Minnesota Department of Transportation

State Highways and Bridges
Evaluation Report
Status Update
October 15, 2015

The **State Highways and Bridges Evaluation Report** was requested by the Legislative Audit Commission directing the Office of Legislative Auditor to reevaluate highway spending in Minnesota with a focus on the state trunk highway system. This was requested shortly after the I-35W bridge collapsed in Minneapolis on August 1, 2007. The report addressed the following questions:

- How have resources and spending for the state trunk highway system and the condition of the system's roads and bridges changed?
- What are Minnesota's practices for inspecting bridges and culverts, and how do they compare to state and federal requirements?
- What standards and criteria guide the allocation of resources to the preservation of state trunk highway roads and bridges?
- How has actual trunk highway spending aligned with the Minnesota Department of Transportation's stated priorities?

The report provides: 1) an overview of Minnesota's road system, transportation funding, and MnDOT's organization and staffing; 2) trend information on state trunk highway revenues and expenditures on the condition of state trunk highway roads and bridges; 3) discussion of Minnesota's bridge inspection program including information on inspector certification, the frequency of bridge inspections, inspection procedures and post-inspection activities; and 4) a review of MnDOT's process for establishing the state trunk highway construction program and the extent to which trunk highway investments have aligned with state priorities.

The report provided a list of recommendations to improve efficiency in state highway and bridges transportation infrastructure and confirmed Minnesota has not invested adequately to maintain existing highways.

MnDOT continues to implement recommendations and bring to light the severity of the funding problems. This report is to summarize actions taken to date since 2008 relating to the evaluation report recommendations. To further demonstrate its commitment, MnDOT made the agency's Fiscal Year (FY) 2014/2015 strategic priority *Enhancing Financial Effectiveness* with the intent to earn or reinforce stakeholder trust and confidence in MnDOT by demonstrating effective and efficient stewardship of public resources. MnDOT also organized to flatten the organizational structure which: 1) elevated the Chief Financial Officer (CFO) to a Deputy Commissioner; 2) moved the State Road Construction (SRC) funds management accountability to the CFO; and 3) established a controller function.

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RECOMMENDATION: ***The Minnesota Department of Transportation should provide the operating funds necessary to meet inspection frequency requirements for fracture critical bridges (p. 54)***

All fracture critical bridges in Minnesota are inspected by a centralized inspection unit, operating out of the MnDOT Bridge Office. This unit is staffed with 9 inspectors and is assisted by district inspection personnel during bridge inspections. The unit also manages a fleet of 7 under-bridge inspection vehicles for access to fracture critical bridge elements.

The timeliness of fracture critical bridge inspections is audited annually by the Federal Highway Administration per the National Bridge Inspection Program. MnDOT's fracture critical bridge inspections are currently fully compliant with the inspection frequency targets established by the FHWA.

RECOMMENDATION: ***The Minnesota Department of Transportation should evaluate districts' procedures for documenting post inspection bridge maintenance decisions and implement standards practices across districts (p. 60)***

MnDOT has implemented a comprehensive bridge inspection and maintenance management system, which is used by all MnDOT districts. Bridge inventory information and inspection data are entered into SIMS (Structure Information Management System). Within this system, bridge maintenance actions are identified based on the inspection data. These bridge maintenance activities are prioritized and built into a maintenance work plan. Bridge records are updated following the completion of any maintenance items.

RECOMMENDATION: ***The Minnesota Department of Transportation should assess the sufficiency of districts' bridge maintenance staffing and make additional resources available, as needed, to ensure that inspection findings and other maintenance needs are effectively addressed (p. 62)***

MnDOT has assessed bridge maintenance and inspection resources and has increased staffing accordingly. Prior to August 2007, statewide bridge maintenance and inspection staffing totaled 119 positions. By July 2010, staffing had increased by 55 positions or nearly 50 percent. In Metro, Duluth, and Rochester districts, where nearly 80 percent of the state's bridge inventory is located, 44 new positions were added. Bridge maintenance and inspection staffing has been generally maintained at this level since the increase in the late 2000's.

The effectiveness of MnDOT's bridge maintenance and inspection program is assessed annually through performance measures. The trend has been positive in all performance measure categories over the last 5 years, and MnDOT is at or near performance targets in all categories.

