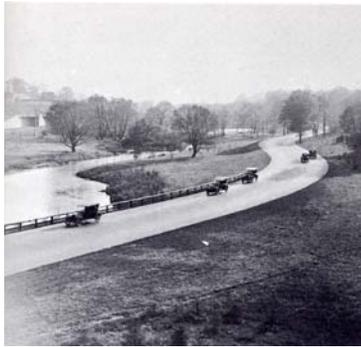




**Session 1:  
INTRODUCING MDOT'S  
CONTEXT SENSITIVE SOLUTIONS AWARENESS TRAINING**



Bronx River Parkway, NY, 1922



Cincinnati, OH



Columbia River Gorge, OR

This first session will acquaint you with the contents of the course. First, take a look at the three photographs on the slide. Notice that they are from different times and different places.

The Bronx River Parkway was one of the nation's first parkways and also one of its first access-controlled freeways. Today it is a commuter route still trying to be both a parkway and a freeway.

The urban street in Cincinnati in the next photo is a very different place, and was constructed much later for very different reasons.

Like the Bronx River Parkway, the Columbia River Gorge Scenic Byway was constructed early in the twentieth century to protect the local environment and provide a recreational driving experience. Despite common origins, however, only the Columbia River Gorge Parkway has remained a two-lane scenic road catering mostly to tourists. The four-lane Bronx River Parkway has increasingly become a commuter route.

Although the designs for all three of these roadways are considered to be context-sensitive, they are only context-sensitive because they responded to the needs of people at a particular time, in a particular place. Of course none of these designs, as a whole, would be appropriate for a freeway constructed today in Detroit. For a road (or any transportation facility) to be context-sensitive, it must be tailored to a particular place and a specific era.



## Class Schedule

- |                            |  |
|----------------------------|--|
| <b>Part 1: Overview</b>    | Introducing and defining the concept of CSS (4 sessions, 45 minutes).  |
| <b>Part 2: Policy</b>      | Understanding federal and state policies related to CSS (4 sessions, 30 minutes).  |
| <b>Part 3: Application</b> | Applying CSS to all phases of MDOT activities—administration, planning, design, construction, maintenance and operations (5 sessions, 45 minutes). |
| <b>Part 4: Summary</b>     | Examples of improving project delivery with CSS (1 session, 30 minutes).   |

The training session and materials are divided into four parts, with a total of 14 teaching sessions. Although organized in a specific sequence, each session is devoted to a single topic and can be viewed separately and out of sequence if desired. Please tailor the presentation to your needs.

However, let us caution you not to assume that a certain session is not relevant to your work at MDOT. Some of the best classroom sessions were those where someone would ask questions, challenge assumptions, or otherwise initiate a discussion outside their area of expertise. (For example, a maintenance worker challenged instructors on whether a particular CSS design practice would actually create more maintenance problems.)

We hope those of you taking this class on-line can have an experience similar to those in the classroom training sessions. We suggest that you review the on-line course one session at a time, then discuss what you saw and how you think it applies to your job with your co-workers, a supervisor, or even friends outside the department. This will give you an experience similar to the best interactive classes we had in the spring of 2006.



# Training Materials: Classroom Presentation

## PowerPoint



## Handout



## Slides with Notes



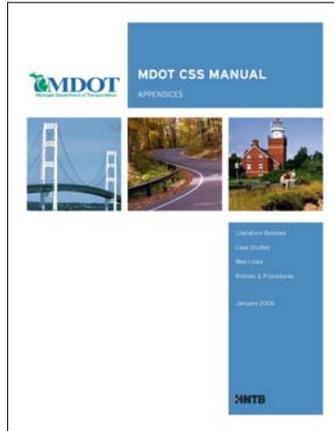
The materials used in the classroom version of this training program included a PowerPoint presentation and a class handout.

The Handout, available on line, shows all slides in the PowerPoint presentation, but with a white background (for better printing) and two slides per page.

The Slides with Notes is what you are reading now. You may print this version or the Handout in order to take notes as you follow the course content.



## Training Materials: Appendices



Literature Reviews

Case Studies

Resources

MDOT Policies & Procedures

A critical part of the training materials are the Appendices, which offer a wealth of additional information on CSS concepts and built projects.

