AASHTO Center for Environmental Excellence

Best Practices in Context-Sensitive Solutions

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS · 1914

NORTH 38

2005
Competition

Best Practices in Context-Sensitive Solutions

AASHTO's Center for Environmental Excellence is pleased to announce the winners of the 2005 Best Practices in Context-Sensitive Solutions (CSS) competition. AASHTO received 75 applications from 33 states. After careful review by a diverse expert review panel, three winners and seven notable practices were selected from across the United States. These winning transportation projects, programs, and initiatives demonstrate exemplary efforts in CSS that will serve as models for achieving transportation solutions that fit the natural and human environment while achieving mobility and safety goals and enhancing community values.

CRITERIA

The review panel judged each application based on the following criteria:
- Addressing transportation needs using CSS principles and effectively using resources;
- Use of partnering, collaboration, and multi-disciplinary approaches;
- Incorporation of community values and improving community assets;
- Achieving compatibility with the natural and built environment; and
- Measuring effectiveness in meeting CSS goals.

CATEGORIES

Winners were selected in each of three categories:

Institutionalization or Organizational Change: Efforts made to make permanent the changes in attitudes and organizational structures that help institutionalize CSS practices in the agency's program of activities.

Program Approaches: Organizational policies and programs that illustrate CSS principles throughout a program or function, applying to multiple projects.

Project-Oriented Activities: Collaborative efforts to plan, design, construct, operate, and maintain a major project that reflects CSS principles.

Part of the Edge of the Wilderness National Scenic Byway Corridor, this context-sensitive bridge reconstruction over Minnesota's Big Fork River applies rustic-style architectural and multimodal streetscape enhancements within the community. Photo Credit: Mn/DOT, Neil Kveberg.

WINNERS

Best Institutional Change
New York State Department of Transportation
Context Sensitive Solutions Implementation Initiative

Best Program
Oregon Transportation Investment Act (OTIA) State Bridge Delivery Program

Best Project
Minnesota TH 38, Edge of the Wilderness National Scenic Byway Corridor

NOTABLE PRACTICES

- SR 179 Needs Based Implementation Plan—Arizona DOT
- Highway 1 Median Barrier Project—California DOT
- Berthoud Pass Mountain Access Project—Colorado DOT
- Stormwater Management Visual and Environmental Quality and Safety Program—Maryland State Highway Administration
- US 131 S-Curve Replacement Project—Michigan DOT
- I-580 Freeway Extension Project—Nevada DOT
- Institutionalization of CSS—Utah DOT

EXPERT REVIEW PANEL

Kathy Ames, Illinois Department of Transportation
Janet D'Ignazio, Center for Transportation and the Environment, N.C. State University
Eleanor Huber, Maryland State Highway Administration
John Mettille, Kentucky Transportation Cabinet
Sally Oldham, Oldham Historic Properties, Inc., Portland, Maine
Harold Peaks, Federal Highway Administration, Washington, D.C.
Melisa Ridenour, Federal Highway Administration, Eastern Federal Lands Highway Division
Joe Sanchez, New Mexico Department of Transportation
Patrick Shea, National Park Service, Denver, Colorado
Shaun Van Doren, Township of Tewksbury Committeeman, Oldwick, New Jersey

Best Institutional or Organizational Change

New York State DOT CSS Implementation Initiative

"CSS is not a separate process or set of standards. CSS is a philosophy that guides NYSDOT in all phases of project development, from planning through project scoping, design, and into construction and maintenance. CSS strives for outcomes that meet transportation service and safety needs, as well as environmental, scenic, aesthetic, cultural, natural resource, and community needs. Context-sensitive projects recognize community goals, and are planned, scoped, designed, built, and maintained while minimizing disruption to the community and the environment."— New York State DOT Engineering Instruction 01-020

At the New York State Department of Transportation (NYSDOT), context-sensitive solutions (CSS) represent more than a philosophy; CSS is a way of doing business. NYSDOT is committed to improve the process by which it delivers projects and services, including a comprehensive effort to incorporate CSS into its business practices.

Beginning in 1999, the agency assembled a multi-disciplined CSS team to advance the philosophy throughout the department. The results can be seen in a range of policies and practices that are instilling CSS principles throughout the agency, ensuring that transportation solutions meet community needs and fit within their context.

