

CONTEXT SENSITIVE DESIGN:

How to Build Success into Highway Projects
From the Start

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EXECUTIVE SUMMARY

Context Sensitive Design is a philosophy that is being adopted by a growing number of states as the new way to get road projects done. Since every road has a "context" every project can benefit from this paradigm. Context Sensitive Design provides a cost-effective way to provide smooth and seamless project completion.

Context Sensitive Design looks at the purpose and need of a project and balances those with the different interests and often competing concerns of the stakeholders as well as taking into account the environmental sensitivities of the area from the very beginning of any project.

Context Sensitive Design allows experts from outside the field of engineering to lend their expertise to a project. The interdisciplinary team approach helps meet the transportation safety and mobility goals while also applying creative solutions to complex projects that might otherwise be shelved or fought in court.

Contrary to popular belief, Context Sensitive Design is not new or revolutionary. It is a common sense approach that other states like Iowa and Oregon have been using for 15 years or more. At least 15 Departments of Transportation use Context Sensitive Design as the way that they do business. It is their business culture.

Context Sensitive Design (CSD) entered the mainstream at the "Thinking Beyond the Pavement" Conference co-sponsored by the Federal Highway Administration (FHWA) and the American Association of State Highway and Transportation Officials (AASHTO) in May of 1998 in Maryland.

The Illinois Department of Transportation does not have to leave Illinois to learn about this philosophy. The University of Kentucky Transportation Center at the request of Kentucky's Secretary of Transportation, James Codell, has packaged a two-day, hands-on seminar that has been in distribution since May of 2000. They have shipped the seminar to 18 states.

National Cooperative Highways Research Program Project 15-19, sponsored by CH2M Hill, a large Chicago Traffic Engineering firm, and overseen by Timothy Neuman is nearing completion. The goal of this research was to develop a concise easily readable guide that Departments of Transportation and other transportation agencies can use to incorporate CSD principles into their project development work. The manual when finished will be distributed to all 50 states. Timothy Neuman has given lectures on Context Sensitive Design at regional traffic engineering conferences around the country.

State Senator Cronin introduced Illinois Senate Bill 1579, on January 22, 2002. This bill mandates that IDOT change the current way they do business and adopt Context Sensitive Design for any project whether the project is funded by strictly state monies or not. The

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intent of this bill is to make IDOT more responsive to local needs, and to insure the protection of both Federal, County and local laws for all state highway projects.

Although the Department of Transportation is within their legal rights to not follow Federal Highway Administration Laws and Guidelines if no federal funding is used, the result has been court battles and lengthy project delays at the expense of Illinois taxpayers. Some examples follow. In Lincolnshire, three village trustees filed a lawsuit against IDOT over the proposed expansion of state Route 22¹. And DuPage County is now forming an ad hoc committee to look into three lanes for Route 53.²

Increasingly, citizens are aware of the importance of the environment and their rights as stakeholders in light of laws such as:

- The National Historic Preservation Act of 1966, Section 106.
- National Environmental Policy Act of 1969.
- The Transportation Equity Act for the 21st Century of 1998 (TEA-21).

Stakeholders are becoming more involved whether they are "invited" or not. It is becoming a national trend.³ Escalation of conflict is inevitable.

Context Sensitive Design encourages clear identification of issues and use of creative design solutions to balance the often-conflicting components that arise from transportation planning and design. Although Context Sensitive Design sounds involved and expensive in actuality, it does not necessarily increase costs. Rather, CSD encourages appropriate expenditures of resources at the appropriate time in the process. In many projects, CSD offers the most cost-effective approach, because it addresses problems before they become costly mistakes.

¹ Joanna Pluta, New trustees, Sept. 11 top year's events, Lincolnshire Review, 27 December 2001, Pioneer Press, www.pioneerlocal.com

² Kevin Lynch, Panel to Study Illinois 53 Plan, Chicago Tribune 13 February 2002

³ Don Hartman, University of Kentucky Transportation Center, phone interview, 30 Jan 2002.

INTRODUCTION

Context sensitive design is a process by which the purpose or goal of a DOT in solving a traffic "need" can also meet as many different interests and competing concerns of the stake holders as possible when planning and carrying out a project.

This sounds vague and ill defined. In reality the goal of Context Sensitive Design is to identify both the obvious and hidden needs of drivers and stakeholders for every project. Context Sensitive Design looks at all aspects of the road and its impact and then helps focus the project criterion toward an excellence in design solution. It is a way to give permission to DOTs and private traffic firms to be truly innovative in their designs, and to take acceptable risks when the situation calls for it in order to solve unique needs that arise because of the context of the area. Context, in a nutshell, is everything related to the people and place where the project is located. "Every project has a context," says Charleen Zimmer, workshop presenter and vice president of SRF Consulting Group, Inc.⁴

It's a chance for states to develop their own unique characters above and beyond the standardization of road building brought about by the need to follow federal guidelines intended to promote safe and efficient travel for drivers from one state to the next. Even the Federal Government recognizes that not every road fits a cookie cutter solution thus the passage of Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 and the Transportation Equity Act for the 21st Century (TEA-21) of 1998. The American Association of State Highway and Transportation Officials (AASHTO) Green Book is an excellent tool in road geometrics and standards. However, planners must take care to not only use these manuals as rigid standards but to utilize the intended flexibility to solve today's project dilemmas.

