

## WORKSHOP: Environmental Impacts of Transportation Planning, Land Use, Air and Water Quality

By: Ben Steinberg

NARC held its 9<sup>th</sup> bi-annual workshop on the Integration of Transportation and Air Quality in conjunction with the Washington Policy Conference on February 8, 2005 at the offices of the Metropolitan Washington Council of Governments (WASHCOG). This workshop called *Environmental Impacts of Transportation Planning, Land Use, Air and Water Quality*, was put together to explore how regional councils and metropolitan planning organizations can and have created comprehensive and sustainable long range transportation plans that simultaneously protect land, air and water quality in their regions. The workshop brought to the forefront the various barriers which stand in the way of long range planning, such as increased sprawl development, vehicle miles traveled, and population growth. The workshop also exposed the difficulty in meeting air quality regulations as well as protecting our watersheds. Each panelist spoke about these issues and gave their perspective and expertise as to how planners, local elected officials, and community activists can work to alleviate these problems. Throughout the workshop many excellent ideas were presented and discussed, generating synergy around how we can create safer, cleaner, and less congested communities for present and future generations.

The workshop began with a showcase of WASHCOG initiatives. David Robertson, Executive director, started the session off with a detailed description of the Washington D.C. metropolitan area and the many demands that the region currently faces. He remarked that in order to reach the demands of anticipated growth, people will have to work collectively and creatively to find solutions.

John Swanson, Transportation Planner, followed this introduction by giving an interesting presentation on alternative ways in which the D.C. area could and should continue to develop its community in the next 25 years. Using current statistical analyses he exposed four major challenges that are affecting growth in D.C.:

(1) job growth is outpacing household growth; (2) workers are living farther and farther away from their jobs; (3) there is disproportionate amount of jobs and houses on the West side of the city compared to the East, and; (4) there is more growth located outside transit station vicinities, compared to within the station lines.

Mr. Swanson explained that staff is conducting a study of “what if” scenarios to determine whether shifts in jobs and housing might have an effect on travel conditions, including levels of congestion. The Regional Mobility and Accessibility Study has already examined five land use scenarios and is currently examining two transportation scenarios.

Joan Rohlfs, Chief of Air Quality Planner gave the next presentation on the integration of air quality and transportation planning, specifically focusing on the 8-hour ozone standards. She explained how transportation conformity regulations link the two

planning divisions of air and transportation together. Due to strict regulations and meticulous planning the Washington D.C. region has reduced its output of volatile organic compounds (VOC) and nitrogen oxides (NOx). Rohlfs suggested that with the dramatic decrease in pollutants, transportation planners will finally have a new opportunity to create new projects, unrelated to conformity. Although this is an option for the D.C. metro area, Rohlfs warned that the eight hour standard for ozone will be a huge challenge in the future and the remaining in attainment will become even harder. Therefore, she believes that planners should always be prepared for the next stage of regulations.

After the conclusion of this presentation Michael Morris, Transportation Director of the North Central Texas Council of Governments (NCTCOG) challenged Ms. Rohlfs' notion of federal regulations. He stated that air quality and transportation planners should not drum to the beat of federal government regulation, rather it is important for them to interact with various types of planners and professionals to create and carry out local initiatives that work towards restoring the community's ecosystems and built environment. He stated that planners need to look less at regulations and more towards the practicality of what regulations are pushing towards. Morris set the tone for the rest of the workshop explaining that comprehensiveness and collaboration is necessary when planning the roads of the future. After tying in the issues of housing, jobs, and air quality with transportation planning Ted Graham added the dimension of water quality to the equation.

Ted Graham, Director of Water Quality Planning, completed the WASHCOG showcase by discussing the importance between water quality and transportation planning. He stated that uncontrolled runoff and erosion of trash and sediment from roads and highways into streams, rivers, and specifically, the Chesapeake Bay is a large cause of the water pollution problem in the Washington D.C. area. He also explained that the primary source of nitrogen oxides in water come from mobile source emissions. Because transportation and water quality is not federally regulated, water professionals do not receive any transportation dollars to remedy problematic water issues. Mr. Graham suggested that the way to remedy these problems, among others, was to cooperate with transportation planners and make sure that they take watersheds into account in their transportation planning process.

