A strategic approach to managing our infrastructure

Investing wisely

Data are “corporate assets”
Over 9,700 miles of road (27,000 lane miles) and 5,679 bridges
215 park-and-ride lots
2,400 trucks, maintenance vehicles, vans and cars
450,000 signs; 4,025 traffic lights; 8 million linear feet of guardrails
83 rest areas and 13 travel information centers
85 roadside parks and 27 scenic turnouts
41 picnic sites and 2,400 picnic tables
163 pumphouses; 188 water wells; 54 sewage disposal facilities and 64,000 catch basins
Nearly 2,000 miles of non-motorized facilities; 700 miles of rail lines; 4,500 miles of fences
1990s

- Passage of ISTEA
- Department management made a major commitment to changing our business processes
- Development of management systems and improvement of our technological capabilities
- Election of a Governor who stressed reorganization and operating more like a business
- Federal move from capital only to more flexible funding - preventive maintenance
MANY PARTNERSHIPS

- AASHTO Task Force on Asset Management
- FHWA - Office of Asset Management
- Other transportation agencies and providers
- Private Sector
Recommended all road agencies within the state should use asset management

Road and bridge data be contained in a common data base
MDOT’S CONSTRUCT

Policy goals and objectives
Information and data collection
Planning and programming
Program delivery
Monitoring and reporting
POLICY GOALS & OBJECTIVES

- Development of a strategic plan
- Managing for results
- Focus on performance
POLICY GOALS & OBJECTIVES

Michigan Transportation Policy Plan
State Long-Range Plan
Department’s Business Plan
Program Specific Strategies:
  Strategy for Repairing & Rebuilding Roads
  Freeway Modernization Strategy
  Corridor Management Strategy
  Access Management Strategy
  Interchange Strategy
  Border Crossing & Trade Corridor Strategy
  Highway/Railroad Grade Crossing Hazard Elimination Strategy
INFORMATION & DATA COLLECTION

- Maintain high-quality information that supports asset management
- Data viewed as a “corporate asset”
- Information automated, integrated and accessible to all parties
- Collect it once - Store it once - Use it over and over again!
Consider a range of alternatives in addressing problems and deficiencies.

Procedures and evaluation criteria are consistent and reinforce policy goals and objectives.

Decisions based on relative merit and an understanding of comparative costs and consequences.
Strategic rather than tactical
Decisions made with regard to the long-range condition of the entire system
Assessing improvements based on desired outcomes
Road Quality Forecasting System
Bridge Condition Forecasting System
MDOT PROCESS HIGHWAYS

- Strategic Analysis
- Ride Quality Forcecasting/Remaining Service Life
- Multi-year Strategy
- Call for Projects
- Candidate List of Projects
- Prioritization Process
- 5-Year Program
- Monitor Progress: PASER
PAVEMENT PRESERVATION

STRATEGIC OBJECTIVES

- Establish cost-effective, long- and short-range programs
- Maximize benefits to the motoring public
- Maximize pavement condition & minimize costs
- Manage pavement not road condition
Mix of Fixes
Varying Fix Lives
Short-term versus Long-term
Meet Condition Goals
BASIS FOR DECISIONS

Road Quality Forecasting System
Call for Projects
Five-Year Road & Bridge Program
ROAD QUALITY FORECASTING SYSTEM

- Strategy analysis tool to project results of pavement rehabilitation policies
- Remaining Service Life
- Collection of fixes that will extend the life of the road
- Analyze various pavement strategies and funding scenarios
CALL FOR PROJECTS

Heart of our asset management process
Project lists developed based on identified investment strategies
Fiscally-constrained
HIGHWAYS: MIX OF FIXES

- **CAPITAL PREVENTIVE MAINTENANCE**
  - Short-term fix: 10 years or less

- **PREHABILITATION**
  - Medium-term fix: 10-20 years

- **RECONSTRUCTION**
  - Long-term fix: 20 years or more
Structure-by-structure basis
Preservation strategies were reactive
Limited investment on “good” and “fair” structures
Maintenance was also reactive rather than preventative
Need for network modeling tool
- Modeling information
- Deterioration rates
- Historic cost data

Network impacts of work activities

Assess current business practices
BCFS PROVIDES NEW APPROACH

- Address all structures of critical concern
- Develop long-term network goals
- Emphasize preservation
- Proactively manage deterioration
- Develop comprehensive maintenance plan
- Commitment to allocate necessary resources
- Strengthen organizational commitment
BRIDGE PRESERVATION

- **Capital Scheduled Maintenance**: Regularly scheduled activities that maintain serviceability
- **Capital Preventive Maintenance**: Scheduled work activities that restore element integrity
- **Rehabilitation**: Programmed work activities that improve element integrity
- **Replacement**: Replace element(s)
BRIDGE CONDITION

<table>
<thead>
<tr>
<th>Freeway</th>
<th>Non-Freeway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>776</td>
</tr>
<tr>
<td>Fair</td>
<td>1753</td>
</tr>
<tr>
<td>Poor</td>
<td>669</td>
</tr>
</tbody>
</table>
5-YEAR ROAD & BRIDGE PROGRAM

- Identifies current investment strategies
- Specific list of road and bridge projects
- Rolling 5-year period
5-YEAR ROAD & BRIDGE PROGRAM
Percent Rated “GOOD”

**HIGHWAYS**
- 95% of trunk line freeways
- 85% of trunk line non-freeways

**BRIDGES**
- 95% of trunk line freeway bridges
- 85% of trunk line non-freeway bridges
**BENEFITS OF NEW STRATEGY**

- Systematic approach to network
- Proactively manages deterioration rates
- Commitment to do the right work at the right time
- Ability to meet established network goals
Management system is used to administer our public transportation program.

Utilized by all transit agencies.

Contains a complete data base of transit agency needs and bus inventories.

Submit annual applications by electronic means rather than paper reports.
Developed informal agreement with several counties and cities
Collect roadway condition data on the federal aid eligible system
Centralized database and sharing of resources
A way of strategically managing our system in a cost-effective, efficient manner.

It’s using data and technology in a proactive rather than reactive way.

It is a sensible way of conducting business.
PIT’S THE WAY WE DO BUSINESS