Context Sensitive Design also allows experts from outside the field of engineering to lend their expertise to a project.⁵ This is not so different from other specialties such as architectural design. CSD relies on skills in many disciplines to build diverse project teams of professionals who are committed to excellence and creative problem solving. The interdisciplinary team helps meet transportation safety and mobility goals by applying creative solutions to complex projects that might otherwise be shelved or fought in court.

The best engineers are innovators and risk takers. They have been responsible for getting man to the moon and for building great architectural wonders like the Hoover Dam. The best traffic engineers are innovators who create not only safe and efficient roads but create them in the spirit of community projects. Anything less is just road building.

Sometimes there is a trade-off that must be made between the best traffic engineering solution and what the needs are of the "environment" through which the road travels. "It's

⁴ Context Sensitive Design, The Road Less Traveled - Executive Summary, (Minnesota: Center For Transportation Studies), pp. 1-12.

⁵ Ibid.

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equally important not to let fear stop engineers from the best solutions," says Rick Dalton, project liaison engineer from Minnesota Department of Transportation's (Mn/DOT's) Office of Technical Support. "You can't design a perfect highway. Investigating the principles behind the standards, thinking creatively, and being able to 'do the math' instead of relying on 'cookbook solutions' will produce a better outcome."⁶

THE FUTURE OF TRAFFIC ENGINEERING

Mike Monseur, an Illinois Department of Transportation spokesman, said in a January 22nd Daily Herald article that the Illinois Department of Transportation doesn't know how to feel about Context Sensitive Design because it's pretty much being tested in Minnesota, Maryland, Connecticut, Kentucky and Utah.⁷

According to the Minnesota DOT their investment in context sensitive design pays off not only in project completion but projects well done. It promotes pride among the professionals in the work that they do. "Engineers have the department's permission to be passionate," says Del Gerdes, director of Mn/DOT Office of Technical Support, "It means pushing the limits. It's going to mean some conflict and discussion, not only from the outside but also from the inside, because not everyone is going to think that way. Ultimately, though, the investment in Context Sensitive Design leads to design excellence."⁸

States other than Minnesota, Maryland, Connecticut, Kentucky and Utah have used context sensitive design before it became a popular buzzword. New York calls their program "Context Sensitive Solutions" and has been practicing CSD philosophy longer than it has been in vogue. Iowa currently calls their program Context Sensitive Design. But they have been practitioners of its philosophy before the Federal Highway Administration (FHWA) and AASHTO ever stated their mandates on the subject

Iowa Case Study

"There were several projects in the late 1970s and 1980s that were at a dead stop in Iowa because the public would not buy into our project design." Said Tom Welch of the Office of Traffic and Safety, who was formerly the deputy director of the Office of Project Planning. "They just wouldn't accept a four-lane road cutting right through the heart of what they valued."

For residents of Cedar Falls, the U.S. 58 project as originally proposed by the Iowa DOT would have major impacts on several neighborhoods, parks

⁶ Ibid., p. 10-11.

⁷ Harry Hitzeman, "Route 53 Critics Hope Legislation Will Raise Local Voice in Road Plans." Daily Herald, 22 Jan. 2002.

⁸ Context Sensitive Design. The Road Less Traveled - Executive Summary, p12.

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and sensitive environmental areas. They were vehemently opposed to the project.

When Mr. Welch was handed the "dead" project back in the mid 1980s he went back to stakeholders with the usual range of alternatives and project presentation styles and the public rejected the proposals again. Mr. Welch said, "There was definitely a credibility problem. They (the citizens) were convinced we wanted to build the same type of road, no matter what we said."

Mr. Welch took the opportunity to walk around the neighborhoods that would be affected. "There was a couple unloading groceries from their car. I stopped to talk to them a little bit and they invited me in. From there we started a neighborhood group meeting in a church basement every other week or so. We convinced them we were willing to listen. It's tough for engineers. We're not trained to be communicators," said Welch.

According to Mr. Welch it was a breakthrough project in that public confidence was regained. The public was kept involved and their suggestions were incorporated in the final design and construction. The neighborhood group went from initially opposing the project to recommending the city council support the final design, which included a number of suggestions the citizens had made in the design concept.

"It was a lot of work, much more than if we would have just held the mandatory meetings," Tom Welch admitted. "We had to take off our 'engineer hats' and function more as teachers. We explained the issues involved and the advantages and disadvantages of their suggestions, and we took the time to thoroughly study their ideas. It was well worth the extra effort."⁹

This new way of thinking, of considering the context of the roadway and accepting compromises, was instrumental in overcoming opposition toward projects which had been on hold for years in the state of Iowa 15 years ago. The Iowa DOT uses context sensitive design routinely when approaching a project now.

The Kentucky Experience

The Kentucky Department of Transportation was having projects that were being delayed for a long, long time either through court injunction or changing needs brought forth from the stakeholders. The DOT Secretary, Mr. James Codell looked at that situation and asked, "Why can't we get these projects done?" Projects were having problems at the design phase and being shelved. "It must have been a good idea at some time to have the money allocated for it," added Don Hartman of the University of Kentucky Transportation

⁹ "Context-Sensitive Design," INSIDE, July 2001, pp.3-4.

