

**A RESOLUTION REQUESTING THAT THE N.C. DEPARTMENT OF
TRANSPORTATION CONSIDER AN ALTERNATIVE DESIGN FOR THE
PROPOSED MODIFICATIONS TO SMITH LEVEL ROAD BETWEEN
MORGAN CREEK AND ROCK HAVEN ROAD**

Resolution No. 123/2003-04

WHEREAS, the N.C. Department of Transportation (NCDOT) has proposed to widen a portion of Smith Level Road, from the Morgan Creek bridge to Rock Haven Road (TIP Project U-2803); and

WHEREAS, it is the Board's desire to modify Smith Level Road to the extent that it can safely and effectively accommodate existing and future pedestrian, bicycle, and vehicular traffic; and

WHEREAS, it is important to the Board that such modifications be designed and constructed to minimize disturbance of adjacent properties and maximize the mobility, safety, and access of transit users, pedestrians, and bicyclists; and

WHEREAS, the Board believes that the principles and procedures of Context-Sensitive Design should be incorporated into the development of the project; and

WHEREAS, the Board believes that the principles of Transportation Demand Management should be utilized to reduce the amount of traffic on Smith Level Road; and

WHEREAS, the project proposed by the N.C. Department of Transportation (NCDOT) includes construction of a four-lane, median-divided roadway with two travel lanes in each direction, a raised center median, curb and gutter, bike lanes, sidewalks, and bus pull-offs; and

WHEREAS, the Board believes that a more modest project design could meet the objectives of the Town and the State with regard to Smith Level Road, at a lower cost than the State's proposed option, and with less disturbance of adjacent properties;

NOW, THEREFORE, BE IT RESOLVED by the Carrboro Board of Aldermen that the Board proposes a project design for Smith Level Road that that would consist of two travel lanes (one lane in each direction) with intersection improvements, turn lanes, pedestrian crosswalks, and bus pull-offs where necessary; that sidewalks, bike lanes, and curb and gutter be provided on both sides of the roadway; and that a median on portions of the project could provide aesthetic and safety benefits and should be considered.

BE IT FURTHER RESOLVED that the Board understands that the State acquire right-of-way on the basis of a four-lane median divided cross-section to facilitate the design and construction of the project.

BE IT FURTHER RESOLVED that the Board requests that the State reallocate any surplus project funds which may accrue as a result of a more modest project design to

ATTACHMENT A

additional pedestrian, bicycle, and vehicular safety and efficiency improvements in the vicinity of Smith Level Road.

This is the 18th day of March in the year 2003.

MEMORANDUM

TO: Mayor and Board of Aldermen

FROM: Dale McKeel, Transportation Planner

SUBJECT: Alternative Design for the Smith Level Road Project

DATE: March 18, 2003

At its February 11, 2002, the Board of Aldermen discussed the proposed widening of Smith Level Road and reviewed three options identified by Town staff. The Board adopted a resolution indicating that the Town will propose an alternative to the design proposed by the N.C. Department of Transportation (NCDOT) for a four-lane, median-divided roadway. The Board requested that Town staff prepare for the Board's review a proposed alternative design and justification.

BACKGROUND

The N.C. Department of Transportation (NCDOT) held a public hearing on the proposed widening of Smith Level Road on October 25, 2001. The plan presented to the public showed Smith Level Road being widened to four lanes with an 18-foot median, curb and gutter, and bike lanes and sidewalks on both sides of the road.

In response to citizen and Town comments during and following the public hearing, NCDOT prepared additional information on the project. There were also several meetings between NCDOT staff, Town staff, and Board of Aldermen members to discuss the project.

On October 15, 2002, a joint worksession was held with the Transportation Advisory Board (TAB) to meet with NCDOT staff and review the information that has been compiled. The abstract from the October 15 worksession provides a history and status of the project.