There are four appendices, all available on line:

- 1) Literature Reviews
- 2) Case Studies (both Michigan and national)
- 3) Resources
- 4) MDOT Policies and Procedures



## Appendix A: Literature Reviews

Appendix A is a set of 15 book summaries that describe good CSS policies and practices. It reviews several important publications, such as AASHTO's *A Guide for Achieving Flexibility in Highway Design*; FHWA's *Flexibility in Highway Design*; Transportation Research Board's *NCHRP 40: A Guide to Best Practices for Achieving CSS*; Maryland DOT's *When Main Street is a State Highway*; and from Rutgers University and New Jersey DOT, *Flexible Design of New Jersey's Main Streets*.

Appendix A also contains reviews of key CSS books about highways, bridges, transportation aesthetics, and the ecology of transportation corridors:

- *Saving Historic Roads: Design and Policy Guidelines* (Marriott)
- *The Freeway in the City* (Rapuano & Halprin)
- *Transportation and Land Use Innovations* (Ewing)
- *Bridges: Aesthetics and Design* (Leonhardt)
- *Aesthetic Guidelines for Bridge Design* (Minnesota DOT)
- *Aesthetic Bridges Users Guide* (Maryland DOT)
- *A Guide for the Development of Bicycle Facilities* (AASHTO)
- *Practical Highway Esthetics* (ASCE)
- *Ecology of Greenways* (Smith & Hellmund)
- *Road Ecology* (Forman & Sperling)



# Appendix B1: Michigan Case Studies

	<p><b>MDOT Context Sensitive Solutions Case Study: Metro Region</b></p> <p><b>M-696: Three Pedestrian Plazas Over Freeway</b></p> <p><b>Context</b> Three new pedestrian bridges are located in the Metro Region and are located in urban and suburban areas. The bridges are located in the Metro Region and are located in urban and suburban areas. The bridges are located in the Metro Region and are located in urban and suburban areas.</p> <p><b>Purpose and Description</b> The project was designed to provide a safe and scenic pedestrian route over the freeway. The project was designed to provide a safe and scenic pedestrian route over the freeway. The project was designed to provide a safe and scenic pedestrian route over the freeway.</p> <p><b>Public Engagement</b> Public engagement was conducted through a series of public meetings and workshops. Public engagement was conducted through a series of public meetings and workshops. Public engagement was conducted through a series of public meetings and workshops.</p> <p><b>Context Sensitive Solutions Approach</b> The project was designed to provide a safe and scenic pedestrian route over the freeway. The project was designed to provide a safe and scenic pedestrian route over the freeway. The project was designed to provide a safe and scenic pedestrian route over the freeway.</p> <p><b>Outcome</b> The project was completed in early 2005 and has been a success. The project was completed in early 2005 and has been a success. The project was completed in early 2005 and has been a success.</p> <p><b>Contact:</b> Bob Dillman, Engineer Manager, Lansing, 517-373-2196 Mike Collins, Regional Construction Engineer, Metro Region, 517-373-2196</p> <p>Feb 2006 HNTB SOURCE 82-11</p>	<p><b>MDOT Context Sensitive Solutions Case Study: North Region, Traverse City T2C</b></p> <p><b>M-22: Crystal River Bridge Replacement</b></p> <p><b>Context</b> The new bridge is located in the North Region and is located in the Traverse City T2C area. The new bridge is located in the North Region and is located in the Traverse City T2C area. The new bridge is located in the North Region and is located in the Traverse City T2C area.</p> <p><b>Purpose and Description</b> The project was designed to provide a safe and scenic pedestrian route over the freeway. The project was designed to provide a safe and scenic pedestrian route over the freeway. The project was designed to provide a safe and scenic pedestrian route over the freeway.</p> <p><b>Public Engagement</b> Public engagement was conducted through a series of public meetings and workshops. Public engagement was conducted through a series of public meetings and workshops. Public engagement was conducted through a series of public meetings and workshops.</p> <p><b>Challenges</b> The project was designed to provide a safe and scenic pedestrian route over the freeway. The project was designed to provide a safe and scenic pedestrian route over the freeway. The project was designed to provide a safe and scenic pedestrian route over the freeway.</p> <p><b>Context Sensitive Solutions Approach</b> The project was designed to provide a safe and scenic pedestrian route over the freeway. The project was designed to provide a safe and scenic pedestrian route over the freeway. The project was designed to provide a safe and scenic pedestrian route over the freeway.</p> <p><b>Outcome</b> The project was completed in early 2005 and has been a success. The project was completed in early 2005 and has been a success. The project was completed in early 2005 and has been a success.</p> <p><b>Contact:</b> Greg Harris, Development Engineer, Traverse City T2C, 231-947-8888</p> <p>Feb 2006 HNTB SOURCE 82-16</p>
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Appendix B comes in two parts. Appendix B1 contains 30 case studies of transportation projects in Michigan, where CSS lessons were learned by MDOT. The narrative of each case study describes the project, the public engagement process, the CSS approach used, the outcome, challenges, funding, and lessons learned. Case studies from every MDOT region are included. A table of contents at the beginning of Appendix B1 lists all of the projects that are reviewed.

