that the measured percentage of congested freeway miles in the Twin Cities has stayed constant over the past decade.

Exhibit 1.13: Percentage of Congested Freeway Miles in the Twin Cities Metropolitan Area, 2005-2014



NOTE: Congestion is traffic flowing at speeds less than 45 miles per hour for a sustained period. The measure is taken during morning or evening peak traffic each October along 379 miles of freeway in the Twin Cities metropolitan area.

SOURCE: Minnesota Department of Transportation, *Annual Minnesota Transportation Performance Report 2014* (St. Paul, 2015), 15-16.

This measure has some limitations. First, measures of traffic speed can only be reasonably applied to freeways, not to trunk highways with traffic signals where congestion nevertheless occurs. Second, MnDOT only has traffic data for some roads. MnDOT is currently investigating the use of proprietary data obtained from tracking the movement of GPS-enabled devices on trunk highways. Such data could provide a rich source of new data on traffic movement in congested areas, and could also provide much better data than currently exists for locations outside the metropolitan area.

MnDOT is not currently meeting its target for congestion in the Twin Cities metropolitan area, but MnDOT's measure of congestion and its associated target are likely to change due to forthcoming federal regulations.

MnDOT's goal for congestion in the Twin Cities area is based on a rolling average of the percentage of congested freeway miles. The goal is that the three-year rolling average

should not exceed the ten-year rolling average. The most recent data available show that the three-year average (2012-2014) is 21 percent, slightly higher than the ten-year average (2005-2014) of 20 percent. However, MnDOT expects to adopt both a new definition of congestion and a new performance target for congestion when the federal government releases its final rules for MAP-21.

Greater Minnesota

The most heavily traveled roads in Greater Minnesota are part of the Interregional Corridor (IRC) system. These roads connect regional trade centers throughout the state. The IRC consists of 2,960 miles of road, accounting for 2 percent of all roadway miles in the state but 30 percent of all statewide travel.

Each corridor in the IRC has a target average travel speed of 55, 60, or 65 miles per hour for a journey across the entire corridor. The performance of the IRC is measured as the percentage of corridor miles where traffic moves within two miles per hour of the target travel speed. MnDOT's goal is to have traffic moving at more than two miles per hour below the target speed on no more than 5 percent of the IRC.

This target has been met for several years, with a consistent 2 percent of the IRC having traffic moving below the target speed. As of 2013, the only stretch of the IRC that has traffic consistently moving below its target speed is Minnesota Highway 210 between Motley and Aitkin. According to MnDOT, a large part of that corridor has a posted speed limit less than 55 miles per hour. MnDOT expects that the IRC will continue to meet this performance target into the future. However, as with MnDOT's metropolitan area performance measure, federal rule changes may make this measure obsolete.

Other Infrastructure Condition

MnDOT is responsible for maintaining many other infrastructure assets besides pavement and bridges, including guardrails, noise barriers, rest areas, culverts, pavement markings, retaining walls, signs, weigh stations, and lighting structures.

MnDOT has not defined performance measures that enable it to track the condition of most roadside infrastructure.

MnDOT does not track the condition or performance of most of its roadside structures, including guardrails, noise barriers, rest areas, retaining walls, and signs. Even among those assets MnDOT does track, its data are incomplete. For example, our discussions with MnDOT hydraulics experts revealed that MnDOT only collects data on culverts that cross the centerline of trunk highways. It does not include highway culverts within MnDOT's right of way that are parallel to trunk highways. Such culverts are considered to be a lower priority than culverts that pass underneath highways because their failure would impact fewer people.

The lack of information on roadside infrastructure is not a problem unique to MnDOT. Most other state departments of transportation do not track the performance of such assets either; it is an enormous task to inventory all roadside infrastructure. MAP-21 requires every state to develop a risk-based asset-management plan. FHWA asked Minnesota, along with two other states, to be the first to develop such plans, which will then serve as models for other states' plans.

MnDOT created its first Transportation Asset Management Plan in 2014. In addition to pavements and bridges, the plan focused on four additional asset types for which MnDOT developed new performance measures and targets: highway culverts, deep stormwater tunnels, overhead sign structures, and high-mast light tower structures.[27] Exhibit 1.14 shows the condition of these assets as of 2012. At that time, none of these assets met their preliminary performance targets for percentage in poor or very poor condition.[28] Of particular concern were the deep stormwater tunnels: MnDOT evaluated 53 percent of its stormwater tunnel network as being in poor or very poor condition in 2012.[29]

We encourage MnDOT to expand its asset management plan to include additional assets beyond those listed in the Transportation Asset Management Plan. We make no formal recommendation because we do not know the cost or amount of person hours necessary to complete such inventories, and we did not assess the importance of such inventories when compared with MnDOT's other responsibilities.

Exhibit 1.14: Hydraulic and Roadside Infrastructure Condition, 2012

Infrastructure	Count	Percentage Poor	Percentage Very Poor
Highway culverts	47,157	10%	6%
Deep stormwater tunnels	7[a]	39	14
Overhead sign structures	2,359	6	8
High-mast light tower structures[b]	476	6	15

NOTES: The performance targets for the above structures are preliminary. For highway culverts and deep stormwater tunnels, the target is no more than 8 percent poor and no more than 3 percent very poor. For overhead sign structures, the target is no more than 4 percent poor and no more than 2 percent very poor. MnDOT has not yet determined preliminary targets for high-mast light towers.

[a] The seven deep stormwater tunnels consist of 69,272 linear feet.

[b] A high-mast light tower is a pole used to mount lighting at a height of 100 to 140 feet over a highway.

SOURCE: Minnesota Department of Transportation, *Transportation Asset Management Plan (Draft)* (St. Paul, 2014), 14, 23.

[27] A high-mast light tower is a pole used to mount lighting at a height of 100 to 140 feet over a highway.

[28] MnDOT has not yet determined a preliminary performance target for high-mast light towers.

[29] MnDOT is currently rehabilitating a very large stormwater tunnel under Interstate 35W; when that work is completed, the percentage of storm tunnels in poor or very poor condition will drop to 34 percent.

Chapter 2: Standard Project-Selection Process

Highway projects may be scheduled via different decision-making processes within the Minnesota Department of Transportation (MnDOT). In this chapter, we describe in detail the process currently used by MnDOT staff to identify, select, scope, and schedule most projects.

MnDOT staff identify possible highway construction projects as far as ten years into the future, and definitively budget and schedule (or "program") most large projects four years into the future. MnDOT changed its project-selection process in 2013. Thus, the process we describe below has been used to program projects that will begin construction in fiscal year 2017 and later. Most of the projects scheduled for construction this year (2016) were programmed using an older process that has since been superseded.

Under the old process, the MnDOT central office gave each district office a budget based on its highway mileage and measured traffic levels, and district staff had great autonomy to make spending choices within that budget. Districts managed predictable budgets and could shift funds around to address district-level priorities.

Under the new process, MnDOT district staff still decide where and when to build highway projects. However, district-level priorities have been subordinated to state-level priorities. Districts' autonomy is now limited by planning and funding constraints that are enforced by MnDOT's central office staff, and their annual budgets are less predictable.

PLANNING

MnDOT's project-selection process is based on its major statewide plans, which we summarize in Exhibit 2.1. These plans outline long-term agendas for the state's transportation network, including the trunk highway system. Staff in MnDOT's Modal Planning and Program Management Division coordinate the development of MnDOT plans. The plans are then reviewed, adjusted, and approved by the department's senior leadership. Although these plans do not specify what projects MnDOT will build, planning decisions become underlying policy directions and funding constraints for the trunk highway programming process.

State Highway Investment Plan (MnSHIP)

MnDOT's key plan regarding trunk highways is the *20-Year Minnesota State Highway Investment Plan* (MnSHIP), which was last updated in 2013.[1] The MnSHIP estimates the amount of revenue that MnDOT will receive in the next 20 years (2014-2033) and allocates that funding into spending targets (called "investment categories"), as shown in Exhibit 2.2. MnDOT planners and engineers then use the spending targets to guide their highway programming choices.

[1] MnDOT anticipates adoption of the next MnSHIP update in early 2017.

Exhibit 2.1: MnDOT's Transportation Plans

Plan Name and Type	Last Updated	Description
Policy Plans		
Minnesota GO	2011	50-year vision that defines broad goals for all transportation modes.
Statewide Multimodal Transportation Plan	2012	Policy framework for all transportation modes over a 20-year period.
System Plans		
Highway (MnSHIP)	2013	20-year system plan for trunk highways, the largest area of MnDOT activity and spending.
Aviation	2013	Plans outlining goals and investment priorities for other modes of transportation.
Bicycle	2015	
Freight	In process	
Ports & Waterways	2014	
Pedestrian	In process	
Rail	2010	
Greater Minnesota Transit	2011	
Project Listings For Trunk Highways		
Capital Highway Investment Plan (CHIP)	2015	Listing of major highway projects tentatively planned for construction up to ten years into the future.
State Transportation Improvement Program (STIP)	2015	Federally mandated document listing highway projects scheduled for construction in the next four years.
Other		
Strategic Highway Safety Plan	2014	Strategies for reducing fatalities and serious injuries on all Minnesota roads.

NOTES: MnDOT is currently developing new updates for several of these plans. Plans listed as "in process" are being developed for the first time. The STIP also includes federal spending on nonhighway transportation services and facilities.

SOURCE: Office of the Legislative Auditor.

MnDOT uses the MnSHIP to satisfy federal requirements that states' long-term funding plans be based on "reasonably expected" funding.[2] For that reason, the MnSHIP spending targets are based on current funding sources. Although MnDOT and the Governor are currently seeking significant increases to MnDOT's base funding, the MnSHIP does not assume that those efforts will be successful. Estimates of future funding are based on predicted income from MnDOT's current sources of trunk highway revenue, including the gas tax, the motor vehicle sales tax, the motor vehicle registration tax, and federal highway aid.

MnDOT creates the MnSHIP in conjunction with an extensive stakeholder consultation process (as it does with its other major plans). During development of the 2013 MnSHIP, the department held public meetings, conducted surveys and focus groups, assembled

[2] *23 CFR*, sec. 450.214(l) (2014).

Exhibit 2.2: MnDOT Spending Targets for Trunk Highway Capital Investments, 2014-2033

Spending Category	Description	Years 1-10 (2014-2023)	Years 11-20 (2024-2033)
Total Estimated Funds Available	**Not adjusted for inflation; assumes no significant increase in base funding**	**$8 billion**	**$10 billion**
Infrastructure Preservation			
Pavement Condition	Overlays, mill and overlays, full-depth reclamation, reconstruction	38.1%	59.1%
Bridge Condition	Replacements, rehabilitation, painting	20.2	20.7
Roadside Infrastructure Condition	Drainage and culverts, traffic signals, signs, lighting, retaining walls, fencing, noise walls, guardrails, overhead structures, rest areas, technological investments to improve traffic flow or safety, pavement markings	8.8	9.0
Other Categories			
Project Support	Right-of-way costs, consultant services, supplemental agreements, construction incentives	11.5	5.0
Regional and Community Improvement Priorities[a]	Locally desired projects that fall outside MnDOT's performance-based program	7.5	0
Twin Cities Mobility	Projects to reduce traffic congestion, including MnPASS lanes, "spot" improvements, traffic management systems, completion of Highway 610	6.9	0
Traveler Safety	Low-cost high-benefit safety features, additional infrastructure at select locations, initiatives to change user behaviors	4.2	3.3
Accessible Pedestrian Infrastructure	Usually added on to pavement or bridge projects	1.6	2.0
Bicycle Infrastructure	Usually added on to pavement or bridge projects	1.4	1.0

NOTE: Percentages may not sum to 100 percent due to rounding.

[a] This category included several commitments made by MnDOT prior to the creation of this plan, including expanding segments of Highway 60, Highway 14, and Highway 371.

SOURCE: Minnesota Department of Transportation, *20-Year State Highway Investment Plan* (St. Paul, 2013).

advisory committees, created interactive websites, and published a draft plan for public review and comment. MnDOT planners also used similar methods to gather input from staff within the department.

Although they take public input into account, MnDOT planners and senior leadership ultimately decide on the state's highway construction priorities and how much to allocate to each spending target. As acknowledged in the 2013 MnSHIP, many participants in the public outreach process preferred that MnDOT plan to spend less money on infrastructure

preservation and more money on other priorities. MnDOT incorporated some of these preferences into its plan, but placed less emphasis on new infrastructure than many wanted.[3]

MnDOT's long-range highway plan emphasizes preservation of existing infrastructure over other goals.

The 2013 MnSHIP is heavily oriented toward infrastructure preservation, particularly in the later years covered by the plan. As we show in Exhibit 2.2, MnDOT plans to spend 67 percent of available resources rehabilitating and replacing existing infrastructure in the first ten years covered by the plan (2014-2023) and 89 percent in the second ten years (2024-2033).

Three spending targets in the MnSHIP are devoted to infrastructure preservation: pavement condition, bridge condition, and roadside infrastructure condition. MnDOT intends to spend a far larger portion of its state road construction budget on pavement condition in the later years of the plan, upping the percentage from 38 percent to 59 percent. In contrast, MnDOT plans to spend approximately the same percentage of state road construction funds on bridges and roadside infrastructure in the second ten years of the plan as in the first ten years (approximately 20 percent and 9 percent, respectively).

After accounting for preservation work, the MnSHIP scatters MnDOT's remaining state highway construction resources across several different spending categories. The MnSHIP allocates 11.5 percent of total spending in the first ten years to "project support," a broad category that includes spending on right-of-way costs, consultant services, supplemental agreements, and construction incentives.[4] According to MnDOT, this figure is consistent with the amount that MnDOT has historically spent on these expenses as it constructed projects. Optimistically, MnDOT anticipated being able to slash this proportion by more than half in 2024-2033 due to its focus on preservation projects during those years. MnDOT administrators told us that this projection of much lower project support costs is being reassessed, and the spending target for project support in the later years of the plan will likely increase in the next MnSHIP update.

The MnSHIP allocates 7.5 percent of state road construction funding to districts to spend on regional and community priorities in the first ten years of the plan. MnDOT did not allocate any funds to this category in the second ten years of the plan.

Seven percent of total spending in the first ten years is allocated to "mobility" work (improvements that address traffic congestion) in the Twin Cities metropolitan area. MnDOT staff said that they expect to direct most of these funds toward the construction of additional MnPASS lanes.[5] Despite strong interest in some areas of the state in adding lanes to regionally important highways, no funding was set aside for expansion projects in

[3] Because MnDOT settled on spending targets that were out of line with initial public input, the department conducted additional public meetings in the spring of 2013 to explain its rationale.

[4] Construction incentives are additional payments made to some contractors for completing projects early.

[5] MnPASS lanes are express lanes located on Interstates 394, 35W, and 35E. Transit buses, carpools, and motorcycles can use the lanes for free during peak travel times. Solo drivers and small trucks can use the lanes by paying a fee.

Greater Minnesota beyond existing commitments.[6] Further, after the first ten years, funding to address metropolitan-area congestion disappears entirely.

The MnSHIP allocates four percent of total spending to traveler safety improvements. Money for this category is drawn from a specific federal program that only funds projects whose primary purpose is improving safety. MnDOT does not direct additional funds to traffic safety infrastructure at the state level.[7] MnDOT planning staff commented that most MnDOT projects have positive impacts on traffic safety, even when spending is allocated under one of the other categories. In their view, potentially every project could be construed as a "safety project," due in part to MnDOT design requirements that incorporate safety elements.

Lastly, small percentages (no more than 2 percent each) of state road construction funds are allocated to improving or expanding bicycle and pedestrian infrastructure.

MnDOT has stated that given current funding levels, increasing numbers of highways and bridges will deteriorate to poor condition.

Despite planning to spend most of its available funds on preservation, MnDOT anticipates that it will be unable to keep up with its infrastructure preservation responsibilities due to insufficient funding. MnDOT expects to have more money to spend in the second ten years covered by the MnSHIP than in the first ten years ($9.7 billion over the decade rather than $8.5 billion), but it expects its real purchasing power to be substantially diminished due to the effects of inflation (see Exhibit 2.3). The MnSHIP states:

> Despite this focus [on infrastructure preservation], the number of roads and bridges in poor condition will more than double and perhaps even triple within 20 years.[8]

In MnDOT's long-range projections, the amount of pavement in poor condition and the percentage of structurally deficient bridges will increase over time. The major bonding program passed by the Legislature in 2008 after the Interstate 35W bridge collapse moved such problems farther into the future, but did not eliminate the underlying funding inadequacies. MnDOT engineers and planning staff we interviewed often said they were trying to stretch too little money to cover too many problems.

As a result, MnDOT planners and engineers often choose to program cheaper short-term fixes instead of more costly long-term fixes. For example, a MnDOT district may choose to put a relatively thin overlay on a bumpy road that will produce a short-term improvement in ride quality, boosting the district's performance measurements.[9] However, if the underlying substructure of the road is weak, the overlay will not last long. MnDOT staff said the

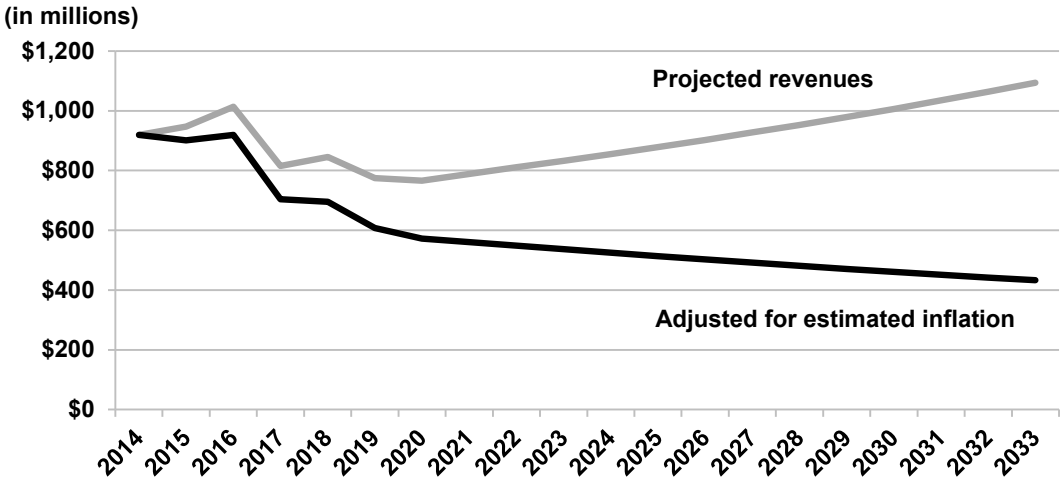
[6] According to the MnSHIP, these commitments included expansion work on Minnesota Highway 60, U.S. Highway 14, and Minnesota Highway 371. The MnSHIP anticipated that funding for these projects would come from the regional and community priorities spending target. MnDOT later funded some of these projects through the Corridors of Commerce program (see Chapter 3).

[7] Districts may allocate some of their "regional and community priority" funds to safety improvements. Metro District, for one, routinely puts some of these funds toward safety improvements.

[8] Minnesota Department of Transportation, *20-Year State Highway Investment Plan* (St. Paul, 2013), ES-3.

[9] See Chapter 1 for a discussion of ride quality as a performance measure.

