



NEW JERSEY HIGHLANDS COALITION

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April 30th, 2015

Ms. Margaret Nordstrom, Executive Director
New Jersey Highlands Water Protection and Planning Council
100 North Road
Chester, NJ 07930

Re: Comments on the Monitoring Program and Recommendation Report

The Highlands Council is currently seeking comments from the public regarding the Highlands Regional Master Plan (RMP) as part of its 2014 RMP Monitoring program. The Highlands Coalition has developed comments on a number of important RMP indicators. [Click here for more information on the Highland Council's Monitoring Program.](#)

I. Plan Conformance & Implementation

The 2008 RMP is a comprehensive, science-based planning document that responds directly to the mandates of New Jersey's 2004 Highlands Water Protection and Planning Act. We frequently encourage non-Highlands entities (e.g. non-profits, planning firms, NJ residents, municipalities outside of the Highlands, etc.) to read and reference the RMP. It is a strong document, but it is only as effective as its implementation in the Highlands.

Currently, the Conformance Process through which the RMP is in large part implemented is muddled by the severe edits to the Highlands Land Use Ordinance that removed language related to the protection of natural resources. A Request for Proposal process, issued in part to develop a separate ordinance specific to resource protection, has yet to be completed. There was also confusion when a December 2012 version of the HLUO was handed out at a February 2013 training session but then a new version was released in July 2013 with no notice to municipalities working to adopt that there was a new model. In the meantime, we have seen a dozen municipalities skirt the requirement to pass an HLUO entirely, and instead implement the 'Checklist Approach to Conformance.

The Conformance Process has always been an intricate process, but with all of these changes and uncertainties, it is harder than ever for the public to follow along. The Highlands Council should increase its efforts to inform the public of municipal progress, especially when major milestones are reached. As of now, even in municipalities that are working towards Plan Conformance, the process is either totally unrecognized by the public or perceived as ambiguous with no formal end or achievements. The Council should identify steps along the way (the passage of conforming ordinances, revision of the Master Plan, completion of a Water Conservation Plan, identification of scenic resources, success in achieving any of the multiple goals, policies or objectives in the RMP, etc.) that would be marked, publicly acknowledged and recognized in Council press releases when achieved. In that manner, municipalities would see their accomplishments recognized publicly, and the Highlands Council itself would likewise receive greater recognition, instead of laboring in the shadows as it does today. The Conformance Process would be both more widely understood and better appreciated, which would be beneficial for all involved.

II. Nitrate Dilution Standards

The application of the Trela-Douglas nitrate dilution model is one of the keystones of the Regional Master Plan (RMP). The adoption of the model's approach and specific inputs by both the NJ DEP and the Highlands Council are in response to the requirements of the Highlands Water Quality Planning and Protection Act (the Act). With the passage of the Highlands Water Protection and Planning Act in 2004, the legislature specified a new more protective approach to land use planning in the Highlands region. It is important to note that the act passed the legislature by large margins: 34-2 in the Senate and 69-10 in the Assembly. Several of those legislators voting against the bill have continued their political opposition the Act until the present.

Specifically the Act stipulates that the RMP should focus on the protection, restoration and enhancement and quality and quantity of surface and ground waters in both the Preservation and Planning Areas (C13:20-10.b(1) and c13:20-11.1(a).

What exactly is meant by the three words, "restore", "protect", and "enhance" in the context of water resources and land use planning in New Jersey? In Its RMP Technical Resource paper, "Water Resources Vol. 1" the Council carefully examined the three terms, protect, enhance, and restore as follows:

"Restore" is the simplest – where waters violate water quality standards, their quality must be improved to the point where they at least meet the water quality criteria established to protect designated water uses such as drinking water, fishing, swimming and ecosystems. The Highlands Region includes areas of both localized and wider scale contamination where restoration would be appropriate, ranging from the effects of intensive agriculture, to the impacts of communities with many septic systems on small lots, to areas of industrial contamination.

"Enhance" is also fairly clear but less used for regulatory purposes – it means improving water quality even where the waters currently meet all standards. The laws do not provide a direct mechanism for doing so, but some regulatory programs (e.g., uniform requirements for secondary treatment of sanitary sewage, industrial treatment standards, municipal stormwater permits) enhance water quality. Voluntary efforts (e.g., agricultural improvement cost-share programs, public education) or indirect efforts (e.g., where efforts to control one contaminant achieve improvements for a non-targeted contaminant) also enhance water quality.

"Protect" is the most variable in meaning, but is a critical focus of water pollution control programs. Existing regulations, case law and legislative history at both the state and federal level make clear that "protect" covers a wide range of policies, from natural quality (no non-natural pollutant loadings of any type) to non-degradation (no reduction in water quality from a baseline condition) to various levels of anti-degradation (allowing some level of reduction in water quality but never beyond the water quality criteria and always controlled to protect public interests). What becomes clear from historic use is that "protect" refers to the protection of water uses ranging from highly sensitive ecosystems that tolerate no degradation, to other water uses that will tolerate some limited degradation under some situations.

Additionally, the Act specifies that a carrying "capacity approach" should be used in the Regional Master Plan: *"The regional master plan shall include, but not be limited to: (1) A resource assessment which determines the amount and type of human development and activity which the ecosystem of the Highlands Region can sustain while still maintaining the overall values thereof with **special reference to surface and ground water quality and supply** (emphasis added)."*

These requirements, the use of a non-degradation approach to surface and groundwater quality and the use of a carrying capacity approach, have been met by the RMP which employs the Trela-Douglas nitrate dilution model along with other planning techniques.

A brief introduction to the nitrate dilution model as used in New Jersey is contained in the N.J. D.E.P.'s "Nitrate Dilution Model, Frequently Asked Questions"

(<http://www.state.nj.us/dep/njgs/enviroed/infocirc/nitratedilutionFAQ.pdf>). The Trela-Douglas nitrate dilution model was developed in New Jersey and is capable of meeting important statutory objectives

mandated by the Act. Perhaps the first clearly articulated explanation of the model appeared in 1988 in “*Document 32: Development of the Nitrate Dilution Model for Land Use Planning in the State of New Jersey*”, a technical document prepared by the Office of State Planning (<http://www.nj.gov/state/planning/docs/nitratemodel120788.pdf>).

The model was specifically reviewed to determine its ability to provide carrying capacity guidance to land use planning in non-sewered areas: “*Traditional tools for evaluating the suitability of a development site for onsite wastewater disposal from conventional septic systems focus on the ability of the surface soils and underlying geologic formations to absorb and transmit septic effluent. These evaluations (e.g., percolation tests) are frequently accurate in determining the ability of the land to support individual septic systems with respect to the filtering and drainage ability of surface and subsurface soils. However, such tests do nothing to evaluate the ability of the environment to dilute and transport contaminants safely out of the watershed. Thus, groundwater degradation may occur in areas having a high density of approved, properly functioning septic tank systems; this may be compounded by additional contaminants introduced by intensive agricultural use of the land* (Doc. 32, p.1). The model was applied statewide and found appropriate septic unit densities ranging from 3.1 ac/unit to 31.1 ac/unit based on a 3mg/l output concentration.