Robert Goo, Environmental Protection Agency, started the next panel entitled *Complex Interactions Between Air and Water Quality*. Goo spoke specifically about the importance of water resource protection in developing a sustainable transportation infrastructure. He explained that the most significant problem that we have today in trying to protect our water is a lack of economically, ecologically, and socially sound land use controls, which inevitably leads to burgeoning sprawl development. He stated that 63% of the houses in the United States live on a one quarter to five acre plot of land. This type of low-density development in turn destroys and pollutes our watersheds at a faster pace than compact development. Goo urged the audience to work hard to save the water in this country by promoting a different type of culture; a culture that attempts to mimic the natural process of a forest. We should strive to promote a culture that is

significantly more efficient and creates less of an impact on the environment. He suggests that the best way to do this is to revitalize what has already been built in local communities and create more dense urban environments, instead of sprawl. Goo remarked that in order to create these types of “livable” communities people need to take a holistic approach and combine their efforts and ideologies to make it happen. He also advocated for a long term approach to planning as well as the development of a system that weighs the consequences of our actions, so we are able to learn from our mistakes. While Mr. Goo took a national perspective on this issue, Suzanne Cooper looked at these issues from a more localized perspective.

Suzanne Cooper, Principal Planner, Tampa Bay Regional Planning Council, continued the panel by speaking about the analysis being done in the Tampa Bay region related to the interaction between air and water. Tampa Bay is Florida’s largest open-water estuary. It is a nitrogen-limited system with an overabundance of natural and anthropogenic phosphorus. Nitrogen is the limiting nutrient, but prior to the 1980s was supplied abundantly by less-treated sewage disposal and coal-fired power plants. Due to pollution over the years Tampa Bay’s native sea grass coverage has been greatly reduced and macroalgae has proliferated. Over the past 20 years dramatic improvements have occurred in sewage treatment and industrial sources of nitrogen, yet sea grasses have not recovered. This phenomenon led to the Bay Regional Atmospheric Chemistry Experiment (BRACE), a concerted effort to determine the amount and sources of nitrogen reaching Tampa Bay. By testing dry and wet atmospheric nitrogen depositions, as well as aerial particles, they were able to determine the cause of the nitrogen-based water pollution. Originally scientists believed that the majority of pollution came from the local power-generating plants, but through tests and analysis, they found that mobile sources are a significant source and that the nitrogen air shed was greater-than-local; going all the way up to Atlanta. Now BRACE, and all of its partners must work towards developing a comprehensive plan that will alleviate air and water pollution. The power-generation facilities are implementing significant reductions in emissions. Transportation planners will be urged to reduce VMTs and mobile source emissions.

Morris, from NCTCOG, commended Cooper and the BRACE alliance for taking matters into their own hands. He stated that this is what communities across the country should strive to achieve. The difficult and unanswerable question that was left hanging was-- How do you motivate communities to take action if they are uninterested as a whole? One such tool to draw people in and create the best long term and comprehensive decision making is through scenario planning. Scenario planning has been used as an effective guide, driving policy and planning within communities.

The next panel called *Scenario Planning Resources and Tools*, discussed resources communities can use to help with the process of scenario planning. The panel also gave two excellent examples of how this process works. Sherry Ways from the Federal Highway Administration gave an excellent summarization of what scenario planning is, how the federal government can help play a part in the equation, and what resources are available for communities who are interested in this process. Scenario planning is a process in which transportation professionals, local elected officials, and citizens work

together to analyze and shape the long term future of their communities. Using a variety of tools and techniques, participants in scenario planning assess trends in key factors such as transportation demographics, health, economic development, environment, and more. The participants bring the factors together in alternative future scenarios, each of these reflecting different trend assumptions and tradeoff preferences. As a result of the process, all members of the community—public, business leaders, and elected officials—have an educational and comprehensive way of reaching agreement on a preferred scenario. This scenario becomes the long term policy framework for the community’s evolution, and is used to guide decision making.

