

Michigan Environmental Council survey of Michigan Department of Transportation programs for context sensitive solutions transportation reform

A context sensitive solutions (CSS) program would be a revolutionary step in Michigan's transportation planning. However, it would build on a long history of Michigan Department of Transportation (MDOT) programs and improvements. Policies currently in place can serve as starting points for developing a fully integrated CSS program. Among them are programs that focus on safety and balancing the flow of traffic (Access Management), programs that focus on historical features (Heritage Routes) and programs that focus on creative technological solutions for transportation problems (Intelligent Transportation Systems).

These programs indicate an ongoing focus on both the safety and the context of each roadway, as well as a call for increased coordination between local land use planners and MDOT. As separate programs, however, they cannot adequately address the widespread concern about community character, environmental quality, safety and mobility.

The MDOT programs described below include Access Management, Asset Management, Aesthetic Project Opportunities Inventory, Intelligent Transportation Systems, Noise Abatement, Heritage Routes, and Stormwater Management.

Access Management

CSS requires the ability to make coordinated decisions concerning safety, mobility and the flow of traffic on all major projects. MDOT has begun to address this concern by developing an Access Management program that provides access to commerce and business along state trunklines while working to preserve good traffic flow on surrounding road systems, with particular attention to issues such as safety, road condition and ride quality.

Essentially, Access Management is a process by which a transportation planner can limit conflict points, usually defined as entrance/exit points, by providing for the adequate spacing of commercial and residential driveways. As well as reducing the direct interference with through traffic, maintaining progression speeds along arterial roads and design safe an adequate on-site movement, access and parking. Access Management, if implemented in coordination with local land use requirements, should reduce the number of crashes and improve safety, reduce traffic congestion, preserve the flow of traffic, preserve the public investment in roads by managing the location, design and type of access to property and enhance the value of private land development.

Asset Management

A successful transportation programs relies on an on-going process for assessing, maintaining, upgrading, and operating its physical assets cost-effectively. This is based on a continuous physical inventory and condition assessment and provides a basis for proposing and planning new transportation projects.

In 2000, MDOT undertook the process of building just such an Asset Management program that would use an equitable research approach to collect data about all of Michigan's roadways and then store that data in a centralized database, to be used as the initial benchmark for a strategic statewide transportation plan. The program called for the department, each county road commission, and each city and village to annually prepare and publish a multi-year program, based on long-range plans, and developed through the use of the asset management process by October 2003. This encourages local road agencies to create long-range transportation plans, and allows them to focus on the environmental, social and economic needs of their roads.

Aesthetic Project Opportunities Inventory

MDOT's Aesthetic Project Opportunities Inventory lists approximately 2,000 opportunities for improving the visual quality of the environment along Michigan's trunklines. This equates to approximately 9,725 miles of federal highways, interstate, and state roads in the state's trunkline system. The inventory is a useful tool for communities, agencies, and others interested in improving the visual quality of the environment along their community or business trunkline.

Generally, the state approach is that aesthetic improvements would be undertaken in conjunction with already scheduled road repair or improvement projects. Other potential improvements, such as streetscapes or scenic easements, could be undertaken independently. Those interested are encouraged to explore funding options through the Transportation Enhancement Program, the Heritage Routes Program and the National Scenic Byway Program.

Although CSS is a comprehensive approach to transportation planning, one the most popular and easy to understand aspects is that of aesthetic improvement. This not only gives a community the opportunity to discuss the look and feel of their road but the landscape that surrounds it. Aesthetic improvements are generally the first steps taken in the CSS process because they represent an easy change and ease communities and transportation planners into the collaborative process.

Intelligent Transportation Systems

Intelligent Transportation Systems (ITS) is a nationally developed program that examines the integration of computer-based technologies into transportation planning and traffic management.

Advances in ITS electronics, telecommunications and information technology can now help provide a precise management system that takes traffic volume and travel patterns into account with the overall structure and maintenance level of roads.

