

Sent: 10/26/2012

MDOT RESPONSE TO 10/23/2012 SENATE TASK FORCE HEARING:

Q – How much do we need? (Pappageorge)

The amount of additional revenue immediately usable by MDOT in FY 2014 is no less than \$900 million. MDOT has demonstrated its ability to accommodate such an increase in program size in the past, when it had the opportunity to use American Recovery and Reinvestment Act (ARRA) funds.

The ARRA stimulus-spending program of 2009 gave the state 120 days to obligate half of almost \$900 million, with the rest to be obligated within the year. Ultimately some \$877 million in federal aid was obligated for roads and bridges alone, roughly equivalent to a year's MDOT construction program. This federal aid was divided between MDOT and local units in the usual 75/25% proportion. Most of the projects were advanced from future years' programs. Shortly after that, MDOT applied for discretionary ARRA funds under the TIGER program and other modal programs, and obligated still more projects, for an overall total of more than \$1.3 billion in transportation projects.

The ARRA program led to several streamlined processes that are now employed routinely to move projects faster. In particular, MDOT was just beginning to use innovative contracting procedures like "design-build" when ARRA was announced, and the experience with those projects has provided useful lessons that can help MDOT spend additional transportation dollars more efficiently in the future.

MDOT would add projects to its Fiscal-2014 program through several means:

- Projects could be advanced into 2014 from future years in MDOT's Five-year Program.
- Projects now programmed to be spread over several years could be combined or expanded in length, possibly accomplishing economies of scale.
- Unfunded but clearly-necessary projects could be added to the program.
- Projects not yet ready to let might be advanced through design/build contracts.

An expanded 2014 program would yield the same or better mix of fixes, built to the usual standards. No shortcuts or half-measures would be needed to employ additional state-trunkline funds. In 2006, when funding was available, MDOT successfully implemented a nearly \$1.8 billion program, some \$500 million more than today's state highway program.

Michigan's private construction industry is enormously adaptable. There are many skilled construction tradesmen out of work or underemployed, and a lot of productive capacity going underutilized. Both labor and machinery are at risk of relocation to other states; indeed, this process has already begun.

Q – Why do we use 85%? (Kahn)

Please see attached explanation sheet.

Q --Who is looking at the future alternatives to the gasoline tax? (Pappageorge)

MDOT participated in the first multi-state study of mileage-based user fees in 2002, which produced the book, *A New Approach to Assessing Road-user Charges*, published by the University of Iowa. Since then, the concept has had practical tests in Oregon and Iowa, and is the subject of much public and private-sector research. MDOT continues to monitor developments in this field, and confers periodically with Michigan local units that are interested in the concept as well. It is associated with vehicle-to-infrastructure communications, with which MDOT, local agencies, and Michigan firms are heavily involved. Per-mile charging and road pricing are no longer regarded as exotic or advanced technologies, and a new study by Michigan does not seem to be warranted. Most of the issues are of a policy nature, not economic or technical.

Q --What are the trends for commodity prices such as concrete? (Kahn)

The trend is always upward, but not evenly so. There have been periods of stagnation, or even deflation, followed by rapid run-ups in cement, steel, and asphalt. Commodity prices are now driven by demand worldwide, and they're going to be subject to unpredictable increases when construction activity increases in other places.

Q --What is the impact of investment on the "two finger chart" titled "Maximizing Investment" in the handout. How does the pavement deterioration line change with spending \$1 on preservation earlier in the time line? (Kahn)

Please see attached explanation sheet.

Q -- What is Michigan's bond debt compared to other states?

