ABOVE AND BEYOND

The Environmental and Social Contributions of America's Highway Programs

January 2008

Center for Environmental Excellence

Planning and Designing Transportation to Fit the Community

For almost a decade, transportation agencies have been advancing the concept of context sensitive solutions (CSS), in which transportation projects are planned, designed, and implemented to meet the needs of communities and the environment. CSS adds to the traditional methods of project development by emphasizing collaborative and interdisciplinary decision making and by insisting that the contexts of a project are thoroughly understood before design decisions are made.

The concept has evolved since 1998, when transportation agencies first promoted "context sensitive design" for projects at the influential Thinking Beyond the Pavement conference in Baltimore. Five pilot CSS programs were established in Connecticut, Kentucky, Maryland, Minnesota, and Utah. Today, this concept has expanded to additional states. Across the country, highway agencies are advancing a philosophy that involves all stakeholders in developing transportation "solutions" that go far beyond designing projects.

Transportation leaders agree that every transportation project offers a unique opportunity to enhance safety, mobility, economy, and the natural environment. With these goals in mind, state and Federal highway agencies have established context sensitive solutions as the way of doing business across the nation. Five pilot states began in earnest to apply the principles of CSS to their programs in the early 1990s, and the Federal Highway Administration (FHWA)

Did You Know?
By 2007, 41 states had made significant progress implementing context sensitive solutions in their standard practices.

has supported multiple programs to encourage the full implementation of CSS across the country. Numerous training courses, award programs, publications, and other initiatives advance the state of the practice. Today, every state can point to many projects that embody the goals of CSS.

A national "peer exchange" meeting held in the Fall of 2006 renewed focus on mainstreaming context sensitive solutions into transportation agencies. The event, sponsored by the Center for Environmental Excellence by AASHTO and FHWA, brought together representatives from 46 state transportation agencies and a range of Federal and private sector partners to share lessons learned and to develop a strategy to further integrate CSS concepts into day-to-day practice.

Following the peer exchange, FHWA and AASHTO partnered to establish strategic goals and initiate action plans to implement the goals. The focus of this successful partnership is to apply CSS not only to project design, but also to long-range transportation planning, acquisition, construction, and maintenance.

Vision Statement for Context Sensitive Solutions

In the year 2011, context sensitive solutions will

- be the way of doing business throughout the life cycle of a project from preplanning through maintenance, not just in state DOTs but throughout government agencies that are responsible for the development of transportation projects;

- result in solutions that provide a net improvement to the community and environment;

- meet needs and community goals as defined by a full range of stakeholders, including safety and mobility goals;

- include the full involvement of stakeholders throughout [the] decision-making [process] and be done in a way that is consistent with the broader vision for the community and environment; and

- include teams of multidisciplinary experts who all contribute to developing solutions together with stakeholders.

– Neil Pedersen, Administrator, Maryland State Highway
Administration, presented at the 2006 CSS Peer Exchange

The States Move Forward

State transportation agencies are in different phases of CSS implementation, but all states are taking steps to implement context sensitive solutions at the project level or at the organizational level according to a national assessment conducted in 2007 by FHWA. The assessment found that 41 states have made significant progress with CSS implementation, including 16 states that have "mature" or "exemplary" programs or activities underway, meaning CSS is routinely incorporated into the agency culture. The remainder of the states initiated CSS efforts with many making some progress toward CSS implementation (9).

An AASHTO survey conducted in 2005 found that all 50 states are aware of the principles of context sensitive solutions. In addition, the survey found that

- 35 states had issued formal policies related to CSS;
- 37 states were undertaking steps to incorporate CSS into their project development process;
- 47 states had held seminars, workshops and/or provided CSS training to staff;
- 25 states developed or were developing public involvement plans or practice early stakeholder involvement;
- 25 states had taken specific steps to incorporate CSS into their agency culture;
- 23 states offered CSS training to consultants;
- 19 states developed CSS manuals or related website content;
- 14 states established CSS-related partnerships with university engineering departments for development and/or delivery of CSS training programs;
- 8 states had formed CSS-dedicated internal committees or teams; and
- 6 states had included CSS in their agency strategic plans.

Exemplary CSS Practices

The progress in implementing CSS is evident in the sheer number of examples of CSS policies, programs, guidelines, and manuals coming from the states. The Center for Environmental Excellence by AASHTO's Best Practices in Context Sensitive Solutions competitions garnered 75 applications from 33 states in 2005 and 62 applications from 31 states in 2006.

The following award-winning examples of CSS approaches illustrate how context sensitive solutions are truly becoming the way of doing business in transportation agencies across the nation.
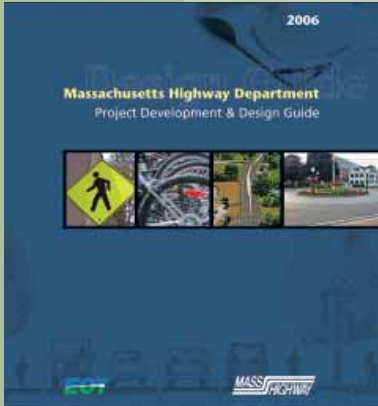
Massachusetts Highway Department's 2006 design guide represented a change in approach to incorporate context sensitive solutions on all projects in the state.