Ways explained that there are competing values and interests in society. While most Americans care about the environment, they also enjoy consuming and living in the comforts of a sprawling society. Therefore, scenario planning offers a process to enhance responses to future challenges, facilitate consensus, analyze complex issues, understand them, and finally compromise. Ways showed that FHWA is taking an active part in facilitating and educating people about scenario planning with different workshops and forums on this topic. FHWA is also able to facilitate peer workshops and training using funds from their division offices. Ways encourages the use of scenario planning as a way to create effective long term and comprehensive planning in the transportation sector as well as in other sectors of society.

Tom Cosgrove, Mayor of the City of Lincoln, representing the Sacramento Area Council of Governments (SACOG), continued this discussion with his presentation on “Blueprint for the Future” a fifty year conceptual vision/scenario plan for future growth in the Sacramento region. This blueprint plan has been highly acclaimed and has won many awards for its creative applications and its ability to create consensus in the region on a variety of complex issues. Through this process SACOG involved over 5,000 participants in the community, from all different factions of society, using interactive web software. In two different forums, one for the public and one for elected officials, SACOG delved into the various development issues that would face the area in the next fifty years, such as housing, reinvestment, transit, vehicle miles traveled, carbon dioxide emissions, and so on. Using this blueprint plan they were able to draw conclusions and use them to make specific applications within their local communities. The Honorable Cosgrove showed specifically what *his* town of Lincoln is doing to reinvigorate its downtown area and create a more sustainable community for the future. Following Cosgrove’s presentation on the SACOG, Paul Hamilton gave a presentation on how his community used scenario planning to effectively plan for the future.

Paul Hamilton, Chief Planner, Tri County Regional Planning Commission (TCRPC) and the staff at TCRPC, created a long range transportation plan, which heavily involved smart growth concepts as developed in the “**Regional Growth: Choices for Our Future**” project . In order to create a comprehensive plan that included smart growth, they sought to create consensus among the 78 units of government in the region, 50 of which have land use powers. TCRPC created this consensus through a plan that: involved committees with interlocking members; used extensive public involvement, public opinion research, educational forums and outreach components; used alternative

analyses for land use and transportation; and, integrated land use and transportation into one planning process. Hamilton found that in order to make this process work it was critical to cooperate with a diverse and non-traditional set of partners in order to create consensus. Thus they were able to develop a “wise” growth plan for their community that protected existing natural habitat, agricultural lands and open spaces, while at the same time accommodating anticipated increases in population and economic development in a more compact city centered land use pattern.

Mr. Hamilton explained that the scenario planning process helped dramatically alter the land use/transportation plans in their area. In the end, their plan promoted increased access to parks, protected natural areas, decreased agricultural land consumption, increased access to transit, increased access to public services, decreased cost and expansion of future infrastructure, including jobs and services located adjacent to developed areas, and thus reduced travel time and air pollution while saving an estimated 1.8 to 5.4 billion dollars in reduced cost to retire transportation deficiencies at regional build out.

The next panel entitled *Integrating Land Use, Air and Water Quality in Long Range Plans* consisted of four panelists from different metropolitan planning organizations who talked about other ways that transportation planners can create more comprehensive long range transportation plans. The first panelist was Michael Morris from NCTCOG. Morris explained that the most important decision in planning transportation is how you build your plan. He suggested that you need to be smart with your money and direct your finances towards a “needs based” planning. A planning team should always prioritize what needs to get done versus what they want done. He continued by making the case that a community that has diverse/mixed-use transportation systems and improved management of the transportation infrastructure is most effective in dealing with congestion and air quality. In order to do this it is extremely important to educate and empower the community about transportation and make sure there is momentum behind planning decisions. The single best way to do this is through leadership at the technical and political levels. Through leadership and planning expertise, the Dallas-Fort Worth region is able to carry out many comprehensive long term planning initiatives that seek to create a more effective transportation infrastructure as well as protect its air quality and scarce water resources.

