

# **Integration of Context Sensitive Solutions in the Transportation Planning Process**

**FINAL REPORT**

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## **Project Background**

Since the 1998 “Thinking Beyond the Pavement” workshop, the national movement of the use of context sensitive solutions for project development is well documented. Better understanding of the application of CSS principles in the transportation planning process will further enable appropriate, cost-effective, and successful integration and application into the planning and project development process to inform and influence context sensitive design/solutions in a more widespread and consistent manner. The goal of this project is to investigate emerging successful practices, case studies, and policy guidance that can promote integrating CSS principles in the transportation planning process.

The project includes a general review of the relevant literature and current planning practices. Using the 1998 CSS principles for project development as a point of departure, a set of principles applicable to transportation planning was developed. Materials for Web and print publication were prepared that include the principles, questions and answers related to implementing practices based on the principles, and case studies and fact sheets highlighting examples of CSS integration into transportation planning.

This report provides documentation of a survey of current practices in planning agencies and the development of the toolkit materials. The report concludes with a summary of findings, recommendations for implementation, and identifies several areas needing future study.

## Task 2.1: Literature Review

The objective of this section of the report is to provide information and resources related to context sensitive solutions (CSS) in the transportation planning process. The section is organized as an annotated bibliography with sections on general discussions of CSS, current research initiatives, and applications and policies at National, State, and regional agencies. The intent of this section is to provide background information on using a CSS approach to transportation planning as well as examples of how transportation agencies are implementing CSS practices and developing CSS policy initiatives. These resources also provide background for the toolkit materials developed for this project.

### Methodology

#### *Keyword Search*

An extensive list of keywords and phrases were used to identify CSS principles being applied in planning. The following list includes some of the keywords used to search public, private, governmental, and CSS-related Web sites, publications, conference proceedings, transportation research organizations and professional entities.

1. Community engagement in transportation planning
2. Public involvement in transportation planning
3. Stakeholder involvement in transportation planning
4. Multidisciplinary planning teams
5. Regional transportation planning
6. Land-use and transportation planning integration
7. Land-use, transportation, and air quality planning
8. Livability policy
9. Livable communities policy
10. Sustainability policy
11. Design-oriented planning
12. Transportation planning and urban design
13. Form-based codes and transportation
14. Transportation planning and scenario building
15. Land-use and transportation scenarios
16. Visioning
17. Long-range plan visioning
18. Strategic transportation planning
19. Transportation planning and environmental considerations
20. GIS in transportation planning
21. Transportation planning and smart growth
22. Planning for sustainable transportation

### Annotated Bibliography

#### *General*

**Lazzara, J. and L. Arrigoni. 2004. "Context sensitive solutions: A collaborative process for planning, design and construction." *Transportation Builder*, Vol. 16, No. 6; pp. 35-37.**

This article details an example of collaborative processes for planning, design and construction, in this case the Franklin Orleans Street Bridge of the Chicago River. In a special design process called context

sensitive solutions (CSS), project stakeholders like merchants, hoteliers, and residents play an integral planning role. A citizen advisory committee is formed, and public outreach leads to better information dissemination, the article states. CSS policy development at various departments of transportation is listed, along with some CSS basic tenets. The article concludes with further development of existing CSS policies in Illinois.

**Brach, A.M. 2005. “A taxonomy for stakeholder involvement in public sector transportation research and technology programs.” *Public Works Management & Policy*, Vol. 9, No. 3; pp. 223-231.**

Stakeholder involvement has become critical in transportation research over the past two decades as constituencies that had previously shown little interest in research began to realize that Federal and State government decisions about research priorities could influence market opportunities and public policy. Providing for stakeholder involvement in a research program means giving those interested in the research opportunities to help shape the program. This article develops a taxonomy for stakeholder involvement in public sector transportation research programs based on the purpose of the research, sponsorship of the research, and stages of the research management process. Four types of stakeholders are identified: sponsors, experts, users and affected parties, and their potential roles at each stage of the research management process are discussed. The article identifies four general types of mechanisms for stakeholder involvement, from the least formal to the most formal mechanism, and provides guidelines for their use in the context of the taxonomy for stakeholder involvement. The taxonomy developed in this paper can help transportation research program managers develop practical approaches for stakeholder involvement.

**Hoover, J.; McDowell, B.; Sciara, G.C. 2004. *Transit at the Table: A Guide to Participation in Metropolitan Decisionmaking*. Parsons Brinckerhoff, Report No. VA-90-1004-04-1; 88p.**

This report presents the observations, perspectives, and recommendations of a cross section of transit agencies from large metropolitan areas on how to secure positions in the metropolitan planning process. More importantly, the report can be a guide on how to use those positions to win policy and program support for priority transit services. The challenges to achieving full decision-making partnerships in regional settings, the most effective strategies for addressing these challenges, and the rewards of partnerships are presented by transit industry leaders using their own experiences. While the primary audience for this report is transit general managers and transit senior staff, important messages are included for other key stakeholders. Because the overall effectiveness of a metropolitan planning organization rises and falls with the depth of the decision-making partnerships, suggestions and strategies presented in this report represent significant opportunities for improving current practice. Key findings of the report were also used in preparing a self-assessment checklist for transit operations in assessing their profile and participation in metropolitan planning. The indicators are generic and not exhaustive. As such, the questions should be regarded as only the starting point for subsequent discussion focused on local issues. This checklist is located in appendix A of the report. This report is a product of the Transportation Planning Capacity Building Program and can be found at [www.planning.dot.gov](http://www.planning.dot.gov) as a metropolitan planning technical resource.

**Levine, J. and A. Inam. 2004. “The market for transportation-land use integration: Do developers want smarter growth than regulations allow?” *Transportation*, Vol. 31, No. 4; pp. 409-427.**

Policy reform efforts have recently assumed that manipulating land uses in the direction of smart-growth alternatives can improve travel behavior. This notion of manipulating land uses implies that the alternative is somehow self organized or market based, which may underestimate the extent to which current planning interventions in the United States impose an automobile-oriented template on most new development. Rather than a market failure, the paucity of smart-growth alternatives may be a planning failure. This problem definition would shift the burden of proof for policy reform, as uncertainty in travel behavior benefits would hardly justify the continuation of exclusionary regulations. If municipal regulations in fact constrain alternatives to low-density, automobile-oriented development, one would expect developers to perceive unsatisfied market interest in such development. This article studies, through a national survey, U.S. developers' perceptions of the market for pedestrian- and transit-oriented development forms. Findings show that respondents perceive considerable market interest in alternative development forms, but believe that there is inadequate supply of such alternatives relative to market demand. Developer-respondents attribute this gap between supply and demand principally to local government regulation. The

majority of developers indicated that relaxation of these regulations would lead them to develop in a denser and more mixed-use fashion, particularly in close-in suburban locales. These results can be interpreted in favor of land policy reform based on the expansion of choice in transportation and land use.

**Sen, S. and L.M. Azonobi. 2004. Environmental justice in transportation planning and policy: Some evidence from practice in the Baltimore-Washington DC metropolitan region. Morgan State University, National Transportation Center, Report No. 0102-006; Final Report; 51p.**

The purpose of this report is to answer two broad research questions: (1) How is environmental justice in transportation addressed and implemented to take into account low-income populations and minority communities and their needs, problems, and aspirations? and (2) How are environmental justice data and concerns incorporated into the transportation decision-making process? The research employed multiple methods. These included a literature review; qualitative interviews with transportation planners, practitioners, policy makers, and other stakeholders in transportation planning and policy in the Baltimore-Washington, D.C., metropolitan area; and a focus group in Baltimore. The primary analytical framework was drawn from critical ethnography and studies of practice and discourse in public policy. Three different views of environmental justice emerged from this study of the Baltimore-Washington, D.C., metropolitan area. Most private consulting firms in the area are engaged in environmental justice because it is a source of job and contracts. Most public officials in the region are engaged in environmental justice and public participation because it is a Federal regulation and requirement. However, most citizen and advocacy groups in the region consider environmental justice and its implementation as part of the agency's mission. The lack of uniform standards regarding environmental justice issues, coupled with scarcity of information, as well as the complexity of the issues, are all obstacles to implementing and enforcing environmental justice principles. Access to information is an important issue for community organizations, advocacy groups, low-income, and minority groups. Public agencies often hold meetings at places that are not easily accessible, or at times difficult for transit dependent, low-income, and minority populations to attend. It is recommended that transportation agencies in the Baltimore-Washington, D.C., metropolitan area take a proactive stance in involving low-income and minority communities in the transportation policy and planning process. This should involve establishing outreach programs through nonprofit organizations, minority institutions, and advocacy groups that already play significant roles in these communities.

**TPRAC Minutres, VDOT Richmond District Training Center, Context –Sensitive Solutions in Large Central Cities (Thursday May 27, 2004) [http://gulliver.trb.org/news/blurb\\_detail.asp?id=3000](http://gulliver.trb.org/news/blurb_detail.asp?id=3000)**

The Robert F. Wagner Graduate School of Public Service's Rudin Center for Transportation Policy and Management at New York University has released a summary of the proceedings and findings from a peer-to-peer workshop on context-sensitive design solutions held on June 19-20, 2003, in New York, NY.”

**Context Sensitive Solutions, Federal Highway Administration, January 6, 2005**

This report summarizes the current and recently completed activities of the Federal Highway Administration (FHWA) Context Sensitive Solutions (CSS) program. These are CSS-focused efforts being pursued in support of achieving the FHWA Vital Few Goal of improving environmental stewardship and environmental streamlining. CSS offers agencies the concepts and strategies to reach a consensus on transportation improvement solutions through the balancing of multiple objectives and stakeholder desires (e.g., safety, mobility, environmental, financial, land owner, and community values).

***Current Research Activities***

**Strategic Highway Research Program II (SHRP II)**

This cooperative program funds short-term, results-oriented research projects. The program has four main research areas: highway safety, highway renewal, travel-time reliability, and capacity. The goal of the capacity program is to support research that will help reach the goal of integrating mobility, economic, environmental, and community needs in the planning and design of new transportation capacity. Twelve RFPs were released in fall of 2006, and approved work programs are expected to be released in fall of 2007. More information available at: <http://www.trb.org/shrpii/>

**Surface Transportation Environment and Planning Cooperative Research Program (STEP)**

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) established the Surface Transportation Environment and Planning Cooperative Research Program (STEP). The general objective of the STEP is to improve understanding of the complex relationship between surface transportation, planning and the environment. More information available at: [www.fhwa.dot.gov/hep/step/index.htm](http://www.fhwa.dot.gov/hep/step/index.htm)

#### **Transportation Pool Fund**

When significant or widespread interest is shown in solving transportation-related problems, then research, planning, and technology transfer activities may be jointly funded by several Federal, State, regional, and local transportation agencies, academic institutions, foundations, or private firms as a pooled fund study. A Federal, State, regional, or local transportation agency may initiate pooled fund studies. Private companies, foundations, and colleges/universities may partner with any or all of the sponsoring agencies to conduct pooled fund projects. More information available at: <http://www.pooledfund.org/about.stm>

#### **Research for the AASHTO Standing Committee on Planning (NCHRP 08-36)**

The objective of this project is to establish a flexible, ongoing program of quick-response research designed to develop improvements to the analytical methods, decision-support tools, procedures, and techniques employed by practitioners to support statewide and metropolitan transportation planning, programming, and development. More information available at: <http://www.trb.org/TRBNet/ProjectDisplay.asp?ProjectID=909>

#### **Research for the AASHTO Standing Committee on the Environment (NCHRP 25-25)**

The objective of Project 25-25 is to provide flexible, ongoing, quick-response research on environmental issues in transportation. This research will be designed to develop improvements to analytical methods, decision-support tools, procedures, and techniques employed by practitioners to support statewide and metropolitan transportation planning, programming, and development. More information available at: <http://www.trb.org/TRBNet/ProjectDisplay.asp?ProjectID=761>

#### **NCHRP 15-32: Context Sensitive Solutions: Quantification of the Benefits in Transportation**

This NCHRP project will provide practitioners and policymakers with solid information on the costs and benefits of applying the principles of CSS in project development. Some of the findings of this report will likely also be applicable to transportation planning agencies. The report is anticipated for release in 2008. More information available at: <http://www.trb.org/trbnet/projectdisplay.asp?projectid=412>

#### ***Applications: Streamlining Planning Strategies***

##### **Delaware Smart Growth Transportation Strategies, Robert Kleinburd, Environmental Program Manager, FHWA Delaware Division, [Robert.Kleinburd@fhwa.dot.gov](mailto:Robert.Kleinburd@fhwa.dot.gov), 302-734-2966**

In 2001 the State governor announced a planning agenda to promote smart-growth development called "Livable Delaware." The Delaware Department of Transportation (DelDOT) adopted a series of strategies to support the governor's statewide agenda. DelDOT appoints representatives to local/county development advisory committees, which create site plan reviews and municipal transportation ordinances as part of land development. Certain counties can enable themselves to deny approval of development plans that would worsen traffic congestion. In addition, DelDOT will participate in on-going corridor coordination to facilitate preservation efforts. For more information on Livable Delaware and how it relates to enhanced transportation planning in Delaware see: <http://www.state.de.us/planning/livedel/default.shtml>.

