
Environmental Issues ■

***Environmental laws
affect the construction
of transportation
projects.***

State and federal environmental laws, especially those pertaining to air and water quality, affect highway construction practices and costs, as well as the environmental impact of individual projects. DOT does not track its environmental expenditures, but it estimates the state highway program, of which the major highway program is a part, spent \$29.1 million in FY 2001-02 for construction bids, consultant contracts, and staffing related to safeguarding the environment. Construction contractors believe their costs to comply with environmental regulations are significantly higher than DOT's estimates because their operations are also influenced by regulations that are not administered by DOT. Because neither DOT nor the contractors provided supporting documentation, the actual cost of compliance with state and federal environmental laws cannot be verified.

Environmental Impact Assessments

To avoid, minimize, and mitigate harmful effects to the environment, federal law requires DOT to complete an environmental impact statement before construction of most major highway projects. An environmental impact statement is a comprehensive, scientific study of a project's location, concept, and potential environmental effects on, for example, plants and wildlife, air and water quality, and neighborhoods. On smaller projects, DOT must conduct an environmental assessment to determine whether there could be a large environmental effect. If so, DOT must complete an environmental impact statement; if not, no further environmental documentation is needed.

Completing an environmental impact statement for most major highway projects takes from three to five years or longer. Because major highway projects can be controversial, the process is intended to be the forum in which conflicting views are presented and consensus is reached. It allows considerable public input and involves a number of state and federal agencies, including the Department of Natural Resources, the Federal Highway Administration, and the federal Environmental Protection Agency. During the process, various project designs and locations are considered, and DOT identifies a preferred alternative.

Traffic patterns or community interests may change considerably during the several years it takes to complete an environmental impact statement, and this may alter the preferred alternative for a project's design or location. For example, the preferred alternative selected in 1998 for the USH 10 (Stevens Point to Amherst Junction) project would have retained the highway's current location east of Stevens Point. Subsequently, local interests requested an interchange near an expanded business park, and changes in DOT's redesign of an existing interchange required additional land. As a result, the preferred alternative may be modified so that the highway will be moved two to three miles south of its current location. Such a move would likely result in the partial dismantling of a \$5.5 million interchange that was built on USH 10 in fall 2001, in anticipation of the highway remaining at its current location. However, the cost of these changes would be so significant that DOT believes the project would need to be submitted to the Transportation Projects Commission for re-approval before the modification would be implemented.

DOT estimates the average cost of an environmental impact statement is \$2.0 million.

DOT's record-keeping makes it difficult to determine the cost to complete an environmental impact statement. DOT estimates that the average cost is approximately \$2.0 million, but costs can be significantly higher. For example, DOT has indicated that the environmental impact statement for the USH 12 (Sauk City to Middleton) project, which was contentious, cost more than \$5.3 million. This amount does not include \$5.0 million allocated to Dane County for land planning and preservation, or \$753,300 for a 1991 study of the highway corridor required by the Legislature.

Enforcement of Environmental Laws

While most environmental laws have been in place for many years, regulations implementing those laws, and the way in which regulators interpret them, have evolved over time. Federal and state environmental laws affecting highway construction that have been in place for at least 30 years include the National Environmental

Policy Act of 1969; the Clean Air Act of 1970; the Safe Drinking Water Act of 1974; and the Wisconsin Environmental Policy Act of 1971, which is based on federal law. More recently, federal Executive Order 12898, which was signed in February 1994, has required that federally funded projects not disproportionately affect minority and low-income populations. Federal Executive Order 13274, which was signed in September 2002, is intended to streamline the environmental review process for nationally selected transportation projects.

Some regulations implementing environmental laws have changed in recent years.

Some regulations implementing environmental laws have changed over time. For example, in 2002, ch. TRANS 401, Wis. Adm. Code, was amended to incorporate more stringent standards for erosion control and to improve the quality of stormwater runoff from transportation projects. Since January 2003, DOT has been required to reduce the amount of suspended solids in runoff by 80 percent. By March 2008, it will also be required to implement stormwater management plans to control pollutants from all highways, bridges, and other transportation facilities in municipalities that require such plans. DOT estimates that these requirements will increase its annual construction bid costs by \$4.4 million to \$6.5 million.

Changes in regulatory practices have also occurred. For example:

- Chapter NR 429, Wis. Adm. Code, authorizes DOT to burn brush when clearing a right-of-way, but the Department of Natural Resources is increasingly requesting that all brush be chipped. DOT often allows contractors to burn brush in less-populated areas, but it typically requires them to chip and haul the brush away for disposal when projects are located in more populated areas. For the USH 12 (Sauk City to Middleton) project, DOT required contractors to chip most brush.
- Placing a culvert in a stream or small river and building the highway on top of it typically costs less than constructing a bridge. However, the Department of Natural Resources is increasingly requiring that bridges, not culverts, be built in order to minimize environmental effects. For example, on the USH 10 (Amherst Junction to Waupaca) project, DOT replaced two large culverts with four bridges where the highway crosses the Tomorrow River. DOT estimated that constructing the bridges increased project costs by approximately \$875,000.

When DOT district staff negotiate with the Department of Natural Resources to establish the extent and type of mitigation activities needed to compensate for the negative environmental effects of some highway projects, DOT staff sometimes agree to not only mitigate but also enhance affected areas. For example, policy manuals used by both departments state that when streams are relocated as a result of highway projects, the condition of the relocated stream may be improved so that fish are better able to reproduce. Such improvements may include constructing a meandering stream or lining the streambed with rocks.

Although some regulatory changes require additional efforts and costs, others have provided DOT with increased flexibility to comply with environmental laws. For example:

- 1995 Wisconsin Act 296 altered the State Endangered Species Act to allow DOT to remove some endangered and threatened animals and plants from project sites. Before this change, DOT was required to avoid areas with such species.
- Beginning in 1996, the Federal Highway Administration and the State Historic Preservation Office allowed DOT to screen some highway project sites for the presence of artifacts. Surveying all sites had previously been the standard practice. Screening involves searching archaeological archives to evaluate the likelihood that artifacts are located at a site. A more extensive on-site survey is completed only if the archival search indicates artifacts may be present. DOT estimates that an archival search costs \$45 to \$200, while an on-site survey costs \$3,000 to \$20,000.
- DOT used to survey for artifacts at areas called borrow sites, from which contractors take soil and other materials for use in highway projects, although federal law did not require the surveys. Since 1997, DOT completes an on-site survey only when an archival search indicates the possible presence of artifacts. DOT estimates that this change saves it \$150,000 to \$200,000 annually.

Environmental Expenditures

DOT does not adequately track its environmental expenditures.

DOT incurs environmental expenditures for construction bid items provided by contractors, consultant contracts, and activities performed by its own staff, and it pays the State Historical Society and the Department of Natural Resources for their environmental work. The extent of these expenditures is a longstanding concern of legislators, contractors, and others. In 1997, we recommended that DOT monitor its environmental expenditures. During our current evaluation, we found that DOT has done little to monitor its environmental expenditures, either in total or on a per project basis.

Environmental expenditures can vary significantly among projects. For example, in projects we reviewed, archeological expenditures ranged from \$45 for a data base search to an estimated \$750,000 for on-site research on the STH 57 (Dyckesville to Sturgeon Bay) project, where a significant Native American archaeological site was discovered. In addition, some projects involve unique challenges. For example, the STH 57 (Green Bay to Dyckesville) project required special erosion control measures to prevent contaminated water from seeping into deep fissures in the bedrock and the underlying drinking water. DOT used sandbags and other measures, which it estimates cost approximately \$337,000, to ensure no construction runoff entered the fissures.

In FY 1999-2000, DOT created accounting codes to track environmental work completed by consultants, who perform tasks such as conducting archeological surveys, identifying historic buildings, and determining whether endangered species are present at project sites. However, these codes reflect only the estimated cost of the work completed by the consultant, not the actual cost. DOT also tracks the expenditures incurred by its own staff, who review and prepare environmental documents, but it does not retain expenditure information after projects have been completed.