Each case study includes the name and telephone number of the MDOT employee who was most responsible for implementing the particular context sensitive solution used on the project. If you think your project (or parts of your project) are similar to one of these case studies, give the contact or contacts a call. As a Learning Organization, MDOT wants its employees to benefit from the department's past experience. All contacts listed have agreed to be available to any MDOT employee wanting to discuss how the lessons learned on these projects may be applied to another project in Michigan.



## Appendix B2: National Case Studies

**CORRIDOR MANAGEMENT PLAN**  
MINNESOTA HIGHWAY 35  
EDGE OF THE WOODS  
NATIONAL SCIENCE BYWAY

**PURPOSE**  
The purpose of creating a Corridor Management Plan was to coordinate the planning and delivery of road management operations with those of the surrounding public and private organizations for planning, designing, constructing, and maintaining roadways with transportation corridors through Highway 35.

**DESCRIPTION**  
The existing road, State Highway 35, was originally designed in the 1950s to provide a rural route through the area. Highway 35 was later upgraded and widened in the 1970s. The road is now a two-lane road with a shoulder of 10 feet on each side. The road is currently used for local travel and is a major route for the area.

**RAILROAD CORRIDOR PROPERTY STUDY**  
SAN CARLOS  
SAN MATEO COUNTY  
TRANSIT DISTRICT  
CALIFORNIA

**PURPOSE**  
The purpose and goals for the project planning effort were to prepare the project and provide the information needed to support the project and provide the information needed to support the project and provide the information needed to support the project.

**DESCRIPTION**  
The existing corridor of the project was a long, narrow, and undeveloped area that had not been used for the railroad or transit use. The project was a joint effort between the San Mateo County Transit District and the San Carlos Transit District. The project was a joint effort between the San Mateo County Transit District and the San Carlos Transit District.



Appendix B2 contains 20 notable case studies of transportation projects from around the country. Like the Michigan case studies, these national examples include a project description, information on the public engagement process and the CSS approach used, the outcome of the process, challenges the sponsoring agency faced, funding issues, and lessons learned.

The names and telephone numbers of agency personnel involved in the project are also listed. On many of these projects, Craig Churchward or Doug Mann (the HNTB landscape architects who developed this training program for MDOT), were personally involved in incorporating CSS into the project and are listed as contacts for you. They and all the contact people listed have agreed to be available to any MDOT employee wanting to discuss how the lessons learned on a particular national project may be applied to a project in Michigan.

A table of contents at the beginning of the appendix lists all of the case study projects, which come from Arizona, California, Indiana, Kansas, Maine, Minnesota, Missouri, Pennsylvania, Texas, Utah, and Washington. The projects range from urban freeways to rural arterials, and include system planning, rail, and transit case studies.



# Appendix C: Resources

	<p><b>MDOT CSS MANUAL</b> APPENDIX C: RESOURCES</p> <p><b>MDOT</b></p> <p><b>HNTB</b></p>	<p><b>EVALUATING QUALITY AND LEVEL OF SERVICE OF NON-Motorized FACILITIES</b></p> <p>... (text) ...</p> <p><b>MDOT</b></p> <p><b>HNTB</b></p> <p><b>MDOT</b></p>
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Appendix C is primarily an annotated list of more than 25 CSS web sites. Of course web sites and web content are constantly changing; these were the best CSS-related web pages of which we were aware as of March 2006. New and better web sites will continue to emerge. We urge you to transfer these links to your computer and to access them frequently in order to remain up-to-date.

To keep your on-line resources current, consider searching the web using general terms like “context sensitive solutions” and “context sensitive design.” If you are interested in a particular topic such as visual quality, try typing in “visual quality” and “transportation.” Use quotation marks to look for a string of words. (Without the quotation marks the search engine would find links to “visual” and “quality” separately.) Use other Boolean logic symbols to narrow your search, such as a plus sign (+) to link to phrases or ideas. Be sure to share your on-line discoveries with others at MDOT.