##### **Maryland Expert Panel Utilized to Identify Probable Development Patterns, Dan Johnson, Environmental Protection Specialist, FHWA Maryland Division, [DanW.Johnson@fhwa.dot.gov](mailto:DanW.Johnson@fhwa.dot.gov), 410-926-4342**

The Maryland State Highway Administration (SHA) and FHWA Maryland Division have sponsored expert panel discussions to explore the future of Routes 42, 43, 270, and the Intercounty Connector (ICC). Discussions concerning land use near the ICC have been very extensive. Members on the ICC panel include representatives from academia, bankers, realtors, regional planners, and transit planners. At the meetings, panel members review local planning assumptions based on factors such as demographic and

economic projections. In addition, the expert group explores long term cumulative and secondary impacts resulting from future projects. The panels use the Delphi Approach to brainstorm ideas and a contracted facilitator from CH2M Hill to get to consensus. All sessions are open to the public.

For more information on the land use and the ICC see:

<http://www.iccstudy.org/StudiesUnderway.php?pageId=21>

**Integrating NEPA and Statewide Transportation Planning Pilot, Elton Chang, Environmental Coordinator, FHWA Oregon Division, [elton.chang@fhwa.dot.gov](mailto:elton.chang@fhwa.dot.gov), 503-399-5749**

Under the Integrating NEPA and Statewide Transportation Planning Pilot, the Oregon Department of Transportation (ODOT) is moving the first tier of a tiered NEPA process into the planning process. The first tier, called a Location Environmental Impact Statement (EIS), addresses the location of a proposed facility at the corridor level and addresses the modal question. The first tier includes stakeholder involvement and NEPA approvals to purchase right of way where necessary to protect the corridor. Approval to move to final design is acquired later through a second tier document, called a Design EIS, prepared during the project development phase. Using this approach, ODOT will have the information needed to make sound project decisions. Decisions will then be linked to commitments that can protect corridors prior to funding and implementation. ODOT believes that total project delivery time will be shortened and land-use patterns will be developed that are more compatible with proposed facilities.

**"Hear Every Voice" Public Involvement Process, Cheryl Martin, Environmental Engineer, FHWA Minnesota Division, [Cheryl.Martin@fhwa.dot.gov](mailto:Cheryl.Martin@fhwa.dot.gov), 651-291-6120**

In 1999, the Minnesota Department of Transportation (Mn/DOT) finalized a new public-involvement process called "Hear Every Voice." The process guides Mn/DOT staff on how to involve the public, including non-traditional stakeholders, early and often in transportation planning and decision making.

[http://environment.fhwa.dot.gov/strmlng/PDFs/md\\_hev.pdf](http://environment.fhwa.dot.gov/strmlng/PDFs/md_hev.pdf)

**Caltrans/FHWA/EPA Partnership Pilot, Stephanie Stoermer, Environmental Program Manager, [Stephanie.Stoermer@fhwa.dot.gov](mailto:Stephanie.Stoermer@fhwa.dot.gov), 916-498-5057**

Under the California Department of Transportation (CALTRANS)/Federal Highway Administration (FHWA)/U.S. Environmental Protection Agency (EPA) Partnership Pilot, the three agencies are developing joint initiatives that will help reduce project delays while collaboratively meeting transportation and environmental protection priorities. The goal of the pilot is to facilitate the incorporation of environmental concerns into the regional transportation planning process. The pilot will also foster interagency cooperation, enhancing the quality of the tools, guidance, and project management techniques needed to evaluate project impacts. As a first step, an interagency needs assessment and a team-building workshop were conducted in 1999. [http://environment.fhwa.dot.gov/strmlng/PDFs/ca\\_epacaltran.pdf](http://environment.fhwa.dot.gov/strmlng/PDFs/ca_epacaltran.pdf)

**Florida DOT's Efficient Transportation Decision-Making (ETDM) Process, Peter McGilvray, Environmental Resource Manager, Florida DOT, [Peter.McGilvray@dot.state.fl.us](mailto:Peter.McGilvray@dot.state.fl.us), 850-410-5885**

The Florida Department of Transportation (FDOT), FHWA, and all of the Federal and State resource agencies with which FDOT works have joined in a cooperative effort to completely redesign the planning, permitting, and project review process to more efficiently and effectively time and incorporate environmental data, project review, and the technical assistance that resource agencies can provide. The resulting Efficient Transportation Decision-Making process (ETDM) links land use, transportation, and environmental resource planning, and facilitates early and interactive involvement to produce better and more consensual environmental outcomes. Through electronic data sharing and comment entry, maps can be viewed and comments filed and read by others online at various stages in the process. As a result, FDOT expects more efficient and effective environmental stewardship, along with considerable reductions in delays, project changes, and challenges associated with project development, permitting, and consultation. The process is expected to improve the quality of decisions and environmental investments.

The ETDM process involves two environmental screening stages, one of the long-range plan and another of the transportation improvement program. Consequently, both screens will occur considerably earlier in the project development process than they do now. Environmental Technical Advisory Teams (ETAT) in each of Florida's seven districts will coordinate the screens. The ETATs will consist of FDOT district staff and



planning and regulatory staff from the resource agencies, a staffing commitment that FDOT plans to support. Each ETAT representative will have responsibility to coordinate internally at their agency and represent responses and positions to FDOT and metropolitan planning organizations (MPOs). During planning, the team's role is advisory and includes input on regulatory and planning programs and priorities, avoidance and minimization options, and mitigation alternatives, leading to more accurate estimation of project costs. Secondary and cumulative effects are evaluated on a project and systemwide basis in connection with the planning screen, so that the interrelationship between land use, ecosystem management, and mobility plans can be considered in integrated planning across the agencies.

The role of the ETAT changes from advisor during planning to coordinator during project development. The ETAT input covers agency scoping requirements, and ETAT members coordinate with their agency and FDOT's project managers during project development to issue construction permits simultaneously with the National Environmental Policy Act (NEPA) record of decision. As a project advances into the project development and design phases, the ETAT continues to provide project input and technical assistance to the project sponsor to satisfy permit requirements under multiple environmental laws. The ETAT also identifies, defines, and participates in technical studies needed for permitting decisions. Criteria are being developed for categorically excluding certain projects from permitting, enabling early approvals for less complex projects.

The overall process is expected to reduce the number of projects subject to detailed reviews and to enable teams to focus on key environmental issues in their districts. An electronic database system provides the vehicle for information exchange to and from ETAT members regarding project plans, impacts, and recommendations or requirements. The database system will be housed at the University of Florida GeoPlan Center, and all project and resource data will reside in the GeoPlan Center's Florida Geographic Data Library (FGDL). All geographic information systems (GIS) analyses will be performed within the FGDL system so that ETAT members will only need an Internet connection to view and comment on the results of GIS analyses.

### ***Applications: National Initiatives***

#### **CSS Self-Assessment Guide and Workshop, FHWA, Office of Infrastructure, Barbara Bauer** [barbara.bauer@dot.gov](mailto:barbara.bauer@dot.gov).

This project will develop a technical assistance guide and self-assessment tool to assist agencies with assessing their progress with advancing CSS integration. It will assist agencies in assessing how the CSS philosophy and principles have been institutionally integrated within their agency and progress with advancing the application of these principles in all aspects of planning and project development. This project includes development of outreach material and workshops, including a one-day workshop to provide guidance to agency managers and a one-day workshop to provide guidance to practitioners on how to work with the assessment tool. The draft guide, assessment tool, and outreach material will be available in late 2007. The workshops will be developed per feedback received on the guide and tool.

#### **CSS Implementation Assessment, FHWA, Office of Infrastructure, Barbara Bauer** [barbara.bauer@dot.gov](mailto:barbara.bauer@dot.gov).

One of the objectives under the Vital Few Goal of improved environmental stewardship is to increase the number of State and Federal agencies implementing CSS. Beginning in FY2007, FHWA Division Offices will assess agencies' progress toward implementing CSS principals throughout the planning, project development, construction, operations, and maintenance of transportation projects and systems. FHWA has set a target of 20 Divisions that would achieve a level of full integration FY2007. The rest of the Divisions should complete the assessment as they work to achieve, maintain, or advance their CSS goals during FY 2007. This assessment complements the joint commitment by AASHTO and FHWA at the National CSS Peer Exchange, held in Baltimore in September 2006, to elevate the importance of CSS and support State and Division action plans. This assessment of State progress will help FHWA gauge the success of national CSS programs, and enable it to better define priorities. The assessments are also important for the development of annual performance goals for the each agency. In FY 2008 and future years, all Divisions will be asked to conduct the assessment and set goals according to the revised CSS

implementation criteria and feedback received. Expanded assessment criteria, examples, and support tools will be developed and validated during FY 2007.

**Integrated Planning Initiative, FHWA, Office of Infrastructure, Barbara Bauer**  
[barbara.bauer@dot.gov](mailto:barbara.bauer@dot.gov).

Integrated planning can help agencies to identify opportunities to address environmental impacts early in project development and to develop mitigation options that address the highest-priority needs in an ecosystem. The key characteristics of integrated planning include:

- Collaborative partnerships among stakeholders
- A common language with which to develop shared goals and evaluate alternatives
- Planning that leads to a shared conservation strategy
- Adaptive management in planning, using appropriate performance measures

FHWA leads the Executive Order Interagency Task Force efforts and has a prominent role in the Task Force Working Group on Integrated Planning, which meets frequently to discuss integrated planning barriers, priorities, and progress. The Working Group has identified key issues and is developing a broad range of recommendations for helping agencies move toward integrated planning. In addition to the Task Force, FHWA is partnering with other Federal agencies to write a handbook for Federal field staff. The handbook will provide step-by-step processes, tools, techniques, and resources to enable Federal staff to work in partnership with State, local, and non-profit organizations to initiate integrated planning and deploy creative approaches to mitigation.

More information available at: <http://www.environment.fhwa.dot.gov/strmlng/newsletters/nov04nl.asp>

**SAFETEA-LU Provisions**

The current transportation legislation allows States to use Federal funds to provide additional resources to Federal agencies, State agencies, and Federally recognized Tribes participating in the environmental review process. These funds are only available to States that support activities that directly and meaningfully contribute to expediting and improving transportation project planning and delivery. Transportation planning agencies (e.g., MPOs and DOTs) could explore how this authority could be used to support reviews at the long-range planning level.

**National Highway Institute, USDOT**

The National Highway Institute (NHI) provides training and workforce development courses for the transportation industry. In an effort to integrate CSS more fully into all transportation decisions, FHWA is currently sponsoring a review of course materials to update them to include CSS concepts and approaches.

More information available at: <http://www.nhi.fhwa.dot.gov>

**GIS in Transport, FHWA**

FHWA sponsors a Web site with extensive resources related to GIS in transportation. The Web site provides a list of GIS-related events and meetings, information on GIS training opportunities, GIS databases, and current research reports. GIS can play an important role as a tool for CSS approaches for transportation planning. GIS can improve the environmental review process and can further integrate planning and project development activities. Incorporating GIS into transportation activities allows for project alternatives to be effectively and efficiently evaluated in response to public or agency comments.

More information available at: <http://gis.fhwa.dot.gov>

**Geographic Information for Transportation (GIS-T)**

Co-sponsored by AASHTO, USDOT, URISA, HEEP, this group organizes a symposium and series of workshops each year. This provides the opportunity for persons in government and private industry who are interested in the use of GIS for transportation purposes to get together and share experiences, see state-of-art software, and learn more about this field. It annually attracts about 400 registrants and additional exhibitors. More information available at: <http://www.gis-t.org>

**Environmental Geospatial Information for Transportation. An Exchange for the Mid-Atlantic Region. Transportation Research Board, 2006**

The Transportation Research Board, in partnership FHWA, convened a workshop on May 3 - 4, 2006, in Washington, D.C., to discuss successful GIS data-sharing collaborations for environmental GIS

applications used in transportation, discuss common approaches and issues, and consider methods to facilitate adoption by other organizations. Representatives from State and Federal transportation and natural resource agencies, local governments, and non-governmental organizations with expertise in natural resource planning and regulatory programs, transportation planning and project development, and geographic information specialists from the Mid-Atlantic Region attended.

