

DRAFT

Transportation Task Force Meeting Agenda's:

1st Meeting –

Date: Tuesday, October 2nd

Time: 10am-Noon

Location: Capitol Bldg. Rooms 402-403

Testifiers: MDOT, Oakland Co. Rd. Commission, CRAM, SEMCOG, MML, Representative Opsommer

Topic:

Overview of Asset Management and Efficiencies:

Provide information on asset management, the types of road condition evaluation used, and programs to choose the correct "fix" from "the mix of fixes." Discuss efficiencies in administering and performing road maintenance and construction and the ways road agencies have maximized return on investment.

Specifically:

- What asset management means, breadth of use across road agencies
- Description of different distress-rating systems, differences between each
- How asset management influences decisions on what to fix, not fix, and when
- Efficiencies realized, both one time and long term, if possible over a 10 year period
- Non-road spending (administrative) efficiencies and cost reductions (such as retirement and healthcare)
- Maximizing return on investment, the different tools used to get value for money, and innovations and use of technology
- Practices in other states
- Regional initiatives and efforts

2nd Meeting –

Date: Tuesday, October 23rd

Time: 10am-noon

Location: Capitol Bldg. Rooms 402-403

Testifiers: Transportation Asset Management Council, HFA, SFA, MDOT, Local Bridge Advisory Board Member

Topic: Description of Current Revenue, Conditions, and Maintenance Needs

Overview of current transportation revenue levels per type of jurisdiction. Provide background information on the number of route miles and bridges and their conditions, as well as winter maintenance conditions delineated by type of jurisdiction. Discuss current levels of funding and revenue shortfalls to maintain assets per type of jurisdiction.

Specifically:

- Historical level of funding including a discussion of purchasing power and commodity/equipment prices
- Current funding by source (registration fees, state fuel taxes, federal fuel taxes, other)
- Current funding level per jurisdiction (several specific examples for counties and municipalities)

- Current road conditions per type of jurisdiction with a historical trend report over the past 10-15 years
- Estimated funding shortfalls and the impact on physical maintenance and construction based upon 5 year plans and long term reconstruction and rehabilitation projects per type of jurisdiction. 10-15 year trend reports would be helpful.
- Shortfalls and the impact on winter maintenance per type of jurisdiction. 10-15 year trend reports would be helpful.

3rd Meeting –

Date: Tuesday, October 30th

Time: 10am-noon

Location: Capitol Bldg. Rooms 402-403

Testifiers: CRAM, MML, MITA, Operating Engineers, Paving Association, Asphalt Association, Jim Shea

Topic: Description of Current Revenue and Maintenance Needs, and Estimated Funding Required

Overview of current transportation revenue levels per type of jurisdiction. Provide background information on the number of route miles and bridges and their conditions, as well as winter maintenance conditions delineated by type of jurisdiction. Discuss current levels of funding and revenue shortfalls to maintain assets per type of jurisdiction.

Specifically:

- Historical level of funding including a discussion of purchasing power and commodity/equipment prices
- Current funding by source (registration fees, state fuel taxes, federal fuel taxes, other)
- Current funding level per jurisdiction (several specific examples for counties and municipalities)
- Current road conditions per type of jurisdiction with a historical trend report over the past 10-15 years
- Estimated funding shortfalls and the impact on physical maintenance and construction based upon 5 year plans and long term reconstruction and rehabilitation projects per type of jurisdiction. 10-15 year trend reports would be helpful.
- Shortfalls and the impact on winter maintenance per type of jurisdiction. 10-15 year trend reports would be helpful.
- Different levels of funding would purchase in terms of road health and other transportation programs (mix of fixes).

4th Meeting –

Date: Wednesday, November 7th

Time: 10am - noon

Location: Capitol Bldg. Rooms 402-403

Testifiers: Michigan Chamber of Commerce, MDOT, Business Leaders of Michigan, MITA, Anderson Economic Group, Operating Engineers, State Police, Rep. Olson

Topic: Costs of Not Meeting Maintenance Need, Benefits of Increased Investment

Provide background and estimates on the short and long term costs to the public and businesses due to poor infrastructure. Discuss the amount of asset value lost annually and the consequences of revenue shortfalls on road and highway assets.

Specifically:

- Asset value lost annually

- Cost of not performing maintenance work when appropriate due to lack of funding
- Future cost (increased revenue needed annually) if delaying raising annual revenue continues
- Some review of what different quality systems provide with respect to cost prevention in the future and benefits that could be realized with increased investment.
- Direct costs to consumers (residents) and businesses of the state (several reports exist)
- Indirect costs to residents and businesses of the state (several reports exist)
- Immediate and future benefits

5th Meeting –

Date: Tuesday, November 13th

Time: 10am - noon

Location: Capitol Bldg. Rooms 402-403

Testifiers: Bill Rustem (Governor's Office), Senator Walker & SMPO (bill package), MML, CRAM, Chamber

Topic: Funding Sources, Level of Funding Required, and the Net Effect of Both

Have discussion on the pros and cons of having a fossil-fuel tax, registration fees, moving to a sales tax, diverting the sales tax on gasoline, or any other fund-sources. Discuss what level of increased revenue is needed. Provide estimates of the financial and economic benefits and impact of increased funding and the savings for residents and businesses.

Specifically:

- Continuing to use fuel taxes and registration fees for acquiring transportation funds
- Using a sales tax for acquiring transportation funds rather than fuel taxes
- Diverting sales tax revenue on fuel purchases to acquire transportation funds
- Any other ideas for sources of transportation funds
- The effects of using different funding sources
- The levels of funding necessary or desired
- The effects on Michigan of those funding levels



COUNTY ROAD ASSOCIATION OF MICHIGAN

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To: Senate Transportation Infrastructure Task Force
From: John D. Niemela, Director
Date: October 2, 2012
Subject: Road Commission Administrative Reforms

In both 2011 and 2012, CRAM surveyed our membership on changes made to road commission operations in recent years. Sample administrative reforms from this survey are attached.

When asked what reform or efficiencies have been implemented to reduce administrative expenses, 70 county road agencies provided examples of health insurance reforms and 48 provided examples of pension reform.

At least 84% of county road agencies have implemented health insurance reforms and 58% have implemented pension reforms.

When asked if positions had been eliminated in recent years, 80 of 83 county road agencies replied that they have reduced staff levels; some by more than 50 percent.

At least 96% of county road agencies have reduced staffing levels.

County	Administrative Reforms Implemented in 2011 - January 2012 CRAM Survey
Alcona	We have a defined contribution plan, 457 plan, no defined benefit or retiree health care.
Alger	We have less full-time employees and more temporary workers
Allegan	We reduced the number of people in the office and offered a high deductible health care plan.
Alpena	We reduced retirement benefit for new hires, and have health care cost participation.
Antrim	We negotiated health care concessions with union and staff, and reduced our health care cost below the new law cap before it was passed.
Arenac	We have a cap on pension contributions and the union took over employee health insurance.
Baraga	We have changed health insurance plans several times, reducing premiums. We are also one of two counties to change to enhanced Microsoft Great Plains software system. We are in compliance with PA 152 of 2011.
Barry	We have zero OPEB liability and a defined contribution 401K.
Bay	We negotiated both the local union and administrative contracts last year. Each is paying a portion of their pension and has taken a healthcare plan that has higher deductibles and co-pays.
Benzie	Our wages have been frozen for 3 years. We require a 20 percent contribution to our health insurance from all employees.
Berrien	We recently experienced a reorganization of management which resulted in the elimination of two positions.
Branch	We continue to work with a reduced administrative staff, from 8 to 6 employees.
Calhoun	We require a cost share on insurance premiums and have not filled vacancies.
Cass	Our employees pay 20 percent of health care premiums. We have moved retiree health care to a yearly stipend, and eliminated early retirement option for employees hired after 2000.
Charlevoix	We are using part time office help rather than filling vacant positions.
Cheboygan	We have reduced administrative staff. When CCRC had a payroll clerk resign, we did not fill from outside but moved an internal position to fill the need, as well as the clerk picking up more duties.
Chippewa	We restructured the health insurance plan for administrative personnel, increasing costs passed on to the employees by 500 percent.
Clare	Clare CRC has capped insurance costs and employees pay anything above the cap. Employees pay 5 percent toward pension. The full-time workforce has been downsized, and we acquired the ability to use part-time employees with less restrictions. Contractors are being utilized more often. We have also installed a new high-efficiency lighting system, and made boiler upgrades for increased efficiency.
Clinton	We use electronic time keeping, have less administrative staff, and new hires have less post-retirement benefits (DC plans and and retiree health insurance).
Delta	Benefit levels are decreasing with partial employee contributions. We have also reduced retirement benefit levels for new hires.
Dickinson	We had to layoff one staff person, and hired a new manager-superintendent at a reduced salary. We have also reduced insurance levels for new administrative staff hires.
Eaton	We are using a Health Reimbursement Account in conjunction with a medical insurance plan with higher deductibles and co-pays to help control health care costs. Dental and prescription insurance have been separated from the BCBS health insurance and is shopped annually for cost savings. Retiree health insurance was separated from the active employees plans for an estimated savings of over \$360,000 over the next three years.

County	Administrative Reforms Implemented- 2011-12 CRAM Survey
Lapeer	Lapeer CRC has made changes in negotiated contracts: pay increase tied to increase in MTF with a cap percent; eliminated lifetime healthcare to retirees; and added a deductible to health insurance.
Leelanau	Our operations are bare bones now. We have a manager/superintendent; engineer, clerk, and deputy clerk. We eliminated the assistant manager position in 2007.
Lenawee	We reduced health insurance benefits in Feb 2011 contract negotiations with union and reorganized administrative positions to reduce staffing levels.
Livingston	We have changed to a B-1 for new employees and implemented caps on health care.
Luce	eliminated health insurance for retirees upon becoming medicare eligible. Using HRA for employee health insurance
Mackinac	We have implemented PA 152.
Macomb	For employees hired after 1/1/12: increased vesting period from 8 to 15 years; no spouse medical benefits after retirement; increased minimum retirement age from 50 to 55; and must be employed 20 years to get medical coverage upon retirement.
Manistee	All new hires are required to contribute 5 percent into MERS.
Marquette	Employees are contributing more to MERS; we are continuing to administer health care plan through high-deductible/co-pay plan with HRA in place to maintain negotiated benefit level.
Mason	Revised benefit packages to existing employees reducing benefits.
Mecosta	We have implemented significant changes with no wage increases since 2008; B2 retirement-MERS; have required cost share for health care since pre-1997; no dental or vision; and we have combined positions and not replaced office staff.
Menominee	MCRC changed health insurance plans several years ago. The current plan provides premium rates for up to four years in advance, this allows the CRC improved cost projections for the organization. In addition, the current health plan offers more cost efficient rates than our previous plan. A wage freeze was in effect for all employees in 2009 and 2010. In 2011, a lump sum payment was given to employees in lieu of any increase in wages.
Missaukee	We have had no wage increases and adjusted insurance programs.
Monroe	We have reduced the administrative and engineering staff by 13 employees saving more than \$1,000,000 annually. We negotiated cheaper health insurance including implementing a prescription drug advantage plan that saved more than \$200,000 annually both for the actives and retirees.
Muskegon	Since 1992, MCRC has had a defined contribution plan for our health, dental, life, and short term disability insurances. Employees are responsible for all costs in excess of our contribution.
Newaygo	We have implemented an HRA plan. This allowed us to continue to provide a good health insurance plan for our employees while saving money. All new hires effective 6-1-10 have a significantly reduced benefit level for pension and health insurance.
Oakland	RCOC has implemented many changes including sharing of staff: traffic safety shifts to maintenance for winter months and maintenance shifts to traffic safety for summer months (re-lamping program); construction has shifted inspectors around to assist other departments during winter months and when not working on construction projects during summer months. We have increased co-pays, and decreased retirement benefits.
Oceana	We now have Priority Health (HSA).

Reforms or Efficiencies Implemented to Reduce Administrative Expenses

Alcona: The Alcona CRC implemented several changes including: freezing salaries for the last two years and anticipated to continue for 2011; reducing travel expenses and increasing online training to reduce remote site training; and eliminating road commission participation in prescription drug co-pay for all employees.

Alger: The Alger CRC creatively managed health care benefits with third-party administrators to modify deductibles, while maintaining coverage. They have increased the number of temporary employees used for peak operations, while refraining from hiring full-time employees.

Allegan: The Allegan CRC reduced their engineering department from three to two people; more work will be done by consultants.

Alpena: The Alpena CRC's recent contract changes will reduce retirement and health care costs.

Antrim: The Antrim CRC made changes to healthcare, including using an HRA and increasing the co-pays to employees.

Arenac: The Arenac CRC capped pension costs and moved to Teamsters health insurance with fixed costs for a four-year contract.