Following the joint worksession, the Board of Aldermen referred the item to Town staff and the TAB for a recommendation within 30 days. The Transportation Advisory Board discussed the project at its meetings on November 7 and November 21, and adopted a resolution on November 21. The TAB resolution recommends that the Board of Aldermen reject NCDOT's proposal for widening Smith Level Road to four lanes and also provides additional comments on the project.

ADOPTED TOWN POLICIES

The Board of Aldermen's action on February 11 was not the first instance in which the Board has expressed support for a roadway design with fewer than four lanes on Smith Level Road. On April 20, 1999 the Board adopted a resolution requesting that three design alternatives be considered, including a two-lane curb and gutter facility with bike lanes and sidewalks on both sides of the road. However, at a meeting on January 6, 2000, NCDOT officials stated that they did not consider

the two-lane option reasonable due to projected traffic volumes, and henceforth the only options studied were (1) a four-lane with median design and (2) a five-lane design.

The Board of Aldermen on June 27, 2000 adopted a resolution endorsing a four-lane median divided road with bike lanes and sidewalks. However, the only other choice presented to the Town at that time was a five-lane roadway.

The Board of Aldermen on December 5, 2000, adopted Carrboro Vision 2020, a policy-making document for the Town to use in the planning of its future. Policy 4.41 states: "As a general policy, established roads should be widened to accommodate bike lanes and sidewalks, but not to provide additional lanes for automobiles."

NCDOT's preference for a four-lane design is based primarily on traffic projections for the year 2025. The traffic projections developed by NCDOT indicate that 29,400 vehicles per day will travel on Smith Level Road in 2025 in the section between Willow Oak Drive and BPW Club Road, assuming the road is four lanes with a 45 mph speed limit. NCDOT engineers have said that they generally recommend a four-lane roadway when daily traffic volumes exceed a certain number, such as 18,000 vehicles per day.

JUSTIFICATION FOR FEWER THAN FOUR LANES

New information collected over the past year indicates that traffic volumes have decreased on Smith Level Road, ridership on the bus routes in the corridor has increased, and new projections for the year 2025 are lower than previous projections. This information suggests that the use of Transportation Demand Management (TDM) measures is already affecting travel behavior in Chapel Hill and Carrboro and in the Smith Level Road corridor. TDM measures are intended to maximize the use of the existing transportation system by providing a variety of mobility options for those who wish to travel.

With the advent of fare-free transit and reduced parking on campus, bus ridership has increased in the Smith Level Road corridor. The following chart shows that ridership since the advent of fare-free in January 2002 has been much higher on the J bus, the primary route serving the Smith Level Road area.

	2001	2002	Change	Percent Increase
July	21,172	37,347	+16,175	76.40%
August	35,184	53,850	+18,666	53.05%
September	44,123	67,420	+23,297	52.80%
October	48,187	72,058	+23,871	49.54%
November	39,604	59,653	+20,049	50.62%
December	23,740	35,360	+11,620	48.95%

Likewise, traffic counts taken by the Town of Carrboro suggest that the number of vehicles per day on Smith Level Road has fallen over the past year. Counts taken by the Town on October 30, 2002 and December 3, 2002 recorded 15,733 and 15,700 vehicles per day respectively

between Willow Oak Drive and BPW Club Road. In contrast, counts by NCDOT in February 2002 recorded 20,800 vehicles per day on this section. The Town's counts are 24 percent lower than those recorded by NCDOT about a year ago.

Jim Zimmerman, a consultant with Kimley-Horn and Associates, recently told a committee of the UNC Board of Trustees that the introduction of fare-free transit, along with the massive amount of construction on campus, has dramatically changed the way people get around. According to the *Chapel Hill Herald* [1-22-03], Zimmerman told the Committee, "There [have] been significant changes in driving behavior. It's just amazing what not charging people to get on the bus will do for people getting on the bus, when it's a good alternative."

