Safety & Aesthetics in the Urban Environment

2. Introduction/Background

Purpose:

Washington State's population is growing at a rate that is placing ever-increasing demands upon our transportation system. Urban roadways, in particular, are suffering from significant additional burden. Engineers and planners from state and local agencies are challenged by the need to reconcile multiple, sometimes conflicting, expectations for urban roadways.

Much of the apparent conflict involves balancing safety needs with the desire for aesthetic design features. Many of these features are considered fixed objects, as defined in the AASHTO Roadside Design Guide, and are often located within the design clear zone. Decisions are further complicated by a variety of related issues. These include: access management, urban median design, context-sensitive design, utility pole location, bike and pedestrian access and safety, transit service, trees, landscaping and other aesthetic improvements, capacity demand, traffic calming, and process issues, including the route development plan approval process and project development schedules.

To best address the challenges of these issues, WSDOT has implemented a multi-faceted effort to implement the fundamental principles of context-sensitive design. Recognizing that the WSDOT *Design Manual* has traditionally focused on freeway and rural highway-type design, a major effort of the group focused on the development of this companion document to the *Design Manual*, which provides conceptual guidance for the application of context-sensitive design in the project development process.

The intent of this companion document is to provide a compilation of the issues that are included in urban highway design. The document provides background information on why a particular issue is of concern; balancing the trade-offs associated with the particular issue; and prompts the user to think about how a particular issue impacts other issues related to urban highway design. The content of this companion document should not be misconstrued as what is considered to be design guidance; rather, it should be recognized as simply a tool to assist in the development of projects in a context-sensitive manner and a repository for the ideas and considerations that must be included in the project development and design process. It is the intent of this document to inspire excellence in design and prompt the user to consider how they can best optimize the existing, surrounding conditions to the greatest extent possible.

History and Principles of Context-Sensitive Design:

One of the most difficult challenges facing the highway community is providing safe, efficient transportation service that conserves and/or enhances the environmental, scenic, historic, and community resources that are so vital to our way of life. The principles of Context Sensitive Design (CSD) offer a useful tool in facing those challenges. CSD allows an agency to initiate a collaborative, interdisciplinary approach that relies on the involvement of key stakeholders, in order to balance the safety and efficiency of a project with the integration of the project into the existing natural, social, economic and cultural environment.

The history of CSD finds its roots as far as back as 1988 and has been prompted into such prominent thinking by the following events:

- The American Association of State Highway and Transportation Officials (AASHTO) established the National Highway System (NHS) Task Force in December 1988 to look beyond Interstate completion; AASHTO Board of Directors recommended the creation of a National Highway System.

- AASHTO adopted the *National Highway System Design Standards* policy on April 11, 1994, Pittsburgh, PA. The relevant portion of that policy is:

  BE IT FURTHER RESOLVED that the Member Departments of AASHTO will work through AASHTO's design standards committees with DOT and with interested parties on design criteria and a design process for NHS routes that integrate safety, environmental, scenic, historic, community and preservation concerns, and on standards which also foster access for bicycles and pedestrian traffic along with other transportation modes.

- NHS Designation Act was enacted in November 1995.

  Section 109 of Title 23, United States Code. The relevant portion of the policy is:
  - A design for new construction, reconstruction, resurfacing…restoration, or rehabilitation of 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]….
    - the constructed and natural environment of the area;
    - the environmental, scenic, aesthetic, historic, community, and preservation impacts of the activity; and
    - access for other modes of transportation.

- The Maryland Department of Transportation, State Highway Administration conducted "Thinking Beyond the Pavement: National Workshop on Integrating Highway Development with Communities and the Environment While Maintaining Safety and Performance" in May 1998.

- Just after the national workshop in Maryland, five pilot states were selected: Connecticut, Kentucky, Maryland, Minnesota, and Utah. The pilot states agreed to implement the CSD approach that was developed at the Maryland workshop and to share their experiences with the States within their region. For additional information on the pilot states' efforts, click on the enclosed link: http://www.fhwa.dot.gov/csd/states.htm.

- FHWA Federal Lands Highway joined the five Pilot States. FHWA's Office of Program Administration and Office of Environment and Planning published *Flexibility in Highway Design* (FHWA Pub. No. FHWA-PD-97-062).

- The American Society of Civil Engineers held the "Role of the Civil Engineer" conference in June 1999. Over 140 practicing civil engineers gathered in Reston, VA, to participate. The workshop, sponsored by the Highway Division's Environmental Quality Committee, offered civil engineers in the community the opportunity to hear from the nation's leaders on context sensitive design and to participate in active and informative small group discussions.

- AASHTO committees began working on four chapters to serve as a bridging document between AASHTO's *A Policy on Geometric Design of Highways and Streets* (The *"Green Book"*) and FHWA's *Flexibility in Highway Design*.

- On January 24, 2002, Mary E. Peters, FHWA Administrator, issued a memorandum to all FHWA field offices which called for the need for "innovative thinking, improved coordination, cooperation, interdisciplinary decision making, streamlined implementation and community acceptance" and cited the value of using CSD as a tool to help sustain important community values without compromising safety.

