

**AGENCY CHALLENGES TO INTEGRATING
CONTEXT SENSITIVE SOLUTIONS
SUMMARY OF SESSIONS 17 AND 22 HELD IN CONJUNCTION WITH
THE 2006 ITE TECHNICAL CONFERENCE
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Janet D'Ignazio
Center for Transportation & the Environment

Context Sensitive Solutions (CSS) is a new way of approaching transportation planning and implementation. Non-CSS transportation agencies view their mission as being responsible for building safe, efficient and effective transportation systems. These agencies recognize that under NEPA and environmental permitting regulations they must consider community goals and environmental impacts as a part of their transportation decision-making process. "Consideration," however, does not mean that transportation goals take a back seat. In most cases the facilities that are built under a traditional approach meet all of the transportation goals and engineering standards that transportation agencies establish. CSS, however, goes beyond consideration. CSS implementation means that transportation, community and environmental goals are all on an equal footing. It means that it is possible that transportation goals and traditional engineering approaches may not be the primary driver for all of the final project decisions.

This subtle shift—from transportation is number 1 to transportation is 1 of 3 equals—is at the core of the challenge of integrating CSS into transportation agencies and transportation decision-making. It raises implications that are difficult to understand let alone address. Yet transportation agencies across the country are moving to implement and integrate CSS. In some cases this is being done on individual projects as a project delivery risk management approach. In other agencies CSS implementation is organization-wide and represents an overall shift in the fundamental culture of the state department of transportation (DOT). The organization-wide implementation involves a comprehensive examination and revision of policies, processes, procedures and standards to assure that they are "CSS friendly."

No matter where transportation agencies are located on the CSS implementation spectrum they face challenges. In preparation for a peer exchange, the American Association of State Highway and Transportation Officials (AASHTO) recently surveyed its members to establish a baseline for CSS implementation. Forty-five state DOTs responded to a question about barriers to the implementation of CSS. Respondents identified the following challenges to CSS implementation: resistance to change (56%), a perceived higher cost (42%), clear understanding of CSS (40%), and liability concerns (16%).¹ Each of these barriers raises interesting questions.

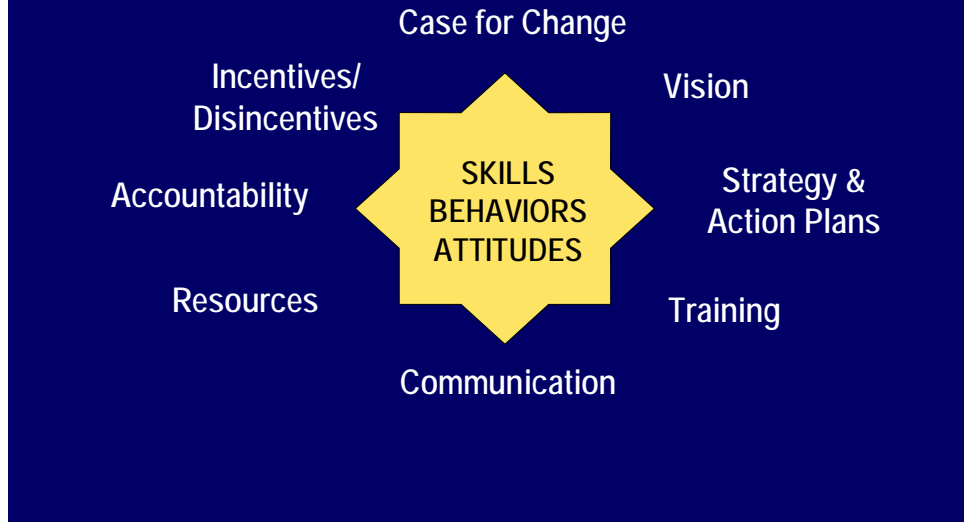
At the Institutes of Transportation Engineers' 2006 Technical Conference and Exhibit, a panel explored these and other challenges in two related sessions called Agency Challenges of Integrating Context Sensitive Solutions. In the first session three panelists presented their perspectives and examples of this integration. The second session was a roundtable discussion where participants asked questions and shared experiences. This paper is a summary of these two sessions.

