

**Final Comments  
Of  
The Association of New Jersey Environmental Commissions  
On  
The Draft Highlands Resource Management Plan and  
Technical Reports**

The Association of New Jersey Environmental Commissions (ANJEC) is pleased to present the following comments to the New Jersey Highlands Council regarding the Draft Regional Master Plan and associated Technical Reports. The Association is a private, non-profit organization that assists local environmental commissions and individuals with a broad range of environmental issues and is dedicated to fostering good environmental planning statewide. ANJEC makes these comments of its own volition in the spirit of constructive criticism to assist the Council in the development and implementation of an effective regional management plan.

ANJEC has long been an advocate of properly directed regional planning that provides a rational framework for the operation of local government. Historically, ANJEC has supported the Pinelands and the Hackensack Meadowlands efforts and the State Planning process.

## **I. Overarching Issues**

### **1. Lack of “Control Model” Analysis**

The Act is predicated on the fact that the existing land use control and regulation system in the Highlands region has been *ineffective* in protecting the natural, scenic and cultural resources of the Highlands, particularly water supply.

To address these deficiencies, the Act proposes a cooperative planning process that will be both extensive (88 municipalities, 7 counties, state agencies, including the DEP, DOA, DOT, DCA, interstate entities and the federal government and “a myriad of private landowners”) and intensive (detailed revisions of municipal planning and zoning requirements). Since the Act specifies this (cumbersome) approach, the Council would be well served by developing a critical evaluation of the existing regulatory, planning and zoning framework in the Highlands region. The system of existing control involves private, local, county state and federal government processes that, taken together, may be termed the “control model”.

Analysis of this “control model” could identify specific weaknesses in the current system that should be addressed in the RMP. It is also possible that strengths could also be identified and preserved in the plan. Overall, the reasons why the policies and procedures governing land use and regulation have failed to result in the protection of the public interest *remain undefined*

The Council should conduct a ‘control model’ analysis to facilitate the development of policies and procedures that would be more effective, not simply more detailed, in natural and cultural resources protection.

Of particular concern are the institutional capacities of local governments. Some examples of measurable capacity indicators are:

- Budgets for planning
- Presence or absence of qualified professionals
- Presence or absence of particular Master Plan Elements (e.g. conservation element)
- Presence or absence of a municipal environmental commission
- Date of current Master Plan
- Presence or absence of an ERI

Workloads, technical assistance available, morale, political support and financial support of planning boards, board of adjustment, boards of health, and relations with other levels of government are also critical factors that may be constraining the practice of planning at the municipal level. While not as easy to analyze, a “control model” analysis should explore these areas through surveying, interviewing or direct observation.

In sum, the Council would be well served in the development of the RMP if an objective, critical analysis of the existing land use and regulatory control framework were performed. The results of this analysis could be used in the development of realistic and

effective policies and procedures to meet the goals of the Act through the implementation of the RMP during Conformance.

**Suggestion:**

- **Conduct a critical “control model” analysis prior to issuing the final RMP.**

**2. LUCM is Not a “Capability Map”**

Contrary to the requirements of the Act, the current LUCM is not, in reality, a map of land capability. Rather, it is a curious mixture of mapping of equally weighted environmental and infrastructure characteristics and current landcover.

**Suggestions:**

- **Consider the use a weighted analysis with an accompanying overt process of assigning weights.**
- **At a minimum, re-title the map and legends to reflect what it actually is, perhaps “existing conditions”**

Throughout the comment period numerous comments and objections have been raised based on responses to the LUCM, often the first and only part of the plan to be viewed. As long as this map is represented as a capability map, this unnecessary confusion will continue well into the conformance period. An inordinate amount of staff time and talent will be required to address this confusion during conformance.

Multiple concerns have been raised with the designated Planned Community/Specially Planned Areas (“purple zones”). Commenters continue to believe that the planned community zones are “targeted” for growth. Previous experiences with the State Development Guide Plan, COAH and to a lesser degree with the SDRP have shown that labeling something “growth zone” is dangerous (see Hills Development v. Bedminster).