Context-sensitive design considers the elements of mobility, safety, environment and visual functions from the beginning to the end of the project development process and is based on the following principles:

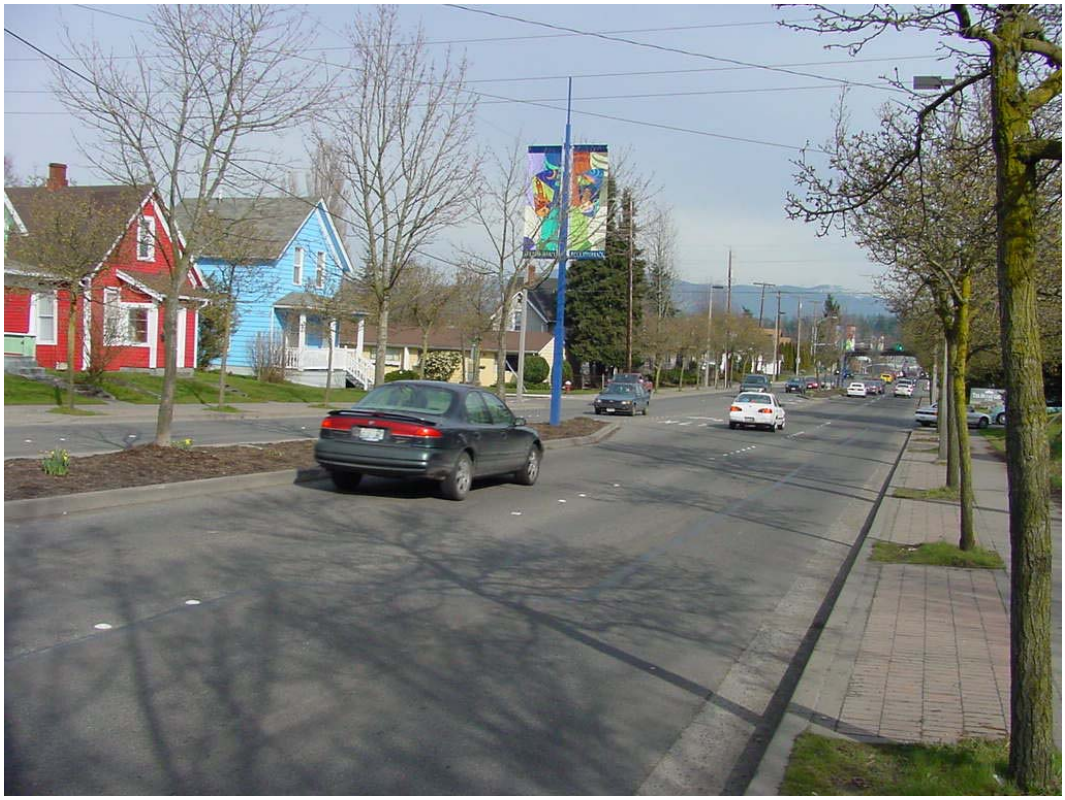
- Projects satisfy the purpose and need as agreed to by a full range of stakeholders. This agreement is forged in the earliest phase of the project and is amended as necessary, as the project develops.

- Projects optimize safety of the facility for both the user and the community.

- Projects are in harmony with the community, and preserve the environmental, scenic, aesthetic, historic, and natural resource values of the area.

- Projects are designed and built with minimal disruption to the community.

- Projects involve efficient and effective use of the resources (time, budget, community) of all involved parties.

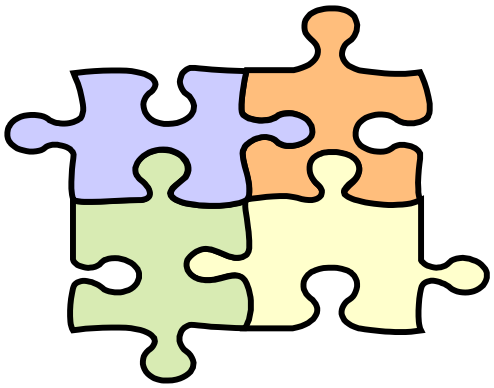


Safety, Aesthetics and Context-Sensitive Design in Washington State – Putting the pieces of the puzzle together:

WSDOT's Design Policy, Standards, and Safety Research Unit is charged with leadership responsibilities for coordinating and conducting safety-related research and analysis to support the evaluation, development, implementation and communication of design standards, policies, and performance measures.

A March 2001 Value Engineering Study on Urban Roadside Treatments recommended a need to develop comprehensive policy guidance for aesthetic urban roadway design. As a result, in June 2001, the WSDOT Design Office launched a new effort, "Safety and Aesthetics in Urban Roadway Design". The project is based on the fundamental principles of context-sensitive design and is considered key to the implementation of context-sensitive design in Washington State.

In the true partnership spirit of CSD, the effort has resulted in the creation of an interdisciplinary group that meets on a quarterly basis. The group is comprised of representatives from cities, the Association of Washington Cities (AWC), the County Road Administration Board (CRAB), the Federal Highways Administration (FHWA), MPOs, and various disciplines within WSDOT including planning, traffic, project development, Local Programs, and landscape design.



The group was formed to assist in the identification of priorities; potential issues and needed work elements; allows for two-way communication and assists in the identification of task-specific sub-committees and members.

The work from this group and the various sub-committees has resulted or will result in the development of a number of tools to be used in the implementation of the CSD vision. These tools include:

- this companion document to WSDOT's *Design Manual*;
- the development of revised or new Design policy, including:
    - a *Design Manual* Design Clear Zone Supplement
    - an Instructional Letter (IL) for determining "Jurisdiction over State Highways within Cities"
    - an In-Service Evaluation Process for new design concepts on state highway systems, as proposed by local agencies;
- new communication tools, including:
    - the interdisciplinary group itself;
    - the Urban Design Alternatives Treatment Brochure; and
- future training efforts.

For more information on WSDOT's Safety, Aesthetics and Context-Sensitive Design effort, click on the following link: http://www.wsdot.wa.gov/eesc/design/Urban/Safety,Aesthetics,&ContextSensitiveDesign.htm or contact……..