SENATE TASK FORCE HEARING OVERVIEW OF ASSET MANAGEMENT & EFFICIENCIES

October 2, 2012

MDOT

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

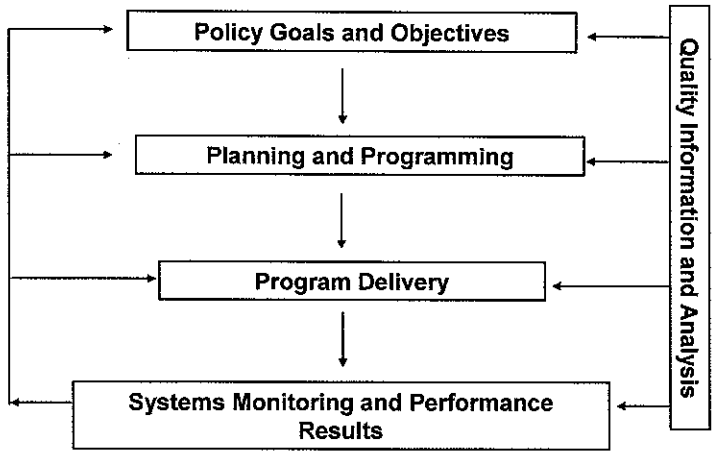
What Asset Management Means to MDOT

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 MDOT

- Pavement and bridge condition goals
- Capital Program investment strategy
- Call for Projects program development process
  - Mix of 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