DOT estimated its environmental expenditures were \$29.1 million in FY 2001-02.

At our request, DOT convened a group of staff involved with environmental regulation and construction oversight to estimate DOT's construction expenditures for environmental activities. The group estimated the percentage of each itemized bid expenditure that had resulted from complying with environmental laws. DOT estimated that its environmental expenditures for all state highway projects, as well as some local projects, were \$29.1 million in FY 2001-02. As shown in Table 10, these expenditures include construction bid items, consultant contracts, DOT staff time, and payments to the Department of Natural Resources and the State Historical Society for work performed by those agencies.

Table 10

**Department of Transportation's Estimated Environmental
Expenditures, by Type
FY 2001-02**

Type	Environmental Expenditures
Construction Bid Items	\$19,334,000
Consultant Contracts	6,164,000
DOT Staff Time	1,219,000
Department of Transportation Payments to:	
State Historical Society	1,748,000
Department of Natural Resources	607,000
Total	\$29,072,000

***DOT funds 12.0 FTE
liaison staff positions at
the Department of
Natural Resources.***

Construction bid item expenditures for environmental activities represented 2.9 percent of all construction bid item expenditures in the state highway program, while consultant contract expenditures for environmental activities represented 5.3 percent of all consultant contract expenditures in the state highway program. DOT's payments to the Department of Natural Resources were for liaison staff to identify and address environmental issues in transportation projects. In FY 2001-02, the payment included \$575,000 to fund 12.0 FTE liaison staff positions: 7.0 limited-term positions, 4.0 full-time positions, and 1.0 contract employee position. DOT also paid the Department of Natural Resources \$32,000 for a statewide study to determine the location of freshwater mussels. The study's results will be used to determine how to mitigate the effects of transportation projects on mussels. DOT paid the State Historical Society \$1.7 million, primarily for archeological investigations related to highway projects.

DOT also provided estimates of the amounts that it spent on each type of environmental activity, as shown in Table 11.

Table 11

**Department of Transportation's Estimated Environmental
Expenditures, by Activity
FY 2001-02**

Activity	Amount
Construction Bid Items, Consultants, and DOT Staff:	
Stormwater Management and Erosion Control	\$17,510,000
Hazardous Materials	3,838,000
Environmental Documentation	2,513,000
Archaeology	914,000
Wetlands	783,000
Air Quality	703,000
Historical Resources	248,000
Endangered Species	138,000
Sound Quality	70,000
Department of Transportation Payments to:	
State Historical Society	1,748,000
Department of Natural Resources	607,000
Total	\$29,072,000

In FY 2001-02, DOT paid 101 consultants an estimated \$6.2 million for their environmental services. Table 12 shows the ten consultants paid the most for such services. As noted, the amounts are estimated because DOT does not track the actual cost of the environmental work performed by consultants.

Table 12

**Ten Consultants DOT Paid the Most for Environmental Services
FY 2001-02**

Consultant	Amount
Earth Tech	\$ 641,000
HNTB	577,000
Marquette University	559,000
RMT	555,000
Short Elliott Hendrickson	349,000
Teng & Associates	342,000
BT Squared	254,000
Strand Associates	242,000
EMCS Design Group	235,000
CH2M Hill	225,000
All Other Consultants	2,185,000
Total	\$6,164,000

***Contractors believe
DOT's environmental
expenditure estimates
exclude many costs.***

We asked construction contractors from five industries—bridge building, asphalt, concrete, earth moving, and aggregate production—to review DOT's FY 2001-02 environmental expenditure information and estimate the percentage of expenditures in each construction bid item that they believe was attributable to the cost of complying with environmental laws. All of the contractors with whom we spoke believed that DOT's information excluded a significant amount of the compliance-related costs that they incur. For example, while DOT indicated that none of the \$80.8 million it paid for asphalt-related work was attributable to the costs of compliance, contractors estimated that compliance with environmental regulations accounts for up to 10 percent of their asphalt-related costs. Similarly, contractors estimated that 10 percent of the cost of producing aggregate is attributable to costs associated with compliance with environmental regulations. The contractors provided other examples of costs not included in DOT's estimates, including:

- \$300,000 to \$450,000 for one firm to install equipment to reduce an asphalt plant's emissions;

- \$200,000 to build three stormwater retention ponds, which allowed one company to obtain a stormwater management permit that was necessary to expand a building for producing asphalt;
- \$50,000 or more annually for insurance to protect one firm from liabilities related to the cleanup and disposal of soil contaminated by hazardous materials; and
- \$12,000 to \$15,000 annually to train one firm's staff about environmental laws.

Many of the examples provided by contractors pertained to regulatory requirements that do not apply to DOT. For example, s. 295.16, Wis. Stats., exempts DOT from ch. NR 135, Wis. Adm. Code, which was created in September 2000 and pertains to nonmetallic mining. However, commercial suppliers of gravel, sand, and other materials used in transportation projects are not exempt from this code, which stipulates how the materials are to be mined, how the environment is to be protected during mining operations, and how the site is to be restored after operations are complete. Contractors stated that their costs also increase as a result of a number of other activities that they must perform, including:

- cleaning their construction vehicles in confined areas in order to collect the water and washed-off soil and prevent adverse environmental effects;
- limiting bridge work in order to minimize disturbances of fish during spawning cycles; and
- using specialized equipment to prevent debris and bridge construction materials from entering the underlying water, as well as removing a bridge in sections, instead of demolishing an entire bridge at once and letting it fall into the water.

Because neither DOT nor the contractors provided supporting documentation, estimates of their environmental expenditures are not verifiable. The absence of accurate expenditure information makes it difficult to assess overall trends or the effects of environmental laws on transportation projects. Given the considerable amount of expenditures that DOT estimates it incurs and the difference between the estimates provided by DOT and the contractors, we continue to recommend that DOT monitor its environmental expenditures. We note that cooperation with contractors will be necessary to collect this expenditure information.

☑ Recommendation

We recommend the Department of Transportation track its overall and per project environmental expenditures, including those incurred by its own staff, consultants, and construction contractors, and report its plan for doing so to the Joint Legislative Audit Committee by June 1, 2004.

Project Alternatives

DOT's environmental impact statements failed to include all project cost information.

When we reviewed the environmental impact statements for 18 major highway projects, we found that DOT appropriately considered a range of alternatives, as is required. However, the cost estimates were not calculated in a standardized or comprehensive way, making it difficult to track changes to a project's overall cost or to compare costs among projects.

DOT's policies do not specify which types of costs are to be included in the project alternatives that are presented in the environmental documents. Construction costs were included in the environmental documents for all 18 major highway projects we reviewed. However:

- administrative costs were not identified for 17 projects;
- engineering, contingency, and home and business relocation costs were each not identified for 16 projects;
- future highway maintenance costs were not identified for 15 projects;
- right-of-way costs were not identified for 13 projects; and
- real estate costs were not identified for 10 projects.

It is difficult to track changes in a project's cost over time if environmental documents do not include comprehensive costs. When documents contain only construction costs, for example, some individuals may believe that all costs have been represented when, in fact, additional costs associated with real estate purchases, engineering, and other activities will be incurred. In addition, members of the Transportation Projects Commission find it difficult to compare the costs of various projects if the cost estimates are not comprehensive.

Recommendation

We recommend the Department of Transportation develop policies specifying that all project costs should be included in the project cost estimates that are presented in the environmental documents it prepares.

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Financing Transportation Projects ■

We analyzed all of DOT's revenue sources, not just those that support the major highway program. DOT is funded by federal, state, and local revenue; proceeds from bonds; and a small amount of program revenue. Transportation revenue bonds, which are repaid with vehicle registration fee revenue, have long been used as a funding source for the major highway program. However, DOT's main source of revenue is state fuel taxes.

Revenue Sources

***Since FY 1993-94,
transportation revenue
has increased by
49.6 percent.***

Table 13 shows all of DOT's revenue sources from FY 1993-94 through FY 2002-03. In the period shown, total transportation revenue increased 49.6 percent. State transportation revenue increased 44.8 percent; federal transportation revenue increased 92.6 percent; and bond proceeds decreased 17.4 percent.