More information and meeting presentations available at: <http://www.trb.org/Conferences/EnvGIS>

### ***Applications: State DOT Initiatives***

#### **California Department of Transportation (Caltrans)**

While much of Caltrans' efforts are project and design oriented, its CSS approach does seek to ensure that transportation facilities are a community asset and compatible with their context. As part of a community-sensitive approach to decision making, the Office of Community Planning (OCP) was created. OCP seeks to integrate transportation, land use, and community values, in part through public engagement and in part through serving as a resource center on livable communities and smart growth. An example of this effort is the publication "Main Streets: Flexibility in Design and Operations." Caltrans won the "2004 Best Practices in Smart Growth and Transportation" award from AASHTO for "Context Sensitive Solutions: Changing the Culture."

#### **CEO Leadership Forum—State Strategic Initiatives, Connecticut DOT Segment**

##### ***Implementation of Context Sensitive Solutions (CSS) as a part of the project development process.***

CSS is a collaborative, interdisciplinary approach to project development involving all stakeholders at the earliest phase of a project. The goals of the CSS process is to ensure that transportation projects are in harmony with the community and preserve those attributes that are important to the community.

##### ***What challenges has your organization encountered in implementing these initiatives?***

The CSS process requires that DOT personnel and external stakeholders change their attitudes with respect to the project development process. The training of DOT and external stakeholders is perhaps the most critical challenge in implementing the CSS process due to the need to change attitudes. All participants must be able to understand the CSS process and realize that the process is collaborative in nature and, therefore, requires a high level of communication and participation. Engineers must learn to communicate—both by speaking and listening—in lay terms that the public can understand. External stakeholders must understand that the DOT is willing to participate in discussions that will lead to a project in harmony with the community concerns. The adversarial roles of both groups need to change and both internal DOT and external stakeholders need to work in a cooperative fashion for the good of the community and the project's purpose and need. Developing a purpose and need for the transportation project that adequately defines and addresses both the transportation and community requirements is another challenge facing implementation of a CSS process.

##### ***What lessons have been learned during this process?***

Communication is the key to the success of a CSS process. Training of both internal and external stakeholders is an ongoing process that must be maintained for the process to be successful. The process also requires that DOT management have a high level of commitment and involvement in the process and this involvement must become a part of the culture of the agency.

##### ***What follow-up actions are needed from AASHTO, TRB, or FHWA that would help support these initiatives?***

Continued involvement and support of agency initiatives in the CSS area. AASHTO, FHWA and TRB have the ability to provide forums for introducing the process to both agencies and the public. Development of best practices and continual updating of information on the CSS process and its implementation will help all parties to the project development process improve the relationships that are critical for bring projects to fruition in a timely and appropriate manner.

#### **Maryland State Highway Administration (MSHA)**

MSHA's "Thinking Beyond the Pavement" (TBTP) workshop in 1998 introduced CSD concepts to much of the transportation industry. While much of MSHA's efforts remain project and design oriented, the TBTP process does seek to integrate transportation and land-use planning. TBTP supports growth management through its focus on transportation being an asset to people, communities and businesses, as well as an emphasis on environmental protection. The goals of TBTP include TSM, multimodality, livable

communities, community compatibility, and provision of a balanced transportation system. An example of this effort is the publication “When Main Street is a State Highway.”

#### **Minnesota Department of Transportation (MnDOT)**

MnDOT and the Center for Transportation Studies, University of Minnesota, are working in partnership to expand use of CSD&S within the state. As part of an education and outreach effort, MnDOT cohosted the Midwest CSD&S workshop in August 2005, which included an “Integrating CSS into systems planning” module. MnDOT’s public involvement program “proactively seek[s] early and continuous public input and involvement so that MnDOT is responsive and accountable to its traditional and nontraditional stakeholders, communicates effectively with the public, and makes the best possible transportation decisions . . . and enhancing the quality of life. . .” MnDOT uses tools, such as surveys and market studies, to incorporate public input into the long-range plan vision.

#### **Montana Transportation Choices, Context Sensitive Highway Design (November 2003)**

“Context sensitive design (CSD) is a set of ideas and principles developed and promoted by the Federal Highway Administration (FHWA). According to FHWA:

*Context sensitive design 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. CSD is an approach that considers the total context within which a transportation improvement project will exist.*

Real context sensitive design processes are those that:

- Balance safety, mobility, community, and environmental goals in all projects
- Involve the public and affected agencies early and continuously
- Use an interdisciplinary team tailored to project needs
- Address all modes of travel
- Apply flexibility inherent in design standards; and incorporate aesthetics as an integral part of good design”

#### **New Hampshire DOT; Powerpoint Presentation, David Burwell**

“One of the Vital Few Strategies is for FHWA to provide guidance, information, and training to States on ‘integrating the planning and environmental processes’ and encouraging context sensitive solutions/context sensitive design (CSS/CSD).” [www.contextsensitivesolutions.org](http://www.contextsensitivesolutions.org)

“Strengthen transportation/land-use partnerships by applying context sensitive solutions (CSS) strategies to project development process, design, and construction.”

#### **Five-Year Building Program (Utah)**

“Utah has a statewide, comprehensive capital plan, the Five-Year Building Program that is centrally prioritized by the State Building Board based on set criteria. The capital plan is well-linked with the State’s capital budget. The Department of Transportation’s (DOT) capital planning process involves multiple plans and is very thorough. DOT has made use of innovative methods to garner public input in project planning, including the use of truck-mounted billboards driven along corridors and other methods of bringing the public-input process to the public. The agency is also committed to seeking context sensitive solutions for projects, which typically requires significant public input. Monitoring of state construction projects is good, and monitoring of DOT projects is excellent.”

#### **Look Ahead: Multimodal Corridor Solutions. Planning in Advance of Funding (UDOT, Utah)**

“...For that reason, 3500 South’s stakeholders would have to share in the project’s decision making as well as the responsibility for the results . . . Each agency is very good at its main focus, but not everything,” says Angelo Papastamos, UDOT’s context sensitive solutions director. “Traditionally, a DOT looked at roadway capacity and safety problems alone, not collaboratively. In the 3500 South Corridor, citizens saw other community needs, including land use, as an equally important consideration because this is where they live. As such, we needed the close involvement of the West Valley City government, which has the power to shape zoning and land use ordinances. To see how transit would meld in, we needed the involvement of the UTA [Utah Transit Authority]. And to ensure that the corridor’s future fits with the region’s long-range

plans, we needed the involvement of the metropolitan planning organization [MPO]—in our case, the Wasatch Front Regional Commission."

### ***Applications: Regional Initiatives***

#### **Thurston Regional Planning Commission (TRPC, Washington)**

In 2003 TRPC initiated the Vision Reality Task Force, made up of elected officials and citizen advisors, to examine disconnects between transportation and land-use visions and the implementation of these visions. The Task Force also identified emerging opportunities and new partnerships and strategies that could help reconnect vision and implementation. The report, completed in early 2005, includes proposed actions for local agencies as well as new regional initiatives. An overarching goal is to harness market forces to enhance opportunities and minimize impacts along the I-5 and SR 507 corridors. Smaller scale projects involve the Capitol Way Corridor Study and Boulevard Road Studies, both of which are addressing multimodal and livability issues.

#### **Puget Sound Regional Council (PSRC, Washington)**

PSRC has initiated a plan update, called "Vision 2020 + 20," which means to provide a shared regional vision that is clear, complete, and measurable. The major goal is development of integrated and coordinated land use, multimodal transportation, and economic development strategies. The effort is informed by past growth management experience, new information ranging from public health to energy consumption, and issues identified through extensive public engagement activities. PSRC's public participation plan calls to "ensure early and continuous public notification about and participation in major actions and decisions." "Destination 2030," the regional transportation plan, seeks to balance mobility with livability and sustainability needs while implementing the regional vision.

#### **Georgia Regional Transportation Authority (GRTA)**

GRTA recently completed the Northern Sub-Area (NSA) Study for 2,590 km<sup>2</sup> (1,000 mi<sup>2</sup>) of metropolitan Atlanta. The NSA involved developing alternative transportation "futures" or scenarios, assessing the effects of alternative land development policies on the transportation system, and evaluating ways to increase multimodal efficiency on existing corridors. Public engagement to determine values and priorities was a critical element of all four parts of the NSA process. The study is a multijurisdictional approach to solving regional transportation system problems.

### ***Applications: Long-Range Transportation Plans***

#### **Move Arizona Long-Range Transportation Plan—August 2004, Environmental Concerns Focus Group**

Nine individuals representing State parks, National parks and forests, and air-quality planners participated in the environmental concerns focus group on September 26, 2002. Participants of this group identified the following issues: access and tourism—providing access to recreational facilities, parks, and forests is critical for quality of life and tourism to the State. At the same time, access to sensitive natural areas raises substantial concerns and the need to mitigate impacts of transportation. Context sensitive design and growth controls will help protect resources.

#### **California Department of Transportation, District 5 Transportation Concept Report, Prepared for State Route 41, San Luis Obispo County**

"Although SR 41 serves a significant purpose for transporting City of Morro Bay and Atascadero residents, improvements through these communities could incorporate local land-use policies in order to improve traffic flow while providing infrastructure that blends with the existing built environment and each community's historical context. Improvements to the route shall contribute to a circulation plan that considers the needs of pedestrians, bicyclists, and vehicles. Public improvements in the respective downtowns and incorporated community main streets should create a "walkable" community that encourages pedestrian, bicycling, and social activity."

### **Big Sur Coast Highway Management Plan 2003 – Highway 1 (California); Strategy B-2: Context Sensitive Solutions**

Application of standard highway design elements that are associated with freeway and urban settings appear out of place on the Big Sur Coast. Exploring the possibilities with flexibility in highway design is necessary. Furthermore, stakeholder involvement in a collaborative decision-making process is key. The *Guidelines for Corridor Aesthetics* are especially relevant to this subject. B-2.1 Seek experimental applications for alternative aesthetic design treatments for construction of new features, such as guardrail, or retrofit of existing roadside features, such as paddle markers. (Caltrans, Immediate) B-2.2 Establish a reliable approach to improve effective stakeholder participation at various stages of decision making, from non-essential sign requests to alternatives for a capital improvement. (Caltrans, Immediate)”

### **State of Connecticut—2004 Long-Range Transportation Plan**

From the long-range plan: “Continue to employ and promote the use of context sensitive solutions, including early project coordination and well-planned construction management, for all transportation projects in order to meet the needs of the State, its regional interests, and local communities during planning, design, and construction. Continue to seek public input early in the transportation planning process, and employ context sensitive solutions to preserve the character of rural village centers and natural and historic resources. Encourage transportation projects that support and preserve the community character, especially in rural centers and historic areas, through the use of context sensitive design practices and support of Federal Enhancement Program funding for streetscapes and recreation trails.”

### **New Jersey Department of Transportation (NJDOT) and New Jersey Transit Corporation (NJ TRANSIT), Transportation Choices 2025**

“Transportation Choices 2025” includes a strategic vision to guide both development and transportation. This effort included using a multimodal travel demand model to evaluate different transportation and land-use scenarios. Outcomes from this process include multimodal, sustainable development, and similar smart-growth goals in the “Long-Range Transportation Plan,” as well as programs dealing with environmental and urban center issues. NJDOT and NJ TRANSIT lead a multiagency partnership, known as the Transit Village Initiative. This initiative helps redevelop and revitalize communities around transit stations while also improving air quality and mobility. Designation as a Transit Village commits the state to the locality’s vision for the redevelopment area, with state agencies coordinated by the Transit Village task force. More information available at: <http://www.state.nj.us/transportation/works/njchoices>

### **Broward County Florida Long Range Transportation Plan George Hadley, Environmental Coordinator, FHWA Florida Division, [George.Hadley@FHWA.dot.gov](mailto:George.Hadley@FHWA.dot.gov), 850-942-9650 x 3011**

The Broward County transportation planning committee used a range of improvements to upgrade the transportation system in Broward County, Florida. Together, these improvements are known as the “2025 Long-Range Transportation Plan (LRTP),” a multimodal approach to infrastructure development that had three main categories: air-quality improvements, livable communities, and nonmotorized transportation. The committee worked with city governments, statewide transportation administrations, neighboring counties, and ordinary citizens in creating a plan to increase bicycle and pedestrian access around the county as well as improving mass transit. The LRTP also included more than 40 meetings and public workshops in order to include as much of the public as possible.