Exhibit 2.3: MnDOT Projections of Future State Road Construction Revenue, 2014-2033



NOTES: Revenue will drop in 2017 due to the ending of a ten-year bridge bonding program begun in 2008. The adjustment for inflation uses the average inflation amount for construction-related costs from 1999-2011, which was 5 percent per year. Inflation-adjusted revenue is in constant 2014 dollars.

SOURCE: Minnesota Department of Transportation.

department would spend less over the long term and have more years of high-quality road surface by doing more complete reconstructions.

Though preserving infrastructure is important, MnDOT has overemphasized the bureaucratic consequences of failing to meet its performance targets.

We agree with MnDOT's emphasis on preservation; in fact, we criticized MnDOT for not focusing enough on preservation in a 2008 report.[10] But the principal reasons MnDOT has given for that emphasis are not fully persuasive. MnDOT's *primary* reason for its focus on preservation should be to maintain safe, predictable usage of state highways. MnDOT should maintain highways so it does not need to impose lengthy closures or restrictions to safeguard the traveling public. It should certainly do its utmost to prevent catastrophic failure of infrastructure segments, such as the 2007 collapse of the Interstate 35W bridge.

However, in the MnSHIP, MnDOT justified its emphasis on infrastructure preservation based on two "unacceptable" risks that have only an indirect relationship to infrastructure failure. These risks were (1) failing to meet the federal MAP-21 standards for National Highway System (NHS) condition, which could lead the Federal Highway Administration (FHWA) to restrict how MnDOT spends federal funds; and (2) failing to meet the standards

[10] Office of the Legislative Auditor, Program Evaluation Division, *State Highways and Bridges* (St. Paul, 2008).

for acceptable condition of state infrastructure assets under Governmental Accounting Standards Board Statement 34, which could lead to a decline in the state's bond rating.[11]

In our view, although it would be best to avoid either of these outcomes, both of these risks are overstated. To date, FHWA has not finished setting the MAP-21 standards it will expect states to meet, nor has it set any deadline by which states will be sanctioned for not meeting them. Further, failing to meet the MAP-21 thresholds does not result in any loss of federal funds; MnDOT would instead lose some flexibility in how it spends them. Losing this flexibility would be a major headache for MnDOT staff, but it is unclear that the traveling public would notice any difference.

The Governmental Accounting Standards Board statement is a reporting standard used in accounting. It mandates that the state set a threshold for the condition of its infrastructure assets, and then report each year on whether the state is meeting that threshold. Essentially, this requirement merely affects the state's year-end financial reports. It has no automatic effect on bond ratings, which are set by major national bond ratings companies such as Moody's and Standard & Poor's. These companies' published criteria for rating state bonds barely mention transportation infrastructure. Instead, they focus on other factors such as the strength of a state's economy and its pension obligations.[12] As an internal MnDOT document notes, Colorado announced in 2008 and 2010 that it would not be able to meet its performance thresholds without any change to its bond rating.

Corridor Plans and Other Local Plans

In addition to transportation plans that take a statewide view, both MnDOT and local jurisdictions develop regionally specific transportation plans. Such plans can vary widely in scope and purpose. Some plans, called "corridor plans," outline future work along stretches of highway that cross multiple jurisdictions. Other plans explore future needs on multiple roads within a specified area. Different entities may create such plans for different reasons, and some do not have significant MnDOT involvement. Some plans are developed to consider how best to expand existing transportation infrastructure to meet anticipated future needs. Others are focused on developing smaller infrastructure additions, such as bicycling routes or safety features.

Although local-level plans can build expectations among local stakeholders, they play a limited role in MnDOT's planning process.

As described above, MnDOT's spending targets are based on a broad statewide assessment of needs, not on the aggregation of local and regional plans. Expansion projects identified in corridor plans and other local plans do not generally influence MnDOT's overall spending targets. Regardless of other priorities that may appear in local-level plans, MnDOT's statewide priorities drive the distribution of funding.

[11] Governmental Accounting Standards Board of the Financial Accounting Foundation, *Statement No. 34 of the Governmental Accounting Standards Board: Basic Financial Statements—and Management's Discussion and Analysis—for State and Local Governments*, Governmental Accounting Standards Series No. 171-A, (Norwalk, CT: Governmental Accounting Standards Board, 1999).

[12] See Emily Raimes, "US States Rating Methodology," Moody's Investors Service Report 129816 (New York, 2013); and Robin Prunty et. al., "U.S. State Ratings Methodology," Standard & Poor's Financial Services (New York, 2011), both accessed December 31, 2015, at the web page of the National Association of State Retirement Administrators, http://www.nasra.org/crediteffects.

Local-level plans that do not match available funding may not be realized. Metropolitan Council staff told us that for many years, Metropolitan Council plans included proposed highway projects for which no funding was identified. As a result, some projects were repeatedly planned but never delivered.[13] In preparing its 2009 plan, the Metropolitan Council—working with MnDOT—changed its approach and listed only projects that had a reasonable chance of receiving funding, dropping several projects that had been part of its plans for years. The Metropolitan Council and MnDOT have continued this more fiscally constrained approach—which is aligned with federal requirements for metropolitan planning—since 2009.

However, when local-level plans match up well to available funding, they can influence MnDOT's choices of how to distribute that funding. For example, all MnDOT districts and counties have traffic safety plans. Federal funding for safety improvements is available each year, and these plans play an important role in determining which projects should be given highest priority.[14]

Local-level plans may also affect whether certain components, such as bicycle, pedestrian, safety, or transit improvements, are added to projects planned for another reason. For example, a protected bicycle path could be added to a trunk highway bridge rehabilitation or bridge replacement project because local bicycle planning work had identified the crossing as an important connector between routes. The local plan likely would not prompt widening the bridge to create a bicycle lane if the bridge did not already need work, because the cost would be prohibitive. On the other hand, even if the local bicycle plan showed the importance of the crossing, funding may not be available to add the improvement. MnDOT district staff may decide that other locations are higher priorities for the limited bicycle funding available districtwide.

PROGRAMMING

Project Lists

MnDOT annually produces two key documents that identify and provisionally schedule individual highway projects up to ten years into the future. (We follow MnDOT convention by referring to future years as "year 1," "year 2," and so on—for example, if the current fiscal year is 2016, year 1 is fiscal year 2017 and year 4 is fiscal year 2020.)

State Transportation Improvement Program (STIP)

The STIP, a federally required document, lists highway projects scheduled in years 1-4. The STIP must include all projects receiving federal funding, but MnDOT opts to include most other major highway projects as well.[15] Ideally, before a project is listed in the STIP, MnDOT staff complete preparatory work to determine (1) the project's specific components

[13] The Metropolitan Council has significant authority over long-range transportation planning in the seven-county Twin Cities metropolitan area. We further discuss the Council's role later in this chapter.

[14] Minnesota distributes federal Highway Safety Improvement Program funding to both MnDOT districts and local jurisdictions. It is possible, though unusual, for local jurisdictions to spend these funds on trunk highway projects.

[15] The STIP lists all planned expenditures of federal transportation funds in Minnesota, so it also includes federally funded construction projects that are not on MnDOT roads and some nonconstruction items, such as transit funding.

(or "scope"); (2) an informed, reasonably accurate cost estimate; and (3) the mix of funding sources to be used.

MnDOT considers projects listed in the STIP to be binding commitments and tries very hard to avoid removing any projects once they have been listed there. For example, after the 2012 passage of the federal MAP-21 law, MnDOT changed its project-selection priorities to emphasize better performance on NHS routes (see Chapter 1). Although MnDOT had previously paid greater attention to highly traveled routes, that exact emphasis had not been in place previously. Thus, the already-programmed projects in 2014, 2015, and 2016 did not always match the new priorities. However, MnDOT did not remove any STIP-listed projects, viewing them as commitments that it would abandon only as a last resort. Instead, it added a very large pavement project on Interstate 90 to improve statewide interstate performance outcomes and meet the MAP-21 requirements.[16]

Some items in the STIP are "set-asides"—money that MnDOT allocates for purposes such as unexpected cost overruns, short-timeline projects that can be specified later in the programming process, or components that can be added to already-programmed projects.

Capital Highway Investment Plan (CHIP)

The CHIP contains a preliminary list of projects scheduled in years 5-10.[17] Unlike projects in the STIP, projects listed in the CHIP are not fully defined and may have preliminary cost estimates that will change as more work is done to finalize the project scope. MnDOT does not treat the CHIP as a list of binding commitments. District staff may advance, delay, or even remove projects from the CHIP for a variety of reasons. Further, MnDOT staff may change a CHIP project's scope by adding or subtracting components as estimated costs become clearer.

Ideally, as the projects listed in the CHIP progress towards year 5, district staff do preparatory work to finalize each project's scope and make detailed cost estimates. When a project's scheduled construction year progresses from year 5 to year 4, an important decision point is reached. Once projects move into the STIP, they become "commitments" that should not be changed. Thus, CHIP projects that are candidates for transfer to the STIP must be reexamined.

District staff may find, for example, that some CHIP projects must be left out of the STIP because not enough funding is available to cover the updated cost estimates. Alternatively, cost estimates may come in lower than expected and allow district staff to advance forward CHIP projects listed in year 6 or year 7 more quickly than expected.

Project List Development

MnDOT planners and engineers prepare new versions of the STIP and the CHIP each year. Current projects that have begun construction are removed from the STIP, and a new year of projects is added (year 4). The projects taken out of the CHIP (to add to the STIP) create

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[16] As we discuss in Chapter 1, the federal MAP-21 performance standards have not yet been finalized by the Federal Highway Administration. MnDOT was anticipating the requirements would prioritize pavement condition on interstates.

[17] The CHIP also relists the major highway construction projects in the STIP (that is, projects from years 1-4). Technically, therefore, it is a list of projects in years 1-10. However, its primary importance in terms of project selection is the list of projects in years 5-10.

space to add a new year to that document as well (year 10). Further, MnDOT district staff add additional short-term projects in years 1 or 2 of the STIP, using funding set aside for later decisions or funding initially allocated to other projects but not used.

Under the process begun in 2013 (for construction in 2017), MnDOT adds new projects to the STIP and CHIP at the same time, following approximately the same procedure. The process moves back and forth between central MnDOT offices and the MnDOT districts. We describe the process in detail below, indicating whether the primary work is done by central office units or district staff. We have divided the process into a series of steps to simplify our explanation; in practice, many of these steps overlap and activities listed in later steps may sometimes occur before activities listed in earlier steps. For a summary of the steps, see Exhibit 2.4.

1. Assessment of district needs (central office). Drawing on work by the materials and bridge offices, the MnDOT planning office (the Office of Transportation Systems Management) predicts what percentage of each district's pavement and bridges will be below quality thresholds in the year being programmed. This prediction is based on current measures of pavement and bridge quality, historical trends of how quickly infrastructure has deteriorated in the past, and future work already scheduled in the district.

2. Allocation of funding to districts (central office). Based on the needs assessment and statewide budget projections, MnDOT's Office of Transportation Systems Management sets spending targets for each district in the year being programmed. For example, if the central office predicts a district will have 18 percent of the poor quality pavement in the state and 12 percent of the poor quality bridges in the state, the Office of Transportation Systems Management allocates appropriate proportions of the overall budget to that district.[18] Thus, districts with greater needs receive more money, even if they have fewer highway miles to manage overall. Because of the federal MAP-21 requirements (see Chapter 1), most of the funding is designated for projects on NHS highways.

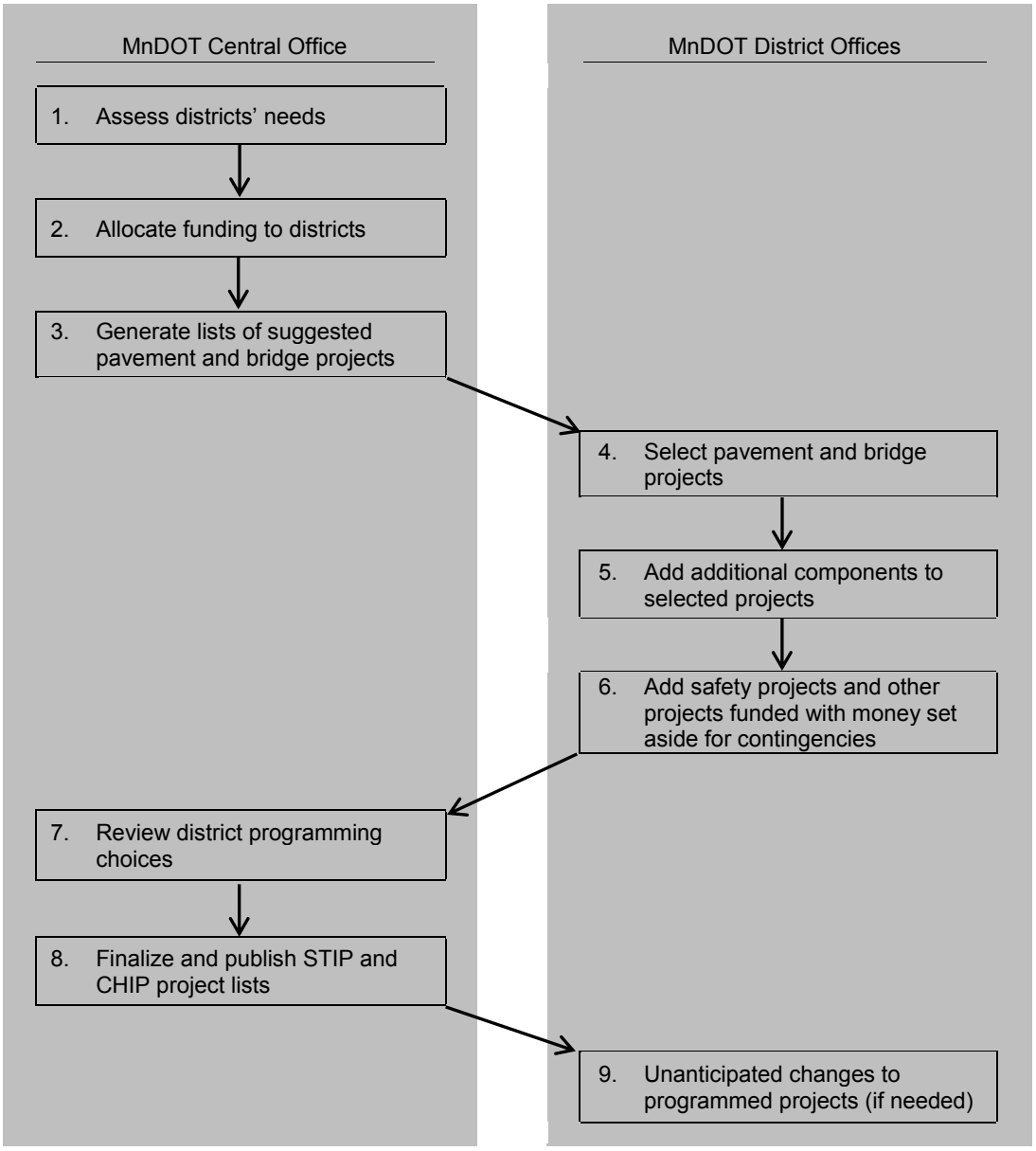
3. Suggested pavement and bridge project lists (central office). The MnDOT materials and bridge offices provide each district with prioritized lists of pavement and bridge projects developed through computer models. These lists are based on current performance measures combined with assumptions about how quickly highways and bridges will deteriorate.

4. Pavement and bridge project selection (district offices). Working from the amount of available funding and the suggested lists of projects received from the materials and bridge offices, district staff select pavement and bridge projects for the STIP and the CHIP. Due to the way funding is distributed by the central office, most of the available money is directed toward NHS highways. Even so, some district engineers told us that NHS preservation needs are so great that they have opted to spend some district discretionary funding on NHS highways as well.

[18] The actual computation is more complex than a straight match of the proportions. The amount allocated to each district is based on projected costs. For example, some bridges are larger and cost more to fix than others, and there may be a choice between short-term repairs that cost less and long-term repairs that cost more. Such factors are included in the model—it estimates an optimal statewide distribution of available resources, and then each district is allocated its proportion of that optimal distribution. Further, the central office allocates funding for non-NHS preservation work using a formula based partly on need and partly on the size of each district's highway system.

Districts may adopt the pavement and bridge projects on the suggested lists, or they may replace them with other pavement and bridge projects. The total amount of pavement upgrades assigned is important; if districts change the lists, the new lists, when combined together, must approximately match the total amount of work suggested by the central office. Our conversations with MnDOT staff suggested that districts are more likely to replace pavement projects than bridge projects. There are a smaller number of plausible bridge projects, and bridge project costs have less flexibility than pavement projects (for example, districts may be able to change a seven-mile repaving project to a five-mile project, but cannot decide to redeck only part of a bridge).

Exhibit 2.4: Overview of MnDOT's Standard Project-Selection Process



SOURCE: Office of the Legislative Auditor.

In most districts, an assistant district engineer manages the project-selection process, relying heavily on the professional judgment of the district's pavement and bridge engineering specialists. The judgment of engineers can vary from one to the next; substituting different engineers in those roles could produce somewhat different project lists.[19] For example, the District 4 pavement engineer told us that he starts with the central office list of pavement projects, but reorders it to take additional criteria into account. The criteria he uses were developed in District 2, where he previously worked, and he brought the method with him when he moved from District 2. Prior to his arrival, District 4 did not reprioritize the central office list in this way.

Other districts have their own methods of changing the central office pavement list. Still others adopt the central office list mostly as is. District staff that do change the list cited several reasons. For example, the central office list of pavement projects sometimes includes very short highway segments that would not be as cost-effective to repave as longer segments. The central office list does not take into account lower speed limits when highways pass through populated areas; district staff may decide that a road that would be too bumpy at highway speed is acceptable at lower speeds. The central office list simply measures the ride quality of the road and does not take ongoing maintenance into account—a road measured as relatively smooth may only be kept at that level because the district spends a lot of maintenance money on it. Lastly, the central office list does not take into account other work that can be accomplished at the same time, such as culvert repairs or combining a pavement and a bridge project.

Districts' programming of projects may also take into account the needs of local stakeholders. For example, construction disruptions and detours must be planned in conjunction with local authorities. Further, local jurisdictions may schedule their own construction work in conjunction with a MnDOT project to take advantage of cost efficiencies or to concentrate construction disruptions into a single time period.

5. Adding additional components to selected projects (district offices). As we described above, the central office sets district spending targets in several categories in addition to pavement and bridges: roadside infrastructure, regional priorities, and bicycle and pedestrian improvements. Districts generally allocate these funds by adding components to the selected pavement and bridge projects. For example, districts may add culvert replacements to a pavement rehabilitation project, or add a bicycle lane when replacing a bridge. Although districts can (and occasionally do) schedule stand-alone roadside infrastructure, pedestrian, and bicycle projects, district staff told us they usually combine work together into larger projects to reduce costs.

6. Adding safety projects and other "set-aside" spending (district offices). Many small stand-alone safety improvements have short time frames and can be programmed later in response to the most recent accident data. As a result, safety projects are often programmed only one to two years in advance, and do not appear in the CHIP or years 3 and 4 of the STIP. Instead, districts "set aside" safety funds to be programmed later.