Baraga: The Baraga CRC changed their health insurance plan several times to reduce premiums; and they are one of two counties that changed to enhanced Microsoft Great Plains Software System.

Barry: The Barry CRC has reduced staffing by 20 percent. Reforms were implemented many years ago to reduce/eliminate post-employment benefit costs.

Bay: The Bay CRC is currently in negotiations with both of their unions. Health care and pension cost-sharing are possibilities. The Road Commission also cut one engineering position from administration through attrition which provided a savings.

Benzie: The Benzie CRC's current contract calls for a three year pay freeze and 20 percent contribution towards health care premiums. They also use an HRA. New hires have a different benefit package than current employees. Effective July 1, 2011, any new employees are not eligible for post employment benefits. They reduced seven management positions to five; and in general, continue to reduce their workforce through attrition.

Berrien: The Berrien CRC closed two maintenance garages in three-years to reduce two foreman positions and the fixed costs of a garage. Berrien CRC has also replaced their dedicated weather service with internet-based reports.

Branch: The Branch CRC shares engineering staff with other road commissions, and information technology staff with county offices. They will likely increase the employee share of benefit costs in the next labor agreement renewal.

Genesee: The Genesee CRC has implemented a variety of changes including: increasing co-pays for employees; and maintaining both premium plans and self-insured plans to decrease costs.

Gladwin: The Gladwin CRC is doing more design work for federal/state aid projects and other locally funded projects in house using the manager and county highway engineer to reduce costs of hiring private consultants. Employee cost participation in health care has increased over the past number of years, and retiree healthcare was eliminated with the last contract negotiations. The elimination of retiree healthcare applies to employees hired after July, 2009.

Gogebic: The Gogebic CRC made several changes to reduce administration expenses including: health care and defined contribution changes with the union and administration working together on cost-reduction options; combining positions and duties – for retirement of administration employees; and cross-training administrative staff to efficiently handle more tasks.

Grand Traverse: The Grand Traverse CRC recently went to a high deductible medical plan and defined contribution pension plans. The number of administrative staff positions has decreased by over 20 percent in the last nine years and everyone left is doing more with less. Grand Traverse CRC recently terminated an engineering position and has created a seasonal snowplow driver/construction technician position. Co-pay reimbursements have been eliminated for administrative staff and union negotiations should yield more cost savings in terms of benefits.

Hillsdale: The Hillsdale CRC switched to high deductible health insurance using an HRA. Employees have also voluntarily agreed to bank winter overtime for time off in summer at 1.5 times. This choice is voluntary at the option of the individual for each day worked.

Huron: The Huron CRC implemented several changes to enhance administrative efficiency including:

- Providing no wage increases or benefit improvements through 2010;
- The County Highway Engineer also serves as the Deputy Drain Commissioner. As such, the Drain Commission shares facilities, administration and all clerical functions with the road commission;
- Huron CRC also manages the Huron County Memorial Airport and the Huron County Park System for the County of Huron. Obvious extensive savings in equipment, facilities and manpower are the result of this venture; and
- Huron CRC road budget is approximately \$14 million, park is over \$41 million, airport is approximately \$100,000, and the drain office budget is several million. All administrative functions for these four departments are handled by only four clerical people, the Finance Director, Park Superintendent, Road Commission Secretary-Manager and Engineer/Deputy Drain Commissioner. By consolidating these operations with the Road Commission, the associated expenses of four separate departments within the county are eliminated.

Ingham: The Ingham CRC froze wages in 2010 and 2011. They are negotiating to cap the employer's costs for health care and retirement. Fewer people are doing the same amount of work.

Luce: The Luce CRC eliminated health insurance for retirees after they become Medicare eligible. They are also using an HRA for employee health insurance.

Mackinac: The Mackinac CRC switched healthcare providers saving \$150,000 each year; and they continue to shop for best value benefits. They have also reduced the number of administrative staff from five to three and set a policy that all new hires including administrative positions get current bargaining unit benefits (defined contribution vs. defined benefit, also reduced medical).

Macomb: The Macomb County Roads Division changed their health care plan and modified the retirement age.

Manistee: The Manistee CRC changed health insurance and pension to require a match from all new hires.

Marquette: The Marquette CRC implemented health insurance reforms saving the Road Commission over \$325,000 per year over the last three years. Administrative employees are contributing more for their retirement benefits and this is currently being negotiated in the bargaining unit contract. Staffing levels have been reduced and they are using third-party administrators and an insurance agent.

Mason: The Mason CRC is using consultants more; and puts examples from other road commissions to use.

Mecosta: The Mecosta CRC's administrative pension and benefits are the same as the union. All employees pay a portion of their health care premiums. The Road Commission offers opt-out for those who have coverage through a spouse.

Menominee: The Menominee CRC changed health insurance plans several years ago. The current health insurance plan provides premium rates up to four years in advance which allows the CRC to improve cost projections. In addition, the current plan offers more cost-effective rates than the previous plan. A wage freeze was in effect for employees in 2009 and 2010.

Midland: The Midland CRC, like most road commissions, has reduced pension benefits, overtime activity, and health care benefits. They also provided no raises for 2011; reduced administrative staff from ten to eight employees over the last five years; and reduced benefits for new employees.

Missaukee: The Missaukee CRC has a defined contribution pension; has not provided raises; and has tried to be as creative as possible with their insurance (reimbursements, deductibles).

Monroe: The Monroe CRC has negotiated cheaper health insurance for retirees over age 65, and reduced the cost of health insurance for regular employees by receiving a greater share from employees.

lighting, reducing energy costs. The Road Commission also installed new furnaces that are more efficient.

Roscommon: The Roscommon CRC changed their health care provider, but still has 100 percent coverage through H.S.A.

Saginaw: From 2008-2010, the Saginaw CRC implemented a variety of cost-saving administrative reforms which yielded \$1,665,950 in annual savings including:

- The elimination of 6 management positions (2 IT Personnel, 1 Surveyor, 1 Construction Foreman, 1 Assistant Manager, 1 Assistant Engineer) and 5 union positions (1 Rodman, 3 Inspectors, 1 Stock Clerk) resulting in **annual net savings of \$968,000;**
- Modified health care plan without reducing benefits resulting in **anticipated savings of \$450,000 annually;**
- Reduced opt-out pay for health care by 50 percent for an **annual savings of \$16,800;**
- Eliminated 15 cell phones for an **annual savings of \$7,200;**
- Eliminated vehicles driven by four full-time and three part time employees for an **annual savings of \$136,000;**
- Reduced travel expenses by 42 percent for an **annual savings of \$11,000;**
- Reduced office supply expenses by 45 percent for an **annual savings of \$8,450;**
- Expanded Automatic Vehicle Location (AVL) system by including Mosquito Control and the City of Saginaw for an **annual savings of \$2,000;**
- In-house production of annual report for an **annual savings of \$6,000;**
- Substantially increased efforts in billing for property damage (signs, guardrail, road surfaces) which brought in **\$25,000 in 2010;** and
- The following minor changes saved an **accumulated \$15,000 annually:**
 - Eliminated P.O. Box and Delivery Service;
 - Reduced advertising costs by enhancing the website;
 - Eliminated the dedicated weather service (now done with internet);
 - Eliminated the music service for the phone system (now done in house);
 - Consolidation and changes within the IT department including changing phone service, eliminating lines, changing internet service, eliminating copiers and printers, changing modem service for GPS and Foreman wireless connection, and eliminating programming software.

Sanilac: The Sanilac CRC made changes to their employee and retiree health care plans. This has brought their 2010 total cost back down to 2005-2006 levels. They have also centralized equipment maintenance.

Schoolcraft: The Schoolcraft CRC implemented more efficient office procedures; utilize spreadsheets for better inventory control; and reduced staffing in the engineering department. Employee pay has been frozen since 2007. The Road Commission has changed health insurance carriers; and is currently undergoing an energy analysis for a district-wide heating co-op utilizing a bio-mass heating plant. They installed a waste-oil furnace and insulation at a satellite garage to reduce heating expenses.

Michigan DOT

Efficiencies and Innovations

MDOT continues to undertake numerous efforts to operate more efficiently and find every available dollar in its budget for transportation infrastructure. The Department is also undertaking innovative cost-saving measures to reduce operating costs, extend the life of projects, and maximize energy efficiency. The following tables provide a summary of recent efficiency and innovation efforts.

MDOT will continue to take relentless, positive action to maximize its resources by finding efficiencies and incorporating them into its business practices to support the MDOT mission: **"Providing the highest quality integrated transportation services for economic benefit and improved quality of life."**

Meeting Today's Challenges

**Better
Faster
Cheaper
Safer
Smarter**



**Michigan Department of Transportation
Efficiencies and Innovations**

EFFICIENCY	EST. SAVINGS PER YEAR
E-SIGN - MDOT's Chief Operations Officer, Bureau of Field Services, Transportation Service Centers, Design, and Aeronautics have used digital electronic signatures (e-sign) for construction documentation on more than 40 documents, saving up to three weeks of processing time per document and eliminating 7.4 million sheets of paper. Future savings will be significantly greater as more processes move to electronic signatures, and as other MDOT divisions and bureaus begin full implementation of e-sign. MDOT is only in the beginning stages of e-sign, and has already saved over \$2 million in the first six months with more savings anticipated the rest of the year.	\$4,000,000
RESTRUCTURE STF - MDOT restructured the State Trunkline Fund (STF) refunding bond deal to obtain a lower interest rate on debt; the new rate saved over 16% or \$9.4 million. The debt service savings was front loaded in FY 13 at \$2.8 million and just over \$810,000 debt service savings from FY14 through FY22.	\$2,600,000
ZILWAUKEE BRIDGE - MDOT is using new technology and products for Zilwaukee Bridge repairs which will result in significant cost savings. MDOT is using previously built beams, previously built scaffolding, and the thinnest bearings possible. These products allow the Department to complete the necessary repairs without making major modifications to the existing structure.	\$2,450,000
BICYCLE MAPS - MDOT has reduced the number of bicycle maps it produced from 96 county and city maps to 11 regional maps. The savings in printing costs alone have been approximately \$838,000. Savings have also been realized in reduced storage costs and decreased mailing expenses.	\$838,000
REST AREAS - The North Region has contracted the operations activities of six rest areas and two roadside parks. Private contractors perform services such as cleaning, mowing, and staffing on holiday weekends, which has reduced operating costs at those locations by two thirds. The contractors are also required to supply all the materials needed for the facility. Two more rest areas will be contracted out in spring 2013.	\$660,000
SALT PURCHASES - Bay Region developed a projection module spreadsheet that gives predictions of salt usage based on the current year's usage trend and on the five year usage average. This allows MDOT to keep the amount of salt purchases to a minimum.	\$470,000
ASSET MANAGEMENT CONTRACTS - The Asset Management Division reduced annual contract costs by using a qualifications-based low-bid vendor selection process for pavement surface data collection projects. This includes changing the scoping process to require a new sampling technique for surface condition assessments. MDOT is able to save money by reducing the sample size of pavement data collection to 30%.	\$380,000
MAINTENANCE STRATEGY - As part of a proactive maintenance strategy, Oakland County TSC has been performing heavy surface repair to minimize maintenance costs, minimize damage claims against the Department, and improve mobility. This strategy has resulted in considerable cost savings, 19 fewer damage claims, and 93 fewer closures since 2011.	\$327,000
CARPPOOL LOT PARTNERSHIP - MDOT continued its partnership with Meijer Corporation to add a 15 th store to the carpool lot agreement. The store, located in Wyoming Michigan, will provide parking for up to 50 commuters and save the Department approximately \$300,000 in construction and real estate costs. This partnership model has also been used in the Upper Peninsula; MDOT has agreements with four local businesses that provide parking capacity for commuters. Since 2008, this partnership has saved approximately \$4.5 million in real estate and construction costs.	\$300,000
ENTERPRISE ASSET MANAGEMENT - The Asset Management Division implemented the early stages of the Enterprise Asset Management program for non-pavement and non-bridge features. In addition to a lane mile inventory, this included loading over 135 asset classes to a central ArcGIS Server database that supports various business areas across the Department. By making this resource available via free software (ArcGIS Explorer), the Department was able to replace the fee-based Google Earth and Transportation Asset Mapping System (TRAMS) II programs.	\$250,000
STRINGLESS PAVING - Stringless paving is a new construction method that uses digital technology to accurately direct the paving equipment onsite, reducing the amount of preparation work and on-site surveying. By using this new technology, crews can more quickly and accurately establish the correct alignment and profile for the pavements. This new technology was tested in 2012 on a project in Bay County; it enabled MDOT to complete a two-year project in one year, with savings of \$210,000. This project also decreased user delay due to the expedited schedule.	\$210,000
BASCULE BRIDGES - The Bay Region contracted the operation and custodial services of two bascule bridges in Bay City. These bridges are M-13/M-84 (Lafayette Bridge) and M-25 (Veteran's Memorial Bridge), both are over the Saginaw River. The contractor will be required to operate these bridges as necessary and as required by law, and to provide custodial services at the bridges.	\$200,000