### **INDOT 2030 Long Range Transportation Plan—2004 (Indiana)**

“Refine the roadway classification system of statewide mobility corridors, regional mobility corridors, and local access roadways to provide a classification for special transportation areas where context sensitive solutions and special access management treatments will be considered to deal with the unique characteristics of the area.”

### **A Guide to Transportation Enhancements. Quality of Life of the Community (Missouri)**

The quality and feasibility of the project is a vital factor in its success. Describe how the project will complement existing facilities or future plans for the local area. Be sure to describe the context sensitive solutions that make the project stand alone. The project may provide connections between residential areas and parks, schools, or industrial areas. It may link more than one mode of transportation. These are

valuable social impacts. If the project boosts the local economy due to an increase in tourism, the applicant has created a positive economic impact.”

**2025 Long-Range Transportation Plan, Ithaca-Tompkins County Transportation Council (New York)**

“The ITCTC is supportive of the application of context sensitive solutions in the design of transportation projects. Every project funded through the ITCTC Transportation Improvement Program includes a scoping phase to collect local input on the needs of the affected parties and the local community. A roads' cross section, including lane width, provision of road shoulders, sidewalks, etc., is determined on a project-by-project basis, depending on the needs of the area and the input obtained in the scoping phase of the project.”

**Tennessee Long-Range Transportation Plan. Goals, Objectives, and Policies, August 2005**

“Promote and implement context sensitive solutions and balance safety, mobility, community, and environmental goals in all projects.”

**Long-Range Transportation Plan 2030, Utah Department of Transportation**

Section 1.3 of the Plan – “In July 2001, UDOT adopted the context sensitive solutions philosophy (CSS) to guide our approach to doing business. Although formalized at that time, the CSS philosophy has been evolving over time within the department, as it has become clear that considerations in addition to highway design standards must be weighed in making system decisions that connect communities and preserve and improve our quality of life.”

**UnJAM 2025 Plan, 5/13/2004 (Virginia)**

Context Sensitive Solutions: an approach to roadway planning and design that develops appropriate, varying designs for different segments of the road as it passes through communities, neighborhoods, and rural areas.

**Washington State DOT Centennial Accord Plan 2003**

Resources mentioned in this document: context sensitive solutions/design and community partnership resources. [www.wsdot.wa.gov/TA/PAandI/CommPart/ContextSensitive.html](http://www.wsdot.wa.gov/TA/PAandI/CommPart/ContextSensitive.html)

***Applications: City/Local Initiatives***

**Dock, Frederick C. Dock, P.E., PTOE. “CSS in Network Planning: Minneapolis System Planning Framework” White paper for Institute of Transportation Engineers. Available on-line at:**

<http://www.ite.org/css/CB06C74.pdf>. Accessed 21 August 2006.

An initiative to better apply CSS principles to street network planning is underway in Minneapolis, Minnesota. The city is moving toward a framework for system planning that pairs roadway design with urban design (activity levels, access points, orientation to the street). The goal is to reinforce the place-making element of the comprehensive plan while providing mobility. The city compares street and place classifications to identify any locations where the two systems are poorly coordinated. Street types are compared with roadway functional classifications to determine if changes need to be made in the network plan to keep the transportation network in balance with the urban context and development/activity patterns.

**Leach, Dennis M., AICP. “Context-Sensitive Solutions in Multimodal Urban Corridor Planning: Arlington, Virginia’s Experience.” White paper for Institute of Transportation Engineers. Available on-line at: <http://www.ite.org/css/CB06C72.pdf>. Accessed 14 August 2006.**

Arlington County has developed design standards and policies for arterial streets that include linking land-use and transportation planning, applying form-based codes for development that help dampen traffic growth and better accommodate transit infrastructure. The initiative includes retrofitting a number of corridors to better fit community context and fit with goals for building an efficient multimodal network. There is tension between the Virginia DOT’s goal of moving traffic efficiently and Arlington County’s goal of high-quality, multimodal streets.

## ***Policies: Environmental Streamlining***

### **Efficient Transportation Decision-Making Memorandum of Understanding (Florida)**

**George Hadley, Environmental, FHWA Florida Division, Coordinator.**

[George.Hadley@FHWA.dot.gov](mailto:George.Hadley@FHWA.dot.gov), 850-942-9650 x 3011

In December 2001, the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), Florida Department of Transportation (FDOT) management, and managers from nearly 20 other Federal and state agencies, including the chair of the Florida Metropolitan Planning Organization advisory council, signed a Memorandum of Understanding (MOU) to develop the efficient transportation decision-making (ETDM) process. The MOU is an umbrella agreement that outlines how the involved agencies and organizations will work together to implement the ETDM process, which will create and use linkages between land use, transportation, and environmental resource planning through early and continuous agency involvement. Electronic databases and communication techniques will be used during planning and program development for all NEPA decisions. In addition, as outlined in the MOU, an environmental technical advisory team (ETAT) in each Florida transportation district will coordinate environmental screening events during the planning process. At these screening events, ETATs (composed of Federal and State agencies) will coordinate agreement on the purpose and need, the alternatives for the proposed action, the identification of appropriate environmental studies, and each study's scope. The scope will then be built upon during the project development and environmental process. ETATs will also advise FDOT, FHWA, FTA, and metropolitan planning organizations in Florida of issues that need to be addressed in order to ensure the issuance of permits at the conclusion of the project development and environmental processes. FHWA and FDOT are now working with participating agencies to develop agency-resource-specific memorandum of agreements and standard operating procedures to formalize the ETDM process throughout the state.

Download the MOU in the Library section at: <http://fdotenvironmentalstreamlining.urs-tally.com>. For more information on ETDM, visit <http://www.dot.state.fl.us/emo/esp/esp.htm>.

### **Transportation Permit Efficiency and Accountability Committee (TPEAC), Washington State DOT.**

**Carrie Berry, [berryc@wsdot.wa.gov](mailto:berryc@wsdot.wa.gov).**

The TPEAC met as part of a five-year multiagency effort to improve environmental permitting for transportation projects. Since beginning in 2001, TPEAC has sought to improve the permitting process for transportation projects while maintaining high standards for environmental protection. TPEAC brought together state legislators, representatives from state and local agencies, tribes, business associations, the construction industry, and environmental and labor interests. TPEAC established several subcommittees to address permit reform solutions for permit streamlining. Working together and sharing perspectives allowed the subcommittees to better understand the complexities of permitting and coordinating issues involved in the successful delivery of transportation projects. TPEAC's accomplishments have improved transportation project permitting and established shared knowledge and trust among stakeholders. These accomplishments have brought more efficient and effective use of public resources and benefits for transportation and the environment. The Office of Regulatory Assistance and the agencies of TPEAC will commit to continuing to provide the leadership, support, and direction necessary to:

- Improve mitigation approaches including speeding up approvals of mitigation banks
- Develop and extend multiagency programmatic permits
- Implement watershed-based mitigation tools and strategies
- Develop performance measures for regulatory work
- Expand and improve Web-based permitting tools and information
- Develop and implement a NEPA consultation with Native American tribes
- Reduce duplication between permits issued by different agencies
- Integrate and align planning and permitting
- Implement coordinated permitting tools and strategies, including the use of multiagency permit (MAP) teams and interdisciplinary project teams

More information available at: <http://www.wsdot.wa.gov/environment/streamlineact>



## ***Policies: Community Asset/Smart Growth/Livability/Sustainable Development***

### **Oregon Department of Transportation (ODOT)**

ODOT's Transportation System Planning (TSP) program involves early coordination with review agencies and local governments as well as creation of a public involvement program. The TSP is an important mechanism for integration of land-use and transportation plans. Its intent is to minimize human and natural environment impacts and to determine community values and goals. The Transportation and Growth Management (TGM) program is a joint effort of ODOT and the Department of Land Conservation and Development. TGM has published a number of CSS-related documents, including "Main Street—When a Highway Runs Through It," "Neighborhood Street Design Guidelines," and "Narrow Streets."

### **Utah Department of Transportation (UDOT)**

UDOT adopted CSS guiding principles in 2001. In addition to the principles of transportation need, community asset, and environmentally compatible, four strategic goals define a successful project—"CSS for transportation issues includes a process that: (1) identifies community values early in the process, (2) understands the context, (3) uses collaborative decision making to connect communities and improve quality of life, and (4) balances the community, the environment, and the transportation system." Public involvement is a key element of transportation planning and informed decision making, which is one reason UDOT collaborates with Envision Utah.

### **Blueprint, Sacramento Area Council of Governments (SACOG, California)**

SACOG's "Blueprint" project is a comprehensive examination of regional land-use patterns, using cutting-edge modeling tools to estimate transportation, air quality, economic, and other effects of current land-use patterns, and to develop a comprehensive land-use scenario for the next 50 years. The project was created within a framework of public outreach and engagement. Blueprint provides a vision of how the region may grow and change in the future. In 2004 USEPA recognized Blueprint with a smart-growth award for its innovative approach to development that strengthens community identity and protects the environment.

### **Compass, Southern California Council of Governments (SCAG)**

SCAG's "Compass" project is a regional visioning process which brought together a wide range of stakeholders to develop a consensus for a shared-growth vision. The project involved extensive public engagement, developing principles to guide the vision and process, and creating growth scenarios which were then evaluated based on objective criteria. Compass includes not only a preferred growth scenario but outlines key strategies for implementation and benchmarks to measure progress.

### **UnJAM 2025, Thomas Jefferson Planning District Commission (TJPDC, Virginia)**

TJPDC's "United Jefferson Area Mobility Plan" (UnJAM 2025) combines the "Charlottesville-Albemarle Regional Transportation (CHART) Plan" for the MPO area with the "Rural Area Transportation Long-Range Plan" for the five-county planning district. Public engagement efforts started with brainstorming policies and projects, then identified and prioritized regional transportation needs. Development scenarios were created; data were provided on costs, benefits, and impacts; and a preferred scenario was selected to coordinate transportation and land-use plans. UnJAM 2025 is in many ways an extension of TJPDC's earlier work with CorPlan—a community-scaled planning model developed with TCSP funds.

### **Oahu Trans 2K, Honolulu City and County (Hawaii)**

Oahu Trans 2K is a visioning process initiated in 1999 that has led to the development of the Islandwide Mobility Concept Plan as well as major multimodal projects, ranging from traffic calming to bicycle master plans to BRT. Trans 2K is a community-based process aimed at creating an integrated, multimodal transportation system. The process included the work of 19 community teams and hundreds of meetings, workshops, and forums to define a balanced, integrated transportation vision for the Oahu. The overarching goal was to create increased accessibility to livable communities, with the intent that solutions would be both sustainable and economically sound.

### **Mapping for a Millennium, Teton County (Wyoming)**

Mapping for a Millennium is a series of charrettes aimed at redevelopment of important corridors within Teton County, which serves as a gateway to both Yellowstone and Grand Teton National Parks and which is itself a tourist destination. These charrettes were initiated with the assistance of the Urban Land Institute and in coordination with Wyoming DOT. Transportation issues are closely linked with community preservation, affordable housing, and compact development patterns. The Teton County charrettes were part of the 2003 Domestic Scan Tour on land use and transportation coordination.

### **ETDM Process, Florida Department of Transportation (FDOT)**

FDOT's Efficient Transportation Decision-Making (ETDM) Process is a commitment of early and continuous agency involvement in a collaborative and cooperative approach. The process involves two screening efforts, the Planning Screen and the Programming Screen, followed by project development. agencies, which review transportation projects and must resolve disputes with FDOT before a project can proceed. ETDM seeks to balance human and natural environmental consideration within the decision-making process.

### **Metropolitan Council (Minneapolis-St. Paul's Regional Planning Agency, Minnesota)**

The Metropolitan Council has adopted the "2030 Regional Planning Framework" to guide and coordinate four regional systems—transportation, aviation, parks, and wastewater—based on smart-growth principles with the goals of creating livable communities and protecting the environment. Their transportation policy plan is highly multimodal, with a strong transit component, and strongly integrated with land use. Council efforts also include tools such as the St. Croix Valley Development Design Study, which provides localities with methods of creating walkable communities to accommodate growth anticipated after a bridge project.