Unlike the other spending target categories, the safety category is funded primarily through a specific federal program, the Highway Safety Improvement Program (HSIP). The funding is

[19] At its root, the central office's list of potential pavement projects is also based on professional judgment. To calibrate the model, materials division staff assembled a committee of pavement specialists and asked them to choose the best treatment for a variety of roads in varying levels of disrepair. The parameters of the computer model were then adjusted so that it would produce results as close as possible to the decisions of the committee.

controlled by MnDOT's Office of Traffic, Safety, and Technology, which makes the funding available based on the number of severe crashes occurring in each district.[20] However, the funding is not guaranteed. Districts must apply to receive the funding that is available to them by proposing eligible projects.[21] Due to the requirements of that program, the Office of Traffic, Safety, and Technology prefers that districts create "stand-alone" safety projects, but does allow the use of HSIP funding to add components to existing projects.

Because of the separate funding stream, districts generally select safety improvements separately from the main pavement and bridge selection process. As with pavement and bridge projects, districts usually rely on their staff specialists to identify and schedule such projects. Safety projects are generally targeted to locations with a history of accidents causing death or serious injury.

Districts also set aside additional funding as a contingency in the event of unexpected costs (such as damage from accidents or bad weather, or unexpected issues that arise during construction). If these contingencies do not occur, districts can reallocate this money for other purposes.

7. Review of district programming choices (central office). Central office staff review districts' project selections in two ways: (1) when all districts' projects are combined, the selections should produce predicted performance outcomes that meet the statewide targets listed in the MnSHIP, and (2) when all districts' projects are combined, the selections should approximately match the distribution of funds to the spending targets outlined in the MnSHIP.

If either criterion is not met, central office staff examine project lists to see which districts are farthest from the statewide targets. Districts may be asked to change their project selections to come closer to targeted spending and performance goals in order to produce acceptable statewide numbers. In 2014, for example, District 2 was asked to add additional bicycle projects for 2018 or demonstrate more clearly that their selected projects would include sufficient bicycle spending. Alternatively, districts may negotiate with other districts to "trade" spending so that one district's overspending in a category is balanced by another district's underspending. Another possibility is that MnDOT leadership may agree to accept a slightly different performance outcomes or funding distribution than outlined in the MnSHIP.

The central office's assessment of district project selections focuses on total outcomes. In most instances, central office staff do not examine the merits of the selected individual projects. Further, central office staff usually do not check to ensure that districts have correctly categorized projects into appropriate spending categories.

There are some instances in which central office staff do examine district choices on individual projects. A "major projects committee" provides an extra level of engineering

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[20] The Office of Traffic, Safety, and Technology does not approve safety projects within Metro District; Metro District chooses these projects independently in conjunction with the Technical Advisory Committee of the Transportation Advisory Board (see description in next section). However, MnDOT safety specialists said that Metro District's list of safety projects would likely be very similar to what the Office of Traffic, Safety, and Technology would have approved.

[21] Local jurisdictions are also eligible to apply for HSIP funding. Although local HSIP projects are usually constructed on local roads, local jurisdictions could use HSIP funding to construct projects on trunk highways. See our discussion of local spending on MnDOT infrastructure in Chapter 3.

review for particularly large or risky projects. For traffic safety projects funded through HSIP, central office staff ensure the federal criteria are met. Similarly, accessibility specialists review scheduled projects to make sure appropriate pedestrian accessibility improvements are included.

8. Finalization and publication of the STIP and the CHIP (central office). As required by federal regulations, a draft version of the STIP is made available for public comment.[22] MnDOT meets this requirement by inviting comments on district-level versions of the STIP.[23] The central office then compiles the district-level versions of the CHIP and STIP into final statewide versions. Both the STIP and CHIP are available to the public on MnDOT's website. The STIP, as a federally required document, must also be submitted to the FHWA for approval.

9. Unanticipated changes to programmed projects (district offices). MnDOT commits to constructing projects that are listed in the STIP. However, at times, districts are forced to make changes due to unexpected circumstances that create expenses exceeding their set-aside funds (such as severe weather that damages road surfaces). In these instances, districts may reconfigure planned projects to address the unexpected costs (for example, by eliminating optional components) or appeal to the central office for assistance. As a last resort, districts may be forced to delay one or more projects.

At other times, unexpected circumstances may lead to extra funds—for example, a favorable market for fuel or materials could enable a district to construct a number of projects under budget. The district may then be able to move some projects forward in the STIP, constructing them earlier than anticipated, and creating additional space for projects to be added during the next programming cycle.

Stakeholder Involvement

In Minnesota, several local structures exist that appear to involve local public officials and other stakeholders in MnDOT's trunk highway planning and programming processes.

Area Transportation Partnerships (ATPs) are regional groups of transportation stakeholders located in each MnDOT district.[24] MnDOT created the ATPs in 1993 to address local participation requirements in federal transportation law. ATPs vary in composition, but they often include local elected officials, city and county engineers, economic development officials, representatives of tribal nations, business representatives, and MnDOT district staff. ATPs were once responsible for creating subsections of the STIP that would be combined together to form the statewide document. Their power is now reduced; the ATPs merely make recommendations regarding projects on local roads to MnDOT district leadership. MnDOT districts now create the subsections of the STIP.

Metropolitan Planning Organizations (MPOs) are federally mandated organizations that coordinate transportation planning in metropolitan areas with populations over 50,000. There are eight metropolitan areas with MPOs that have boundaries entirely or partly in Minnesota: Duluth, Fargo, Grand Forks, La Crosse, Mankato, Rochester, St. Cloud, and the

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[22] *23 CFR*, secs. 450.216(f) and 450.210 (2014).

[23] Technically, these documents are titled "area transportation improvement plans" and are known as ATIPs.

[24] ATP boundaries and MnDOT district boundaries do not exactly match; ATP boundaries follow county boundaries, while a few counties are split between two different MnDOT districts.

Twin Cities. By federal law, the federally funded projects listed in MPOs' four-year transportation plans must be incorporated into the statewide STIP without changes.[25]

The **Metropolitan Council** is the comprehensive planning agency for the Twin Cities metropolitan area, with jurisdiction in Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington counties. The council has broad planning authority not only for transportation and transit, but also for community development, land use, and the environment. It is governed by a board of 16 members and a chair, all of whom are appointed by the Governor. Because of a federal requirement that MPOs in large cities include elected officials, the Legislature created the Transportation Advisory Board, a 33-member group that includes elected and appointed officials and community representatives from within the metropolitan area.[26] The Metropolitan Council and Transportation Advisory Board jointly serve as both ATP and MPO for the Twin Cities.

Although local stakeholders have opportunities to express their opinions, trunk highway project selection is largely an internal MnDOT process.

In our interviews, MnDOT district staff described project selection as a highly consultative process. Different MnDOT staff with different expertise—such as pavement and bridge specialists, safety specialists, and maintenance directors—contribute ideas and take part in programming discussions. However, in most districts, this consultation takes place primarily within MnDOT. Local stakeholders do not participate in the decision-making process, though the MnDOT staff making the decisions may be aware of local preferences. Some local stakeholders expressed dissatisfaction with their lack of influence over trunk highway project decisions, but others think that the current structure works well.

ATP and MPO organizations appear to be part of the transportation decision-making process, but we found that their influence differed greatly between Greater Minnesota and the metropolitan area. In Greater Minnesota, ATP and MPO representatives told us they have a very limited role in defining MnDOT's highway construction work. Internal MnDOT documents outlining the role of ATPs describe their role with regard to trunk highway projects as strictly advisory.

Although federal rules require that MnDOT projects within an MPO's planning area must appear in that MPO's four-year transportation plan, we found that this requirement has not given MPOs in Greater Minnesota meaningful influence over trunk highway projects. MPO representatives told us that MnDOT decides on projects regardless of the content of MPO plans and expects MPOs to amend their plans to add MnDOT projects as needed. Staff at one MPO said that changes "just happen, they are passed down," and noted that the MPO was given only a week to approve a recent amendment proposed by the MnDOT district. Another MPO staff person said that the amendment process has been frustrating and that it has been difficult for the MPO to address a "moving target." Yet another MPO representative commented that relations between the MPO and MnDOT are good, but it's important to remember the "golden rule"—MnDOT has the "gold," so it makes the rules.

Some local stakeholders told us they were satisfied with their access to MnDOT staff, but dissatisfied with some of MnDOT's decisions. Two county engineers said they had many

[25] *23 CFR*, sec. 450.216(b) (2014).

[26] See *23 CFR*, sec. 450.310(d) (2014).

opportunities to speak with MnDOT staff, but complained they could lobby for changes to a project until they were "blue in the face" without having any impact. Another county engineer commented that MnDOT staff meet with his county's board, and the board members are generally happy with the meeting—but often unhappy with MnDOT's final decisions.

However, individuals involved with several other ATPs and MPOs expressed satisfaction with the current framework and did not think that local stakeholders should have a greater role in MnDOT decision making. Some said that they felt it was appropriate for MnDOT to rely on its technical expertise to select projects on state highways. Others said that though they did not directly participate in MnDOT's decision making, they felt their concerns were generally heard and MnDOT made appropriate adjustments to its plans when asked. A few county and city engineers commented that they did not expect MnDOT to seek their opinions about state highway projects in the same way that they did not seek MnDOT's opinions about local road projects.

Project Narrative: Minnesota Highway 40 Bridge in Milan

The Minnesota Highway 40 Bridge over Lac Qui Parle Lake near Milan, also known as the "Milan Bridge," was constructed in 1938. It is on the state's list of historic bridges.

Due to deterioration, MnDOT District 8 had originally planned to replace the Milan Bridge. But after the Federal Highway Administration expressed concern over replacing this historic bridge, District 8 scheduled a rehabilitation project instead. However, the changed listing in the STIP was unclear, identifying the project as both a rehabilitation and a replacement.

Local residents had apparently been unaware of the plan to rehabilitate, rather than replace, the bridge. When MnDOT District 8 held an open house in March 2015—two months before the project was scheduled to start construction—it encountered opposition. Many citizens thought that the bridge should be replaced, in part because the current bridge is too narrow for modern farm equipment. Based on the public's opposition, the district decided to delay the start of the project and reexamine its options.

According to MnDOT district staff, it is rare to reconsider a project's scope so late in the process. To respond to the public's concerns, MnDOT assembled a task force in November 2015 to reexamine the decision to rehabilitate the bridge. The task force recommended that MnDOT replace the bridge; MnDOT anticipates making a final decision in early 2016.

In the Twin Cities metropolitan area, MnDOT's Metro District and the Metropolitan Council work closely together to plan highway projects, particularly those that address traffic congestion or add infrastructure that supports the transit system. The Metropolitan Council's more involved role may be driven by several factors. First, both state and federal law gives the Metropolitan Council additional responsibilities beyond those of Greater

Minnesota MPOs.[27] Second, Metro District is the only MnDOT district with MnSHIP spending targets oriented toward building new infrastructure. Third, transit networks in the metropolitan area (which are primarily coordinated by the Metropolitan Council) play a much more important role in regional transportation than they do anywhere else in the state. Lastly, most of MnDOT Metro District lies within the Metropolitan Council's jurisdiction, so there is much greater overlap between a MnDOT district and MPO than anywhere else in the state.

However, even with this greater role, the Metropolitan Council and Transportation Advisory Board offer limited input to MnDOT Metro District regarding the selection of infrastructure preservation projects. As is the case elsewhere in the state, preservation projects are generally chosen internally within MnDOT without much stakeholder participation.

Transparency

MnDOT's trunk highway decisions directly or indirectly affect nearly every Minnesota resident. However, the reasons for many of MnDOT's decisions are often unclear to those outside the department.

MnDOT does not provide sufficient information about its selection decisions to the public or interested stakeholders.

MnDOT does not publicly score or otherwise rank projects considered in its standard process to show why some potential projects were picked and others were not. After staff make project selection decisions, selected projects are listed in the STIP or the CHIP. However, MnDOT districts do not provide consistent information about how decisions are made. Importantly, no information is provided in those documents about what MnDOT decided not to do so interested stakeholders can compare MnDOT's chosen projects to what it might otherwise have done.

Projects that MnDOT selects for the STIP and CHIP are not listed in order of priority—there is no way to tell from these documents whether some of the selected projects are a higher priority than others. One cannot predict, for example, which projects might be advanced or delayed in the event of changed circumstances.

For example, the 2016 CHIP listed a District 4 project on Minnesota Highway 55 as starting construction four years later than the date listed for this project in the previous year's CHIP. Little information about this change was provided other than "work on MN 55 between Elbow Lake and Barrett (a primary truck route) has been delayed from 2020 to 2024 due to limited funding."[28] MnDOT offered no explanation in the CHIP for why this project was moved instead of any of the district's other 2020 projects. Further, MnDOT did not explain why the project was pushed back four years instead of just one or two. Similarly, MnDOT does not volunteer information in its project lists about why optional components such as bicycle improvements or roadside infrastructure repairs are included in some projects and not in others.

[27] Federal regulations give additional responsibilities to MPOs in urbanized areas with a population over 200,000. *23 CFR*, sec. 450.320(b) (2014).

[28] Minnesota Department of Transportation, *10-Year Capital Highway Investment Plan*, 4-4 (St. Paul, 2016).

MnDOT does regularly offer explanations of its decisions in meetings with various stakeholders. At a minimum, the STIP and CHIP are presented to local ATPs. Upcoming projects are highlighted, and MnDOT staff answer questions about the reasoning behind their decisions. Some MnDOT district administrators go further, for example by arranging annual one-on-one meetings with key local stakeholders to ensure that counties and cities are well-informed and that they have the opportunity to express opinions. However, such explanations are generally provided orally, not in writing.

Local stakeholders expressed mixed reactions to MnDOT's outreach efforts. In a survey of all county engineers in Minnesota, approximately three-quarters of respondents said that they knew some elements of MnDOT's decision-making process, but did not know how MnDOT selects highway projects.[29] As we show in Exhibit 2.5, many county engineers would like to be consulted more often about project-selection, scoping, and timing decisions than they currently are. Almost half said that MnDOT rarely or never provided opportunities for them to offer input about the timing of trunk highway projects in their counties. A few county engineers told us that they do not learn about some projects (particularly those that require no coordination with local officials) until the last minute.

Nonetheless, most county engineers expressed overall satisfaction with MnDOT's final project-selection decisions. Sixty-eight percent of our respondents rated MnDOT's overall project selections as good or very good. In interviews, county engineers frequently said that MnDOT is doing a reasonable job given the amount of funding available to it for building and repairing transportation infrastructure.

RECOMMENDATION

MnDOT should take steps to improve the transparency of its standard project-selection process.

In our interviews with MnDOT staff, it was clear that standard programming decisions were carefully thought out and took into consideration a wide variety of important factors. Further, we found that when we asked specific questions, MnDOT staff could generally provide cogent explanations for the reasons behind specific programming decisions. We do not have significant concerns about the decisions themselves.

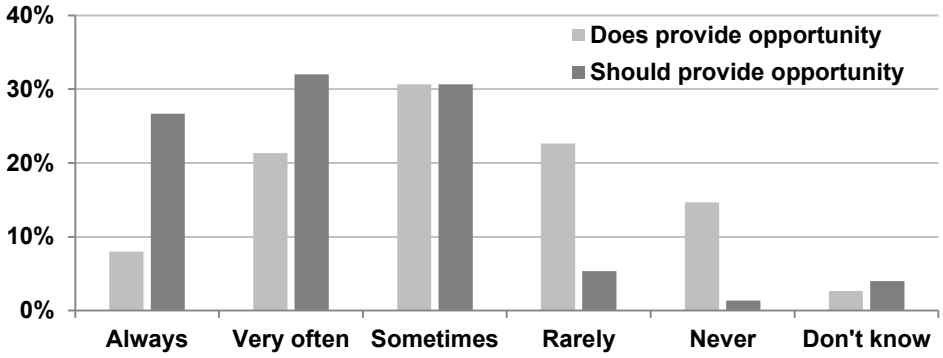
However, MnDOT's primary approach to decision making relies on the professional judgment of specialists, which takes place out of public view in most instances. From the outside, project-selection is a "black box" between inputs (the amount of the budget, the allocation of funding to the MnSHIP spending targets, and stakeholders' expressed preferences) and outputs (the STIP and CHIP listings). MnDOT should consider how it might provide clearer reporting to stakeholders and the public about what takes place in the decision-making process.

[29] We surveyed all 86 county engineers in Minnesota. We received 75 responses, for a response rate of 87 percent.

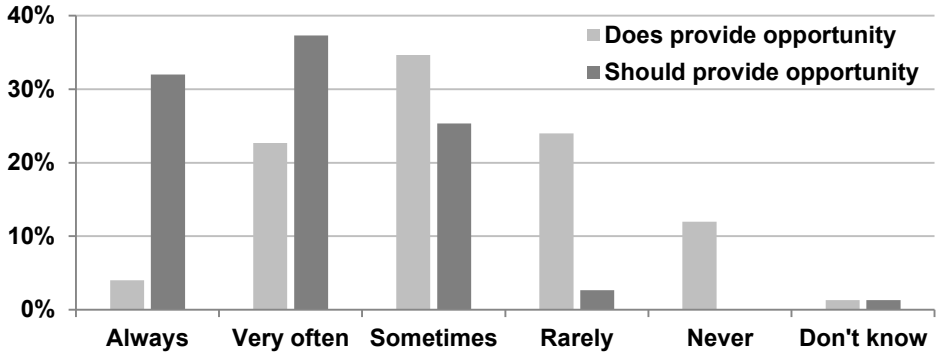
Exhibit 2.5: County Engineers' Opinions On MnDOT's Openness to Outside Input

Survey questions: How often does—and should—MnDOT provide an opportunity for you to offer input:

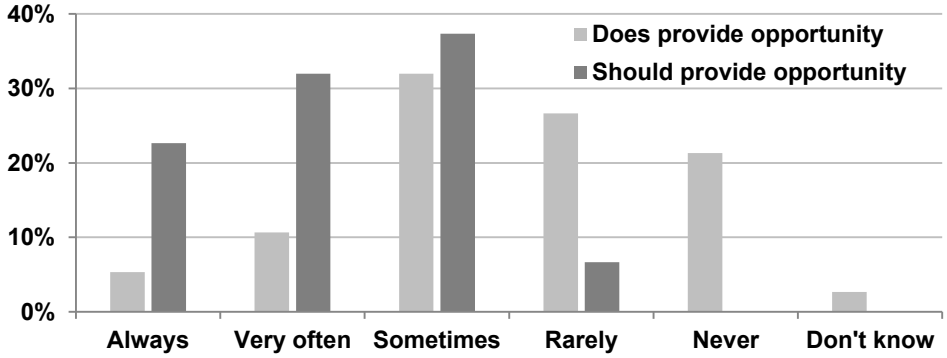
When deciding whether to construct a trunk highway project in your county?



When determining the scope of a trunk highway project in your county, such as the boundaries of the project or the components it will include?



When determining the timing of a trunk highway project in your county?



NOTE: We surveyed all 86 county engineers in Minnesota and received 75 responses.

SOURCE: Office of the Legislative Auditor, survey of county engineers, September 2015.