Agency Challenges of Integrating Context Sensitive Solutions: Panel

This panel discussion provided the opportunity for three panelists, all current or former state DOT representatives, to introduce the topic and provide their individual perspectives on implementation challenges. In addition the speakers presented successful examples of agency efforts to integrate CSS into state DOTs.

The panel was opened by Janet D'Ignazio, former Chief Planning and Environmental Officer with the North Carolina Department of Transportation. The presentation set the framework by discussing change management within large organizations. D'Ignazio opened by noting that we often talk about changing organizations but that this is a misnomer. Organizations, processes, and procedures do not change—it is the people within those organizations, executing the process and procedures that make change happen. So integrating CSS, or any large scale organizational change, requires a thoughtful and successful approach to helping the people within the organization develop the skills, learn the behaviors and ultimately accept willingly that CSS is a better way to do their job. The graphic below illustrates all of the various activities and actions that are required to provide the new skills, encourage new behaviors, and ultimately to

Institutionalizing Change



change the attitudes of staff, managers and leaders so that CSS can be integrated.

D'Ignazio's presentation described briefly the importance of each element in this framework for CSS implementation:

Case for Change- Change will only happen if the people doing the work believe they need to change. The key to this is a good case for change. The goal is to convince the employees who must implement CSS that there is a good reason for them to do the additional work needed to design and implement new processes and procedures.

Vision- The AASHTO survey results indicated that resistance to change is one of the biggest challenges to implementing CSS. In any organizational change one of the causes of resistance is that the employees do not understand what will result from the change—what will it “look like” once the change is implemented. The goal of the change vision is to describe clearly what the future will look like.

Strategy and Action Plans-Integrating CSS requires that the organization identify the specific processes, policies, relationships, etc. that must be modified to implement the change vision. This overall assessment helps set the change strategy. Action plans, including assigned responsibilities and schedules, detail how the strategy will be implemented.

Training- CSS cannot be integrated into the organization unless everyone within the organization understands how they need to do their job differently using CSS principles and practices, so training is essential.

Communication- Regular, open and two-way communication is required for the people inside the organization to understand and accept the case for change and vision, as well as to provide regular progress reports about the overall implementation. External communication is essential so that partners (communities and resource agencies), political leaders and the public understand what changes the DOT is making. For CSS to truly succeed all of these external partners and customers will have to accept CSS as the new way of doing business. In addition, CSS will require the partners to make changes in their processes and relationships as well.

Resources- An organization cannot implement CSS without adequate resources. These may be new resources or a reassignment of existing resources, but in either case implementing the action plans requires time and money.

Accountability- With all the effort required to develop and implement a CSS change initiative, the DOT needs to know that it is making a difference—that the action plans are being implemented and that they are achieving the desired result. Accountability, therefore, is both individual and organizational. Individually, are the staff, managers and leaders each doing their part for making CSS happen? Organizationally, is the change vision actually happening? Both of these require performance measures to be developed and implemented so that the CSS implementation can be monitored.

Incentives and Disincentives- Incentives (to change) and disincentives (to resist change) provide the “push” to help people change. Since changing people is the only way to change the organization, these are critical.

In his presentation Angelo Papastamos, the Context Sensitive Solutions Director at the Utah Department of Transportation, provided a brief overview of strategies UDOT has found that worked in their CSS implementation.

Papastamos indicated that a key success factor for Utah DOT's CSS integration has been the incorporation of the CSS philosophy into the department's overall strategic direction. In addition, Papastamos discussed UDOT's training. Initially UDOT invested substantially in CSS awareness training. Through comprehensive training and by changing its strategic direction, UDOT wove CSS into the way it approaches all its work.

Papastamos also talked about the key strategies for CSS integration. He discussed the importance of working collaboratively in multi-disciplinary teams and strong public involvement as a part of CSS. But the most important factor in Utah has been senior management's buy-in to CSS. John Njord, UDOT

Executive Director, has been a strong, visible advocate for CSS. He has communicated his commitment internally and externally which has created new expectations for the employees internally and for the organization externally. Each of UDOT's training documents includes the following quote from Njord:

Context sensitive solutions is more than an initiative. It is a fundamental change in the way we do business. As each of us comes to understand the elements of CSS, it will be woven into the way we do our work, and it will become an integral part of the UDOT culture.