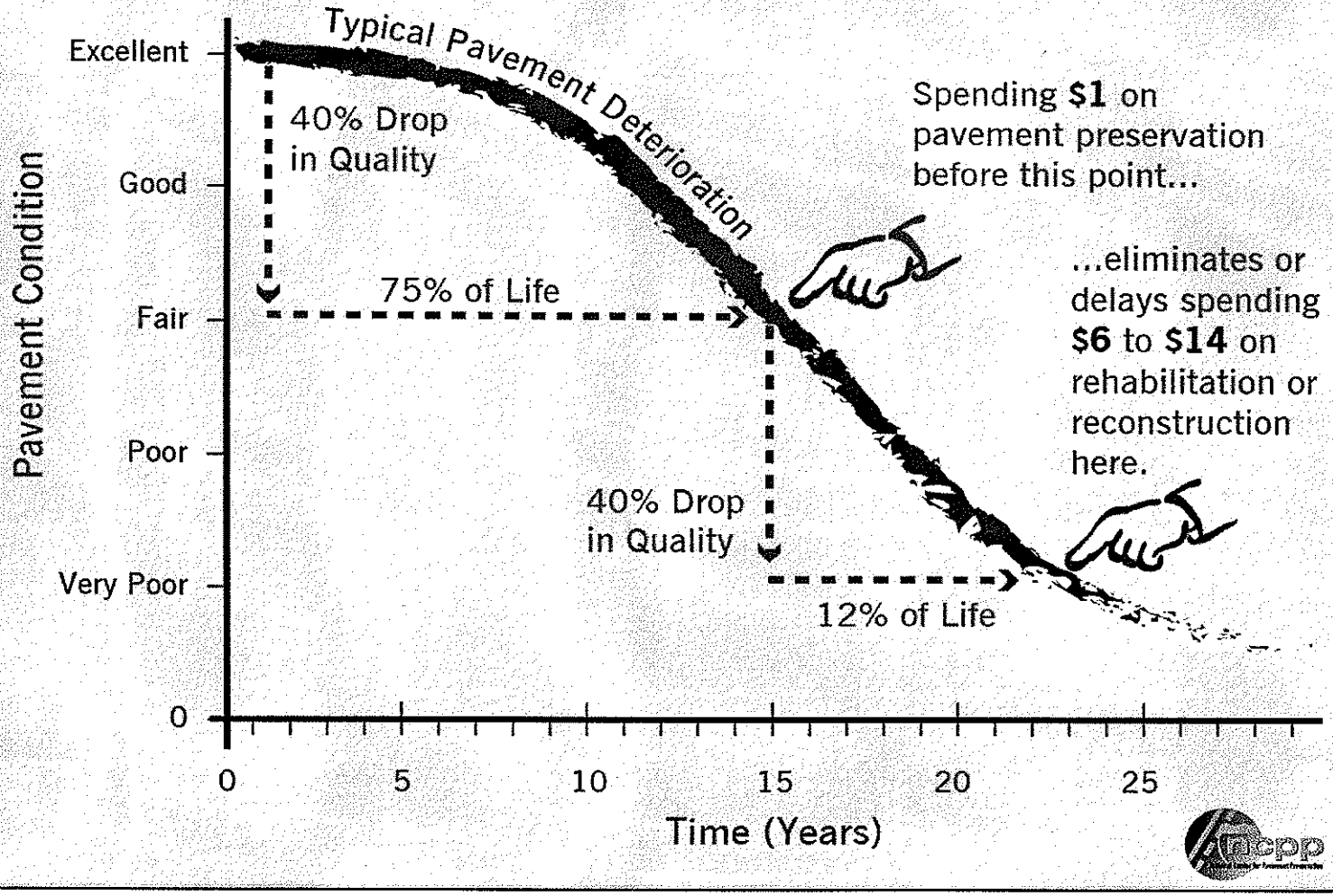
Maximizing Investment

- **MDOT'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

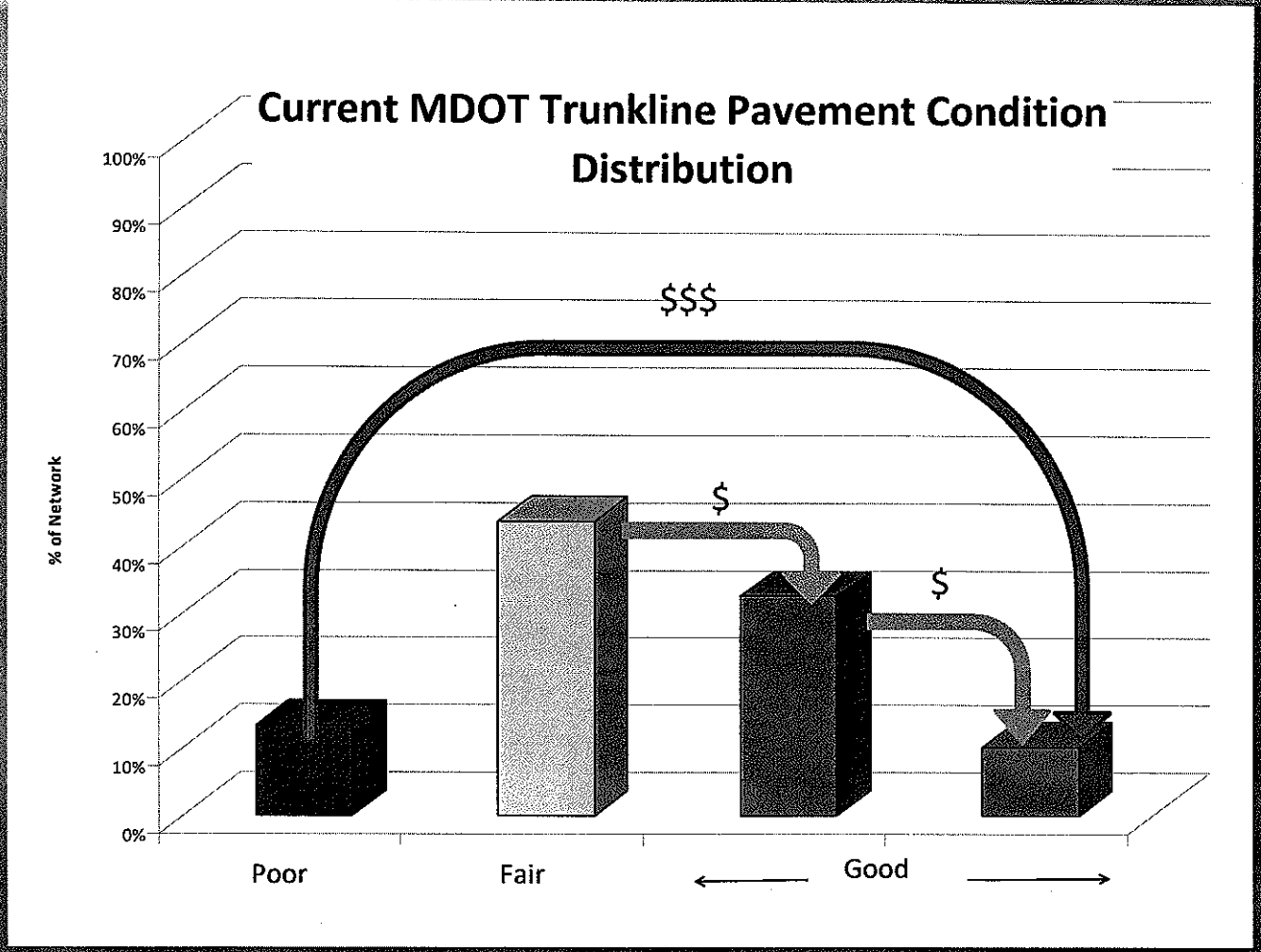
- **It's more cost effective to keep a pavement in good or fair condition rather than repairing it when it becomes poor**