Michigan Department of Transportation
Efficiencies and Innovations

EFFICIENCY	EST. SAVINGS PER YEAR
WEED CONTROL - New weed control techniques are being used in the Grand Region area to inhibit the growth of roadside vegetation. This has reduced the amount of mowing by up to 50% in one growing season. There is potential for this technique to be used statewide.	\$192,000
IMPACT ATTENUATORS - The Oakland County TSC has been replacing damaged impact attenuators (impact cushions on fixed structures) with self-restoring reusable attenuators which have reduced repair and maintenance costs.	\$160,000
GUARDRAIL - The Oakland County TSC manages a contract with several private businesses to complete repairs of damaged guardrail. This work was previously conducted by the Road Commission of Oakland County. Since 2007 the private contracts have saved approximately \$600,000.	\$155,000
WOUNDED VETERANS PROGRAM - MDOT and FHWA recently joined forces to recruit and hire skilled wounded veterans for temporary positions - at no cost to the state. Qualified wounded veterans are hired for positions in MDOT that best use their skills and training, and FHWA pays their salary for up to 6 months. Currently, MDOT plans to employ as many as 10 wounded veterans at a potential savings to the department of \$150,000 over six months.	\$150,000
SNOWPLOW SPEED - Southwest Region snowplow trucks drive 25 mph, down from 35-45 mph. The slower speed is expected to reduce the amount of salt used by 30-40%, saving money and creating safer road conditions. This technique can also be applied to other Regions.	\$100,000
BRIDGE JOINTS - New tools and technologies are being used for the bridge joint installation process that has reduced costs by 40%, reduced construction time by 50%, and provides a better surface condition after construction. The savings are based on eight projects conducted in the Grand Region during the 2012 construction season. This technique could be applied statewide.	\$78,000
EMPLOYEE RESOURCES - The North Region shared employee resources between offices for a major project in West Branch which reduced the need for consultants, saving time and expenses. The project utilized incentive-disincentive and user delay provisions that reduced motorist delay and business impacts.	\$60,000
COORDINATED WORK - MDOT and other road agencies coordinate their work, when possible, so multiple agencies can work in an area that is already closed to traffic. This method eliminates the cost of closing an area more than necessary. Combining different types of work within a construction closure area saves time, money, and improves safety by reducing employee's exposure to traffic. Cost saving is estimated using projects from the Grand Region. This process could be applied statewide.	\$48,000
EPOKE SPREADER - A new machine for salt spreading, called an EPOKE spreader, is being used for winter maintenance on the Zilwaukee Bridge. This allows the crews to spread both the solid material and a non-corrosive liquid with a single truck, as opposed to the two vehicles that were required with previous operations. In addition to reducing the number of fleet units and drivers required for winter maintenance, it has shown approximately \$30,000 in material savings per year due to the efficiency of the spreader.	\$30,000
LED LIGHTING - The Oakland County TSC replaced 350 existing lights with LED luminaires along the median of I-696 between I-75 and Lasher Rd. As of the 2nd quarter of 2012 the new lights have reduce energy consumption and saved approximately \$28,000.	\$28,000
AUXILIARY POWER UNITS - Auxiliary power units, or batteries, were installed in two MDOT vehicles that provides a power source to operate laptops, printers, etc. This device cuts idle time on vehicles with high engine hours and low mileage, thereby reducing the amount of fuel that needs to be purchased. Two additional units will be purchased by the end of the year.	\$15,000
SPRAY EQUIPMENT - A one-time purchase of new spray equipment from an auction site saved money. This equipment has been shared between the regions.	\$10,000
AUTOMATED DATA COLLECTION - Several automated processes have been developed for entering Air-Carrier Airport data, Inter-city bus passenger data, and Amtrak data in the Intermodal Management database. These processes improve accuracy and reduce staff time dedicated to data entry, which is used to monitor travel trends for modes other than highways.	\$5,000
USER SAVINGS	
COORDINATED GOALS - Coordinated lane-closure standards, winter maintenance goals, and traffic incident management in Metro Region, Southwest Region, University Region, and Operation Field Services were developed which has decreased user-delay costs for travelers on I-94 from the Indiana border to Port Huron.	\$2,000,000
STRINGLESS PAVING - The stringless paving pilot project in the Bay Region reduced construction time in half, from two years to one year, and reduced motorists delay.	\$600,000
Total Efficiency Savings:	
\$16,316,000	

**Michigan Department of Transportation
Efficiencies and Innovations**

Listed below are efforts which produce cost savings for the Department or users that are difficult to quantify.
INNOVATIONS
CARBON FIBER - MDOT has used carbon fiber as a replacement for steel components in numerous bridges across the state. This technology will greatly expand the life of a bridge because the material is more resistant to corrosion than steel.
OVERDUE FINAL BILLINGS - The Metro Region established a goal to reduce the number of overdue final billings for projects between contractors and the Department by 50% before the end of the calendar year. The Region has already surpassed this goal and is working to continue to lower the number so contractors have a quick return of money they are owed and relief of their bonding debts.
ADOPT-A-WELCOME CENTER - The "Adopt-a-Welcome Center" program provides enhanced visitor service without increasing operational costs to MDOT. Tourism-related groups can adopt a welcome center and help staff the facility. Adoption activities include providing bags for visitors, maintaining flower beds, providing local expertise, and supplementing the current Welcome Center staffing levels. E-comment cards for Welcome Centers are being implemented which allows guests to provide feedback on our operations electronically, minimizing the need to print and store paper comment cards and reducing postage costs.
MI-COMMUTE WEBSITE - The MiCommute website became available to the public in spring of 2011 and provides tips and tools to help commuters find alternate ways to travel and save money in the process. The web site explores bicycling, public transportation, and other modes of travel that may help commuters save money on gas and vehicle repair costs.
REST AREAS - In the Grand Region energy efficient lighting was installed in five rest areas and automatic soap dispensers and faucets were installed in seven rest areas; reducing energy use, materials, and water waste.
SIGN FABRICATION - The use of Michigan State Industries (MSI), a division of the Department of Corrections, to fabricate signs in large volumes to aid in upgrades and new installations as in Emergency Routing Detours.
ENERGY SAVINGS - Set and follow general energy savings practices for building and employees such as programmable thermostats, limited use of lighting, closing overhead doors in cold weather, turning off computers; all of which have cut down considerably on electric and gas usage.
STAFFING - Reduced the permanent staff and seasonal employees at MDOT maintenance garages. The number of maintenance workers in the summer was reduced to match current funding availability, but retained seasonal positions to fully provide winter maintenance on the state highways.
STAFFING - Consolidated various technician classifications into one transportation technician classification to employ techs in the area of current need. For example, a tech could perform construction administration in the summer and design-related work in the winter.
PRECAST BRIDGES - Precast bridge elements were used for the first time on the M-115 Highways for Life project. This technology was used on the two bridges along this corridor. As a result of the use of the pre-cast elements the bridge reconstruction process was reduced by approximately 50%. In 2011, the M-25 Bridge over the White River in Huron County also made use of precast bridge elements. The time savings is estimated to be 2-3 weeks faster, with better time savings realized through more use and greater familiarity with the technology.
BRIDGE MAINTENANCE CREWS - Used an innovative staffing plan to employ six bridge maintenance crews between MDOT and several local road commissions. Joining forces allowed for three additional crews that were able to complete more preventative maintenance and minor bridge repairs, which will help reduce future costs by keeping bridges in better condition. By conducting more preventative maintenance now the Department will see a long-term benefit in lower repair costs in the future.

SENATE TASK FORCE
HEARING
OVERVIEW OF ASSET
MANAGEMENT &
EFFICIENCIES

October 2, 2012



Michigan Department of Transportation

MDOT

Asset Management & Efficiencies

Provide overview of MDOT's asset management approach and efficiencies

MDOT's actions taken to maximize return on investment

- How asset management influences proactive decision making and getting the most out of existing resources
- How MDOT has met today's challenges through efficiencies and innovations

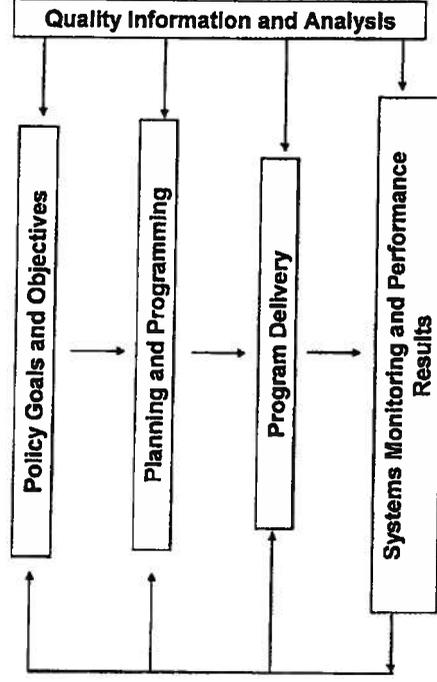
What Asset Management Means to MDOT

An ongoing process of maintaining, upgrading, and operating physical assets cost-effectively.

Five fundamental components of sound management:

1. Develop policy goals and objectives
2. Data collection
3. Planning and programming
4. Program delivery
5. Monitoring and reporting results

Asset Management Concept



What Asset Management Means to MIDOT

Pavement and bridge condition goals

Capital Program investment strategy

Tools for Projects program development
process

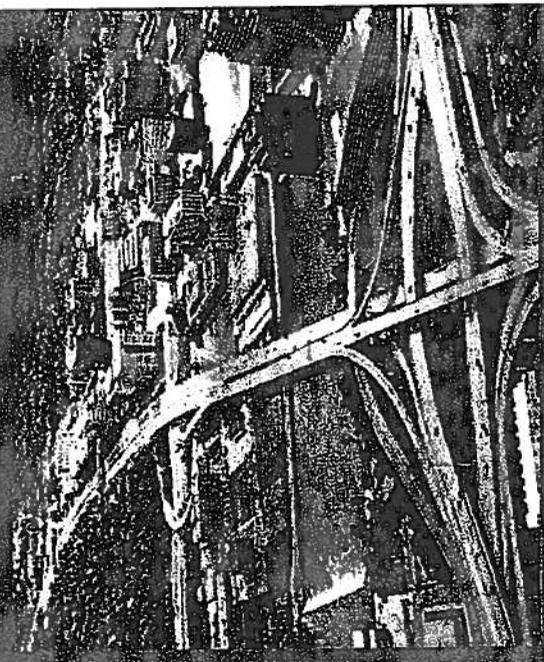
Fixes strategy (long-medium-short term)

- Condition forecasting
- Project prioritization and selection

Performance Measurement

- Achieved goals set in 1997

Five-Year Transportation Program



How MDOT Measures Pavement Condition

Visual Survey Measures - Surface Distress

Sufficiency - MDOT observed trunkline
pavement surface deterioration

PASER - used by TAMC to measure all
federal-aid routes



How MDOT Measures Pavement Condition

Pavement Health Measure - Structural Capacity

Remaining Service Life (RSL) - MDOT calculated
on trunkline routes based on pavement distress

Estimated time (in years) until major rehabilitation or
reconstruction would be more effective than preventive
maintenance

- Provides pavement health and benefit investment insight
more so than snapshot condition indicator
- Facilitates focus on the longer-term for planning purposes

Maximizing Investment

Asset management proactive decisions have a positive influence on MDOT program development and resources

Condition and traffic data drives fix strategy (long-term versus short-term fixes)

Historical data helps determine the appropriate fix

- Environmental data minimizes impacts and costs
- Forecasting tools help determine future needs and necessary budgets
- Detailed project scoping and estimating reduces future extras and overruns