In 1995, MDOT installed ITS infrastructure in southeast Michigan. Considered at the time to be the largest ITS deployment of its kind in the world, the project added instrumentation to more than 148 miles of freeways, bringing the total size of MDOT's ITS system in southeast Michigan to 180 miles. The expanded system included 156 closed circuit television cameras, 59 changeable message signs, 61 ramp meters, 2,260 inductive loops and 11 highway advisory radios.

This technological revolution could be an incredible boon to a comprehensive CSS program. Using technology that regulates traffic flow by volume and travel pattern could alleviate some of congestion that prompts calls for road expansion. The program has also brought a broader array of technology into the transportation design field, which could help involve the public in decision-making and integrate consideration of design features. Besides Metro Detroit, Grand Rapids is served by several miles of ITS equipment on US-131, operated for MDOT by the city of Grand Rapids Police Department.

Use of Intelligent Transportation Systems

According to MDOT, the state has active operational field tests of ITS, including:

- Advantage-75, for electronic pre-clearance for commercial vehicles on I-75 from Michigan to Florida and also Ontario, Canada;
- DIRECT (Driver Information Radio using Experimental Communications Technologies);
- U.S. Canada International Border Crossing at Ambassador Bridge, in Detroit for an integrated ITS application to clear commercial vehicles and passenger cars;
- FAST-TRAC in Oakland County, Michigan, using adaptive traffic signal system on arterial roads using SCATS (Sydney Coordinated Adaptive Traffic System) system from Australia; and
- Adaptive Cruise Control systems developed with the University of Michigan.

MDOT has been involved in several other ITS initiatives, including:

- ITS training and education seminars for MDOT staff to equip them with basic skills in use and interpretation of ITS technologies.
- Completing the ITS Pre-deployment Study to evaluate potential future expansion of the ITS infrastructure to the north, west and south of Metropolitan Detroit as well as in the Lansing area.
- Determining the impacts of ITS investments on tourism and trade in Michigan. The study was completed by the University of Michigan, Ann Arbor for MDOT.
- Evaluating ITS deployment in Detroit (under contract with Michigan State University).

MEC survey of MDOT programs for CSS transportation reform

- Evaluating temporary ITS application for reconstruction of I-496 in downtown Lansing, a first of its kind use of the newest tool for calculating benefits of ITS.
- Initiating ITS test-bed projects, to offer an unprecedented opportunity to the private industry to test their products, services and concepts in partnership with MDOT to enhance economic development and create high tech jobs in Michigan.
- Exploring the feasibility of 511 in Michigan. MDOT was awarded a national grant to study the implementation of the three-digit national telephone number, 511, for traveler information.
- Partaking in a Traffic Management Centers Pooled Fund Study. MDOT is participating with several other states to stay ahead of the curve in developing technologies for planning, development and operation of traffic management centers in the nation.
- Developing ITS regional architecture. MDOT, in cooperation with the Federal Highway Administration, has been taking the lead role in development of the Regional ITS Architectures that will provide a framework for ITS implementation in the future. These Regional Architectures, required for eligibility for federal funds, have been completed in Southeast Michigan, Grand Rapids, Lansing, and Genesee County.
- Integrating ITS into the MDOT transportation planning process. Steps are being taken regarding the integration of ITS into the mainstream planning process of MDOT. For example, ITS is an option for submission of projects in response to the department's annual call for projects, a major step in the direction of integration. This effort puts MDOT among the leaders in the nation.
- Implementing ITS applications at the U.S. -Canada international border crossings. MDOT is taking a lead role in preparing an implementation plan for expediting traffic flow across the border at the Ambassador (Detroit) and Bluewater (Port Huron) bridges and the Detroit-Windsor Tunnel, using ITS technologies.

Noise Abatement Program

A major concern for communities on or near state trunklines is excessive noise. To that end MDOT has created a Noise Abatement Program, which will serve as a resource for Local Governing Authorities and community residents seeking information regarding the reduction of motor vehicle noise.

MDOT's Noise Abatement Program includes Noise Walls, Local Vehicle Noise Enforcement, and Land-Use information to help manage future quality-of-life. The four goals of the program are 1) reduction of noise at the source, 2) noise abatement by MDOT, 3) encouraging compatible adjacent land use, and 4) noise abatement by the local governing body or developer.