Maximizing Investment

PAVEMENT PRESERVATION IS COST EFFECTIVE



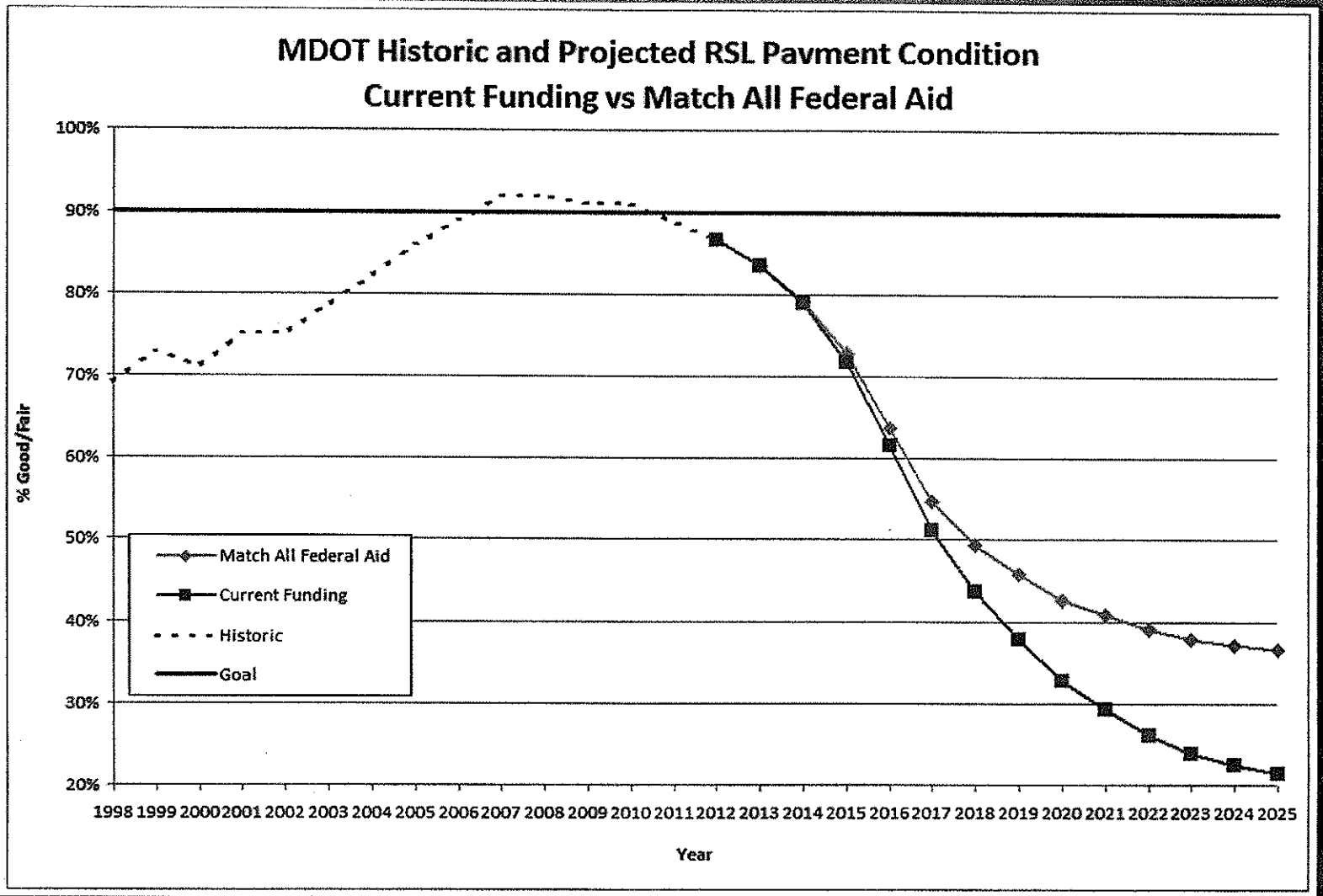
Maximizing Investment



- 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