Table 13

Transportation Revenue
(in millions)

Source	FY 1993-94	FY 2002-03	Percentage Change	Percentage Change in Constant Dollars
State Revenue				
Fuel Tax	\$ 634.6	\$ 902.5	42.2%	14.6%
Registration Fees	260.9	369.5	41.6	14.1
Other ¹	62.0	114.6	84.8	49.0
Subtotal	957.5	1,386.6	44.8	16.7
Federal Revenue	372.0	716.3	92.6	55.2
Bond Proceeds				
Revenue	107.8	136.1	26.3	1.8
General Obligation	61.5	3.8	(93.8)	(95.0)
Subtotal	169.3	139.9	(17.4)	(33.4)
Local Revenue	52.1	72.2	38.6	11.7
Program Revenue	0.3	4.9	1,533.3	1,216.4
Total	\$1,551.2	\$2,319.9	49.6	20.5

¹ Includes driver licensing fees; motor carrier registration and licensing fees; aviation fuel, aviation licensing, and airline property taxes; railroad property taxes; and salvage vehicle inspection, vehicle rental, limousine service, and hazardous materials fees.

State Revenue Sources

In the 2003-05 biennium, DOT expects to receive an additional \$268.2 million in state revenue.

In FY 2002-03, the state fuel tax and motor vehicle registration fees accounted for 91.7 percent of DOT's \$1.4 billion in state revenue, and 54.8 percent of its revenue from all sources. As of September 2003, DOT expected its state revenue to be \$1.5 billion in FY 2003-04 and again in FY 2004-05, largely because of increased revenue from the state fuel tax and vehicle registration fees. If actual state revenue matches these projections, DOT's state revenue in the 2003-05 biennium will exceed its 2001-03 state revenue by \$268.2 million, or 9.8 percent.

State Fuel Taxes

Wisconsin's gasoline tax is the highest in the nation, and DOT's largest revenue source.

As noted, state fuel taxes are DOT's largest revenue source. As of April 2003, Wisconsin's per gallon state fuel tax was 31.5 cents for gasoline and diesel fuel, and 23.8 cents for liquefied petroleum. These amounts include a petroleum inspection fee of three cents per gallon that funds the Petroleum Environmental Cleanup Fund Award (PECFA) program. Currently, Wisconsin's state fuel tax is the highest in the nation.

The state gasoline tax rate is adjusted annually.

To maintain the Transportation Fund's purchasing power, an indexing formula was introduced for the gasoline and diesel fuel tax rate in 1985. Annual adjustments to the tax rate are made each April 1, based on changes to the U.S. consumer price index. In addition, the Legislature enacted a permanent statutory one-cent increase in November 1997. Before April 1998, the fuel tax rate was also adjusted annually by a consumption factor, which decreased the tax rate by the amount that consumption increased during the prior year. The consumption factor was eliminated by the Legislature in April 1998 because increasing fuel consumption trends would have reduced tax revenues.

Table 14 shows the annual per gallon gasoline and diesel fuel tax rate from 1994 through 2003, excluding the three-cent inspection fee that funds PECFA.

Table 14

State Gasoline and Diesel Fuel Tax Rate¹
(cents per gallon)

	Tax Rate
April 1994	23.1¢
April 1995	23.4
April 1996	23.7
April 1997	23.8
Nov. 1997	24.8
April 1998	25.4
April 1999	25.8
April 2000	26.4
April 2001	27.3
April 2002	28.1
April 2003	28.5

¹ Excludes the 3.0¢ inspection fee that funds PECFA.

**Revenue from the state
fuel tax has increased
steadily since
FY 1993-94.**

As shown in Table 15, state fuel tax revenue increased steadily after FY 1993-94, particularly after the consumption factor was eliminated and the Legislature increased the tax rate by one cent. As of September 2003, DOT estimated that state fuel tax revenue will be \$926.0 million in FY 2003-04 and \$984.2 million in FY 2004-05.

Table 15

**State Fuel Tax Revenue
(in millions)**

Fiscal Year	Amount	Percentage Change
1993-94	\$634.6	—
1994-95	651.2	2.6%
1995-96	672.5	3.3
1996-97	692.9	3.0
1997-98	740.2	6.8
1998-99	797.0	7.7
1999-2000	809.5	1.6
2000-01	827.5	2.2
2001-02	865.5	4.6
2002-03	902.5	4.3
2003-04 ¹	926.0	2.6
2004-05 ¹	984.2	6.3

¹ Estimated.

2003 Assembly Bill 242, which was introduced in April 2003, would end fuel tax indexing before the next scheduled adjustment in April 2004. According to a fiscal note prepared by DOT, if this legislation had been enacted before July 2003, fuel tax revenue in the 2003-05 biennium would have been reduced by an estimated \$61.3 million.

Concerns have been raised about the long-term ability of the fuel tax to provide a stable source of revenue for transportation projects. If increasing numbers of vehicles that operate on electricity or fuel cells are driven in the future, fuel tax revenues will decrease. However, in the short-term, the state fuel tax will likely remain the single largest source of revenue available to fund DOT's programs.

Motor Vehicle Registration Fees

Owners of passenger vehicles (cars, vans, and sport-utility vehicles) that are registered in Wisconsin pay a \$55 annual registration fee. Truck owners pay an annual fee based on vehicle weight, ranging from \$48.50 to \$1,970. In FY 2002-03, DOT's revenue from registration fees was \$369.5 million.

The 2003-05 Biennial Budget Act raised annual registration fees for passenger vehicles by \$10.

Registration fees have increased twice in recent years. In 1997, passenger vehicle registration fees increased from \$40 to \$45, and truck registration fees increased by amounts that varied with truck weight; in October 2003, the annual passenger vehicle registration fee increased from \$45 to \$55. The October 2003 increase was included in 2003 Wisconsin Act 33 and is expected to generate an additional \$25.6 million in FY 2003-04 and \$34.9 million in FY 2004-05.

In addition to vehicle registration fees, registration fee revenue includes title, title transfer, and associated fees, as well as counter and other transaction fees. 2003 Wisconsin Act 33 also increased both the vehicle title fee and the vehicle title transfer fee by \$10, to \$18.50 each. These increases are expected to generate an additional \$11.3 million in FY 2003-04 and \$15.0 million in FY 2004-05.

As of September 2003, DOT estimated that total registration revenue will be \$429.1 million in FY 2003-04 and \$448.5 million in FY 2004-05, as shown in Table 16. The 16.1 percent increase projected for FY 2003-04 is the largest since FY 1997-98, when registration fees were last increased. From FY 1993-94 through FY 2002-03, DOT's total registration fee revenue increased 41.6 percent.

Table 16

Total Registration Fee Revenue
(in millions)

Fiscal Year	Amount	Percentage Change
1993-94	\$260.9	-
1994-95	270.2	3.6%
1995-96	277.3	2.6
1996-97	279.9	0.9
1997-98	324.7	16.0
1998-99	341.3	5.1
1999-2000	361.8	6.0
2000-01	361.5	(0.1)
2001-02	376.1	4.0
2002-03	369.5	(1.8)
2003-04 ¹	429.1	16.1
2004-05 ¹	448.5	4.5

¹ Estimated.

Federal Funding

In FY 2002-03, federal funds accounted for almost one-third of DOT's total revenue.

In FY 2002-03, federal funds represented almost one-third of DOT's total revenue. Wisconsin receives most federal transportation funding through the Transportation Equity Act for the 21st Century (TEA-21), which was enacted in federal fiscal year 1997-98 and provides funding for highway, transit, and other programs. The federal government generates transportation revenue primarily from the federal motor fuel tax, which was 18.4 cents per gallon of gasoline and 24.4 cents per gallon of diesel fuel as of June 2003.