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Center. "What can we do to fix that so we can deliver projects that are needed for the benefit of everyone?" asked the Secretary of Transportation in Kentucky.¹⁰

PUBLIC INVOLVEMENT

"What's going on now is an asphalt rebellion, " said Tom Warne former executive director of Utah's Department of Transportation and new president of the American Association of State and Highway Transportation Officials (AASHTO). "The public expects us to do things differently," he says. "It's time to engage some unique solutions to make projects successful."¹¹

There is a general recognition across the country that interacting with the public is needed to get projects done. The public has a new awareness of environment issues with the signing of the Environmental Act from NEPA and Federal Highway Environment Law 106 (for not building through parks). More importantly, the public is intensely interested in getting involved with these projects. It's a new social paradigm, and it can be a real headache for DOTs.¹²

By ignoring public input, especially with the increase of public sensitivity to urban sprawl, pedestrian safety and environmental issues, DOTs will put their projects in peril. This results in projects becoming fragmented or coming to a stand still. Roads in need of updating never quite reach the project table or if they do, the project is not done optimally for anyone.

The cost of delay and fragmentation of projects can be quantified in real dollars and cents as inflation takes a toll over years and decades. The increasing cost to the taxpayers when these battles end up in courts or another government agency must "redo" the work that was "undone" by the State DOT does not engender public goodwill. Neither does the litigation cost when human lives and limbs are lost as badly out of date roads are left to continue to "rot" because of opposition.

Context Sensitive Design is a strategy to do more, better within budget quicker and with public approval. It is a proactive approach that can actually improve overall efficiency, reduce controversy and streamline a project thus saving money by avoiding the escalation of costs that invariably accompanies project delay. Route 53 in Illinois is a good example of what can happen when CSD is not implemented.

Increasingly, transportation practitioners nationwide are turning to the principles of CSD for the answers to these increasing project delay problems. Applying the principles of CSD encourages clear identification of issues and use of creative design solutions to balance the often-conflicting components that arise from transportation planning and

¹⁰ Don Hartman, University of Kentucky Transportation Center, phone interview, 30 Jan 2002.

¹¹ Context Sensitive Design, The Road Less Traveled - Executive Summary, p.1.

¹² Don Hartman, phone interview.

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design. Context Sensitive Design requires early and continuous commitment to public involvement, flexibility in exploring solutions and openness to ideas.¹³

THE ORIGINS OF CONTEXT SENSITIVE DESIGN

Context Sensitive Design was officially debuted at the National Workshop on Integrating Highway Development with Communities and the Environment while Maintaining Safety and Performance, sponsored by the Federal Highway Administration (FHWA) and AASHTO. This conference is popularly known as, "Thinking Beyond The Pavement." Held at the University of Maryland Conference Center in May of 1998, Thinking Beyond The Pavement provided a landmark opportunity for 325 invited participants from 39 states and the District of Columbia to develop a vision of excellence in highway design for the 21st Century. Participants included chief engineers, senior designers and planners from 29 state departments of transportation, representatives of national transportation organizations, and a variety of stakeholders from government, the private sector and citizens' organizations.¹⁴

The University of Kentucky Transportation Center was approached by Kentucky's Secretary of Transportation Codell who had spoken with Gene Keckly, FHWA, about the problems in Kentucky. He asked the Center to come up with a program to teach Context Sensitive Design to the DOT and other interested practitioners. The Center put together a 2 day, hands on seminar on Context Sensitive Design from the planning stage to the design stage. The first full workshop was given on Dec 14th, 1999.¹⁵

The Seminar was then packaged and delivered at the AASHTO conference in Mississippi May 3rd of 2000. Other DOTs attending that conference requested that they be given the seminar package and guide as well to conduct in their own states. To date, according to Don Hartman, 18 states have been given this seminar from Kentucky's Transportation Center. They are New York, North Carolina, South Carolina, Connecticut, Kansas, Arkansas, Oregon, Minnesota, Maryland, Colorado, Montana, Georgia, Indiana, Iowa, New Jersey, Washington, Florida, and Utah.¹⁶

Many more states have participated in Context Sensitive design Conferences set up in the different regions across the country. The ITE website has regional conference information available. Context Sensitive Design does seem to be drawing a lot of attention and popularity across the United States.

The Illinois Department of Transportation does not have to go all the way to Kentucky for experts in Context Sensitive Design. Tim Neuman of Ch2M Hill Associates, a Chicago

¹³ Context Sensitive Design, The Road Less Traveled - Executive Summary, p. 1.

¹⁴ Deborah L. Meyerson, AICP. "Getting It Right In The Right-Of-Way; Citizen Participation In Context-Sensitive Highway Design," Action Guide, Scenic America, p. 8.

¹⁵ Don Hartman, phone interview.

¹⁶ Ibid.

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traffic engineering firm, was the guest speaker on context sensitive design at the October 2001 Institute of Transportation Engineers Missouri Valley Section Meeting.

From Tim Neuman's presentation to the American Association of State Highway and Transportation Officials:

Context Sensitive Design is another way of saying... to think beyond the pavement about the impact a travel-way will have on the area it traverses, including the people who live work, or pass through the area

So what is the big deal?