Correcting this problem will require a deeper analysis of constraints within the planned community zone. Much of the data to support these analyses exists in the technical reports (e.g. water availability, utility capacity) but other perhaps equally compelling limits have not been explored (e.g. traffic).

**Suggestion:**

- **Conduct an infrastructure analysis (especially sewer and water ) to further define the capabilities existing within the “purple” zones.**

Additionally, although it is well understood by ANJEC that the natural resource mapping exists for the planned community zones and that protective policies will apply, readers cannot reach this conclusion from viewing the maps. Rather, the purple areas are devoid of wetlands, slopes and other critical features giving the impression that these are considered “free fire zones”, favoring development over sound planning and environmental protection. This erroneous impression is exacerbated by the difficulty in extracting the policies that apply to each overlay zone from the draft plan where they are presented by medium, rather than by zone.

**Suggestion:**

- **Provide examples of individual planned community zones showing the detailed mapping with a policy discussion.**

Furthermore, the use of the term “zone” for the protection, conservation and planned community overlay areas carries unwanted connotations, especially to municipal officials who are working on a different definition of the word. Municipal officials are used to a zoning district, with specific use, bulk and design requirements. The broad guidance framework intended for the overlay zones is thus not correctly understood.

**Suggestions:**

- **Rename the overlay zones using a less “loaded” term.**
- **Within the Plan, the specific policies applicable to each zone should be clearly presented, not organized by individual media as currently shown.**

**3. Financial Component**

The Financial component (p. 188) in the Draft RMP is inadequate to answer many of the questions being raised by municipalities and others submitting comments. Although the presentation references the Technical Report, a review of the technical report shows an abundance of data that are not presented or available in the RMP. The Council should review the technical document and extract more information for inclusion in the RMP.

Particular findings from the technical report should be made public in a structured manner prior to conformance.

Of particular note in the technical report is a reference to a CUPR contract to develop financial analyses of different scenarios of control. To date, we believe that this vital information has not been produced. Prior to issuing the final RMP this important information should be made available and included in the report. This approach was of considerable benefit during the early stages of the SDRP process.

**Suggestions:**

- **Carefully review the Technical Report, extract and include more data in the RMP of use to municipal planners and others.**
- **Provide a series of extracted fact sheets and structured public relations releases based on the findings of the Technical Report.**
- **Complete the CUPR contract and include pertinent findings in the RMP, fact sheets and public releases.**

## II. General Comments

### 1. Document Style, Format and Tone

Considerable difficulty was encountered in reviewing the document to its construction, style and tone.

There is no Executive Summary.

#### Suggestion:

- **Provide an Executive Summary**

Policies, particularly those relating to each of the “overlay zones” are distributed within the Resource Assessment Component, rather than unified in a policy section. Overall the document continually mixes what should be objective resource information with policy statements.

#### Suggestion:

- **Separate policies from inventory and assessment data and organize by Preservation/Planning Area and overlay zone.**

The Environmental and Land Use Setting section should provide the objective presentation of the “inventory” of the Highlands Region. This section is very poorly developed. For example, the very important subject of geology is given two short paragraphs and is accompanied by a poor quality map. Providing detailed objective resource inventory information is standard in municipal practice where Environmental Resource Inventories (ERIs) are integrated as a separate component of municipal Master Plans. These relationships are commonly expected by municipal planning boards and professionals. Adhering to this expected format would provide clarity and objective support for proposed policies.

The Resource Assessment Component should be derived from and linked to the objective inventory information, identifying positive and negative conditions in the resources as a result of human intervention in the natural systems. If developed in this way, readers could follow the logical trail from inventory through assessment to policy.

Policy should be presented after both the Inventory and assessment and there should be a clearly demonstrated nexus between policy and physical conditions. Readers should be able to access the policy statements of the Plan readily and be able to trace the rationale for each policy to a resource protection need.