Table 17 shows Wisconsin's federal transportation revenue since FY 1993-94. There have been two significant increases in this funding: the 38.1 percent increase in FY 1997-98, as a result of the passage of TEA-21, and a 15.5 percent increase in FY 1999-2000. As of September 2003, DOT expected to receive \$1.4 billion during the 2003-05 biennium, which is a 3.3 percent decline from the amount received during the 2001-03 biennium. However, TEA-21 expired at the end of September 2003, and the structure of the pending legislation is not yet known. As a result, it is uncertain how much federal transportation revenue will actually be available.

Table 17

Federal Transportation Revenue
(in millions)

Fiscal Year	Amount	Percentage Change
1993-94	\$372.0	-
1994-95	380.3	2.2%
1995-96	371.5	(2.3)
1996-97	354.7	(4.5)
1997-98	489.9	38.1
1998-99	524.9	7.1
1999-2000	606.1	15.5
2000-01	640.7	5.7
2001-02	687.8	7.4
2002-03	716.3	4.1
2003-04 ¹	677.2	(5.5)
2004-05 ¹	680.0	0.4

¹ Estimated.

DOT receives earmarked federal funds that Congress provides for specific projects.

Throughout the fiscal year, DOT also receives earmarked federal funds that Congress provides for specific projects. For example, in federal fiscal year 2002-03, DOT received \$107.9 million in earmarked federal funds, including:

- \$6.0 million for the Marquette Interchange;
- \$6.0 million for Interstate 39/USH 51, the Wausau beltline;
- \$2.0 million for USH 10 from Stevens Point to Waupaca;
- \$2.0 million for STH 29 from Chippewa Falls to Interstate 94; and
- \$2.0 million for USH 53, the Eau Claire bypass.

These earmarked funds are not shown in Table 17, nor are they included in the State's appropriation schedule.

Bond Proceeds

Transportation revenue bonds have long been used as a funding source for the major highway program. Unlike general obligation bonds, which are backed by the full faith and credit of the State, revenue bonds are secured by registration fee revenue. The revenue is placed in a trust account from which debt service payments are made. Any revenue in excess of the amount needed for debt service is transferred to the Transportation Fund. In issuing revenue bonds, the State has pledged to the bondholders that registration fee revenue will be at least 2.25 times the annual amount of debt service payments; that is, for every \$1 in bond debt to be paid, at least \$2.25 in registration fees will be collected.

Bond debt service costs are increasing and totaled \$101.1 million in FY 2002-03.

The issuance of revenue bonds has allowed DOT to construct major highway projects without heavy reliance on other funding sources. However, the resulting debt service leaves fewer vehicle registration fee funds available for projects. As shown in Table 18, revenue bond debt service totaled \$101.1 million in FY 2002-03. The proportion of registration fee revenue required to cover debt service costs has been increasing and reached 27.4 percent in FY 2002-03.

Table 18

Revenue Bond Debt Service as a Percentage of Registration Fee Revenue (in millions)

Fiscal Year	Debt Service	Increased Debt Service	Registration Fee Revenue	Debt Service as a Percentage of Registration Fee Revenue
1993-94	\$ 41.2	-	\$260.9	15.8%
1994-95	51.2	\$10.0	270.2	18.9
1995-96	58.5	7.3	277.3	21.1
1996-97	68.5	10.0	279.9	24.5
1997-98	71.9	3.4	324.7	22.1
1998-99	80.9	9.0	341.3	23.7
1999-2000	84.2	3.3	361.8	23.3
2000-01	89.1	4.9	361.5	24.6
2001-02	87.9	(1.2)	376.1	23.4
2002-03	101.1	13.2	369.5	27.4
2003-04 ¹	127.2	26.1	429.1	29.6
2004-05 ¹	141.1	13.9	448.5	31.5

¹ Estimated.

2003 Wisconsin Act 33 broadened the revenue sources pledged to cover debt service requirements to include title transfer fees and various other registration and license fees, such as personalized license plate fees. As noted, title transfer fees increased by \$10 in October 2003.

Table 19 shows DOT's estimates of future revenue-to-debt ratios. These estimates assume \$171.7 million in revenue bonds will be issued in FY 2005-06, and then the amount of bonds issued will increase by 3.0 percent annually. As a result of the expansion of pledged revenue that began in FY 2003-04, the revenue-to-debt ratio is expected to remain above 2.25 through FY 2011-12, the last year for which DOT has completed its projections. However, the \$171.7 million assumed for FY 2005-06 is a 20.2 percent increase over FY 2004-05 funds and reflects the increased level of funding needed for already-enumerated major highway projects.

Table 19

**Estimated Revenue-to-Debt Ratios for Transportation Revenue Bonds
(in millions)**

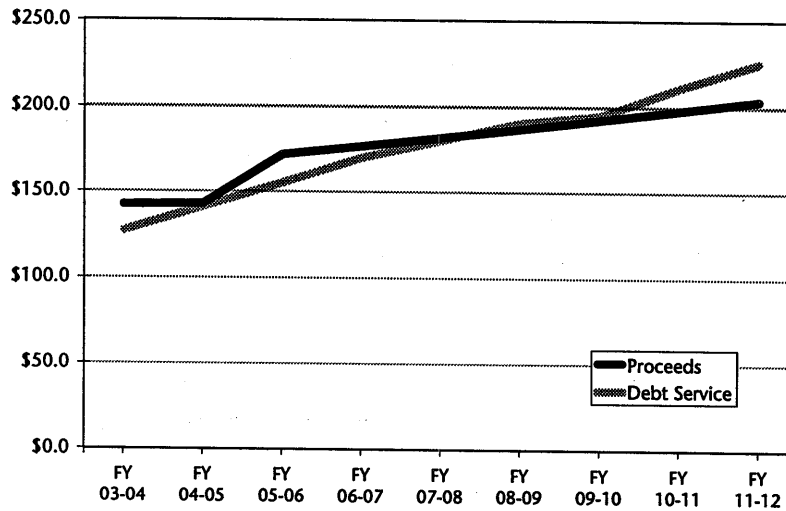
Fiscal Year	Pledged Revenue	Debt Service	Increased Debt Service	Revenue-to-Debt Ratio
2003-04	\$418.1	\$127.2	-	3.29
2004-05	441.1	141.1	\$13.9	3.13
2005-06	459.0	155.1	14.0	2.96
2006-07	464.7	169.9	14.8	2.74
2007-08	483.7	180.2	10.3	2.68
2008-09	490.3	190.6	10.4	2.57
2009-10	509.8	194.9	4.3	2.62
2010-11	517.2	211.3	16.4	2.45
2011-12	537.7	225.8	14.5	2.38

Debt service payments are projected to exceed bond proceeds from FY 2008-09 onward.

DOT estimates that annual debt service payments will exceed proceeds from the transportation revenue bonds from FY 2008-09 onward, as shown in Figure 5. In FY 2008-09, DOT will receive an estimated \$187.0 million in bond proceeds, while debt service costs will be \$190.6 million.

Figure 5

Comparison of Revenue Bond Proceeds to Debt Service Payments
(in millions)



The potential for annual debt service payments to exceed revenue bond proceeds raises several concerns. For example, some may argue that the State will no longer realize a benefit by relying on bonding for major highway projects because, in effect, the proceeds will be used to pay off earlier bonds. At the same time, debt service requirements will continue to grow, further reducing the amount of Transportation Fund revenue available for projects.

For the first time, bonds will be issued to fund state highway rehabilitation projects.

2003 Wisconsin Act 33 expanded the issuance of bonds that will be repaid by the Transportation Fund. The issuance of revenue bonds for the major highway program will increase only slightly. However, Act 33 provides that the rehabilitation and southeast Wisconsin freeways programs will be partially funded by \$565.5 million in general obligation bonds that the Transportation Fund will repay. DOT has indicated that these bonds will not be subject to the 2.25 revenue-to-debt ratio because they are backed by the State's full faith and credit. As shown in Table 20, total bonding amounts for the state highway program will increase from \$130.2 million in FY 2002-03 to \$406.0 million in FY 2003-04 and \$432.5 million in FY 2004-05. Debt service costs for the general obligation bonds issued during the 2003-05 biennium will total \$767.6 million from FY 2003-04 through FY 2024-25.