The model was adopted for use in New Jersey by the State Planning Commission, the N.J. D.E.P., the Pinelands Commission and numerous municipalities. An excellent guide to the model at a watershed scale and its use was published by Somerset County in 2010: (*WQMP Rule N.J.A.C. 7:15: Development of the NJGS HUC11-Scale Nitrate-Dilution Model to Determine Regional Septic Densities 03-09-10*) (<https://www.co.somerset.nj.us/planweb/wastewater/maps/NJDEPNO3-Models.pdf>).

This document addresses the use of the model to meet the requirements of the N.J. D.E.P.’s Water Quality Management Planning Rule that by then had incorporated the use of the model. The extensive bibliographic references, numerous reviews and applications of the model in New Jersey indicate that the model has a strong scientific basis and has been reviewed and used by a wide variety of scientific and non-scientific land use practitioners. Overall, the model is, at present, the best available and understood mechanism for establishing appropriate septic densities in non-sewered areas.

Like other models, the inputs used have an effect on the results. In the case of the nitrate dilution model, several factors must be carefully considered. The Council’s entire approach and application of the nitrate dilution model is described in the Water Resources Technical Report, Vol 1 on pages 114-173. The document recognizes that there is a clear association between land use intensity and the concentrations of nitrates present in groundwater. It also recognizes that nitrate concentrations are not only a potential health problem but that they can be used as an indicator to predict the presence of other contaminants in groundwater. While health concerns are of crucial importance it is also necessary to consider the impacts of nitrate concentrations on ecological systems. Since many of the Highlands stream systems are, or should be, low nutrient streams, the threshold for ecological protection is generally lower than the human health threshold.

Median nitrate concentrations were evaluated using 352 direct well measurements and a logistic regression process implemented by the U.S. Geological Survey. “*Of the 183 subwatersheds, the median concentration for the Highlands Region as a whole was determined to be 0.83 mg/L, slightly lower than the 1.1 mg/L value calculated directly from well sampling analytical results. The model-derived median is considered more accurate as it addresses limitations in the well monitoring network, related to the overall distribution of wells with a disproportionately small number located in undeveloped areas. The modeling analysis also provides an indication of general trends in water quality and magnitude of contamination in terms of both areal extent and actual concentrations that are related to nitrate loadings.*

Estimated median nitrate concentrations for each of the 183 subwatersheds range from 0.17 to 3.6 mg/L; just nine subwatersheds have an estimated median concentration greater than 2.0 mg/L. The median nitrate concentration in undeveloped areas was estimated to be 0.1 mg/L, with concentrations in subwatersheds with very limited development typically less than 1.0 mg/L. Highly urbanized areas are likely to have somewhat elevated concentrations, with intensely agricultural areas most likely to have the highest concentrations of nitrate. The results of the median nitrate concentration analysis, aggregated into representative values for the HUC14-specific results are illustrated in the map figure entitled Median Nitrate Concentrations by HUC14"-Water Resources Technical Report (Vol.1,p. 116).

Median results from the Protection Zone were .72 mg/l, Conservation Zone, 1.87 mg/l and for the ECZ, 1.17 mg/l. The median concentrations for the Protection Zone and the Conservation Zone were adopted as targets while 2.0 mg/l was adopted as the target in the ECZ Zone corresponding to the NJ DEP statewide level. The Council did not analyze the Preservation Area of the N.J. D.E.P.

While there may be some distrust of the modeled results it is important to note that in 2014 a report prepared by the N.J.'s New Jersey Geologic and Water Survey found N.J. G &WS: *Technical Memorandum 14-1, 2014 Nitrate Concentrations of New Jersey's Highlands Region, using 19,369 sample results generated through the Private Well Testing Act found similar figures: for the Protection Zone the median was .2 mg/l, for the Conservation Zone 2.55 mg/l and for the ECZ 3.55 mg/l. The overall range was similar ranging from .1mg/l in the Protection Zone of the Preservation Area to 3.55 mg/l in the ECZ in the Planning Area.* Based on a comparison of these two studies it is clear that median concentration have been accurately determined.

Another variable in the model is the recharge volume. The Council and the N.J. D.E.P. both used the 1961-1966 drought of record to inform the model. This was done to assure a conservative analysis and is the proper choice for long term water resources planning. Home occupancy was also considered at 4 persons per household, despite the fact that census figures indicate an average home occupancy of 2.73 people per unit in the region. This is explained in the Technical Report as a compensation for other potential sources of nitrate such as lawn fertilizer and to account for occupancy above the average.

The model was then applied to all 183 subwatersheds to determine the average density to be permitted so as not to break the target number. Each municipality was assigned a percentage of the available septic capacity based on its land area in the watershed.

Controversy about NJDEP's Septic Density Standard for the Highlands Preservation Area, characterizing it as junk science, etc. comes from the equally valid input variables used by NJDEP in the nitrate model. The Trela-Douglas Nitrate Model is a peer-reviewed tool that has been in use in New Jersey and elsewhere for more than 30 years. The model is not controversial, but the inputs do not sit well with those unhappy with the results. For example, NJDEP assumed a recharge based on drought rather than annual precipitation averages; for nitrate loading, NJDEP assumed household sizes of four persons instead of a regional average of 2.7 occupants. These very conservative inputs to the formula result in the 88 acre and 25 acre densities.

NJDEP's use of these conservative inputs are directly responsive to the mandates of the Highlands Act and justification by the Department can be found on their website at [Basis & Background of the Septic Density Standard of the Highlands Water Protection and Planning Act Rule at N.J.A.C. 7:38-3.4.](#)

The Highlands Act is unequivocal in stating the goals it intends for the Highlands Preservation Area. Primary among them are the goals: *to protect, restore, and enhance the quality of surface and groundwaters (C.13:20-10.b.1 et seq.).* Also stated are goals to: *preserve extensive and, to the maximum extent possible, contiguous areas of land in its natural state* and to: *prohibit or limit to the maximum extent possible construction or development incompatible with preservation.* Unlike the series of goals

stated for the Planning Area, which includes the character, location and types of development that are encouraged, except for brownfield remediation and development, there exists absolutely no provision to accommodate any form of residential or commercial development in the Preservation Area. For the Preservation Area there is no intention that its primary purposes of protection, restoration and enhancement of water resources be mitigated or softened with loopholes in accommodation of development such as, *to the maximum extent practical, or practicable, or feasible*.

Clearly, the legislative intent for the Highlands Preservation Area is to maintain, if not enhance, the landscapes that contribute to the Highlands supply of clean water. Any human disturbances that could damage the existing fragile ecology are not to be *limited*, but **prohibited**. Land uses must conform to policies that are not merely anti-degradation, but non-degradation.

NJDEP, in developing a septic density standard for the Highlands Preservation Area had to fully incorporate the mandates of the Act into standards for non-degradation. With that in mind, the 88 acre and 25 acre minimum lot sizes for residential development is not jaw-dropping if the goal is to maintain forest ecology, as it surely is. Lot size shock only comes into play when looking at the Highlands Act as a development plan. It is a preservation plan, and one with lines drawn in the sand.