#### Suggestions:

- **Expand and develop the Environmental and Land Use Setting sections to adequately support the Resource Assessments and policy presentations.**
- **Adhere to the established relationships that develop policies from inventory through assessment to policy.**

Stylistically, the document reads as if it has had at least several authors. While this is understandable in an undertaking of this magnitude, the use of a professional editor to harmonize and unify the various writing styles is strongly recommended. One excellent example is the State Development and Redevelopment Plan that presents not only a unified style but also has a unified graphic look.

Tone also varies considerably from the strictly legalistic (various sections “Goals and Requirements of the Act) to a more casual and informal tone (Historic, Cultural and Scenic Resources Protection). While this is understandable to a degree, the document lacks a cohesive tone that conveys confidence and legitimacy.

**Suggestion:**

**Use a professional copy editor (and consider a graphics designer) to address tone, continuity, style and visual “look”.**

## **2. Maps**

The Draft RMP relies heavily on maps to communicate important facts and concepts to the reader. Each map should contain interpretive language on the map, written to the user’s level of understanding. ANJEC can provide examples of this approach as produced by dozens of ERIs funded by our organization.

**Suggestions:**

- **Source data (not just NJ Highlands Council) should be indicated on the map. If too complex, a separate data sheet should be included, referenced to the map)**
- **Color Usage: Color usage should be carefully reviewed. If a “stop light” color scheme is used (red, yellow, green) it should be intuitive to the intent of the map. One example of this problem is found on the “Total Water Usage by HUC 14 (2003) on p. 18. Here the HUC 14 units with the lowest usage (0-1.11 mgd) are shown in red, giving the impression of “stop!”**
- **Color Separation: Color separation should be sufficient to allow reader to distinguish between categories, survive duplication by numerous methods and remain readable. This applies both to the map image and to the legend.**
- **Legend Design: Legends should be larger overall. There should never be a color on the map that does not have a legend category. One example is found on the “Source Water Protection Areas and Reservoirs” map on p. 19. Here the large pastel yellow area (that appears to correspond to the Delaware and Walkill drainages, does not appear on the legend.**
- **Gray Scale Maps: Some maps could be rendered effectively in gray scale, reducing download and duplication costs.**

- **Disclaimer and Logo: All maps should carry the standard disclaimer and the Highlands Council Logo. An example where this is not so is the map “Highlands Watershed Management Areas” on p. 21.**

### III. Comments by Section.

#### **Section I: The Highlands Water Protection And Planning Act**

This section introduces the concept of “public trust resources” (p.2) but does not explain to the reader what these are, particularly as related to the Highlands Act (or the Highlands region). Numerous comments have been presented challenging the constitutional legitimacy of the Act, and consequently the RMP that flows from it. The Council should be concerned with defending the legitimacy of the Act and the RMP.

One way to do this is to develop and present the idea of the public trust and public trust doctrine.

#### **Suggestion:**

- **A brief discussion of “public trust resources” and public trust doctrine should be provided in this section and defined in the Glossary (IV) (B).**

Attached as *Appendix A-1* is one excellent paper, “*Applying the Public Trust Doctrine to River Protection*” by Jan S. Stevens, University of California at Davis, June 9, 2004, California Water Plan Update, 2005, that could serve as a model for development of language for the RMP.

- **The Council should consider featuring the article’s citation from *Hudson County Water Co. v. McCarter, 209 U.S. 349, 356 (1908)* given in the conclusion section of this document:**

**“Few public interests are more obvious, indisputable and independent of particular theory than the interest of the public of a State to maintain the rivers that are wholly within it substantially undiminished, except by such drafts upon them as the guardian of the public welfare may permit for the purpose of turning them to a more perfect use. The public interest is omnipresent wherever there is a state, and grows more pressing as population grows. It is fundamental, and we are of opinion that the private property of riparian proprietors cannot be supposed to have deeper roots...The private right to appropriate is subject not only to the rights of lower owners but to the initial limitation that it may not substantially diminish one of the great foundations of public welfare and health.”**

The paper also describes other aspects of the public trust doctrine relating to ecological preservation, wetlands, groundwater, impoundments, wildlife, government duties, implementation by statute, and access to water, standing, and federal obligations.