Context sensitive design is HARD WORK-- more public interaction, more options to consider, more effort to develop and test alternatives and more thinking. Context Sensitive Design requires us to take more risks -- try new things, empower others.

Why do we need Context Sensitive Designs?

Our customers have expressed widespread dissatisfaction with highway projects.

- *the perceived need is challenged*
- *the physical impacts of the improvements are unacceptable*
- *concerns about the safety and effects of high speed roads¹⁷*

Working for a Chicago based firm, Tim Neuman can definitely speak from experience about the Illinois public and customer base expectations.

CONTEXT SENSITIVE DESIGN IS A SHARED RESPONSIBILITY

Context Sensitive Design is not just the responsibility of the DOT and private firms. It also falls on the shoulders of stakeholders, whether they are elected officials, appointed officials or concerned citizens. It takes work and commitment from everyone in terms of time and dedication to excellence. But like MoDOT's Grandview Triangle Project in Kansas, City MO., the pay off is worth all the effort. Through MoDOT's extensive communication program and close coordination with transportation interests everyone seems to be getting what they want out of MoDOT's Triangle Project.

MoDOT formed a Citizen Advisory Committee (CAC) whose membership included: city council members, state legislative representatives, and officials from the City of Kansas City, Missouri, and Jackson and Cass Counties, public works, police, and fire department staff from all the affected communities, as well as including a host of local residents from the numerous neighborhoods surrounding the Triangle. It has helped decision-makers, for

¹⁷ Tim Neuman. Presentation at AASHTO Midwest Regional Conference, Iowa: October 2001.

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and affected by the project to reach consensus early and has expedited the approval plans. The intensity of communication and coordination by this group applied to the Triangle Project is producing cost-effective decisions and allowing seamless project completion.¹⁸

“One of the interesting outcomes from the Triangle Project was the discovery that sometimes the best public works project is the concrete you don't pour.”¹⁹ According to Steve Porter, public affairs specialist with MoDOT.

Steve Porter further said, "The level of communication and cooperation has been outstanding. We may have taken the first step to bring all of these people together, but it has been the willingness of all to work toward solutions that has truly made this into the partnership that it is."²⁰

This seeming unique look at incorporating the needs of the stakeholders from the homeowner up is not at all unique. In the forward and introduction of the guide titled "Flexibility of Highway Design" by the U.S. Department of Transportation and Federal Highway Administration many recommendations for using a context sensitive design approach especially for complex road context issues is recommended. It was recommended that the guide, which is about designing highways that incorporate community values and are safe, efficient, and effective mechanisms for the movement of people and goods also be used by citizens who want to gain a better understanding of the highway design process.²¹

FEDERAL SUPPORT FOR CONTEXT SENSITIVE DESIGN

Congress itself, in the Intermodal Surface Transportation Efficiency ACT (ISTEA) of 1991 and the National Highway System Designation (NHS) Act of 1995, maintained a strong national commitment to safety and mobility. Congress also made a commitment to preserving and protecting the environmental and cultural values affected by transportation facilities.²² The challenge to the highway design community is to find design solutions, as well as operational options, that result in full consideration of these sometimes conflicting objectives as in the case of Route 53.

When Congress passed ISTEA in 1991, in addition to safety, it emphasized the importance of good design that is sensitive to its surrounding environment. Aesthetic, scenic, historic, and cultural resources and the physical characteristics of an area are always important factors because they help give a community its identity and sense of place and are sources of local pride.²³

¹⁸ Judy Meyer, "MoDOT Untangles The Triangle Through Public Cooperation", APWA Reporter, September 2001, pp. 56-58.

¹⁹ Ibid.

²⁰ Ibid.

²¹ Flexibility In Highway Design, US-DOT, Federal Highway Administration, pp. v-vii.

²² Ibid.

²³ Ibid.

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Many DOTs around the country are following FHWA, NEPA and ISTEA guidelines for dealing with projects voluntarily. "Although it's true that no DOT can please all citizens in every project, we have found that we get a lot farther when there is open and honest communication, and give and take between the residents and the traffic engineers who are trying to solve the community's and state's traffic needs," according to Helen Peiker, Region 4, Colorado DOT. "We notify the stakeholders and citizens along the project corridor first. We have a public coordinator as part of the project who handles meetings. Because of meeting with the public first, items that would have been fought over later are fully considered and discussed early in the design process."²⁴

In September 1998, a National Training Steering Committee was created to oversee pilot efforts to institutionalize Context-Sensitive Design principles in five state departments of transportation: Connecticut, Kentucky, Maryland, Minnesota and Utah. It was agreed that each of these five states would proceed with a policy review and a training program tailored to its individual institutional needs, but that the five states would benefit from frequent exchange of information about the design and progress of these pilot efforts and that all 50 states would then benefit from understanding the experiences of these five states.²⁵

Although the context of the transportation facility should be considered throughout a project's life, National Cooperative Highway Research Program (NCHRP) Project 15-19 will focus on project development. The objective of this research is to develop a concise, easily readable guide that state DOTs and other transportation agencies can use to incorporate context-sensitive design principles into their transportation project development work. The guide is intended for a wide variety of projects that transportation agencies routinely encounter.

