

**HIGHLANDS COUNCIL
NATURAL RESOURCES COMMITTEE
CHAIR REPORT
FOR THE JANUARY 30, 2006 MEETING**

On January 30, 2006, the Natural Resources Committee held a meeting at the New Jersey Highlands Council office in Chester, New Jersey. Notice of a special meeting was sent to the following newspapers: the Daily Record, Easton Express Times, Daily News, Star Ledger, New Jersey Herald and The Record. Notice of the meeting was also provided to the public on the Highlands Council's web site. Council members present at the meeting were: Committee Chair Tim Dillingham and Councilmembers John Weingart, Tracy Carluccio, Kurt Alstede, Ben Spinelli and Debbie Pasquarelli via teleconference. Council staff present included Tom Borden, Dante Di Pirro, Steve Balzano, and Lynn Brass-Smith. Mr. Dillingham called the meeting to order at 10:15 a.m. One matter was on the agenda: Policy matrix specific to ecosystem management and water resources

1. Draft Policy Matrix – Ecosystem Management and Water Resources

Steve Balzano introduced the working draft of the policy matrix and noted that the ongoing development of the matrix will assist the Highlands Council to identify and track the data, approaches, next steps, and policy decisions leading up to a draft Regional Master Plan (“RMP”). The Highlands Council staff has identified key issues in the draft matrix that the staff is looking for policy guidance from the Natural Resources Committee to continue development of the RMP. Specifically, the water resource assessment and ecosystem management assessments will require that large amounts of information and data sets be reduced into information that can be incorporated into the plan. The Committee discussed the need to specifically identify tasks and decisions that will be incorporated the RMP and those tasks and decisions requiring additional data or analysis which would be resolved after the adoption of the RMP.

Ground Water Availability Analysis

Mr. Balzano began a review of the draft matrix elements relating to the ground water availability analysis. The approach under development is to examine ground water availability for each of the 183 HUC 14 subwatersheds in the Highlands Region (“HUC 14” means the hydrologic unit code system for delineating and identifying drainage areas, specifically those drainage areas with a HUC designation with 14 numbers). These analyses will be used to establish thresholds for determining what part of the total budget of ground water supplies is available for each of the 183 HUC 14s. These thresholds for the safe and sustainable yield for ground water and surface water supplies will assist in the determination of the capacity of Highlands watersheds to meet current and future population demands. The water availability thresholds for each HUC 14 may thus be used as a basis to determine appropriate land uses within the projected water availability limitations.

In collaboration with the New Jersey Department of Environmental Protection’s New Jersey Geological Survey (“NJGS”), the Highlands Council staff and its contractor, the United States Geological Survey (“USGS”), are developing methodologies that utilize stream flow statistics and basin characteristics to determine ground water availability. (For more complete discussion see attachment 1). The two primary methodologies to assess water availability include an analysis of a low flow margin of safety and an analysis of base flow. A base flow analysis examines a range of drought conditions (the base-flow recurrence interval) to estimate ground-water availability. The low flow margin of safety analysis compares flows from two different critical periods: 1) the 7Q10 (the lowest flow over a seven-day period that happens once every 10 years on average) and the median September baseflow (September being the

month that normally has the lowest flows). A third methodology, a hydro-ecological integrity assessment, would be completed as a pilot project for four HUC 14 sub-basins and results will be compared to the base flow and low-flow margin results to provide a basis for comparison.

The Committee discussed at length numerous variables related to approving the proposed methodologies. Ms. Carluccio expressed concern that the 7Q10 approach does not take fully address ecological needs, water quality, and the ability of the system to bounce back under drought. Mr. Balzano discussed the fact that the primary methodologies include conservative assumptions to protect ecological resources and that the hydro-ecological integrity pilot project will be used to validate the primary methods.

After additional discussion, the Committee came to a consensus on the following additions to be reflected in the draft Policy Matrix relating to water resources (See attached “Policy Action Water Resources”).