In the long-term, it also appears that TDM measures can influence the amount of traffic on Smith Level Road. The model used for the 2025 long-range plan adopted by the Durham-Chapel Hill-Carrboro MPO in December projects about 1750 fewer vehicles per day in the year 2025 on Smith Level Road between NC 54 Bypass and Culbreth Road than NCDOT's traffic model. The MPO model assumes fare free transit, additional bike and pedestrian facilities, and additional park and ride lots in northern Chatham County, which were not included in NCDOT's model. Both models assume a four-lane road at 45-mph speed.

The traffic estimates prepared by NCDOT also show the effect of "induced demand," the phenomenon that wider and faster roads often attract more traffic. For instance, NCDOT's traffic estimates show the following:

- If the projected speed is reduced from 45 to 35 mph, the number of vehicles on Smith Level Road decreases by about 2500 vehicles per day near the BPW Club Road intersection.
- If Smith Level Road is reduced from four lanes to two or three lanes with a 45 mph speed, the number of vehicles on Smith Level Road decreases by 5000 vehicles per day near the BPW Club Road intersection.

Please note that NCDOT did not provide traffic estimates for a two or three lane road with a 35-mph speed. However, it appears that if traffic estimates were prepared assuming a two or three lane roadway, a 35-mph speed, and additional TDM measures (fare free transit, bike/ped facilities, additional park and ride lots), that the estimated number of vehicles per day in 2025 would be reduced to somewhere in the range of 22,000-23,000 in the most congested area between Willow Oak Drive and BPW Club Road.

If Smith Level Road is expected to carry 22,500 vehicles per day in 2025 (rather than 29,400), the argument in favor of a four-lane design is diminished. NCDOT engineers have said that they generally recommend a four-lane roadway when daily traffic volumes exceed a certain number, such as 18,000 vehicles per day. However, in reviewing information on the subject, there are examples of two-lane and three-lane roads that are carrying 20,000 to 25,000 and even 30,000 vehicles per day (for instance, see *Road Diets* by Dan Burden and Peter Lagerway). A feasibility study of the Hillsborough Street reconstruction in Raleigh states that the two-lane roadway with median (reduced from four lanes) is expected to carry about 30,000 vehicles per day. The Town

should work with NCDOT to determine the factors that account for the high capacity of these facilities, and whether these factors are applicable to the Smith Level Road corridor.

Also note that Smith Level Road is classified as a Minor Arterial on the North Carolina Statewide Functional Classification System. Minor arterials are intended to serve trips of moderate length at a somewhat lower level of travel mobility than principal arterials. It is reasonable that Smith Level Road be designed to a lower standard than a primary route, such as US 15-501 or NC 54.

PROPOSED ALTERNATIVE DESIGN

The Town staff proposes that the Board of Aldermen consider an alternative design that would consist of two travel lanes (one lane in each direction) with intersection improvements, turn lanes, pedestrian crosswalks, and bus pull-offs where necessary. Sidewalks, bike lanes, and curb and gutter would be provided on both sides of the roadway. A median on portions of the project could provide aesthetic and safety benefits and should be considered.

Please note that NCDOT staff is already willing to reduce the road from four lanes to two lanes south of Culbreth Road, where the projected 2025 traffic volumes are lower. In response to discussions with the Town, the State has also determined that a single-lane roundabout at the intersection of Smith Level and Rock Haven Road would adequately handle projected 2025 traffic volumes.

Rather than being overly prescriptive about the details of an alternative cross-section, Town staff suggests that NCDOT could adopt Smith Level Road as a pilot project for the implementation of context-sensitive design in North Carolina (see Attachment D). This process would bring together various stakeholders in defining community issues, identifying design details, avoiding/minimizing adverse effects and environmental impacts, and ensuring a safe facility for bicyclists, pedestrians, and motorists.

Town staff recommend that the State acquire right-of-way on the basis of a four-lane median divided cross-section to facilitate the design and construction of the project. Right-of-way plans for the project have been developed and the additional right-of-way will provide an additional buffer between the roadway and adjacent structures.