### **Treasure Coast Regional Planning Council (TCRPC, Florida)**

In 1995 the TCRPC adopted the "Strategic Regional Policy Plan," which illustrated the benefits, costs, and impacts of different development scenarios. The policy plan contains a vision section, and all of the goals and policies tie into the vision. The future of the region section discusses development patterns at scales ranging from regional to neighborhood. The vision outlines and illustrates efficient, context sensitive development. Related projects include a TOD for downtown West Palm Beach and a master plan charrette for north St. Lucie County.

### **Envision Utah**

Envision Utah, in collaboration with Utah DOT, Wasatch Front Regional Council, and Mountainland Association of Governments, is engaged in Wasatch Choices 2040, a four-county land-use and transportation visioning process. Local elected officials and citizens will be extensively engaged throughout this process. This will involve assessment of various development scenarios in an attempt to reach consensus on a shared regional vision. Growth principles developed through this process will guide the long-range transportation plans of the two MPOs. Envision Utah's general process involves inventory, scenario development, quality growth strategy, and implementation, all of which include values research, surveys, workshops, presentations, and community design workshops.

## Task 2.2

### Assessment of Context Sensitive Solutions Applied in Transportation Planning

#### Survey

##### *Background*

The Center for Transportation and the Environment (CTE) at North Carolina State University conducted an FHWA-sponsored research project to determine best practices associated integrating context sensitive solutions (CSS) into the transportation planning process. As a part of this study, input was gathered from metropolitan planning organizations (MPOs) to assist in this effort and to screen potential case studies to be incorporated into the "Integration of Context Sensitive Solutions in the Transportation Planning Toolkit and Report."

This report summarizes the results of the brief survey that was conducted to guide the CTE team in the selection of case studies from MPOs nationwide that best represent the use of CSS and planning.

##### *Methodology*

This survey was designed to focus on MPOs and their practices of applying CSS principles in planning. Email contact information was obtained by the recent Association of Metropolitan Planning Organizations (AMPO) Web site, <http://www.ampo.org/>, and supplemented by contact information obtained from the [www.contextsensitivesolutions.org](http://www.contextsensitivesolutions.org) Web site as well as personal contacts of the team. Not all email addresses were available for each MPO; however, the majority of MPOs were sent the survey. Approximately 350 email surveys were solicited.

The survey format was created using a standard online survey Web application, SurveyMonkey.

The survey was launched on the Web on January 6, 2006. Potential respondents were sent an email containing a link to the survey Web site and brief explanation of the study. Participants were given eight days initially to complete the survey, but a three-day extension was given to allow for later respondents.

The survey questions were designed for quick response and to be used to supplement the literature review, with a goal of quickly assessing whether MPOs were employing CSS principles in the transportation planning processes and practices. In addition, the survey was intended to solicit potential case studies including corridor visioning plans, transportation long-range and/or subarea plans utilizing the principles of CSS. The information gathered from this survey is supplemental to the report and literature review.

Following the goals outlined by the project team and the topic panel, the survey examined the following issues and questions:

- CSS applications or policies employed by MPOs nationwide
- Screening tool for potential case studies

The results of the surveys are described in detail in the two following sections of this chapter.

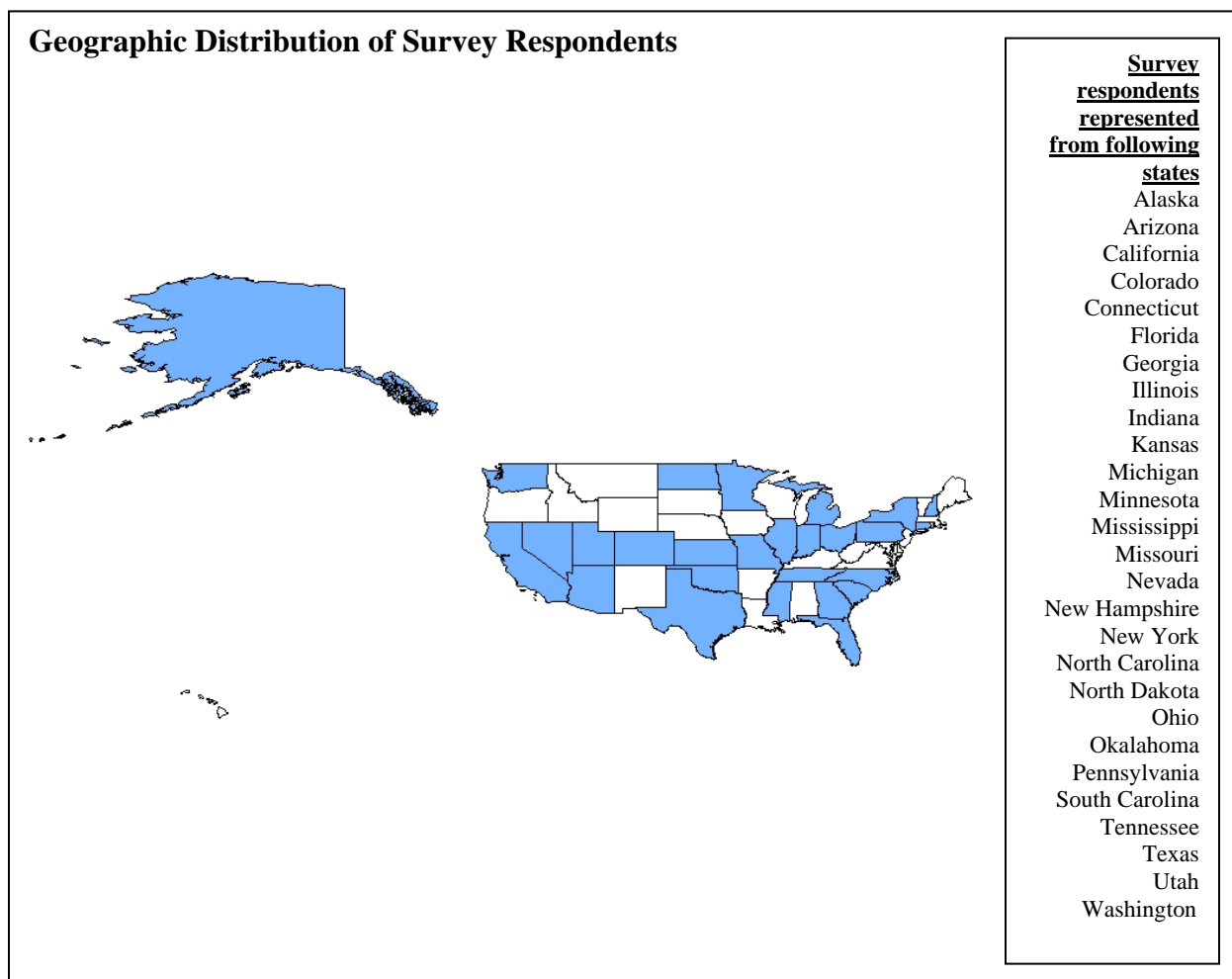
##### *Results*

The survey had a response rate of 13 percent. Of the nearly 350 surveys sent out, 45 MPOs responded. The geographic distribution of respondents, by state is shown in figure 3.1. Since contacts were generated using results from an established contact list from AMPO, the validity of

contact information and subject relevancy yielded better than average results. Still, it is likely that some states did not respond due to invalid emails/correspondence and/or subject relevancy issues.

### *Demographics*

Since the vast majority of states responded to the survey, the results are geographically representative (see figure 1).



**Figure 1. Geographic Distribution of Survey Respondents.**

### *Current CSS Applications and Policies*

This survey question was used primarily to assess current CSS applications and policies in MPOs. It was established to evaluate current CSS policies and initiatives on an agency/organizational level. Each MPO was asked what types of CSS policies, directives/initiatives are in place at their agency. Results are shown in table 1 below.

**Table 1: Responses to Survey Question: “Which of the following CSS applications or policies does your MPO organization employ? (Check all that apply.)” (N = 45)**

| <i>Application/Policies</i>   | <i>Response Percent</i> | <i>Response Total</i> |
|---|-------------------------|-----------------------|
| Incorporate CSS into Local Transportation Plans   | 47.7%                   | 21                    |
| Scenario Testing  | 25%                     | 11                    |
| Community Visioning   | 56.8%                   | 25                    |
| Multidisciplinary Team Participation  | 52.3%                   | 23                    |
| Environmental Stewardship Policies  | 9.1%                    | 4                     |
| Adopted CSS Policy  | 13.6%                   | 6                     |
| Adopted Aesthetic Policy  | 6.8%                    | 3                     |
| Innovative Public Involvement Techniques  | 54.5%                   | 24                    |
| Consultation with Environmental Resource Agencies   | 43.2%                   | 19                    |
| Use Geographic Information Systems (GIS) to Identify High-Value Community and Environmental Resources   | 59.1%                   | 26                    |
| Other<br>(Specific responses included: aesthetics review process/committee, collaboration with regional planning commission, corridor management/conservation programs, street classification systems.) | 31.8%                   | 14                    |

## **Principles of Context-Sensitive Solutions for Transportation Planning**

In addition to the survey responses, the assessment phase of the project required attention to examining the differences CSS made in the planning process, the impact the use of CSS had on public involvement/outreach, whether CSS improved and/or streamlined the decision-making process, and if CSS led to more integrated planning efforts. Prior to closer investigation of planning efforts, the project team needed to clearly identify the characteristics of a plan or elements of the planning process that would constitute a CSS approach. A candidate list of characteristics was developed, which were tested as a preliminary screening tool on the potential examples identified during the Web-based scan. However, during this exercise the results of the AASHTO CSS survey were released. Forty percent of the respondents to this survey identified lack of clear understanding of CSS as a barrier to CSS implementation. This result seemed remarkable to the project team given the attention and level of effort to implementation of CSS in project planning and design over the last eight years. After considering the AASHTO survey findings, the team felt that the best approach to the CSS in planning criteria would be to adapt established CSS/CSD principles for project development if at all possible. The 1998 principles have broad-based acceptance with transportation agencies and stakeholder groups. They provide a logical foundation from which to build the planning principles. In addition, using these principles as a foundation provides additional visibility and reinforcement of the 1998 principles and will help address the lack of understanding of CSS reported in the AASHTO survey by presenting a unified message.

Thus, beginning with the principles of context sensitive design developed at the 1998 “Thinking Beyond the Pavement” workshop, the team designed a set principles that can guide transportation planning and integrate the ideas of CSS into plans and planning processes. The team reviewed each of the 1998 principles carefully and discussed not only the content, but also the implications of each. For each principle the team then asked how the same intent could be demonstrated during transportation planning. The guiding assumption was that the planning principles should use the same overall structure (product and process principles), concepts, and, wherever possible, the same language agreed to at the 1998 conference. This approach also honors the consensus-based process through which the project development principles were developed. Once each of the principles had been discussed and adapted where possible, the team considered what potential concepts or elements of CSS in planning were missing and included additional principles to address those concepts.

It should be noted that during the fall of 2006, AASHTO and FHWA began a series of meetings and activities to develop a strategic plan for mainstreaming CSS into the work of every State DOT. Part of this effort will include revisiting the 1998 principles with some possible refocusing on core concepts and changes in language. The project team anticipates that the principles for integrating CSS in transportation planning may undergo future revisions to maintain the links with the principles for project development.

The project team began investigating transportation plans and processes for examples where the principles were applied. This investigation began with the MPOs that responded to the survey and was then expanded to consideration of other MPOs. The case studies initially focused on long-range transportation plans (LRTPs), as these are mandated transportation documents and include documentation of the planning process, public comments, and data used. A series of brief fact sheets were developed that highlighted processes and planning products in which CSS approaches were evident. The plans were selected to provide examples of as many of the principles as possible and to represent various regions of the country. The range of plans

considered was expanded later to include a somewhat broader range of plan types in order to demonstrate the applicability of the principles to any type of planning effort.

The principles were revised in consultation with FHWA staff and the project committee. In order to collect further comments and input, the revised principles were distributed, along with a brief introduction and a set of brief case studies, to members of the AASHTO Task Force for CSS at the AASHTO/FHWA CSS Peer Exchange, held September 6-8, 2006, in Baltimore, Maryland. Comments on the principles and potential case studies were solicited from this group.