Table 20

State Highway Program Bonding Amounts
(in millions)

	FY 2002-03	FY 2003-04	FY 2004-05
Major Highway	\$130.2	\$136.2	\$136.8
Rehabilitation	0.0	253.9	230.0
Southeast Wisconsin Freeways	0.0	15.9	65.7
Total	\$130.2	\$406.0	\$432.5

2003 Wisconsin Act 64, which was enacted in October 2003, requires that the debt service on the \$565.5 million in general obligation bonds be paid from the Transportation Fund during the 2003-05 biennium. Beginning in FY 2005-06, the debt service will be paid from the General Fund. In that fiscal year and annually thereafter, DOT anticipates that debt service costs for these bonds will be \$69.2 million.

While the issuance of these general obligation bonds will help to fund reconstruction of the southeast Wisconsin freeway system and the rehabilitation program, the resulting debt service will reduce the amount of funds available to support future major highway program projects.

■ ■ ■ ■

Future Considerations ■

The Legislature will likely continue to face requests to increase transportation funding or expand other financial support for the state highway program. To help it respond to these funding requests, we:

- compared Wisconsin's transportation funding sources, spending, and highway conditions with other midwestern states'; and
- considered a \$5.2 billion funding shortfall projected in DOT's State Highway Plan 2020 in the context of current state highway planning and construction practices.

Comparisons with Other Midwestern States

Because states define and fund their highway programs differently, comparisons of state highway spending and highway conditions can have widely varying results. Our comparisons use the most recent data reported by the Federal Highway Administration, which are widely viewed as the best available. However, these data are from a 2001 report, and they are not always as precise as the actual expenditure and revenue information included elsewhere in this report. In most cases, we limited our comparisons to six midwestern states with climates similar to Wisconsin's because climate changes have a strong effect on highway construction costs and processes.

Spending

Wisconsin ranks in the middle of seven midwestern states on spending for major highway improvements and rehabilitation.

Based on data in the 2001 Federal Highway Administration report, Wisconsin ranks in the middle of seven midwestern states on spending for major improvements and rehabilitation of state highways. As shown in Table 21, Federal Highway Administration data show that Wisconsin spent:

- \$207 per licensed driver, which was fourth-highest among the midwestern states, and below the national average;
- \$142 per capita, which was third-highest among the midwestern states, and below the national average; and
- \$13,283 per million vehicle miles traveled, which was fourth-highest among the midwestern states, and below the national average.

Table 21

State Highway Expenditures, by Midwestern State and Nationally

State	Expenditures for Major Improvements and Rehabilitation ¹	Expenditures per Licensed Driver	Expenditures per Capita	Expenditures per Million Vehicle Miles Traveled
Illinois	\$1,673.2	\$214	\$135	\$16,239
Indiana	2,168.0	527	357	30,269
Iowa	604.6	306	207	20,143
Michigan	1,234.0	177	124	12,466
Minnesota	601.9	203	122	11,284
Ohio	1,403.5	181	124	13,167
Wisconsin	760.7	207	142	13,283
National Average	—	245	166	16,837

¹ In billions.

Source: Federal Highway Administration, Highway Statistics 2001

Funding

Wisconsin has fewer sources of transportation revenue than six other midwestern states.

While Wisconsin is in the middle of the midwestern states in state highway spending, it relies on a narrower funding base. Like the six other midwestern states shown in Table 22, Wisconsin supports its transportation program with federal revenue, state fuel taxes, and vehicle registration fees. However, Wisconsin relies solely on bonding to supplement these funding sources. The supplementary funding sources of the other midwestern states include general purpose revenue, tolls, and additional transportation-related sales and excise taxes.

Table 22
Supplemental Transportation Funding Sources, by Midwestern State¹
 FY 2002-03

	Illinois	Indiana	Iowa	Michigan	Minnesota	Ohio	Wisconsin
Bonding	■	■		■	■	■	■
General Purpose Revenue	■		■	■	■	■	
Tolls	■	■		■		■	
Vehicle Sales Tax			■	■	■		
Sales Tax on Fuel Purchases	■			■			
Excise Tax		■					
Dedicated Sales Tax		■					

¹ Funding sources other than federal revenue, state fuel taxes, and vehicle registration fees.

As noted, fuel taxes and vehicle registration fees are Wisconsin's two largest sources of state transportation revenue, and Wisconsin's fuel tax rate of 31.5 cents per gallon of gasoline or diesel fuel is the highest in the nation. Table 23 shows gasoline tax rates in Wisconsin and six other midwestern states. Michigan, Illinois, and Indiana also assess a sales tax on fuel purchases, and a portion of these states' revenues from that tax support transportation projects.

Table 23

**Per Gallon Gasoline Tax Rates, by Midwestern State
June 2003**

State	State Fuel Tax for Gasoline	Sales Tax	Environmental Tax ¹	Total
Wisconsin	28.5¢	–	3.0¢	31.5¢
Michigan	19.0	8.8¢	0.9	28.7
Illinois	19.0	8.1	1.1	28.2 ²
Indiana	18.0	8.0	0.8	26.8
Ohio	22.0	–	–	22.0
Iowa	20.1	–	1.0	21.1
Minnesota	20.0	–	–	20.0

¹ In Wisconsin, this tax funds the PECFA program.

² Chicago adds a 14.2¢ local tax that is not included in this total.

Wisconsin's truck registration fees are generally at the midpoint for midwestern states.

As shown in Table 24, Wisconsin's truck registration fees generally fall in the middle of the range of fees assessed by midwestern states. In addition to the fees shown, Wisconsin charges \$18 annually for tractor trailers, regardless of their weight.

Table 24

**Truck Registration Fees, by Midwestern State
April 2003**

	Truck Weight		
	20,000 Pounds	40,000 Pounds	80,000 Pounds
Illinois	\$490	\$1,202	\$2,790
Indiana	185	516	966
Iowa	235	675	1,695
Michigan	491	874	1,660
Minnesota	190	595	1,760
Ohio	218	421	824
Wisconsin	274	709	1,970

Wisconsin's passenger vehicle registration fee is among the lowest in the Midwest.

Wisconsin's passenger vehicle registration fee, however, is among the lowest in the Midwest. Midwestern states calculate passenger vehicle registration fees differently. For example, Illinois, Ohio, and Wisconsin assess a uniform fee on all vehicles, whereas Indiana, Iowa, Michigan, and Minnesota calculate fees based on a vehicle's value, age, or weight. Furthermore, Illinois, Indiana, Ohio, and Wisconsin allow local governments to assess additional taxes that fund transportation projects. Indiana allows counties to assess an additional fee based on a vehicle's value, and Ohio allows local governments to assess a flat fee up to \$20. Currently, two Wisconsin local governments assess a local tax, which is \$10 in Beloit and \$6 in Sheboygan.

Because some of the midwestern states in our comparison do not assess uniform registration fees, Table 25 compares fees for new and used luxury, mid-size, and economy cars as of June 2003. Since that time, Wisconsin's passenger vehicle registration fee has increased to \$55. Nevertheless, it remains one of the lowest in the Midwest.

Table 25

Passenger Vehicle Registration Rates, by Midwestern State¹
June 2003

	Illinois	Indiana ²	Iowa	Michigan	Minnesota	Ohio ³	Wisconsin ⁴
Current Model Year							
Luxury	\$78	\$508	\$355	\$173	\$423	\$43	\$45
Mid-size	78	381	243	123	296	43	45
Economy	78	227	140	78	183	43	45
Three-Year-Old Cars							
Luxury	78	389	355	129	106	43	45
Mid-size	78	291	243	93	106	43	45
Economy	78	177	140	59	106	43	45
Six-Year-Old Cars							
Luxury	78	224	272	129	106	43	45
Mid-size	78	166	186	93	106	43	45
Economy	78	115	108	59	106	43	45
Nine-Year-Old Cars							
Luxury	78	79	35	129	106	43	45
Mid-size	78	77	35	93	101	43	45
Economy	78	76	35	59	67	43	45

¹ The luxury vehicle is a Ford Expedition, the mid-size car is a Ford Taurus, and the economy car is a Ford Focus.