MDOT's Road Quality Forecasting System (RQFS) predicts even with asset management we cannot maintain pavement condition



Efficiencies

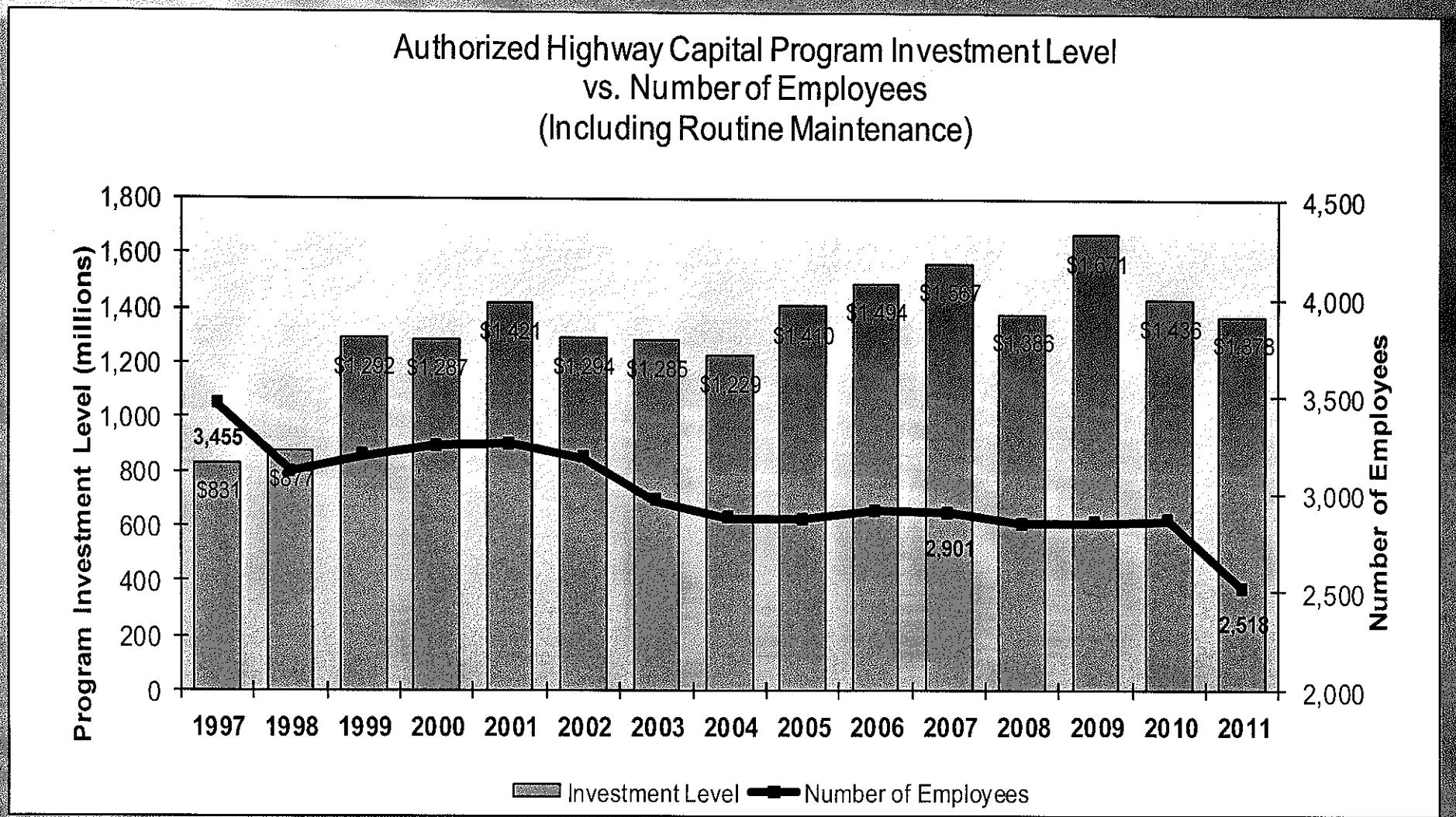
- Asset management
- Energy efficiency
- Safety
- Performance measures

