Spring 2001 Volume 5, Issue 2

STREAMLINES

A Newsletter for North Carolina Water Supply Watershed Administrators

Q & A WITH DOT

INTERVIEWS WITH TRANSPORTATION PLANNERS

Over the course of the Water Supply Watershed Protection Program we have heard a number of questions regarding the role of the North Carolina Department of Transportation in watershed protection. This role is heavily influenced by the requirements of The Water Supply Rules (15A NCAC 2B .0104(m)), which calls for DOT's cooperation in protecting water supply watersheds:

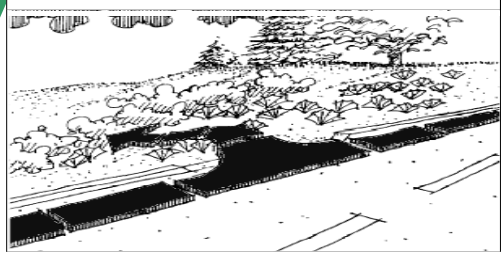
"The construction of roads and bridges and non-residential development shall minimize built-upon area, divert stormwater away from surface waters supply waters as much as possible, and employ best management practices (BMPs) to minimize water quality impacts. To the extent practicable, the construction of new roads in the critical area shall be avoided. The Department of Transportation shall use BMPs as outlined in their document entitled "Best Management Practices for the Protection of Surface Waters" which is hereby incorporated by reference including all subsequent amendments and editions."

In order to answer the questions posed to us, the Local Government Assistance Unit decided to sit down with three DOT transportation planners to ask them some of the questions we regularly hear from local program participants. Here are some of their responses.

1. How is DOT trying to reduce the amount of impervious surfaces in its current activities?

DOT is making substantial changes to the way it does business. This change in practice is making real and long-term improvements in how we create and use impervious surfaces. The following are four ways a difference is being made:

DOT encourages road designs to shed runoff in more natural like conditions by not using curb and gutter systems.



Better usage of existing systems.

DOT, through partnerships with other regulatory agencies, is working to prioritize the improvement of existing systems before considering new road construction projects. Our planning process utilizes close coordination with local and regional organizations to document the purpose and need for new roads. First, DOT conducts an analysis of the existing system to determine where excess capacity exists in the system. Then, in some cases we are able to upgrade the existing roadway instead of creating a new road.

Investigate alternative modes of transportation.

The National Environmental Policy Act / State Environmental Policy Act review process requires DOT to engage other agencies and the general public to confirm the purpose and need of new road proposals. This process requires the creation of alternative scenarios, the selection of a feasible alternative, minimizing environmental impacts, and where necessary, mitigating for unavoidable impacts. Exploration of alternatives can identify other transportation opportunities such as transit, bicycle usage and pedestrian features. However, many projects still involve the need to upgrade an existing road or construction of a new road. In this case, we try to incorporate smart growth ideals into the design. These ideals include items such as, control of access, curb cuts, pedestrian and transit opportunities and route locations that are consistent with local and regional land use plans. DOT endorses the concept of smart growth and seeks strategies to encourage alternative transportation options and street networks that are all compatible with sound local and regional land use planning.

Removal of curbs and gutters in critical habitat areas.

The removal of curb and gutter systems can help reduce run off impacts in sensitive ecosystems. Changing the characteristics of runoff by slowing the volume by which channelized runoff may leave a roadway system will have an improved benefit for water quality. Removal of curbs and gutters and subsequent conveyance systems (pipes) allows the roadway system to transport runoff more closely to natural sheet flow function. The sheet flow concept is consistent with many Department of Environment & Natural Resources non-point source goals, including buffer areas and other regulations directed to increase the use of natural features as filtering devices before runoff reaches surface waters.

(See Q & A on page 2)

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Due to budget constraints, Streamlines may no longer be mailed out. Please look for it at: http://h2o.enr.state.nc.us/wswp/.

Q & A (Continued from page 1)

Increased use of mitigation and preservation as a means for mitigation.

DOT complies with all regulatory requirements for mitigation. We believe there is an opportunity to promote more preservation through coordinated mitigation. By increasing the ratio of mitigation requirements, we are able to conserve more land and preserve more habitat. This year DOT purchased 9,700 acres of land in Tyrrell County for red-cockaded woodpecker protection. The ability to purchase this size of contiguous land will significantly benefit the woodpecker by preserving an entire ecosystem. This ecosystem acquisition results in elimination of timbering operations and prevention of land development in any intensive manner. In the end, this action minimizes future threats to water quality.

2. How does DOT take local water supply watershed protection ordinances into account in its transportation planning activities?

DOT transportation planning activities take place on two levels. First, the Statewide Planning Branch works with counties and municipalities to develop long-range, systems-level plans for their communities. An entire network of inter-related transportation facilities is thus developed. In this way, local government land use plans, including water supply watershed requirements and other regulations, are incorporated into DOT Thoroughfare Plans.

