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Bridge Inspection Program

Bridge inspections allow the Department of Transportation to assess current structural conditions, anticipate future problems, and identify needed maintenance work. In fiscal year (FY) 2000-01, the Department spent an estimated \$2.2 million on inspection activities. Concerns were raised about the adequacy of the Department's bridge inspection program after three supporting girders of the Daniel Webster Hoan Bridge in the City of Milwaukee cracked on December 13, 2000, resulting in the bridge's failure.

The Department performs routine inspections on all 4,858 state-owned bridges, and six types of specialized inspections such as underwater inspections. In FY 2000-01, the Department used 12.99 full-time equivalent (FTE) staff positions to conduct most inspections, but it also spent \$1.2 million to contract with private-sector consultants. We found that the Department's written bridge inspection procedures are generally consistent with federal regulations and industry guidelines, and its inspectors meet the minimum professional qualifications required by federal regulations.

In 2000, 8.8 percent of all state-owned bridges were structurally deficient, indicating they are becoming unsafe, and Wisconsin had the third-highest percentage of structurally deficient bridges among seven midwestern states.

The Department Does Not Adequately Monitor Program Expenditures

Inspection program expenditures increased an estimated 74.7 percent from FY 1999-2000 to FY 2000-01. Officials attribute some of the increase to additional work involved with the Hoan Bridge failure, but they could not explain annual variations in program expenditures and staffing levels over the past five fiscal years. Further, the Department does not adequately monitor its costs for state staff and consultants or evaluate the cost-effectiveness of its use of consultants, particularly for routine inspections conducted in the Waukesha district. Although the Department is attempting to complete evaluations of consultants' performance, only 6 of 25 required evaluations were completed from March 1996 through April 2000. Effective management requires the Department to monitor program expenditures and the performance of consultants. Therefore, we include a recommendation that the Department monitor and compare inspection costs for state staff and consultants.

Bridge Inspections Are Not Always Completed in a Timely Manner

Despite a 24.0 percent increase in the number of FTE staff positions devoted to bridge inspection from FY 1999-2000 to FY 2000-01, the Department's completion of routine inspections within the federally required interval of 24 months has not improved. From 1996 through 1999, 1.5 percent of routine inspections were not completed within 24 months. From January 2000 through August 2001, 15.9 percent of inspections were not completed within the same interval. Following a change in administrative code that was implemented in January 2000, central office officials expected inspectors would examine bridges more thoroughly. However, we could not determine whether inspections have become more rigorous or state staff are becoming less efficient. We include a recommendation that the Department ensure inspections are completed in a timely manner.

Two-Thirds of State Bridge Traffic Counts Are Outdated

A bridge's average daily traffic count is one factor that determines its condition, and this determines, in part, the amount of federal bridge replacement and rehabilitation program funding the State receives. The State received \$27.2 million from the federal program in federal fiscal year 2000-01. As of July 2001, traffic counts for 3,256 state bridges, or about two-thirds of the total, were outdated. Updating the traffic counts could potentially give the Department access

to additional federal funds.

The Department's Inspections Could Not Have Predicted the Hoan Bridge's Failure

National bridge experts and Federal Highway Administration officials determined that the cracks that caused the Hoan Bridge's failure in December 2000 developed so suddenly and unexpectedly that the Department's inspections could not have detected them. However, the Department had not conducted routine inspections of the bridge as frequently as required by law. Bridge repair and retrofit costs are estimated to total \$15.8 million, and federal funds are expected to pay for 80 percent of this amount. The Department also plans to retrofit the Menomonee Valley Bridge, 1 of 21 state-owned bridges with structural configurations similar to those that caused the Hoan Bridge's failure.

[full report, PDF file \(280KB\)](#)