The University of Kentucky Transportation Center is in the final stages of putting together a one-day seminar on carrying context sensitive design into and through the construction phase. The seminar will be available in March 2002. Context Sensitive Design strategies are important after the design phase is completed because sometimes the context of the road changes between the planning and construction phase. Sometimes the commitments get lost at the construction phase and a stakeholder remembers and sometimes construction crews just don't know what it is that the design is trying to protect. When this happens, confusion, frustration and lack of cooperation can suddenly occur unless the project has strong and dedicated leadership from the CSD project committee from beginning to the very end. Public involvement does not necessarily begin or end with public hearings; rather it occurs throughout the project's life.²⁶

²⁴ Helen Peiker, Region 4, Colorado DOT, phone interview, August 2001.

²⁵ "National Cooperative Highway Research Program: Progress Report 94", Transportation Research Board National Research Council, Washington, D.C.: July 2001, p.284.

²⁶ Don Hartman, phone interview.

PLANNING FOR SUCCESS (OR CONFLICT)

Today's transportation manager must meet a whole new set of expectations while balancing a full plate of increasingly complex projects. Applying the principles of Context Sensitive Design (CSD) encourages clear identification of issues and use of creative design solutions to balance the often-conflicting components that arise from transportation planning and design. In other words... to plan for a successful project from the beginning instead of seeing if it is a success at the end.

Although Context Sensitive Design sounds involved and expensive, in actuality it does not necessarily increase costs. Rather, CSD encourages appropriate expenditures of resources at the appropriate time in the process. In many projects, CSD offers the most cost-effective approach, because it addresses problems before they become costly mistakes.²⁷

In a Daily Herald interview, Illinois Department of Transportation (IDOT) official Mike Monseur said the agency already incorporates some of the elements of Senator Cronin's legislative proposal (SB 1579, Jan 22, 2002). This Senate Bill mandates that IDOT use context sensitive design for all its projects no matter how funded. Mike Monseur went on to cite I-74 project through Peoria as an example of IDOT using Context Sensitive Design. He said that IDOT held meetings with residents, business groups and government leaders on that project.²⁸

Yet when citizens calling themselves Neighbor's Influencing Route 53 Improvement (NIFTI) tried to solicit a real dialogue early in the planning phase of the Route 53 project, IDOT was generally unresponsive.

Context Sensitive Design ideology is not just to use on one project and not the next project. For the state to truly reap the cost benefits, it takes reorienting a DOT's design parameters to include the people, the place as well as the traffic in deciding what the purpose and need are when approaching EVERY project. On again off again context sensitive design will not work as the public will not stand for showing "favoritism" to one set of stakeholders while withholding that cooperation from another. Inconsistency in public involvement, which includes, listening, honesty and respect towards stakeholders will set up a backlash of angry taxpayers across the state. In fact this is already occurring.

IDOT for whatever reason decided not to use the successful Context Sensitive Design strategy on the Route 53 project that had helped them complete the 11 mile I-74 project in Peoria, IL. Some consequences have occurred as a result.

IDOT has delayed its public hearing on Route 53 for over a year. According to IDOT's original plan, construction was supposed to start summer of 2002. Public hearings have not occurred for any of the Route 53 corridor from North Avenue to S. Park Boulevard near Osage Drive as of February 2002. Construction is now slated for Route 53 from

²⁷ Context Sensitive Design, The Road Less Traveled - Executive Summary, pp. 1-12.

²⁸ Harry Hitzeman.

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Roosevelt to North Avenue in 2003 and 2004 south of Butterfield Road.²⁹ IDOT who is not using context sensitive design protocols for this project is meeting with an increasing united public front of opposition from Senators to the homeowners.

IDOT's original plan was to build five lanes from North Avenue to Osage Drive on Route 53. They have since segmented the project leaving the middle section from Butterfield Road to Roosevelt Road off the expansion project.

Had IDOT been using Federal funding this wouldn't have been allowed. Segmentation of a project in this manner is in violation of Federal Highway Association Environmental Law, 23 CFR 771.111(f).³⁰ A full review by the FHWA would be needed if IDOT applied for federal funding to complete this project. Federal funding would be withheld until IDOT came into full compliance with federal guidelines.

Context Sensitive Design is the current trend nationwide in approaching traffic design and is recommended to all DOTs by the Federal Highway Administration (FHWA). Context sensitive design puts an emphasis on fitting a road to its environment, not just building the biggest road one can afford.³¹

Neighbor's Influencing Fifty-Three Improvement or NIFTI for short is an enthusiastic, well-informed and hard working citizen's group determined to see Route 53 IMPROVED not only in capacity and safety but in the contextual fit for the area as well. NIFTI seeks an upgrade to the road but not at the expense of their most precious resources.

Route 53 is used by three school districts for busing children to and from seventeen schools. Parents traveling by car frequently must travel Route 53 to get their children to private schools not on the list. There are more than 100 school-aged children walking along the route as well as crossing Route 53 twice every day by foot and bike. Pedestrian and school bus route safety is a high priority for NIFTI.

There are also environmentally sensitive wetlands and floodplains that align the road as well. These wetlands are also high on the priority for preservation not only from NIFTI but the County of DuPage who has spent \$9,000,000 to date in restoration and preservation projects along the Route.