One approach might be to create a system that assigns scores to each pavement and bridge preservation project. The starting point for the score might be the project rankings assigned by the central office materials and bridge offices, but additional points could be awarded for such important characteristics as the amount of traffic, needed roadside improvements along the same road segment (such as culvert repairs), opportunities to coordinate with local partners on related work, or needed accessibility improvements. For such an approach to really provide transparency, MnDOT would also need to publish preliminary scores for projects that are considered but not chosen (or are simply held for inclusion another year).

Such systems are already used in many areas of highway planning. Some ATPs use rankings to distribute federal highway funds to locally led projects. Metropolitan Council and MnDOT Metro District studies have publicly scored and ranked potential expansion projects in the metropolitan area.[30] Similar approaches are also used in some of MnDOT's alternative programming processes as part of an application and award process, as we discuss in Chapter 3. But for infrastructure preservation projects, which make up the vast majority of MnDOT's state road construction work, there is no standard scoring process and no publication of scores.

A standardized scoring and ranking system may not be the best approach to providing greater transparency; MnDOT may find a different approach that provides similar information but can be better incorporated into its existing process. The key component of a more transparent process would be to provide greater information about what MnDOT decides *not* to do. Such information would enable stakeholders to make comparisons between what projects MnDOT selects and what it does not.

IMPLICATIONS OF THE STANDARD PROCESS

In this section, we discuss some of the consequences of MnDOT's selection process. Some of these consequences are by design. Others appear to be unintended.

Projects selected through MnDOT's standard process have been consistent with agency spending priorities.

Our review of the projects MnDOT districts have scheduled for construction found that MnDOT is mostly adhering to the spending targets published in the MnSHIP. MnDOT's process of requiring districts to fit their project selections into the required budget categories appears to be successful. However, our analysis is based on prospective estimates of project costs; since the first construction projects programmed using these spending targets will not be constructed until 2017, we cannot compare actual expenditures to targets.[31]

Despite changes to introduce more centralization, MnDOT district offices continue to play a primary role in project selection, scoping, and timing.

[30] For example, Parsons Brinckerhoff, *Metropolitan Highway System Investment Study* (St. Paul: Metropolitan Council, 2010).

[31] We did not attempt to assess whether MnDOT construction expenditures for recent years accurately reflected the 2009 MnSHIP, which was in effect at the time those projects were programmed.

Beginning with projects scheduled for construction in 2017, MnDOT changed its project-selection process to provide a stronger oversight role for the central office. That oversight has changed how districts select projects; districts still select projects, but must do so within narrower constraints and with less predictable budgets.

Project Narrative: Interstate 35 Bridge Replacement in Owatonna

MnDOT's regular bridge inspections revealed significant cracks on the Interstate 35 bridges crossing County Road 2 in Owatonna in approximately 2010. As a result of the discovery of the cracks, MnDOT District 6 developed a project to replace these bridges. Because District 6 programmed the project to address new performance information (the presence of the cracks), MnDOT had not previously listed the project in long-range planning documents. The project did not appear in the CHIP, and instead first appeared in the 2011 STIP. Construction took place in 2014-2015.

Because this project was programmed before the new project selection process was introduced in 2013, District 6 had autonomy to decide how much money to devote to this project from its formula allocation of state road construction funds. District 6 also decided what other projects it would have to delay or reduce in order to fund this project. Further, the district decided whether to add additional elements to the project—it eventually added work on two nearby bridges, rebuilt a segment of pavement, and constructed auxiliary lanes between two exits.

Had this project been programmed under the new system, the decision to prioritize the bridges for earlier construction would have involved central office bridge planners. Upon discovery of the cracking, central office staff would have updated their statewide database of bridges. As part of the annual STIP development process, this information would be combined with all other new information coming in from across the state to create a new bridge prioritization list.

Because funding is now based on need instead of on a formula, the cracking information would have affected District 6's funding allocation. The amount of bridge funding allocated to District 6 would have been larger due to the district's greater need (and funding to other districts would consequently be less). District 6 would have used its allocation to program the Owatonna bridges and its other bridge projects into the new year of projects listed in the STIP.

However, in enforcing those constraints, MnDOT's central office looks primarily at the "big picture." It rarely evaluates individual project choices made at the district level. Although districts must select projects so that their overall program contributes to statewide priorities, many possible combinations of projects can meet central office requirements. The central office does not evaluate whether the combination the district chooses is the one most consistent with department priorities.

Further, districts determine how to allocate funds to add optional components to programmed construction projects. For the most part, districts have complete autonomy to decide whether and where to add improvements like wider shoulders, larger culverts, or

new bicycling infrastructure. Such choices are not reviewed by the central office, other than to ensure that the district's overall spending levels are appropriate.[32]

Measures of pavement and bridge quality determine most of MnDOT's project selections, even for other spending categories.

As we describe above, MnDOT's pavement and bridge measures drive the selection of pavement and bridge projects. Even when districts substitute other projects for those suggested by central office units, they must show that the substituted projects will have approximately the same effect on overall infrastructure measurements. Only after those decisions are made do district staff turn to additional spending decisions about roadside infrastructure, safety improvements, bicycle and pedestrian infrastructure, and mitigating traffic congestion.

As a result, improvements in these other categories may not be made in the locations which would rank highest if MnDOT assessed locations independently. For example, districts are more likely to build bicycling improvements on highways needing pavement rehabilitation than at district locations with higher bicycling demand but no pavement needs.

However, need assessments in other spending categories sometimes play a role in districts' decisions about which pavement or bridge projects to pursue. For example, some district staff told us that the presence of deteriorating culverts was a factor in prioritizing pavement projects.

The current project-selection process makes it difficult to program some projects that are high priorities for MnDOT.

MnDOT created the MnSHIP spending targets because it does not have enough money to do every project that its stakeholders would like. Projects that do not fit within the spending targets are, by definition, not as important as projects that do.

However, some types of projects occupy a gray area—they appear to be MnDOT priorities, but are not likely to be programmed under MnDOT's standard project-selection process. In spite of their importance, they are difficult to fund, and thus difficult to program.

Turnback projects. For several years, MnDOT and local jurisdictions have worked cooperatively to remove certain roads from the trunk highway system and place them under local control. Such transfers are referred to as "turnbacks" because all roads were originally under local control before the creation of the trunk highway system—thus, a transfer turns control "back" to the local jurisdiction.

Naturally, local jurisdictions do not want to accept responsibility for roads in imminent need of costly repair work. Thus, MnDOT has agreed to rehabilitate roads to an agreed-upon quality level before transferring them to local jurisdictions. In some instances, MnDOT has already transferred control and promised to do rehabilitative work in the future. MnDOT considers these promises to be departmental commitments that it must meet, and thus such projects should be high priorities for MnDOT.

[32] Some added project components are not optional—for example, all repaving projects must install rumble strips on the center line of two-lane highways.

Project Narrative: MnPASS Lanes on Interstate 35E

In 2010, MnDOT Metro District and the Metropolitan Council conducted studies to determine where to build additional MnPASS lanes. The studies considered many factors, including travel times, traffic capacity, transit ridership, construction costs, and projected MnPASS revenue. The MnDOT study listed the Interstate 35E corridor north of St. Paul as its highest priority for new lanes; the Metropolitan Council study listed the same location as one of its top priorities. As a result, MnDOT Metro District built MnPASS lanes on Interstate 35E in 2013-2015.

Both of the 2010 studies chose this corridor as a top priority despite the fact that it was not the top-scoring project using the studies' criteria. Metro District and the Metropolitan Council prioritized this location because MnPASS lanes could be added at the same time as a planned bridge reconstruction project. The cost efficiencies from doing the two projects at the same time made the Interstate 35E project the most attractive option for new MnPASS lanes.

MnDOT's choice to construct MnPASS lanes on this corridor highlights the primacy MnDOT gives to preservation projects. If MnDOT had *first* selected MnPASS projects based on the studies' criteria, and *then* added bridge or pavement preservation projects to those locations as needed, MnDOT might have constructed MnPASS lanes in a different corridor before building them on Interstate 35E.

However, work on turnback roads does not readily fit into the current project-selection process. Once repaired, turned back roads will no longer be part of the trunk highway system and thus will not contribute to the state's overall performance measures. Thus, there is little incentive for districts to unilaterally choose such projects. Further, nearly all turnback roads are not part of the National Highway System, and thus have lower funding priority.

Historic structures. Like other elements of MnDOT's infrastructure, historic structures, such as the Stone Arch Bridge in Minneapolis, deteriorate over time. In order to keep them operational, MnDOT must schedule projects on them from time to time. Thus, work on historic structures fits MnDOT's focus on preserving its assets.

However, a structure's historic value is an intangible asset that cannot easily be measured. Standard pavement, bridge, and safety measurements are not sufficient to assess a historic structure's condition. Further, work on historic structures can be disproportionately expensive and time consuming. Under MnDOT's ordinary project-selection process, a district can get more "bang for its buck" with conventional projects than it can for work on historic structures.

Rest areas. Like historic structures, rest areas are existing infrastructure components that are part of MnDOT's preservation emphasis. However, they also fall outside the performance measures and spending targets that MnDOT uses. Further, they are located unevenly around the state; some districts maintain many rest areas, others very few. Rest area preservation expenses are not necessarily correlated with a district's pavement and bridge performance measurements, which drive the amount of funding available to a district.

Other priorities. MnDOT acknowledges the importance of departmental goals outlined in Minnesota statutes, such as improving the movement of commercial freight, promoting

tourism, and enhancing economic development.[33] However, the agency does not direct funds to address such agendas as part of its standard project-selection process. Such priorities are only addressed indirectly, in that any improvement to roads and bridges makes them more usable by commercial interests and the general public. We describe other selection processes that address these priorities more directly in Chapter 3.

MnDOT has addressed some of the above priorities in the past through "District C," a separate "district" managed by the director of the Office of Transportation Systems Management. MnDOT leadership has allocated funds to District C each year to fund various projects that are not easily funded at the district level. In 2015, MnDOT began a process of replacing District C with multiple smaller programs.

MnDOT's selection process does not include any assessment of project impacts on disadvantaged communities.

Under federal rules, MnDOT must carry out its planning processes in accordance with a number of antidiscrimination policies, including the Americans With Disabilities Act, the Older Americans Act, Title VI of the Civil Rights Act of 1964, a 1994 Executive Order on environmental justice, and a 2000 Executive Order on persons with limited English proficiency.[34] In general, these policies require federal agencies and other entities receiving federal funding to avoid disproportionately negative outcomes for disadvantaged populations.

Each of these laws and executive orders are broad statements of overarching policy. None are focused specifically on transportation, and the extent to which federal, state, and local agencies must take them into account as part of transportation planning is open to interpretation. For example, a key FHWA guidance document offers no details on addressing environmental justice in the programming process, stating simply:

> To select projects, State DOTs and MPOs develop a project prioritization process.... FHWA funding recipients should consider including EJ [environmental justice] in the prioritization process, where relevant. In assessing the equitable distribution of benefits and burdens, funding recipients should consider not only where impacts occur, but also when they occur in order to ensure an equitable distribution.[35]

Further, federal rules require the state to involve the public at "key decision points" in a way that seeks out and considers "the needs of those traditionally underserved by existing

[33] *Minnesota Statutes* 2015, 174.01, subd. 2.

[34] *23 CFR*, sec. 450.218 (2014); *Americans with Disabilities Act of 1990*, Public Law 101-336, 104 Stat. 327 (July 26, 1990); *Older Americans Act of 1965*, Public Law 89-73, 79 Stat. 218 (July 14, 1965); *Civil Rights Act of 1964*, Public Law 88-352, 78 Stat. 241 (July 2, 1964); President William J. Clinton, Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," February 16, 1994; and President William J. Clinton, Executive Order 13166, "Improving Access to Services for Persons with Limited English Proficiency," August 11, 2000. The Executive Order on Environmental Justice directs all federal agencies to identify and address "disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations."

[35] U.S. Department of Transportation, *Federal Highway Administration Environmental Justice Reference Guide* (Washington, DC, 2015), 28.

transportation systems, such as low-income and minority households."[36] However, the rules do not define what these "decision points" are.

MnDOT district administrators said that they did not take into account the antidiscrimination policies listed above when selecting projects—even in the vague way suggested by the federal guidance document. MnDOT staff told us that they interpreted their responsibility to address equity issues as beginning only after projects are already chosen.[37] At that point, MnDOT begins considering whether project work needs to be altered to address equity and accessibility concerns.

In contrast, the selection of local transportation projects to receive federal funding in the Twin Cities metropolitan area does take equity and accessibility issues into account. In this process, local jurisdictions submit possible transportation construction projects to the Transportation Advisory Board. Each submitted project is scored based on a number of factors, including an "equity and housing performance" score that constitutes 10 percent of the total score for the project. Thus, if two projects are otherwise identical, the Board would fund the one serving an area with high poverty, or with a concentration of elderly residents, or with a demonstrated need for accessibility improvements.

MnDOT may wish to give more consideration to equity issues in its project-selection process. However, we make no specific recommendation with regard to this finding. No clear standard exists in federal or state law indicating how MnDOT should address such concerns in project selection, nor is it clear how to assess MnDOT's chosen projects to determine whether equity issues have been adequately addressed. The Transportation Advisory Board's addition of equity into its project-selection scoring has been controversial. Further, its decision was not based on external requirements, but emerged from its own long-range visioning and planning processes.

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[36] *23 CFR*, sec. 450.210(a)(1)(viii) (2014).

[37] MnDOT staff noted that accessibility is addressed in the planning and programming processes to the extent that all MnDOT public participation processes are accessible to persons with disabilities. Thus, planning and programming documents published by MnDOT are made available in accessible formats, and public meetings are held at accessible locations.

Chapter 3: Alternative Project-Selection Processes

Each year, the Minnesota Department of Transportation (MnDOT) schedules projects that are selected outside of its standard project-selection process. In this chapter, we describe the major alternative processes and the implications of programming trunk highway projects in this manner. We address four types of alternative project-selection processes: (1) MnDOT specialty programs, (2) MnDOT senior leadership, (3) locally led projects, and (4) lawmaker direction.

Most alternative project-selection processes are based on the existence of a funding stream separate from the monies that fund standard projects. Money is allocated for a particular purpose, and then projects are chosen to meet that purpose. In some instances, the Legislature appropriates funding; in others, MnDOT carves funding out of its existing appropriations to pursue specific goals. Alternative processes constitute a small fraction of MnDOT's overall trunk highway spending. In addition, some local governments assemble funding to construct projects on MnDOT's highways.

Some alternative project-selection processes are created because stakeholders believe that MnDOT's standard process will not promote certain types of projects. Alternative processes allow projects to be completed sooner than they otherwise would have, and in some instances, allow projects to occur at all.

SPECIALTY PROGRAMS

We use the term "specialty programs" to refer to programs managed by the MnDOT central office that identify and select projects using designated funds. MnDOT uses a different process to select projects for each specialty program. Some specialty programs' objectives, eligibility requirements, and selection criteria are defined more clearly than others. For most specialty programs, money is distributed through a process in which applicants apply for and compete against one another for funding. Specialty programs may fund part or all of a project's total cost. Depending on the program, local governments, private entities, or MnDOT contribute the remainder of the funds.

In this section, we describe the major specialty programs that funded projects constructed in 2013 or later: Corridors of Commerce, the Transportation Economic Development (TED) program, the Corridor Investment Management Strategy (CIMS) program, and the Safety and Mobility Interchange (SaM) program. See Exhibit 3.1 for a summary of the programs.

Exhibit 3.1: MnDOT Specialty Programs, 2010-2015

Program	Purpose	Years Funded	Total Amount of Funding (in millions)
Corridors of Commerce	To fund construction projects that address "gaps" in the trunk highway system or improve freight movement through a preservation project	2013, 2014, 2015	$362.5
Transportation Economic Development (TED)	To fund construction projects on the trunk highway and local systems that promote economic development, decrease traffic congestion, and increase traffic safety	2010, 2012, 2013, 2015	103.3
Corridor Investment Management Strategy (CIMS)	To fund construction projects on trunk highways addressing issues that MnDOT would not address through its standard project-selection process, including quality of life, environmental health, and economic competitiveness	2013	30.0
Safety and Mobility Interchange (SaM)	To fund trunk highway interchange construction projects that relieve traffic congestion and improve safety	2010	44.5

NOTES: The displayed funding amounts include legislative appropriations and additional allocations made by MnDOT (and the Department of Employment and Economic Development for the TED program). In addition to this funding, many projects received additional money from other sources.

SOURCE: Office of the Legislative Auditor, analysis of Minnesota Department of Transportation program documents.

Corridors of Commerce

The Minnesota Legislature created the Corridors of Commerce program in 2013 to fund construction, reconstruction, and improvement projects on trunk highways.[1]

The Corridors of Commerce program funds projects that close "gaps" in the trunk highway system or improve freight movement through a preservation project.

There are a number of locations in Minnesota's trunk highway system where a highway narrows to fewer lanes of traffic after a segment with more lanes. The Corridors of Commerce law particularly identified such "gaps" as candidates for funding. The law also targeted locations where a trunk highway could be lengthened to connect to another trunk highway or where a trunk highway intersection could be enlarged to an interchange. In addition, the law allowed MnDOT to select preservation projects on trunk highways that eased or preserved freight movement.

The Legislature appropriated $300 million in trunk highway bond proceeds for the 2013 Corridors of Commerce program, $6.5 million in state road construction funds for the 2014

[1] *Laws of Minnesota* 2013, chapter 117, art. 3, sec. 1; codified in *Minnesota Statutes* 2015, 161.088.

program, and $25 million in state road construction funds for the 2015 program.[2] Therefore, MnDOT has selected projects to receive Corridors of Commerce funding during three program cycles with a different amount of money available each time. There is no ongoing base funding for the program.

Legal Requirements

To be eligible for Corridors of Commerce funding, projects must either (1) provide additional capacity on a segment of trunk highway meeting certain criteria or (2) improve the movement of freight through preservation or reconstruction projects.[3] Eligible projects must also:

- Be consistent with the statewide multimodal transportation plan.
- Be located in the Metro District or on an interregional corridor if located outside of the MnDOT Metro District.
- Start construction prior to a date determined by MnDOT.
- Be within a cost limit defined by MnDOT.
- Not be programmed in the State Transportation Improvement Program (STIP).[4]

Legislative funding decisions have affected projects' eligibility for Corridors of Commerce funding. In 2013, Corridors of Commerce funding came from trunk highway bond proceeds, so program funds could only be used on capital projects that were part of, or functionally related to, the construction, improvement or maintenance of the state trunk highway system.[5] In 2014 and 2015, however, the Legislature appropriated state road construction funds that do not have the same restrictions as trunk highway bonds, so some projects MnDOT deemed ineligible in 2013 became eligible.

The law requires MnDOT to solicit and, if appropriate, evaluate project recommendations from Area Transportation Partnerships and other stakeholders.[6] MnDOT must evaluate projects based on seven criteria, including (1) return on investment; (2) economic impact; (3) freight movement; (4) improvements to traffic safety; (5) connections to regional trade

[2] *Laws of Minnesota* 2013, chapter 117, art. 2, sec. 2; and *Laws of Minnesota* 2014, chapter 312, art. 9, sec. 7.

[3] *Minnesota Statutes* 2015, 161.088, subd. 3.

[4] *Minnesota Statutes* 2015, 161.088, subd. 4. Interregional corridors are heavily traveled trunk highways that connect the largest regional trade centers in Minnesota with each other, with neighboring states, and with Canada. As we described in Chapter 2, the STIP is a federally required document that lists highway projects scheduled over a four-year period.