Papastamos also discussed two CSS myths that create barriers to CSS implementation. The first is the myth that CSS costs more money. While aesthetic components may have some added cost, the bottom line is that the projects that are built provide higher customer satisfaction because they are assets to the communities and are compatible with the natural and built environment. The second myth is that CSS projects compromise standards, are less safe and increase liability. In response, Papastamos pointed out that transportation standards are far more flexible than we realize. Good engineering is about applying the appropriate solution given the context. The AASHTO Green Book is extremely flexible and allows engineers to use good engineering judgment.

Finally, Papastamos gave several project-specific CSS examples from Utah. He provided a brief summary of some of the stakeholder involvement techniques used on the 12300 South Design-Build project. A few techniques were:

- Personal visits to residents or businesses who expressed a concern
- Regular meetings between the UDOT project manager, resident engineer, design consultant and the contractor project manager with affected stakeholders to work out specific problems
- Building relationships by having core project team members attend neighborhood meetings and meetings of citizen advisory committees
- Meetings as needed between contractors and inspectors on the construction site with residents and businesses to resolve issues associated with maintenance of traffic plans

Papastamos' second CSS example was Utah's *Partners for the Road Ahead Guide*. UDOT developed this guide to provide business owners and managers with various resources to adapt their business to the changes brought on by transportation projects. It provides general tips and guidelines for preparing for roadwork activities and suggestions for developing an effective "Under Construction" marketing plan.

In summarizing, Papastamos indicated that the key to effective stakeholder involvement is to go to the stakeholders and listen carefully to their concerns.

The third panelist was Michael Horton of the Washington Department of Transportation (WSDOT). In his opening comments Horton also discussed stakeholder involvement. He emphasized the importance of recognizing that CSS extends beyond the development of a NEPA document. Communication early, often and continuously is a key to CSS success. This includes not just discussions with communities about the characteristics of a CSS project—the product—but also communicating about the process. It is important to understand the balance between state and local responsibilities, and this can only happen with good communication.

Horton also discussed the need the importance of adherence to standards, but there are trade-offs that must be considered in order to accommodate CSS.

He also provided specific examples of WSDOT's efforts to integrate CSS into the day-to-day work at the department. Several years ago the CSS approach was initiated when the Secretary issued Executive Order 1028.00. This order directed that projects should be developed to: (1) Maintain the safety and efficiency of the facility for the users and the community; and (2) Add to the livability of community by preserving environmental, scenic, aesthetic and natural resource values of the area. As a follow-up from this Executive Order the department has developed a number of manuals, guides, processes and policies that have integrated CSS into the work. Horton described two of the manuals, *Understanding Flexibility in Highway Design-Washington* and *Building Projects that Build Communities*.

Understanding Flexibility in Highway Design-Washington was developed to create a consistent approach and understanding of the complex interrelationships between traditional design and context sensitive solutions decision-making. The *Building Projects to Build Communities* guide focuses on effective community-based design and collaborative decision-making. Both of these documents are available on the WSDOT website.

CSS training has been another important element of WSDOT's CSS implementation. Initially WSDOT developed stand alone CSS training but has since integrated CSS principles into every training class and has eliminated the stand alone course.

The session was then opened for discussion among the panel members and questions from the audience. This discussion was continued during a follow-up roundtable session scheduled later in the day. Several themes emerged during these question and answer sessions:

Cost and Schedule Impacts of CSS

Participants had many questions about the cost and schedule challenges of implementing CSS. Both the panel and members of the audience provided perspectives. Papastamos indicated that spending additional funds up-front saves time by reducing the risk of redo as the project progresses. Horton

indicated that WSDOT gives careful consideration to establishing a realistic schedule from project inception. This is based on careful up-front scoping to understand both the transportation and community issues associated with the project. WSDOT has also made an effort to educate the public on the inflationary costs associated with project delays. This gives everyone a better understanding of the risks associated with controversy.

