



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

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SECRETARY

**North Carolina Board of Transportation
Environmental Planning and Policy Committee
Meeting Minutes for July 9, 2008**

A meeting of the Environmental Planning and Policy Committee (EPPC) was held July 9, 2008 at 8:30 AM in the Board Room (Room 150) of the Transportation Building. Board Member Marrion Cowell chaired the meeting. Other Board of Transportation members that attended were:

Conrad Burrell	Lanny Willson	Alan Thornburg
Bob Collier	Doug Galyon	Gus Tulloss
Marion Cowell	Andrew Perkins	Cam McRae
Nancy Dunn		

Other attendees included:

Libby Smith	Kubda Runer	Barry Moose
Pete Benjamin	Daniel Keel	Greg Thorpe
Mike Bruff	Mike Mills	Tim Foltson
Whitt Webb	Roger Henderson	Don Voelker
Bill Gilmore	Amy Simes	Don Lee
Jennifer Garifo	Ehren Meister	Marella Buncick
Abtin Mehdizadegan		

Mr. Cowell called the EPPC meeting to order at 8:30 a.m. and accepted a motion made by Andrew Perkins to approve the meeting minutes from the June 4, 2008 committee meeting. The minutes were approved as presented.

Mr. Cowell introduced the Dan Thomas, Unit Head for the NCDOT Technical Services Unit of the Transportation Planning Branch, to present on the Congestion Mitigation and Air Quality (CMAQ) Program.

Mr. Thomas gave an overview presentation on changes proposed for the CMAQ Program. CMAQ provides a federal source of funding intended to improve air quality in non-attainment and maintenance areas. CMAQ has been an established program since the early 1990s when the Intermodal Surface Transportation Efficiency Act (ISTEA) was passed. It is jointly administered by the Federal Highway Administration (FHWA), the Environmental Protection Agency (EPA) and the Federal Transit Administration (FTA).

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The money given to NCDOT for CMAQ is based on the population of non-attainment and maintenance counties, as well as the severity of the pollutants in that area. For example, Charlotte has a more severe air quality problem than the Triad area; therefore, more money is allocated for that region.

In 2004, the Board of Transportation approved a process for distributing and administering CMAQ project funding. This included a budget of approximately \$20 million per year which in turn was allocated to individual Metropolitan Planning Organizations (MPOs) and Rural Planning Organizations (RPOs) based on a BOT-approved formula (pertaining to population and pollutants). In addition to the money distributed to the MPOs/RPOs, there was \$4 million allocated to statewide projects. MPOs and RPOs would apply for the money, and these requests were reviewed by an interagency review team which included U.S. Department of Transportation, NCDOT, MPOs, RPOs, EPA, and the NC Department of Environment and Natural Resources' Division of Air Quality (DAQ). The projects were incorporated into the draft TIP and then became part of the finalized TIP. Overall, in 2004 the process was very popular, open, inclusive, and the overall use of these funds provided for better air quality standards.

Mr. Thomas elaborated on a need for change. The CMAQ program has experienced some issues that have shown a need for process reevaluation. The program received publicity for having remaining balances of money allocated to projects—yet made less than desirable headway on projects. The money was not used because MPOs and RPOs are not used to requesting federal funds. From a project management standpoint, the process is not well-balanced. For instance, if a project is \$2,000 or \$2 million, the project managers spend the same amount of time requesting funds. There has been difficulty getting the projects underway because of these key issues. Often projects receive approval, but first-time requesters find getting through the process is problematic. The new changes are outlined in three goals:

1. Program unused funds from 2004 and get the projects moving;
2. Deplete any unused or reserve funds for CMAQ balance; and.
3. Revise the process to program funds for 2013 (during the next TIP development cycle).

Once the changes occur, the question will be how to expend the remaining funds. The CMAQ program plans to streamline any 2009-approved projects, implementing the new process in September of 2008 or upon BOT approval. The new process will entail depleting a significant portion of the NCDOT – CMAQ balance by fully funding existing CMAQ projects. With the new guidelines, the CMAQ program will distribute funds to regions instead of to individual entities within a region. This way, with the regional oversight—the program seeks to get the best dollar value for air quality, as well as plan how to manage unused funds. If regional funds build up without use, the funding will then become eligible for statewide programming. This will push through some implementation delays related to the local unfamiliarity with the federal funding process.

Mr. Thomas reiterated that the primary reason for his presentation was to provide for an overview regarding the CMAQ program. The CMAQ program is ultimately seeking final BOT approval by means of the EPPC.

Mr. Cowell next introduced Dr. Stanley Riggs from the Geological Sciences Department at East Carolina University. Dr. Riggs also serves on the North Carolina Coastal Geology Cooperative, the North Carolina Geological Survey, and the United States Geological Survey (USGS). Dr. Riggs' presentation covered climate change and sea level rise in North Carolina.

Dr. Riggs is the director of the NC Coastal Geology Cooperative, a pilot program funded by the USGS. Dr. Riggs bases his work on the fundamental value that geologists perceive themselves as Earth historians. In geological terms, this is meant to study historical climate records and historic sea level records.

The Board of Transportation, NC Department of Transportation, and North Carolina as a whole have a vested interest in the \$15 billion tourist industry based in the coastal areas of North Carolina. With this in mind, North Carolina government must work diligently to preserve the tourism industry of North Carolina and the economy as a whole. To preserve these things, one must understand that the geology, geography, and coastal conditions of North Carolina are changing and dynamic; one must understand this in order to plan for the future.