IDOT recognized that Route 53 was different to the north and south of North Avenue and segmented the project to begin with along that natural break. They then completely failed to treat the two sections differently even when they had shareholders (NIFTI, the cities of Glen Ellyn and Lombard, DuPage County, Milton Township and others) who were willing, even asking, to participate in developing the best solution that would meet all parties needs.

²⁹ Kirk Brown, Illinois Secretary of Transportation, Letter to Senate President James "Pate" Philip, 11 26 September 2001.

³⁰ Paul Tuffs, FHWA Midwest Resource Center, Planning & Environment, phone interview, 7 Jan 2002.

³¹ Context Sensitive Design, The Road Less Traveled - Executive Summary, p. 2.

IDOT has not done full Environmental Impact Studies of these sensitive environs. This is contrary to Federal Highway Administration standards as well as the National Environmental Protection Agency.

NIFTI Formed to Influence Project Design

A group of homeowners along the proposed Route 53 corridor from North Avenue to Osage Drive began meeting to discuss the new expansion in winter of 2000. The Vision Committee, as it was called then, hammered out a list of objectives for the Route 53 Highway Project.³² These they later condensed into their mission statement.

*Neighbors Influencing Fifty-Three Improvement (NIFTI) seeks to achieve an improvement of Illinois Route 53 that promotes: safety for children, a superior quality of life, protection for the environment and a more reasonable alternative for motorists, by replacing Illinois Department of Transportation's current five-lane plan with a community friendly three-lane proposal.*³³

No one on the steering committee felt that a five-lane road was the best design for the corridor. Considering the Context of the area, the committee felt that a more moderate, cost-effective approach with less concrete and other non-pavement strategies and principles was a more appropriate improvement.

NIFTI also hired a traffic engineering consulting firm, CEMCON Ltd., to evaluate the current and projected traffic needs of Route 53, and whether NIFTI's 3-lane proposal could meet those needs. CEMCON found that forecasts show that traffic volumes are stable in the area. The addition of a TWLTL would ease current congestion and keep the Level of Service and safety within Illinois Department of Transportation guidelines for the next twenty years.

An Opportunity Lost

For fourteen months, NIFTI lobbied John Kos, District 1 Engineer IDOT, for a meeting with IDOT project managers and planners so they could present their requests. They were very professional and took great pains to seek the high road in the hopes that they could forge a working relationship with IDOT.

When IDOT finally granted an April 23rd, 2001 meeting, NIFTI, tried to make the most of this unique opportunity. Three weeks prior to the meeting, NIFTI submitted a list of questions they hoped could be answered by IDOT staff. NIFTI also submitted CEMCON's "Working Paper Number 1," six weeks in advance of the meeting. NIFTI

³² NIFTI meeting minutes, April 17, 2000.

³³ www.nifti.net

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provided an agenda, which was approved in advance of the meeting by the IDOT project manager for Route 53, who was acting as meeting facilitator.

Unfortunately, NIFTI's overtures of cooperation were not well received. In a rebuttal letter to Secretary of Transportation Kirk Brown on the segmentation of the Route 53 project in September 2001, NIFTI says of the April 23rd meeting,

For nearly two years we have sought a positive collaboration with engineers from your department. We came in good faith and said, "Please work with us to find a win-win solution, and set a new standard in how we do highway improvement." The only major meeting that we have been allowed with your engineers came on April 23 of last year. At that meeting, the traffic studies of the engineering firm we retained were disputed and discredited by your staff. Now, essentially those same statistics are used by your department to cancel any improvement for a section of the road ---while using the disputed and unacceptable five-lane expansion concept for sections nearby. Please note that not until after the April 23rd, 2001 meeting and the department's reluctance to collaborate and compromise did we go out to key officials and to the larger public with a more vocal campaign.³⁴

IDOT had the opportunity before them to incorporate Context Sensitive Design at the April 23rd meeting and beyond. Although IDOT was farther along in the project than other DOTs usually are when first consulting the public, NIFTI had also done a lot of good solid hard work even hiring a traffic engineering consultant to do studies on route 53 to see if NIFTI's proposal was sound. The two groups could have joined forces and worked together to bring about improvement to Route 53 had IDOT been willing to do so.

DuPage County has a commitment to Storm Water Best Management Practices as the Village of Glen Ellyn is dedicated to maintaining its trees and green space. NIFTI, who ironically has been doing de facto context sensitive design with these and other stakeholders, has the total support of County Board District 4 Representatives and the village of Glen Ellyn for their design. NIFTI also has the support of 21 different stakeholders from four school boards to federal level elected officials and more than 3000 homeowners.³⁵

With the segmentation of the project in September 2001, rather than work with NIFTI, IDOT seemed to pick up their marbles and go home. However, stakeholders are concerned that this strategy would allow IDOT to come back at a later time and point out a bottleneck of two lanes that need to be widened to match the rest of the five lane sections that are planned to be built using only state monies. In The Kirk Brown letter 9/26/2001 to Senator Philip, Secretary of Transportation Kirk Brown stated,

³⁴ NIFTI Response Letter to Secretary of Transportation Kirk Brown, 11 Jan. 2002.

³⁵ <http://www.nifti.net/endorsements.htm>.

