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Chairman DeFazio, Ranking Member Duncan, and Members of the Subcommittee, thank you for the opportunity to appear before you today to discuss using practical design and context sensitive solutions (CSS) in developing surface transportation projects. Today I want to share with you how the Federal Highway Administration (FHWA) is advancing CSS to help ensure that Federal investments in transportation fit well within communities. Our work regarding CSS includes an extensive history of partnering with many groups and individuals in the CSS community, including the other panelists here today and the entities they represent. FHWA recognizes the important linkage between reliable transportation, economic prosperity, and quality of life. CSS help maintain that linkage.

LIVABLE COMMUNITIES INITIATIVE

Before I specifically address the issue of CSS, I would like to briefly mention the Administration's Livable Communities Initiative. How a community is designed—including the layout of the roads, transit systems, and walkways—has a considerable impact on its residents.

Making America's communities more livable is a key part of the President's agenda, and Secretary LaHood and FHWA Administrator Mendez are working hard to make important advancements in this area. In June 2009, the Department of Transportation (DOT) joined forces with the Department of Housing and Urban Development (HUD) and the Environmental Protection Agency (EPA) to stimulate comprehensive regional and community planning efforts that integrate transportation, housing, energy and other critical investments. Together, we will help State and local governments make smarter investments in their transportation infrastructure in order to better leverage that investment and to advance sustainable development.

DOT, HUD, and EPA have developed six guiding principles to promote livability:

- providing more transportation choices;
- expanding access to affordable housing, particularly housing located close to transit;
- enhancing economic competitiveness—giving people access to jobs, education, and services, as well as giving businesses access to markets;

- targeting Federal funds toward existing communities to spur revitalization and protect rural landscapes;
- increasing collaboration among Federal, State, and local governments to better target investments and improve accountability; and
- valuing the unique qualities of all communities—whether urban, suburban, or rural.

In most communities, jobs, homes, and other destinations are located apart from one another, necessitating a separate car ride for every errand. Coordinating transportation and land-use decisions and investments increases the efficiency of Federal transportation spending. Strategies that support mixed-use development, mixed-income communities and multiple transportation options help to reduce traffic congestion, pollution, and energy use.

Transportation can play an enhanced role in creating safer, healthier communities with the strong economies needed to support our families. As the population increases, we must identify new strategies to move people and goods within communities and throughout the Nation. Integrating transportation planning with community development and expanding transportation options will not only improve connectivity and influence how people choose to travel, but also lower transportation costs, reduce dependence on oil, and decrease emissions.

Livable communities are mixed-use neighborhoods with highly-connected streets promoting mobility for all users, whether they are children walking or biking to school or commuters riding transit or driving motor vehicles. Benefits include improved traffic flow, shorter trip lengths, safer streets for pedestrians and cyclists, increased trip-chaining, and independence for those who prefer not to or are unable to drive. In addition, investing in a “complete street” concept stimulates private-sector economic activity by increasing the viability of street-level retail small businesses and professional services, creating housing opportunities, and expanding the usefulness of school and transit facilities. A complete street is designed and operated for pedestrians, bicyclists, motorists, and transit riders of all ages and abilities to move safely along and across the street.

Given the clear linkage between livability concepts and CSS, FHWA is already utilizing CSS to improve livability, considering the unique qualities of communities, actively engaging stakeholders in decision-making, and using multidisciplinary approaches. CSS projects consider community characteristics and visions, new and emerging technologies, bicycle and pedestrian facilities, transit and multimodal connections, stormwater management, and use of recycled materials.

CSS DEFINED

Applying CSS involves a collaborative, interdisciplinary approach that includes all stakeholders in providing a transportation facility that fits its setting. It is an approach that leads to preserving and enhancing scenic, aesthetic, historic, community, and environmental resources, while improving or maintaining safety, mobility, and infrastructure conditions. “Context sensitive solutions” have evolved from a concept known as “context sensitive design.” The difference is much more than semantics. “Design” assumed, as engineers always had, that transportation

problems required some sort of construction to fix them. “Solutions” implies a broader, more objective view—one that may result in a multi-modal solution or may not result in any road construction at all. It also suggests that community stakeholders might have innovative ideas for how to address transportation issues.

CSS encompass four core principles for integration into decision-making in the planning and development of surface transportation system projects:

- striving toward a shared stakeholder vision to provide a basis for decisions;
- demonstrating a comprehensive understanding of contexts;
- fostering continuing communication and collaboration to achieve consensus; and
- exercising flexibility and creativity to shape effective transportation solutions, while preserving and enhancing community and natural environments.