To understand the present and future, one must study the past. In Dr. Riggs' presentation, he displayed a map of various world climactic changes beginning from the "Ice Age." This takes a serious look at the origin and evolution of the coastal system of North Carolina.

Dr. Riggs gave a brief overview of the Ice Age to the Interglacial Period that we are currently in. He explained that because of the Interglacial Period, many rivers were formed in North Carolina, all of which originated from the Ice Age.

As the climate began to warm, the sea level has steadily risen. Dr. Riggs explained that we have a very mobile coastal zone in North Carolina, being the second highest hurricane zone in the United States. With hurricane weather, we see the mobility of the coastal islands and shorelines. Though we are in a glacial warming period, there is still a lot of ice in Greenland and Antarctica. With the ice that is currently in this region, the shoreline can move up to 200 feet, reclaiming vast amounts of the North Carolina shoreline all the way to the I-95 corridor.

Dr. Riggs gave graphical data indicating the shoreline is presently in a mobile period of moving back and forth, and has done so at least 20 times between the coastal plain. He noted that 11,000 years ago the shoreline was 115 feet lower than it is today. At some point, the sea level could change at least three feet in just a few years. Between 2100 years ago to about 200 years ago, the sea level almost stopped rising and only did so about 3.3 inches in the entire span of that time.

Once the Industrial Era began and became fixated, the sea level experienced a rise of 100 feet in just 100 years from 1800 to 1900. By the 1900s – 2000s, sea level had risen 200 feet within that 100-year span.

At the time of the Industrial Revolution, barrier islands began forming. Most barrier islands formed and reformed many times. Sea level began going up very quickly. If the curve continues the way it is, many counties in North Carolina will go under water. Much land in North Carolina is only one foot above sea level.

With this in mind, Dr. Riggs asked the Board to consider hurricanes and how they relate to the coastal shoreline. Storms make the coastal line mobile. The storms move the barrier islands and move, wash out and resurface these islands. This is called shoreline erosion. This make the shoreline recede, such that as the shores move in further, the barrier islands move, and are maintained by storms, demolishing, and rebuilding coastal land.

Some areas can erode 7-8 feet a day. It erodes during the winter months mostly, which we have seen to result in a loss of 1000 feet of shoreline, which is without major storms. This is likely to impact the Outer Banks area, Nag's Head, and the coastal shoreline of North Carolina. With this understood, North Carolina beaches are eroding at an average of 15 feet per year.

As evidence of these changes to the North Carolina coastal area, Dr. Riggs noted that Highway 12 has been moved several times. North Carolina has taken measures to harden the shores (at a rate of 30 miles per year), yet during one storm it only took half an hour to cut shoreline 80 feet.

As it relates to NCDOT, the main question is how to preserve and maintain the infrastructure. The general measure for coverage and preservation of the shoreline has been to harden the shoreline and build dune ridges. Since 1975, North Carolina has hardened about 1000 miles of shoreline. This is critical to the barrier islands because of various inlets and overwash that exist on the shoreline. This is a crucial process for building island width and elevation as sea-level rises and ocean shorelines recede.

To preserve the short-term health and allow the long-term evolution of our barrier islands, North Carolina must allow the islands to respond to the natural dynamics of sediment supply, storms, and seal level rise. Dr. Riggs explained shoreline hardening as a small band-aid for a continuing problem area that needs to build island width. If you fill inlets, the result is a narrow barrier island. This becomes a flooded tide delta which evolves to over wash. This makes inlets filled in, but on top of that then you get new sand that gets 2 meters of sand. The island needs to be elevated. Sand adds vertical elevation to islands to withstand storms. Width adds long-term evolution.

Human processes are affecting the natural inlet and overwash dynamics which do not stop shoreline recess. Island narrowing segments desperately need inlet plans. Currently there has been a 75% loss of barrier islands.

Dr. Riggs explained that NCDOT must work with the system and the dynamics, not around it. Big storms give width to the barrier islands, small storms give height. With this, a new way of thinking must come about. It is not to say North Carolina ought to abandon the barrier islands, it's that human processes need to be limited. Shoreline hardening is detrimental to this process as well as dune construction; however, every year tons and tons of sand are deposited in the islands and again lost to sea. Change is the only constant in dynamic coastal systems.

North Carolina must embrace it, embrace a new way of thinking, and let natural processes occur and work around them. Dr. Riggs believes there is tremendous potential for NCDOT to become the leader in this thought pattern by letting parts of the barrier islands go to sea and use an advanced ferry system to get the public from the mainland to their destinations, which will reduce the need of shoreline hardening to maintain infrastructure, reduce costs to infrastructure rebuilding, and allow natural process to supersede human intervention.

Mr. Cowell asked for any questions.

Secretary Tippet asked, “Why are river levels down if coastal level is rising?”

Mr. Riggs answered, “Rain runs downhill, such that inland can experience droughts while shorelines can experience drought-like conditions.”

Seeing no further questions, Mr. Cowell adjourned the meeting at 9:35 A.M.

The next meeting for the Environmental Planning and Policy Committee is scheduled for Wednesday, August 6, 2008 in the Board of Transportation Room (Room 150) of the Transportation Building.