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"We will continue to monitor traffic along this section of Illinois (Butterfield to Roosevelt) and reevaluate the need for additional improvements as traffic increases in the future."³⁶

There are no wetlands in this section of Route 53. No messy federal wetlands regulations to adhere to. Widening this stretch later as a separate project would be less contextually complicated and easier for IDOT to comply with federal guidelines for federal funding. IDOT may be purposefully intending to get around Federal Highway Regulations by using state funding.

This is a disservice not only to DuPage County, but the state of Illinois. According to Northeast Illinois Planning Commission's (NIPC) December 1999 Biodiversity Recovery Plan, the Chicagoland area is host to 49 different natural habitats. Of these 23 are globally imperiled.³⁷ Federal Environmental Laws and Regulations for project development are intended to protect the best interests of a community and its environment.

Route 53 traverses the East Branch of the DuPage River. It also lies within the watershed for the river. According to the Illinois Department of Natural Resources, endangered bird, turtle and plant species have been found from Churchill Woods, considered a pristine native habitat, to Hidden Lake Forest Preserve. These natural habitats run next to the road sections currently slated for expansion.

If IDOT's hopes were to get NIFTI and their supporters to quit, then they have shown that they do not fully understand NIFTI's intent. NIFTI is not a "not in my back yard group." NIFTI stands by its commitment to the Route 53 project.

We seek an improved and safer highway, but one that is also consistent in scale with these residential neighborhoods, and with the level of use that is tolerable for this stable, low-growth area. This vision also, and equally, respects the beauty and functionality of the green space we enjoy and need to preserve, and the major wetlands and riparian areas through which the road runs."³⁸

NIFTI has done the research and the work to offer a real solution for Route 53 for everyone. A three-lane would improve the area, add significant capacity to the roadway since 75% of the Route 53 corridor is two lanes, and significantly reduce the number of accidents that presently do and will occur. Research has shown that a three-lane roadway has a capacity almost the equivalent of a four-lane undivided roadway.³⁹ AND it would

³⁶ Kirk Brown.

³⁷ Biodiversity Recovery Plan, Northeastern Illinois Planning Commission, Illinois: 1998

³⁸ June 3rd, 2000 letter to John Kos of IDOT from NIFTI.

³⁹ Dr. Keith Knapp, Karen Giesse, MA, "Guidelines for the Conversion of Urban Four-Lane Undivided Roadways and Three-Lane Two-Way-Left-Turn Facilities," Iowa Department of Transportation, Iowa: April 2001.

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have added this increased capacity and safety without endangering school children or the environment. IDOT is doing a disservice by leaving off a section of two-lane road from the project table.

NIFTI is following the spirit of NEPA and FHWA guidelines for environmental sensitivity, and is doing much of the work that Context Sensitive Design demands. NIFTI has remained for the most part professional, but determined to be heard. The group has been the one to go out and educate Senators, Representatives and other political and transportation involved agencies and has gotten consensus from the stakeholders. NIFTI has done the research on alternative road designs. NIFTI supports and has worked toward Excellence in Design. This is work that IDOT can and should be doing in concert with NIFTI. The NIFTI steering committee did this in their free time as volunteers.

CONCLUSION

Context Sensitive Design is the new way to get projects done. It allows the context of the road to shape some of the design parameters. This creates not just a traffic upgrade, but a public works that is a thing of beauty.⁴⁰

Sometimes public wants and needs conflict with the project purpose and needs. These competing concerns can cause costly project delays. Context Sensitive Design helps mesh these often-conflicting needs and better defines the project's purpose.

Context Sensitive Design is not experimental. Some states have been practitioners of this philosophy for at least 15 years. They find that projects get done better, quicker and with some predictability of schedule.

AASHTO and the FHWA are advocates of Context Sensitive Design. Flexibility in Highway Design along with changes being made in the AASHTO Green Book is allowing state DOTs more flexibility than ever before in project designs.

Congress has also supported Context Sensitive Design by passing ISTEA in 1991, NHS Act of 1995 and more recently TEA-21 in 1998. Congress has recognized the growing need to do Smart Growth to preserve this Country's environment and to promote its citizen's well being.

Not using Context Sensitive Design does not always mean a project is delayed. However, it is not often clear from the beginning of a project what difficulties may arise. Certainly IDOT could have benefited from a Context Sensitive Design approach on the Route 53 project. It is still not too late for IDOT to begin involving the stakeholders along Route 53 so that a better design solution can be completed for this disputed roadway.

⁴⁰ Eugene Cleckley P.E., Director of Field Services-South, Southern Resource Center, FHWA, phone interview, 6 Jan 2002.

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Context Sensitive Design is not strictly an issue of how many lanes to pave. Rather, it is about working to meet the needs of the community as a whole, not just the drivers. Seeking out the opinions and identifying the needs of stakeholders from the beginning would foster a very different atmosphere in citizen groups similar to NIFTI.

In specific to Route 53, NIFTI can be the vehicle to educate the public about the need and reason for a specific design that will be in the best interests of the community and county as a whole. The road so designed will be a win-win for everyone. If IDOT had chosen to work with NIFTI from the beginning, IDOT could have come in ahead of schedule and within the original budget on this project, since many of the stakeholders were already being represented by NIFTI. Instead, IDOT is still in phase one and no serious collaboration is occurring yet.

Although we cannot go backwards in time, IDOT can mitigate future delays and expenses on this project by using Context Sensitive Design strategies. NIFTI has stated publicly that they still want to work with IDOT as recently as January 2002. IDOT has not yet responded.