RECOMMENDATION: ***The Minnesota Department of Transportation should ensure timely resolution of recommendations from Federal Highway Administration reviews of Minnesota's bridge inspection program (p.65)***

MnDOT's bridge inspection program is evaluated annually by the Federal Highway Administration per the requirements of the National Bridge Inspection Program. Minnesota is currently fully or substantially compliant in all program review categories. Any FHWA recommendations identified during this process are formally documented in an action plan with a defined timeline for resolution. A summary of Minnesota inspection program reviews since 2008 are available at:

http://www.dot.state.mn.us/govrel/reports/2011/bridgechange/report.pdf

http://www.dot.state.mn.us/govrel/reports/2013/BridgeInspectionsfinalreport.pdf
http://www.dot.state.mn.us/govrel/reports/2015/bridge-inspection-quality-assurance-report.pdf

RECOMMENDATION: ***The Minnesota Department of Transportation should improve its process for developing state trunk highway projects to better ensure that projects included in its program plans (1) align with the department's priorities and (2) can realistically be delivered within the funds projected to be available (p.80)***

(1) Aligning projects in the program with department priorities

In 2010, MnDOT entered into a new strategic and investment planning cycle. The Minnesota Go 50-year Vision and the Statewide Multimodal Transportation Plan laid out the strategic priorities for MnDOT's infrastructure investments. For the state highway program, those investment priorities are contained in the 2014-2033 Minnesota State Highway Investment Plan (MnSHIP). MnSHIP confirmed the findings of the previous 20-year plan in that MnDOT would need to spend nearly all of its resources in an attempt to maintain the current network in a state of good repair.

Simultaneously, Congress passed a two-year federal transportation act called MAP-21[1]. MAP-21 departed from previous surface transportation acts in that it focused its attention on the National Highway System (NHS) and introduced federal performance measures and some minimum performance requirements. The NHS is a network of over 5000 miles of mostly state trunk highways that serve a national interest. If MnDOT failed to meet the minimum requirements, it would be compelled to spend a greater portion of its Federal funds on the NHS until the minimum requirements were reached.

To avoid federal restrictions on the state's funding flexibility and to that assure that state-of-good-repair investment priorities were achieved, MnDOT implemented the following changes to create a more centralized programming process in several areas of capital resource allocation to highway projects.

1. Beginning with state FY2017, projects on the National Highway System are funded through statewide programs. Asset management systems for pavements and bridges create a list of candidate preservation projects that will meet the MnSHIP statewide performance outcomes. Districts review the candidates, and after considering other risk factors, recommend a slate of projects to meet the outcomes and minimize those risks. The pavement and bridge specialists then review the District recommendations to assure that the District selected projects will still meet the required performance outcomes.

2. Remaining dollars are distributed to the Districts in a District Risk Management Program (DRMP). The DRMP must cover most other highway needs both on and off the NHS. MnDOT has about 7000 miles of highways that are not on the NHS. Even though there are not performance measures and targets for all of these types of investments, there are investment goals that the Districts are expected to achieve in the DRMP.

[1] Moving Ahead for Progress in the 21st Century Act (P.L. 112-141)

3. Following the creation of the eight District draft programs, the programs are combined and evaluated for alignment with MnSHIP's investment priorities. This exercise not only evaluates the performance outcome of the draft statewide program, but it also assures that needs are addressed equitably within and across District boundaries.

4. At the conclusion of this exercise, the program is adjusted accordingly and presented to senior department leadership. At this presentation leadership weighs the program outcomes against the planned outcomes and either sends the draft program back for revision or recommends approval of the program to the Commissioner.

5. Throughout the year between programming cycles, risks may materialize that jeopardize the achievement of the stated goals. Risks that cannot be mitigated within the project or District budget are tracked by the Office of Transportation System Management. Should additional resources from innovation, bid savings, or additional funding become available, those funds are first used to mitigate programmatic risks to the program outcomes before other uses are considered.

The Auditor's report stated that the 2005 district plans showed 60% of funds spent on preservation but that actual spending was more for expansion than preservation. Although the new programming process described here is only in its third year, it is proving to be successful at directing the dollars to the needs identified in the plan. The most recent MnSHIP concluded that about 76% of the programmed dollars should be spent on preservation. In June of 2014, the draft 2015-2018 STIP found that Districts had planned to spend about 83% of programmed dollars on preservation.

Programmed dollars includes those funds in the State Road Construction account, both state and federal. For this calculation project support, which includes consultant services, supplemental agreements and right-of-way, is distributed across the spending categories. Bond revenues are not included as bond revenues are often directed by the legislature. For example, the 2008 bonds focused on replacing fracture critical bridges, while the 2015 Corridors of Commerce bonds were directed more toward system expansion.