The policy is written to insure local governments or authorities provide 10 percent of the total cost for noise abatement. Also, local authorities are required to apply annually for a specific site and provide data on that site. This information can help MDOT coordinate with local governments in terms of compatible land use and addressing concerns of the residents of the community.

Heritage Routes Program

Created by the Public Act 69 of 1993, the Michigan Heritage Routes Program is designed to identify, inventory, protect, enhance, and in some cases, promote state trunklines and adjacent land with distinctive or unique scenic, cultural or historic qualities. In so doing, the program emphasizes grassroots cooperation among local residents, their government officials, landowners and interested groups to ensure that their highway and its roadsides remain in their natural and unspoiled conditions.

The program operates through a nomination process that includes highlighting the routes of historical, scenic and cultural significance, and promotes greater awareness for the natural resources that surround a roadway. This process is beneficial from a land use standpoint because it provides a great opportunity for and a great example of investing in and designing growth management plans around existing infrastructure.

A driving theme behind CSS is taking pride in the way that transportation systems, including its roadways, can be designed and delivered in a way that is beneficial and intertwined with community assets. In Michigan, many roadways are a source of pride. MDOT's Heritage Routes Program is the first step towards cataloging those state trunklines in terms of their scenic, historical and recreational attributes.

Michigan's scenic, historic and recreation heritage routes are identified below.

Scenic Heritage Routes

M-119. In June 2003, nearly 70 years after its inspiration, M-119 along the Lake Michigan shore was designated a scenic Heritage Route. This route, also known as the "Tunnel of Trees," is a 13-mile stretch of M-119 traveling through Friendship, Readmond and Cross Village townships. The area abounds in natural beauty and history. M-119 is not a road for those in a hurry. Cross Village, located at the northernmost point of the route, is a charming hamlet overlooking Lake Michigan. South of Cross Village, the road meanders along the shoreline toward Harbor Springs, offering the traveler spectacular views of the lake and the

Beaver Island archipelago. Considered by many to be one of the nation's most scenic highways, the M-119 Heritage Route is unparalleled.

US-41. The first road designated as a Scenic Heritage Route was the eighteen-mile segment of US-41 from Mine to Copper Harbor in Keweenaw County in the Upper Peninsula. The uniqueness of this road is its forest and how the trees, some as close as three feet from the edge of the pavement, form a complete canopy over most of the entire length of the Heritage Route. This road provides access to such recreational resources as Lake Superior beaches, Copper Harbor, Historic Fort Wilkins state park, hunting, fishing, and fall color touring.

M-123. Another Scenic Heritage Route already in the system is the 27 -mile portion of M-123 that runs from County Road 500 to about eight miles south of Paradise at the southern limits of the Tahquamenon Falls State Park. This route transverses the Tahquamenon Falls State Park, the Lake Superior State Forest, the Village of Paradise and through McMillan and Whitefish townships in Chippewa and Luce counties.

M-22. Michigan highway M-22 in Leelanau County acts both as a major transportation artery for the county and as a corridor for viewing some of the country's most scenic and diverse vistas. It is because of the scenic attributes and rural characteristics that a concerned group of residents sought and achieved Heritage Route designation. This distinction would ensure that the rural character of the county would remain in its current state and would be managed in a manner that highlights the intrinsic qualities of the peninsula.

Historic Heritage Routes

M-125. The City of Monroe in conjunction with MDOT nominated the portion of M-125 which runs through the Old Village Historic District, and is contiguous to the East Elm – North Macomb Historic District, and the Custer Equestrian Monument.

M-25. The City of Bay City in conjunction with MDOT nominated the 1.5 miles long portion of M-25 which runs from Madison Avenue to Livingston Avenue. Visible from the road is the Bay County Building, which is on the National Register for Historic Places. The area also contains 48 pre-1900 and 32 1900-1929 structures, which are also on the National Register as part of the Center Avenue Historic District.

US-2. Iron County Heritage Trail is 16 miles long and the perfect place to learn the story of iron mining in Michigan. It is an amazing story, started some 1.2 billion years ago, that involves

rift minerals, prehistoric mining tools, copper and bronze age, the industrial revolution and world conflicts.