Comments received were generally positive. There was some concern over the principles seeming to indicate that only a maximal effort to apply all aspects of CSS could be considered as having used CSS. Such comments reflected a concern that if CSS indeed becomes the standard practice and official policy for transportation planning in the United States, any situation in which even one principle was not fully applied would be deemed inadequate, thus leaving the door open for formal citizen complaint. This perspective also seeks to strike a balance between the level of effort and expense needed to use CSS and the scope and scale of the planning effort at hand. In short, the desire to use a CSS approach must be balanced with the need to exercise good stewardship of public resources, financial and human. In responding to this concern it should be noted that one of the principles directly promotes the efficient use of resources. Further, the principles are aimed at identifying and promoting excellent, not merely adequate, practices and outcomes. The published materials also note that the level of effort can be scaled as appropriate to the specific planning issue at hand. An additional concern was that the language of the principles seemed to emphasize human factors over the natural environment. It should be noted that for each principle mentioning the human environment, the natural environment is also mentioned. One reviewer commented that only case studies that included a strong public involvement component should be used in the published materials. The long form case studies were carefully screened for this characteristic, although some of the shorter fact sheets were selected primarily for their usefulness in highlighting other CSS characteristics and principles, which should not be taken to indicate poor public participation and outreach efforts. Other reviewers focused on adjustments to wording to broaden the principles, add descriptors to certain elements, or more closely reflect issues faced in their particular state. In consultation with FHWA staff, the project team made an effort to include these ideas in the principles when the changes were in keeping with the general ideas as shaped by the project development principles. In other cases, these ideas were discussed in the descriptive/discussion materials for the toolkit.

The principles are presented in table 2. They are shown alongside the principles for project development to help clarify the linkages between the underlying intent of each principle. In comparing the two sets of principles, the planning principles are in some cases less specific than the project development principles as the latter were designed for application to somewhat more tangible outcomes. There are a few additional principles for planning than for project development, since there are some concepts or elements of CSS in transportation planning that have no counterpart in project development. It is anticipated that these principles may be revised to keep them in step with any changes made to the project development principles.

**Table 2: CSS Principles for Transportation Planning***The CSS Product: Qualities of Excellence in a Transportation Plan*

| Transportation Planning  | Project Development  |
|--|--|
| 1. Identification of the problem statement during transportation planning is derived from a collaborative process involving stakeholders, documents, and available data.   | 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 problem statement takes into consideration safety for both the user and the community.  | 2. The project is a safe facility for both the user and the community.   |
| 3. The transportation plan is in harmony with the regional and communities' visions and is sensitive to the human and natural environment.   | 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 diversity of the various communities' visions is integrated into the transportation plan.   | 4. The project exceeds the expectations of both designers and stakeholders and achieves a level of excellence in people's minds.   |
| 5. The transportation plan involves an efficient and effective use of resources, and is adopted according to any applicable planning update cycles.  | 5. The project involves efficient and effective use of the resources (time, budget, community) of all involved parties.  |
| 6. The transportation plan gives consideration to avoiding and/or minimizing disruption to the community.  | 6. The project is designed and built with minimal disruption to the community.   |
| 7. Transportation goals are consistent with the communities' visions and the adopted transportation plan meets or exceeds the transportation goals and objectives.   | 7. The project is seen as having added lasting value to the community.   |
| 8. The transportation plan provides planning products that can feed directly into project planning to improve quality or reduce time to complete the project development process, including but not limited to data, stakeholder contacts, hot issues, and agreements. |  |



***The CSS Process: Characteristics of the Planning Process Contributing to Excellence***

| Transportation Planning   | Project Development  |
|---|--|
| 1. Communication with all stakeholders is open, honest, early, and continuous.  | 1. Communication with all stakeholders is open, honest, early, and continuous.   |
| 2. The multidisciplinary team(s) is (are) fully representative of the human and natural environment as well as the communities' perspectives of a good quality of life and important issues.  | 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. The transportation plan includes an upfront preplanning process that allows all formal partners, including, but not limited to, environmental agencies and community representatives, to participate in the early identification of issues that should be considered during the transportation planning process.     | 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 transportation plan evaluates multimodal, operational, and innovative strategies, and the recommended plan addresses all transportation needs, including, but not limited to, safety, access/mobility, and air-quality issues.   | 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. The adopted transportation plan is based on adopted CSS policy and includes explicit support for CSS.  | 5. A commitment to the process from top agency officials and local leaders is secured.   |
| 6. The transportation planning process is based on a comprehensive public-involvement/ participation plan that is based on meaningful opportunities for input.  | 6. The public involvement process, which includes informal meetings, is tailored to the project.   |
| 7. The landscape, community, and valued resources are understood before analysis of the transportation system begins or potential transportation solutions are explored.  | 7. The landscape, the community, and valued resources are understood before engineering design is started.   |
| 8. A full range of user-friendly tools for communicating transportation plan options are used to effectively present information.   | 8. A full range of tools for communication about project alternatives is used (e.g., visualization).   |
| 9. Limitations to the quantity or quality of data and information are recognized, and strategies to manage any gaps are implemented. The final plan and the transportation planning process are thoroughly documented.  |  |
| 10. The transportation planning process includes identification and consideration of adopted municipal, State and Federal agency plans relevant to the transportation planning process, including, but not limited to, those for land use, water and sewer, watershed management, economic development, and mitigation. |  |

## **Task 2.3**

### **Develop Toolkit for Planners and the Public**

This portion of the project involved developing a set of materials suitable for distribution to planning practitioners and the public. The materials are appropriate for publication on the FHWA Web site, and will also be printer-friendly so agencies, community groups, and individuals can print and distribute the documents in paper form, if desired. The various components of the toolkit are designed to work together to offer ideas, explanations, and examples.

The toolkit includes a brief introduction, the table of the principles, an informational brochure in question-and-answer format, a series of 10 fact sheets presenting brief case studies, three extended case studies offering more detail, and a glossary of key terms. Each element of the toolkit includes a brief list of outside resources where users can find further information. Case studies were selected to represent all regions of the country. An additional goal of the longer case studies was to expand the types of plans represented. Thus, one is an MPO long-range transportation plan, one is a DOT long-range statewide transportation plan, and one is a DOT corridor plan. Aside from the plans themselves, more detailed information was obtained from key individuals at the agencies and the citizen advisory committees. By broadening the scope of the case studies and fact sheets, the project team hoped to illustrate the potential for integrating CSS in planning for all planning efforts and agencies.

The definitions in the glossary were drawn largely from the FHWA Planning Glossary, to maintain consistency with other FHWA materials. The few exceptions to this were included to help clarify specialized language for the general public. The question-and-answer brochure includes discussion of the ideas behind the principles as well as how each principle can be implemented in transportation planning. The question-and-answer brochure also notes the case studies and/or fact sheets that illustrate the application of specific principles.

From the start, the toolkit materials were designed to be visually appealing, colorful, and easy to understand. The various components were carefully coordinated in style, language, and content to present a cohesive message and set of materials.

The toolkit materials were reviewed by the FHWA staff, and each fact sheet and case study was forwarded to the respective planning agencies for their review. Permissions for the use of graphic materials were also secured from each agency. The various materials are included in Appendix C of this report.

## Task 2.4

### Conclusions: Summary of Findings and Recommendations

#### Introduction

Traditional transportation planning has been largely reliant on technical problem solving. This paradigm uses highly rigorous, if somewhat narrow, approaches. The National movement toward taking a context sensitive solutions (CSS) approach to transportation is a marked transformation occurring within the industry. In this approach, many of the larger issues formerly considered outside the domain of the transportation planners/designers are brought to bear on problem definition, identification of solutions, and implementation. Aside from complex physical engineering problems, the interactions between dynamic natural processes, social activity patterns, and more recently even potential effects on levels of physical activity and health of residents are being brought into the decision matrix. Theoretician Donald Schön described this as the movement from rigor to relevance:

When a civil engineer worries over what road to build rather than how to build it, he comes up against the politics of land taking and the organized resistance of neighborhoods. Indeed, he comes up against the whole economic, social, and political life of the region upon which the road may be imposed. And when, having designed a road, he begins to convert his design to reality, he encounters such additional problems as the constraints on city budgets, the reactions of organized labor, and the political machinations of contractors. The engineer may deal with these messy factors by placing them beyond the boundaries of his professional life; he may try to clear a space for narrowly defined professional work, treating the rest of the situation as a necessary evil. Or he may accept the intrusions of the larger situation as a part of his legitimate professional concern, opening himself to complexity, instability, and uncertainty. . . .

It is in the setting of technical problems and in the implementation of their solutions that science-based practitioners meet most directly the dilemma of “rigor or relevance.” (p. 187-188).<sup>1</sup>

Similarly, a CSS approach requires that transportation planning be opened up to consider the interactions between transportation systems and facilities, and the human and natural environment in order to develop solutions that are acceptable to all parties, relevant to their needs and perspectives. This, in short, is what it means to position transportation needs and solutions within a context.

This is not to dismiss traditional engineering rigor. Transportation planning will continue to require the gathering of travel data, generating projections about population and employment, and then feeding those projections into a transportation system model. The model reveals where in the transportation system unacceptable levels of service will occur. Technical advances in data collection and modeling, such as vehicle-mounted GPS units and activity-based models, will undoubtedly greatly improve the technical accuracy of travel projections and further unravel the complexities of travel behavior. These advances will no doubt continue to improve the technical side of planning and must not be dismissed as trivial in developing and evaluating solutions to critical transportation issues, such as air quality, safety, and congestion. Yet, CSS offers an important complement to these technical advances.

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<sup>1</sup> Schön, Donald A. *The Reflective Practitioner. How Professionals Think in Action*. Basic Books, 1983.

This section of the project report begins with a general summary of the findings of the review of current practice, and some discussion of the broader implications of those findings. The next section describes how integrating CSS in planning is well coordinated with the FHWA Vital Few Goals, and the current transportation legislation, SAFETEA-LU. The closing section makes recommendations for promoting the integration of CSS in transportation planning and identifies some areas that require further research and investigation.

## **Summary and Discussion of Findings**

Although this project represents an initial foray into drawing connections between CSS and transportation planning, the review of current planning agency practices found that the ideas that lie behind CSS and the attitudes needed for CSS work are not completely foreign to transportation planning. Many agencies are already using one dimension of CSS (or a few). For example, a planning agency may carry out extensive, high-quality public participation/involvement, yet put less energy into coordination with other plans or planning agencies. As a result, the plans may reflect the desires of the community but may falter when recommended projects are moved to implementation phases because of conflicts with other jurisdictions, or important infrastructure or environmental issues. Certainly, at this early point of integration, it is unreasonable to expect to find plans that fully apply every principle to their planning processes and plans. Yet it is very encouraging that many planning agencies are using CSS in their plans and processes. (For a summary table of specific plans' integration of CSS principles see Appendix D.)

Perhaps most encouraging is the finding that across the country transportation planning agencies are making great progress in public involvement/participation. This project identified a number of agencies using innovative techniques and making a tremendous effort to reach out to the public, including segments of the population that have generally not been involved in the past. These agencies are demonstrating that they have integrated the CSS principles related to public involvement. Still, building trust and getting people involved remains a challenge. As with many of the examples of highly successful projects that have used a CSS approach, educating stakeholders on technical and financial issues, and then empowering them to have a genuine say in outcomes are proving successful ways to engage stakeholders in transportation planning. While the uncertainty that stems from including a broad range of stakeholder interests must be acknowledged, it should be recognized as a normal part of cultural and institutional change. The prospect of uncertainty, therefore, does not provide adequate reason to derail the integration of CSS in transportation planning.

One of the potential gains related to taking a CSS approach to public involvement/outreach is that it can build citizens' general capacity for civic engagement. A citizenry that is engaged and educated about transportation issues and processes may be seen as an obstacle to some in the transportation industry, but, in fact, it will prove the opposite in the future. As the legacy fades of past practices that set aside public input, an engaged citizenry will lead to improved planning outcomes that account for the needs of all segments of society, and public buy-in on proposed projects and programs. This higher degree of transparency will encourage trust and understanding of the transportation decision-making process within the public. Ultimately, it may lead to more consistent, long-term political and, therefore, fiscal support for the transportation industry.

An additional positive finding is that many transportation agencies are strengthening the connection between planning and the project development process by using CSS principles in

planning as they develop “streamlining” policies. Integrating CSS in planning will play an important role in streamlining by promoting attention to context in an early, “front-loaded” process that will increase the ability to move a project forward quickly in project development. Improving overall efficiency and coordination can also boost job satisfaction levels in the transportation industry workforce, thus improving employee retention and continuity for agencies and for projects and programs.

Increasing attention to planning coordination was yet another noteworthy finding. This is an important component of a CSS approach, where context includes the context of planning, across jurisdictions, scales, and types of planning. Many of the highlighted plans feature close coordination with land-use and growth-management plans, recognizing the interplay between the transportation system and development patterns. Coordinating these two fields holds great potential for promoting more rational and coherent public and private investments, for improving overall environmental quality and quality of life, and for helping communities move closer to their visions for the future.