It should be noted that the septic density standard for the Highlands Preservation Area is a component of NJDEP's Highlands Rules in response to the Highlands Act. The standard is not subject to the jurisdiction of the Highlands Council, or a component of the Highlands Regional Master Plan, except as adopted by reference into the RMP.

In sum, the nitrate dilution model is a proven mechanism to aid in calculating septic densities and to distribute remaining capacity in an equitable basis. Its application by the Highlands Council and the DEP was carefully considered and assumptions were carefully made. Overall, we can see no reason to abandon or modify the approach. We strongly recommend that the Council continue to apply the model during conformance until substantial land area is controlled by appropriate zoning and further direct groundwater and surface water measurement and analyses can be performed.

III. Historic, Cultural and Archaeological Resource Protection

Chapter 4. Goals, Policies and Objectives:

The introductory paragraph of Chapter 4 (p. 137) provides an overview of the chapter. There is, however, an essential aspect of resources as described in the Highlands Water Protection and Preservation Act (Act) that is not articulated, and is vital to understanding the policies and objectives therein. A paragraph needs to be added stating that natural and cultural resources coexist in the world, and even though we treat them as separate academic subject areas, that is not how they are found in the Highlands Region or, indeed, the world.

Outside of academia, in the world around us, both resource types, natural and cultural, are interdependent, interrelated, inseparable. Therefore, actions that impact natural resources can, and most likely will, also impact cultural resources and vice versa.

Not all resources are of equal significance, and very often the protection of one resource type should take precedence over another. But, In order to make a fully informed decision regarding an action that will impact resources, we must always have a complete examination of the spectrum of resource types in a project area or municipality.

Water is of primary importance in the Act, but it is also the clearly stated intent of the Act to protect all natural and cultural resource types generally.

The following is copied from the Act, and should be added as Part 11 of Chapter 4:

11. The regional master plan shall include, but need not necessarily be limited to:

(1) A resource assessment which:

- (a) determines the amount and type of human development and activity which the ecosystem of the Highlands Region can sustain while still maintaining the overall ecological values thereof, with special reference to surface and ground water quality and supply; contiguous forests and woodlands; endangered and threatened animals, plants, and biotic communities; ecological factors relating to the protection and enhancement of agricultural or horticultural production or activity; air quality; and other appropriate considerations affecting the ecological integrity of the Highlands Region; and
- (b) Includes an assessment of scenic, aesthetic, cultural, historic, open space, farmland, and outdoor recreation resources of the region, together with a determination of overall policies required to maintain and enhance such resources;

Chapter 5. Programs:

Part 4. Historic, Cultural, Archaeological, and Scenic Resources (p. 291)

Goal4A: Protection and Preservation of the Historic, Cultural and Archaeological Resources of the Highlands.

Policy 4A1: To maintain and periodically update the Highlands Region Historic and Cultural Resources Inventory

Several of the objectives under this policy, as currently written, need to be updated. Some additional objectives must be added, if the stated goal is to be achieved.

Objective 4A1: To encourage municipalities and counties to include a historic, cultural and archaeological survey(s) as part of the Historic Preservation Plan element of their master plans.

This crucial objective needs to **require**, not simply **encourage** its implementation. The costs of such surveys should be eligible for grant funds from the NJ Highlands Council. Also, as time passes, historic and cultural resources age into the program. Additionally, the significance of historic resources can substantially increase as the perspective of time increases our awareness of the importance of a specific resource to the narrative of American history. Without a current and on-going survey process, valuable unknown resources can be irrevocably harmed or lost altogether.

Policy 4A2: To provide a process whereby resources may be nominated, considered and included in the Highlands Historic and Cultural Resource Inventory.

In objectives 4A2a and 4A2b, it must be clear who is responsible for identifying these objects, buildings, sites, and districts, and who will evaluate their significance and potential eligibility for nomination to the Highlands Historic and Cultural Resource Inventory – a record that does not yet exist. It must also be clear what propels the inventory process in areas or at times where no Council actions are under way.

Objective 4A3: All development and redevelopment applications shall include submission of a report identifying potential historic, cultural and/or archaeological resources on the subject property or immediately adjacent properties.

This objective needs to ensure that the person(s) preparing the report have the professional credentials to evaluate these resource types. The plan should specify the professional standards required by the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR Part 61). Additionally, the sentence should read **and** immediately adjacent properties, not **or**, because historic,

cultural and archaeological resources may extend beyond the current property boundaries onto adjacent properties.

Protection of historic transportation and industrial resources:

Historic transportation resources, specifically dams and bridges, are highly significant to the narrative of Highlands history. These resources are also especially threatened due to a lack of understanding of the interdependence of many of these resources. As part of the above stated need to develop the Highlands Historic and Cultural Resource Inventory, special emphasis should be placed on ensuring comprehensive inclusion of these resource types. A full understanding of the significance of these resources often depends on the evaluation of the larger historic context in which they are found.

Bridges and dams should be mapped and linked to a relational data base so that the condition of the structure, historic value (if any) and regulatory status can be determined as part of interactive map analysis.

IV. Scenic Resources Protection

1. The scenic beauty of the New Jersey Highlands is both a valuable and a fragile resource. The Highlands' scenic resource is highly valued by residents and visitors, as well as artists and landscape planning professionals. In the 1800's, Jasper Cropsey, an important American artist of the Hudson River school, painted Greenwood Lake and other Highlands sites. More recently, the Highlands were recognized as a "*landscape of national significance*" in the 1992 federal USDA/Forest Service *New York-New Jersey Highlands Regional Stud*, which found that the Highlands delineate "*where the pavement ends and nature begins.*" The report cautioned that the region faced "*the immediate prospect of unprecedented urbanization and change,*" a conclusion reinforced by the Study's 2002 Update.

2. The 2004 New Jersey Highlands Water Protection and Planning Act is clear in its intent to protect scenic and aesthetic resources. The Legislature's "findings and declarations" introducing the Highlands Act conclude: "*The Legislature further finds and declares that the protection of the New Jersey Highlands, because of its vital link to the future of the State's drinking water supplies and other key natural resources, is an issue of State level importance that cannot be left to the uncoordinated land use decisions of 88 municipalities, seven counties, and a myriad of private landowners; ... and that all such aforementioned measures should be guided, in heart, mind, and spirit, by an abiding and generously given commitment to protecting the incomparable water resources and **natural beauty** of the New Jersey Highlands so as to preserve them intact, in trust, forever for the pleasure, enjoyment, and use of future generations...*" C.13:20-2

Highlands Act Goals for the Regional Master Plan in the Preservation Area include to "preserve extensive and ...contiguous areas of land in its natural state, thereby ensuring the continuation of a Highlands environment which contains unique and significant natural, *scenic* and other resources representative of the Highlands Region;... protect the natural, *scenic*, and other resources of the Highlands Region...; [and] prohibit or limit to the maximum extent possible construction or development which is incompatible with preservation of this unique area." P.L. 2004, Chapter 120, and C.13:20-10.b Highlands Act Goals for the Regional Master Plan in the Planning Area include "protecting and maintaining the essential character of the Highlands environment." C.13:20-10.c.