Senator Cronin introduced Senate Bill 1579 on January 22, 2002. This legislation is designed to mandate IDOT to adopt Context Sensitive Design as the new way to get projects completed in the state of Illinois.

IDOT seems reluctant to take into account the context of the road at times when approaching some projects. For example on the Route 53 project, IDOT clearly did not use past successful strategies to bring about improvement in a road without costly delays due to political and public resistance.

NIFTI is not the only group of concerned citizens that is having difficulties with IDOT. Recently, Itasca and Lincolnshire as well as Kane County have had their woes. Clearly, things must change for the better. One only has to read the papers to see the conflicts between stakeholders and the Department of Transportation. This paper shows that the citizens of Illinois have the knowledge, the concern and the desire for adopting Context Sensitive Design for their state. All that is now required is for IDOT to climb aboard.

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Appendix 1: Interview with Gene Cleckley

Gene Cleckley
Director of Field Services-South
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January 6th, 2002

Mr. Gene Cleckley has worked as Director of Field Services for three years at the FHWA Resource Center in Atlanta. Prior to his position in Atlanta, Mr. Cleckley was part of the FHWA team that put together "Thinking Beyond the Pavement" in May 1998.

Shortly before the groundbreaking seminar, he met with Kentucky's Secretary of Transportation in Washington D. C. Secretary of Transportation, James Codell, and Gene Cleckley held a brainstorming session about why projects were not getting done in Kentucky.

It was agreed that the Kentucky Department of Transportation needed not only a Context Sensitive Design seminar but also an Environmental Leadership Team Building Session. The ELTB Session took place in conjunction with the Context Sensitive design program in December of 1998.

Taking into account the ENVIRONMENT which not only includes nature but social environment when approaching a project equals Context Sensitive Design.

Gene Cleckley does not conduct any seminars in a state unless there is a declaration for the Department of Transportation to make the change to Context Sensitive Design. The Secretary of Transportation in any state must participate in the seminar as an equal. It is run in a boot camp manner as what is at stake is changing how the Department of Transportation thinks about environment and the people along a road. No one leaves without signing a commitment and writing a declaration that they understand and support the new way of doing business for their state.

The key to change and keeping the change in attitude is the dedication of the Leadership toward Context Sensitive Design and holding the management under them accountable. This is known as changing the "Culture" of a Department of Transportation. Without a complete culture change, Context Sensitive Design philosophies can wither and die as people retire or move on to other positions within the industry. A culture change is a change in ideology and focus from a Corporate and Leadership perspective. Furthermore a Department of Transportation can't do Context Sensitive Design unless they have an "environment" oriented committee at its core on board.

Creating a Context Sensitive Design Culture in a DOT creates a feeling of safety so that planners and designers and others feel comfortable meeting the public and keeping a more open mind to new ideas. Kentucky, North Carolina, Florida, Mississippi and Arkansas have managed to make the full transition to Context Sensitive Design Culture in their Departments of Transportation for his region.

The advantage of Context Sensitive Design is that projects are able to meet a more predictable budget and schedule. And the end result of a project done in this manner is seen as a "Thing of Beauty" and fits in harmony with the environment where the project lies.

From the original Engineering perspective a project goes along this production line.
Design ----Announce----Defend

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Departments of Transportation holding on to doing it the engineering way will "Pave Their Way" through projects using the straightest line possible. This not only includes the actual road or bridge or public work but also includes the project schedule framework and attitude behind it.

Departments of Transportation not supporting a new Culture of Context Sensitive Design are quick to point out that it takes more time and costs more money. However, when they try to push a project through in the old way of thinking $a \rightarrow b$, they are increasingly likely to meet with opposition that will cause increased delays, project cost overruns and projects that are not completed. In the long run, these "real world projects" don't reflect the "paper projects" and end up costing more than if they had used Context Sensitive Design in the first place.

The biggest adjustment DOTs face when adopting a Context Sensitive Design culture is that projects don't move as fast as they originally expected. But like the race between the Tortoise and the Hare, the Context Sensitive Design Projects finish first.

The one thing that engineers that embrace Context Sensitive Design do well is the collaboration and communication between the public and the designers. But it takes commitment.

When Mr. Cleckley held the Environmental Leadership and Team Building Seminar for the District Engineers in Kentucky, one engineer who was in the planning and design department for his DOT was very negative toward the public and having to deal with them. This did not go over well with Mr. Cleckley and the engineer was taken to task.

A few years later, when Mr. Cleckley was visiting Kentucky again, the engineer carefully approached Mr. Cleckley and proudly showed him a newspaper article in which he was featured for bringing about a very well received Bridge Project that was hailed as an Excellence in Design by the community. He had stayed to his commitments and had done the work and it had paid off. Mr. Cleckley of course was very proud of him.

Gene Cleckley's goal is for all Departments of Transportation to foster Leadership and Teambuilding within a DOT to enhance their knowledge, skills and attitude. Departments of Transportation can then design a process to integrate transportation and environmental decision making, foster an environmental ethic in daily decision making and engage and collaborate with stakeholders, partners and public to share in the decisions. This new framework then allows for projects to become a "part of the community" and enhance the quality of life for citizens throughout the nation.