² Includes the tax charged by Indianapolis.

³ Includes the \$20 tax charged by Columbus.

⁴ This fee increased to \$55 in October 2003.

Highway Condition

Two commonly accepted measures of highway condition are:

- levels of traffic congestion; and
- pavement condition.

Wisconsin's traffic congestion levels compare favorably with other midwestern states'.

As shown in Table 26, Wisconsin's traffic congestion levels compare favorably with those of other midwestern states. Only two of the states in our comparison—Iowa and Minnesota—had greater percentages of state highway miles with low congestion levels, based on Federal Highway Administration data.

Table 26
**Percentage of State Highway Miles with Low Congestion Levels,
 by Midwestern State and Nationally
 2001**

	Percentage
Iowa	96.3%
Minnesota	83.3
Wisconsin	79.9
Illinois	78.6
Indiana	72.7
Michigan	66.8
Ohio	62.1
National Average	74.0

Both traffic congestion levels and pavement quality began to improve in 1998.

As shown in Figure 6, the percentage of Wisconsin's state highways with low levels of congestion was relatively constant from 1993 through 1998, but increased thereafter. Pavement conditions also improved after 1998, when Wisconsin began to receive increased federal highway funding as a result of the federal Transportation Equity Act for the 21st Century. As shown in Figure 7, the percentage of state highway miles with good or excellent pavement condition increased from 30.3 percent in 1998 to 57.5 percent in 2001.

Figure 6

Percentage of Wisconsin State Highway Miles with Low Levels of Congestion

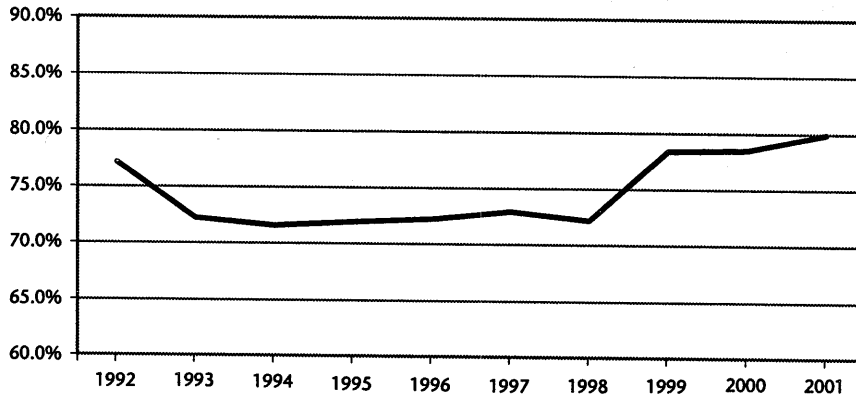
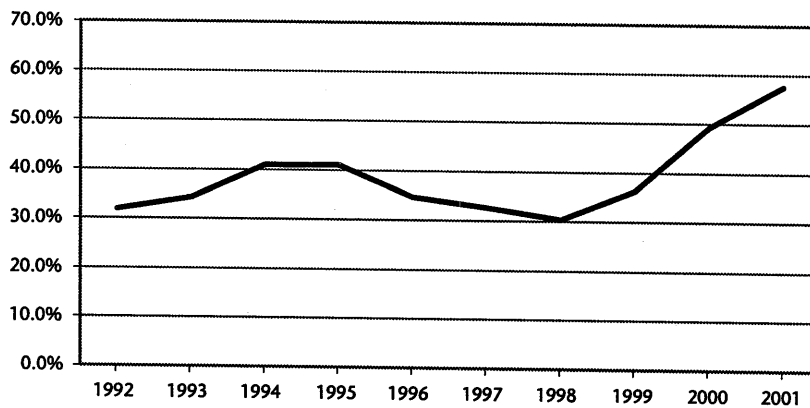


Figure 7

Percentage of Wisconsin State Highway Miles with Good or Excellent Pavement Condition



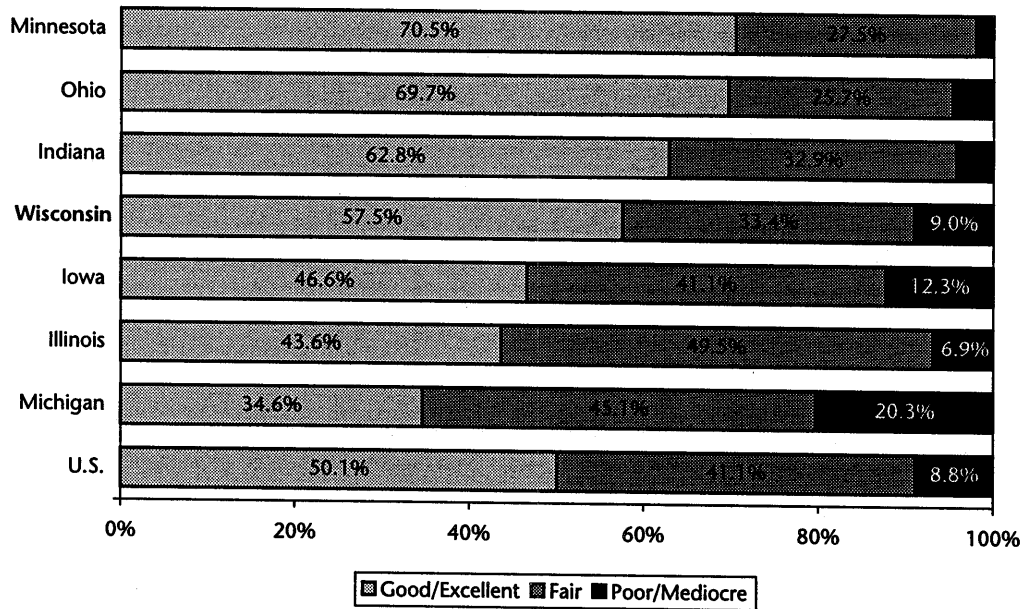
In 2001, the pavement condition of 9.0 percent of state highway miles was rated poor or mediocre.

Figure 8 compares pavement conditions in midwestern states based on a machine-measured roughness rating known as the pavement serviceability index. In 2001, Wisconsin was fourth among seven midwestern states in the percentage of state highway miles in good or excellent condition. The national average was 50.1 percent. Based

on our analysis of these roughness ratings, only 9.0 percent of Wisconsin's state highway miles were in poor or mediocre condition at that time, compared to a low of 2.0 percent in Minnesota and a high of 20.3 percent in Michigan.

Figure 8

Percentage of State Highway Miles by Roughness Rating
2001



State Highway Plan 2020

Wisconsin's long-range highway plan, which is required by the federal government and is DOT's principal tool for establishing highway program funding needs, is DOT's State Highway Plan 2020. In February 2000, when DOT adopted this plan, it estimated that fully implementing the plan's recommendations would require \$20.4 billion from FY 1999-2000 through FY 2019-20, but that only \$15.2 billion in funding would be available. The difference between these estimates is \$5.2 billion.

In developing the State Highway Plan 2020, DOT considered several spending scenarios, which are shown in Table 27. Its initial scenario assumed that amounts budgeted in FY 1998-99, with increases for inflation, would be spent each year from FY 1999-2000 through

FY 2019-20; this spending would total \$15.2 billion (in 1999 dollars) over the 21-year period. The first alternative focused on preserving the existing system, the second focused on completing projects on only some state highways, and the third focused on expanding the entire state highway system. A fourth alternative was ultimately selected by DOT and serves as the basis of the current state highway program and DOT's transportation funding requests. The selected alternative blends alternatives two and three and has a projected cost of \$20.4 billion (in 1999 dollars).