[5] Minnesota Management and Budget, *Minnesota Management and Budget Guidance Relating to Permitted Uses of State Trunk Highway Bond Proceed* (St. Paul, 2008).

[6] *Minnesota Statutes* 2015, 161.088, subd. 5(b). Area Transportation Partnerships are explained in more detail in Chapter 2.

centers, local highway systems, and other transportation modes; (6) attention to multiple policy objectives; and (7) community support.[7]

The law mandated that the monies appropriated in fiscal year 2014 be spent on projects in Greater Minnesota.[8] Projects selected for funding in fiscal years 2013 and 2015 did not have to be located in a specific region of the state. In both years, MnDOT chose to split the funding evenly between Greater Minnesota and Metro District projects.

Project Selection

MnDOT delegated the evaluation of potential Corridors of Commerce projects to its Office of Transportation Systems Management (OTSM). OTSM has relied heavily on MnDOT district administrators' recommendations to identify potential Corridors of Commerce projects. Although OTSM requested project ideas from stakeholders and other members of the public for two of the three Corridors of Commerce program cycles, it ignored the suggestions it received unless they matched internal suggestions.

After reviewing the projects suggested by MnDOT staff, OTSM created "scenarios" that combined together different projects that addressed different themes. For example, the scenarios OTSM created in 2013 focused on completing connections, return on investment, and project readiness and geographic distribution. In 2015, the scenarios emphasized U.S. Highway 14 and Interstate 94, freight support, geographic balance, and advancing project design. In each program cycle, OTSM presented the scenarios to MnDOT's Transportation Programming and Investment Committee (TPIC) and TPIC chose from among the scenarios.[9]

In 2013, TPIC unilaterally added two additional projects to its chosen scenario: (1) a project on U.S. Highway 14 (expansion of the road from West Nicollet to Minnesota Highway 15), which OTSM had evaluated and included in a different scenario, and (2) a project on Interstate 694 (a project adding an additional lane to Interstate 694 in Shoreview and Arden Hills), which OTSM had neither evaluated nor included in any scenario.

The projects that TPIC evaluated and selected in each program cycle are listed in Exhibits 3.2, 3.3, and 3.4. As can be seen from the information provided in the exhibits, OTSM has changed its criteria for selecting Corridors of Commerce projects in each year of the program.

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[7] *Minnesota Statutes* 2015, 161.088, subd. 5(c). Return on investment is used in the private sector as a measure of the amount of profit or benefit gained from an investment. For public-sector transportation investments, return on investment calculations estimate the value of long-term benefits gained (such as reduced congestion, increased safety, or reduced pollution) and compare them to total short-term costs (construction) and long-term costs (maintenance).

[8] *Laws of Minnesota* 2014, chapter 312, art. 9, sec. 7.

[9] As we describe in more detail in Chapter 1, TPIC is a group composed of senior MnDOT leadership. TPIC makes, approves, or confirms most major policy and spending decisions related to construction on trunk highways. TPIC's decisions are recommendations to the Commissioner.

Exhibit 3.2: List of Projects Evaluated for Corridors of Commerce Funding, 2013 Program

Highlighting indicates selected projects

District	Route	Description	Estimated Average Cost (in millions)	Estimated Date of Construction	Return-on-Investment Rank
M	US 10	Interchange, US 10 at Armstrong Blvd	$ 33.5	2014	High
4	MN 34	Passing lanes, Detroit Lakes to Nevis	9.0	2014	High
2	US 2	Passing lanes, Cass Lake to Deer River	4.5	2014	High
3	I-94	Expansion, Rogers to St. Michael	51.5	2014	High
M	I-94	MnPASS, Minneapolis to St. Paul	70.0	2016	High
M	I-35W	MnPASS, I-35W north from MN 36 to US 10	102.5	2016	High
M	MN 610	Expansion, completion of connection to I-94	150.0	2014	High
8	MN 23	Passing lanes, I-90 to Willmar	15.0	2016	Medium
1	MN 61	Improvement, 40th Ave in Duluth	3.2	2016	Medium
3	MN 95	Reconstruction, Cambridge	14.5	2018	Medium
M	MN 36	MnPASS, I-35W to I-35E	47.5	2016	Medium
M	I-35E	MnPASS, Little Canada to CR 96	35.0	2015	Medium
8	MN 30	Improvement, Pipestone	8.5	2016	Low
M	I-35W	Lake Street Transit Station	150.0	2016	Low
2	MN 371	Center turn lane, Walker	3.0	2016	Low
1	US 2	Reconstruction, Deer River	1.6	2016	Low
1	MN 61	Reconstruction, Two Harbors to Silver Creek	16.4	2018	Low
2	MN 371	Reconstruction, Cass Lake	2.5	2018	Low
1	MN 61	Reconstruction and trail improvement, Tofte	6.1	2016	Low
1	MN 210	Reconstruction, Cromwell	2.3	2015	Low
7	US 71	Reconstruction, railroad bridge in Sanborn	3.0	2016	Low
8	US 212	Reconstruction, railroad bridge in Granite Falls	3.0	2016	Low
1	MN 61	Reconstruction, railroad bridge in Taconite Harbor	3.0	2016	Low
6	US 14	Expansion, Owatonna to Dodge Center	170.0	2014	Low
6	US 14	Expansion, Owatonna to Dodge Center phase 1	17.0	2014	Low
7	US 14	Expansion, Nicollet Bypass	29.5	2015	Low
3	MN 371[a]	Expansion, Nisswa to Jenkins	39.0	2016	Low
7	US 14	Expansion, West Nicollet to MN 15	109.5	2016	Low
3	MN 371	Expansion, Jenkins to Pine River	56.5	2016	Low
1	US 169	Expansion, Marble to Calumet	51.6	2016	Low
1	US 169	Expansion, Calumet to Pengilly	30.7	2016	Low
1	US 169	Expansion, E of Scenic 7 to Marble	15.1	2016	Low
1	US 169	Expansion, SW of CSAH 15 to E of Scenic 7	12.3	2016	Low
7	US 71	Reconstruction, railroad bridge in Windom	3.0	2016	Low
4	US 10	Expansion, Wadena	65.0	2017	Low
8	MN 23	Expansion, New London to Paynesville	60.0	2017	Low
M	I-694	Expansion, Lexington to Rice	34.0	2015	N/A[b]
M	MN 51	Snelling bridge work and ADA/median treatments	28.5	2015	N/A[b]
M	US 52	Interchange, US 52 at CSAH 86	10.0	2015	N/A[b]

NOTES: MnDOT's Metro District is abbreviated as "M," County State Aid Highways are abbreviated as "CSAH," and county roads are abbreviated as "CR." Estimated average cost and estimated start date of construction are as of October 2013. MnDOT rated each project as offering high, medium, or low return on investment.

[a] The MN 371 expansion project from Nisswa to Jenkins was not selected in 2013 but later received funding through the Corridors of Commerce program using savings from other Corridors of Commerce projects whose costs were less than anticipated.

[b] Projects' return-on-investment scores were not calculated during the selection process.

SOURCE: Office of the Legislative Auditor, analysis of Minnesota Department of Transportation program documents.

Exhibit 3.3: List of Projects Selected for Corridors of Commerce Funding, 2014 Program

District	Route	Description	Estimated Average Cost (in millions)
1	US 2	Reconstruction, Deer River	$1.6
3	MN 23	Environmental review, Paynesville to Richmond	1.0
4	MN 34	Left turn lanes, US 59 to Detroit Lakes	2.0
6	US 14	Purchase right-of-way, Owatonna to Dodge Center	1.4
8	MN 23	Environmental review, New London to Paynesville	0.5

NOTE: Estimated average cost as of June 19, 2014.

SOURCE: Office of the Legislative Auditor, analysis of Minnesota Department of Transportation program documents.

Exhibit 3.4: List of Projects Evaluated for Corridors of Commerce Funding, 2015 Program

Highlighting indicates selected projects

District	Route	Description	Estimated Average Cost (in millions)	Return on Investment	Advanced Project Readiness	Preserved Efficient Freight Movement
M	US 169	Advance design, Nine Mile Creek bridge replacement	$ 1.5	High	High	High
M	I-35W	Advance design, Minnesota River bridge replacement	5.6	High	High	High
M	MN 65	Advance design, Central Avenue bridge replacement	1.0	High	High	High
M	I-94	Advance design, Minneapolis to St. Paul	2.0	High	High	High
M	I-35W	Advance design, I-35W MnPASS lanes in Arden Hills and Lino Lakes	1.1	High	High	Low
3	I-94	Advance design, St. Michael to Albertville	1.0	High	High	Low
M	MN 51	Reconstruction, Snelling Avenue	1.4	High	Low	High
4	I-94	Preservation, approximately 25 percent of the road's distance in District 4	3.5	High	Low	High
4	I-94	Reconstruction, Alexandria or Fergus Falls rest area	9.0	High	Low	High
4	MN 34	Preservation, Detroit Lakes to Becker CR 29	1.8	High	Low	High
2	MN 11	Advance design, Greenbush to Warroad passing lanes	0.5	Low	High	Low
3/4	US 10	Advance design, Wadena	2.0	Low	High	Low
6	US 14	Purchase right-of-way, Owatonna to Dodge Center phase 2	7.3	Low	High	Low
7	US 14	Advance design, intersection with MN 15, New Ulm	0.7	Low	High	Low
8	MN 23	Purchase right-of-way, New London to Paynesville	1.0	Low	Medium	Low
6	US 14	Purchase right-of-way, Owatonna to Dodge Center phases 2 and 3	10.8	Low	Low	Low

NOTES: MnDOT's Metro District is abbreviated as "M" and county roads are abbreviated as "CR." Estimated average cost as of September 2014. MnDOT rated each project as high, medium, or low on seven criteria, but it prioritized three criteria over the others: return on investment, the extent to which a project advanced project readiness, and the extent to which a project preserved efficient freight movement.

SOURCE: Office of the Legislative Auditor, analysis of Minnesota Department of Transportation program documents.

Discussion

In this section, we further discuss the process MnDOT used to select projects for Corridors of Commerce funding and offer recommendations for increased accountability and transparency.

MnDOT did not select Corridors of Commerce projects in a manner fully consistent with the law's requirements.

MnDOT did not evaluate project recommendations from the public as required by the law.[10] Instead, the department relied solely on project ideas generated internally; it only evaluated public suggestions if they overlapped with internal proposals.

Further, the law requires that MnDOT use seven listed criteria to evaluate and select projects.[11] As far as we could determine, MnDOT did not formally evaluate projects against any statutorily required evaluation criteria for the 2014 Corridors of Commerce program. In 2013 and 2015, MnDOT evaluated some projects using some—but not all—of the criteria outlined in the law, as shown in Exhibit 3.5. MnDOT incorporated several of the legally required criteria into the return-on-investment calculation used in 2013 and 2015. But MnDOT did not use the same return-on-investment calculation across projects, and did not calculate a return-on-investment score at all for a few.

We acknowledge that the law allows for some interpretation by MnDOT. The law does not explicitly require that MnDOT choose Corridors of Commerce projects from among the suggestions it receives.[12] Further, the law does not define the relative importance of the evaluation criteria, nor does it preclude MnDOT from using additional criteria beyond those listed in the law. Also, some of the criteria listed in the law are not explicitly defined. For example, the return-on-investment score could have been calculated many different ways; the law does not specify how MnDOT should define benefits and costs. Lastly, some suggestions from the public were not eligible under the Corridors of Commerce law; we do not think MnDOT was required to evaluate ineligible suggestions.

Nonetheless, the Legislature clearly expected MnDOT to evaluate all eligible internal and external suggestions using the criteria in the statute. MnDOT did not meet this expectation.

MnDOT's process for selecting Corridors of Commerce projects has been inconsistent and subjective.

MnDOT did not use an objective process to select Corridors of Commerce projects, did not rank projects in a consistent manner, and did not choose projects according to their rank.

[10] *Minnesota Statutes* 2015, 161.088, subd. 5(b).

[11] *Minnesota Statutes* 2015, 161.088, subd. 5(c).

[12] *Minnesota Statutes* 2015, 161.088, subd. 5.

Exhibit 3.5: Corridors of Commerce Evaluation Criteria

Criteria	MnDOT Used in 2013	MnDOT Used in 2014	MnDOT Used in 2015
Statutorily Required			
Return on investment	✓		✓
Measures of economic impact[a]	✓		✓
Measures of freight movement[a]	✓		✓
Improvements to traffic safety[a]	✓		✓
Connections to regional trade centers, local highway systems, and other transportation modes			
The extent to which the project addresses multiple policy objectives			
Community support			
Additional Criteria Created by MnDOT			
Project readiness	✓		
Project's cost compared to the total amount of available Corridors of Commerce funding			✓
Ranking of the project among a list of each district's top five priority projects			✓
Extent to which the project advances readiness for future construction			✓
Consistency with regional plans			✓
Preservation or improvement of efficient freight movement			✓

[a] Criterion was included in MnDOT's return-on-investment calculation.

SOURCE: Office of the Legislative Auditor, analysis of Minnesota Department of Transportation program documents; and *Minnesota Statutes* 2015, 161.088, subd. 5(c).

First, MnDOT chose some projects without formally evaluating them against a broader list of projects or against any set of evaluation criteria. As far as we could determine, MnDOT did not formally evaluate any of the projects selected for the 2014 Corridors of Commerce program. In 2015, MnDOT's Metro District chose its own Corridors of Commerce projects, subject to TPIC's approval. Metro District did not evaluate the projects it chose against other possible projects using the criteria listed in the law.

Second, MnDOT did not evaluate projects in a consistent manner. For example, even though MnDOT prioritized return-on-investment scores to select projects, MnDOT has not calculated return-on-investment scores for every eligible project. Among the projects that did receive a return-on-investment score, MnDOT did not calculate the return-on-investment scores using an equivalent method. As a result, the return-on-investment scores were not comparable across the projects evaluated in any program cycle. Nevertheless, MnDOT rated projects in 2013 and 2015 as offering high, medium, or low return on investment, as shown in Exhibits 3.2 and 3.4.

Third, even though most projects selected in 2013 and 2015 were evaluated and ranked according to criteria defined by MnDOT, OTSM did not choose projects in the order in which they were ranked. Rather, projects were grouped into scenarios based on how they fit

a particular theme. As a result, TPIC—and ultimately the Commissioner—selected Corridors of Commerce projects based on the theme that the scenarios addressed, not the projects' rank.

Finally, MnDOT selected some projects despite their low ranking. For example, after the scenarios were presented to TPIC in 2013, TPIC unilaterally added two additional projects that did not rank high in either of MnDOT's two primary criteria. In particular, TPIC selected the Interstate 694 project at the last minute to receive funding over several highly ranked and similarly priced projects in the Metro District, most notably the U.S. Highway 10 and Armstrong Boulevard interchange project. The Armstrong Boulevard interchange project had the highest return on investment of all evaluated projects, yet it was not chosen. Although MnDOT supposedly prioritized "project readiness," or whether projects were ready for immediate construction, the Armstrong Boulevard interchange project was expected to be ready for construction one year prior to the Interstate 694 project.

Project Narrative: Minnesota Highway 23 Passing Lanes in Southwest Minnesota

According to administrators in District 8, local stakeholders had wished for a four-lane highway connecting Marshall to the Twin Cities, but MnDOT administrators told them that the department will not be able to build such a project in the foreseeable future. However, district administrators told us that these conversations with local stakeholders led to the idea to construct passing lanes to improve freight movement on Minnesota Highway 23 between Willmar and Luverne. In 2013, District 8 recommended the Minnesota Highway 23 passing lanes project to MnDOT for Corridors of Commerce funding. The project was also proposed by two stakeholders outside of MnDOT. The Minnesota Highway 23 passing lanes project received a "medium" return-on-investment score.

District 8 received approximately $11 million through the 2013 Corridors of Commerce program to construct this project in 2016. In deciding where to put the lanes, the district talked to businesses about where the passing lanes will make a difference for freight movement and combined this information with the technical constraints of the potential locations.

RECOMMENDATION

MnDOT should ensure that its Corridors of Commerce scoring criteria are aligned with the statutorily defined criteria and that it applies these criteria consistently.

In the Corridors of Commerce law, the Legislature listed seven separate criteria and mandated that MnDOT use those criteria to select projects for the program. MnDOT has used some, but not all, of these criteria while adding additional criteria of its own. Because of the amount of discretion the law gives to MnDOT in defining and weighting the criteria, we cannot definitively conclude that MnDOT would have selected a different set of projects for the Corridors of Commerce program if the project-selection process had followed the law more closely. However, the Legislature clearly intended MnDOT to rely on the statutorily defined criteria to select Corridors of Commerce projects.

Before selecting projects for future Corridors of Commerce program cycles, MnDOT should publicly define (1) how it will measure each of the criteria specified in the law, (2) what additional criteria the department intends to use and how it will measure each of the additional criteria, and (3) how much each criterion will contribute to a potential project's ranking.

RECOMMENDATION

The Legislature should require MnDOT to annually report a detailed description of the selection criteria it used to select projects and a ranking of all eligible projects for the Corridors of Commerce program.

The Corridors of Commerce law requires that MnDOT annually report information about the program, including a review of the project-selection process, a breakdown of project costs and funding sources, and a list of candidate projects.[13] While MnDOT addressed most of these components in an October 2014 report, it provided only a high-level overview of its project-selection process.[14] In our view, MnDOT's arbitrary selection process for Corridors of Commerce has escaped scrutiny because it is not clear to outside observers how decisions are made.

The law should be more specific. We recommend that the Legislature require MnDOT to report, at the conclusion of each Corridors of Commerce funding cycle, (1) how it measured each of the criteria specified in the law, (2) what additional criteria the department used and how they were measured, (3) how much each criterion contributed to each project's ranking, and (4) a ranked list of all eligible projects proposed.

Transportation Economic Development

MnDOT and the Department of Employment and Economic Development (DEED) jointly manage the Transportation Economic Development (TED) program, which provides funding for state and local transportation projects that promote economic development, decrease traffic congestion, and increase traffic safety.

The Transportation Economic Development program funds projects that promote economic development and have funding commitments from outside of MnDOT.

MnDOT and DEED have conducted four application processes since the inception of the TED program (in 2010, 2012, 2013, and 2015).[15] Applicants must be governmental entities; they have included cities, counties, a tribal nation, and a MnDOT district. In each program cycle, the TED program has received different amounts of funding from different sources, as shown in Exhibit 3.6. MnDOT and DEED jointly select projects for TED funding.

[13] *Minnesota Statutes* 2015, 161.088, subd. 7.

[14] Minnesota Department of Transportation, *2014 Report on the Corridors of Commerce Program* (St. Paul, 2014), 5.

[15] The Public Facilities Authority also participated in TED in 2012.

Exhibit 3.6: Transportation Economic Development Program Funds, 2010-2015

Program Year	MnDOT's Contributions (in millions)	DEED's Contributions (in millions)	Total (in millions)
2010	$29.7	$3.5	$33.2
2012	16.7	5.5	22.2
2013	15.6	0.0	15.6
2015	29.8	2.3	32.1

NOTES: The amounts of Transportation Economic Development program funding includes legislative appropriations and additional allocations made by MnDOT and the Department of Employment and Economic Development (DEED). In addition to this funding, many projects received additional money from local jurisdictions and/or private entities.