3. Protection and enhancement of the scenic character of the Highlands will be a major factor in the Region's success as a tourism and recreation destination, and deserves far more attention than it has received thus far. The RMP must recognize that natural and cultural resources are interdependent and inseparable. Effective protection of the Highlands' scenic quality will increase the Region's ability to attract and sustain agri-tourism, eco-tourism and heritage tourism, as well as a wide range of outdoor and cultural recreational activities and events that contribute to the Highlands economy in a variety of ways.

4. The RMP includes a baseline Scenic Resources Inventory of 131 scenic resource areas, which is comprised of publicly-owned federal, State and county open space and recreation lands. However, Policy 4B1 “to maintain and periodically update the Highlands Scenic Resources Inventory,” has not been implemented.

5. In 2008, after more than a year of consideration, the Highlands Council approved by a vote of 10 – 1 (with 3 absent) a procedure for local governments and the public to nominate regionally significant scenic resources in the Highlands, as a first step towards their evaluation and potential inclusion in the Scenic Resources Inventory, and protection Resolution 2008-57 also included approval of a volunteer Scenic Design Advisory Board to be convened. However, the procedure has not yet been implemented further.

The Highlands Council itself “may also designate and institute region-wide protection standards for broad categories of regional scenic resources that warrant protection.” RMP policies and objectives also include development of guidelines and model ordinances to assist local officials and agencies and private entities in fulfilling the procedures.

6. The RMP requires that “conforming municipalities and counties include a Historic, Cultural and Scenic Resource Protection Element in municipal and county master plans and development regulations...” (Policy 4C1). We strongly urge the Council to enforce this requirement. In municipal plan conformance submissions, as well as that requiring conforming municipalities to include minimum standards for the protection and enhancement of scenic resources listed in the Highlands Scenic Resources Inventory in their development regulations (Policy 4C3).

7. The Highlands Council Scenic Resource procedures identify five types of regionally significant scenic resources:

A. Scenic byway/corridor – transportation corridors that have outstanding scenic, natural recreational, cultural, historic or archaeological significance. Included are roads, trails, rail-trails, foot trails, bikeways, and waterways. Regionally significant trails in the Highlands include the Appalachian National Scenic Trail and the Highlands Millennium Trail.

B. Panorama and Valley – The Highlands’ characteristic steep sided ridges and lower elevation valleys create scenic panoramas that may encompass a combination of scenic resources within a viewshed.

C. Ridgeline, mountainside and geological feature, such as cliffs and rock outcrops - “Because of their prominent elevation and size, ridgeline scenic resources are particularly damaged aesthetically by inappropriate development. The intent of ridgeline protection is to ensure that development near ridges does not rise to the height of the ridge top and does not stand out in contrast to the surrounding area.”

4. Natural features, including vegetation and water features “that meet the criteria of the National Wild and Scenic Rivers Act or the RMP Critical Habitat features.” RMP Critical Habitat includes 1. Critical Wildlife Habitat (for rare, threatened, and endangered species); 2. Significant Natural Areas (regionally significant ecological communities); and 3. NJDEP-certified vernal pools. 5. Cultural landscapes, including community gateways, landmarks, and historic or archaeological features – four types recognized by the U.S. Department of the Interior (DOI), include historic sites, historic designed landscapes (notable parks, campuses and estates); historic vernacular landscapes (functional – village, industrial complex, agricultural) and ethnographic landscapes (heritage resources of associated people, such as settlements or sacred sites).

V. Highlands Open Waters and Stream Protection

The protection of water resources in the Highlands is a primary focus of the Highlands Act and the RMP. Surface water resources are highly valued for water supply, ecosystem viability, recreational opportunity, and aesthetic value. Degradation of Highlands’s surface waters would have a severe impact

on the Region as well as elsewhere in the state. Since surface water and ground water are part of the same hydrologic system, the protection of both is necessary. Contamination and over development can severely impact both water quality and supply and must be prevented through appropriate land use practices.

It is an established fact that once impervious cover (roads, buildings, paving, etc.) in an area exceeds 8% - 10%, surface water quality in waterways becomes degraded as a result. Forests and vegetated riparian areas protect surface water and ground water and are therefore essential to maintaining the quantity and quality of our water resources.

We support the strong protections for Highlands Open Waters (HOW) in the 2008 RMP and urge that the processes to ensure the protections delineated in the plan be implemented by the Council. Changes in the Highlands Land Use Ordinance have removed many of the protections for water resources and have yet to be replaced elsewhere. We request that they be restored in full to safeguard all HOW and riparian areas.

We ask the Council to establish, maintain, and make available an inventory of all HOW and their integrity as is specified in the RMP, including the Watershed Resource Values of each Highlands HUC14 watershed. The Functional Value Assessment Methodology (FVAM) in the Council's Stream Corridor Guidance document provides an excellent framework for planning and science professionals within a municipality to assess the integrity of Highlands streams, rivers and riparian areas within a jurisdiction. We encourage the Council to provide grant funding in the conformance process for this purpose for all Highlands municipalities.

The protection buffer of 300 feet for all HOW must be maintained, and where land uses have reduced or impaired the functional values of the buffers, the Council should encourage restoration activities to restore these buffers and their functions. When land is converted to non-agricultural land uses, the 300 foot buffer must be reinstated. Enforcement of such cases should be documented.

Preservation Area buffers for HOW should be maintained and linear development should be excluded unless no feasible alternative for it exists outside the Highlands. This exemption may become increasingly problematic with the influx of linear development that is threatening HOW and other valuable Highlands resources.

We strongly urge the Council to facilitate restoration and enhancement of HOW buffers in both the Preservation and Planning Areas. Streams and rivers that flow through both Preservation and Planning Areas suffer from the lack of protections provided in the Planning Area.

Stream Corridor Protection and Restoration Plans that are developed through the Plan Conformance Process should be evaluated, including a process for their implementation. We support the principles, strategies and methods outlined within the Council's *Stream Corridor Protection and Restoration Planning* document. It provides a valuable framework for identifying, prioritizing and implementing protection and restoration projects for either general planning purposes or mitigation planning related to a specific proposed project. We urge the Council to provide grant funding in the conformance process for municipalities to employ this technical guidance to protect and preserve natural functions where appropriate, and to mitigate waterway impairments in degraded areas. This document builds on the FVAM to ensure that there will be no net loss of functional value on any proposed project.

Stream Corridor ordinances in conforming municipalities should be inventoried. The Council should develop and maintain a list of riparian areas with high priority for land preservation/acquisition and development restrictions for lands within High Source Value Watersheds and High Integrity Riparian Areas.

VI. Karst

The RMP's goals, policies and objectives are presented in Subpart F (p.154). We suggest the following changes:

Policy 1K2: Rather than wait for individual development review to assess the land area that contributes run-off to carbonate rock, provide this mapping as part of the interactive map data.