Attached as *Appendix A-2* is an excellent “fact sheet” on the Public Trust Doctrine from the State of Wisconsin. This could serve as a model for a similar public information piece for the Highlands.

Also attached as *Appendix A-3* is an in-depth article, “The Public Trust Doctrine, *Parens Patrie*, and the Attorney General As the Guardians of the State’s Natural Resources”, Duke Environmental Law and Policy, by Allan Kanner that describes the public trust doctrine and the role of the Attorney General in utilizing it for protecting trust resources. The council may find this of use.

#### **A. The New Jersey Highlands Region**

Overall this section is informative and accurate. The map (p2) could be enlarged to full page or 11x17 foldout format and the underlying topography allowed to show through, using light pattern-fills to depict the Preservation and Planning Areas. Each municipality and county should be labeled on the map. This would accompany the tables on (pgs. 3, 4, 5). The full extent of the Highlands Counties should be shown.

The Council may wish to present the tabular information ordered by acreage and to add percent columns: % in Planning Area, % in Preservation Area etc.

An annotated copy of the Act should be included as an appendix to allow rapid “look-up” of referenced citations. Electronic linkage should be provided for each text citation.

#### **B. The Highlands Water Protection And Planning Council**

We note that the third bullet authorizes the Council, “*To designate in the Regional Master Plan special areas in the Preservation Area within which development shall not occur in order to protect water resources and environmentally sensitive lands while recognizing the need to provide just compensation to the owners of those lands when appropriate, whether through acquisition, transfer of development rights programs, or other means or strategies;* (RMP, p.5).

In reviewing the balance of the Draft RMP, we can find no specific spatial definition of the so-called “no build zones” in the Preservation Area nor do we find any discrete, easily identified narrative criteria as to what natural features might be used to define such areas.

#### **Suggestion:**

- **The failure to define a “no build zone” is, at this time, a critical deficiency in the Draft RMP.**

Further, this lack of definition, either spatially or in narrative criteria, prevents the Council from reaching the important questions relating to compensation, a persistent theme in comments to date.

We would also note that the Act appears to require “just compensation” to the owners of these designated “no-build zones”, “when appropriate”.

**Suggestion:**

- **The Council should issue a policy statement on exactly what it envisions the scope of the “just compensation” requirement to be.**

Following this, an estimate of the amount of funding and sources of funding necessary to accomplish the objectives of providing “just compensation” to owners of the no build zones should be presented in the Land Preservation and Stewardship section (III (C)(3) and be reflected in the Financial Component.

Thus, the Council should:

- **Establish objective mapping and narrative criteria for defining “no-build zones” within the Preservation Area.**
- **Apply these criteria to produce a “no-build zone map”.**
- **Identify the pattern of ownership (platting and lot lines) within these zones.**
  - **Estimate the cost of compensation by several scenarios, (e.g.) all direct acquisition, all conservation easement, a mix of fee acquisition and conservation easement, use of TDR purchase of development rights.**

**C. The Highlands Regional Master Plan**

- **This section could be made more accessible by producing a tabular spread sheet that compares the goals for the Preservation Area and the Planning Area.**

For example:

<i>Goals</i>	<i>Preservation Area</i>	<i>Planning Area</i>
<i>Protect, restore and enhance water quality and quantity:</i>	<i>X</i>	<i>X</i>
<i>Preserve extensive and contiguous areas in its natural state</i>	<i>X</i>	
<i>Preserve environmentally sensitive, recreational and cons. lands</i>		<i>X</i>

This would allow the reader to rapidly compare the differing policy framework applicable to both areas.