In addition to web sites, Appendix C lists printed reference materials about pedestrian and bicycle transportation available to MDOT employees at their Transportation Service Center office, Regional Office, or MDOT Headquarters in Lansing. An outline of a technique for evaluating the quality and level of service of pedestrian and bicycle facilities concludes Appendix C.



# Appendix D: MDOT Policies & Procedures

**EXECUTIVE DIRECTIVE**  
No. 2003-25

**CONTEXT SENSITIVE DESIGN FOR TRANSPORTATION PROJECTS**

WHEREAS, under Section 1 of Article V of the Michigan Constitution of 1963, the executive power of the State of Michigan is vested in the Governor;

WHEREAS, under Section 9 of Article V of the Michigan Constitution of 1963, each principal department of state government is under the supervision of the Governor unless otherwise provided by the Constitution;

WHEREAS, Michigan transportation system consists of construction and citizens, affects the shape of the communities, affects our economy, and impacts the quality of life for Michiganders;

WHEREAS, Section 109 of Title 21 of the United States Code permits a design for new construction, reconstruction, and resurfacing of highways on the National Highway System to take into account the established local historical, architectural, or other historic, scenic, aesthetic, historic, community, or environmental impacts of the activity, and assess for other modes of transportation;

WHEREAS, the use of context sensitive design for transportation projects can enhance both the quality of transportation and the vitality of communities;

WHEREAS, initial efforts by the Michigan Department of Transportation to implement context sensitive design have demonstrated that appropriate use of context sensitive design for transportation projects can be achieved without undue cost or scheduling burdens;

WHEREAS, the Michigan Department of Transportation has established a team to examine procedures and practices relating to context sensitive design for transportation projects;

NO. 10099	NO. 10138	NO. 2003-25
REVISION	REVISION	REVISION
DATE	DATE	DATE
BY	BY	BY
APPROVED	APPROVED	APPROVED

**MDOT COMMISSION POLICY**  
No. 10138

**CONTEXT SENSITIVE SOLUTIONS**

The Governor's Executive Order 2003-25 defines context sensitive design as "a collaborative, interdisciplinary approach involving stakeholders for the development of a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic, cultural, and environmental resources, while maintaining safety and mobility."

The Michigan Department of Transportation (MDOT) will pursue a proactive, consistent and Context Sensitive Solutions (CSS) process in bringing a job to access to provide the highest quality integrated transportation services for economic benefit and improved quality of life. It is recognized CSS programs will require mutual commitment on the part of both transportation agencies and individuals to identify appropriate opportunities to plan, design, construct, operate and maintain infrastructure in accordance with CSS principles within state-of-the-art technology.

The Department will encourage an appropriate level of CSS use in Transportation Program contracts with CSS principles which include:

- Early and consistent public involvement
- Efficient Decision Making
- Building Community Values
- Enhancing Environmental Sensitivity and Sensitivity
- Encouraging Safe and Healthy Transported Behavior
- Promoting Scenic Resources and Achieving Aesthetically Pleasing Solutions

MDOT will identify or create guidelines and guidelines to expand the use of CSS for state transportation projects. The guidelines and guidelines will:

- Provide partnerships with local governments, state agencies, business, community groups, and transportation system users and providers to better understand resources.
- Use flexibility within state and federal design standards, and develop alternate state standards when appropriate, without compromising safety and mobility.
- Encourage early and consistent dialog with stakeholders on defining transportation problems and solutions during project planning and development.
- Use integrated transportation solutions to reduce access to jobs, support economic development activities with local government and other state agencies, and preserve the environment.
- Consider the need for integrated transportation systems in the early planning and development phases of transportation programs, especially for open highway, bridge, and other projects.
- Encourage the use of CSS principles to create a more efficient, higher quality and more projects.
- Promote the use of CSS principles with local and state transportation agencies.