Maximizing Investment

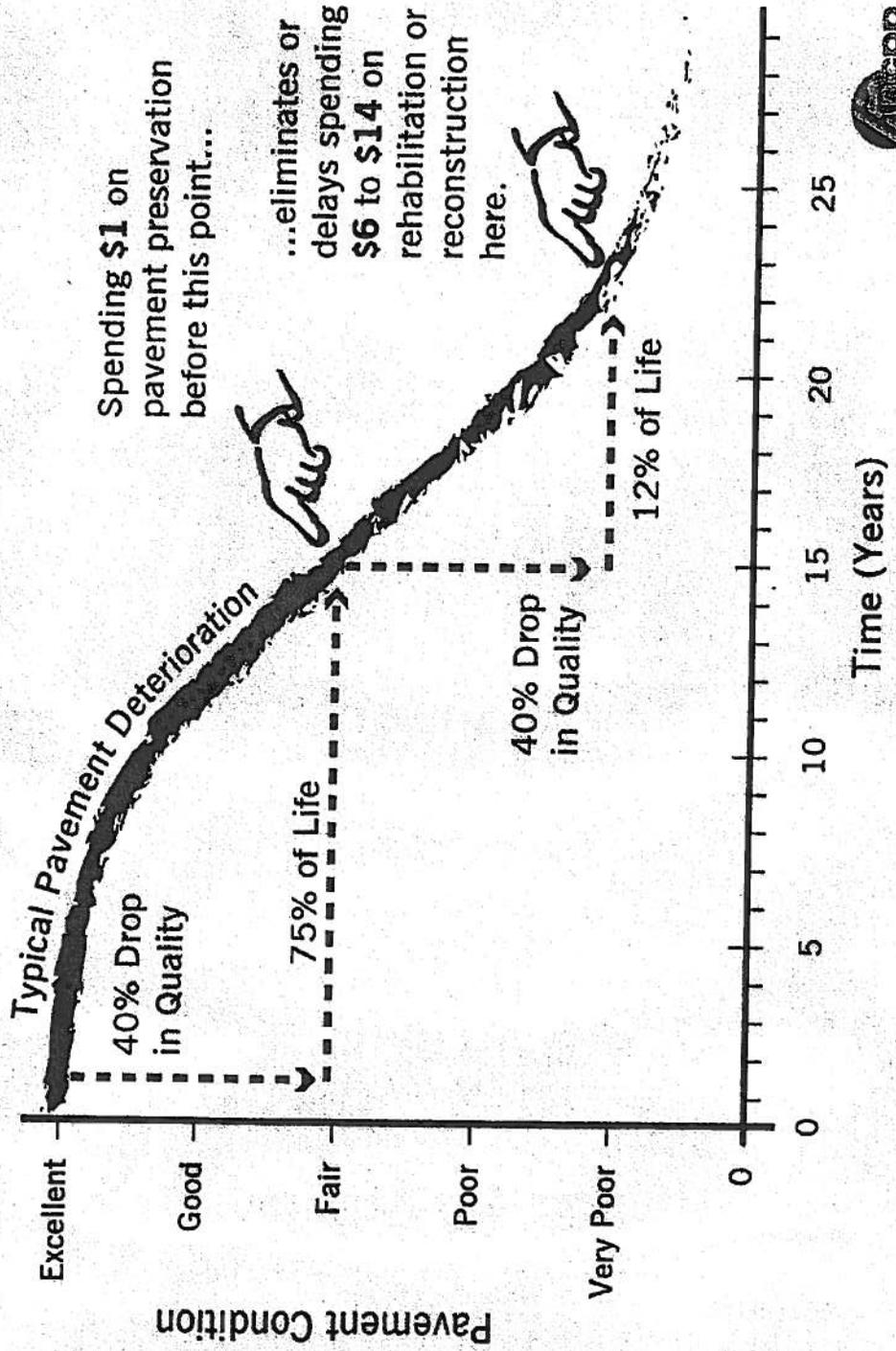
MDO's asset management approach emphasizes preventive maintenance

Capital Preventive Maintenance implements cost effective treatments that preserve the system, retard future deterioration, and maintain or improve functional condition

- ▣ It's more cost effective to keep a pavement in good or fair condition rather than repairing it when it becomes poor

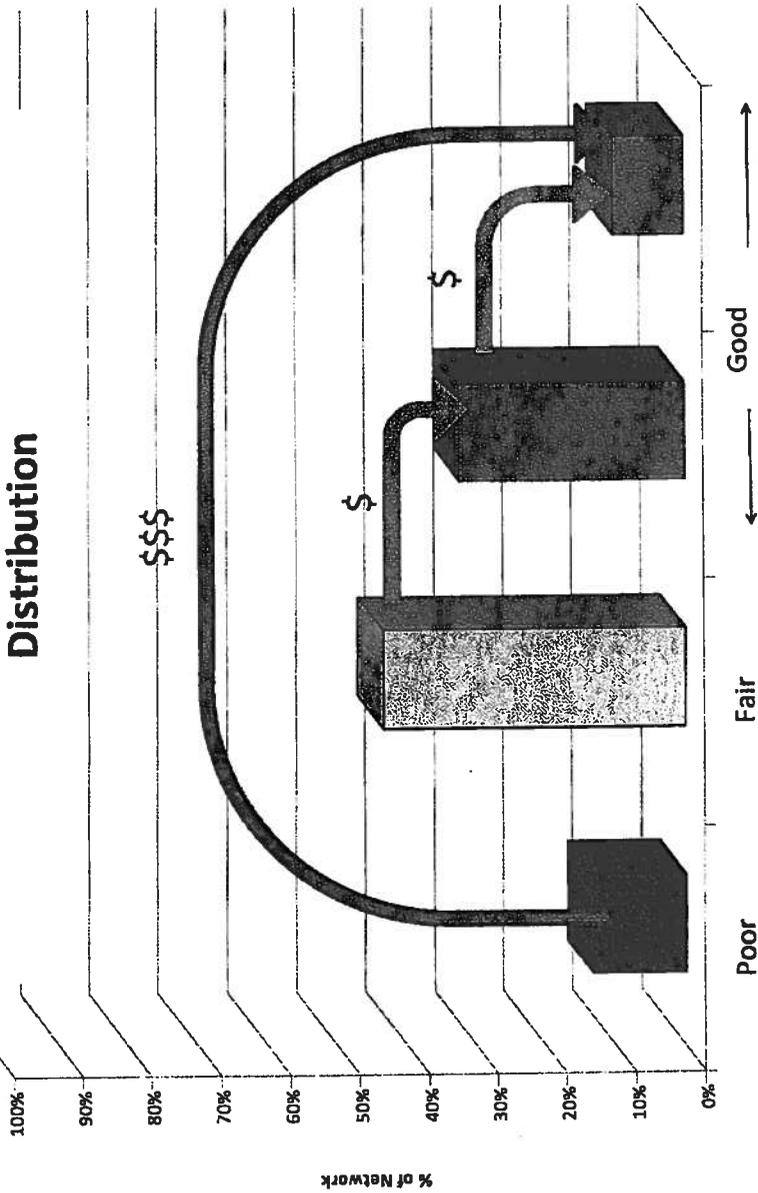
Maximizing Investment

PAVEMENT PRESERVATION IS COST EFFECTIVE



Maximizing Investment

Current MDOT Trunkline Pavement Condition Distribution

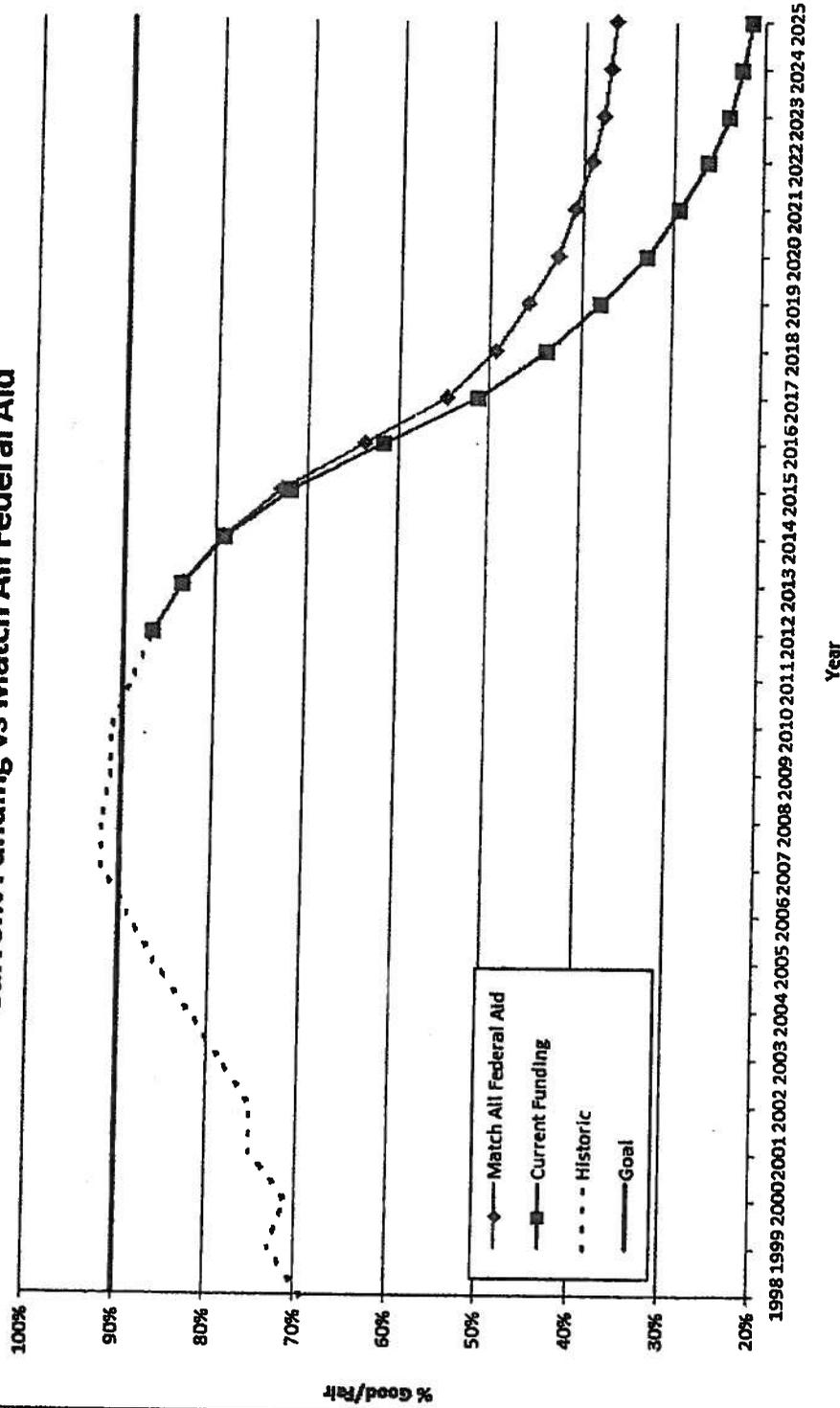


Need to invest now to keep pavements in good condition before they become poor and more expensive to repair.

We've Gone as Far as We Can

Quality Forecasting System (ROFS) predicts even
management we cannot maintain pavement condition

MDOT Historic and Projected RSL Pavment Condition Current Funding vs Match All Federal Aid



Efficiencies

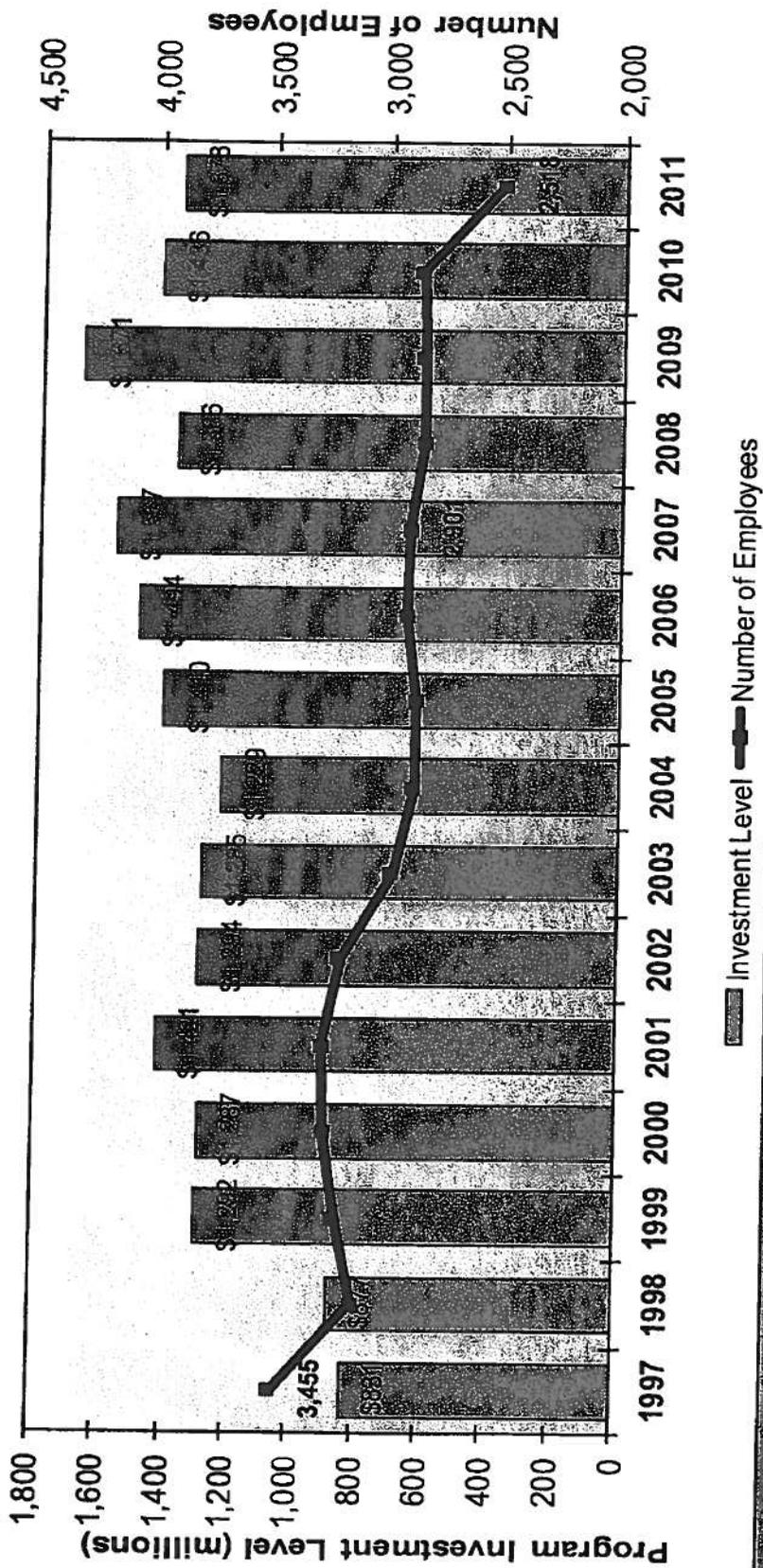
- ▣ Asset management
- ▣ Construction warranties
- ▣ Energy efficiency
- ▣ Innovative contracts
- ▣ Safety
- ▣ Innovative finance
- ▣ Performance measures
- ▣ Technology
- ▣ Partnerships