CSS help transportation agencies meet their mission of delivering good value in transportation facilities to the public through the timely delivery of high quality projects that are within budget and have widespread support from stakeholders and users. Cost savings can be achieved through effective establishment of a project’s scope, scale, and expectations prior to public agencies’ completion of a significant amount of work on a project, and before other stakeholders and individuals become involved in the process to plan or develop a project. This “right sizing” of projects relates directly to providing opportunities to leverage a wider range of alternatives, solutions, and approaches to complete the project as well as a wider range of resources and funding, including non-traditional sources or cost-sharing approaches. Additionally, projects that follow this process tend to develop informed consent within the community and significantly reduce the risk of resource agency actions or delays resulting from litigation.

EVOLUTION OF CSS

The enactment of the National Environmental Policy Act of 1969 (NEPA) provided a foundation for CSS. A project purpose and needs statement should include discussion of transportation problems to be addressed, but also should reflect a full range of public values identified through scoping and public involvement, including community issues and constraints, sensitive environmental resources, and appropriate consideration of other factors. The statement should be based on input from all interested parties, and consensus should be achieved before proceeding. The purpose and needs statement subsequently provides the basis for stakeholders to develop criteria to evaluate alternatives and creative solutions. Developing a statement to articulate desired characteristics of a place at a future time that addresses transportation needs, community values or aspirations and environmental values provides a forum for communication and helps build a common understanding and expectations about project outcomes.

CSS have evolved over the past 20 years through several key events and publications and through surface transportation legislation placing additional emphasis on the importance of good design that is sensitive to its surroundings. The Intermodal Surface Transportation Efficiency Act of 1991 and the National Highway System Designation Act of 1995, without requiring the development of new standards or criteria, encouraged greater flexibility in highway design. The FHWA publication of *Flexibility in Highway Design* in 1997 built upon and highlighted the flexibility that already existed in current laws, regulations, and guidance, and the American Association of State Highway and Transportation Officials' "Green Book." The impetus for the Context Sensitive Design/Context Sensitive Solutions national initiative was a 1998 national "Thinking Beyond the Pavement" workshop in Maryland. Although the Transportation Equity Act for the 21st Century did not specifically address CSS, it did advance streamlining and stewardship concepts, and the application of CSS can lead to streamlining and stewardship outcomes. In 2005, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), required consideration of CSS in establishing new design standards.

FHWA and CSS

Throughout this period of CSS evolution, FHWA has worked with partners to advance initiatives for expanding the practice of CSS among transportation professionals. FHWA continues to be a leader in promoting CSS through research and publications; training and technical assistance; action planning grants; conferences and peer exchanges; guidance documents and supportive legislative concepts; and fostering a community of practice by developing the CSS clearinghouse website to serve as the definitive source to access CSS information and resources. For example, FHWA delivers CSS training through the National Highway Institute and FHWA Resource Centers; integrates CSS concepts into university curricula; supports and sponsors research projects, technical guidance handbooks, competitions, and conferences; and manages and coordinates contracts and internal and external partnerships to link CSS with planning and project development. Three recent program activities highlight FHWA efforts to continue advancing CSS nationwide: the CSS clearinghouse website, a nationally accepted CSS design guide, and a five-city CSS national dialogue effort.

FHWA has focused on working with partners to document and share success stories and give practitioners a wide variety of examples from which to learn and model. Through the clearinghouse website, we are supporting a broader spectrum of transportation stakeholders such as: municipal governments, public works departments, non-government organizations, environmental and community organizations, professional associations for planners and engineers, and universities. The site is intended to increase the visibility and understanding of CSS by aggressively marketing the concepts and creating multiple opportunities for learning and information exchange. The CSS clearinghouse will reflect trends in building, operating, and

maintaining the national transportation system, including innovative finance, climate change, asset management, project delivery, accelerated construction, sustainability, and performance measurement and will use economic, social, and environmental indicators. It contains hundreds of case studies, hosts a popular webinar series, conducts broad outreach activities, and serves a growing Community of Practice.

FHWA was a sponsor and contributor to the recent publication: *Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities*. This publication illustrates how standards and guidelines may be applied to ensure that urban thoroughfare improvement projects can be compatible with their urban context by supporting community objectives, walkable communities, compact development, mixed land uses, and pedestrians and bicyclists. We will continue our partnership with the Institute of Transportation Engineers, the Center for New Urbanism, and EPA to promote this publication and track case studies.