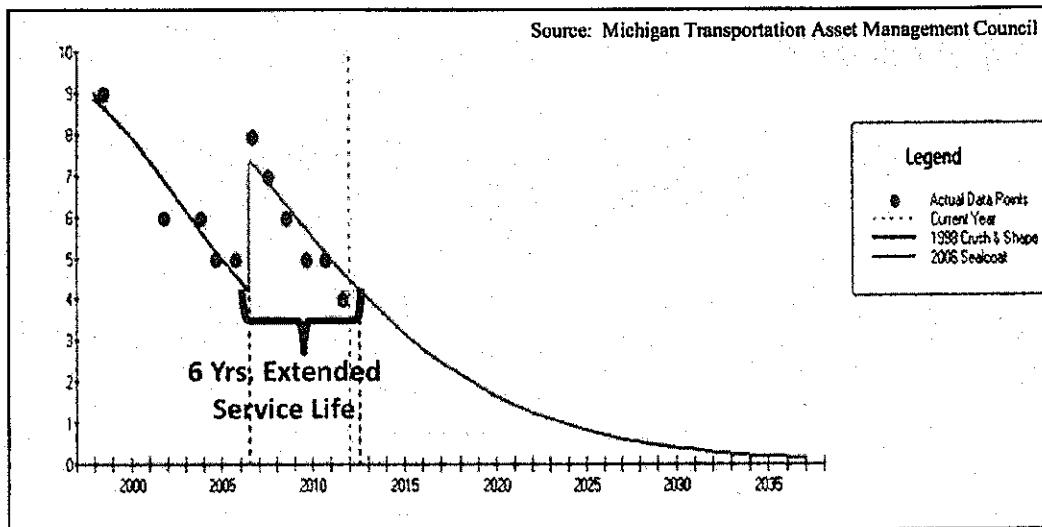
Attached is a survey on State DOT bond programs. In an effort to provide a peer comparison of the bond programs managed by each state transportation department, the Kansas DOT surveyed each state requesting detail on outstanding bonds which supported their transportation infrastructure at June 30, 2011. The results of the survey were used to develop the attached summarizing the profile and cost of each bond portfolio.

Q -- Winter Maintenance.

MDOT does not move the funds between line items. If more money is needed for winter maintenance, the summer maintenance budget is then reduced.

Capital Preventive Maintenance

Capital preventive maintenance (CPM) is the centerpiece of sound asset management. CPM treatments generally extend the service life of pavement by 3 to 10 years, depending on the specific treatment, traffic characteristics, environmental impacts, etc. Successful treatments include a "Mix of Fixes" approach by applying the right fix, in the right place, at the right time. Decades of pavement research and analysis by agencies across the nation have shown that pavement life can be extended longer through preventive maintenance rather than taking a "Worst First" approach focused only on more expensive rehabilitation fixes or reconstruction at earlier dates.



Michigan Example

The chart above displays pavement service life curves developed by the Michigan Transportation Asset Management Council. The curves are used to estimate the remaining service life for roadway pavement. The example is a summary derived from a total of 17 capital preventive maintenance projects in Kent County. The chart shows an average extended service life of over 6 years for each project from an investment in sealcoat pavement preservation.

Overall, CPM benefits include:

- Life extension to delay full reconstruction
- Lower treatment costs vs. rehabilitation and reconstruction costs
- Reduced user costs
- Improved safety to users
- Protected environment, using less natural resources and recycled materials