Better. Faster. Cheaper. Smarter. Safer

Fewer staff

Authorized Highway Capital Program Investment Level
vs. Number of Employees
(Including Routine Maintenance)



Reinventing MDOT Savings

Major reorganization saved \$55 Million in 2011

Closed 8 facilities, left 15% of positions vacant, refinanced bonds and other efficiencies/innovations.

New efficiencies & innovation saved an additional \$16 Million in 2012

- ▣ Administrative and operations efficiencies such as:
 - ▣ Estimation
 - ▣ Service contracts with private business
 - ▣ Improved winter maintenance practices



Innovations

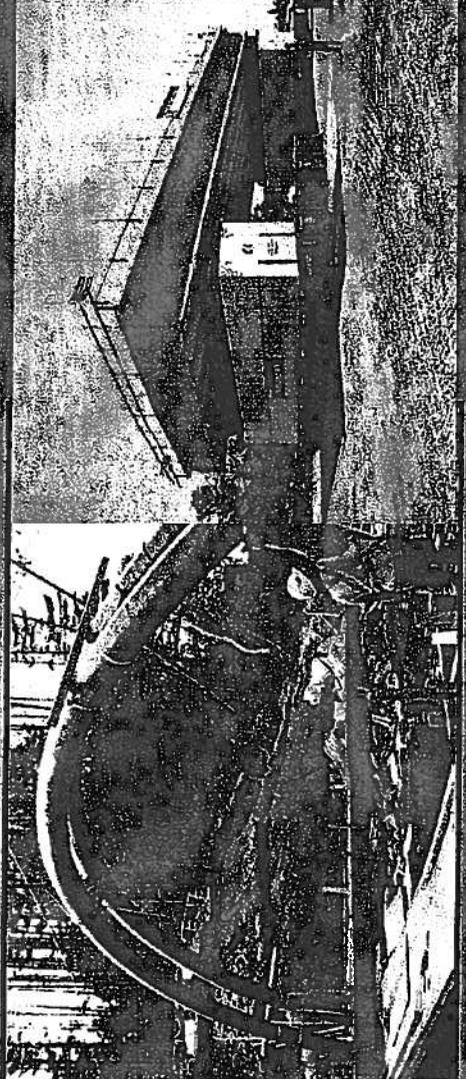
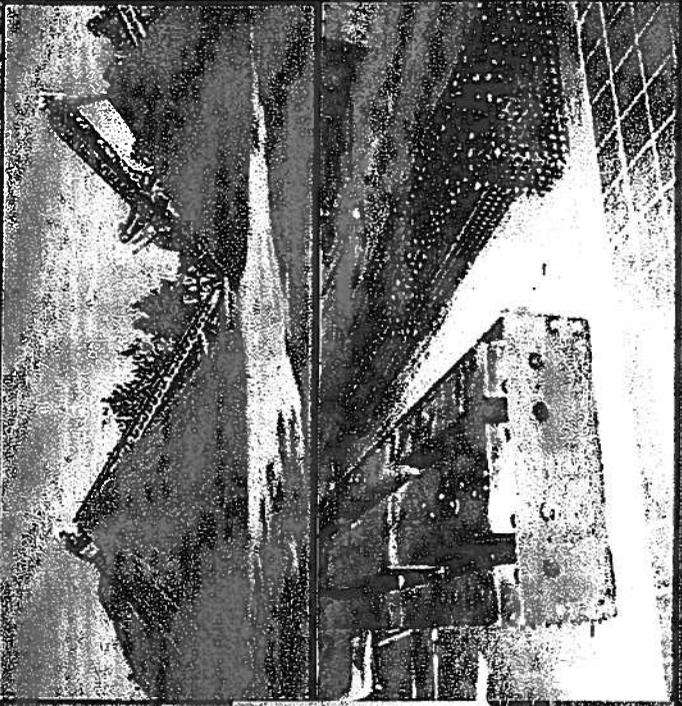
Warm mix asphalt

Carbon fiber

Recycled concrete, asphalt

Precast bridges

Bridge in a Backpack



Performance Measures

- Michigan Dashboard
- Infrastructure Dashboard
- MDOT's Scorecard
- MDOT System Measures
- Asset Management Council
- FHWA Stewardship Agreement

Aligning Measures is Critical to Efficiency

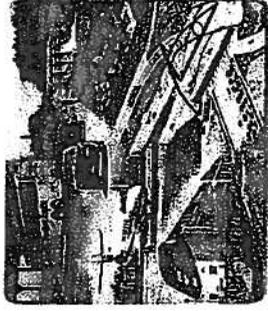
www.michigan.gov/midashboard
www.michigan.gov/mdot

Infrastructure Dashboard

Performance Key:

- Performance improving
- Performance staying about the same
- Performance declining

Click on the links in the table below for more detail



Economic Growth	Prior	Current	Progress
Commercial vehicle traffic, in billions of miles	5.64	5.74	▾
Road freight traffic, in millions of tons	66.8	52.7	▾
Percentage of households with broadband	N/A	67%	▾
Percentage of U.S. trading trade traffic through Michigan international borders	43.9%	45.7%	▾

Safety	Prior	Current	Progress
Individuals fatally or seriously injured in traffic accidents	7,382	6,917	▾
Work zone injuries and fatalities	118	128	▾
Monitored beaches with no closures or unsafe advisories	78%	86%	▾

Accountability	Prior	Current	Progress
Percentage of road construction projects completed	97.2%	99.6%	▾
- On time or ahead of schedule	72.7%	77.8%	▾
- Within 5% of budget or less			

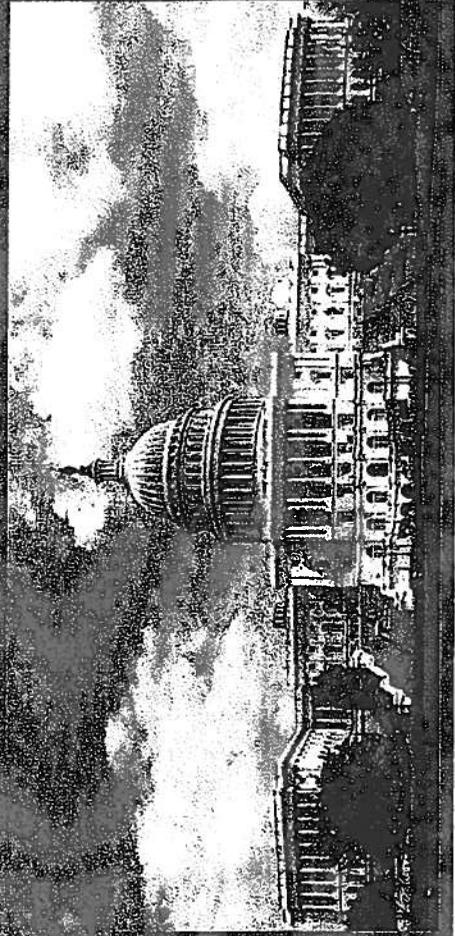
Reliability	Prior	Current	Progress
Percentage of traffic incidents cleared in less than 2 hours**	86.2%	85.8%	▾
Passenger air service in and out of Michigan in millions of passengers	35.4	33.9	▾
Percentage change in passenger rail ridership	-5.6%	-8.2%	▾
Percentage change in bus ridership	-6.0%	-3.65%	▾

Completions	Prior	Current	Progress
Percentage of structurally deficient bridges	13.5%	13.2%	▾
Percentage of roads in good or fair condition in the paved federal aid system	66.8%	63.2%	▾
Number of item failures	2	2	=
Road savings discharge in billions of dollars	5.38	7.29	▾

MAP 21

Moving Ahead for Progress in the 21st Century
Act of MAP-21

- No more money, but more flexibility
- Focus on performance measurement
- Asset Management
- Accelerated Project Delivery



Questions?

AVANT

“Providing the highest quality
integrated transportation services for economic
benefit and improved
quality of life.”

Asset Management & Achieving Efficiencies

Dennis G. Kolar, PE

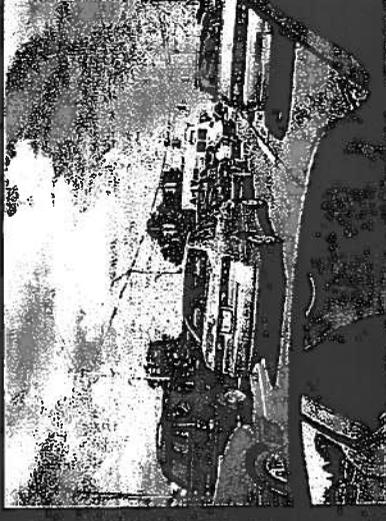
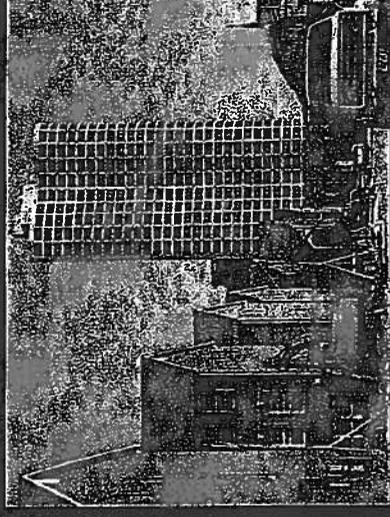
Managing Director

Road Commission for Oakland County



RCOC:

- ⇒ Largest county road system in state
 - 2,700-plus miles of roads
- ⇒ \$101 million budget (FY 2012)
- ⇒ Nearly 800 miles = still gravel
- ⇒ RCOC maintains:
 - 230 miles of state highways
 - 90% of all traffic signals (1,500)
 - 150,000+ road signs



Asset Management

- We strongly support this scientific approach to road project & treatment selection.
- We have done asset management since the early 1980s -- long before it was mandated.
- This data has long been used for project and treatment selection.
- The problem: We know what roads need what treatments -- we don't have the money to implement all of those treatments.

Efficiencies

■ Road funding has been inadequate for 50 years.

Per Capita State & Local Expenditures (Michigan's Rank in the Nation)

<u>Expenditures</u>	<u>1964</u>	<u>1974</u>	<u>1984</u>	<u>1988</u>	<u>1992</u>	<u>2009</u>
Health	5	8	9	3	12	13
Education	11	7	10	7	11	9
Welfare	31	5	3	8	17	32
Roads	43	44	42	44	49	44

Source: U.S. Census Bureau

■ We've been finding ways to cut costs & save money for so long, it's part of our DNA.

How we've cut costs & saved money:

- Privatization
- Benefit restructuring
- Technology
- Staff reductions
- Cross-training staff
- Reorganized departments
- Etc.

Privatization

- We continually evaluate operations:
Can we do more efficiently than private sector?
- Where there is a strong business case, we have privatized.