Appendix D lists policies and guidelines that affect the way MDOT and its employees are able to conduct business on a daily basis. The following documents are included in Appendix D:

1. December 23, 2003; Governor Jennifer M. Granholm, Executive Directive 2003 - 25, Context Sensitive Design for Transportation Projects
2. May 26, 2005; State Transportation Commission, Commission Policy 10138, Context Sensitive Solutions
3. December 13, 2004; Michigan Department of Transportation, Context Sensitive Solutions Draft Implementation Plan.
4. April 12, 2005; MDOT Design, Flexibility in Michigan DOT Design Standards.
5. April 27, 2005; Ron Emery, Assistant Attorney General, Highway Tort Liability in Michigan
6. September 28, 2000; State Transportation Commission, Commission Policy 10099, Aesthetics



## Purpose of CSS Awareness Training

- Provide an understanding of CSS principles
- Provide knowledge of when and how to use CSS
- Provide a reference and a guide to CSS resources
- Provide encouragement to practice CSS
- Provide a recognition of successful MDOT CSS projects



The purpose of this training and this manual is fivefold:

1. To provide an understanding of CSS principles to MDOT staff and other stakeholders.
2. To provide a working knowledge of how to use CSS and when to use particular CSS techniques for what types of projects.
3. To provide a reference manual and a guide to additional CSS resources, either written, on the web, or contacts with experts.
4. To encourage the practice of CSS on all MDOT projects.
5. To recognize the excellent work and progress the Department has had toward the goal of full utilization of CSS principles and methods on all of its projects.



## Synonyms for Context Sensitive Solutions

- Context Sensitive Design
- Customer Sensitive Solutions
- Common Sense Solutions
- Community Sensitive Design
- Thinking Beyond the Pavement
- Placemaking
- Using Engineering Judgment
- Right-Sizing
- Right Project Components and Locations

There are a number of synonyms for *Context Sensitive Solutions* (CSS). In neighboring Wisconsin it is called *Community Sensitive Design*. Urban designers have been known to simply call it *Placemaking*. Some engineers, trying to keep the same acronym, have called it *Common Sense Solutions*. In all cases, the principles and concepts are similar if not identical. In Michigan, the preferred term is CSS because we want to emphasize that being context-sensitive can be applied during planning, design, construction, operations, and maintenance—not just during design. For these same reasons, the term CSS is gradually become the preferred term not only in the United States, but internationally.



## Opening Exercise

1. What is your definition of CSS?
2. What is your favorite driving experience?  
Explain why.
3. What do you believe is the best example of CSS in Michigan or the United States?  
Explain why.

This is an exercise that was used in the classroom training. For those of you viewing this on line, answering these questions will enhance your understanding of CSS. There are no right or wrong answers.

When you conclude this training, use your answer for the first question to gauge how much you learned. If you are like many of the MDOT employees who attended the classroom training, you may find CSS more comprehensive, practical, and applicable to your job than you originally thought. We certainly hope so.

Does your favorite driving experience happen on vacation and in a remote natural region without much traffic? If so, you share this preference with many fellow MDOT employees. Nonetheless, many said that their commuting trip—especially in the evening—was their favorite. These trips typically happened on freeways in metropolitan areas. Listening to what made these trips rewarding, we discovered many similarities to those who had listed less-crowded rural routes as their favorite trips. What do you think they had in common?

When we start to analyze what it is about a transportation experience that makes it more pleasurable, we will be able to use that knowledge in our work. What makes one airport, bike trail, sidewalk, bridge, or road better than another? How can you apply what you learn during your personal travel to your job at MDOT?



## Appendix B1: Michigan Case Studies

	<p><b>MDOT Case Study: I-696: Three Pedestrian Plazas Over Freeway</b></p> <p><b>Context</b> Three new pedestrian plazas are located in the cities of East Park and Westland in Oakland County. The plazas are part of a larger, multi-year, multi-phase project.</p> <p><b>Purpose and Description</b> The project consists of three pedestrian plazas located over the I-696 freeway. The plazas are designed to provide a safe and comfortable walking environment for pedestrians.</p> <p><b>Public Engagement</b> Public input was gathered through a series of public meetings, focus groups, and surveys. The project team worked closely with the community to ensure that the project met the needs of the area.</p> <p><b>Challenges</b> The project faced several challenges, including limited space and the need to coordinate with other transportation projects. The project team worked to overcome these challenges through creative design and collaboration.</p> <p><b>Outcomes</b> The project resulted in three new pedestrian plazas that provide a safe and comfortable walking environment for pedestrians. The project also resulted in increased public awareness of the benefits of pedestrian-friendly infrastructure.</p> <p><b>Contact:</b> Mike D'Amico, Engineer Manager, Lansing, 517-373-2100 Mike D'Amico, Regional Construction Engineer, Metro Region, 248-662-8174</p> <p>Feb 2006 HNTB 8/2-11</p>	<p><b>MDOT Case Study: M-22: Crystal River Bridge Replacement</b></p> <p><b>Context</b> The Crystal River Bridge is a historic bridge located in Crystal River, Florida. The bridge is a landmark and a popular tourist attraction.</p> <p><b>Purpose and Description</b> The project involved the replacement of the Crystal River Bridge with a new bridge that would provide a safe and comfortable crossing for vehicles and pedestrians.</p> <p><b>Public Engagement</b> Public input was gathered through a series of public meetings, focus groups, and surveys. The project team worked closely with the community to ensure that the project met the needs of the area.</p> <p><b>Challenges</b> The project faced several challenges, including limited space and the need to coordinate with other transportation projects. The project team worked to overcome these challenges through creative design and collaboration.</p> <p><b>Outcomes</b> The project resulted in a new bridge that provides a safe and comfortable crossing for vehicles and pedestrians. The project also resulted in increased public awareness of the benefits of pedestrian-friendly infrastructure.</p> <p><b>Contact:</b> Greg Harris, Development Engineer, Traverse City TOL, 231-947-8888</p> <p>Feb 2006 HNTB 8/2-16</p>
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As an introduction to CSS, 30 case studies of MDOT projects incorporating CSS were examined. We recommend that you review the case studies that follow, noting which ones apply to your work, and follow up by studying the more detailed accounts of each that appear in Appendix B1.