Town staff also note that Governor Easley has recently appointed a panel to develop a Statewide Transportation Demand Management Plan (Attachment E). Because of the TDM measures already in place in the Smith Level corridor and throughout the Chapel Hill-Carrboro community, Town staff also suggests that this corridor can serve as a case study for the Easley panel to explore the implementation and effectiveness of TDM measures.

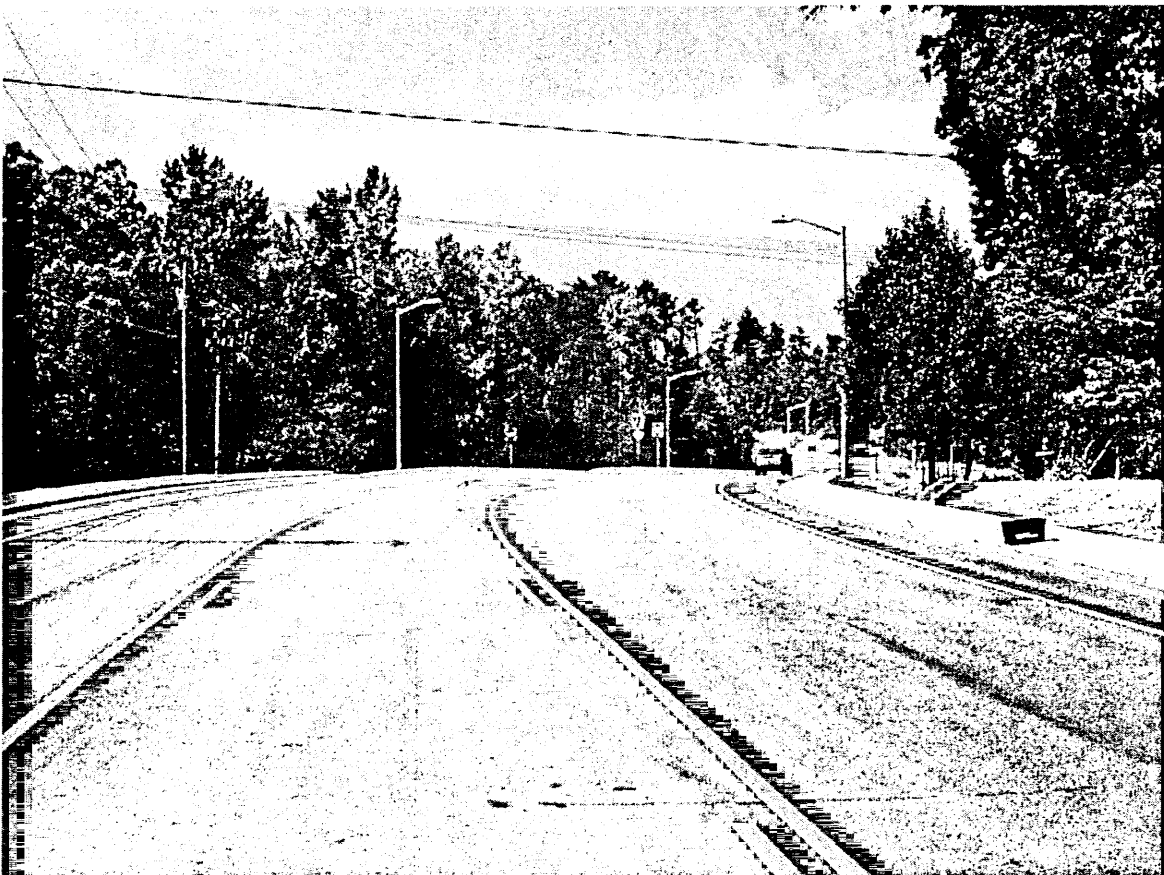