Activities Privatized

Fully Privatized:

- All road construction
- Curb Sweeping
- Pavement Marking (Legends & Striping)
- Large Tree Removal
- Simple Asphalt Resurfacing
- Shoulder Paving
- Concrete Repair
- Joint and Crack Sealing
- Slope Mowing on State Highways
- Bridge Inspection
- Guardrail Repair on State Highways
- Carpet Cleaning & Repair
- Vehicle Windshield Replacements
- Vehicle Body Work
- Oil Change -- Autos/Light-Duty Trucks

Partially Privatized

- Light Truck & Auto Repair
- Boulevard Mowing
- Bridge Repair
- Base Repair
- Engineering (Road & Bridge Design)
- Signal Design
- Signal Installation / Modernization
- Heavy Equipment & Truck Repair
- Soil and Material Testing
- Gravel Spreading
- Larger Road Maintenance Project (culvert replacements, dredging, etc.)
- Boom Inspections & Repairs
- Building Maintenance
- New Dump Truck Outfitting
- Building Janitorial Services
- Building Windows Repair/Replacement
- PM Service, Large Trucks
- Building HVAC and Plumbing Work
- Storm sewer clean-out
- Sign fabrication

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Benefit Restructuring

- RCOC Board dramatically restructured retiree benefits
- Established “hybrid” plan for non-represented employees – includes both pension & defined-contribution elements
- This provided far greater savings than eliminating pension plan & replacing with only defined-contribution plan.

Comparison of new & old RCOC retirement plans

Defined-benefit (pension) portion:

	<u>Old Plan</u>	<u>New Hybrid</u>
<u>Plan</u>		
Age/years eligibility:	55/25 or 60/8	62/10
Vesting:	8 years	10 years
Factor:	2.25%	1.5%
Employer Contribution:	Approx. 15%	Approx. 4%
Employee Contribution:	0%	6%

Defined-contribution portion:

- Employer match: Up to 1% of employee contribution
- Full vesting only after 4 years of service

Comparison: Defined Contribution vs. Hybrid

	Defined Contribution	Hybrid
Savings in 1 st year	None -- increased costs of \$1 million	\$121,000
Cumulative savings after 18 years	\$7 million	\$35 million
No. of years before generates savings	9	0

Other Benefit Changes

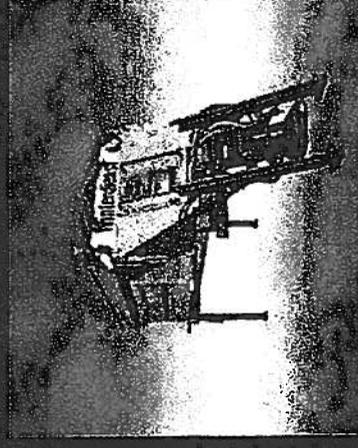
- Eliminated retiree health care for new hires.
- Replaced with health-care savings account.
- Means no retirement health care costs for agency for these employees.
- Have complied with PA 152 for non-rep employees.
- Even before PA 152, RCOC was moving in this direction -- employee health-care contributions had been increasing.
- Will enact for union employees as contracts expire.

Technology

- RCOC was one of the first local road agencies in US to introduce “adaptive” traffic signals – FAST-TRAC system.
- These detect traffic present in all directions and continually adjust signal timing to most efficiently handle that traffic.
- Proven to improve traffic flow and safety (independent studies)
- RCOC has second-largest system in U.S.

Other Technologies

- All RCOC snowplows/salt trucks equipped with Automated Vehicle Location system
- Managers in garage can look at computer map and see:
 - Where all trucks are
 - What they are doing
 - Air and pavement temps
 - Where they have been, when
- Our system was one of first and largest in nation.
- We're adding E-Poke high-tech units
 - Spread salt over 3 lanes – improving efficiency
 - Better able to mix liquid brine with salt as it leaves truck
 - Reduces salt usage – saves money



Other Technologies Continued

- RCOC is one of the only local agencies working with Federal Hwy Admin and auto companies on “Connected-Vehicle” technology.
- This allows cars to talk to each other and to the infrastructure.
- Will provide improved safety & mobility – A new paradigm: Prevent accidents from happening rather than seeking to reduce severity.
- Largest federal test bed is in Oakland County.
- FAST-TRAC collects data suitable for connected vehicle.

Other Technologies Continued

- High-tech tools used to enhance project design & efficiency
- Latest Autocad software used for project design
- High-tech survey equipment -- resulted in reducing survey crews from 3 people to 2

RCOC Staff Reductions

■ 2007: 556

■ 2012: 405

■ 1974: 548

■ 1962: 425

– 1962:

■ 1/2 the population

■ far fewer lane miles

■ 1/5 the VMT

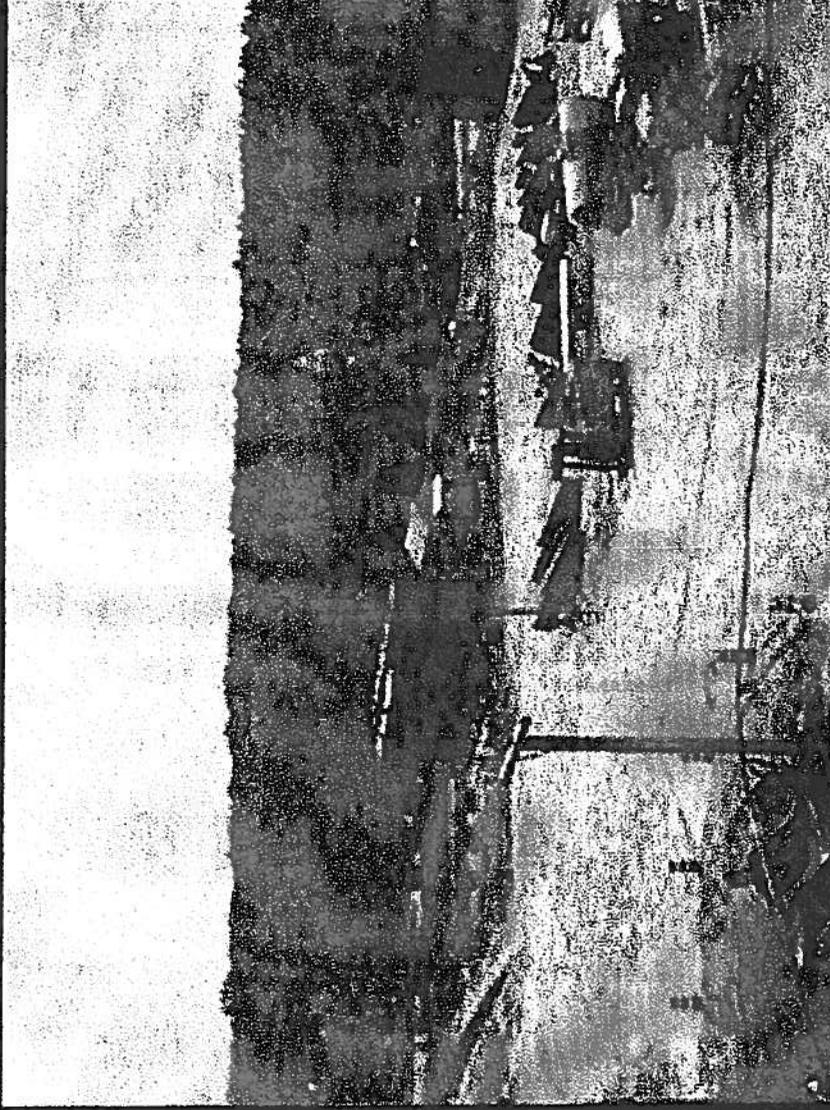
■ 1/3 the signs

■ 1/4 the traffic signals

■ Few freeways had been built

Other Innovations

- RCOC brine/chloride program



Other Innovations

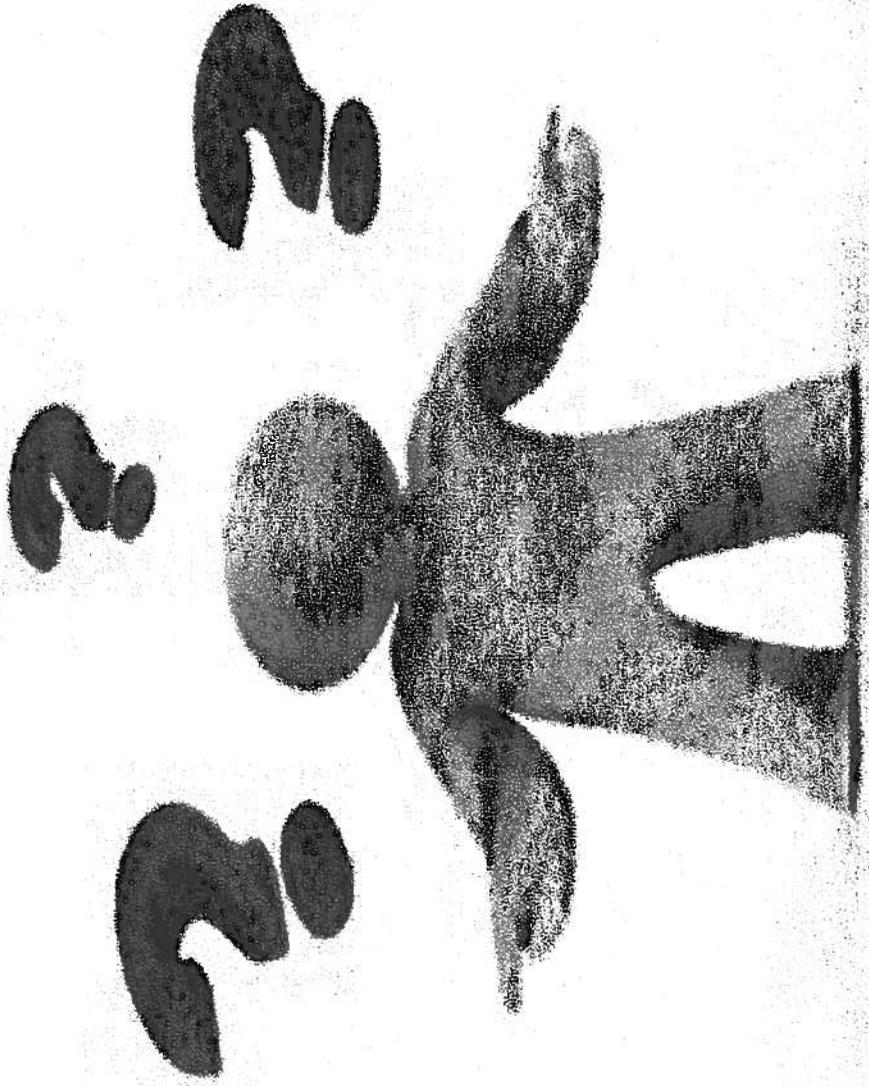
- RCOC brine/chloride program
- Highest concentration of roundabouts in state
- One of the earliest users of LEDs in signals:
 - 80% energy cost savings,
 - 10-year bulb life
- Using free RAP from contractors:
 - Saved \$750k over 3 years
- Latest project technologies/techniques
 - “White topping”
 - Warm-mix asphalt
 - Cold in-place recycling
 - “Bridge in a backpack”



Resource Sharing

- Winter & Summer Maintenance (communities doing some work)
- Maintaining traffic signals for most cities/villages
- Bid sharing
- Materials purchasing (sharing with CVTs)
- Sharing staff trainers (equipment and electrical) with CVTs
- Fuel
- Maintaining MDOT system for state

QUESTIONS?



The House Transportation Committee looked at numerous issues during the past 21 months. After meeting with Sen. Kahn, I have selected two categories from our overall strategic plan that should fit into the goals of this committee.

REFORMS & EFFICIENCIES ACCOMPLISHED

1. Authorized MDOT to conduct ACT 51 audits of local road agencies. (HB 5007)
2. Encouraged local road agencies to utilize "Asset Management" concepts in their 5 year plans. (HB 5302)
3. Made it easier to combine transit agencies for combined services. (HB 4366 & 4367)
4. If local agencies can provide 20% match, MDOT must cooperate. (HB 4739)
5. Require local road agencies to adopt best practices like schools and municipalities do. (HB 5302)
6. Allowed County Commissioners to dissolve County Road Commissions. (HB 5125 & 5126)
7. Eased wetland mitigation issues between road agencies and EPA & DEQ. (HB 4303)
8. Provided for county road agencies to not exceed design standards set forth by the American Association of State Highway & Transportation Officials unless the township agrees. (HB 4790)
9. Determine true need for additional road funding. (Rep. Olson & Rep. Schmidt sub-committee)

REFORMS STILL NEEDED

1. Unfunded retirement healthcare cost
 - a. \$1 to \$1 ratio in some road agencies.
2. Administrative cost
 - a. Is it 7.5% or 20%?
3. A new funding formula for transit.
4. Funding increase.
5. Pilot projects for new materials.