Along with these encouraging findings, several challenges are identified. One of these is when different goals and visions exist within a single planning jurisdiction. The task in such situations is to develop a plan that is built on multiple visions, which can be in conflict. For example, a region may have one community that highly values open space and traditional, compact neighborhoods, and another community that welcomes low-density growth and the affordable housing and expanding tax base this often provides. A regional transportation plan needs to strike a balance between preserving the first community, perhaps by planning for limited mobility for and through the first community, while at the same time maximizing mobility for and through the second. Many agencies routinely face this issue. Meeting this challenge will require transportation planners who are dedicated to and well trained in developing consensus within diverse groups.

As noted above, some agencies are making considerable progress toward streamlining transportation decision making. Yet the issue of complex jurisdictional and regulatory structures remains a challenge in some respects. For example, it has been reported that some regulatory agencies see early collaboration, in which they may agree to some degree of compromise, may weaken their position later when they are asked to issue project permits.<sup>2</sup> This is part of the “stovepipe” mentality that has developed within some regulatory agencies in which they work on specific, narrowly defined points in the project process rather than working iteratively and collaboratively to develop consensus solutions. Changing these attitudes and processes will require time and experience along with internal cultural/institutional change. In order to dismantle these barriers, transportation agencies will need to continue to work to cultivate good interdepartmental and multidisciplinary partnerships, as the political and financial costs of waiting until late in project development can be very high. The current transportation legislation, SAFETEA-LU, requires that environmental mitigation activity be included in long-range planning, thereby, opening up the opportunity to cultivate good working relationships with resource agencies. Integrating CSS at the earliest planning stages can smooth the progress of these important changes.

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<sup>2</sup> Cambridge Systematics. “SAFETEA\_LU Planning Provisions Workshop. Final Report.” Prepared for FHWA and AASHTO, May 2006. Available online: [http://www.transportation.org/sites/planning/docs/FINAL%20REPORT%20FR1\\_SAFETEA-LU%20Plan%20Prov%20Workshop.pdf](http://www.transportation.org/sites/planning/docs/FINAL%20REPORT%20FR1_SAFETEA-LU%20Plan%20Prov%20Workshop.pdf)

An additional benefit of integrating CSS into transportation planning is that it can help identify potential indirect and cumulative effects (ICEs), an area of rising concern for the transportation industry.<sup>3</sup> Although evidence of this was not found in this project, it seems that a holistic approach and genuine effort to understand the full context of a transportation need may help identify issues that could fuel a challenge based on unacceptable or unmitigated ICEs.

An additional challenge lies in how to meaningfully convey various plan options. Technological advances have provided some exciting tools for visualization, and it is expected that these tools will continue to improve, and be more widely available for use. While some of the plans highlighted in this project are using innovative technical communication tools, more traditional communication and facilitation skills should not be neglected. These skills, although not traditionally part of the transportation planning skill set, are crucial, especially during visioning, priority- and goal-setting, and communicating plan options to the public. Therefore, interpersonal communication and consensus-building skills should not be abandoned in favor of high-tech tools. The collaborative nature of the CSS approach requires a full range of methods and tools in order to build consensus and keep the process moving forward to prevent stakeholder and staff discouragement and fatigue.

Finally, there is a potential challenge related to the small number of agencies that have a formal adopted policy on CSS. This may indicate a lack of buy-in at the highest levels of the agency, uncertainty about what CSS is or how to implement it, or reluctance to commit to a policy that could potentially be used as leverage to alter projects or fuel legal challenges. Continuing to promote and publicize CSS as a way to improve transportation planning, along with documenting successes and problems with using CSS can help allay these concerns. Still, it must be emphasized that a formal CSS policy is not required to integrate CSS into transportation planning, as is well evidenced in some of the plans highlighted in this project.

## **Coordination with Existing Policies**

### *FHWA's Vital Few Goals*

It has been noted that CSS offers an avenue to move transportation projects and project development processes toward fulfilling the high-priority goals of the FHWA, the Vital Few Goals of safety, congestion management, and environmental stewardship and streamlining.<sup>4</sup> Integrating CSS in transportation planning is similarly in harmony with the Vital Few. The CSS principles developed by this project complement the Vital Few, and provide direction for how transportation planning can contribute toward attaining them. Table 3 shows the main objectives related to each of the Vital Few Goals and which CSS principles for transportation planning relate to them. Aside from these specific relationships, CSS principles that emphasize genuine stakeholder involvement and open, honest, and continuous communication will also facilitate

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<sup>3</sup> Stanley, M. "Indirect and Cumulative Impact Analysis" NCHRP 25-25, Task 11. Prepared for AASHTO's Standing Committee on the Environment. January 2006. Available online: [http://www.trb.org/NotesDocs/25-25%2811%29\\_FR.pdf](http://www.trb.org/NotesDocs/25-25%2811%29_FR.pdf)

<sup>4</sup> Lane, L, T. Townsend and A. Hartell. "Community Impact Assessment Practice: Where we've been, where we are, where we're going." Paper presented at the 85<sup>th</sup> Annual Meeting of the Transportation Research Board, January 2006, Washington DC. Available online: [http://www.mdt.mt.gov/research/docs/trb\\_cd/Files/06-1072.pdf](http://www.mdt.mt.gov/research/docs/trb_cd/Files/06-1072.pdf)

progress toward the Vital Few by supporting collaborative work and promoting public awareness and education on transportation issues.

FHWA has also developed a set of measures to be used to assess progress toward meeting each of the Vital Few Goals. Each of these measures requires benchmarking and tracking outcomes and data trends over time. A CSS approach improves the quality and quantity of documentation, which could help facilitate the measurement of progress.

Attaining the Vital Few Goals requires considering transportation facilities in their environmental, operation, and community contexts. Clearly, a context-sensitive approach to all phases of transportation decision making, including long-range planning, will bring more progress toward meeting these nationally important goals.

**Table 3: FHWA Vital Few Goals and CSS Transportation Planning Principles**

| <i>Vital Few Goals and Objectives</i>   | <i>Related CSS Principles</i>  |
|---|--|
| <p><b>Safety</b></p> <ul style="list-style-type: none"> <li>▪ Strategic safety programs integral part of statewide and metropolitan transportation planning</li> <li>▪ Increase seatbelt usage and decrease number of impaired drivers through education and enforcement</li> <li>▪ Decrease fatalities through better engineering design</li> </ul>  | <ul style="list-style-type: none"> <li>▪ The problem statement takes into consideration safety for both the user and the community.</li> <li>▪ The transportation plan evaluates multimodal, operational, and innovative strategies, and the recommended plan addresses all transportation needs, including, but not limited to, safety, access/mobility, and air-quality issues.</li> </ul>   |
| <p><b>Congestion Management</b></p> <ul style="list-style-type: none"> <li>▪ Mitigate overall impacts of congestion through effective local partnerships</li> <li>▪ Reduce work zone delay by aggressively anticipating and mitigating congestion caused by highway work zones</li> <li>▪ Reduce traffic incident delay by aggressively anticipating and mitigating congestion caused by traffic incidents</li> </ul>   | <ul style="list-style-type: none"> <li>▪ The transportation plan gives consideration to avoiding and/or minimizing disruption to the community.</li> <li>▪ The transportation planning process includes identification and consideration of adopted municipal, State, and Federal agency plans relevant to the transportation planning process, including, but not limited to, those for land use, water and sewer, watershed management, economic development, and mitigation.</li> </ul>   |
| <p><b>Environmental Stewardship and Streamlining</b></p> <ul style="list-style-type: none"> <li>▪ Improve the environmental quality of transportation decision making by:               <ul style="list-style-type: none"> <li>▪ Integrated approaches to multimodal planning, the environmental process and project development at a systems level</li> <li>▪ CSS at a project level</li> </ul> </li> <li>▪ Improve timeliness of the EIS and EA processes</li> <li>▪ Increase ecosystem and habitat conservation</li> </ul> <p>Source: FHWA, <a href="http://www.fhwa.dot.gov">www.fhwa.dot.gov</a></p> | <ul style="list-style-type: none"> <li>▪ The transportation plan provides planning products that can feed directly into project planning to improve quality or reduce time to complete the project development process, including but not limited to data, stakeholder contacts, hot issues, and agreements.</li> <li>▪ The transportation plan involves an efficient and effective use of resources, and the transportation plan is adopted according to planning update cycles.</li> <li>▪ The multidisciplinary team(s) is (are) fully representative of the human and natural environment as well as the communities’ perspectives of a good quality of life and important issues.</li> <li>▪ Identification of the problem statement during long-range transportation planning is derived from a collaborative process involving stakeholders, documents and available data.</li> <li>▪ The transportation plan includes an upfront preplanning process that allows all formal partners, including, but not limited to, environmental agencies and community representatives, to participate in the early identification of issues that should be considered during the transportation planning process.</li> </ul> |



## SAFETEA-LU

SAFETEA-LU includes a number of changes for statewide and metropolitan transportation planning.<sup>5</sup> An increased level of funding set aside for MPOs is evidence of the recognition of expanded requirements and the importance of planning to the overall transportation decision-making process. SAFETEA-LU established several new provisions and programs that relate to the consideration of CSS principles in transportation planning. The specific requirements for various types of agencies (State DOTs, MPOs, RPCs) vary somewhat, but the basic issues are constant for all transportation planning activities. The CSS principles for transportation planning have a number of parallels with the new SAFETEA-LU provisions and programs and will provide a framework for reaching compliance. Each of the new planning provisions and programs is listed below.<sup>6</sup> The CSS principles that are applicable to each are noted in italics.<sup>7</sup>

- Congestion
  - Increased emphasis on management and operations to address congestion through a Congestion Management Process (CMP).
    - *Identification of the problem statement during transportation planning is derived from a collaborative process involving stakeholders, documents, and available data.*
    - *The transportation plan gives consideration to avoiding and/or minimizing disruption to the community.*
    - *The transportation plan includes an upfront preplanning process that allows all formal partners, including, but not limited to, environmental agencies and community representatives, to participate in the early identification of issues that should be considered during the transportation planning process.*
- Consistency
  - Promote the connection between State and local plans for economic development, land-use, and transportation plans.
  - Concerned with the process of developing consistency, not with a specific outcome.
    - *Identification of the problem statement during transportation planning is derived from a collaborative process involving stakeholders, documents, and available data.*
    - *The diversity of the various communities' visions is integrated into the transportation plan.*
    - *Transportation goals are consistent with the communities' visions and the adopted transportation plan meets or exceeds the transportation goals and objectives.*
    - *The transportation plan includes an upfront preplanning process that allows all formal partners, including, but not limited to, environmental agencies and community representatives, to participate in the early identification of issues that should be considered during the transportation planning process.*
    - *The landscape, community, and valued resources are understood before analysis of the transportation system begins or potential transportation solutions are explored.*

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<sup>5</sup> FHWA. "A Summary of Highway Provisions in SAFETEA-LU." 25 August 2005.  
<http://www.fhwa.dot.gov/safetealu/summary.htm>

<sup>6</sup> For additional discussion of each planning factor, see Cambridge Systematics. "SAFETEA-LU Planning Provisions Workshop. Final Report." Prepared for FHWA and AASHTO, May 2006.  
[http://www.transportation.org/sites/planning/docs/FINAL%20REPORT%20FR1\\_SAFETEA-LU%20Plan%20Prov%20Workshop.pdf](http://www.transportation.org/sites/planning/docs/FINAL%20REPORT%20FR1_SAFETEA-LU%20Plan%20Prov%20Workshop.pdf)

<sup>7</sup> This list is somewhat generalized. For specific requirements for each type of agency, see FHWA guidance and SAFETEA-LU legislation.

