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Context Sensitive Solutions: Changing the Mindset in Transportation Planning

by Meg Maguire

Historic preservationists are all too familiar with road projects that rip through communities with little regard for cultural assets or community values, often in the name of providing “safety” or “increasing capacity.” Preservation lore is rich in victories, defeats, and battles with state departments of transportation.

Fortunately, these battles have also helped open the state transportation door to a more sensitive approach to road design known as Context Sensitive Solutions (CSS). The challenge is to move this approach from occasional state practice into official state policy.

What Are Context Sensitive Solutions?

The Federal Highway Administration (FHWA) defines CSS as “...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. CSS is an approach that considers the total context within which a transportation improvement project will exist.”

CSS is applicable to highways, mass transit, and all other transportation improvements. This approach can help ensure that transportation planning engages the public in balancing community, cultural, aesthetic, environmental, and transportation needs. For example, CSS can be applied to everything from relocating a highway interchange that would adversely affect a historic park to a traffic calming design for a historic main street.

Brief History of CSS

Congress first officially acknowledged the concept of “flexibility in highway design” with the passage of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the National Highway System Act of 1995 (NHS). The NHS stated:

A design for new construction, reconstruction, resurfacing...restoration, or rehabilitation of a highway on the National Highway System (other than a highway also on the Interstate System) may take into account...[in addition to safety, durability, and economy of maintenance]...

- (A) the constructed and natural environment of the area;
- (B) the environmental, scenic, aesthetic, historic, community, and preservation impacts of the activity; and
- (C) access for other modes of transportation.



In Trenton, N.J., NJDOT constructed the Route 29 Tunnel to relocate the heavy traffic that literally shook the 100-year-old row houses on Lambertson Street. As part of the improvements NJDOT constructed a four-season water feature and a waterside plaza. Photo courtesy of NJDOT and Vollmer Associates.

Congress again reinforced CSS in the most recent federal surface transportation bill, the Safe, Accessible, Flexible, Efficient Transportation Equity Act of 2005—A Legacy for Users (SAFETEA-LU). Section 6008, Integration of Natural Resource Concerns into Transportation Project Planning, specifically recognizes these key reference materials:

- *Flexibility in Highway Design*, FHWA’s 1997 seminal publication that affirms the flexible, well-documented application of design guidelines established by the American Association of State Highway and Transportation Officials (AASHTO) in *A Policy on Geometric Design of Highways and Streets*, more commonly known as “the Green Book”;
- Eight Characteristics of the Process That Yield Excellence [see sidebar]; and
- Seven Qualities of Excellence in Transportation Design [see sidebar].

SAFETEA-LU authorizes the Secretary of Transportation to consider these references in establishing standards to be used on the National Highway System. For preservation advocates, federal law can provide the basic framework and rationale for state CSS legislation affecting all state roads and bridges.

What Works in the States?

A growing number of state departments of transportation, including those in Maryland, Minnesota, New Jersey, New York, and Oregon, are



The urban park that was constructed over the tunnel section of Route 29 in Trenton, N.J., features a bicycle path and pedestrian walkway, pavilions, playground, and a historic interpretive area. Photo courtesy of NJDOT and Vollmer Associates.

adopting CSS policies and beginning to retrain highway engineers, planners, and other transportation professionals to put this philosophy into practice. The result is better projects, a higher degree of public satisfaction, and often a shorter project delivery that saves time and money and promotes goodwill.

Best Practices in Context-Sensitive Solutions, a CSS project competition sponsored by the AASHTO Center for Environmental Excellence in 2005, recognized several states with successful CSS policies:

Best Project: Minnesota’s Trunk Highway 38, the Edge of the Wilderness National Scenic Byway Corridor is a corridor reconstruction project focused on maintaining the historic roadway’s existing alignment. It incorporates 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’s impact on the land.

Best Program: Oregon’s Transportation Investment Act State Bridge Delivery Program is an innovative effort to replace or repair more than 300 bridges including a number of historic bridges. The program includes a collaborative effort to streamline the process for permits, to be implemented using a context sensitive and sustainable solutions approach.

Best Institutional Change: The New York State Department of Transportation’s Context Sensitive Solutions Implementation Initiative includes a CSS policy directive for the department as well as an annual CSS award to recognize exemplary practices, a CSS website, numerous CSS training courses, and incorporation of CSS into the agency’s Project Development Manual.

However, without state legislation mandating CSS, progress is based entirely on enlightened gubernatorial or departmental leadership. And unfortunately, for all the talk about designing roads that protect community character, there is still too little progress in too few states. Here are three steps to implement CSS policies in your state.

Step 1: Advocate for State CSS Legislation

Recognizing that most decisions about transportation projects are made at the state level, FHWA has established, as one of its vital strategies, “to provide guidance, information, and training to States on ‘integrating the planning and environmental processes’ and encouraging context-sensitive solutions/context-sensitive design” (FHWA Memorandum, October 29, 2002).