CONCLUSION

1. Condition of the state trunk system is in good to very good shape.
2. Condition of the local road system is in poor shape.
3. We need to come up with a funding mechanism for transit.
4. Control unfunded retirement healthcare issues.
5. Avoid authorities or corridor improvement authorities that can levy taxes or fees.
6. Determine administrative overhead which is 18-20% in many agencies.



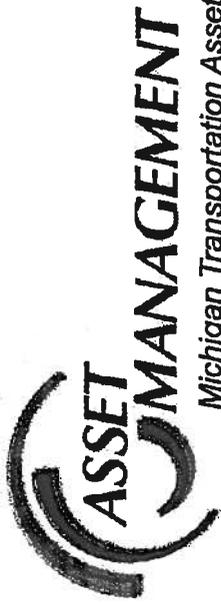
Michigan Transportation Asset Management Council

Senate Transportation Funding Task Force Meeting

Steve Warren, Deputy Director
Kent County Road Commission
Member

Michigan Transportation Asset Management Council

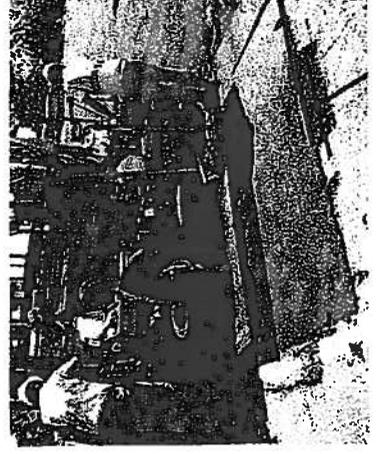
October 2, 2012



Michigan Transportation Asset Management Council

Overview of Asset Management

- ✓ What is Asset Management
- ✓ Use in Michigan & Other States
- ✓ Pavement Distress Rating
- ✓ What Roads to Fix & When
- ✓ Maximizing Return on Investment





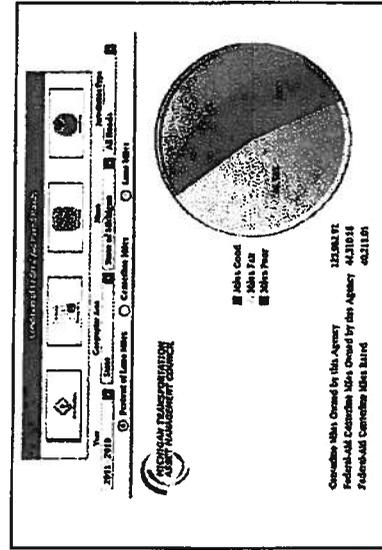
Michigan Transportation Asset Management Council

What is Asset Management?

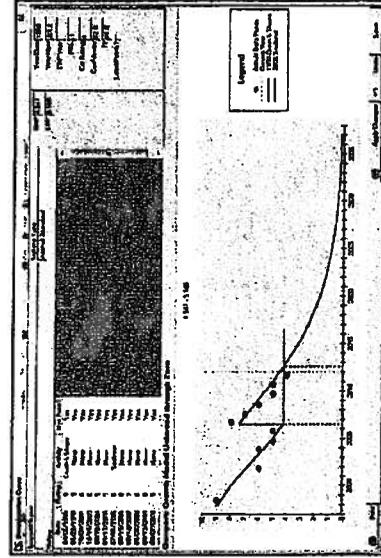
Asset Management: “An ongoing process of maintaining, upgrading and operating assets cost-effectively, based on a continuous, physical inventory and condition assessment.” [MCL 247.659(a)]

TAMC responsibility: “...advising the Commission on a statewide asset management strategy and the processes and necessary tools to implement such a strategy...” [MCL 247.659(2)]

Promote Best Practice in Pavement and Bridge Preservation



Data



Tools



Training



What is Asset Management?

Four Step Process

Monitoring & Reporting
(Road Condition Rating)



Goals & Objectives
(Long-Range Vision)



Plans & Programs
(Multi-Year Program)



Program Delivery
(Implementation)

TAMC Support

Surface condition rating: PASER

- MDOT, county, city/village, RPO
- Federal and non-federal aid roads

Analyze improvement scenarios

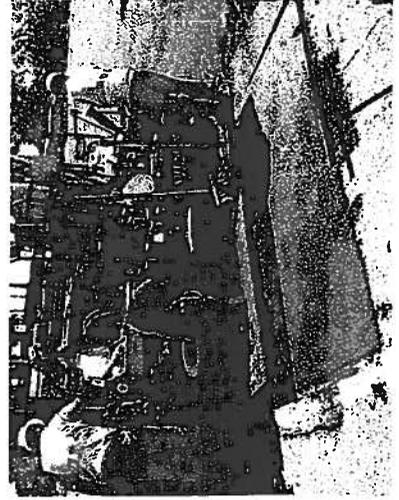
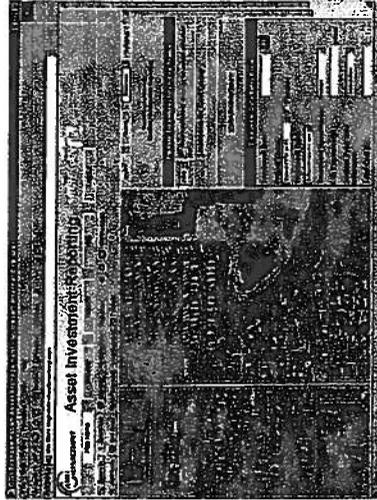
- RoadSoft Training
- Network and project level analysis

Three – Five Year Program

- Pavement Preservation Targets
- Major Rehab. and Reconstruction
- Report to TAMC (Act 51 Report)

Document project completion

- Completed improvements
- 3yrs planned projects
- Report to TAMC (Act 51 Report)





Michigan Transportation Asset Management Council

Michigan & Other States

2012	Participants	Agencies
County	1374	83
City	991	178
Village	157	72
Total	2522	333

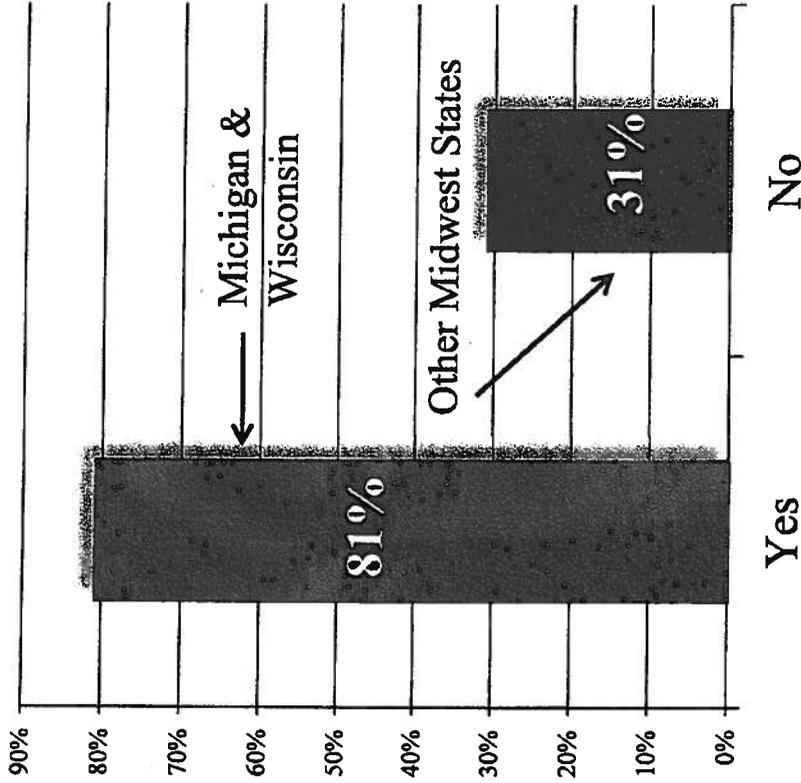
Townships 620 (including 526 elected)

Asset Management Implementation in

Michigan Local Agencies: Survey Results

- 76% of agencies have implemented asset management.
- 80% use a mix-of-fixes approach
- 83% are collecting more than minimum pavement condition rating
- 8% are not using PASER ratings
- 31% of agencies in other states are using asset management.

Source: Michigan Local Technical Assistance Program, Michigan Tech. University, 2012



Statewide Pavement Preservation Initiative

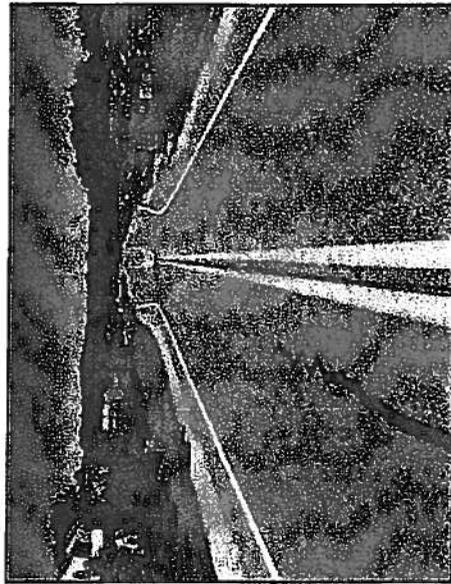
Source: Midwest Regional University Transportation Center University of Wisconsin, 2008



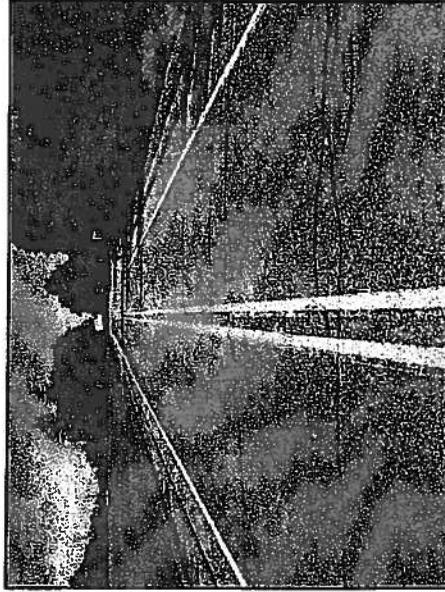
Michigan Transportation Asset Management Council