Efforts include adoption of Engineering Instruction 01-020, a policy document specifying that NYSDOT projects will reflect the principles of CSS and incorporate public involvement plans. The document sets forth the principles of CSS as they apply to projects in the state, and establishes CSS goals specifying that the state's projects should:

- Be in harmony with the community and preserve or improve the environmental, scenic, cultural, natural resources, and economic viability of the area.
- Address both transportation and community needs as developed by a full range of stakeholders.

- Incorporate early and effective public involvement.
- Identify and address community issues through a continuous, structured format.
- Incorporate innovative and safe solutions that add value for the user and the community.
- Be designed, built, and maintained with minimal disruption to the community.

The CSS philosophy is also advanced within NYSDOT through an annual CSS award to recognize exemplary projects and share best practices; a CSS website with links to resources, best practices, and agency contacts; numerous CSS training courses; and incorporation of CSS into the agency's Project Development Manual, including a separate Public Involvement Manual.

Context-sensitive solutions will continue as a part of NYSDOT's business processes through ongoing incentives and performance measures that will track progress in meeting CSS goals.

Officials host a public information meeting to discuss reconstruction of NYS Routes 173 and 91, in the Town of DeWitt, NY.

Citizens get involved in plans to reconstruct NYS Route 146 at a public information meeting in the Village of Altamont, NY.

The Court Street Bridge replacement, located in Owego, NY, was a winner of the state's 2004 CSS Exemplary Project Award.

Best Program

"Using the Context Sensitive and Sustainable Solutions (CS3) approach for implementing the bridge program results in transportation solutions that reflect social values, maintain safety and mobility, support economic prosperity, achieve responsible stewardship of the natural environment, and optimize long-term performance of the state's transportation system. In essence, the bridge program enhances the quality of life for all Oregonians."— Oregon Department of Transportation

To the left:
Located in the Rogue River National Forest, the Rogue River Bridge is one of more than 300 bridges being repaired or replaced in a context-sensitive manner under Oregon's progressive OTIA III State Bridge Delivery Program.

To the left:
The bridge program is committed to employing a diverse workforce and stimulating Oregon's economy while being responsive and sensitive to the environment.

Faced with the need to repair over 300 state highway bridges, the Oregon Department of Transportation (ODOT) developed an unprecedented bridge repair and replacement program, including a context-sensitive solutions approach to address transportation goals as well as community and quality-of-life goals for the citizens the state.

Under the 2003 Oregon Transportation Investment Act (OTIA), the State Legislature provided $1.3 billion to repair or replace the aging highway bridges over the next eight to ten years. In order to complete the project in the timeframe mandated by the Legislature, ODOT developed the OTIA III State Bridge Delivery Program. The innovative program includes a collaborative permit-streamlining effort, in which ODOT obtained a programmatic permit for the entire bridge program instead of individual permits for each bridge. The program will be implemented using a newly

developed Context Sensitive and Sustainable Solutions (CS3) approach.

According to ODOT, CS3 is a decision-making framework that will focus on community values to shape a new generation of bridges. CS3 combines the existing CSS design philosophy with the concept of sustainability, an approach that is unique to ODOT. The CS3 approach will allow ODOT to achieve the goals of the bridge delivery program: maintaining mobility; stimulating Oregon's economy; employing efficient and cost-effective delivery practices; building projects that are sensitive to their communities and landscape; and capitalizing on funding opportunities.

CS3 merges eight diverse disciplines under one umbrella: economic stimulus, diversity, cost-effectiveness, mobility, public involvement, environmental justice, environmental program management, and sustainability. A "task lead" manager is responsible for integrating these diverse management systems with ODOT's existing project delivery structure.

As of April 2005, 50 bridges were in construction and 52 were in design. Construction will continue through 2011. The CS3 approach is critical to delivering these bridge projects on time and within budget, while also meeting community and environmental goals. Implementing CS3 will enable ODOT and Oregon's communities to create legacy bridges that will enhance quality of life for all Oregonians.