But how far are states really willing to go to institutionalize CSS principles and practices? Will state departments of transportation adopt only CSS administrative guidelines that are subject to change with each new department head? Or will state legislatures pass CSS legislation that advances CSS from one administration to the next? The answer lies in the power and effectiveness of citizen advocates, including preservationists, to bring about real change.

Only a handful of states—Connecticut, Illinois, New Jersey, Vermont—have passed authorizing legislation that provides a statutory basis for CSS. However, official support is increasing for state legislation. The AASHTO 2004 publication *A Guide to Achieving Flexibility in Highway Design* recommends that each state enact CSS authorizing legislation as one important way of addressing liability issues.

Advocates may encounter resistance to CSS legislation. Some transportation officials will say that CSS is nothing new, that they have always done business this way. Others misrepresent CSS as concerned mostly with design “frills,” failing to grasp the underlying emphasis on public engagement and community values. But everyone can agree that good transportation design should be the rule, not the exception. Institutionalizing CSS can only improve the odds that projects will be well designed and meet public expectations.

Step 2: Provide Training for DOT Staff

Enacting state CSS legislation is not enough, however. Comprehensive training within the transportation agency is needed for skillful and successful implementation of CSS. Without ongoing training and retraining of personnel—from engineers and planners to maintenance workers and administrators—CSS will remain on the sidelines, overwhelmed by standard ways of thinking and inadequate public engagement.

Several states have instituted excellent ongoing CSS training programs. In New Jersey, The Congestion Relief and Transportation Trust Fund Renewal Act, signed into law in July 2000, requires the state’s DOT to have a CSS training program.

A useful training manual is *Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities* developed by the Institute of Transportation Engineers and the Congress for the New Urbanism. Engineer-sanctioned guidelines provide an invaluable tool for activists to work with state and local transportation agencies on better community design.

COMMONLY USED ACRONYMS

AASHTO:	American Association of State Highway and Transportation Officials
CSS:	Context Sensitive Solutions
FHWA:	Federal Highway Administration
ISTEA:	Intermodal Surface Transportation Efficiency Act of 1991
NHS:	National Highway System Act of 1995
SAFETEA-LU:	Safe, Accessible, Flexible, Efficient Transportation Equity Act of 2005 – A Legacy for Users

Step 3: Evaluate CSS Performance

Does CSS really produce better results and better participation? To date, little has been done to measure outcomes, and performance methodology is still evolving. *Performance Measures for Context Sensitive Solutions—A Guidebook for State DOTs*, published in October 2004 by the National Cooperative Highway Research Program [Project 20-24(30)], sets forth a CSS Measurement Program Framework that promises to be a significant tool for state officials and citizen advocates alike.

Case Study: New Jersey Route 29 Tunnel and Park

New Jersey Department of Transportation (NJDOT) engineers, planners, project managers, and community relations representatives, as well as consultants and community leaders, have been trained in CSS techniques—flexible design, respectful communication, consensus-building and community participation, negotiation and conflict resolution—and already see the public benefits.

Gary Toth, NJDOT director of Project Planning and Development, says that the department encourages communities to develop a vision of their own future to guide transportation decisions. “Residents must develop a formal concept of what they want their towns to look like in five, ten, and twenty years. NJDOT can then be a partner in fulfilling that vision and also explain any limits on our delivery of the project so local expectations can be realized.”

The New Jersey Route 29 Tunnel and Landscape Deck Park/South Riverwalk Project is a good example of CSS. In Trenton, Route 29 is primarily a four- to six-lane freeway running along the Delaware River. It connects with Interstate 295 to the south via a section of historic Lambertton Street, which features 100-year-old brick row houses and mature trees. Residents were inundated with traffic that literally shook their homes and depressed property values. NJDOT recognized that the situation was unacceptable and undertook the NJ Route 29 Tunnel and Landscape Deck Park/South Riverwalk Project to move goods and people through the area while creating a major public park and preserving historic and archeological resources.

One of the most exciting aspects of the Deck Park project is its historic interpretive area that is subdivided into five octagonal spaces graced by arches designed to reflect the typical architecture of the century they represent. This design helps park visitors easily assimilate what would otherwise be an overwhelming amount of information.

Preservationists were involved in the project, both as citizen advocates and as professionals. Hunter Research, the firm retained to conduct archeological studies, produced six popular booklets based on their research on subjects as varied as *Native Americans in South Trenton, 10,000 B.C. to A.D. 1700* and *Riverview Cemetery and Trenton’s Dead*. In addition, the firm helped to interpret the archeological excavations to schoolchildren and community members. Website: www.state.nj.us/transportation/eng/CSD

Conclusion

If universally adopted by state and local transportation agencies, CSS could transform transportation planning and project delivery. By more efficiently integrating all planning and design concerns in one process, and by addressing a variety of environmental obligations under Section 106 of the National Historic Preservation Act of 1966, Section 4(f) of the Department of Transportation Act of 1966, and

the National Environmental Policy Act of 1969, CSS could save time and money and promote community goodwill. Most importantly, it could produce superior results with and for the public.

Conservationists and preservationists have long demanded better transportation products and community outcomes. Through advocacy at the state level, preservationists can realistically press an agenda designed to achieve transportation excellence.