2011 - State DOT Debt Survey

State	Allocation			Aggregate Debt	Weighted Average Cost			Weighted Average Life			Credit Ratings	State
	Fixed	Variable	Syn Fixed		Fixed	Variable	Syn Fixed	Aggregate	Fixed	Variable		
Alaska	100.00%	0.00%	0.00%	262,330,000	4.32%	0.00%	0.00%	4.32%	7.45	-	7.45	Alaska
Arizona ¹	100.00%	0.00%	0.00%	2,871,195,000	4.43%	0.00%	0.00%	4.43%	8.73	-	8.73	Arizona
California	100.00%	0.00%	0.00%	340,625,000	4.42%	0.00%	0.00%	4.42%	2.80	-	2.80	California
Colorado ³	100.00%	0.00%	0.00%	678,005,000	4.01%	0.00%	0.00%	4.01%	14.45	-	14.45	Colorado
Delaware ⁷	100.00%	0.00%	0.00%	1,110,140,000	4.23%	0.00%	0.00%	4.23%	6.97	-	6.97	Delaware
Florida ²	100.00%	0.00%	0.00%	4,820,525,258	4.63%	0.00%	0.00%	4.63%	12.44	-	12.44	Florida
Georgia	82.80%	17.20%	0.00%	1,588,028,258	4.12%	0.18%	0.00%	3.21%	6.68	9.70	7.20	Georgia
Hawaii ⁵	100.00%	0.00%	0.00%	337,420,000	4.94%	0.00%	0.00%	4.94%	7.08	-	7.08	Hawaii
Illinois ⁵	100.00%	0.00%	0.00%	3,143,070,563	4.78%	0.00%	0.00%	4.78%	8.69	-	8.69	Illinois
Indiana ¹¹	100.00%	0.00%	0.00%	1,186,791,298	4.48%	0.00%	0.00%	4.48%	10.56	-	10.56	Indiana
Kansas ⁶	64.02%	0.03%	35.95%	1,687,295,000	3.60%	0.60%	3.95%	3.66%	11.77	2.67	5.57	Kansas
Kentucky ⁸	100.00%	0.00%	0.00%	1,663,030,000	4.18%	0.00%	0.00%	4.18%	8.50	-	8.50	Kentucky
Maryland ⁹	100.00%	0.00%	0.00%	1,561,840,000	3.85%	0.00%	0.00%	3.85%	6.23	-	6.23	Maryland
Michigan ¹⁰	100.00%	0.00%	0.00%	2,284,812,945	4.75%	0.00%	0.00%	4.75%	8.34	-	8.34	Michigan
Mississippi	100.00%	0.00%	0.00%	589,805,000	4.36%	0.00%	0.00%	4.36%	13.47	-	13.47	Mississippi
Missouri ³	98.16%	1.84%	0.00%	3,204,715,000	4.00%	0.35%	0.00%	3.97%	9.50	3.84	9.39	Missouri
Montana	100.00%	0.00%	0.00%	121,850,000	4.41%	0.00%	0.00%	4.41%	5.59	-	5.59	Montana
Nevada	100.00%	0.00%	0.00%	611,975,000	4.30%	0.00%	0.00%	4.30%	6.51	-	6.51	Nevada
North Dakota	100.00%	0.00%	0.00%	38,210,000	4.25%	0.00%	0.00%	4.25%	5.12	-	5.12	North Dakota
Oklahoma ¹²	100.00%	0.00%	0.00%	632,010,000	3.38%	0.00%	0.00%	3.38%	6.44	-	6.44	Oklahoma
Oregon	88.24%	11.76%	0.00%	2,255,055,000	5.07%	1.81%	0.00%	4.75%	14.30	11.95	14.02	Oregon
Pennsylvania ⁴	100.00%	0.00%	0.00%	517,500,000	3.74%	0.00%	0.00%	3.74%	13.02	-	13.02	Pennsylvania
Texas ¹¹	97.01%	2.99%	0.00%	11,113,935,000	4.11%	0.57%	0.00%	3.99%	16.17	18.13	16.23	Texas
Utah	100.00%	0.00%	0.00%	3,967,800,000	2.68%	0.00%	0.00%	2.68%	6.83	-	6.83	Utah
Washington	100.00%	0.00%	0.00%	6,004,454,495	4.05%	0.00%	0.00%	4.05%	12.91	-	12.91	Washington
West Virginia ⁶	100.00%	0.00%	0.00%	428,255,000	4.10%	0.00%	0.00%	4.10%	5.55	-	5.55	West Virginia
Wisconsin	91.79%	8.21%	0.00%	1,784,938,000	4.18%	0.45%	0.00%	3.94%	8.69	6.54	8.51	Wisconsin
Average	97.11%	1.56%	1.33%	2,007,609,280	4.20%	0.15%	0.15%	4.14%	9.07	1.96	0.21	
Total				54,205,450,558								