SOURCE: Office of the Legislative Auditor, analysis of Minnesota Department of Transportation program documents.

Legal Requirements

MnDOT and DEED originally created the TED program in 2010 to distribute funding from a nonspecific legislative appropriation for interchange projects.[16] Legislation passed in 2011 and 2012 endorsed the program and established basic requirements.[17] The law stated that projects must "promote economic development, increase employment, and relieve growing traffic congestion."[18]

A 2013 rewrite of the law established criteria for the TED program. The law mandates that MnDOT and DEED evaluate the extent to which an applicant project (1) provides a measurable economic benefit, (2) is consistent with relevant state and local transportation plans, (3) has secured funding from nonpublic sources, (4) addresses overall transportation system needs, (5) improves the movement of people and freight, and (6) contributes to the program's overall geographic balance.[19]

Decisions made by the Legislature, MnDOT, and DEED regarding the amount and type of funding directed to the TED program have affected projects' eligibility. For example, the 2010 appropriation that MnDOT used to initiate the program could only fund interchanges on trunk highways.[20] In the following program cycles, most funding came from state road construction appropriations, so most projects had to provide a direct benefit to the trunk highway system. The Legislature has also appropriated some capital improvement bond

[16] MnDOT directed $30 million to TED from the $70 million appropriation (*Laws of Minnesota* 2010, chapter 388, art. 2, sec. 2). The Safety and Mobility Interchange program received the remaining $40 million.

[17] *Laws of Minnesota* 2011, chapter 3, art. 3, sec. 3; and *Laws of Minnesota* 2012, chapter 293, sec. 34.

[18] *Laws of Minnesota* 2011, chapter 3, art.3, sec. 3.

[19] *Laws of Minnesota* 2013, chapter 117, art. 3, sec. 19, subd. 5; codified in *Minnesota Statutes* 2015, 174.12, subd. 5.

[20] *Laws of Minnesota* 2010, chapter 388, art. 2, sec. 2.

funding to DEED for the TED program.[21] This funding and DEED's internal allocations have allowed the TED program to fund a few projects on local transportation systems.[22]

The laws in place for the 2010 and 2012 program cycles required that MnDOT and DEED split the appropriations evenly between the Metro District and Greater Minnesota districts.[23] Starting in 2013, this requirement was eased somewhat. MnDOT and DEED must now ensure that program funds are distributed "in a manner that is balanced throughout the state, including with respect to (1) the number of projects receiving funding in a particular geographic location or region of the state, and (2) the total amount of financial assistance provided for projects in a particular geographic location or region of the state."[24]

Project Selection

MnDOT and DEED established a selection committee in 2010 to review and recommend projects for TED funding, and the agencies have used the selection committee for each program cycle. Staff from MnDOT and DEED and a representative from an economic development authority in Greater Minnesota have served on the selection committee. Projects have been scored on a scale of 0 to 100 points, with 35 points awarded for economic development, 35 points for transportation, 20 points for local financial participation, and 10 points for project readiness.

Prior to 2015, applications were simply given subjective scores based on MnDOT and DEED staff judgments. Applications for TED funding in 2010, 2012, and 2013 were divided in half and provisionally scored by two employees—one from MnDOT and one from DEED. Therefore, half of the applications' transportation sections were scored by a DEED employee and half of the applications' economic development sections were scored by a MnDOT employee. The selection committee then reviewed the scores assigned by the two employees.

In 2015, a new MnDOT program manager instigated a new process. MnDOT began calculating the transportation portion of each project's total score using a return-on-investment analysis. Applicants were required to estimate the reduction in total crashes and increase in traffic volume attributable to the proposed project. MnDOT scored the projects by weighting these benefits against construction costs using a computer model.

Another component that MnDOT added to the 2015 TED solicitation was a district review. MnDOT districts reviewed the proposed projects to see if they: (1) met applicable guidelines, (2) were supported locally, (3) had reasonable project delivery timelines, (4) negatively affected MnDOT's program, (5) complied with MnDOT's cost-participation policy, and (6) reported reasonable safety and traffic counts. The results of the district review were provided to the selection committee.

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[21] *Laws of Minnesota* 2012, chapter 293, sec. 21, subd. 4; and *Laws of Minnesota* 2015, First Special Session, chapter 5, art. 1, sec. 14, subd. 3.

[22] In 2010 and 2012, DEED allocated general obligation bond funds to the TED program through its Greater Minnesota Business Development Public Infrastructure and Innovative Business Development Public Infrastructure programs.

[23] *Laws of Minnesota* 2010, chapter 388, art. 2, sec.2; and *Laws of Minnesota* 2011, First Special Session, chapter 3, art. 3, sec. 3.

[24] *Minnesota Statutes* 2015, 174.12, subd. 7(b).

Project Narrative: U.S. Highway 10 and Otter Tail County Highway 34 Interchange in Perham

The City of Perham applied for and received funding through the 2010 TED program to convert an existing bridge to an interchange by adding ramps. The main purpose of this project was to increase accessibility to a nearby hospital. The project was the highest scoring project considered for 2010 TED funding because it improved state and local infrastructure, promoted economic development, and had funding commitments from outside of MnDOT. The project received approximately $4.0 million in both interchange trunk highway bonds and general obligation bonds from the TED program. The hospital, city, and Otter Tail County together contributed approximately $2.4 million.

According to MnDOT, the nearby hospital employs approximately 440 employees and serves more than 30,000 people. Since the interchange was constructed, several nearby businesses have expanded and anticipate hiring additional employees in the next five years. In total, MnDOT reports that the project will help create 280 new jobs in the area.

In each program cycle, MnDOT and DEED awarded funding to the projects from Greater Minnesota and the Metro District receiving the highest scores from the selection committee, except when a top-scoring project exceeded the funds available to the program. In the Appendix, Exhibits A.1, A.2, A.3, and A.4 provide a list of the projects considered and selected in each TED program cycle.

Discussion

MnDOT's use of a standardized return-on-investment score in the transportation section of the proposals has made the 2015 project-selection process more objective, transparent, and replicable. However, the new process may have unintended consequences.

New requirements for Transportation Economic Development program applicants may have limited the ability of smaller jurisdictions to apply.

Prior to 2015, applicants from Greater Minnesota and the metropolitan region requested a similar proportion of funding from the TED program. Greater Minnesota applicants requested approximately 55 percent of the total amount of requested funding in 2010, 35 percent in 2012, and 51 percent in 2013. However, after the introduction of the new scoring system, projects in Greater Minnesota made up only 14 percent of the total amount of requested funding in 2015.

The sharp decrease of Greater Minnesota applications in 2015 coincides with the increase of information requested from the applicant. This information suggests that MnDOT faces a tradeoff in administering programs aimed at local jurisdictions. Increased rigor may provide greater clarity and consistency in project selection, but it may also increase the burden on applicants.

Our conversations with county engineers provided additional detail. Several told us that their counties have not or are not planning to prepare an application for future TED program cycles because the counties did not perceive that they could compete against projects located in larger, urban areas. Others said that the applications were difficult to complete; some counties hired consultants to prepare the applications. In our survey of county engineers,

69 percent of respondents from counties with a population greater than 50,000 reported that their county applied at least once to receive TED funding, but only 17 percent of respondents from counties with a population less than 50,000 have applied.[25]

MnDOT staff told us they intended to evaluate the changes in the 2015 TED program before the next program cycle. While we were impressed with the increased rigor of the new process, MnDOT may wish to adjust the program to find a better balance among competing priorities.

Corridor Investment Management Strategy

In 2013, MnDOT created the Corridor Investment Management Strategy (CIMS) program using $30 million of an additional $95 million provided by the Legislature from the state road construction fund.

MnDOT designed the Corridor Investment Management Strategy program to pursue broad MnDOT goals that are not well-addressed in its standard project-selection process.

In particular, applicants had to describe how the proposed project would improve one or more key objectives, including quality of life, environmental health, and economic competitiveness. MnDOT conducted a statewide application process to identify projects for the CIMS program. MnDOT districts and local units of government could apply for CIMS funding, but projects were only eligible if they were located on trunk highways.

The CIMS program had no direct legislative authority. MnDOT conducted one application process in 2013; an application process planned in 2017 was cancelled by MnDOT leadership due to more urgent funding needs in other areas. The future of the CIMS program is unclear.

Project Selection

From the start of the CIMS program, MnDOT sought external participation in project-selection decisions. MnDOT formed an interagency advisory group to develop evaluation criteria, evaluate project submissions, and recommend a list of projects for funding. The CIMS advisory group included representatives from MnDOT; Explore Minnesota Tourism; the departments of Commerce, Education, Employment and Economic Development, Health, Natural Resources, and Public Safety; and the Pollution Control Agency.

Because MnDOT created the CIMS program, there were no legal restrictions on how the program funds were to be distributed geographically. The CIMS advisory group decided that neither Greater Minnesota nor the metropolitan area could be awarded more than 60 percent of the total amount of CIMS funding. The CIMS advisory group used three criteria to evaluate, rank, and select projects for CIMS funding:

- **Benefit-cost ratio (60 percent of total score).** MnDOT used a computer model to calculate a benefit-cost ratio for each project proposal. MnDOT considered economic, social, and environmental effects and the project's long-term value as

[25] Twenty-two percent of Minnesota counties have a population greater than 50,000.

benefits. Costs included construction, operations and management, and future rehabilitation.

- **Qualitative factors (30 percent of total score).** The advisory group developed a rubric to score each project's expected impact on the local economy; improvements to the multimodal transportation system; consistency with existing regional or corridor plans; access to preventative health, clinical health, and recreational facilities; and consistency with surrounding land uses.

- **Financial match (10 percent of total score).** To be eligible for CIMS funding, projects needed to have at least 10 percent of total project costs covered by a non-MnDOT source. Projects with more external funding received additional points.

The CIMS advisory group recommended the top-scoring project proposals from Greater Minnesota and the Metro District to TPIC.[26] TPIC accepted the recommendations and added an additional project when it found that the recommended projects did not use all of the available funding. The additional project was the next highest scoring project in Greater Minnesota small enough to be constructed with the available funding. In the Appendix, see Exhibit A.5 for a list of the projects that were considered and selected for CIMS funding.

Discussion

The process MnDOT used to select projects for CIMS funding was new to the department. We found that this process was transparent when compared to other specialty programs' project-selection processes, particularly because MnDOT included outside stakeholders in program development and project-selection decisions. Also, MnDOT publicly defined which criteria it intended to use to evaluate projects, how it intended to apply the selection criteria, and how much each criterion contributed to each project's ranking. MnDOT then evaluated and selected projects accordingly. In addition, the projects' scores are available to the public on MnDOT's website.

Safety and Mobility Interchange Program

MnDOT created the Safety and Mobility Interchange (SaM) program in 2010 using $40 million from a $70 million legislative appropriation.[27]

MnDOT created the Safety and Mobility Interchange program to fund trunk highway interchange projects that relieved traffic congestion and improved traffic safety.

The Legislature has not appropriated funds to the SaM program since 2010, and SaM is not an ongoing MnDOT program. We describe it in this chapter because SaM projects were still being constructed in the period covered by our evaluation.

[26] The CIMS advisory group did not recommend the highest-scoring project in the Metro District because it was awarded funding through the 2013 TED program instead.

[27] *Laws of Minnesota* 2010, chapter 388, art. 2, sec. 2. MnDOT allocated the remaining $30 million to the Transportation Economic Development program.

MnDOT chose to solicit projects only from MnDOT districts. Proposed projects were eligible for SaM funding if they were consistent with regional transportation plans and policies, had non-SaM funding participation, could be awarded to a construction firm by January 1, 2014, and were not included in the 2011-2014 STIP.

Legal Requirements

The 2010 law required that the $70 million appropriation be used to construct trunk highway interchanges to promote economic development, increase employment, decrease congestion, and increase traffic safety. In addition, the law required that the funds be split evenly between Greater Minnesota and metropolitan area projects. Beyond these general statements, the law did not specify how the funds should be distributed.[28]

Project Selection

Proposed projects were scored by an evaluation committee composed of six reviewers (three Assistant District Engineers from Greater Minnesota, the Metro District traffic engineer, the Assistant State Traffic Engineer, and the SaM Program Manager).

The committee used a rubric that assigned 50 percent of the points for safety improvements, 30 percent for congestion relief, and 20 percent for cost participation from nonprogram sources. The evaluation committee assigned scores using data on crashes resulting in fatal and serious injuries, traffic counts, and the percentage of non-SaM funds available for each of the proposed projects. While the prioritizing criteria were largely objective, some subjectivity existed in the estimates of how well the proposed interchange projects would reduce serious crashes.

Two districts submitted multiple projects that received similarly high scores from the evaluation committee. The evaluation committee decided that small differences in total points were not meaningful. Instead of choosing the projects that scored slightly higher, the committee asked the two districts to prioritize their projects and explain the prioritization. The committee accepted the districts' preferences and recommended the projects to TPIC. TPIC selected those projects for funding.

However, TPIC's recommendation was overruled by Commissioner Sorel. Instead, the Commissioner asked MnDOT District 6 to find additional non-SaM funding for its proposed project on U.S. Highway 52. The added funds increased the project's score so that it became the highest ranked project, and the Commissioner substituted it for one of the originally recommended projects. In the Appendix, see Exhibit A.6 for a list of the projects that were considered and selected for SaM funding in 2010.

Discussion

The SaM selection process took place entirely within MnDOT. All applicants were MnDOT districts and decisions were made by senior MnDOT staff. The legislative requirements for MnDOT's use of the funding were very broad. MnDOT chose to create a program and an application process to distribute the funds; it was not required to do so. Thus, although the Commissioner's action seems arbitrary, in our view it was a defensible exercise of executive authority.

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[28] *Laws of Minnesota* 2010, chapter 388, art. 2, sec. 2.

DIRECT DECISION MAKING BY MNDOT LEADERSHIP

In addition to project-selection choices made through the standard process outlined in Chapter 2 and the specialty programs described earlier in this chapter, MnDOT's senior leadership also makes trunk highway programming decisions. Such decisions are usually made by MnDOT's Transportation Programming and Investment Committee (TPIC). TPIC is composed of eight senior agency leaders, including the two deputy commissioners, five division directors, and the Metro District engineer.

One of TPIC's roles is to serve as a clearinghouse within MnDOT. Uncommitted funds, such as savings from completed projects or extra federal or state appropriations, are brought to TPIC for distribution. Similarly, various offices within MnDOT bring important projects lacking a funding source to TPIC with requests for funding. TPIC constantly juggles this changing mixture of funding and requests.

TPIC has the authority to direct state road construction funds to specific projects, programs, and studies subject to approval by the commissioner. The committee uses this authority frequently. Our review of TPIC meeting minutes shows that since 2012, TPIC has directed funding to specific projects or programs at nearly every monthly meeting.

For example, in 2013, TPIC directed $20 million of unused funding from the St. Croix bridge project and $30 million of unused appropriations from the Trunk Highway Fund to pay for long-term pavement rehabilitation on approximately 50 miles of Interstate 90 in District 7. The Interstate 90 pavement preservation project was too expensive for District 7 to fund alone, but MnDOT considered it a high priority due to the changes in federal requirements as part of the Moving Ahead for Progress in the 21st Century Act (MAP-21). The funding augmented the projects on Interstate 90 that District 7 had already programmed through the standard process.

TPIC maintains a standing list of projects called the "Investment Opportunity Plan" where an important need has been identified, but the standard programming process has not addressed or cannot address the need. MnDOT prioritizes these projects based on their potential risk to the department's goals and program. TPIC selects projects according to their rank from the Investment Opportunity Plan several times a year depending on available funding. Projects listed in the Investment Opportunity Plan vary widely, from right-of-way purchases to large pavement rehabilitation projects.

TPIC established the Investment Opportunity Plan as a guideline to aid in selecting the highest priority projects when money becomes available. However, it is simply a decision-making tool. At any time, TPIC may allocate additional funds to priorities that are not listed in the Investment Opportunity Plan.

Project Narrative: Minnesota Highway 371 Expansion from Nisswa to Jenkins

Prior to the development of the 20-Year State Highway Investment Plan (MnSHIP) in 2013, MnDOT District 3 had planned to expand Minnesota Highway 371 from two to four lanes between Nisswa and Jenkins. When MnDOT reconfigured its project selection process and cut funding for expansion projects in Greater Minnesota, this expansion project had been promised but not yet scheduled. MnDOT senior leadership viewed the Minnesota Highway 371 project as a commitment because it had already been presented to the public. District 3 was planning to begin constructing the project in fiscal year 2018.

In 2014, one year after the initial projects were announced for the 2013 Corridors of Commerce program, MnDOT determined that not all the allocated funding would be used by the chosen projects. MnDOT's Transportation Programming and Investment Committee (TPIC) considered using the savings towards expanding Minnesota Highway 371 between Nisswa and Jenkins, expanding a segment of U.S. Highway 14 between Dodge Center and Owatonna, constructing several preservation projects, or helping fund a congestion project in MnDOT's Metro District. TPIC ultimately decided to use the approximately $45 million of savings to fund the Minnesota Highway 371 expansion project. The switch to Corridors of Commerce funding enabled District 3 to accelerate the project by two years and enabled MnDOT to reallocate the funding that had been originally set aside for this project.

LOCAL SPENDING

In some instances, local jurisdictions develop and construct projects on trunk highways. These projects may use some MnDOT funding, but the local jurisdictions may also assemble most of the funding themselves. Local jurisdictions have used a variety of sources to fund such projects, including applying for state and federal funds and using local revenue.

Some local jurisdictions have used local road funding to build projects on trunk highways because their preferences are low priorities for MnDOT.

Our conversations with county engineers and other stakeholders suggested that local entities build projects on trunk highways primarily due to differing priorities between MnDOT and local governments. For a local government, a trunk highway improvement that affects many of its residents may be a very high priority project. But for MnDOT, that project competes against many other projects considered high priorities in other communities.

For example, Dakota County and the City of Rosemount will lead a reconstruction project in 2017 at the U.S. Highway 52 and County Highway 42 interchange in Rosemount. The City of Rosemount and Dakota County decided to lead this project because MnDOT is not planning to upgrade the existing interchange in the foreseeable future. Dakota County estimates that the project will cost $17.2 million. Dakota County applied for and received $10.3 million in federal funding and $3.1 million from the 2015 TED program. The City of Rosemount will contribute $1.7 million and Dakota County will contribute $2.1 million to the project.

Based on our survey of county engineers, local jurisdictions build projects on trunk highways more frequently in the Metro District. However, some local agencies in Greater Minnesota also have built trunk highway projects. For example, the City of Rochester and Olmsted County funded and built a new interchange at the intersection of 65th Street and U.S. Highway 52. MnDOT did not contribute any funding to this project. Kandiyohi County will lead an interchange construction project in 2016 at the intersection of Minnesota Highway 23 and County Highway 5 southwest of Willmar. Although MnDOT and the county had not finalized the details at the time of this report's publication, the county engineer expected that Kandiyohi County and MnDOT would each contribute approximately $2 million to the project.