**D. NJDEP Highlands Rules**

The reader is referred to the table “Provisions of the Highlands Water Protection and Planning Act”. This table does not provide information regarding the DEP Rules.

**Suggestion:**

- **A table depicting the DEP Rule’s contents should be provided and an annotated copy of the Rule included as an appendix.**

## **Section II. The Highlands Region, History and Current Conditions**

### **A. Significance of the Highlands Region**

**P9-** The statement that “Projections indicate that at the current pace of development, the future demand for water through 2030 may exceed safe yields.....”, **needs attribution.**

**Suggestion:**

- **Cite source(s) of projections.**

**P9-** The history of Highlands studies beginning with the 1907 Potable Water Commission Report is valuable. However, there is a large time gap between the quoted 1907 report and the 1992 and 2002 U. S Forest Services Report.

Significant other planning analyses were made in the interim period, eg: State Water Supply Master Plans beginning in 1955, DEP sponsored watershed management plans (e.g. Raritan Basin). More research would give extra support to the legitimacy of the RMP. The Council may also wish to look for earlier statements of significance.

**Suggestions:**

- **Enlarge and broaden the history of planning in the Region.**
- **The Forest Service Reports should be made available on the Council’s website or direct links provided and referenced in the RMP. How the RMP incorporates recommendations of these reports should be described and integrated into the discussion.**

**p.10:** Map, “Areas Served by Highlands Water”

This is a highly useful and important map.

**Suggestions:**

- **This map should either be re-titled “Areas of New Jersey Outside the Highlands Regions Served by Highlands Water” or re-configured to show the Highlands region itself as a “75% or greater area”. This re-configuration would graphically reveal the conflict between in-region water demand and external demands, a fundamental tension in the Highlands planning process.**

Problems with the map include:

- **Areas served may be underestimated.**

Some “fact checking” might reveal a greater portion of Monmouth County (NJDEP Ground Water Critical Area 1) to be supplied by the Raritan, a portion of which is attributable to the Highlands sources.

- **The Delaware River**

The Delaware River is a special problem. Water is withdrawn at Easton Pa., portions of which are contributed by the Pequest and Paulins Kill Rivers as well as the Highlands Delaware main stem drainages above the withdrawal point at Easton.

The Merrill Creek Reservoir is a part of an overall system to provide flow augmentation to the Schuylkill River in Pennsylvania, primarily for consumptive evaporative cooling of a power plant at Limerick Pa. This water is withdrawn at Point Pleasant, Pa. A portion of these flows is attributable to the Highlands.

Other non-potable withdrawals may also exist on the Pa. side of the river and in NJ.

The D&R Canal withdraws a portion of Highlands water at Bulls Island, NJ and makes an inter-basin transfer to the Raritan.

There may be potable water intakes in Pennsylvania below the Easton withdrawal that utilize a portion of Highlands water.

- The Walkill

There may be water supply withdrawals on the Walkill in New York State.

**Suggestion:**

**Overall, the areas served by Highlands water may be underestimated and may exceed the boundaries of New Jersey. Accurately depicting these areas could materially aid the Highlands preservation and planning efforts in the neighboring States of Pennsylvania and New York. Placing the RMP in a wider regional (inter-state) context would prove beneficial to water resource protection**

### C. Environmental and Land Use Setting

It is unclear what the purpose of this section is, given it's poorly developed and presented nature.

**Suggestion:**

- **The Association strongly recommends that this entire section be re-written to provide an objective *inventory* of the Highlands region.**

ANJEC has long advocated the preparation of thorough Environmental Resource Inventories (ERIs). Specific Guidance is available on the Association's website ([www.anjec.org](http://www.anjec.org)), "The Environmental Resource Inventory: ERI". This guidance defines an ERI: "*An ERI is an unbiased report of integrated data. It provides baseline documentation for measuring and evaluating resource protection issues. The ERI is an objective index and descriptions of features and their functions, rather than an interpretation or recommendation*" (ERI, p.1).