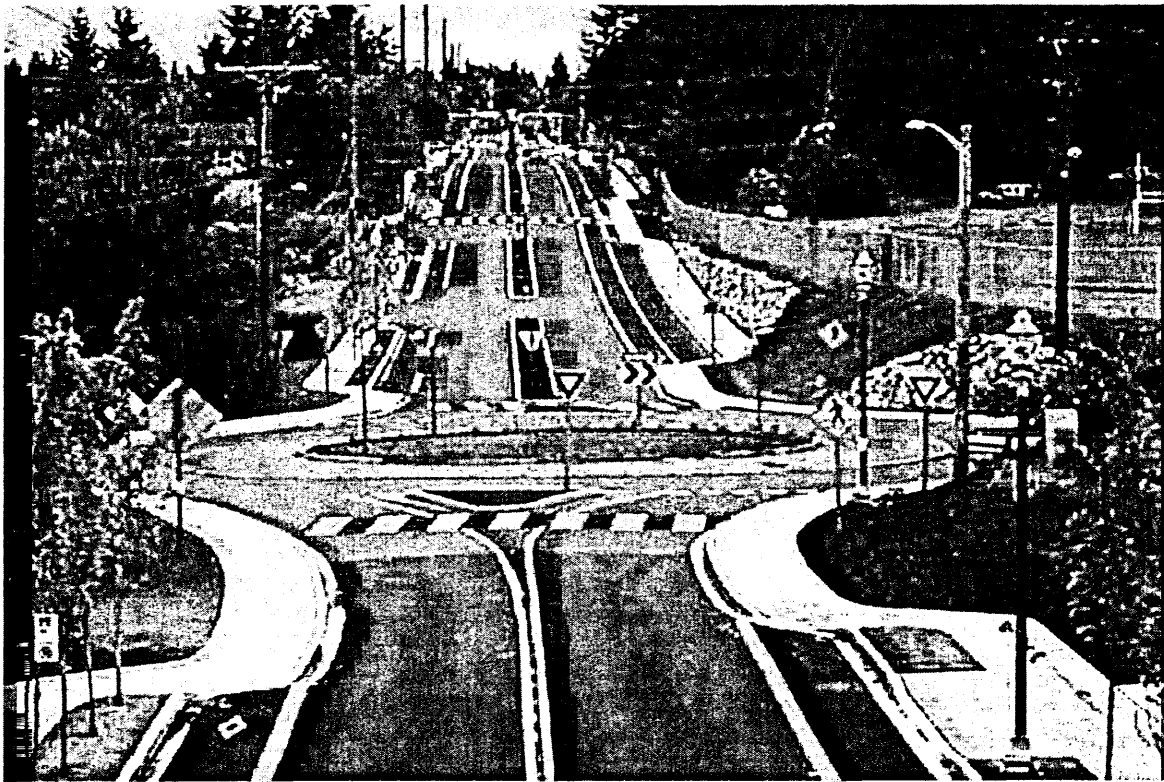
There are several other issues that need to be discussed with NCDOT staff and addressed as part of the final design for the project. These issues have been raised at public meetings, in meetings with NCDOT staff, and by the Transportation Advisory Board. In conjunction with the final decision about the cross-section, careful consideration of these issues will be needed. The following is a list of some of these issues:

- Include improvements to the operation of the interchange at Smith Level Road and NC 54 Bypass as part of the project.
- Include bicycle lanes and sidewalks on both sides of Smith Level Road including the Morgan Creek bridge.
- Consider extending the right southbound lane across the bridge to Willow Oak Lane, as proposed by the Berryhill neighborhood in its presentation to the TAB.
- Determine whether to provide a median opening at the intersection of Smith Level Road and Willow Oak Lane.
- Add bikelanes and sidewalks to the east side of the existing bridge over Morgan Creek on Smith Level Road and other bicycle and pedestrian improvements in the vicinity of NC 54.
- Incorporate context-sensitive design and traffic calming principles into the design of the project.
- Ensure that emergency response and public safety needs are addressed in the design.
- Use recycled materials in all aspects of the project.
- Review the design to ensure a safe and functional pedestrian environment along Smith Level Road.
- Incorporate recommendations from the traffic operations study at the Frank Porter Graham site.
- Coordinate signal timing on Smith Level Road.
- Reduce the speed limit to 35 mph / reduce the design speed.
- Incorporate additional landscape plantings into the project.
- Replace fencing removed by the project.

Examples of Two-Lane and Three-Lane Roadways



Examples of Two-Lane and Three-Lane Roadways



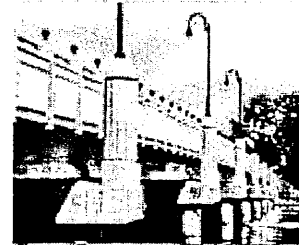


Successes in Streamlining March 2003

Context Sensitive Solutions: Thinking Beyond the Pavement to Be in Harmony with the Environment

Meeting Transportation Needs and Community Values

Many state departments of transportation (DOTs) are using context sensitive solutions (CSS) to "think beyond the pavement" and develop high quality projects that enhance communities and the environment. State DOTs that incorporate CSS principles into the entire transportation process can expedite project delivery and lower costs. Implementing CSS also demonstrates environmental stewardship and commitment, fosters community acceptance, and often prevents project redesigns.



In 2000, NJDOT used the principles of context sensitive solutions - including working early and often with communities - to redesign the Route 35 Coopers Bridge (NJDOT image.)

Benefits of CSS

- Improves project quality.
- Improves relationships with resource agencies, environmental organizations, and communities.
- Expedites permit approval and project development.
- Lowers administrative and mitigation costs.
- Leads to cost effective environmental benefits.
- Develops decisions that "stick."
- Limits redesigns.

State DOTs can adopt CSS as a way of doing business by implementing the following principles:

- Develop projects through a collaborative process that actively engages communities and other stakeholders early and often.
- Balance safety, mobility, and economic goals with the preservation of environmental, scenic, aesthetic, historic, and cultural values.
- Build projects that add lasting value to and minimally disrupt communities.
- Implement a flexible design process that is sensitive to project goals, timelines, and the environment.
- Exceed the expectations of designers and stakeholders.

The Federal Highway Administration (FHWA) views CSS as an opportunity to connect with communities, develop innovative transportation solutions, and improve interagency coordination. FHWA supports CSS in its January 2002 Memorandum to FHWA field leadership, staff, and state DOTs, and in its Vital Few Goal of Environmental Stewardship and Streamlining. FHWA also supports the CSS efforts of state DOTs such as the Maryland State Highway Administration (MSHA), the New Jersey Department of Transportation (NJDOT), the Kentucky Transportation Cabinet (KYTC), and the Minnesota Department of Transportation (Mn/DOT). These states are using innovative strategies to incorporate CSS principles into their daily practices.

Maryland (<http://www.sha.state.md.us/events/oce/thinkingbeyondpavement/thinking.asp>)

In 1998, MSHA sponsored "Thinking Beyond the Pavement - A National Workshop on Integrating Highway Development with Communities and the Environment while Maintaining Safety and Performance" with FHWA and the American Association of State Highway Transportation Officials (AASHTO). Workshop participants identified the project and process qualities associated with CSS. MSHA then worked with a variety of stakeholders to incorporate CSS concepts into its entire transportation process. As part of its CSS efforts, MSHA has improved communication among planning, design, construction, and maintenance staff, established pilot projects to test its streamlined project delivery process, developed a community involvement handbook, and created community involvement and

project management training for MSHA staff.