John Poorman, Staff Director, Capital District Transportation Committee (CDTC), like Morris, also presented about action his region is taking to create holistic long term transportation plans. By using committee structures, CDTC is able to collaborate with a diverse array of local businesses, organizations, as well as different planners in the Albany, NY region to decide how to best develop the area. As a result of this holistic approach CDTC values land use as its primary issue and considers land use before anything else when developing transportation projects for the future. This land use principal ensures that the Albany region will not sprawl out of control.

Tom Kane, Executive Director, Des Moines Area MPO, followed Poorman, by talking about the actions his community is taking to ensure that the roads in the Des Moines, IA

area are built and managed effectively. Due to the changing transportation demographics in the area, such as the Corridor 44 Highway leading westward out of the Des Moines metropolitan area, long-range transportation planning is important. The metropolitan planning organization led the way by helping to build a partnership of the willing that including partners such as a regional council of governments, schools, businesses, local governments, economic development agencies, congressional staff, non-profits and the Iowa DOT. Through this partnership, these stakeholders were able to cooperate and create the best land use initiatives for the future. By using inventories, planners were able to strategize and identify where improvements needed to be made and where future development was possible. Whatever roadway improvements the partnership would request from the Iowa DOT would satisfy whatever traffic could be anticipated from the land use proposed in future comprehensive plans of local governments and in the regional transportation plan. The partnership was committing to future land uses that would not cause additional future roadway improvements because of inconsistent land use policies by local government over time. Each government was committing to a land use pattern consistent with the roadway improvements being, or to be, requested from the Iowa DOT. For example, the partnership created a whole different set of priorities for the urbanized Des Moines area roads than they did for the rural roads outside of the metropolitan area. The partnership was integral in this process because planners and other organizations that did not normally have land use decision making powers were factored into the equation. The partnership enabled transportation planners to become more comprehensive with their planning and as a result their work has created a more sustainable community.

Juanita Wieczoreck, Executive Director, Dover/Kent MPO ended the last panel by describing the difficulties her organization had with updating the long range transportation plan that would properly meet air quality regulations. Unfortunately due to various reasons, the MPO region lapsed in July 2004. In order for exempt projects to continue to be eligible for federal funds, the MPO had to adopt an Interim Plan and TIP. The members of the Dover/Kent County MPO are working hard end the lapse by adopting a Plan and TIP that conform to the new 8-hour ozone requirements. All levels of government in the MPO region agree on the approach that needs to be taken to manage growth. To support that approach, the MPO used the CorPlan land use model to link the impacts of different growth scenarios to the transportation system by generating population and employment estimates that were then incorporated into the travel demand modeling performed for the plan update.

Throughout this workshop participants were able to learn multiple tools and processes that professionals can use in order to develop a comprehensive and collaborative long range transportation plan that deals with many important issues as well as different ways to create consensus in your community.

The workshop ended with a summary from Mark Simons, EPA, Office of Transportation and Air Quality. He stated that studies have demonstrated, and the presenters showed that growth and development are increasing rapidly and have profound effects on our air and water quality as well as our overall quality of life. Due to the seriousness of these issues, Congress has passed legislation setting requirements for improvement.

Simons suggested that federal regulation is just the framework from which we create state and local plans. He stated “ultimately, as representatives of centers of population, regional councils and metropolitan planning organizations bear the responsibility for developing and implementing plans that balance growth and development with environmental quality” that goes beyond federal regulation. Therefore, in the past planners, and currently elected officials, have championed the relationships among development, transportation, and the environment, and have sought to change their interactions for the betterment of society. At the present, professionals are planning and developing cities and rural landscapes in new innovative ways. Simons ended his summary by stating that these new tools and ideas have the potential to “capture the benefits of economic development, health, and quality of life while preserving the environment and protecting air and water quality” for present and future generations.

To learn more about this workshop and receive additional resources on this topic, please contact the NARC office at: 202-986-1032.