Since the appendix thoroughly describes each project in detail, the examples included here typically do not include speakers' notes. The exception is when we add insight from someone who saw the slide in the classroom and was able to enrich the project description or the CSS story.



## Road Rehabilitation and Streetscape

Harbor Beach, Huron County

- City-state partnership; strong community involvement
- Streetscape elements included tree plantings, benches and other amenities
- Specially designed paver incorporated city logo
- A convenient and inviting area for businesses and tourists





## Pere Marquette Rail-Trail Enhancement

Midland-Isabella to Isabella-Clare County Lines

- Extension of trail, a highly regarded community asset
- Pleasant linear park ties together several communities and offers varied activity opportunities
- “Glasphalt” made from recycled glass collected by citizens
- Quality-of-life improvement for area residents and visitors



According to an MDOT employee who was familiar with this project, the “glasphalt” was not a success. The glass was not properly processed, and so retained sharp edges that punctured bicycle tires. (Upon hearing this, several people in the classroom wondered what it would be like to fall from a bike on such a surface.)

While recycled glass has been effectively used as part of aggregate road bases, using it as a component of the bituminous mix itself seems to be a complicated proposition. Anecdotes indicate that slippery glass particles don't always adhere well to the binder, and may even pop out of the surface.



## M-25 White Rock Motorist Park

Huron County, adjacent Lake Huron

- Project protected site from private development
- Preserved natural, cultural and historic resources while accommodating recreation and transportation needs
- Input from the Saginaw Chippewa Tribe of Michigan
- All park amenities are ADA accessible
- Complements the new multi-use non-motorized path along of M-25





## **New Interchange at I-96 and 36th Street**

Cascade Township, Kent County

- Access improvements and traffic congestion relief
- Maintained safe, efficient traffic flow during construction
- Public engagement via various municipalities and committees
- Minimized impact on wetlands and other other vegetation
- Textured pattern on retaining walls, native plantings and other enhancements





## **M-45 Resurfacing, Rehabilitation & Widening**

Grand Rapids and Walker, Kent County

- Public meetings; web site for ongoing communication
- Close communication with adjacent property owners to avoid disruption during construction
- Challenge: minimize impacts to adjacent property while accommodating sidewalks on both sides
- Result is improved traffic flow and safety for both drivers and pedestrians





## US-131 S-Curve Replacement

Grand Rapids

- Balanced highway efficiency requirements with community needs
- Effective public participation process following initial opposition
- Considered aesthetic, cultural, and natural resource values
- Spurred subsequent improvements to area





## **US-131/M-6 Interchange Retaining Wall**

Gaines Township, Kent County

- Intended to continue color and texture of M-6 corridor bridges
- Challenge of numerous elevation changes and varied interchanges
- Quality control included checking pattern layouts through design, construction, and maintenance





## **Zeeland Transportation Improvements**

Ottawa County

- Capital Preventive Maintenance Project on M-21 coordinated with new Zeeland Community Hospital
- Successful stakeholder engagement and productive communication
- Incorporated bike path extension, sewer/water extensions, safety and access improvements.