New Jersey (<http://www.state.nj.us/dot/csd/index.htm>)

NJDOT began incorporating CSS into its policies, procedures, design standards, and organizational culture in 1999. While implementing its long-term CSS initiatives, NJDOT is incorporating CSS immediately into several pilot projects and streamlining its project delivery process. NJDOT promotes design flexibility, early and collaborative involvement with communities and resource agencies, and early identification and consideration of natural and cultural resources. In addition, NJDOT has developed CSS training for staff, consultants, and community leaders, and a commitment tracking and post-project evaluation system. Currently, NJDOT is developing annual CSS awards and an electronic warehouse of CSS best practices and project information.

Kentucky (<http://www.ktc.uky.edu/>)

In 2000, KYTC began integrating CSS principles into its entire transportation process. KYTC provides staff with guidance on CSS, public involvement, and geometric design. KYTC also uses project plan profile sheets, ledgers of commitment, and commitment action plans to ensure that environmental commitments are carried through construction. Finally, KYTC supports CSS training for all participants in the project development process, including construction contractors and engineers. KYTC's efforts have proven successful. By involving landowners, communities, landscape architects, historic preservationists, and environmental specialists in the Paris Pike Reconstruction process, KYTC was able to reconstruct this portion of US Route 27, including its unique dry stonewall that runs along the highway, with little disruption to the surrounding area.

Minnesota (<http://www.cts.umn.edu/education/csd/index.html>)

Guided by the thinking "Listen-Understand-Design-Build," Mn/DOT began its CSS efforts in 2000. Mn/DOT promotes environmental stewardship, encourages innovative and flexible design, and actively engages communities and other agencies in the transportation process. Interdisciplinary teams of economic, environmental, and social experts develop projects that fit functionally, culturally, and environmentally within their location. In addition, Mn/DOT provides project management and CSS training for Mn/DOT and resource agency staff. Mn/DOT is now developing CSS performance measures and methods to assure that commitments are met during construction and maintenance.

Tips for Implementing CSS

- Incorporate CSS into procedures, policies, and organizational structure.
- Train staff and consultants.
- Garner commitment to the CSS process from agencies and communities early.
- Form an interdisciplinary team for each project to provide input to the process. Include the public.
- Analyze the community and surrounding resources before beginning engineering design.
- Start mitigation during project planning as concerns are identified.
- Communicate early and continuously with all stakeholders.
- Tailor the process, including public involvement techniques, to the circumstances of a project.
- Develop partner agreements with agencies and industry to share environmental responsibilities.
- Use the flexibility inherent in design standards to meet the needs and values of the community.
- Document all design exceptions and variances to demonstrate sound engineering.

History of CSS

The Intermodal Surface Transportation Efficiency Act of 1991, AASHTO's National Highway System Design Standards, and the National Highway System Designation Act of 1995 promote the balancing of safety, mobility, economic, environmental, scenic, historic, community, and preservation values. CSS emerged as the means to make all of this work.

In 1997, FHWA, with input from AASHTO and several environmental interest groups, developed the guide Flexibility in Highway Design to promote flexible design, interdisciplinary decision-making, and proactive public participation in the transportation

process. The first national CSS conference soon followed in 1998, after which FHWA and AASHTO began supporting six CSS pilot programs - Connecticut, Kentucky, Maryland, Minnesota, Utah, and the FHWA Federal Lands Highway Program. Each pilot is integrating CSS into the planning, design, development, and construction processes and training nearby states in CSS.

For more information, visit <http://www.fhwa.dot.gov/csd/index.htm>.

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Look What's New!

- [FHWA Interim Guidance: Indirect and Cumulative Impacts in NEPA](#)
- National Transit Institute course "Linking Planning and NEPA: Towards Streamlined Decisionmaking." Spring/Summer 2003. For more information, contact Sean Libberton at the Federal Transit Administration at (202) 366-5112 or John Humeston at FHWA at (404) 562-3667.

For more information on environmental streamlining, please visit: www.fhwa.dot.gov/environment/strmlng/index.htm.

"Successes in Streamlining" is a Federal Highway Administration newsletter highlighting current environmental streamlining practices from around the country. To subscribe, contact Sara McKinstry at (617) 494-3581 or mckinstry@volpe.dot.gov.