This fiscal year, FHWA held five national dialogue workshops in Austin, Texas; Portland, Oregon; Minneapolis, Minnesota; Charlotte, North Carolina; and New Brunswick, New Jersey. A national solicitation of projects to highlight in these workshops yielded 90 case studies. Regional participants and the web-viewing audience reviewed case studies; discussed trends in CSS relative to local, State, and Federal initiatives such as livability and sustainability; and identified actions for moving forward. These events met our goals to strengthen and broaden interest in CSS, discover new opportunities for partnerships, and define how CSS support the Administration's Livable Communities Initiative and the FHWA Administrator's Every Day Counts initiative, which is focused on expediting project delivery and enhancing the quality of projects and the surrounding environment.

INTEGRATING CSS INTO PLANNING AND PROJECT DELIVERY

CSS can be applied to all aspects of project development—from planning and design to construction, operation, and maintenance. CSS have been utilized most frequently for difficult and complex projects with major impacts, often as an intervention to get a project moving when absence of stakeholder agreement has halted the project. Increasingly, however, State Departments of Transportation (State DOTs) are appropriately seeking to use CSS from the onset of project planning and in more routine projects. CSS do not represent a philosophy to be selectively applied to certain categories of projects, but an approach to transportation planning, design, construction, and maintenance that is scalable to use on every transportation project.

The application of CSS principles within the transportation planning process assists regions and communities in reaching their transportation goals by encouraging the consideration of land-use, transportation, and infrastructure needs in an integrated manner. When transportation planning reflects community input and takes into consideration the impacts on both natural and human environments, it also promotes partnerships that lead to more balanced decision-making.

While construction, maintenance, and operations functions seem straightforward, a CSS approach can reduce adverse community impacts related to when and how the work is conducted. For example, in some locations, it may make sense to overlay an asphalt surface in increments while leaving the roadway partially open to traffic. In other situations, it may be preferable to completely close a roadway and get the overlay work done more quickly.

Accommodating business access is often an issue during construction and maintenance activities. Collaborating with local businesses and economic development interests provides useful information about access requirements, alternate access locations, detour routes, and signage. Collaboration with these stakeholders can also result in construction schedules that avoid conflict with local holiday gatherings, festivals, fairs, and sporting events.

Considering impacts to adjacent areas in determining the time of day for construction operations can also be important. Mobility may be improved by conducting work at night, but night-time construction light and noise could negatively affect adjacent residential neighborhoods. Communication with stakeholders can result in better understanding and resolution of potential trade-offs.

At the organizational level, CSS training is important, particularly in areas of project management, communications, public involvement, and design flexibility. Institutionalizing the CSS approach involves State DOT reviews of policies and procedures to identify barriers to using the CSS principles for project delivery, and then modifying policies and procedures as needed to mitigate or remove barriers and to allow and encourage flexible decision-making tailored to specific projects. Some State DOTs have also established CSS training programs for contractors and construction and maintenance staff.

Through State pilot efforts (like those in Maryland, Utah, Kentucky, Connecticut, and Minnesota), case study compilation, and recent National Cooperative Highway Research Program research efforts on CSS benefits, the transportation community has observed how CSS can help create projects that meet or exceed the expectations of both designers and stakeholders. The use of CSS can lead to better value in the form of reduced costs, on-time delivery, improved community relationships, and opportunities to leverage a wider range of funding options (non-traditional funding sources or cost-sharing approaches).

How to “Right Size” Projects

Variations of CSS have evolved to incorporate greater financial feasibility and benefits analyses and to respond to perceived problems of “over design” and “over sizing.” States have coined terms and initiatives such as “Common Sense Solutions,” “Community-based Solutions,”

“Flexible Design,” “Practical Design,” “Practical Solutions,” “Smart Transportation,” and just recently we heard the term “Design Suitability” associated with Caltrans’ new “Smart Mobility 2010” framework. Common to these efforts is a system-sensitive approach where reasonable solutions are sought to address more complicated areas with constrained financial resources. This can be achieved by applying the concept of diminishing returns and viewing a project as an investment. At some point in the design process, larger cross sections and wider rights-of-way may not return significant improvements for the investment to be made. The current budgetary constraints and limitations necessitate such an approach for addressing more problem areas with limited resources. The right answer does not come just from an engineering manual but from creative thinking that reflects, among other things, good, safe engineering and the context of the community.

If a transportation agency is faced with a change in available resources and it is necessary to down-scope the project, the CSS process can be continued or reactivated to take into account the new fiscal reality. The agency can pose the situation of reduced funds to stakeholders and collaborate to determine what features a shorter-term or smaller-scoped project should include and the cost tradeoffs of not accommodating future projected demands if that is an issue. Openly discussing issues related to priorities and phasing, and examining short-term options that do not preclude the preferred long-term solution, helps stakeholders accept changed conditions and support a revised project scope.