As with the Kandiyohi County project, MnDOT districts sometimes contribute money to projects led by local jurisdictions. Administrators from MnDOT Metro District said that the district may contribute funds when a local project replaces a project that the district planned to construct anyway. For example, if the district is planning a $3 million bridge repair, but a local government wants to construct a larger project that would include the bridge repair, the district may contribute $3 million toward the cost of the larger project. Metro District administrators told us that MnDOT would not contribute money to a local project if the project has no trunk highway benefit or is not listed in its Capital Highway Improvement Plan (CHIP).

Local governments may also collaborate with MnDOT to add extra components to MnDOT projects that the department would not have paid for otherwise. For example, the City of Rochester paid to include bicycle lanes and additional landscaping during a MnDOT project on U.S. Highway 14 within city limits.

MnDOT does not systematically track the projects constructed by local jurisdictions on trunk highways.

We wished to include in our report a listing of locally led projects on trunk highways, but were surprised to find that MnDOT could not provide comprehensive information. Various MnDOT offices must approve or be informed of such projects, but no office tracks key information such as the type of project, overall cost, or date of construction.

As a result, we can only report that local governments contribute to building MnDOT's trunk highway system. We cannot determine what percentage of construction and maintenance costs on the trunk highway system are paid for by local governments, whether that percentage has increased or decreased over time, or which local jurisdictions have spent the most.

RECOMMENDATION

MnDOT should track local government spending on trunk highways.

In order to be fully informed of the costs of building and maintaining the trunk highway system, the Legislature should be aware of all expenditures used to build or maintain the system. The lack of information about local spending on trunk highways appears to be a significant gap in the Legislature's knowledge.

MnDOT should track basic information about local projects that significantly affect state infrastructure and regularly report that information as part of its routine reporting on construction activities and expenditures. As a condition of giving approval for locally led

construction projects, MnDOT should require local jurisdictions to provide information for reporting purposes.

Project Narrative: U.S. Highway 10 and Armstrong Boulevard Interchange in Ramsey

Anoka County is currently leading a project to construct an interchange at the intersection of U.S. Highway 10 and Armstrong Boulevard in the City of Ramsey. The project also includes construction of a bridge over the nearby Burlington Northern Santa Fe train tracks. Because MnDOT was not planning to construct the interchange, Anoka County took the lead and assembled funding from several sources. The county began constructing the project in 2015.

Despite being considered for every specialty program included in this chapter (see Exhibit 3.2, and in the Appendix, Exhibits A.1, A.2, A.3, A.5, and A.6), the project did not receive funding from MnDOT until the 2013 CIMS program. In most instances, the project scored well against competing projects—particularly in the 2013 Corridors of Commerce program—but was not awarded funding.

As of February 2016, the estimated cost of the project was $41.9 million. Other than $10.0 million through the CIMS program, MnDOT has not contributed any funding to this project from the department's state road construction appropriation. However, the agency has contributed contract administration and inspection services at a value of $2.4 million. The City of Ramsey and Anoka County have contributed $2.0 million each. The project also received approximately $5.6 million through a state Local Road Improvement Program grant, $7.1 million through a Counties Transit Improvement Board grant, $1.7 million from a congressional earmark, $10 million through a federal Transportation Investment Generating Economic Recovery grant, and $1.1 million from the Burlington Northern Santa Fe Corporation.

LAWMAKER-SELECTED PROJECTS

Legislators in both the Minnesota Legislature and the United States Congress are opposed to listing specific trunk highway projects in transportation appropriations legislation. No Minnesota projects have been specified by lawmakers in this way for over five years. Nonetheless, Minnesota legislators have occasionally directed spending towards specific highway projects in ways other than transportation appropriations bills.

General Obligation Bonding. Despite the opposition to specifying trunk highway projects in *transportation* appropriations bills, the Legislature has occasionally used general obligation bonding bills to direct funding to projects on trunk highways when projects are led by local transportation agencies. For example, the 2008 Legislature designated $2 million to Ramsey County to design the Rice Street Bridge over Minnesota Highway 36.[29] The 2014 Legislature directed that Anoka County receive a Local Road Improvement Fund grant to construct the U.S. Highway 10 and Armstrong Boulevard interchange.[30] The 2015 Legislature appropriated

[29] *Laws of Minnesota* 2008, chapter 179, sec. 16, subd. 2.

[30] *Laws of Minnesota* 2014, chapter 294, art. 1, sec. 16, subd. 3(b).

$10 million to the city of Richfield for a project to construct an underpass on 77th Street under Minnesota Highway 77.[31]

Federal Earmarks. Prior to 2011, the U.S. Congress routinely specified transportation projects in law in a practice called "earmarking." The 112th Congress introduced restrictions that largely eliminated earmarking for transportation projects. However, MnDOT is still completing some projects specified by Congress before the restrictions were put in place. In summer 2015, MnDOT District 1 extended passing lanes and made safety improvements on U.S. Highway 53 using federally earmarked funds. In 2016, the district will reconstruct a portion of U.S. Highway 169 between Tower and Ely, another project that received funding through a congressional earmark.

Unwritten Agreements. MnDOT has occasionally reached unwritten agreements with lawmakers that designate funding for specific purposes. For example, a $140 million trunk highway bond appropriation in 2015 was widely reported as designated for the relocation of U.S. Highway 53 around a taconite mine near Virginia, and MnDOT has treated the funding as dedicated for that use. However, the law does not restrict MnDOT's use of the funding.[32]

IMPLICATIONS OF ALTERNATIVE PROCESSES

This chapter has highlighted several ways trunk highway projects are selected outside of MnDOT's standard programming process. We now discuss the implications of selecting projects through alternative processes.

MnDOT's alternative selection processes have emphasized projects in which construction could begin quickly.

It takes time to plan, design, and construct projects on trunk highways; large construction projects can take five to eight years from the planning stage to opening for travel. The time it takes MnDOT to prepare a project for construction depends on many things, such as whether the department must purchase right-of-way, complete an environmental review, gather input from the public, or plan detour routes. MnDOT does not spend the same amount of time planning every project; more complicated projects, such as an expansion project in an urban area, need more preparation than less complicated projects, such as a pavement preservation project on a rural trunk highway.

In most of the districts we visited, MnDOT district administrators told us that they had to deliver projects on shortened timelines when the projects were funded through alternative project-selection processes. For example, for the 2013 Corridors of Commerce program, MnDOT prioritized projects that were ready to start construction as soon as possible after July 1, 2014, or approximately seven months after the projects were selected. The TED selection process gives higher scores to projects that can be prepared and constructed earlier, even though the law does not require MnDOT and DEED to prioritize projects based on when they will be constructed. For CIMS, MnDOT required that successful applicants solicit bids from construction firms by early June 2015; project awards were announced in June 2013.

[31] *Laws of Minnesota* 2015, First Special Session, chapter 5, art. 1, sec. 10, subd. 7.

[32] *Laws of Minnesota* 2015, First Special Session, chapter 5, art. 1, sec. 10, subd. 8.

MnDOT's emphasis on selecting projects that can start quickly has created extra expenses, reduced districts' ability to gather public input, and influenced project-selection decisions.

MnDOT district staff told us that short project delivery timelines have increased the cost of projects. For example, MnDOT districts need to devote staff time to scope, organize, and manage construction projects. When new projects are added after districts have already scheduled their staff to work on the projects programmed through the standard process, districts often hire consultants at additional expense to do administrative work for the added projects.

Additionally, administrators in several MnDOT districts told us that shortened timelines hindered the agency's public outreach activities meant to gather input from local stakeholders. Unless a district conducts public outreach activities before a project is selected through an alternative selection process, the shortened timeline may force the district to limit or disregard this step in the planning process.

Short timelines can also negatively affect local governments. Local transportation professionals reported that it is difficult to allocate staff resources to complete a specialty program application, let alone carry out such a project if it is awarded. Counties or cities may instead hire consulting firms to do the work, which in turn increases a project's cost. Counties and cities with fewer financial resources may find that shortened timelines effectively reduce their ability to apply at all. In addition to application costs, some alternative processes require local governments to share the cost of a project's construction. Longer timelines would allow local jurisdictions more time to identify sources of funding for these projects, making projects selected through alternative processes more feasible.

Short timelines also influence which projects are selected via alternative processes. Complex projects are more difficult to deliver quickly. Thus, MnDOT is less likely to select projects for short-timeline programs that require right-of-way purchases, environmental reviews, coordination with other jurisdictions, or complex engineering solutions. One example of projects commonly disadvantaged by short time frames are highway reconstruction projects that run through small cities. According to several MnDOT district engineers, many cities would like MnDOT to program such projects. Not only are road surface conditions deteriorating, but cities want to take advantage of such projects to access and replace decaying underground infrastructure, such as sewers and water pipes. However, such infrastructure projects are costly for cities, and often require years of planning and budgeting at the local level.

Some alternative processes circumvent MnDOT's planning priorities and enable the construction of projects the department deems less important.

As discussed in Chapter 2, MnDOT prioritizes preservation ahead of expansion. In fact, the purpose of MnSHIP and the standard planning and programming process is to decide which projects are most urgent and which can be delayed. Under this process, MnDOT has allocated no funding to expanding the trunk highway system in Greater Minnesota over the next 20 years, and only limited funding for expansion in the metropolitan region.

However, MnDOT and the Legislature have used alternative project-selection processes to fund expansion projects, such as four lane expansion projects on segments of U.S. Highway 169 in northeastern Minnesota and U.S. Highway 14 in southeastern

Minnesota, and the construction of several new interchanges. One MnDOT administrator characterized specialty programs like TED and Corridors of Commerce as specifically designed to fund projects that would not otherwise be constructed (or would not be scheduled as soon).

For some alternative project-selection processes, MnDOT deviates from its priorities due in part to the presence of external funding. Both the TED and CIMS programs were designed to support projects funded in part by local stakeholders; contributions by local public and private entities reduce MnDOT's share of project costs. For example, a TED project in Perham to improve highway access to a hospital was funded by the hospital, county, city, MnDOT, and DEED. Locally led projects on trunk highways may even receive the majority of their funding from non-MnDOT sources—in a few cases, MnDOT has not contributed any funding to locally led projects.

Other alternative processes, however, simply replace MnDOT's priorities with others. The Corridors of Commerce program redirects funding from preservation to expansion projects. Although the Legislature has appropriated additional money above MnDOT's base funding for the Corridors of Commerce program, it did so initially through the use of trunk highway bonds. In future years, MnDOT will be spending money to settle the bond debts, money that it would otherwise plan to spend primarily on preservation projects. In the past two years, the funding has been taken directly from the state road construction appropriation, again limiting the ability of MnDOT to use the funds for other purposes.

In another recent example, MnDOT leadership deviated from departmental priorities in its allocation of an additional $134 million the Legislature provided MnDOT in 2015. In legislative testimony, MnDOT leadership had orally committed to use this funding for preservation projects that were already a part of its program. TPIC decided to use $20 million of this funding on "overprogrammed" fiscal year 2016 projects—projects that would otherwise have been pushed back to 2017—and $114 million on preservation projects that did not appear in the STIP. In fact, some of the projects did not even appear in the CHIP.

MnDOT's central office chose projects for the $114 million from an existing list of project identified by MnDOT district staff as important, but unprogrammed, preservation projects that could be delivered quickly. However, since MnDOT's standard project-selection process is designed to promote the highest priority projects into the STIP, these projects were, by definition, less urgent than the projects MnDOT had already scheduled. Further, the emphasis on projects that could start quickly influenced which projects the districts chose. We found it strange that MnDOT leadership did not first look to see which projects already listed in the STIP could be constructed earlier using the additional $134 million. In particular, we note that there were also "overprogrammed" projects in fiscal year 2017 that MnDOT leadership passed over. Instead, MnDOT advanced lower-priority projects ahead of the higher-priority projects it had already planned.

RECOMMENDATION

The Legislature and MnDOT should limit programs or agreements that require the initiation of trunk highway projects less than three years into the future.

Planning and programming transportation projects takes time. While MnDOT can deliver some projects quickly, others require time-consuming planning and engineering work to prepare for construction.

For example, one of the goals of the Corridors of Commerce program is to address "gaps" in the trunk highway system—a location where a trunk highway ends and does not connect to another trunk highway or a segment where the highway narrows to fewer lanes of traffic. Two such gaps exist on Minnesota Highway 23 between New London and Paynesville in Kandiyohi County, and Paynesville and Richmond in Stearns County. However, since MnDOT had not yet completed an environmental review for these projects, they were ruled out of the 2013 Corridors of Commerce program almost immediately because they could not be built quickly enough. The environmental reviews were later completed using 2014 Corridors of Commerce funding. However, no funding is currently available to further advance or complete the projects.

We think that project readiness should play a more limited role in project funding decisions than it currently does in many of the alternative processes we describe in this chapter. Trunk highway improvements can last a long time. If MnDOT determines Project A is more important to complete than Project B because of safety considerations, improved freight movement, reduced congestion, improved intermodal connections, or other reasons, then it is shortsighted to override those reasons—or even avoid ranking the comparison—because Project B will be ready for construction earlier than Project A.

Project readiness should be taken into account only if it is relevant to the costs or benefits associated with the project. For instance, TED projects are built to support economic activity. If the economic activity is tied to the speed with which a project is constructed, it would make sense to take project readiness into account when selecting projects. Speed in preparing a project for construction might matter, for example, for a project that improves access so that roads leading to a planned distribution center can handle increased truck traffic.

We recommend that when administering specialty programs, MnDOT avoid using projects' readiness for construction as a selection criterion unless required by law or there is a clear connection to a project's costs or benefits. We further recommend that the Legislature be prudent about requiring shortened timelines in law.

RECOMMENDATION

MnDOT should develop a transparent long-term planning and prioritization process for expansion projects funded through alternative processes.

The Legislature has appropriated or redirected funding for system expansion beyond that planned by MnDOT in each of the last three legislative sessions. Due to the Legislature's current strategy of funding expansion projects through alternative processes, MnDOT has programmed and constructed expansion projects outside its standard process on shortened timelines. Not only has this practice created difficulties and extra expenses for districts and local officials, it also contributes to the perceived opaqueness of MnDOT's project-selection process.

Given the Legislature's continuing interest in funding expansion projects, MnDOT would be better able to deliver such projects by planning for them. In fact, MnDOT districts have already begun to do this informally. Some districts have developed "shelf projects" to respond to the Legislature's practice of creating specialty programs to fund expansion projects. Shelf projects are projects that MnDOT does not have funding for and does not anticipate being able to program through its regular planning process. However, districts have done some work to prepare these projects to be ready if funding unexpectedly becomes available through an alternative project-selection process. Some MnDOT districts have also created lists of "flexible projects," or projects that are scheduled several years in the future but can be built more quickly if additional funding becomes available.

However, the process to develop shelf and flexible projects is informal; there are no standard criteria for prioritizing such projects. In addition, each specialty program or designated legislative appropriation prompts the development of a new set of criteria, often with time constraints for construction. The flexible and shelf projects identified by the districts may not fit the criteria for the new funding, so districts then look to see what projects can be quickly put together in order to "chase" the available money, as one district administrator described the process.

Meanwhile, planners at the central office have also identified projects that may be initiated if a new funding source becomes available. For example, central office staff have created the Investment Opportunity Plan, which attempts to prioritize possible uses of leadership-directed funding.

Because MnDOT's planning process is tied to long-term expected funding, planning for projects programmed through alternative processes has become an ad hoc process with a constantly changing set of priorities. The processes used to select projects for the districts' and central offices' lists are not transparent to external stakeholders. Several MnDOT staff and external stakeholders told us that they felt alternative processes reduce the public's trust in MnDOT decision making. It is difficult to explain to stakeholders why district staff repeatedly insist that a desired project is not a high priority, only to suddenly schedule it after money "drops out of the sky," to quote one assistant district engineer.

MnDOT should develop a transparent process for prioritizing expansion projects that do not fit within the department's current spending categories even though there is no funding identified for tem. Creating a space for such projects within MnDOT's standard planning process will enable MnDOT to better prepare for these types of projects. Additionally, such planning ahead may make it easier for projects needing more preparation time to compete against alternatives that can be built quickly.

List of Recommendations

- The Minnesota Department of Transportation (MnDOT) should take steps to improve the transparency of its standard project-selection process. (p.44)
- MnDOT should ensure that its Corridors of Commerce scoring criteria are aligned with the statutorily defined criteria and that it applies these criteria consistently. (p. 61)
- The Legislature should require MnDOT to annually report a detailed description of the selection criteria it used to select projects and ranking of all eligible projects for the Corridors of Commerce program. (p. 62)
- MnDOT should track local government spending on trunk highways. (p. 71)
- The Legislature and MnDOT should limit programs or agreements that require the initiation of trunk highway projects less than three years into the future. (p. 75)
- MnDOT should develop a transparent long-term planning and prioritization process for expansion projects funded through alternative processes. (p. 76)

Additional Data on Specialty Programs

APPENDIX

Exhibit A.1: List of Potential Projects, Transportation Economic Development Program, 2010 Program

Highlighting indicates selected projects

District	Applicant	Description	Requested Funding (in millions)	Rank
Greater Minnesota Projects, Interchange Trunk Highway Bond Eligible				
4	Perham	US 10 & CSAH 34 interchange	$ 4.4	1
3	St. Cloud	MN 15 & 33rd Street interchange	8.4	2
3	Albertville	I-94, CSAH 19, and CSAH 37 reconfiguration	1.6	3
7	District 7	US 14 & CR 12 interchange, Mankato	2.0	4
7	Jackson	I-90 & CR 34 interchange	1.7	5
6	Rochester	US 52, 65th, and 55th Street interchanges	10.0	6
3	Benton County	US 10 & CSAH 3 interchange	2.5	7
7	Le Sueur	US 169 & CSAH 28 interchange	2.8	7
7	District 7	US 14 & CR 41 interchange, Mankato	10.0	9
4	Moorhead	I-94 & 29th Street interchange	10.0	10
Greater Minnesota Projects, Uncommitted Trunk Highway Bond Eligible				
6	St. Charles	I-90 & CSAH 74 industrial park	0.6	1
6	Zumbrota	US 52 & CSAH 68 reconstruction	1.1	2
1	Two Harbors[a]	North Shore Manufacturing MN 61 access	1.2	3
7	Worthington	US 59 infrastructure improvements	3.3	3
8	Marshall	MN 68 & Lake Road industrial park	0.6	5
1/3	Aitkin County	CSAH 5 reconstruction	0.1	6
6	Stewartville[a]	US 63 business park	1.1	7
3	Sherburne County	Rail industrial park, Big Lake	1.3	8
1	Sandstone	MN 23 intersection and medical campus	1.7	9
2	East Grand Forks	American Sugar Company freight road	1.6	9
1	Carlton County	I-35 & MN 210 industrial park	2.6	11
8	McLeod County	Railroad siding relocation, Glencoe	0.4	12
1	Duluth Transit Authority	I-35 transit facility pedestrian improvements	2.5	13
1	Chisholm-Hibbing Airport	LifeLink hangar renovation	0.6	14
Metro District Projects				
M	Bloomington	I-494 & 34th Avenue interchange	4.2	1
M	Hennepin County	I-35W & 4th Street interchange	9.4	2
M	St. Louis Park	MN 7 & Louisiana Avenue interchange	9.7	3
M	Ramsey, Anoka County	US 10 & CSAH 83 interchange	10.0	4
M	Maplewood	MN 36 & US 61 interchange	5.9	5
M	Ramsey County	CR F & Lexington Avenue reconfiguration	2.0	6
M	Roseville	I-35 & Cleveland Avenue interchange	0.7	7
M	Cottage Grove	US 61 & Innovation Road interchange	7.0	8
M	Chaska	US 212 & CR 140 interchange	10.0	9
M	Maple Plain	Boardwalk, Maple Plain & Independence	1.1	10

NOTES: MnDOT's Metro District is abbreviated as "M," County State Aid Highways are abbreviated as "CSAH," and county roads are abbreviated as "CR." Requested funding as of December 21, 2010. The trunk highway bonds appropriated to MnDOT that it used for the 2010 Transportation Economic Development program were legislatively designated for interchange projects. MnDOT and DEED contributed additional uncommitted trunk highway and general obligation bond funding, respectively. MnDOT and DEED awarded funding to the highest-ranked projects in each funding category.