Policy 1K3: We have seen no inventories either of karst features or watershed areas that drain directly to carbonate rock. A process to allow their development should be instituted.

Objective 1K4: Expand the required review to include foundations and provide sample development review ordinances.

Objective 1K4b: A better description of the "multi-phased geotechnical site investigation" must be provided as a guidance document.

Objective 1K4c: This objective is broad enough to include consideration of agricultural impacts and should say so. See: <http://www2.ca.uky.edu/agc/pubs/aen/aen109/aen109.pdf> and NRCS

Conservation Practice Standard No. 527:

http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_025714.pdf

Additional guidance, particularly relating to forestry on karst:

<https://www.for.gov.bc.ca/hfp/publications/00189/Karst-Mgmt-Handbook-web.pdf>

Objective 1K4e: Add new petroleum pipelines to this list

Objective 1K4f: Add petroleum pipelines to this list

VII. Forests and Critical Habitats

Forests: Though forestry activities with an approved Forest Management Plan are exempt from the Highlands Act, forest management is a critical activity with the potential for negative impacts to the region's critical resources. Current forestry guidelines are insufficient at best and non-existent at worst, but sustainable forestry practices can be bolstered by the Highlands Council in numerous ways. For one, activities may be addressed through the RMP Conformance Process, either by the requirement of a municipal ordinance or resolution. The best method to protect Highlands' core forests from inappropriate projects is to require the inclusion of certification standards from the *Forest Stewardship Council* (FSC) for any work done under a forestry plan. Many states and other entities have adopted the FSC certification standards with great success. Though there are other certification programs, the Forest Stewardship Council certification is the premier program and the only one endorsed by long-standing national and international environmental NGOs. It is the only one the Coalition recommends to protect forests in the Highlands. The health of the entire forest ecosystem – not just the trees -- in the Highlands is critically important to both biodiversity and the quality and quantity of the State's water supply and thus demands the highest level of sustainable forestry practices.

As the lead agency in the Highlands, it is the Council's responsibility to work with other state entities and stakeholders to ensure that forestry practices on both private and public lands do not degrade the quality of Highlands forests. Landowners, such as the Department of Environmental Protection (NJDEP), should be required to incorporate FSC standards as part of waiver/approval requirements for forestry work.

We request that the historical topographic manuscript maps developed by C.C. Vermeule be included as an overlay both as a standalone map in the RMP and as a layer in the Highlands Interactive Map. The Vermeule maps, which depict historic forest soils, clearly assist in identifying currently intact ecological communities with little presence of invasive species. Historically forested areas are delineated so that impacts to unique forest communities with exemplary conservation values can be evaluated. Including

these maps in the RMP would be beneficial in the general planning process as well as open space preservation efforts.

Critical Habitats: Vernal pools cannot function in isolation, while the state initiative, Connecting Habitat Across NJ (CHANJ), recognizes the importance of contiguous habitats. The Highlands RMP absolutely needs to maintain, if not increase, the existing 1000 foot buffer for vernal pools. Bethlehem Township in Hunterdon County is a model for vernal pool protections – having mapped and certified all within their town, and added them to their Environmental Resource Inventory as part of the Conformance Process. The Highlands Council has already mapped the vernal pools and respective buffers, but more needs to be done at the state and municipal levels to ensure their continued protection.

The RMP frequently references “rare, threatened, endangered” species but does not seem to define the terms. The most comprehensive definition available for ‘rare’ is found in the NJDEP Heritage Program, which was defined along with ‘species of special concern (SSC).’ Otherwise, the Green Acres Program’s rules (N.J.A.C. 7:36) were the only proper definition of ‘rare’ that we could find. The aggregate list of rare species designated by the NJ Department of Environmental Protection includes well over 1000 species statewide, and many are known to occur in the Highlands region. The list of rare species is far larger than the species listed as Threatened and Endangered in NJ, and includes special concern animal species listed by the NJ Endangered and Non-Game Species program, as well as all plants determined by the NJ DEP Natural Heritage Program to show a degree of imperilment of S3 or greater. Much of the work has already been done, but protection of rare, threatened, and endangered species needs to be made much clearer and easier to implement for development projects and conforming municipalities.

Despite identification, rare species are frequently ignored in the planning process, if they are not specifically listed as threatened or endangered. Likewise, the Critical Wildlife Habitat overlay in the RMP is incredibly useful, but is too subjective. NJDEP has an existing list of identified T&E species, but no mitigation is offered because too few of these species are identified during the planning process. Therefore, we strongly recommend that surveys must be conducted by experts for each taxon, using appropriate methods, and must be repeated over at least two full years during all appropriate seasons. Once all occurrences of rare flora and fauna at a proposed site have been quantified, existing populations of rare flora and fauna must be avoided.

The Coalition stresses that critical habitat must not be exchanged until a fact-based result of increased value to a habitat is established. Recovery of rare plant and animal populations through habitat restoration is a laudable goal; in general, ecological restoration should be encouraged as a long-term public policy. But long-term restoration is not mitigation for destruction of local populations of rare species. Restoration projects take decades, and are fraught with uncertainty. It is impossible for restoration projects to provide population benefits *in time* to mitigate for a habitat loss that quickly destroys or subtly pushes a local population to extinction. If long-term restoration is to be allowed to mitigate for known impacts to a suite of declining and/or rare species, the restoration must be conducted, completed, and show quantifiable expansion greater than the anticipated losses of the population of the species in question, *before* permitting a habitat loss to occur.

VIII. Climate Change

Climate change is not currently addressed in the Regional Master Plan, but protection of the large tracts of contiguous forests in the Highlands is directly related to mitigating the effects of climate change. Not only do forests in the Highlands provide a plentiful supply of clean water to New Jersey’s residents, but they also sequester atmospheric carbon, thus limiting the impacts of climate change. The RMP should include guidelines for mitigating climate change on a regional level.

Given the advancements of climate change policy at the national level, it would not be unprecedented for the Highlands Council and the RMP to consider effects of climate change as part of the planning

process. *The President's Climate Action Plan* was issued in June 2013 and includes three main components: 1) Cut carbon pollution in America; 2) Prepare the United States for the impacts of climate change; and 3) Lead international efforts to combat global climate change and prepare for its impacts. The Action Plan notes:

“This guidance was called for by the governors, mayors and other local leaders on the President’s Task Force on Climate Preparedness and Resilience in their recommendations to the President...The Task Force requested the guidance to ensure that projects and investments are advanced with adequate and coordinated consideration of the project design or alternatives relative to climate impacts and greenhouse gas emissions, to avoid unacceptable public health, safety, and financial risks for communities...This draft addresses land and resource management actions.”

According to the Council for Forest Research and Development (COFORD)¹, forests are a globally important storehouse of carbon and play a critical role in influencing the Earth's climate. Forest trees, plants, and soils drive the global carbon cycle by sequestering carbon dioxide through photosynthesis and releasing it through respiration. When the uptake of carbon dioxide (photosynthesis) is greater than losses via respiration, forests serve as carbon dioxide sinks. When forests are degraded or cleared, their stored carbon is released back to the atmosphere and through respiration. Thus, these forests are net contributors of carbon to the atmosphere.