1. Kansas information as of December 31, 2011.
 2. AZ DOT credit ratings: Hwy User Tax based \$1.601 billion Moody's Aaa/S&P AAA/Fitch N/A and GARVEE \$878 million Moody's Aa2/S&P AA/Fitch N/A
 3. FL DOT credit ratings: Turnpike \$3.095 billion Moody's Aa3/S&P AA-Fitch A- and Right of Way \$1.587 billion Moody's Aa1/S&P AAA/Fitch AAA
 4. MO DOT credit ratings: listed credit ratings are for senior debt obligations
 5. PA DOT: A limited amount of "old debt" is excluded from calculation. It was issued several decades ago and remains active due to refinancing.
 6. IL DOT has \$86,507,970 of zero-coupon (capital appreciation) bonds outstanding that will be retired by August 1, 2024 which are excluded in this calculation
 7. WV DOT credit ratings: GO \$305 million Moody's Aa1/S&P AA/Fitch AA+ and GARVEE \$123 million Moody's Aa2/S&P AA-Fitch N/A
 8. DE DOT credit ratings: Revenue bonds \$1.062 billion Moody's Aa2/S&P AA+ Fitch N/A and GARVEE \$47 million Moody's Aa2/S&P AA/Fitch N/A
 9. KY Transportation Cabinet Credit ratings: ALCO \$407 million Moody's Aa2/S&P AA/Fitch AA- and TAK \$1.256 billion Moody's Aa2/S&P AA+ Fitch AA-
 10. CO DOT: One bond series is excluded from this survey because of information was not readily available. This series will be retired soon.
 11. MI DOT bonds Credit ratings: Comprehensive Transportation Fund Moody's Aa2/S&P AA+ Fitch AA and State Trunkline Fund Moody's Aa2/S&P AA+ Fitch N/A
 12. TX DOT bonds Credit ratings: State Highway Fund First Tier Revenue Bonds \$4.078 billion Moody's Aaa/S&P AAA/Fitch N/A and TX Mobility Fund GO Bonds & State of TX Highway Improvement GO Bonds \$1.035 billion Moody's Aaa/S&P AA+ Fitch AAA
 13. IN DOT bonds Credit ratings: DOT issued \$228 million Moody's Aa1/S&P AA+ Fitch AA+ and \$143 million Moody's Aa1/S&P AA+ Fitch WD
 N/A - Not applicable or not rated
 WD - Withdrawn

History behind the 1997 Pavement Goal Determination

Department staff conducted a series of workshops and discussions with the state transportation commission (STC) in 1997. These culminated with the December 1997 commission meeting where the STC approved the ten year pavement condition goal of 95% good and fair for the freeway system and 85% good and fair for the non-freeway system.

The question was recently posed by Senator Kahn asking what the basis was for this decision. Department staff presented a variety of options to the STC leading up to the December 1997 commission action. These various options were reviewed by the commission at a October 1997 workshop and at the November 1997 commission meeting.

Funding levels necessary to achieve various ten year condition goals were discussed and commissioners were given the opportunity, at the October 1997 workshop, to suggest various pavement investment strategies. MDOT staff showed the results of these requested strategies "on the fly" at the workshop. This was accomplished by utilizing MDOT developed computer based strategy analysis tools at the meeting. The resulting analysis provided the long term (30 year +) and ten year results of various "mix of fixes" strategies along with the necessary funding for each specific strategy. MDOT staff were asked in October to come back in November 1997 with information regarding the funding levels necessary to implement the 95/85 ten year pavement goal. The information was gathered, working with others in MDOT, and supplied to the STC in November 1997.

The commission settled on the 95/85 pavement goals and the needed pavement investment approach after considering a variety of strategies. The analysis clearly showed that a "mix of fixes" approach would result in the best long term network condition including that over a ten year period. A mix of fixes is a coordinated strategy of performing timely preventive maintenance on pavements in good and fair condition while maintaining an appropriate level of reconstruction and rehabilitation on poor pavements. This allows MDOT to maintain a fairly stable program from a budgetary and network impact standpoint. Additional factors that were considered by the STC when selecting the 95/85 goal and accompanying strategy include the following,

1. Percentage of the roadway network impacted each year by construction activity (impact on motorists)
2. Impact on other budgets in the transportation program (improve/expand & safety programs)
3. Consideration of statewide economic growth considerations

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