Second, the Project Development and Environmental Analysis Branch plans individual construction projects (at a more detailed level of analysis) to ensure appropriate decisions are made regarding road type, location, and design features.

During both of these planning stages, extensive coordination is maintained with local governments to ensure their interests are included. DOT also uses Geographic Information Systems information to identify water supply watersheds, including critical areas. This information is used to avoid or minimize conflicts. When projects must be located in sensitive areas of the watershed, preventive measures such as hazardous spill catch basins may be included.

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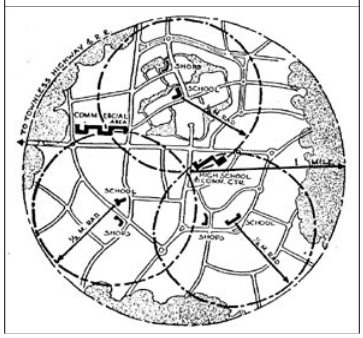
Lewis Mumford, The

REVIEW OF TRADITIONAL NEIGHBORH

Traditional Neighborhood Development is a concept of designing new neighborhoods to reflect the neighborhoods of yesteryear. TND neighborhoods utilize design styles that are sometimes referred to as "neotraditional" or "new urbanist" and contrast greatly with today's conventional subdivision designs *(see February 1997 Streamlines Issue)*. The designs include mixing land uses, increasing the walkability/accessibility of the area, prioritizing pedestrians over cars, utilizing clustering and infill techniques, and building with respect to natural features.

CONCEPTUAL MODEL OF WALKABLE NEIGHBORHOODS



In August 2000, DOT issued *"Traditional Neighborhood Development Guidelines."* The guidelines were established to help DOT District Engineers review subdivision streets and roads for consistency with state requirements, while still allowing for TND concepts. It is the intent of these guidelines to be used as a tool to help local governments and developers develop neighborhoods using the alternative roadway design styles found in TND site designs.

The DOT TND guidelines supercede the design standards contained in *"Subdivision Roads Minimum Construction Standards,"* and are intended to be used in coordination with local governments to develop better neighborhood plans. The guidelines are intended to help local governments encourage walking and biking, enhancing transit service opportunities and improve traffic safety. Additionally, DOT hopes these guidelines will encourage the development community to seek design practices that can reduce the number of external trips and vehicle miles traveled by 15 percent or more; thus, further minimizing the onsite and offsite traffic impacts.

SAMPLE STREET TYPES AND ASSOCIATED DIMENSIONAL REQUIREMENTS (feet)

STREET TYPE	LANE	PARKING LANE	BICYCLE LANE	GUTTER	MEDIAN GUTTER
LANE	8	8	NA	1	NA
STREET	9	6	NA	2	NA
AVENUE	11	6	6	2	1
MAIN STREET	11	6	6	2	1/NA
BOULEVARD	11	6	6	2	1
PARKWAY	12	NA	NA	2/NA	1/NA

It is also hoped that these guidelines will help support the "shared" street concept through function, comfort and safety using a multifunctional evaluation, rather than solely basing the importance or effectiveness of a street on vehicle efficiency. Of critical importance in the guidelines is the opinion that the "shared" street must be destined for the most frequent users: motorists, bicyclists and pedestrians. Oversized vehicles must not be considered regular users, and streets should be designed for the minimum width necessary to accommodate the usual vehicular mix.

Other important concepts promoted are human-scale structures and importance of "walkability." The guidelines support a walkable scale of no site being located more than a five to ten minute walk from the core to the edge of a neighborhood. Additionally the guidelines promote the idea that at least 10 percent of the developed area consist of non-residential usage. This area should lie within the community core area. Of this area, it is advised that at least 15 percent of the floor area be devoted to commercial activities oriented toward neighborhood residents. Lastly, the guidelines promote the use of on-street parking. The parking serves multiple purposes, providing both an effective traffic calming element as well as providing pedestrians with a comfortable buffer between the street and sidewalk.

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DOT routinely reviews all projects to ensure that water supply watersheds are adequately protected. In addition, the department reviews local land use/ development plans to ensure that state transportation projects are consistent with local and regional plans. These reviews consider local water supply protections standards to ensure they have been accounted for. DOT also relies on local governments to help identify local water supply protection measures.

3. How does DOT avoid constructing roads in the critical area?

The department uses GIS information and relies on extensive communication with a local government to identify the critical area of a water supply watershed. As stated before, this information is then used during DOT's two planning stages to avoid locating facilities in the critical area.

4. How does DOT incorporate its document "Best Management Practices for the Protection of Surface Waters" into its activities?

This document, *"Best Management Practices for the Protection of Surface Waters,"* is considered when developing road construction projects. The BMP's listed in the document are standard operating procedures undertaken to prevent or reduce water pollution resulting from activities ranging from planning, design, construction, and maintenance.