In an undisturbed forest, approximately 74% of the sequestered carbon is stored in live stems and branches, 16% is stored in roots and 10% remains in soils. However, when forests are cut and the land deforested, up to 32% of the stored carbon is lost due to decomposition. The remaining carbon is initially retained either on-site or in harvested wood products, but this is slowly released over time. Most of the carbon stored on site will be lost if the land is converted to agriculture or development.

A major consequence of this new information is that it will not be possible to conduct timber management within an existing forest in order to mitigate or recover lost sequestered carbon from the permanent loss of forest cover at another site. The only way to generate new sequestered carbon is through afforestation, where non-forest lands are converted to forest. This process is slow, and requires an enormous ratio of new forest (saplings) planted for every acre of more mature forest lost to development or other non-forest land uses. Thus, it will likely be impossible for the sequestered carbon lost through forest clearing to be recovered and balanced in any reasonable timeframe by the applicant.

The loss of carbon due to harvest can be minimized but only if forests are allowed to regenerate. Tree regeneration is not occurring in the Highlands largely due to an abundant deer population and the presence of invasive species. Regeneration of core forests in the Highlands must be assured and monitored -- the most reliable way to do that is through third-party forestry practices certification, such as the Forest Stewardship Council (FSC). Our current management system provides no assurance that forest stewardship activities have any net-positive impact on natural resources in the region.

Forestry-based measures can effectively complement abatement options focused on fossil fuel emissions. Forest-based mitigation of climate change includes:

- Increasing forest carbon absorption (sequestration) capacity - either by planting trees on un-forested land (i.e. afforestation), facilitating the natural regeneration of forests on marginal land and by managing forests to increase biomass accumulation.
- Substitution of sustainably produced forestry products substituting wood products for materials requiring energy-intensive production, such as aluminum or concrete, and substituting woody biomass for fossil fuels as an energy source. This only works using the FSC certification process.

¹ <http://www.coford.ie/publications/projectreports/climatechangeandforests/faq-roleofforestsinitiatingclimatechange/>

- Conservation of existing forests - to avoid emissions associated with deforestation, forest degradation or clearing.

Another expected side effect in New Jersey from climate change that needs to be addressed is changes in water availability. Climate change projections from the Environmental Protection Agency indicate a stable or increase in yearly average rain fall in New Jersey, but as temperatures increase, less of that water will be available for human use. Warmer temperatures increase the growing season – during this time, trees consume and evaporate more water which results in less water per unit area. To counter this projected trend, more of New Jersey’s open spaces need to be permanently protected from development. More land will provide more water, which will help to mitigate the increased loss of water availability caused by temperature increases.

One of the biggest threats to the core forests of the Highlands is linear development projects, such as pipelines and transmission lines. These projects severely fragment the Highlands forests. With linear energy infrastructure projects having a proportionately greater negative impact on the ability of our forests to sequester carbon, there is a greater need for the Council to emphasize renewable energy as an alternative to fossil fuel based resources. Renewable Energy is mentioned in the RMP, but there are no requirements or guidelines for implementation. Having rules or standards for the implementation of renewable energy technologies would encourage municipalities and developers to use these sustainable technologies and guide them through development issues, such as appropriate site locations. Emphasis on renewable technologies is important to address and mitigate climate change issues.

The President’s Climate Action Plan stresses that climate change is affecting nearly every aspect of our society, from agriculture and tourism to the health and safety of our citizens and natural resources and this is especially true in the Highlands region. President Obama is leading the charge to mitigate the effects of climate change and the Highlands Council is would be well within their right to implement guidelines through the RMP Conformance Process.

IX. Energy Issues

The Highlands Act at Section 11 (6) specifically authorizes the Council to include energy considerations in the RMP, specifically in the Smart Growth section. We note that at present there is no energy section included. We strongly recommend the development and inclusion of such a section.

An overall energy audit of the region should be conducted to assess the baseline consumption of stationary and mobile energy and a “carbon footprint” developed. (See: <http://www.sustainablejersey.com/actions-certification/actions/#open/action/24>) Electrical generation facilities (including renewables) and electrical transmission system (>69kV) as well as other linear energy facilities (e.g., natural gas pipelines) should be mapped.

Goals, policies and objectives should be developed that: harmonize with the New Jersey Global Warming Response Act (P.L. 2007, Ch. 112), facilitate the improvement of energy efficiency in all sectors, encourage load management, facilitate and control the development of renewable sources (solar, wind, geothermal and small scale hydro (< 3 MW)).

Specifically, priority should be given to large scale solar facilities that are located on existing rooftops, over existing impervious surfaces, on **remediated** brownfields, and in areas of highly disturbed ground, (e.g., quarries, gravel pits). Facilities should be dissuaded or prohibited from lands that are largely forested, farmland of Statewide, local or unique importance, contain hydric soils, wetlands, transition areas, riparian zones, slopes over 15% or Highlands waters, contain Threatened or endangered species habitat, or are open waters. In areas planned for residential or commercial development, facilities should be allowed as accessory uses on rooftops and over impervious surfaces. Ground mounter facilities should be prohibited in areas zoned for affordable housing, but should be permitted in

industrial zones on parcels >25 acres. (See ANJEC's Resource Paper, "Solar Siting and Sustainable Land Use" <http://www.anjec.org/pdfs/SolarWhitePaper2012.pdf> for some guidance on utility scale solar facility siting).

While development of renewable energy is highly desirable, conflicts will arise. For example, large utility scale (>10 MW) solar proposals may conflict with other Highlands policies like agricultural preservation, forest removal, scenic objectives. Wind energy development has the potential to conflict with wildlife considerations and scenic objectives while small hydro may conflict with historic resources, water quality and aquatic biological concerns.

Overall greenhouse gas reduction policies, based on the Global Warming Response Act, should be adopted for the region.

X. Linear Development

Linear projects can be defined using the definition from the NJDEP's Freshwater Wetlands Rules: *".....land uses such as roads, drives, railroads, sewerage and stormwater management pipes, gas and water pipelines, electric, telephone and other transmission lines and the rights-of-way therefor, the basic function of which is to connect two points. Linear development shall not mean residential, commercial, office, or industrial buildings, improvements within a development such as utility lines or pipes, or internal circulation roads"* (N.J.A.C. 7:7A).

The Highlands region is crossed by a series of linear projects that have important environmental consequences if expanded and as new projects are proposed. It is reasonable to expect this to happen given the history of linear projects in the Highlands and the region's strategic location between energy sources and markets.

There should be a presumption in the RMP that the resources of the Highlands should have a higher priority than that currently applied in the facility siting process. The Council should take a firm advocacy role to protect Highlands resources in the current regulatory framework (Federal Energy Regulatory Commission – **FERC** for electric transmission and interstate gas lines and all of the NJDEP permitting programs).