**Suggestions:**

- **An objective resource inventory data should be compiled and presented. These data should be made available to local and county government in**

**printed and electronic formats prior to the beginning of the conformance process.**

- **The subject headings should be expanded to include the following not included in the Draft RMP:**
  - **Geography/Topography:** Physiographic region and sub-regions, relief, elevation, slopes.
  - **Climate:** Prevailing winds, maximum and minimum temperatures, precipitation monitoring sites, annual average precipitation, seasonal precipitation, growing season, USDA climate zones, frost dates and frost line.
  - **Air:** Air quality, monitoring locations, stationary sources of pollutants, vehicular pollution “hot spots”
  - **Historic and Cultural Features:** Historic sites, districts, areas, historic roads, railroads, bridges, existing and possible archaeological sites.
  - **Scenic qualities,** viewsheds
  - **Known Contaminated Sites**
  - **Critical Environmental Areas**
  - **Energy:** current consumption, sources, future demand, energy facilities, including power generation and transmission, alternative potential: hydro, wind, solar, biomass, ethanol.
- **Add a separate Hydrology Section**

Discussion of groundwater, surface water, wetlands, vernal pools etc. should be combined in a hydrology section, combined with the discussion of watersheds, waterways, and aquifers.
- **Expand the discussion of vegetation to include:**
  - Types of vegetation, forest communities in particular
  - Fire hazard and history of wildfire
  - Pollution-effects on vegetation
  - Historic, recreational and economic values, especially forestry
  - Forest cover
  - Agricultural areas
  - Street tree resources
- **Expand the discussion of geology to include:**
  - Bedrock geology, types and characteristics, especially carbonate rocks.

- Surficial geology
- Depth to bedrock
- Unconsolidated deposits
- Economic mineral resources, including historic iron mines, non-ferrous ore mines (zinc, graphite), quarries, sand and gravel, radioactive materials.

The Association has previously presented testimony on the importance of carbonate rock formations in the Highlands, both as a constraint to development and as a significant natural resource. These comments are re-submitted here since the issue is not addressed in the Draft RMP. A model ordinance was also included in the original testimony, not included here.

The recommendations for the Council on this issue are:

- **Establish a policy statement in the RMP that recognizes the critical nature of carbonate rock formations, including, at a minimum, their values as:**
  - **Water supplies**
  - **Agricultural lands**
  - **Scenic resources**
  - **Ecological values and:**
- **Recognizes the critical nature of these areas, including;**
  - **Sensitivity to subsidence and collapse.**
  - **Sensitivity to contamination from all surface activities**
  - **Contribution of base flow**
- **Map carbonate rock areas (and areas that contribute water to them) on the Land Capability Map and classify them as “critical areas”.**
- **Prepare a model carbonate rock ordinance and require its adoption as part of plan conformance based on the model developed by NRCS.**

## **1. Water Supply and Use**

### **P.18** Map: Total Water Usage by HUC 14 (2003)

The “stoplight” color scheme selected for this map is counter intuitive: Areas of low use are shown in red while higher use categories are shown in green. The quintile breaks are very strange. Why, for example, does the fourth category (dark green) cover such a broad range of water use (12.15mgd to 124.60mgd) while the others cover much smaller ranges?

This map introduces the reader to the concept of HUC 14 subwatershed units but does not explain what they are. The “nested” watershed concept should be explained. The larger HUC 11 watershed units, (eg. Passaic, Raritan etc.) and their boundaries should be

shown. The actual values should be reported in a spread sheet that follows normal USGS presentation: (Basin, HUC #, HUC name, area, usage). Use of the discussion on p. 21 should be adequate.

**P. 19**, Map: Source Water Protection Areas and Reservoirs

The map appears to be a map of surface waters' protection areas. The title should be revised. The map shows a considerable area in yellow. This appears to be the Delaware and Wallkill drainages. There is no yellow category in the title block. The map gives the incorrect impression that the yellow area has no surface source water implications.