Best Project

Minnesota Trunk Highway 38, Edge of the Wilderness National Scenic Byway Corridor

"With early engagement and listening, Mn/DOT used broad public and stakeholder involvement to better inform the understanding of context and the determination of purpose and need for proposed improvement projects along the TH 38 corridor. Consequently, and in applying all of the key principles of CSS advocated by the agency, Mn/DOT demonstrated flexibility in design to tailor and focus solutions and improvements where the public placed the highest values and received the most return or value-added for the investments."
— Minnesota Department of Transportation

The 47-mile Minnesota Trunk Highway 38 (TH 38) Edge of the Wilderness National Scenic Byway Corridor weaves around lakes and wetlands, allowing travelers to experience Minnesota's northern woods. Faced with the need to reconstruct the aging highway, the Minnesota Department of Transportation (Mn/DOT) developed partnership alliances with Federal, state, and local stakeholders to guide the planning, scoping, and design process associated with the corridor. The resulting corridor reconstruction project exemplifies context-sensitive solutions, balancing safety, mobility, environmental, and community values.

Trunk Highway 38, which runs through the Chippewa National Forest, was originally developed in the 1920s to replace a parallel logging railroad. Mn/DOT sought to reconstruct the substandard roadway to enhance safety and efficiency in the early 1990s. Mn/DOT initially assumed that flattening and straightening out the road consistent with higher design speeds would be crucial to the logging industry, the major employer using the corridor. But extensive outreach to the industry, the public, and agency partners produced a better solution.

The consensus transportation solution focused on maintaining the two-lane roadway and existing alignment, incorporating spot upgrades where needed for safety improvements. This significantly reduced the amount of vegetation that needed to be cleared. The project incorporated four-foot paved shoulders with a rumble strip and an additional two feet of reinforced soft shoulder to improve safety and accommodate bicyclists, while reducing the roadway impacts on the land.

The public and interagency working groups strived to develop solutions, not only for the transportation system, but also for managing land adjacent to the highway. The effort resulted in a completely coordinated schedule of improvement projects for the whole corridor, including transportation, recreation, water quality, and economic development.

A variety of funding sources were used to incorporate context-sensitive features and interpretive sites along the corridor, including turnouts, rest areas, boat access sites, parallel trails, and sidewalk and streetscape enhancements. The improvements have contributed to significantly reduced accidents, enhanced mobility, greatly reduced cost, and context-sensitive outcomes—all well ahead of schedule.

Computer Visualization study exploring flexibility in design of the roadway cross-section to achieve context-sensitive roadway improvements. Photo & Visualization Credit: SEH, Mike Fraser.

This corridor interpretive park and trailhead site along the Byway links users to a multi-use trail that crosses the river and links to other area trail systems. Photo Credit: Mn/DOT, Neil Kveberg.

Computer Visualization study exploring flexibility in design of the roadway cross-section to achieve context-sensitive roadway improvements. Photo & Visualization Credit: SHE, Mike Fraser.

Context-sensitive solutions (CSS) consider the total context within which a transportation improvement project will exist. CSS is a collaborative, interdisciplinary approach that involves all stakeholders to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic, and environmental resources, while maintaining safety and mobility.

