



North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

September 1, 2012

MEMORANDUM

TO: ENVIRONMENTAL REVIEW COMMISSION
The Honorable David Rouzer, Chair
The Honorable Robert Mitchell Gillespie, Co-Chair
The Honorable Ruth Samuelson, Co-Chair

FROM: Kari Barsness *KKB*
Director of Legislative and Intergovernmental Affairs

SUBJECT: Coastal Resources Commission Report On The Implementation of SL 2011-387 – An Act To Authorize the Permitting And Construction Of Up To Four Terminal Groins At Inlets Under Certain Conditions

DATE: September 1, 2012

Pursuant to SL 2011-387, the N.C. Coastal Resources Commission is directed by the General Assembly to permit the construction of a terminal groin under a pilot program. The legislation also requires that the CRC report to the Environmental Review Commission on the implementation of the act including a detailed description of each proposed and permitted terminal groin and its accompanying beach fill project by September 1 of each year. Please consider the attached Coastal Resources Commission report as the formal submission.

If you have any questions or need additional information, please contact me by phone at (919) 707-8618 or via e-mail at Kari.Barsness@ncdenr.gov.

cc: Chief Deputy Secretary Mary Penny Thompson
Commission Counsel Jeff Hudson
Commission Counsel Jennifer McGinnis
DENR Assistant Secretary Robin Smith
Ted Tyndall, Assistant Director, Division of Coastal Management
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North Carolina Department of Environment and Natural Resources
Division of Coastal Management

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CRC-12-01

January 24, 2012

MEMORANDUM TO: Coastal Resources Commission

FROM: Doug Huggett

SUBJECT: Science Panel guidance on monitoring potential adverse impacts of terminal groins in North Carolina

At the request of the Coastal Resources Commission and Division of Coastal Management (DCM) staff, the Coastal Resources Commission Science Panel has held two meetings to offer guidance to staff on how certain requirements of SB 110 (An Act To Authorize The Permitting And Construction Of Up To Four Terminal Groins at Inlets Under Certain Conditions) and the subsequent amendments to CAMA relating to adverse impacts of terminal groins could be satisfied. Specifically, DCM staff requested guidance on how it may be possible to assess potential terminal groin-related damage to adjacent lands (beach, islands, other beaches) and structures.

Following these discussions, DCM staff filtered the Science Panel discussions by specifically targeting guidance that can be implemented within the existing permit process, and that can serve as a framework for DCM to work with individual applicants in the development of project-specific monitoring plans, mitigation triggers, etc. The following represents the guidance points and/or ideas that staff believe are most relevant to the requirements of the terminal groin legislation and that could be incorporated into the permitting process.

General Points

- While there is no CAMA requirement or authority for an independent third-party review of the required inlet management plan, DCM did commit to discussing the possibility of a voluntary third-party review with each potential terminal groin permit applicant. If the applicant is amenable to this voluntary review, the cost associated with the review would likely have to be covered by the applicant.
- The idea of utilizing a “control” beach (i.e. adjacent section of beach not under influence of the inlet or the potential groin) is likely not practicable since such a control site would be difficult if not impossible

to locate. Furthermore, even if such a site could be found, information gathered from the site would likely not provide the types of information that would allow the site to serve as a true control station.

- Terminal groin design alternatives should include consideration of “leaky” or “porous” groins – i.e., groins that will allow for significant sand transport into the inlet system, which should allow for beneficial ephemeral changes to intertidal system within inlet complex.
- Monitoring plans should be developed by determining what existing data can be utilized to develop a pre-project baseline. For example, existing aerial photography or historical shoreline data (beach profiles or surveys) may be the most detailed long-term information available for a specific project area. Furthermore, if at all possible, timing of post project surveys should be done in a way that allows for an “apples to apples” analysis with the pre-project data.
- The most significant challenge may be in the ability to separate terminal groin-related erosional impacts from background erosion (i.e. normal erosion, storms, etc.). DCM must work closely with the applicant and their consultant to design a monitoring plan and thresholds that will enable staff to distinguish between terminal groin-related impacts and non-groin or background erosional impacts or events.

Potential Threshold Ideas

- Examine post-project changes to sediment volumes over pre-project or baseline sediment volumes.

Example – Determine up front what volumetric loss over a given distance would be required to initiate mitigation. As an example, for the Oregon Inlet groin, a volumetric loss of more than 250,000 cubic yards of material results over a one-mile section of beach triggers a mitigation action.

- Examine post-project changes to shoreline position relative to pre-project or baseline shoreline positions.
 - and/or
- Examine post-project changes to shoreline position relative to structures and their pre-project or baseline positions.

Example - Based on historical data (i.e. photos, shoreline surveys, CRC erosion rates, etc.), determine which structures are likely to be threatened by erosion (using CRC’s definition of “imminently threatened”) over five year time periods. If a structure is later determined to be threatened in an earlier time frame than originally predicted, and the accelerated erosion cannot be attributed to storms, mitigation would be triggered.

- Examine post-project changes to beach width relative to pre-project or baseline conditions.
and/or
- Examine post-project movement of vegetation line relative to pre-project or baseline conditions.
and/or
- Examine post-project changes in erosion rate relative to pre-project or baseline conditions.

Example - Plot background (baseline) data over time from whatever method(s) are chosen to see cyclical changes. Then develop existing loss rates and confidence intervals for these loss rates. If the post-project rates exceed the confidence intervals developed based on the pre-project background data, mitigation would be triggered.