5. How often is this document updated?

DOT does not have an established schedule for routine updates of this document. BMP's are updated when substantial changes in regulatory requirements need revision to current operating procedures or when improved protective measures are developed through industry innovation, university research, or field operations.

Thank you to the DOT personnel who collaborated on this article: Bill Gilmore, Harrison Marshall and Rob Hanson.

Local Government Assistant Unit staff member Milt Rhodes compiled this article.

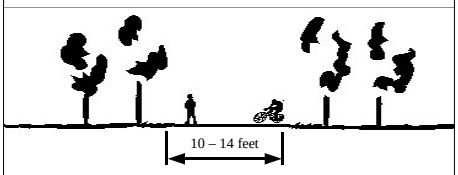
OD DEVELOPMENT GUIDELINES

The following is an excerpt from the interview with DOT officials involved with the formulation of the *"TND Guidelines."* The guidelines can be accessed from this web site <http://www.doh.dot.state.nc.us/operations/tnd.pdf>.

1. Please summarize the key points of the TND Guidelines issued last year.
Traditional Neighborhood Designs are a form of compact, mixed use development. The guidelines promote the use of narrow, interconnected street networks along with sidewalks and path systems. It is our hope that they become walkable communities. Close proximity between homes, businesses and services, as well as pedestrian friendly streets, encourage walking and biking rather than driving. This pattern can reduce both vehicles miles traveled while increasing the number of non-auto trips. Compact development can also make commuter transit and ride-sharing feasible. The impacts of traffic, both on and off site, should be minimized.

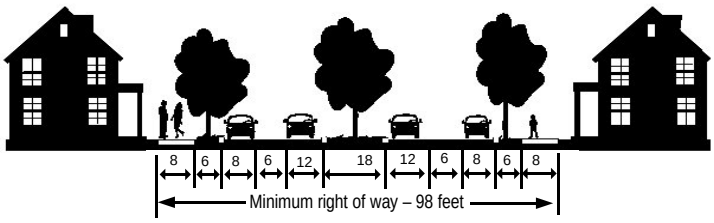
2. Is there an appropriate size for TND neighborhoods?
It is important for these neighborhoods to be walkable. They are generally between 40 and 125 acres, leaving a distance of 1/4 to 1/3 mile from core to edge – approximately a 5 to 10 minute walk. These communities have a core area of non-residential uses, many of which are oriented towards TND residents. The average density for the developed portion of the site should be around eight units per acre or more to promote walking rather than driving.

EXAMPLE SCHEMATIC OF A TRAIL (NO MOTORISTS)



3. How is DOT implementing these Guidelines?
The department reviews design proposals according to the guidelines to ensure that each will function as a walkable community. The TNDs themselves are products of private sector development and local land use plans. Information on TNDs and the new guidelines have been widely distributed across the state to local governments, regional organizations and the development community. Outreach efforts include presentations to Metropolitan Planning Organization officials and staff and to public and private planners.

EXAMPLE SCHEMATIC OF AN AVENUE WITH ON-STREET PARKING



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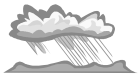
WHAT'S HAPPENING?



Annual North Carolina Planning Conference
May 17–18, 2001
Adam's Mark Hotel, Charlotte
http://www.nc-apa.org/

Municipal/County Administration Workshop by the Institute of Government
Section I April 10-12; Section II April 10-12
Holiday Inn, Burlington
http://ncinfo.iog.unc.edu/calendar/3nov2000dec2001.htm#pann

Environmental Management Committee
April 12 & May 10
Archdale Building, Raleigh

Water Quality Committee
April 11 & May 9
Archdale Building, Raleigh

DID YOU KNOW?

❖CALL FOR 205(j) GRANT PROPOSALS❖

We are currently accepting grant proposals for Fiscal Year 2001 205(j) water quality planning grants. Funding for these grants is provided to the state by the U.S. Environmental Protection Agency pursuant to Section 205(j) of the Clean Water Act. The grants are available to council of governments to be used for water quality management planning, including, but not limited to:

(A) identifying cost effective and locally acceptable facility and non-point measures to meet and maintain water quality standards;
(B) developing an implementation plan to obtain state and local financial and regulatory commitments to implement measures developed under subparagraph (A); and
(C) determining the nature, extent, and causes of water quality problems in various areas of the state.

Local governments with appropriate projects should consult their local COG, and submit a proposal together. For more information, please contact Steve Zoufaly at (919) 733-5083 ext. 566 or steve.zoufaly@ncmail.net.

❖WORKSHOP NOTEBOOKS❖

For those who attended the Water Supply Watershed Protection Workshops held last fall, remember you can use your binder as a living document. Please add new materials to the binder as you receive them, and continue to use the binder as a quick reference source.

550 copies of this public document were printed at a cost of $82.50, or $0.15 per copy.

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