This competition showcases outstanding examples of the work being done throughout the country to integrate CSS principles with the planning and delivery of transportation projects, programs, and services. The award winners and notable practices demonstrate how transportation agencies and their partners, working with their communities, can succeed in meeting mobility needs while promoting community values and enhancing the social and environmental context in which transportation facilities co-exist.
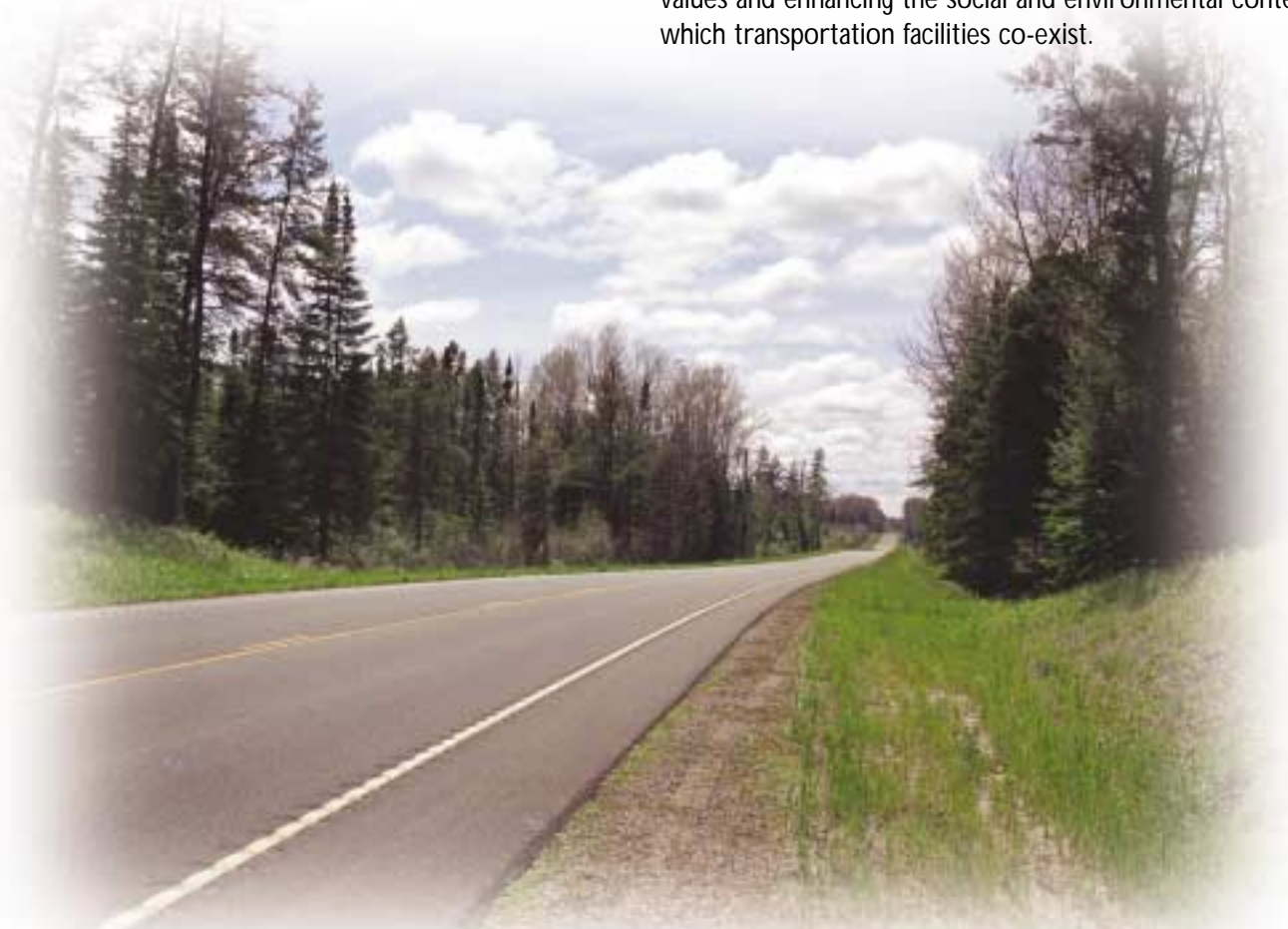
MN TH 38 Edge of the Wilderness National Scenic Byway Corridor. Reconstruction of Minnesota's Edge of the Wilderness National Scenic Byway Corridor includes four-foot paved shoulders with rumble strips, additional reinforced soft shoulder, shallow ditch bottoms and steeper back-slopes to minimize adverse environmental and visual impacts. Photo Credit: Mn/DOT, Neil Kveberg

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Photo Captions for Front Cover, going top to bottom

1. The Rogue River Bridge is one of more than 300 bridges being repaired or replaced in a context-sensitive manner under Oregon's progressive OTIA III State Bridge Delivery Program.
2. A typical limited-use wayside rest area with information kiosk is one of the features of Minnesota's Edge of the Wilderness National Scenic Byway Corridor. Photo Credit: Mn/DOT, Neil Kveberg
3. A community/Byway "gateway" instills a sense of place and pride along Minnesota's Edge of the Wilderness National Scenic Byway Corridor. Photo Credit: Mn/DOT, Karl Weissenborn
4. Minnesota's Edge of the Wilderness National Scenic Byway Corridor was reconstructed as a 10-ton, 2-lane roadway in a context-sensitive manner, using existing alignment with 4-foot paved shoulders and rumble strips, plus a 2-foot reinforced soft shoulder. Photo: Credit: Mn/DOT, Neil Kveberg