**P. 20**, Table: Highlands Water Uses by Type

The source of the figures presented should be attributed. The third largest use category is cited as "Hydroelectric". Where and what is this attributed to? To our knowledge the only hydro-electric facility in the Highlands is located on Paulins Kill Lake, near the mouth of the Pequest. This is a relatively small facility. Is the chart depicting uses only within the Highlands or uses of Highlands water, including areas outside the region? This should be clarified. There is no entry for thermo-electric (evaporative cooling) uses. We believe these to be both substantial and consumptive.

**P. 20, Para 3**: The source of the projections for water demand should be cited. If there is a collaborative NJGS study as suggested, more specific findings should be presented.

## **2. Watersheds**

**P.21**, Figure: Highlands Watershed Management Areas

The figure contains no legend. Although there is a narrative description of the watershed management areas on the following page, the reader cannot tell from the map which is which. In addition, the meaning of the hatching on sub-watersheds in the figure is unknown.

## **Section III. The Elements of the Plan: Specific Comments**

### **Section III, (B) Land Use Capability Map**

In addition to the previously presented comments provided in the first section we note:

**Suggestion:**

- **The Council should carefully consider adding additional overlay categories to better effectuate the goals of the Act.**

The example of the "developed lake communities" has been discussed in comments by others.

- **ANJEC supports the creation of a special district designed to preserve and restore water quality in lakes whose watersheds and near-shore environment are heavily developed.**

In addition, the Conservation Zone contains natural resources that require specific treatment in several areas. For example, the broad definition of agricultural soils adopted in the draft RMP includes some soils with extreme environmental sensitivity, particularly as related to water quality and quantity.

While these soils may be currently in agricultural production, their use and management pose serious concerns for water resources flowing through and beneath them. Furthermore, the RMP proposes to allow residential clustering under certain conditions in the Conservation Zone. These conditions are not well defined. The issue is problematic since clustered development could materially impact scenic character, wildlife habitat (particularly grassland) and consume important agricultural soils. Finally, soils with well established environmental constraints are included in the Conservation Zone.

- **ANJEC does not support the clustering provision in the Conservation Zone as currently proposed.**

During the original SDRP process, planners recognized that some agricultural areas were compromised by sensitive environmental features. This recognition led to the creation of a new Planning Area, “Planning Area 4-B, Environmentally Sensitive Agriculture”.

- **ANJEC recommends a similar approach for agricultural land uses, creating a more protective “Conservation Zone 1”. This new zone would recognize the critical nature of the environmental features present, including based on soils, water supply (tributary to potable intake or within wellhead protection area) and surface water classification of the watershed (c-1 or upstream of c-1) for the Highlands region. An alternative is to remove selected features of the Conservation Zone and add the resulting land areas to the Protection Zone.**

Examples of criteria and policy for the Conservation Zone 1 approach include:

- **Modified agricultural wetlands:** Zone priorities should include purchase in fee, purchase of conservation easements, retirement from agricultural use, restoration of wetland functions, no clustering of development.
- **Hydric soils:** Zone priorities should include: retirement from production, purchase of conservation easements or in fee, restoration of wetland functions, no clustering of development.
- **Alluvial and floodprone soils in riparian areas:** Zone priorities should include: purchase of conservation easements, application of BMPs to protect water quality, installation of riparian buffers, installation of permanent grass or tree cover, no clustering of development.

- **Soils with high seasonal water tables:** Zone priorities should include: application of BMPs to protect water quality, installation of permanent grass or tree cover, no clustering of development.
- **Soils with shallow depth to bedrock:** Zone priorities should include: use of BMPs to protect water quality and prevent erosion, installation of permanent tree cover, installation of permanent grass cover, no clustering of development.
- **Highly erodible soils (k-factor):** Zone priorities should include: Use of BMP's to protect water quality and prevent erosion, conversion to permanent tree cover, conversion to permanent grass cover.
- **Soils weathered from limestone, overlying karst:** Zone priorities should include: Use of water quality BMPs recognizing the groundwater resource, site plan review requirements recognizing the geologic constraints, purchase of agricultural easements.