[a] Project was approved for funding in 2010 but was later discontinued.

SOURCE: Office of the Legislative auditor, analysis of Minnesota Department of Transportation and Department of Employment and Economic Development program documents.

Exhibit A.2: List of Potential Projects, Transportation Economic Development Program, 2012 Program

Highlighting indicates selected projects

District	Applicant	Description	Requested Funding (in millions)	Regional Rank
Greater Minnesota Projects				
7	Windom	North Windom Industrial Park improvements	$1.1	1
3	Benton County	US 10 & CSAH 3 interchange	2.9	2
6	Rochester[a]	US 14 & 40th Avenue SE improvements	1.5	2
3	Mille Lacs County	CR 132 improvements	0.3	4
1	International Falls	Multimodal distribution center	0.7	5
6	Rice County	Industrial Park Road and CR 76 extension	1.5	6
7	Mankato	Eastwood Energy Industrial Park	1.0	7
7	Jackson[a]	I-90 & CR 34 interchange	1.8	8
3	Delano	Delano Northwest Business Park	1.7	8
7	Arlington	MN 5 industrial park	2.8	10
1	Chisholm	6th Street SE & Rail Drive improvements	0.2	11
3	Big Lake	Big Lake Regional Rail Park	2.9	12
6	Faribault	Northern Industrial Park Roadway improvements	0.7	13
2	Fosston	2nd Street South improvements	0.4	13
4	Becker County	CR 48 pavement	0.5	15
8	Slayton	Slayton Industrial Park road rehabilitation	0.2	16
1	Chisholm-Hibbing Airport Authority	Airport fuel facility installation	0.5	17
7	Sleepy Eye	City infrastructure installation, 12th Avenue, St. Mary's Street	1.3	18
1/3	Aitkin County	Great River Road implementation	0.6	19
2	Polk County	CR 210, 10-ton weight limit paving	0.4	20
Metro District Projects				
M	Eden Prairie	Shady Oak Road improvements	7.0	1
M	Maplewood	MN 36 & English Street interchange	1.8	2
M	St. Louis Park	MN 7 & Louisiana Avenue interchange	3.0	3
M	Ramsey County	Lexington Avenue congestion mitigation	1.0	4
M	Hennepin County Regional Rail Authority	Multimodal interchange, Minneapolis	7.0	5
M	Minnetonka	I-394 & Ridgedale Drive westbound ramp	2.8	6
M	Anoka County	US 10 & CSAH 83 interchange	7.0	7
M	Belle Plaine	US 169 & CSAH 3 intersection	7.0	8
M	Scott County	MN 101 Minnesota River crossing	7.0	9

NOTES: MnDOT's Metro District is abbreviated as "M," County State Aid Highways are abbreviated as "CSAH," and county roads are abbreviated as "CR." Requested funding as of May 18, 2012.

[a] Project was approved for funding in 2012 but was later discontinued.

SOURCE: Office of the Legislative Auditor, analysis of Minnesota Department of Transportation and Department of Employment and Economic Development program documents.

Exhibit A.3: List of Potential Projects, Transportation Economic Development Program, 2013 Program

Highlighting indicates selected projects

District	Applicant	Description	Requested Funding (in millions)	Regional Rank
Greater Minnesota Projects				
8	Murray County[a]	Schmitz Grain MN 30 right-turn lane	$0.1	1
7	Le Sueur	US 169 access, rest area improvements	4.6	2
6	Olmsted County	CSAH 16 & US 63 interchange reconstruction	2.2	3
3	Baxter	Isle Drive extension, CR 48 intersection improvements	2.3	4
3	Big Lake	Big Lake Regional Rail Park	3.3	5
1	St. Louis County	CR 666 10-ton road and safety improvements	2.1	6
3	Becker	Becker Industrial Rail Park	0.7	7
6	Faribault	Northern Industrial Park	1.0	8
1	Carlton County	Carlton County Business Park development	2.5	9
1	Virginia	Northern Heights Business Park expansion	1.4	10
6	Spring Valley	Spring Valley Industrial Park Third	3.3	11
7	Mankato	Adams Street	7.0	12
1	Chisholm	US 169 business park	0.8	13
7	Blue Earth County	CSAH 12 extension (stage 5)	4.5	14
2	Red Lake Band	Seven Clans project, Warroad	0.4	15
6	Wabasha County	Wabasha CSAH 2, Elgin	0.6	16
8	Marshall	Southwest Minnesota Regional Airport sewer and water	0.4	17
1	Moose Lake	MN 73 safety improvements, Moose Lake Regional Center	0.2	18
Metro District Projects				
M	Waconia	MN 5 improvements	4.5	1
M	Dayton	I-94 & Brockton Lane interchange	7.0	2
M	Minneapolis	I-94 & 7th Street off ramp, repurpose 5th Street off ramp	6.8	3
M	Ramsey County	I-35E & Ramsey CSAH 96 interchange rehabilitation	0.8	4
M	Chaska	US 212 & CR 140 partial interchange	3.5	5
M	Cottage Grove	US 61 & CSAH 19 interchange improvement	7.0	6
M	Anoka County	US 10 & Armstrong Boulevard interchange	7.0	7

NOTES: MnDOT's Metro District is abbreviated as "M," County State Aid Highways are abbreviated as "CSAH," and county roads are abbreviated as "CR." Requested funding as of May 21, 2013.

[a] Project was approved for funding in 2013 but was later discontinued.

SOURCE: Office of the Legislative Auditor, analysis of Minnesota Department of Transportation and Department of Employment and Economic Development program documents.

Exhibit A.4: List of Potential Projects, Transportation Economic Development Program, 2015 Program

Highlighting indicates selected projects

District	Applicant	Description	Requested Funding (in millions)	Regional Rank
Greater Minnesota Projects				
8	St. John's Township	First Avenue West upgrade	$ 0.4	1
8	Redwood Falls	CSAH 101, MN 19, US 71, Union Drive signal	0.3	2
7	Mankato	Adams Street extension	2.0	3
8	Marshall	MN 68 & Michigan Road turning & bypass lane	0.7	4
7	Wells	Wells Business Park access	0.6	4
3	Mille Lacs County	MN 95 roundabouts, Princeton	3.3	6
6	Wabasha County	CR 86 bituminous paving	0.2	7
6	Wabasha County	CR 72 & 639th Street	0.4	8
1	Ely	17th Avenue East improvements	0.3	8
7	Blue Earth County	CSAH 12 (stage 5)	2.8	10
2	Polk County	CR 221, 281 grading/paving, CSAH 45 turn lanes	0.9	11
Metro District Projects				
M	Bloomington	E Bush Lake Road & I-494 interchange ramp	8.0	1
M	Carver County	MN 41 Expansion	3.5	2
M	Dakota County	US 52 & CSAH 42 interchange	3.1	3
M	Washington County	MN 36 & CSAH 35 interchange	4.0	4
M	Scott County	US 169, MN 41, CSAH 78 interchange	10.0	5
M	Plymouth	I-494 & CSAH 9 interchange	9.6	5
M	Dayton	I-94 & Brockton Lane interchange	10.0	7
M	East Bethel	187th Lane NE & Viking Blvd NE access control	2.0	8
M	Anoka County	I-35 & MN 97 interchange	10.0	9
M	Ramsey County	I-694 & CSAH 49 interchange	10.0	9
M	Richfield	77th Street underpass	4.4	11

NOTES: MnDOT's Metro District is abbreviated as "M," County State Aid Highways are abbreviated as "CSAH," and county roads are abbreviated as "CR." Requested funding as of December 8, 2015.

SOURCE: Office of the Legislative Auditor, analysis of Minnesota Department of Transportation and Department of Employment and Economic Development program documents.

Exhibit A.5: List of Potential Projects, Corridor Investment Management Strategy, 2013 Program

Highlighting indicates selected projects

District	Location	Description	Requested Funding (in millions)	Regional Rank
Greater Minnesota Projects				
6	Red Wing	US 61 downtown improvements	$ 2.4	1
1	Duluth	MN 23 multimodal	3.0	2
4	Moorhead	US 10 & US 75 safety/operational improvements	3.4	3
3	Monticello	MN 25 & CSAH 75 intersection improvements	0.5	4
6	Goodhue County	US 52 & CSAH 9 interchange	0.3	5
8	Marshall	MN 23 J-turn intersection and pedestrian overpass	4.5	6
3	Buffalo	MN 25 improvements (phase 1)	2.1	7
7	Jackson	US 71 Complete Streets	1.3	8
1	International Falls	Gateway Corridor improvements	0.8	9
4	Parkers Prairie	MN 29 reconstruction	1.8	10
7	Mankato	Veterans Memorial Bridge	0.6	11
6	Albert Lea	Broadway streetscaping & pedestrian improvements	0.8	12
2	East Grand Forks	MN 220 reconstruction	2.3	13
4	Detroit Lakes	US 10/US 59 trail	0.2	14
3	Waite Park	18th Avenue South	1.1	15
6	Dresbach	Old US 61 trail	0.5	16
4	Grant County	MN 55 flood mitigation	0.7	17
7	Luverne	US 75	0.7	18
7	New Ulm	US 14 traffic signal	0.2	19
4	Becker County	Heartland Trail Acorn Lake extension	0.9	20
6	Lake City	US 61 trail	0.4	21
4	Ortonville	Cashtown/Hilltop bicycle/pedestrian path	0.2	22
1	Two Harbors	MN 61 trail and stormwater project	0.6	22
4	Barnesville	Barnesville multiuse path	0.6	24
4	Wadena	US 71 reconstruction	1.6	25
4	Breckenridge	US 75 bicycle/pedestrian path	0.6	26
8	Sacred Heart	US 212 reconstruction	0.5	27
3	Avon	I-94 noise barrier	1.2	28
Metro District Projects				
M	Minneapolis	I-94 7th & 5th Street ramps[a]	8.2	1
M	West St. Paul	Robert Street improvements	3.5	2
M	Ramsey	US 10 & Armstrong Boulevard interchange	10.0	3
M	Champlin	US 169 improvements	6.0	4
M	Edina	MN 62 & France Avenue ramps	0.5	5
M	Edina	MN 62 & Tracy Avenue ramps	0.4	6
M	Belle Plaine	US 169 overpass	4.7	7
M	Forest Lake	MN 97 & US 61 intersection reconstruction	2.0	8
M	Saint Paul	Snelling Avenue Complete Streets	7.6	9
M	Prior Lake	MN 13 & CSAH 21 intersection improvements	4.2	10
M	Waconia	MN 5 4-lane expansion[a]	4.5	11
M	Eden Prairie	SW Transit Park & Ride	5.5	12
M	Arden Hills	I-35W & CSAH 96 interchange	7.5	13
M	Chaska	US 212 partial interchange	3.5	14
M	White Bear Lake	US 61 enhancement	1.5	15
M	Golden Valley	MN 55 access management	1.2	16
M	Mendota Heights	MN 149 trail segments	0.4	17

NOTES: MnDOT's Metro District is abbreviated as "M" and County State Aid Highways are abbreviated as "CSAH." Requested funding as of June 20, 2013.

[a] Project was selected to receive funding from the 2013 Transportation Economic Development program.

SOURCE: Office of the Legislative Auditor, analysis of Minnesota Department of Transportation program documents.

Exhibit A.6: List of Potential Projects, Safety and Mobility Program, 2010 Program

Highlighting indicates selected projects

District (Applicant)	Description	Requested Funding (in millions)	Regional Rank
Greater Minnesota Projects			
6	US 52 & CSAH 24, Cannon Falls	$12.8	1
3	US 169 & CSAH 11, north of Milaca	8.6	2
3	MN 65 & CSAH 5, Isanti	12.6	3
3	US 10 & CSAH 2, Rice	14.9	4
3	US 169 & CSAHs 19-25, south of Zimmerman	13.9	5
3	US 10 & CSAH 14, Randall	9.1	6
3	MN 371 & CSAH 48, Baxter	6.5	7
7	US 14 & CSAH 41, North Mankato	15.0	8
3	I-94 & MN 23, St. Joseph	1.7	9
Metro District Projects			
M	US 169 & CSAH 69, Shakopee	12.2	1
M	MN 101 & CSAH 144, Rogers	8.0	2
M	US 10 & Armstrong Boulevard, Ramsey	15.1	3
M	I-694 & CSAH 49, Shoreview	11.0	4
M	I-494 & 34th Avenue, Bloomington	4.2	5
M	I-94 & CSAH 13, Dayton	20.0	6

NOTES: MnDOT's Metro District is abbreviated as "M" and County State Aid Highways are abbreviated as "CSAH." Requested funding as of January 5, 2011.

SOURCE: Office of the Legislative Auditor, analysis of Minnesota Department of Transportation program documents.

Minnesota Department of Transportation
395 John Ireland Boulevard
Saint Paul, MN 55155

March 4, 2016

Mr. Jim Nobles, Legislative Auditor
State of Minnesota
Office of the Legislative Auditor
658 Cedar Street, Room 140
St. Paul, MN 55155

Dear Mr. Nobles:

The Minnesota Department of Transportation (MnDOT) has reviewed the evaluation report entitled "MnDOT Highway Project Selection." How MnDOT selects projects is a perennial topic of interest to legislators and the public, and we appreciate your staff's efforts to make project selection a more transparent process. We are pleased that the report affirms the work MnDOT has done to improve its project selection process over the past several years and since the 2008 audit. In particular we appreciate the acknowledgment for:

- MnDOT's nationwide leadership implementing performance-based planning and programming and in its ability to comply with MAP-21 requirements. (p. 15)
- MnDOT's approximately 90% on-time project delivery record over the past three years. (p. 15)
- MnDOT's implementation of asset management planning.(p. 25)
- The Auditor's confidence in MnDOT's programming decision making. (p. 44)
- The improvements made in prioritizing asset preservation projects and the improved consistency between our agency spending priorities and the projects selected through our standard project-selection process. (p. 46)

In general, MnDOT agrees with the Auditor's findings, and has the following responses and commitments to action.

Key Recommendation #1

MnDOT should increase the transparency of its decision-making process, particularly by providing information to enable comparisons between projects that are selected and those that are not.

MnDOT will implement best practices to improve transparency in both the standard and special project selection processes.

- For special programs that have a defined set of candidate projects that can be evaluated, this would include publicizing the ranking criteria prior to selection and the "scores" of all of the projects considered after selection.

- In the standard process, candidate projects are typically generated from the pavement or bridge management systems. MnDOT will provide greater information on how those systems select (or do

not select) candidate projects and the other factors that MnDOT uses to prioritize among those candidates.

- MnDOT will share the best practices for local agency involvement described by District 4 and others with all of our Districts and Offices.

Key Recommendations #2 & #3

MnDOT should modify its Corridors of Commerce project-selection process to create greater objectivity and transparency. The Legislature should require MnDOT to report detailed information about Corridors of Commerce selection process.

MnDOT agrees that the Corridors of Commerce program would benefit from greater transparency in the criteria used and how they were incorporated into the selection process. With the experience gained in the first implementations of this program, MnDOT will be able to adopt more objective criteria for use with future Corridors of Commerce project nominations.

- MnDOT will establish clear ranking or scoring criteria that include all of the statutorily required factors and any MnDOT added factors for use with future implementations of the Corridors of Commerce program.

- MnDOT will evaluate all of the nominated projects that are eligible for the program and report on the results.

- The Corridors of Commerce statute already requires MnDOT to report on project selection. MnDOT will include all of this information about selection criteria and scoring in the next report.

Key Recommendation #4

The legislature and MnDOT should limit the use of alternative project selection methods that require projects to start construction less than three years into the future.

MnDOT agrees that requirements or expectations to deliver new projects in a very short time may dictate choosing projects differently than the standard process, and may cause hardship for us and our funding partners. Although at times a hardship, a quick delivery requirement also has benefits. MnDOT proposes the following considerations for addressing requirements for quick delivery and the use of project readiness as a selection criterion.

- It takes time to plan construction projects well. There are several project components that add time to the process (e.g. gathering public input, right of way acquisition, securing permits from other state and federal agencies, etc.). For these reasons, some projects are more easily accelerated while others are not. When the most desired projects cannot be easily advanced in time to use newly available funds, MnDOT proposes that it be an acceptable alternative to advance other projects in their place and then to redirect those released funds to the originally intended projects.

- On the other hand, the list of needs, especially for preservation projects, is very long and the difference in benefits between some projects is very small. Even when not required by the legislature, MnDOT has intentionally tried to select projects that can start quickly to demonstrate that, when given resources, we will deliver good projects that address some of the State of Minnesota's many needs. By doing that, we hope to demonstrate that we should be trusted with additional new funds to address the other needs.

- MnDOT has taken several steps to lessen the burdens of quick delivery including: Identifying shelf and flexible projects (projects prepared with the intent of advancing them if funding is available), using alternate project delivery methods, and implementing plan preparation efficiencies. These steps enable MnDOT to respond to new funding without compromising the project-selection process.

- MnDOT agrees with the recommendation to limit (but not end) project selection methods that require projects to start construction quickly. We agree with the recommendation that project readiness is a criterion that should be used to select projects when appropriate, such as when required by law or when it clearly connects to the project's cost or benefits.

Key Recommendation #5

Because the legislature has frequently directed funding toward projects that create new infrastructure, MnDOT should develop a planning process that enables it to prepare for such projects.

MnDOT agrees that some planning for future expansion projects would improve transparency for selecting expansion projects if new money does become available.

- MnDOT's highway investment plan is required by law to be financially constrained, meaning that all the projects in the plan must be within the forecasted budget. Adding expansion projects that do not fall within the existing investment directions would require taking funds from other types of work, namely preservation or safety, etc., and would accelerate the decline in the condition of our assets.

- Nonetheless, it would be prudent and proactive for MnDOT to develop a modest plan for identifying the most important expansion projects and continue to prepare these as shelf projects (developed to a logical point of readiness). That planning information can be used to determine what new funding could realistically accomplish.

Key Recommendation #6

MnDOT should track spending by local governments on trunk highway improvements.

MnDOT agrees and will establish a method to track spending of local dollars on the trunk highway system.

Please accept my thanks for identifying these opportunities to improve the quality and transparency of MnDOT's project selection process.

Sincerely,

Charles A. Zelle, Commissioner
Minnesota Department of Transportation
395 John Ireland Blvd.
St. Paul, MN 55155

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Department of Natural Resources: Deer Population Management

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