- Construction warranties
- Innovative contracts
- Innovative finance
- Technology
- Partnerships

MDOT

Better. *Faster*. Cheaper. Smarter. Safer

Fewer staff

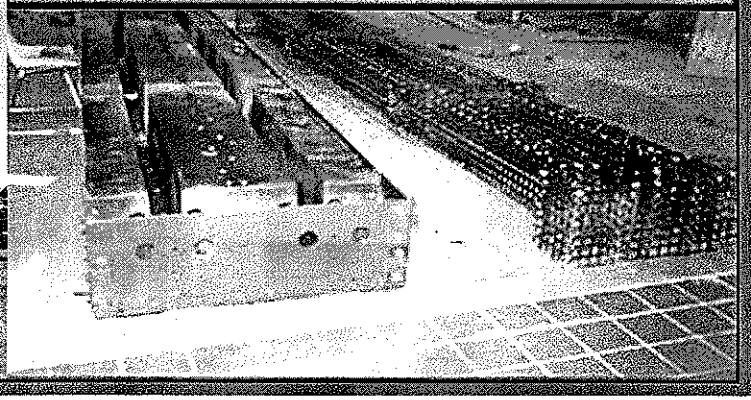

Authorized Highway Capital Program Investment Level
vs. Number of Employees
(Including Routine Maintenance)
Program Investment Level (millions)
Number of Employees
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
4,500
4,000
3,500
3,000
2,500
2,000
$831
$877
$1,292
$1,287
$1,421
$1,294
$1,285
$1,229
$1,410
$1,494
$1,567
$1,385
$1,671
$1,436
$1,378
3,455
2,901
2,518
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
Investment Level
Number of Employees