I-94BL. Marshall Territorial Road is the location of the country's largest National Historic District in the small urban category. This 14-block area has no fewer than 14 official Michigan Markers. These locations reflect Marshall's early importance in Michigan history, especially in areas of government, education, abolition, railroads, unionism and architecture.

US-12. (Michigan Avenue) through Saline follows the route of the historic Sauk Trail, a Native American trail that was to later become the Detroit and Chicago Road. Orange Risdon the founder of Saline was the original surveyor for the Detroit and Chicago Road. The portion of Michigan Avenue in Saline designated as a Heritage Route has several historic attractions. The old Schuyler Mill (now Weller's) is located near the intersection of US-12 and the Saline River. Henry Ford converted this Mill in 1937 to a soybean processing plant for the manufacture of auto paint and auto parts. The Saline Downtown area is a historically significant and vibrant downtown area. Oakwood Cemetery, Curtiss Mansion and the Rentschler Farm museum are other important attractions.

US-12. US-12 in Clinton and Clinton Township is part of the historic Sauk Trail. Typically, Clinton was founded on the convergence of a road, the Chicago Military Road and a river, The Raisin. The original community was called Oak Opening because of its location in a natural opening in the dense oak forest. Clinton soon became the greatest trading point west of Detroit with ten general stores several blacksmith shops a hardware store, the Clinton Inn, Atlas Mill, and the Clinton Woolen Manufacturing Co. with 200 employees. Today many of the buildings in the Village of Clinton and Clinton Township are faithfully preserved, but with modern conveniences to better serve today's customer.

Recreation Heritage Routes

US-23. From Standish to Mackinaw City, the Sunrise Side Coastal Highway is the designation for the state's newest recreational heritage route.

M-15. "Miles of smiles" is Michigan's first Recreational Heritage Route. This 90-mile route has many surprises for the visitor willing to divert from their normal course of travel.

M-179. The natural beauty of the Chief Noontday Trail, coupled with its many recreational and historic sites, make this an outstanding Heritage Route. This area was once the hunting

ground for native woodland Indians. It continues to heavily wooded and inhabited by a wide variety of wildlife. A large portion of the road is bordered by state owned land. This is the gateway to the Yankee Springs Recreational area and the Barry State Game Area. The combination of state and local facilities provide the visitor a wide variety of recreational and historic opportunities. Activities available include camping, hiking, swimming, boating, fishing, hunting, biking, horseback riding, water an cross country skiing, berry and mushroom picking, photography and visits to historical sites and museums.

M-1. Woodward Avenue, southeast Michigan's Main Street, is home to many of Michigan's historic, recreational and cultural jewels. These 28 miles of asphalt ribbon are rich in 200 years of urban history, bright with city lights and shaded in suburban green. That ribbon entwines Detroit's theater, art, education and medical centers with neighborhoods both grand and faded. It ties together stable suburban middle class residential streets and wealthy enclaves and links strips of independent retail shops with landscaped professional office centers, bustling small downtown districts and industrial giants.

Stormwater Management Program

A growing body of research suggests that the rising source of pollution in Michigan's waterways is non-point source, or stormwater runoff. Non-point source pollutants are widespread, originating from the land surface and entering receiving water bodies through storm sewer outlets. Common non-point source pollutants include oil and grease, nutrients, pesticides, organic materials, sediment and trash.

The Michigan Department of Environmental Quality (MDEQ) under the authority of the Environmental Protection Agency (EPA) introduced the use of National Pollutant Discharge Elimination System (NPDES) Permits for MDOT in 2001.

MDOT-operated stormwater drainage systems are in Phase I communities, defined as urban areas with a municipal separate storm sewer system, a population over 10,000, and a system of roads and drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels and storm drains. This includes Ann Arbor, Flint, Grand Rapids, Sterling Heights, and Warren. The next phase of the stormwater management programs requires MDOT, as the owner of these systems, to obtain pollution discharge permits for additional communities, known as Phase II communities.

Understanding and addressing the impact of roadways on water resources is the first step in integrating environmental concerns with transportation projects.