(2) Realistically delivering projects within the funds projected to be available

Having more projects in the program than can realistically be delivered is a condition that MnDOT calls being over-programmed. Over-programming can result from not having enough funds to construct the project or from not having enough human resources or consultant funds to deliver the project to letting.

The State Transportation Program (STIP) is MnDOT's four –year "program" of projects. Most projects MnDOT programs are listed in the STIP. Some projects with special funding sources such as bond funds may not always be listed. The STIP is a fiscally constrained document, meaning that all of the projects listed in the program can be constructed within the amount of funds MnDOT can safely expect to receive in the next four years. By adhering to a fiscally

constrained program, MnDOT is almost never in a position of having to delay projects in the program due to a lack of construction funds.

MnDOT is in the process of enhancing our project management abilities and tools in order to better ensure delivery of our projects is on time and within budget. MnDOT has adopted the industry standard scheduling software, P6. P6 project schedules more accurately reflect the work flow of a project and aid the project manager in identifying the critical path. Once the critical path is identified the project manager can place the appropriate attention on those tasks. In addition, MnDOT is in the process of resource loading its schedules. This gives the department a forecast on how its human resources will be allocated. Furthermore the department can better determine the level of consultant resources needed to deliver our program. The schedule management initiative is well underway and significant progress has been made but we are still short of our goal. In the coming year we anticipate further improvements in delivering our projects on time.

RECOMMENDATION: ***Early in the 2008 legislative session, MnDOT should clearly present the implications of its current financial projections, particularly its projected inability to both preserve existing infrastructure and fund infrastructure enhancements (p.82).***

During the 2008 session and in subsequent years, MnDOT has made several presentations to the Legislature to present its capital budget and to describe the implications of continuing to fund the Trunk Highway system at those levels.

More recently, MnDOT completed the update of the statewide highway investment plan. The plan, dated December 2013, clearly states that for the first ten years of the plan, MnDOT will need to focus about 67% of its capital resources to preserve the infrastructure in an acceptable condition. In the second ten years that percentage increases to 89%, with virtually no money available for expansion projects.

RECOMMENDATION: ***In consultation with the Legislature and Minnesota Department of Finance, MNDOT should adopt financial management policies to guide the use of debt financing and federal advance construction for state trunk highway investments (p.83).***

The Minnesota Department of Transportation (MnDOT) adopted policies to improve its use and management of debt and federal advance construction.

Concerning debt management, legislation was passed in 2010 that added statutory language requiring MnDOT to develop a debt management policy, Minnesota Statute 167.60 "Debt-Financing Management Policy." The policy manages debt service so that the total of all forms of debt obligations of the trunk highway fund may not exceed 20 percent of annual state revenues to the trunk highway fund. The policy is available at http://www.dot.state.mn.us/policy/financial/fm007.html.

To manage its use of federal advance construction, MnDOT adopted a policy that states the amount of federal obligation authority cannot exceed 125 percent of forecast for that year. At the

end of each state fiscal year, the Federal AC financing balance will not exceed 100 percent of the federal funds amount specified above. Use of federal obligation authority for AC conversions for all projects must not exceed 50 percent of the official, estimated federal formula funds available for use during a state fiscal year, unless the Transportation Program Investment Committee approves a different amount. The policy is available at http://www.dot.state.mn.us/policy/financial/fm008.html.

In addition to these two policies, MnDOT also adopted policies on maintaining a minimum trunk highway fund balance, http://www.dot.state.mn.us/policy/financial/fm006.html, and a policy on maintaining a minimum trunk highway fund cash balance, http://www.dot.state.mn.us/policy/financial/fm005.html.

In addition to all of these continuing efforts, MnDOT maintains relationships with other transportation agencies through organizations such as the American Association of State Highway and Transportation Officials and the U.S Department of Transportation. The department values these relationships to conduct research and exchange best practices throughout the industry.

MnDOT recognizes that the agency is charged with using efficient management and operations strategies to provide Minnesotans with a strong, well connected transportation network. Continued integration of the evaluation report recommendations, among other inputs, will assist the department in furthering this mission.

Additional information and supporting documentation are available at:

2008 State Highway and Bridges Evaluation Report
http://www.auditor.leg.state.mn.us/ped/pedrep/trunkhwy.pdf

2012 Annual Transportation Performance Report
http://www.dot.state.mn.us/measures/pdf/2012ReportBook4-15.pdf

Minnesota Department of Transportation Strategic Plan
http://ihub.dot.state.mn.us/vision/

Minnesota Department of Transportation Organizational Chart
http://www.dot.state.mn.us/information/orgchart/index.html