Table 27

Comparison of Various Spending Scenarios for State Highway Programs
 FY 1999-2000 through FY 2019-20
 (constant 1999 dollars, in billions)

Program	Initial Scenario	Alternatives in the State Highway Plan 2020			
		#1	#2	#3	Selected Alternative
Rehabilitation	\$ 9.7	\$12.0	\$10.9	\$13.9	\$10.3
Major Highway	4.0	1.7	7.0	8.4	5.1
Southeast Wisconsin Freeways	1.5	1.5	1.5	1.5	5.0
Total	\$15.2	\$15.2	\$19.4	\$23.8	\$20.4

The State Highway Plan 2020 does not enumerate specific highway projects. Instead, it establishes various performance targets to address, for example, traffic congestion and pavement condition. If targets are exceeded, a highway becomes eligible for expansion or rehabilitation under the plan. Some of the plan's analyses are quite complex. For example, computer models are used to forecast the future condition of highway segments by analyzing current and projected traffic volume, the amount of truck traffic, and other factors. However, it should be noted that while traffic congestion and pavement condition can be measured objectively, national or other performance standards in these areas do not exist. To assess traffic congestion, pavement condition, and safety deficiencies, and to establish performance targets for the State Highway Plan 2020, DOT relied on several committees made up of its own staff and federal and local transportation and planning officials, and it solicited public feedback.

The State Highway Plan 2020 would significantly improve the condition of state highways but would require additional funding.

Table 28 shows DOT's assessment of deficiencies in the state highway system according to three performance standards established by DOT. As shown in the table, DOT projects that if its selected alternative were implemented, the percentage of the state highway system that is congested would decline from DOT's estimate of 8 percent in FY 1999-2000 to 4 percent in FY 2019-20, and the percentage with a pavement condition deficiency would decline from its estimate of 30 percent to 6 percent. We note that in some cases, DOT's deficiency conditions contained in the State Highway Plan 2020 differ from our rankings because of methodological differences.

Table 28

State Highway System Deficiency Projections in State Highway Plan 2020

Performance Measure	Deficient Conditions in FY 1999-2000	Projected Deficient Conditions in FY 2019-20			
		Alternative #1	Alternative #2	Alternative #3	Selected Alternative
Traffic Congestion	8%	15%	9%	5%	4%
Pavement Condition	30	15	14	6	6
Safety	40	35	32	3	31

Although DOT's State Highway Plan 2020 is comprehensive and takes into account state and local opinion regarding future transportation needs, we are concerned that:

- the performance targets are progressively higher under the proposed alternatives, and highest under the selected alternative;
- the types of projects proposed to address deficiencies are also progressively more expensive and extensive; and
- the fiscal and other effects of the southeast Wisconsin freeway system have not been consistently addressed.

DOT has discretion in defining project scope and expanding projects as requested by local officials.

Specifically, the selected alternative separately identified all costs associated with reconstructing the southeast Wisconsin freeway system, while the other alternatives did not. Furthermore, while the performance measures set forth in the plan are useful in identifying future highway program needs, the discretion DOT currently exercises in project selection, location, and design greatly affects project costs. This discretion is particularly evident in the major highway program. For example, most of the cost increases we documented in Table 9 occurred because the scope of projects expanded beyond what had originally been proposed. Although in many cases the expansion was not initiated by DOT, but was instead requested by local officials, DOT's responsiveness to these requests, along with its reluctance to accept a number of cost-saving value engineering recommendations, increases the State's funding commitments to existing projects and limits the number of new projects that can be undertaken.

DOT is also developing a new policy on freeway construction. In Corridors 2020, a report released in 1988, DOT indicated that most of the 1,550 miles of highways that link Wisconsin's major population and economic regions would be built as four-lane expressways, rather than freeways, in order to use available funding more cost effectively. At that time, DOT reported that this backbone system would be upgraded to freeway standards as traffic needs warranted.

DOT is developing a new policy on freeway construction.

However, in November 2001, DOT drafted new guidelines that place greater emphasis on building freeways. While these guidelines are not yet official policy, some DOT staff told us that they use them to make design decisions, and DOT has indicated that the informal guidelines will likely be confirmed in a new policy it is developing. The precise cost of upgrading 1,550 miles of backbone highways to freeway standards has not yet been determined, but based on a sample of six projects completed since 2001 that DOT identified for us, the cost per mile for new freeway construction is \$11.3 million, compared to \$5.5 million for new expressway construction. While upgrading highways from expressway to freeway standards is expected to increase safety as well as to improve traffic flow, both costs and needs should be carefully considered, especially given the State's current financial condition.

Similar consideration should be given to the construction of interchanges. Currently, DOT project managers select an interchange's configuration based on factors that include current and expected traffic levels, topography, and public input. Some interchanges require vehicles to stop before driving onto the intersecting road; more expensive interchanges allow traffic to flow more freely.

DOT project managers have considerable discretion in selecting interchange designs.

DOT does not typically track interchange construction costs separately; instead, these costs are usually included in a project's total costs. However, based on a sample of nine projects completed since 2001 that DOT identified for us, the average cost to construct an interchange requiring vehicles to stop was \$8.0 million, while the average cost to construct a high-speed interchange was \$24.6 million. As shown in Table 29, land requirements increase with allowable vehicle speed on interchange ramps, so high-speed interchanges have higher real estate costs.

Table 29

Land Needs for Various Interchange Ramp Speeds

Allowable Vehicle Speed	Approximate Acres of Land Needed	Approximate Length (in feet) of Each Ramp
30	5	900
40	20	1,600
50	50	2,600
60	130	4,200
70	300	6,400

Funding Needs

The State's investments to date have resulted in a highway system that compares favorably in various rankings with those of other midwestern states and is generally in good condition. However, DOT, the Transportation Projects Commission, and the Legislature face many short- and long-term challenges as they seek to maintain existing highways and expand the system to meet safety, economic development, and other needs. These challenges include:

- a \$5.2 billion funding shortfall identified in DOT's State Highway Plan 2020;
- reconstruction of the aging southeast Wisconsin freeway system, which is not yet fully funded;

- increasing reliance on bonding that, for the first time, requires the issuance of bonds for a part of the state highway rehabilitation program and reconstruction of the southeast Wisconsin freeway system;
- commitments to complete 32 major highway projects that are already enumerated; and
- the needs of the other transportation programs that DOT manages.

To address these challenges and better assess the state highway program's needs, the Transportation Projects Commission, the Legislature, and other policy-makers will need more accurate and comprehensive information from DOT.

☑ Recommendation

We recommend the Department of Transportation:

- *follow our recommendations to improve financial and project reporting, in order to facilitate cost analyses;*
- *provide comprehensive and consistently prepared information in its planning documents, particularly those that identify and estimate the costs of major highway projects; and*
- *consistently communicate changes in project design and scope, so that all understand when projects or funding needs expand beyond initial proposals.*

■ ■ ■ ■

Appendix 1

Statutorily Required Approval Process for Major Highway Projects

Requirements	
--------------	--

Even-numbered years

Before March 15

DOT recommends a list of projects for which environmental studies could be completed.

Before April 15

Since 1999, the Transportation Projects Commission approves environmental studies for selected projects. The following projects are currently being studied:

- State Trunk Highway (STH) 38 (Racine and Milwaukee counties)
- United States Highway (USH) 12 (Fort Atkinson Bypass)
- USH 8 (Polk and Barron counties)
- USH 10/STH 441 (Winnebago County)
- USH 14/STH 11 (Janesville to Interstate 43)
- Interstate 39/90 (Illinois to USH 12)
- USH 45/STH 15 (Outagamie County)
- USH 51 (Stoughton to McFarland)

Studies for potential projects on STH 38 and USH 12 were approved by DOT before 1999, while studies for the six other potential projects were approved by the Commission in 2000 or 2002.

After this process is complete, projects may be considered for enumeration.

Odd-numbered years

Before October 15

Based on initial planning efforts, DOT reports to the Transportation Projects Commission a list of projects for which draft environmental studies have been completed. These projects are candidates for enumeration.

October 15 through
December 31

The Transportation Projects Commission may hold public hearings on candidate projects.

Even-numbered years

January 1 to March 15

The Transportation Projects Commission may hold public hearings on candidate projects.