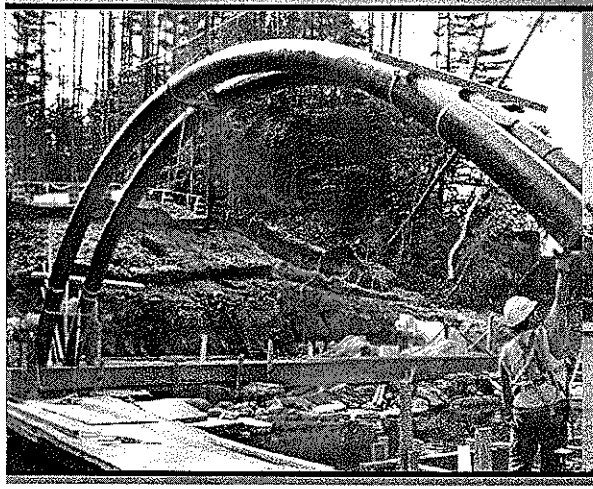
Reinventing MDOT Savings

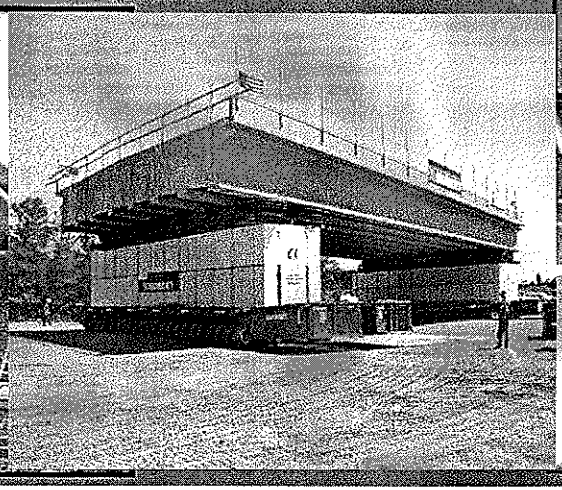
- Major reorganization saved $55 Million in 2011
  - Closed 8 facilities, left 15% of positions vacant, refinanced bonds and other efficiencies/innovations.
- New efficiencies & innovation saved an additional $16 Million in 2012
  - Administrative and operations efficiencies such as:
    - E-sign
    - Service contracts with private business
    - Improved winter maintenance practices

Innovations

- Warm mix asphalt
- Carbon fiber
- Recycled concrete, asphalt
- Pre-cast bridges
- Bridge in a Backpack



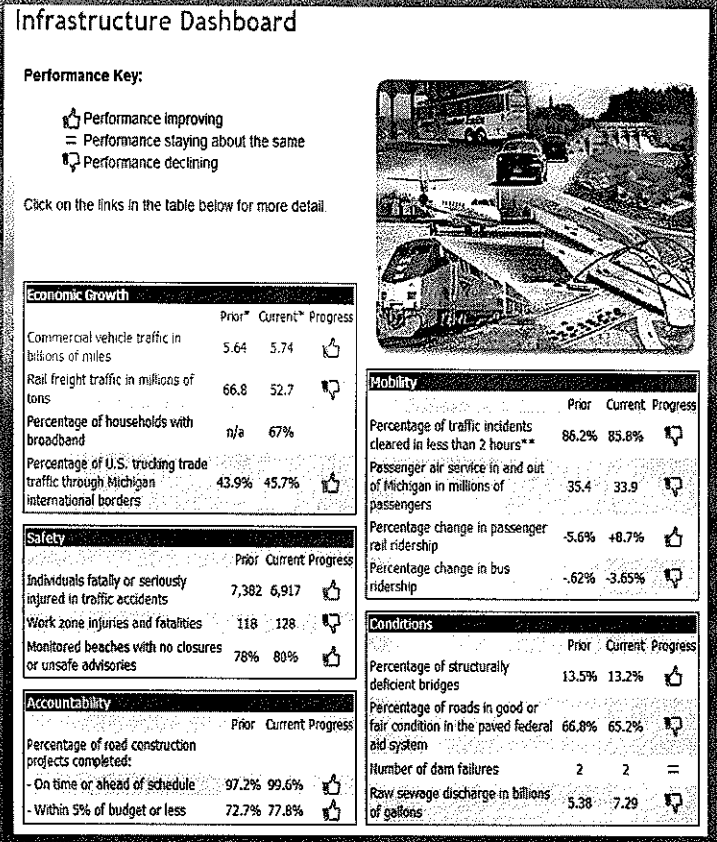




Performance Measures

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

Aligning Measures is Critical to Efficiency



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	
Rail freight traffic in millions of tons	66.8	52.7	
Percentage of households with broadband	n/a	67%	
Percentage of U.S. trucking 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%	80%	

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

Mobility	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%	+8.7%	
Percentage change in bus ridership	-.62%	-3.65%	

Conditions	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%	65.2%	
Number of dam failures	2	2	=
Raw sewage discharge in billions of gallons	5.38	7.29	

www.michigan.gov/midashboard

www.michigan.gov/mdot

MAP 21

- Moving Ahead for Progress in the 21st Century Act, or MAP-21
- No more money, but more flexibility
- Focus on performance measurement
- Asset Management
- Accelerated Project Delivery

Questions?

MDOT

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