## I-94 / US-24 Reconstruct & Tied Arch Bridge

Wayne County

- Improved safety and aesthetics
- Employed single point urban interchange (SPUI)
- SPUI allowed for 80 acres of excess property to be developed
- Partnerships with cities and other groups helped pay for more expensive bridge



Although the general concept still remains valid, the development of the 80 acres may not occur at this particular site, according to an MDOT employee familiar with the project.



## Three Pedestrian Plazas Over I-696

Oakland County

- Aimed to maintain neighborhood connections after freeway construction
- Project included residents in design process
- Extra-wide sidewalks along bridge
- Homes purchased to allow green space development adjacent plaza



Although the plazas have been embraced by much of the community, many of the people for whom the plazas were constructed were so disrupted by their construction that they felt obligated to move in order to maintain their traditions. This addendum to the story illustrates that CSS cannot be relegated to the design phase, but must also consider construction. It also points out the need for better measurement of CSS processes and outcomes. Without solid research, we have no way of knowing how effective CSS programs are in achieving their goals. For instance, here the goal was to maintain the lifestyle of the existing community. Did it succeed? What would be the best way to measure success or failure?



## US-24 Telegraph Road Reconstruction

Taylor, Wayne County

- Public information meetings helped generate public support
- Social and environmental CSS approaches
- Provided foundation for future economic growth
- Stimulus to coordinate regional design guidelines, zoning regulations, and landscape standards





## New Terminal Building at Pellston Regional Airport

Pellston, Emmet County

- Needed more capacity, improved efficiency and ADA accessibility
- Balanced modern airport needs with rustic northwoods ambience
- Created warm, welcoming place for visitors with stone fireplace, log-and-stone construction





## **New Terminal Building at Cherry Capital Airport**

Traverse City

- Larger building, more parking
- Public meetings during planning process aired access and environmental concerns
- Minimized loss of forest
- Reflects history and culture of area with natural materials, local imagery, and indigenous plantings





## **Future Widening of M-32 in Alpena**

Alpena County

- Early public engagement
- Aimed for minimum disruption to businesses
- Developed partnership to seek funding for non-motorized facilities and landscaping
- Installation of decorative lighting to divert eye from utility lines





## US-23 AuSable River Bridge Rehabilitation

AuSable Township, Oscoda County

- Aesthetic improvements implemented due to high visibility from river and road
- Improved connection between marina and commercial areas
- Sidewalk added to bridge
- Aesthetic treatments to bridge structure and decorative railing



Before



After



## US-31 Beulah Bridge Replacement

Benzie County

- Construction schedule coordinated with community to avoid busy tourism months
- Access to businesses and residents maintained throughout construction
- Aesthetic enhancements include simulated fieldstone facade
- Accommodates non-motorized path



Sometimes using a CSS approach introduces new ways of constructing transportation projects. How such new practices are introduced should be part of the CSS process. For example, when this project was constructed, the use of concrete form liners was relatively new. Should a project's specifications require that a contractor be certified in using the new practice before they are allowed to bid on the project? How do we introduce new practices but still keep bidding competitive?



## US-23 Cheboygan Drawbridge Rehabilitation

Cheboygan County

- Sensitivity to historic integrity of bridge
- Lighting matches fixtures throughout downtown
- New railing matches original; retrofitted to be crash-worthy on traffic sides
- Most construction in winter avoided interference with river traffic
- Part-width construction allowed bridge to remain in use



We heard a story that the reconstruction of this bridge, although historically appropriate, may have resulted in operational problems related to its ability to open and close properly. If there are truly problems with the operations of this bridge, it is a good illustration that CSS must be concerned with both appearance and function.



## **M-22 Crystal River Bridge Replacement**

Glen Arbor, Leelanau County

- New bridge includes walkway on each side
- Worked closely with public for aesthetic options
- Detour allowed for duration of construction to be shortened
- Improved aesthetics of area





## Future M-22 Reconstruction Along

Crystal Lake, Benzie County

- Drainage/crown improvements, widened shoulders
- Involved homeowners who built adjacent to ROW line
- Avoided removal of trees along turnpike
- Coordinated construction schedule with homeowners
- Modified construction techniques to avoid utility conflicts





## **M-119 Special Guardrail**

Emmet County

- Guardrail upgraded in conjunction with Scenic Heritage Route management team
- Improved safety in aesthetically pleasing manner
- Designed to blend into natural environment and retain highway's aesthetic characteristics
- No significant cost increases





## M-72/M-33 Slope Improvements

Mio, Oscoda County

- Improved visual appearance
- Replaced concrete slope built during 1980s road widening
- Community involvement led to 2005 solution
- Four shorter tiers better fits locale



Before



After

Changes to the building were privately funded and were not part of the transportation project.