This page last modified on March 4, 2003

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United States Department of Transportation - Federal Highway Administration



State of North Carolina
Office of the Governor

Michael F. Easley
Governor

Release: IMMEDIATE
Date: January 24, 2003

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GOV. EASLEY NAMES PANEL TO IMPROVE AIR QUALITY
*Diverse Group of Government and Business Leaders to Focus on Increasing Commuting
Options Reduce Vehicle Emissions*

RALEIGH - Gov. Mike Easley has named a panel to improve air quality in North Carolina by reducing vehicle emissions resulting from job-related travel by 25 percent by 2009. The panel will focus on developing a statewide travel demand management (TDM) plan to increase commuting options for workers in both the private and public sectors.

TDM stands for a wide range of options for using existing transportation infrastructure in a more efficient manner - from carpooling, telecommuting, public transit and flexible work hours - all of which aim to reduce the number of cars on the road during the rush hour commute.

"Reducing job-related travel by 25 percent by 2009 is an ambitious goal, but the stakes could not be higher in this effort," said Easley. "As the number of cars on our highways increases, so does the level of ozone pollution, which carries serious consequences for the respiratory health of our citizens. Reducing the number of cars on the highway will also strengthen economic development and improve business efficiency by reducing time lost for commuters. I am confident that this panel will provide the vision and leadership necessary to meet our goal and improve air quality across the state."

The statewide TDM plan will include regional plans at the local level across the state to ensure that the emissions goal is achieved. In addition, the 16-member panel has been tasked to develop strategies to enhance existing TDM programs, foster development of new programs and promote TDM strategies in both rural and metropolitan areas for the public and private sector.

The panel, which held its first meeting on Jan. 6, is made up of representatives of federal, state and local government and business leaders from across the state with support from NCDOT staff and a consultant team. The panel was created in response to recent legislation that calls for a 25 percent reduction of both the nitrogen oxide emission levels and number of vehicle miles traveled in the state, and charges the departments of Transportation, Administration and Environment and Natural Resources to oversee the effort to meet these goals. The plan is scheduled to be complete by August.

North Carolina had three of the top 25 metropolitan areas in the country for ozone pollution, as rated by the American Lung Association. The annual national study by The Road Information Program (TRIP) lists those same areas in the top 10 in percentage increase in commuting time from 1990 to 2000. In addition, a large number of counties, both urban and rural, are expected to be identified this year by the U.S. Environmental Protection Agency as being in non-attainment of national air quality standards.

Panel Members

- Gene Conti, Chief Deputy Secretary of Transportation, Chair (State Government)
- John Phelps, Manager of Facilities and Security for Corning, Inc. in Wilmington (Business)
- Jim Palermo, Executive Vice President of Bank of America in Charlotte (Business)
- Kennon Borden, Partner with Borden Real Estate in Durham (Developer)
- Lawless Bean, Coordinator of the Wilmington Regional TDM Program (Technical)
- Beau Mills, Director of Intergovernmental Relations for the N.C. Metropolitan Coalition League of Municipalities in Raleigh (Technical)
- Nancy Dunn, N.C. Board of Transportation member from Winston-Salem (Transportation)
- Marion Cowell, N.C. Board of Transportation member from Charlotte (Transportation)
- Ellen Reckhow, Chair of the Durham County Board of Commissioners (Local Government)
- Charles Worley, Mayor of Asheville (Local Government)
- Bill Laxton, Director of the U.S. Environmental Protection Agency, Office of Administration and Resources Management in RTP (Federal Government)
- Dempsey Benton, Chief Deputy Secretary of the N.C. Department of Environment and Natural Resources (State Government)
- Judith Bell, Human Resources Partner for the Office of State Personnel (State Government)
- Nina Slozbug, Napro Communications in Raleigh (Marketing)
- Elaine Lyerly, President of Lyerly Marketing in Charlotte (Marketing)

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