Meg Maguire served as president of Scenic America from 1996 to 2004 and currently is a community conservation consultant.

Key CSS Documents That Congress Recognized in SAFETEA-LU

From the Thinking Beyond the Pavement Conference, Baltimore, 1998:

Eight Characteristics of the Process That Yield Excellence

1. Communication with all stakeholders is open, honest, early, and continuous.
2. A multidisciplinary team is established early, with disciplines based on the needs of the specific project, and with the inclusion of the public.
3. A full range of stakeholders is involved with transportation officials in the scoping phase. The purposes of the project are clearly defined, and consensus on the scope is forged before proceeding.
4. The highway development process is tailored to meet the circumstances. This process should examine multiple alternatives that will result in a consensus of approach methods.
5. A commitment to the process from top agency officials and local leaders is secured.
6. The public involvement process, which includes informal meetings, is tailored to the project.
7. The landscape, the community, and valued resources are understood before engineering design is started.
8. A full range of tools for communication about project alternatives is used (e.g., visualization).

Seven Qualities of Excellence in Transportation Design

1. The project satisfies the purpose and needs as agreed to by a full range of stakeholders. This agreement is forged in the earliest phase of the project and amended as warranted as the project develops.
2. The project is a safe facility for both the user and the community.
3. The project is in harmony with the community, and it preserves environmental, scenic, aesthetic, historic, and natural resource values of the area, i.e., exhibits context sensitive design.
4. The project exceeds the expectations of both designers and stakeholders and achieves a level of excellence in people’s minds.
5. The project involves efficient and effective use of the resources (time, budget, community) of all involved parties.
6. The project is designed and built with minimal disruption to the community.
7. The project is seen as having added lasting value to the community.

Model CSS State Legislation

Scenic America, a national advocacy group, has drafted model state CSS legislation that the Center for Neighborhood Technology and the Chicagoland Transportation and Air Quality Commission used to initiate a CSS law in the Illinois legislature in 2003. This model state statute can foster context sensitive highway solutions on state and local roads and streets throughout the country. Scenic America took language both from Connecticut Public Act No. 98-118 and from Section 304 of the National Highway System Act of 1995, adding some original text to make clear the legislative intent. The modifications to Scenic America's Model State Law in the language below reflect recent thinking about CSS.

PUBLIC ACT NO. _____: AN ACT CONCERNING CONTEXT-SENSITIVE SOLUTIONS FOR ROADS, BRIDGES AND PUBLIC TRANSPORTATION FACILITIES

It is the intent of the Legislature to encourage the highest quality design to ensure that road, bridge and public transportation projects adequately meet our transportation needs, exist in harmony with their surroundings, and add lasting value to the communities they serve.

Be it enacted by the Senate and House of Representatives in General Assembly convened:

a) On or before _____date_____, the Secretary of Transportation shall establish design criteria and design policies that incorporate context-sensitive design principles and practices as defined by the Federal Highway Administration to govern new construction, reconstruction, resurfacing, restoration, or rehabilitation of bridges; principal and minor arterial roads, collector roads and local roads and streets; and public transportation facilities including rail and bus stations. The criteria and policies shall take into account:

- 1) safety, durability, and economy of maintenance;
- 2) the constructed and natural environment of the area;
- 3) the environmental, scenic, aesthetic, historic, community, and preservation impacts of the activity; and
- 4) access for other modes of transportation, including those that promote physically active communities.

b) In establishing the criteria required under subsection (a) of this section, the Commissioner shall solicit and consider the views of chief elected officials and organizations including, but not limited to: those with expertise in environmental protection, historic preservation, scenic conservation, bicycle and pedestrian transportation, public transportation, as well as regional councils of governments, rural development councils, the state council on the arts, the Federal Highway Administration and (add other categories as appropriate).

Certified as correct by: _____

Legislative Commissioner: _____

Clerk of the Senate: _____

Clerk of the House: _____

Approved _____, 20____
_____ Governor, State of _____

Resources

American Association of State Highway and Transportation Officials (AASHTO) Center for Environmental Excellence Best Practices in Context-Sensitive Solutions Award Announcement: http://news.transportation.org/press_release.aspx?Action=ViewNews&NewsID=81

Federal Highway Administration (FHWA) Context Sensitive Solutions website: www.contextsensitivesolutions.org

FHWA publication, *Flexibility in Highway Design*: www.fhwa.dot.gov/environment/flex/index.htm

FHWA October 2002 Memorandum on Context Sensitive Solutions: www.fhwa.dot.gov/csd/102902.htm

FHWA List of CSS Program Activities: www.fhwa.dot.gov/csd/activities.htm

Institute of Transportation Engineers publication, *Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities*: www.ite.org/bookstore/RP036.pdf

National Cooperative Highway Research Program publication, *Performance Measures for Context Sensitive Solutions—A Guidebook for State DOTs*: http://trb.org/news/blurbs_detail.asp?id=4400

State CSS Policy Profiles: www.contextsensitivesolutions.org/content/gen/state-profiles/sp-policy