## Future M-86 Bridge Replacement

Colon, St. Joseph County

- Ongoing involvement with village officials and residents
- Planning and engineering partnership to address design elements
- Sensitivity to historic structures
- Clear understanding of need for CSS by MDOT staff prior to meeting public officials





## I-69 Concrete Surface Sealing of 16 Structures

Branch County

- Color scheme developed to promote state recreational destinations
- Consultant proposed color combinations to joint meeting of Recreational Heritage Route Committee and MDOT





## I-69 Scenic Corridor Management Study

Branch and Calhoun Counties

- Active participation at local and state level to develop management plan
- Viewshed Preference Survey of residents determined perceptions of views from highway
- Addressed social, economic and natural aspects of corridor
- Established vision statement as well as goals and objectives to support plan's implementation





## Future Reconstruction & Widening of I-94

Kalamazoo and Portage

- Desire to minimize impacts to commuter, commercial and tourist traffic
- Concerns over noise impacts to adjacent residents
- Early review of design concepts by city officials; ongoing input from stakeholder groups
- Frank Lloyd Wright "Usonian" theme included in retaining wall and sound wall aesthetic treatments





## **M-69 Paint River Bridge Rehabilitation**

Crystal Falls, Iron County

- Bridge followed historical design
- Staging construction at one span at a time minimized disruption to structural equilibrium and eliminated environmental impacts
- New lighting added safety and ambiance to rehabilitated bridge
- Serves as gateway into Crystal Falls





## **I-96 BL (Grand River Avenue) Roadway Rehabilitation**

Livingston County

- Business owners invited to progress meeting
- Color concrete crosswalks and other pedestrian enhancements
- Improved area drainage by upgrading county drain
- Numerous partner groups





## M-36 Streetscape

Pinckney, Livingston County



- Alternate streetscape themes presented to city, consensus reached
- Alternate parking and “brighten up the back door” campaign to help keep retailers busy during construction
- Construction coordinated with key downtown events



## City of Morenci – Gateway to Michigan

Lenawee County

- New welcome sign, historic marker and landscaping
- Historic truss bridge relocated to provide non-motorized transportation



The design of the pathways was incomplete, leaving the bridge unconnected to the community. Just prior to its dedication, MDOT Maintenance crews had to add hundreds of feet of mulch to create a path to the bridge. They also had to replant shrubs that were not spaced far enough apart to allow the operation of standard mowing equipment. This project illustrates the need to involve all MDOT activities and disciplines on a project, from planning and design, through construction, maintenance, and operations.



## US-12 Roadway Rehabilitation

Pittsfield Township, Washtenaw County

- Involved resurfacing, center turn lane construction, ramp and drainage improvements, and bridge rehabilitation
- Coordination among local communities, emergency service providers, schools, and business owners
- Developed detour that maintained eastbound traffic at all times
- Incorporated pedestrian signals and curb cuts for future non-motorized path



## MDOT Lessons Learned

- **Implement CSS on all project stages, categories and modes**
- **Implement an appropriate level of CSS on all projects**
- **Lead other transportation agencies by example**



I-43, Milwaukee, WI



In conclusion, MDOT has learned several things from trying to implement CSS on its projects. First it can and should use CSS on all of its projects, during all stages, for all different categories of projects, and for all modes of transportation. Furthermore it has learned to tailor the CSS approach to a particular project. One size does not fit all.

MDOT also recognizes that it has jurisdiction over only about 10% of Michigan's roads, approximately 10,000 miles of the nearly 110,000 miles of road in the state. If MDOT is going to affect how the majority of roads are planned, designed, constructed, maintained, and operated in Michigan, it will need to lead by example. Each MDOT employee is an ambassador to other units of government. As employees, we frequently offer assistance to other units of government, but there is another way for us to affect public policy outside MDOT.

Most of MDOT's employees live on roads created by other jurisdictions and use these roads to get to work, attend school, go shopping, or to visit friends and family. We can still affect these roads as citizens: offering our professional advice, voicing our preferences, insisting that the public be involved, serving on design teams, and demanding that solutions be multi-modal.

MDOT employees not only have a responsibility to MDOT and its roads but, as Michigan citizens, to the larger transportation network and its role in shaping our communities.