Before September 15

DOT evaluates, ranks, and recommends potential projects for enumeration to the Transportation Projects Commission.

Before December 15

The Transportation Projects Commission recommends selected projects for enumeration to the Legislature.

Odd-numbered years

Projects are enumerated by the Legislature and the Governor in the Biennial Budget.

Appendix 2

Time Line for the State Trunk Highway 57 (Green Bay to Dyckesville) Major Highway Project

- 1988 Based on traffic congestion concerns, staff in DOT's Green Bay district office complete an initial planning document to expand STH 57 from two to four lanes from STH 54 in Green Bay through Dyckesville.
- 1989 The Corridors 2020 Plan identifies the expansion of STH 57 as a potential major highway project.
- 1990 DOT presents the project to the Transportation Projects Commission for consideration but does not recommend it for enumeration.
- The Commission subsequently recommends the project for enumeration after it is informed that the Legislature intends to increase the major highway program's budget. The project's anticipated cost is \$34.0 million.
- 1991 The Legislature enumerates the project in 1991 Wisconsin Act 39, the 1991-93 Biennial Budget Act.
- 1995 DOT completes an initial planning document for constructing a diamond interchange at the junction of STH 57 and STH 54, in place of the existing at-grade intersection.
- 1996 DOT completes a draft environmental impact statement for the entire STH 57 corridor and a preliminary design for the STH 57/STH 54 interchange.
- 1998 DOT completes the final environmental impact statement for the STH 57 corridor.
- 1999 Construction of the project begins.
- 2001 DOT completes preliminary designs for expanding STH 57 from north of the STH 57/STH 54 interchange to a point south of Dyckesville, while a bypass of Dyckesville is added to a separate major highway project.
- Removing the Dyckesville bypass, including an interchange and overpass, from the project makes it difficult to compare the original cost estimate to the final project cost.
- 2003 Construction of the project is scheduled for completion. The project is expected to cost \$27.4 million. However, this amount excludes the cost of the Dyckesville bypass, which cannot be determined because its costs are combined with those of a separate project.



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November 17, 2003

Ms. Janice Mueller
State Auditor
Legislative Audit Bureau
22 East Mifflin Street Suite 500
Madison, Wisconsin 53703

Dear Ms. Mueller:

Thank you for the opportunity to respond to your recent evaluation of the Wisconsin Department of Transportation's Major Highway Program. The Department appreciates the thoroughness of the review and the professionalism of your staff during the conduct of the audit.

The report highlights a number of opportunities for the Department to improve its management of the major highway program. Given the importance of a safe and efficient transportation network to the state's economy, the concerns raised over the cost of highway projects deserve serious consideration. In addition, it is important now, more than ever, to ensure that the Department constructs highway projects as cost-effectively as possible as the challenge of funding the reconstruction of the Marquette Interchange and other major highway improvements moves forward.

The report makes a number of specific recommendations:

Real Estate Costs

The report notes that the real estate expenditures of the Department for the major highway program has increased from \$11.8 million in FY 1993-94 to \$43.8 million in FY 2002-03 in large part because of the purchase of land in or near urban areas of the state.

LAB RECOMMENDATION: DOT should track the number of acres and the cost of all real estate it purchases for each major highway project.

Department Response: The Department will study the cost and timing of potential changes to its processes and computer systems to allow for the identification of costs associated with the purchase of real estate for highway projects. However, the trend of increasing real estate costs is likely to continue given current funding levels and the current 12-year time lag between the

enumeration and construction of a highway project. The Department will provide an update to the Joint Legislative Audit Committee by June 1, 2004.

Project Cost Increases

The report notes that project costs can increase significantly between the time when a project is enumerated in the statutes and when actual construction work begins. The Department recognizes the importance in developing reasonably accurate initial cost estimates and has taken steps to provide more accurate estimates to the Transportation Projects Commission. The report acknowledges three efforts by the Department to improve the financial management of the major highway program. First of all, the Department has begun an effort to complete more design work on a project before bringing the project to the Transportation Projects Commission. This additional design work allows for an improved estimate of the cost to be prepared. In addition, the Department has created a departmental Projects Review Committee to review project designs and assess the need for various features and changes. Finally, the Department hired an engineering firm to recommend project modifications which would reduce the cost of the project but still adequately serve the traveling public.

LAB RECOMMENDATION: DOT should report to the Joint Legislative Audit Committee by February 2, 2004, on the amount of savings it expects to achieve as a result of the November 2002 value engineering study, as well as the reasons why it does not plan to implement the study's other recommendations.

Department Response: The Department will prepare a report for the Joint Legislative Audit Committee by February 2, 2004, regarding its implementation of the recommendations within the value engineering study.

Improved Reporting

The report identifies concerns with the ability of the Department to produce financial reports which allow for the analysis of expenditures on individual highway projects.

LAB RECOMMENDATION: DOT should create a report to include all expenditures associated with each major highway project and provide it to the TPC semiannually.

Department Response: The Department will study the cost and timing of potential changes to its processes and computer systems to allow for the identification of costs associated with individual highway projects. In addition, the Department will work toward providing a report to the members of the Transportation Projects Commission to enhance their understanding of the Major

State Auditor Janice Mueller
November 17, 2003
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Highway Program's financial status and the feasibility of enumerating additional projects. The Department will provide an update to the Joint Legislative Audit Committee by June 1, 2004.

Environmental Expenditures

The report identifies concerns with the ability of the Department to produce financial reports which allow for the analysis of environmental related expenditures on individual highway projects.

LAB RECOMMENDATION: DOT should track its overall and per project environmental expenditures, including those incurred by its own staff, consultants, and construction contractors, and reports its plan for doing so to the Joint Legislative Audit Committee by June 1, 2004.

Department Response: The Department will identify needed process and computer system changes to allow for the identification of environmental costs associated with individual highway projects. However, in order to fully analyze the cost of complying with environmental laws and regulation, the cooperation of the road-building industry will be required. Due to the competitive nature of the industry, members of the industry may be hesitant to share cost data with the Department. The Department will ask the Department of Natural Resources and the road-construction industry to participate in a discussion of the cost of complying with environmental laws and regulations. The Department will provide an update to the Joint Legislative Audit Committee by June 1, 2004.

Project Alternatives

The report identifies concerns with the cost information included by the Department in the Environmental Impact Statements prepared for major highway projects.

LAB RECOMMENDATION: DOT should develop policies specifying that all project costs should be included in the project cost estimates that are presented in the environmental documents it prepares.

Department Response: The Department will review and update the policies, which guide the development of cost estimates to be included in the required environmental documents prepared for a proposed highway project. The Department expects to develop guidelines by January 1, 2005.

State Auditor Janice Mueller
November 17, 2003
Page 4 of 4

The Department acknowledges the importance of providing consistent and comprehensive estimates of the cost of current and prospective major highway projects to the Governor and Legislature. Achieving a balance between providing the most cost-effective solution and accommodating the desires and concerns of citizens affected by highway projects provides a constant challenge to the Department and its staff. The Department recognizes the need to be able to provide additional information when changes are made to the initial concept or design of a project.

While the report focused on the management of the Major Highway Program, the report also demonstrates the need for additional funding for the maintenance and operation of the existing State Trunk Highway system. For example, table 3 of the report shows that funding for major highway projects increased 54% between FY 1994 and FY 2003 and funding for rehabilitation work increased 55% over the same time period. On the other hand, funding for maintenance and traffic operations increased only 34% over the same time frame. While expanding the highway system provides many benefits to the state's economy, the investment in the existing highway system must also be maintained through regular maintenance activities such as snow plowing and crack filling.

The audit provides an excellent starting point for the discussion and debate in the next biennium over the appropriate funding levels for expanding, rehabilitating and maintaining our highway system.

Sincerely,



Frank J. Busalacchi
Secretary

1/27/04

file w/ Todd Stuart

- when final EIS comes back from feds,
put it in the TPC

- changing the part of project enumeration →

- incorporate when final fed EIS comes back,
put that into TPC process

- will send staff over