Land Use and Transportation

Several participants talked about the challenges of understanding a community vision. Part of the challenge of this issue is understanding the roles and responsibilities between the state DOT and local communities. The group appeared to agree that CSS is a partnership between local communities and state DOTs and that each of the partners has a responsibility in this partnership. Defining the community vision and values is a critical part of CSS-based project development. The vision and values are generally a part of the land use planning process. Therefore, several participants talked about the challenges of CSS project development when local areas do not have a clearly articulated community vision. There were examples of state DOTs that have provided funds and even direct technical assistance to help local areas develop complete land use plans. On the whole, however, the group felt that the community vision is the responsibility of the local area.

Role of Designers in CSS

There were several questions about buy-in from designers in the CSS process. During the first session the panel provided some perspectives from their experience. Designers have a critical role in CSS implementation, but they cannot be expected to embrace CSS without understanding the case for change and how their concerns for safety and efficiency of the system might be addressed. In addition, designers may not feel they have the skills required to implement CSS-based design approaches.

However, because designers are critical to CSS implementation it is important to address their concerns as a part of the change management process. Most often it is designers who seal the design plans and who, therefore, place their professional credentials and licenses on the line. Issues of liability and safety are a part of nearly all CSS training. Simple education, however, is unlikely to allay all the designers' concerns. Critical to gaining buy-in from the designers (or any group of employees directly involved in CSS implementation) is identifying a "WIFFM"—"what's in it for me." Case studies, pilot projects, mentoring, incentives and disincentives are all techniques that can help designers (or any other DOT employee) understand the benefits of CSS. Discussing CSS in terms of a risk management strategy may also be effective. What is the actual risk of the design issues vs. the risk of being unable to make any improvement at all due to controversy or local opposition?

Another concern important to designers, as well as other DOT employees, is not being aware or understanding how to use CSS techniques. Several participants raised the issue of having the technical engineering staff involved in more interactive and innovative public involvement events such as design charettes. This is a good approach but the organization needs to provide training if they want engineering staff to understand both how to conduct and how to use the results of these public involvement techniques.

Finally, D'Ignazio mentioned that several universities, including North Carolina State University (NCSU), are beginning to incorporate CSS approaches into the undergraduate and graduate engineering curriculum. There is a national CSS graduate course that is being developed which will be piloted at NCSU in Fall 2006 and then offered at several other schools around the country the following year. In addition, many engineering schools have recognized the need for engineers to understand how to apply CSS principles and have started integrating CSS case studies into their planning and design courses. The participants felt that these initiatives should be expanded to incorporate CSS principles into the engineering accreditation process.

Change Management

The question of how to make change “stick” was asked during the roundtable discussion. Participants provided several examples of organizational changes that had faded or been dropped. D'Ignazio focused the participants back on the change framework she had introduced during the panel discussion. She indicated that this framework can be helpful when it appears that a change initiative is slowing or fading. The first step is to “diagnose” the problem by conducting a gap analysis to identify which elements of the change framework are missing. Then follow-up the gap assessment with action plans to address the missing elements. It is also important to recognize that changing organizations takes a long time. While it can be accelerated with thoughtful change management, full implementation for a comprehensive change can take 5+ years.

Conflicting Priorities/Stakeholder Groups

There were discussions related to dealing with the challenges of conflicting priorities or stakeholder groups. Examples provided included conflicts between community vision/values and state long range plans for a particular corridor; widening or rebuilding interstates; “dueling” stakeholders; and road vs. multi-modal improvements when there are right-of-way and/or financial constraints. While the group discussed this issue at some length there was no single approach that emerged. In general it appeared that the group believed each situation is unique and would require a tailored CSS approach based on the transportation and community issues involved.

Other

Several other issues were raised but not discussed at length. The audience and panelists felt that:

- Comprehensive outreach and education are needed to define and implement CSS.
- Design-build and CSS are not incompatible. There are examples where stakeholder involvement did not hinder the design-build process, and even cases where the community is given the authority to decide whether or not the contractor deserves the contract bonus.
- At times CSS be opposed within the DOT by operations and maintenance staff because they view it as “extra cost” which is draining resources from preservation and maintenance budgets.

In summary, these two sessions provided attendees with a significant opportunity to identify and share ideas for addressing the challenges of integrating CSS into large transportation organizations. The experiences, examples and advice provided by panel members and participants indicated that there are organizations where progress is being made.