Additional stress should be placed on resisting open space diversions, intrusion into State owned agricultural easements and other State owned or controlled properties. This effort would be strengthened by several actions:

1. Additional policy and development of definitions around Highlands Act Exemption 11: *"(11) the routine maintenance and operations, rehabilitation, preservation, reconstruction, repair, or upgrade of public utility lines, rights of way, or systems, by a public utility, provided that the activity is consistent with the goals and purposes of this act"*. The terms "routine maintenance", "(routine) operations", "rehabilitation", "preservation", "reconstruction", "repair" and "upgrade" and "public utility" should be defined to facilitate the required consistency determination.

2. The exemption seems to indicate that activity is expected to occur on existing rights of way. Policy should be clarified as to the exemption's applicability where new rights of way are proposed.

3. Existing rights of way and appurtenant facilities should be mapped and analyzed to determine Highlands resources that would be impacted by disturbance and/or widening in advance of a proposal.

4. Mitigation Policy: The Council should develop policies related to mitigation that require an alternatives analysis (including the "no build" alternative) and requiring avoidance first, minimization second and mitigation last to address consistency determination requirements. Similar requirements and others can be found in the NEPA rules.

XI. Land Acquisition

1. In its final report on the current RMP update, the Highlands Council should include the following statement from Chapter 4, Part 7 Highlands Regional Master Plan:

“The Highlands Act recognizes that the implementation of the RMP, which directs and guides future development, inevitably has an impact on reasonable landowner expectations regarding future land use potential. The Act provides several mechanisms that seek to mitigate such impacts, including a TDR Program, *land acquisition*, exemptions, and waivers.

2. In its final report on the current RMP update, the Highlands Council should include the following language from the Resolution 2008-27 adopting the Highlands Regional Master Plan:

“..... the Highlands Council calls upon the Executive and Legislative branches to provide a “strong and significant commitment by the State”to provide for the acquisition, by fee or easement, of exceptional natural resource value lands and farmlands consistent with the goals, requirements, and provisions of the Regional Master Plan and the Highlands Act; ...”

3. The updated RMP should acknowledge the Highland Council’s pending *open space matching grant program*, to be established through the *administrative rulemaking process*, as a source of potential open space funding.

4. The updated RMP should give the strongest possible encouragement to employing the administrative rulemaking process to *include the Highlands Council as a participant in all inter-agency decisions involving the use of dedicated open space funds* made available through public referendum or as a consequence of legal settlements, regulatory fines and mitigation contributions, etc., in the Highlands region. As a participant in Highlands open-space funding decisions, the Council’s primary objectives should be to ensure that (1) Special Environmental Zone properties, “core” and “Heritage” Forest and Critical Habitat are deemed highest priority for acquisition; (2) there is ample notice and opportunity for public participation in all proposed Highlands Open Space acquisitions where buyer and seller are both public entities; (3) that open space funds are not diverted to non-open space purposes.

In addition to continuing to support land acquisition in the Highland region, the Highlands Council must implement a more timely and thorough monitoring system. The Council’s “Land Preservation in the Highlands” report has not been updated since August 2010. This report should be released each year as having the most up-to-date data is critical. In addition to the information already contained in the report, the annual edition should include the following:

- How much land has been preserved in the region in the past year, and the overall total
- How many of those landowners opted for appraisals based on pre-Act zoning versus the current appraisal
- What is the cost of land being preserved for in the Preservation and Planning Areas and how does this compare to previous acquisitions?
- How many Highlands landowners have approached the Green Acres, SADC or TDR programs to discuss acquisition? Of those landowners, how many finalized an agreement, how many are working to finalize an agreement, and how many have been turned away by the state? How long does the process take on average from the time a Highlands landowner expresses interest in selling or putting an easement on his land until the deal is finalized?

XII. Landowner Equity

The Highlands Act incorporates legal shields against takings claims that have proven to be durable. Yet in spite of several Court rulings upholding the legality and Constitutionality of the Highlands Act, the misconception that the Act is a taking of private property without just compensation is common.

The Highlands Act is not a “taking” in any legal sense. Police power is granted to the State to regulate land use, as enumerated in the New Jersey Constitution. The threats that compelled the extraordinary intervention that the Highlands Act intended were clearly laid out in the legislative findings in the

preamble of the Act. The water-producing resources of the Highlands forests were being “consumed and fragmented” by uncoordinated development that “the existing land use and environmental regulation system” had proven incapable of protecting. A fundamental responsibility of State government is to protect the resources it holds in the public trust. The Highlands Act was the response of the State to this solemn obligation.

The Legislature included several provisions responsive to landowner equity including seventeen exemptions and provisions for waivers. After the Act was enacted the Legislature passed further measures including the dual appraisal method and the expansion of potential Highlands TDR receiving zones to the entire State.

In addition, the Garden State Preservation Trust has prioritized open space and farms in the Highlands for acquisition, further demonstrating the State level commitment towards mitigating the landowner equity impact of the Highlands Act.

That the Highlands Council today endeavors to find mechanisms to address “the issue of landowner compensation” places the Highlands Council at cross purposes with the Highlands Act and further fuels the confusion and misconceptions about the Highlands Act.

XIII. Highlands Agriculture and Farmland

Much has been said and much has been claimed about agriculture as regards “landowner equity” in the New Jersey Highlands. Yet very few have taken the time to study the nature and extent of this highly valued resource. In the interest of clarification, the following breakdown of Highlands Agriculture has been compiled. The public perception of the New Jersey Highlands varies greatly. Many who live in the eastern areas of the Highlands do not realize that they are Highlands’ residents, while local officials of communities that receive water from the Highlands have only the vaguest notion of the extent, location and nature of the Highlands region.

Much of Northern New Jersey’s agricultural lands are not in the Highlands. For instance only a third of Sussex County’s agricultural land is within the Highlands. Much of the farmland within the Highlands is preserved, and wood lots represent large portions of land in “agricultural use.” The New Jersey department of Taxation lists 225,000 acres in the Highlands as agriculturally assessed. The Regional Master Plan says that 118,000 to 109,000 acres are in “agricultural use.”

In 2003, there were just less than 71,000 acres in the Highlands under cultivation, some 9% of the Highlands area. More than half of these were in what became the Planning Area and as such were not subject to the Preservation Area constraints to development. Further, many of the remaining acres in cultivation within the restricted Preservation Area were already limited by Farmland Preservation agreements. The latest figures show 15,558 acres in the Highlands Preservation Area as having Farmland Preservation agreements. If we generously estimate the number of acres under cultivation within the Preservation area as one half, then we have 35,500 such acres in the Preservation area. If we further subtract an estimated half of the Farmland Preservation Program acreage we come to approximately 28,000 acres of active farming within the Highlands Preservation Area amounting to an estimated 3.25% of the entire Highlands region. Many of these acres assessed as farmland are of the “gentleman farmer” variety -- small holdings (a single home with at least 5 “farm” acres which are classified as agricultural lands solely for the purposes of property tax reduction) which if numbers were available would further reduce the amount acreage in question. However, as such numbers are not easily available, it is fair to use 3.25% of total Highlands acreage in order to give perspective to the so-called “landowner equity” question.