Many FHWA national initiatives have paralleled this “right sizing” trend at the State level. Through our scenario planning efforts, we have helped communities develop a shared vision for the future by analyzing various forces (e.g., health, transportation, economic, environmental, land use) that affect growth. Our fiscal constraint guidance has helped States and communities determine reasonable assumptions for revenue sources available in the years when they are needed for project development and implementation. Through our corridor planning guidance and efforts to link planning and NEPA, we have helped create a seamless decision-making process that minimizes duplication of effort, promotes environmental stewardship, and reduces delay between planning and project implementation. Section 6002 of SAFETEA-LU provided an environmental review process that emphasizes interagency collaboration and participation, supporting the concept of early consideration of environmental concerns in transportation planning. It builds upon NEPA requirements, allowing decision makers to use a systematic and interdisciplinary approach that considers environmental, economic, and technical factors. Value engineering can be applied at any point in the project development process as long as the approved purpose and need is preserved.

EXAMPLES OF CSS OUTCOMES

Working with stakeholders, designers have many choices, including the type of facility, lane and shoulder widths, clear zone design, level of service, design speed, design vehicles, location and type of bicycle and pedestrian facilities, medians, on-street parking, intersections, channelization features, roadside treatments, and access control. Examples from the national dialogue workshops highlight the range of CSS practice and outcomes.

Central Texas Greenprint

To help identify valuable green infrastructure for Central Texas, Envision Central Texas formed a partnership with the Capital Area Council of Governments and the Trust for Public Land to complete a *Greenprint for Growth* for the region. The Greenprinting process engages community leaders in a collaborative effort to define conservation priorities and establish criteria that reflect locally distinctive resources and objectives. Using state-of-the-art geographic information systems models, the Greenprint analyzes this community-based data and generates maps and reports that provide unique insights for formulating conservation acquisition strategies or development goals. These integrated, interactive green infrastructure maps are invaluable tools to identify and preserve critical open space for trails, parks, and habitats as well as understand which land is most appropriate for development. The regional nature of this Greenprint helps to identify synergies between jurisdictions and develop strategies to support collective and individual county land protection plans.

Skyway Corridor in Paradise, California

The Skyway serves as the Town of Paradise's "Main Street" and primary connection to jobs and shopping in Butte County's largest community, Chico. Traffic volumes, speed and the roadway's existing geometrics had shifted the Skyway away from a "Main Street" to more of an expressway, limiting the ability for the downtown area to flourish. A collaborative, community-supported plan was created to address traffic safety and operations, circulation, pedestrian, and aesthetic deficiencies within the existing corridor.

The plan includes reducing the four-lane roadway to three lanes in the downtown area, adding bicycle lanes, enhancing pedestrian crossing facilities, creating wider sidewalks, and maintaining traffic flow through targeted intersection improvements and coordination of traffic signals. Following a large wildfire near the community that occurred during the process, the plan was modified to eliminate any landscaped medians in the three-lane section, and to include decorative pavement in the center lane to be used as a second evacuation lane in the event of future fires. The plan also includes a new parking lot and public gathering space near the core of downtown to further support the economic revitalization of the downtown area. Subsequent to this effort, the Town of Paradise embarked on a Downtown Capital Improvements Master Plan for other streets in the downtown area.

High Point Redevelopment in Seattle, Washington

The High Point Redevelopment in Seattle represents a unique sustainable development that is garnering local, national, and international attention. The project uses CSS principles to achieve its successes and is serving as a model for how low-impact development methods can be incorporated into an urban streetscape. The key CSS element included intense collaboration with both the public and the multiple government agencies. From this process, the team realized that there was a strong public desire to restore the street grid in order to re-integrate the High Point community with the surrounding neighborhoods. The other community goal was to slow down traffic and provide equitable access to transit for the low-income neighbors at High Point. By using the Complete Streets concept and using natural drainage to manage stormwater, the street network appears to be functioning in a safe manner and has been woven back into the typical grid of the city.

CONCLUSION

Context sensitive solutions are the culmination of a change from a “decide, announce, and defend” way of doing business to a collaborative problem-solving model where transportation agencies consider and build upon ideas generated by stakeholders. FHWA views the nationwide use of CSS as an essential way to fashion 21st Century solutions to emerging infrastructure challenges. We will continue to promote the use of context sensitive philosophies and approaches during project development to improve project decision-making; expedite project delivery; and enhance mobility, safety, livability, and environmental sustainability.

Mr. Chairman, Members, thank you again for this opportunity to testify. I will be pleased to answer any questions you may have.

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