- *The final plan and the transportation planning process are thoroughly documented.*
- *The transportation planning process includes identification and consideration of adopted municipal, State and Federal agency plans relevant to the transportation planning process, including, but not limited to, those for land use, water and sewer, watershed management, economic development, and mitigation.*
- Consultation
  - Consultation with State and local agencies, including tribal agencies, responsible for land use management, natural resources, environmental protection, conservation, historic preservation required.
  - Participation of nonmetropolitan local officials required through a documented process that is separate from the public-involvement process.
    - *Identification of the problem statement during transportation planning is derived from a collaborative process involving stakeholders, documents, and available data.*
    - *The transportation plan includes an upfront preplanning process that allows all formal partners, including, but not limited to, environmental agencies and community representatives, to participate in the early identification of issues that should be considered during the transportation planning process.*
    - *The landscape, community, and valued resources are understood before analysis of the transportation system begins or potential transportation solutions are explored.*
    - *The final plan and the transportation planning process are thoroughly documented.*
- Environmental Considerations in Planning and Project Development
  - Transportation plans must include discussion of potential environmental mitigation activities.
  - Planning agencies must consult with resource agencies responsible for land-use management, natural resources, environmental protection, conservation, and historic preservation.
  - Consider maps and inventories of natural and historic resources and conservation plans.
    - *The transportation plan is in harmony with the regional and communities' visions and is sensitive to the human and natural environment.*
    - *The transportation plan provides planning products that can feed directly into project planning to improve quality or reduce time to complete the project development process, including, but not limited to data, stakeholder contacts, hot issues, and agreements.*
    - *The transportation plan includes an upfront preplanning process that allows all formal partners, including, but not limited to, environmental agencies and community representatives, to participate in the early identification of issues that should be considered during the transportation planning process.*
    - *The landscape, community, and valued resources are understood before analysis of the transportation system begins or potential transportation solutions are explored.*
    - *The transportation planning process includes identification and consideration of adopted municipal, State, and Federal agency plans relevant to the transportation planning process, including, but not limited to, those for land use, water and sewer, watershed management, economic development, and mitigation.*
- Fiscal Constraint
  - Somewhat expanded requirements for considering operational and management strategies, in addition to capital investment strategies, as part of the development of fiscally constrained metropolitan transportation plans.
    - *The transportation plan involves an efficient and effective use of resources.*
- Safety
  - States to develop a Strategic Highway Safety Plan (SHSP) as part of the Highway Safety Improvement Program.
    - *The problem statement takes into consideration safety for both the user and the community.*

- *The transportation plan provides planning products that can feed directly into project planning to improve quality or reduce time to complete the project development process, including, but not limited to, data, stakeholder contacts, hot issues, and agreements.*
- *The multidisciplinary team(s) is (are) fully representative of the human and natural environment as well as the communities' perspectives of a good quality of life and important issues.*
- *The transportation plan includes an upfront preplanning process that allows all formal partners, including, but not limited to, environmental agencies and community representatives, to participate in the early identification of issues that should be considered during the transportation planning process.*
- **Safe Routes to School (SRTS)**
  - Funding available for infrastructure and noninfrastructure projects and programs
    - *The transportation plan provides planning products that can feed directly into project planning to improve quality or reduce time to complete the project development process, including, but not limited to, data, stakeholder contacts, hot issues, and agreements.*
    - *The transportation planning process includes identification and consideration of adopted municipal, State, and Federal agency plans relevant to the transportation planning process, including, but not limited to, those for land use, water and sewer, watershed management, economic development, and mitigation.*
- **Security**
  - Receiving greater emphasis as a stand-alone factor (formerly paired with safety) that is to be included in planning.
    - *Identification of the problem statement during transportation planning is derived from a collaborative process involving stakeholders, documents, and available data.*
    - *The multidisciplinary team(s) is (are) fully representative of the human and natural environment as well as the communities' perspectives of a good quality of life and important issues.*
    - *The transportation plan includes an upfront preplanning process that allows all formal partners, including, but not limited to, environmental agencies and community representatives, to participate in the early identification of issues that should be considered during the transportation planning process.*
- **Visualization**
  - Strengthen the public-participation process by using a range of visual methods to effectively communicate technical information to nontechnical audiences. (Not to be construed as a requirement for computer-based graphic simulations.)
    - *A full range of user-friendly tools for communicating transportation plan options are used to effectively present information.*

Other CSS principles for transportation planning are also connected with these SAFETEA-LU planning requirements. For example, the quality of the results from addressing the consultation, visualization, and consistency requirements will be greatly enhanced if CSS principles are applied when working with all stakeholders, whether members of the public, resource agencies, DOT staff outside long-range planning departments, or local government or tribal officials. As planning agencies move toward adjusting their processes to meet the legislated changes, using the CSS principles for transportation planning will provide a useful framework for guiding changes in policy and practice. Better still, fully implementing CSS in transportation planning will move agencies well beyond meeting the minimum legal requirements to elevating planning practice to a high level of excellence.

## Recommendations for Implementation

As mentioned previously, many transportation planning agencies are applying some but not all of the principles of CSS. This does not, however, mean that integrating all the principles is unrealistic. Rather, the integration of all the principles will provide a substantial framework for transportation planning that will yield outstanding outcomes—a framework for excellence.

There is one area that may require some caution, however. If CSS becomes a very closely defined process or set of outcomes, or a formal requirement of planning agencies, it could become a stagnant checklist of practices or plan requirements. This is counterproductive to the philosophy underlying CSS and would certainly discourage genuine context sensitive planning. Therefore, it is important that CSS continue to be framed as an approach, a philosophy, a “way of doing business,” even if it is a formally adopted policy. For this reason, the principles are somewhat broad in their language to allow for agencies to address the unique planning circumstances they face over time. Further, integrating CSS into transportation planning may help move planning agencies away from solely working through a laundry list of requirements for long-range plans, and improve planning quality so that it truly reflects and responds to the dynamic political, fiscal, demographic, and environmental context.

The review of current practice and exemplary practices identified in this project point to a number of specific ways agencies can move toward fully integrating CSS into transportation planning:

- Make a conscious commitment to use CSS in day-to-day practice.
- Recognize that CSS is a front-loaded approach; make the investment in visioning and the setting of objectives and priorities.
- Develop a comprehensive public-involvement/outreach plan with special attention to communities and system users that have previously not been engaged in transportation planning processes; be sure to follow through.
- Cultivate new partnerships; seek out individuals and organizations that can serve as resources for advisory committees, leadership, public outreach, and information/data sources on context.
- Consider the planning process an ideal forum for educating the public, government officials, and policymakers on the importance of transportation, the many competing factors, and the implications of various solutions to addressing transportation issues.
- Improve public-involvement techniques; work with trained facilitators and/or provide facilitation training for agency staff.
- Improve the level of documentation of external and internal processes and interactions.
- Use the CSS principles as evaluation criteria to assess progress in implementing CSS.
- Be bold and innovative.

Fully integrating all the principles of CSS into transportation planning will entail considerable effort, and perhaps require some reallocation of agency resources. Some have questioned whether a full application of all principles is necessary for all planning efforts, given the necessity to efficiently manage scarce resources. Certainly, good judgment is needed to discern the degree to which all the various principles of CSS should be pursued in a given planning project. Still, given the high level of public trust placed in them and the power of transportation systems to shape economies, landscapes, and lives, planning agencies should strive toward excellence in planning processes and products. It is, therefore, anticipated that agencies will seek to continually increase the number of principles and the degree to which they are integrated into their planning work.

Related to this is the important early step of improving documentation of both positive and negative experiences with integrating CSS. This will become an important body of knowledge, which agencies, practitioners, partnering agencies and groups, and policymakers can draw from to improve transportation

planning processes and outcomes. The FHWA is in a unique position to serve as a clearinghouse for plans and planning practices that use CSS. The FHWA should maintain up-to-date and easily accessible documentation on integrating CSS in transportation planning. This documentation should include not only stand-alone case studies, but also comparative analyses of the efficiency and effectiveness of various planning approaches. This may have important spillover effects by providing much-needed evidence on CSS in project development which can help refine policies and practices across all sectors of the transportation industry.

There also continues to be substantial confusion and lack of knowledge about CSS across the transportation industry. Evidence of this was found in the responses to the AASHTO survey on CSS in which some 40 percent of respondents noted that a lack of clear understanding of the definition of CSS posed a barrier to implementation. This will require that CSS advocates and policymakers continue to develop and disseminate a clear, unified definition of CSS. National entities, including FHWA and AASHTO, should continue to promote National dialogue on CSS through printed and Web-based materials, conferences, workshops, and peer exchanges. It is hoped that this project will have a role in opening the dialogue on what CSS in transportation planning is and how it can be implemented.

In many parts of the country, State agencies have adopted CSS as a policy for project development. In order to implement that policy, agencies are sponsoring CSS training programs for their employees. Employees involved in long-range planning activities in these agencies should be included in these training programs in order to educate them about the general CSS philosophy. Agencies should also consider offering specialized training for transportation planning staff at RPOs, MPOs, and DOTs. Aside from courses specific to CSS, other current workforce training programs should be evaluated and revised to be sure they include CSS principles and approaches. Programs such as the FHWA capacity-building courses for planning, Local Technical Assistance Programs (LTAP), and GIS courses for transportation professionals provide excellent platforms for disseminating the information on CSS and how it can be integrated into transportation planning. Additionally, CSS should become a part of the curriculum of university engineering and planning programs where future transportation planners are being trained. In order to ensure a consistent message about CSS, FHWA should promote coordination across university and workforce courses.

The current transportation legislation, SAFETEA-LU, offers a tremendous opportunity to promote the integration of CSS in transportation planning. As FHWA develops and releases guidance on the various provisions of SAFETEA-LU, it should strive to make the connections with CSS explicit as many SAFETEA-LU requirements can be fulfilled using a CSS approach. National entities, including the FHWA, AASHTO, AMPO, and NARC, should use this opportunity to bring CSS to the attention of agencies through educational and promotional activities as well as outreach to agencies that will increase participation in transportation planning activities under the SAFETEA-LU requirements (e.g., resource agencies and agencies charged with land use, growth, and economic development planning). Outreach to other types of community or public interest groups, such as the Small Town Alliance, the Urban Land Institute, and The National Congress for Community Economic Development, could also help improve the level and quality of stakeholder involvement in transportation planning.

While many of these needs are long term in nature, the case study portion of this project demonstrates that many planning agencies are already using a CSS approach to transportation planning. This indicates that CSS integration into transportation planning can begin immediately. Publicizing the best practices already being in use would be an effective strategy for building awareness of CSS among transportation planners. An educational and promotional strategy should use as many venues as possible, including Web sites, sponsored conference sessions, workshops, and professional publications. This can build awareness and further promote the adoption of CSS in planning in a growing number of planning agencies.

## Recommendations for Future Research

The CSS principles provide a lens for analyzing planning efforts, thus functioning as evaluation criteria that can help identify specific practices that can be used in new contexts. In this way, they have value for policy analysts seeking to identify innovations and improvements to transportation planning practice, and assess their value and transferability to other agencies. Using the principles as evaluation criteria can also help identify “gaps” that could be addressed through Federal agency capacity-building or training programs, or research and evaluation projects. These projects and programs can be more effectively designed and targeted by having a set of principles that serve as a framework for assessing current transportation planning practice. Similarly, researchers and policy analysts will find CSS an appropriate lens through which to assess transportation planning practice, which will also help highlight positive outcomes and identify gaps in practice and policy guidance. Such evaluations should take care to include perspectives of stakeholders and planning partners in order to better assess the degree to which CSS was integrated into the plan and process.

An area that must be explored is whether a CSS approach in long-range planning actually results in efficiency gains during project development. Plans that were developed using CSS principles should be tracked through implementation, into project development and delivery. This would show whether using CSS in planning has payoffs in customer/public satisfaction, streamlining and efficiency, workforce satisfaction, and fostering productive, long-term partnerships. The previously mentioned study, NCHRP 15-32, is anticipated to be an important contribution.

A key to integrating CSS into transportation planning is the close attention to understanding the human and natural environment. To improve this understanding and better integrate different types of environmental factors into planning, new types of data will be needed; and new systems for managing, analyzing, and displaying data will need to be developed. Therefore, research that will improve understanding of the interactions between transportation facilities and communities is needed. Such research can help guide planning agencies in collecting information about the communities they are serving and shape the way planning alternatives are developed and analyzed in light of anticipated outcomes and effects. Researchers can play an important role in testing and demonstrating the usefulness of new measures and data methods for practical application. Support is also needed for the development of databases, such as GIS databases, that include detailed spatial data on the natural and human environment, including social and cultural factors.

Generally, current transportation planning practice does not show evidence of fully integrating the principles of CSS. This is, however, hardly a discouraging finding. Rather, it demonstrates that transportation planning is open to the principles of CSS, a particularly positive situation given the rising support for CSS in project development. Having linkages between best practices in project development and in planning can be a way to strengthen and reinforce those already-adopted practices. Further connections can be made with the FHWA Vital Few Goals and with the current transportation legislation, SAFETEA-LU. Opening up the process, using CSS, will help planning organizations identify and make needed internal, institutional changes that can better cope with complex and dynamic contexts. Fully embracing CSS in transportation planning offers the opportunity to develop a coherent, coordinated approach to addressing our transportation needs, using long-term, big picture thinking and a customer-service focus that reaches across jurisdictions and interests.