- To the extent practical, incorporate ecological and water quality indicators to inform available water supply based on low flow margin of safety.
- Utilize the hydro-ecological integrity pilot project to validate, to the extent possible, available water supply derived from Low Flow Margin of Safety and Base Flow analysis. Develop a program to fully implement Eco-Flow goals as a next step after the adoption of the RMP.
- Establish conservative estimates of water availability utilizing the above methods given the inherent uncertainty and ecological consequences of unsustainable water withdrawals.
- Develop a monitoring program to be implemented upon adoption of the RMP that seeks to validate and inform the estimates of water availability.

One member of the public noted that restoration of surface water should be considered and the committee’s focus on the ecological flow analysis is tantamount to making the plan what it needs to be. A second member of the public echoed the first, and also expressed appreciation for the level of detail and attention that the committee is giving to the ecological flow analysis.

Water Quality Assessment – Septic Density and Nitrate Dilution Assessment

Mr. Balzano introduced the septic density and nitrate dilution assessment policy item. (For a more complete analysis see attachment 2). This assessment is similarly being conducted in collaboration with NJGS, the Highlands Council staff and its contractor, the USGS. The NJDEP has completed a septic density analysis for the Preservation Area using conservative target levels for nitrates. The approach under development by Council staff is to compile nitrate data for ground and surface water in the Highlands Region and compare these results to land use conditions in the HUC 14 drainage area from which they were collected. The goal of this approach is to examine correlations between nitrate concentrations and land uses and develop threshold values for all HUC 14 drainage areas based on NJGS’s recharge-based nitrate-dilution model.

Ms. Carluccio raised questions regarding the use of the GSR32 method as opposed to the Posten method to determine ground water recharge. After additional discussion, the Committee came to a consensus on the following additions to be reflected in the draft Policy Matrix relating to water resources (See attached “Policy Action Water Resources”).

- Include an examination of the relative differences in groundwater recharge between the GSR-32 and Posten methods.

A member of the public asked whether reduced nitrate loading from alternative design septic systems would be a factor in determining lot sizes. Mr. Dillingham noted that the septic density is a management based decision but that alternative systems that would reduce pollutant loading should be encouraged. Ms. Carluccio added that nitrates are not the only resulting pollutant from septic systems and that nitrate is being used as an indicator.

Water Availability Analysis – Buildout Constraints for Trend and State Plan Scenarios

Mr. Balzano introduced the buildout analysis policy item. (For a more complete analysis see attached “Policy Action Buildout Constraints”). The Trend buildout scenario will examine the impact of a full buildout of available unrestricted land in the Highlands Region under current municipal zoning and pre-Highlands regulations regarding land use age. The State Plan buildout scenario will also examine average residential densities under State Planning Area designations. These issues are before the Natural Resources Committee to confirm the approach using pre-Highlands Act existing regulatory environmental constraints.

Based on available data, the pre-Highlands Act constraints according will take into account all lands regulated by NJDEP’s stormwater rules, freshwater wetland rules, flood hazard area rules, as well as steep slope lands using 15% slopes as the threshold. The analysis will include the buffers associated with Category One streams (300’), exceptional wetlands and associated waters (150’) buffers, and intermediate wetlands and associated waters (50’). The analysis will also utilize approved sewer service areas.

Mr. Dillingham cautioned that designated sewer service areas are not always defined according to resource constraints, that the available permitted capacity be incorporated into the trend and State plan analysis, and that the implications of Executive Order 109 be examined to determine appropriate service areas. After additional discussion, the Committee came to a consensus on the following additions to be reflected in the draft Policy Matrix relating to the build out analysis (See attached “Policy Action Water Resources”).

- Incorporate wastewater limitations based upon available permitted capacity in the Build-out analysis. Address implications of Executive Order 109 and water quality indicators in determining appropriate service area limitations in the RMP.

A member of the public commented that similar to Ms. Carluccio, the Warren County Environmental Commission has similar concerns regarding GSR 32. Second, the Warren County Environmental Commission informed the Committee that several streams in Warren County should have been classified as Category One waters.

Outstanding Ecosystem and Water Resources Policy Matrix Items

Mr. Dillingham asked that staff and committee members compile a list of questions they need addressed by the next meeting of the Natural Resources Committee. Mr. Balzano recommended that committee members should examine the ecosystem and water resource portions of the matrix and identify any areas in need of discussion. The meeting adjourned at 12:45 p.m.