Farming as we know it in New Jersey would not exist without government aid and subsidies. After the Second World War it became obvious that applying market-based residential or commercial values to farmland for tax purposes would doom agriculture in the State.

Agricultural assessments vary but may amount to discounts of upwards of 90% on local, county and school property taxes. They are, in fact, an open space program that is paid for by local property taxpayers. It should be noted that agricultural assessments are worth every nickel as they preserve farmlands and open space and prop up local residential and commercial land values. Further, the State of New Jersey and its citizens have contributed over \$111,000,000 in Farmland Preservation funding within what is now the Preservation Area of the Highlands region, along with another \$60,000,000 from other public sources. In addition to these programs, New Jersey citizens contribute to agriculture in the Highlands and various state and federal programs that promote farming in the state.

It is clear that the limitations imposed by the Highlands Act in the Preservation Area have, in some cases, impacted the potential speculative values of some properties. Some describe these values as “equity.” It is also clear that generations of subsidies like tax discounts and outright aid, including public purchase of development rights, have made such “equity” values possible. Further, it is clear that the public has a huge investment in New Jersey farmlands and open space. One of the benefits of that enormous investment is one of the nation’s best and least expensive water supplies. While programs such as the Transfer of Development Rights are meant to assist those who are impacted by the Highlands Act, there is no justification for imperiling the water supply of nearly 6 million New Jerseyans for those who have a share of the value of 3.25% of the Highlands region in question. The Highlands Act was created to preserve Highlands open space, forests, and agriculture, not for its own sake, but for the benefits the Highlands provide --which all New Jerseyans have earned through their ongoing support of open space preservation.

The numbers quoted in this study are provided by County Abstracts of Ratables, Department of Taxation documents on agricultural assessments, State Department of Agriculture documents and the New Jersey Highlands Regional Master Plan.

XIV. Economic Development

By definition the single most important economic factor concerning the Highlands Region is its water. The Highlands provides water to the majority of the population of the State. That being said, the economy inside the Highlands Region is of vital importance, not only to the residents of the Highlands but also to the State’s overall economy.

However, the Highlands Region is not a single economic entity. The eastern Highlands, (from Mahwah south to Bernards Township and as far west as Sparta and Hackettstown), may be characterized as largely suburban this portion of the region is composed mostly of bedroom communities with mixed light industrial areas, large retail centers and corporate business areas. The western and southern Highlands are more rural in nature with parkland, agriculture and mining, mixed with small town centers. While not a homogenous economic area, the region is a geological and hydrological unit defined by its critical water resource.

Consider for example Parsippany-Troy Hills Township (Morris County) and Mansfield Township (Warren County). Both are large municipalities. Mansfield is slightly larger at just under 30 square miles; Parsippany smaller at just over 25 square miles. Both are in the Highlands. There the similarity ends. Parsippany ranks 31st in population in the State; Mansfield is 488th. Parsippany’s population density is 2,259 persons per square mile. In Mansfield the density is 26 persons per square mile. Parsippany is served by three Interstate Highways, Interstates 80, 280 and 287 and three major State highways, Rts. 10, 46 and 202. Mansfield is served by State Rts. 57 and 31. Parsippany’s average family income is

\$102,601, Mansfield's is \$74,063. Round trip to Manhattan from Parsippany is 56 miles, from Mansfield it's 115 miles.

Clearly, these two Highlands communities have very different economic challenges and potentials. The same is true for communities with small town centers. Consider Morris County's Butler Borough and Hunterdon County's Hampton Borough. Similar in size, Butler is 2 miles square and Hampton 1.5 miles square. A round trip to Manhattan from Butler is roughly 65 miles; from Hampton some 117. Butler's population is 7,539 while Hampton comes in at 1,401. Median family income for Butler is \$102,435, in Hampton the figure is \$82,396. Here again, both communities are in the Highlands, yet their economic situations are quite different.

Clearly, economic impacts differ from community to community and area to area within the Highlands. Just as clearly, planning for economic development within the Highlands requires localized solutions. There can be no "one size fits all" plan. This, however, does not mean that there are not common resources within the Highlands. Tourism and recreation can thrive anywhere in the Highlands. While areas in the western Highlands make for a challenging commute they are easy day trips. Cultural, historical, recreational and tourist sites, even wineries and breweries, exist in the Highlands at every turn. Lakes, forests and parklands have been retreats for urban dwellers for more than 150 years. Alstede's, Chester Township, Nolan's Point, Hopatcong, Mayo Performing Arts Center, Morristown, Valley Shepherd Creamery, Long Valley, and downtown Chester Borough are examples of what creative thinking and investing can do.

The Highlands Council can be of great service in this arena. Rather than acting as a mere "Planning Board" the Council could take proactive steps to develop water resource friendly and market appropriate approaches to the areas in the Highlands that need redevelopment. The housing market has changed radically since the real estate bubble of ten years ago. Town centers and rental developments are the rule rather than the exception in New Jersey. Morristown within the Highlands is a prime example. Once a regional shopping destination with small, mid-sized shops surrounded by large, single family homes, Morristown has adapted to the new reality. With a retail center that became obsolete in the era of brick and mortar malls, Morristown has re-created itself in the style of nearby urban centers like Hoboken. Morristown has become a walkable town center having all the advantages of city neighborhood life in a smaller, suburban setting. This is an example that can be successfully emulated in many Highlands town centers.

There are many new approaches that the Highlands Council should be encouraging; for instance, incubator business centers that cater to start-ups. Truck farming in the western Highlands should be supported to adapt to the new trend of local food sourcing (Manhattan and Philadelphia can always use more kale!). Small scale, specialty manufacturing in areas like mill working and stone working ought to be encouraged in the Highlands. We certainly have the history with old mills and mines to support this. Several communities are using the arts to rehabilitate town centers and neighborhoods. Bed and Breakfast lodgings in the many areas adjacent to superb parks, historic sites and hiking trails in the Highlands can be modeled on places such as Massachusetts, where local economies depend on the beauty of an area and its accompanying tourism. There are dozens of other examples of redevelopment that can be economic engines going forward.

The key word here is "forward." Lamenting the disappearance of old economic models is counter-productive. The Highlands Council is a planning organization. In order to anticipate the future we must face the realities of the present. The Highlands are not the empty rolling hills and amber waves of grain of our collective imagination. The Highlands are and will remain the critical water source for a State of nearly 9 million people living adjacent to the greater New York metropolitan region. Without water, the jobs, investments and institutions that are the heart and life blood of our State cannot exist.

That said, the Highlands are also very valuable as residential, recreational and resource areas for the Metropolis. More than the residents of the Highlands need to be served by the State, as all our citizens are, and their rights deserve the attention and protection of our government and their fellow citizens. It is therefore the duty of the Highlands Council to do two things: preserve the water resources of the state and protect and improve the lot of those who live within the Highlands at the same time.

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