State and Federal transportation officials and other stakeholders met in Portland, Oregon in October 2006 to develop a strategic plan for mainstreaming context sensitive solutions.

Massachusetts Project Development and Design Guide

The 2006 *Massachusetts Project Development and Design Guide* received numerous awards, including AASHTO's 2006 CSS competition and FHWA's 2007 Environmental Excellence Award. The guide establishes flexible design standards, is strongly multi-modal, explicitly incorporates community setting as a design factor, dramatically re-shapes the project development process, and supports early planning and coordination with all stakeholders to create safe, attractive roads (*15*).

Oregon Bridge Program

Also honored with AASHTO and FHWA awards, Oregon Department of Transportation's statewide bridge delivery program combines the concepts of CSS and sustainability, applying them to a program for repairing or replacing more than 300 bridges in the state. The approach includes a streamlined programmatic permit for all of the bridges, outcome-based environmental standards, and extensive stakeholder involvement. The approach will help meet the state's goals of maintaining mobility; stimulating the economy; employing efficient and cost-effective delivery practices; building projects that are sensitive to their communities and landscape; and capitalizing on funding opportunities (*14*).

Texas DOT Safety Rest Area Program

Texas DOT's 56 Safety Rest Areas are classic examples of how design elements can be context sensitive. Designers of these rest areas took great care to reflect the characteristics of the local environment and culture by customizing them with attractive structures, regional themes, exhibits, and information to educate travelers. Designed in collaboration with local officials and the public, each rest area is considered the "front door" for its community, promoting each region's unique features and invoking a sense of civic pride for those who live nearby. At the same time, the facilities meet the transportation agency's goal to provide safe rest stops for drivers (*15*).

Washington State DOT CSS Policies, Procedures, and Standards

Washington State DOT's context sensitive solutions approach can be seen throughout all levels of the agency – from planning through construction and maintenance. WSDOT has coordinated efforts to develop context sensitive solutions from executives to technical staff. The agency encourages its employees to look beyond basic transportation issues and develop projects that are integrated within their unique contexts. These priorities are implemented through numerous policies, procedures, manuals, partnering agreements, training programs, liaison positions with resource agencies, and public involvement techniques (*15*).

New York State DOT CSS Implementation Initiative

NYSDOT is committed to improve the process by which it delivers projects and services, including a comprehensive effort to incorporate context sensitive solutions into its business practices. The initiative includes implementation guidelines, public involvement plans, training, and recognition of best practices (*14*).

This rendering helped visualize options for bike and passenger rail as part of the context sensitive long-range transportation plan for Ohio's Eastern Corridor. *Image courtesy of Meisner & Associates.*

Federal Lands Efforts

FHWA's Office of Federal Lands Highway (FLH) delivers projects from the Atlantic to the Pacific and from the tropics to the arctic, in partnerships with Federal land management agencies and Tribal governments. The FLH embraces a CSS approach for all projects from early planning through construction. As a part of the 2008 – 2012 Business Plan entitled "Improving Transportation to and within Federal and Tribal Lands," FLH is raising its self assessment to exemplary levels wherever FLH performance measures are set. Consequently, FLH helps to set the standards of the CSS philosophy for the rest of the nation.

Partnerships to Achieve CSS: Ohio's Eastern Corridor

A long-range transportation plan developed for the eastern corridor near Cincinnati, Ohio, demonstrates how wide-ranging partnerships can be used to develop solutions that integrate multi-modal solutions, land-use planning, and environmental stewardship. Nineteen separate political jurisdictions partnered to develop a transportation plan that includes highway, bus, rail, bicycle, pedestrian and local network projects. A key element in the plan was the use of land use vision planning, which involved citizens, elected officials, and other stakeholders to develop a "green infrastructure" program focusing on sensitive features of the Little Miami River Valley (*15*).

Research to Advance Context Sensitive Solutions

Numerous research efforts are underway to advance context sensitive solutions across the nation. Research being performed for state transportation agencies under the National Cooperative Highway Research Program will look at:

- CSS and its use of multidisciplinary teams; and
- quantification of the benefits of CSS in transportation.

FHWA efforts include the following initiatives planned under the Surface Transportation Environment and Planning Cooperative (STEP) Research program:

- establishing a CSS Clearinghouse for information and resources,
- advancing CSS implementation and stakeholder exchange, and
- utilizing a pooled-fund study to address challenges in implementing CSS.

To see this report in its entirety, please go to:

http://environment.transportation.org/center/products_programs/above_beyond.aspx