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Highlands Water Protection and Planning Council
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Highlands Council
New Jersey

February 25, 2013

Mr. Patrick Moffitt
[redacted]
Peapack, NJ 07977

Dear Mr. Moffitt,

Thank you for your recent correspondence concerning the Highlands Regional Master Plan and the Regional Master Plan Technical Reports. The information you provided in regard to the Highlands forest and nitrate dilution approach will be included in the comprehensive review of the Highlands Regional Master Plan by the Highlands staff. Evaluation and resultant update comments will be presented to the Highlands Council for review and action in conformance with the Regional Master Plan requirements.

We thank you for your interest and expertise in support of the Highlands Regional Master Plan and the important work of the Highlands Water Protection and Planning Council.

Sincerely,

Gene F. Feyl
Executive Director

NITRATE

From: Patrick Moffitt
To: highlands
Subject: Question
Date: Tuesday, February 12, 2013 3:26:02 PM

To whom it may concern,

A basic planning assumption of the Highlands Council is that a "slight" reduction in nitrate loadings has occurred over some undefined period of time. This "minor" reduction in nitrate loading is used, in part, as an "off-set" to new loadings from septic based development. Basically, the Highlands Council has defined the allowable new septic based development as a function of the recent nitrate loading decline. (See Notes 1 & 2 as the basis for the above.)

The historical nitrogen mass analysis required to make this nitrogen loading assumption cannot be found in any available Public document. I would appreciate reviewing the relevant analyses including:

- Methodology and calculations used in the preparation of the historical nitrogen mass balance including identification of and changes in nitrogen source loads.
- The time period used.
- The soil and/or groundwater depth selected to track changes
- The assumed nitrogen delivery efficiencies.
- The applied "error bars" and safety factors.
- The net change in nitrogen (nitrate) loading to groundwater over this period
- The "offset" nitrogen load allocated to new septic development.
- The assumed number of new septic based residences allowed by this offset.
- The number of residences using septic assumed without the Highlands Act.

Thank you for your attention to this matter.
Regards,
Pat Moffitt

Notes:

1. *"NJDEP's Highlands Preservation Area Rules allow for very limited additional septic systems on the assumption, among other things, that nitrate loadings from existing and past land uses are declining over time, resulting in an offset to minor additional*

loadings." The Basis and Background of Septic Density Standard of the Highlands Water Protection and Planning Act Rule at N.J.A.C. 7:38-3.4

2. *"This analysis allowed the Council to evaluate changes in nitrate concentration in ground water over time, taking changes in land use and other factors into account to the maximum extent feasible."* Water Resources Volume I Watersheds and Water Quality Prepared by State of New Jersey Highlands Water Protection and Planning Council in Support of the Highlands Regional Master Plan 2008 Technical Report

From: Patrick Moffitt [mailto[redacted]
Sent: Wednesday, February 06, 2013 2:57 PM
To: highlands
Subject: Forest Question

Dear Ms. Danis,
I hope you may be able to clarify for me the Highlands Act's mandate to preserve land in its "natural state". What is the "natural state" and what representative time period, if any, is used for this analog (pre-human contact, pre-European contact, 1900-1930 etc.)?

Are there any areas currently within the Highlands Act's boundaries considered to be in a "natural state" and if so where?
Has NJDEP or the Highlands Council adopted, by policy or regulation, metrics defining a "natural forest" (beyond the integrity metric outlined in the 2008 Ecosystem Management Report) including:

- Fire return cycle
- % of forest in each stage of succession
- nitrogen fixation, assimilation and denitrification rates
- fauna and flora assemblages
- forest duff and soil chemistry
- soil moisture
- board feet/acre and other tree density measures

I thank you for your time and attention.
Regards,
Pat Moffitt