Pavement Distress Rating

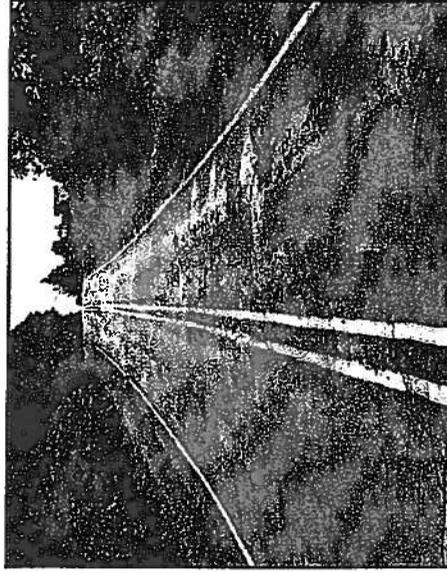
GOOD



FAIR



POOR



PASER = 10, 9, 8

Routine Maintenance

- Crackseal
- Minor Patching

PASER = 7, 6, 5

Preventive Maintenance

- Crackseal
- Patching
- Surface Treatment
- Concrete Joint Repair

PASER = 4, 3, 2, 1

Rehab/Reconstruct

- Resurface
- Structural Overlay
- Replace Concrete Slab
- Complete Reconstruct

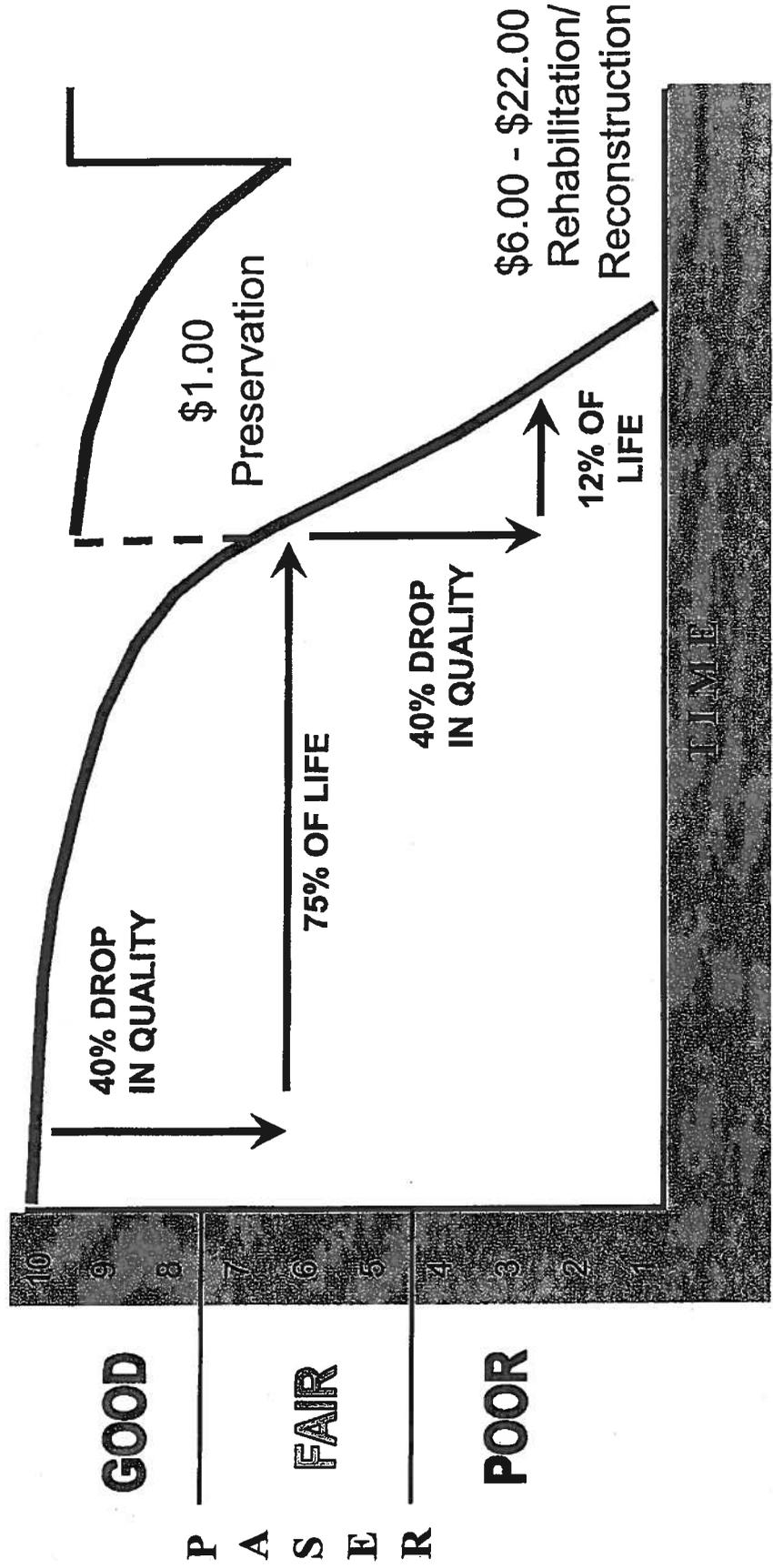


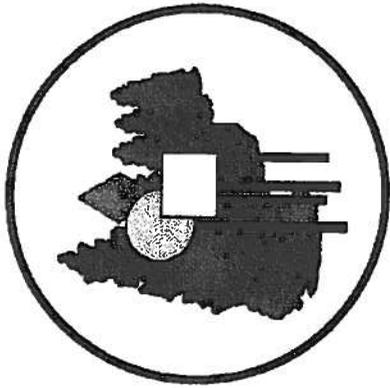
Michigan Transportation Asset Management Council

What Roads to Fix and When

Maintaining Roads in Good Condition

“Right Fix on the Right Road at the Right Time to Maximize Return on Investment”

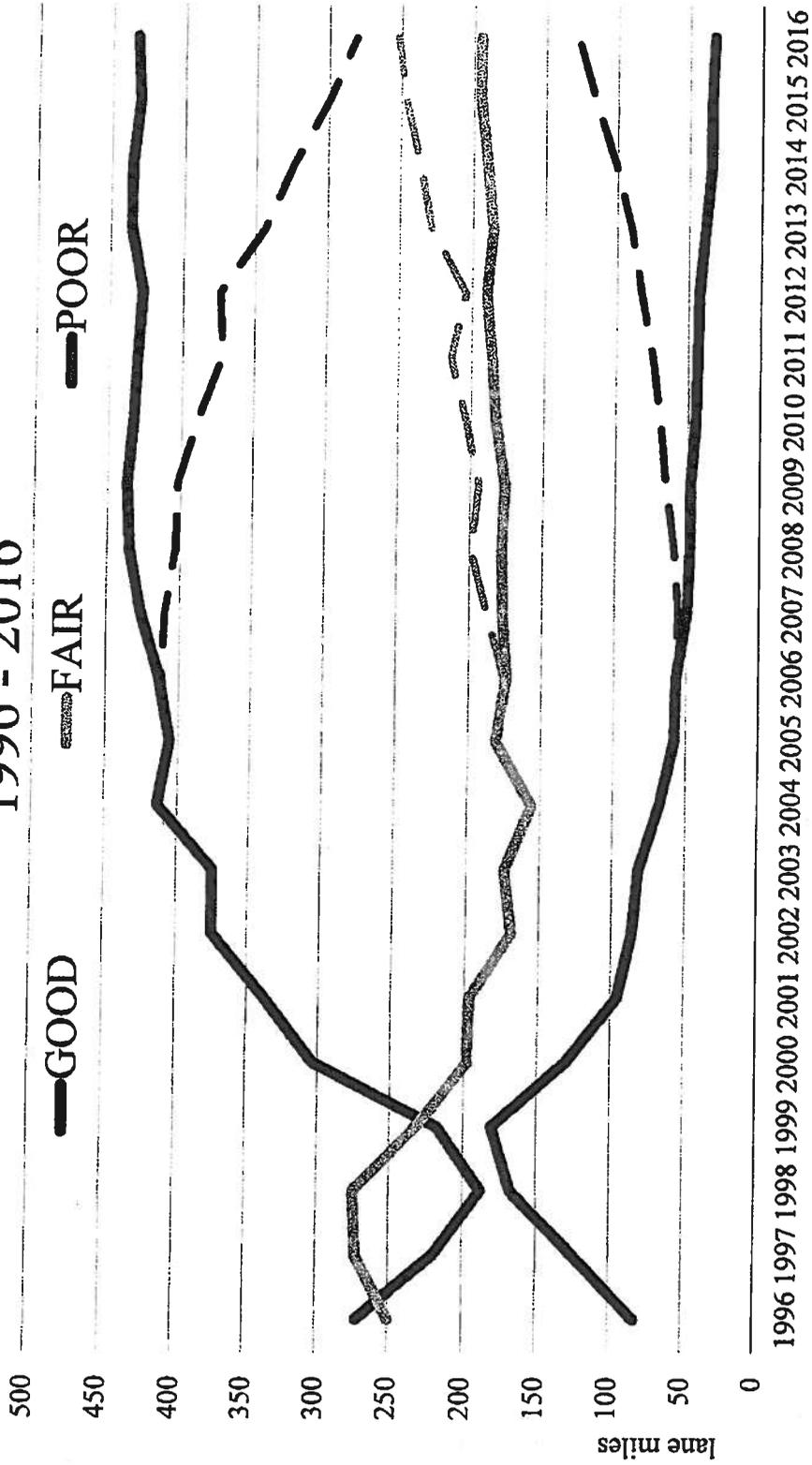




Kent County Road Commission Pavement Preservation Program

Primary Road Network Conditions

1996 - 2016

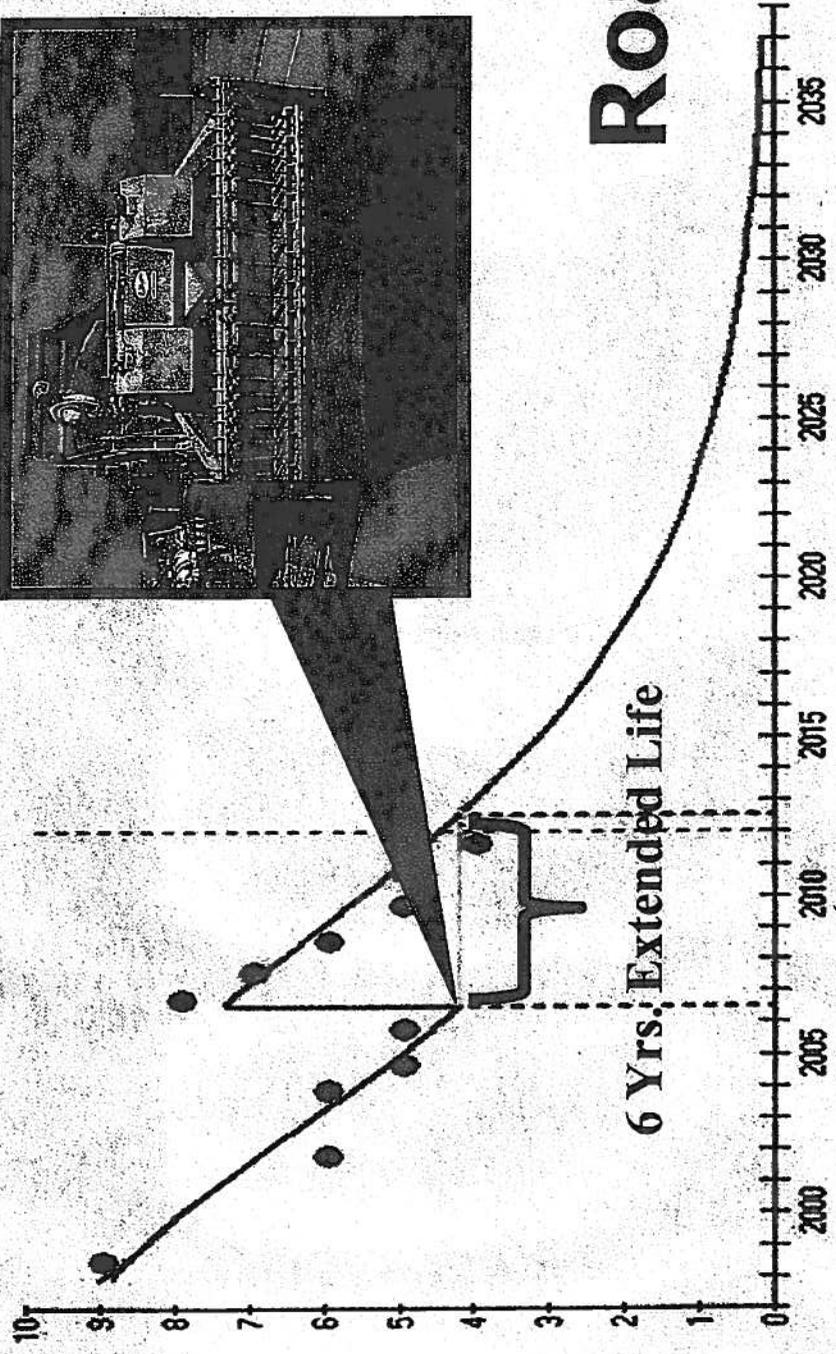
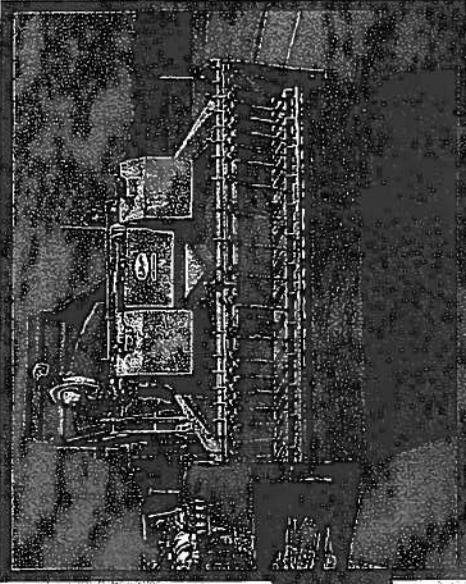




Maximizing Return on Investment

Gompertz Growth Model Unforced through Zero

4,547 · 5,180



6 Yrs. Extended Life

Roadsoft

Legend

- Actual Data Points
- - - Current Year
- 1998 Crush & Shape
- · · 2006 Sealcoat



Michigan Transportation Asset Management Council

Maximizing Return on Investment



Road Name	Year Applied	Extended Life (yrs.)
Alden Nash Ave SE	2004	5
Edgerton Ave NE	2005	10.5
Freeport Ave SE	2006	8.5
Knapp St NE	2006	9
Larsen Ave NE	2006	9
Northland Dr NE	2005	5.5
Old Belding Rd NE	2005	4
Pettis Ave NE	2004	6.5
Rooksby St NE	2007	8.5
Wabasis Ave NE	2006	3.5
Whitneyville Ave SE	2006	4.5
Whitneyville Rd SE	2003	4.5
3 Mile Rd NE	2006	9
10 Mile Rd NE	2006	6
17 Mile Rd NE	2003	7
68th St SE	2005	6
92nd St SE	2005	7.5
Average Years of Extended Life		6.7

Unit Cost / Avg. Extended Life
 =
 Cost per Year of Extended Life

Example:

\$26,000/lane mile / 6.7 years

=

\$3,880 / Yr. of Extended Life