### **Section III, (C)(d) Wellhead Protection:**

These comments are based on a review of the RMP, the related technical documents, Watershed and Water Quality Technical Report , Water Resources Technical Report, Vol. II-Water Use and Availability, Section 9 and the NJ DEP SWAP data. No G.I.S. data or metadata on this subject area or map outputs were available during this review.

- **The first paragraph of the Wellhead Protection section (p. 73) should include some statistics about the volume of water, the number of public community and public non-community wells and the population of the Highlands region served by groundwater and public community and non-community wells.**
- **The discussion of the Department's wellhead protection program should indicate that this is regulatory discussion, not a generic definition of wellhead protection programs.**
- **In paragraph 3, p. 73, there is a mention of wells lost to pollution or requiring sophisticated treatment. Some examples or better still, a compilation of sources "lost" (and why) and treatment costs incurred would be valuable here.**
- **In paragraph 1 (p.75) the SWAP Program is introduced. It is unclear how this program relates to wellhead protection. Overall, the RMP should provide a critical analysis of the existing DEP programs as they apply to meeting the goals of the Act. This discussion should form the basis of RMP policy development.**

For example, the existing program focuses on groundwater quality in only the two, five and twelve year zones. This focus, while valuable, ignores the subject of providing long term, sustainable protection beyond the twelve year time of travel. There is no focus on protecting the quantity of water available from the public community and non-community wells. Adding this consideration would require protective efforts on the **total recharge areas**.

- **In paragraph 2, p.75, the RMP indicates, “Individual reports have been created for each of the community water systems and non-community water systems relying on surface water.” The discussion then expands to include susceptibility ratings for “each well”. This should be clarified.**
- **Spot checking indicated that some reports (e.g. Chester Borough) in the Highlands are not currently available. It appears that the public non-community systems were not evaluated by the SWAP program. This should be stated.**
- **Paragraph 3, p.75, introduces several concepts: “unconfined aquifers”, “confined aquifers” etc. that should be defined for the reader. The discussion of pollutant sources should be expanded to better define what these pollutants are, especially the rather exotic “disinfection-by product precursors” and “radon and radionuclides” categories.**

### **Goals and Requirements of the Highlands Act**

Comparing the contents of this section of the RMP to the stated goals of the Act seems to show an inadequate response, particularly to enhancing and restoring water quality and in protecting water quantity.

- **A specific statement concerning the importance of groundwater as a water supply within the Highlands Region should be included. It is unclear how the following policy statements implement the charge to “protect, enhance and restore water quality”, nor how adequate supplies will be “ensured”.**

### **The Highlands Plan Approach**

The Department of Environmental Protection’s Wellhead Protection Program is currently inadequate to meet the goals of the Act. Specifically, the program is directed at the protection of water quality by conditioning land uses within the 2year, 5 year and 12 year Initially identify Wellhead Protection Areas in need of protection as the total recharge area contributing water to wells

The three areas of action are discussed.

- **“Identify wellhead Protection Areas in need of protection”.**

This should be changed to read:

“Identify all existing public and non-community wellhead protection areas in the Highlands region and provide effective protection of water quality and quantity on a sustainable basis”.

- “Develop resource protection measures to protect and enhance ground water and water supply resources within Wellhead Protection Areas consistent with the source water assessments for each water supply source”.

It is unclear why the Highlands Council, given the mandates of the Act, appears to view the existing source water assessment program as sufficient. We strongly suggest that the requirements of the SWAP program should be minimum starting points for a more effective, sustainable program in the Highlands.

- “Develop educational materials to further the understanding of the importance of Wellhead Protection Areas to protect groundwater supply”.

This is a necessary activity. However, the RMP is silent as to how the “education” is to take place or who is to implement this essential step.

## **Policies and Strategies Related to Wellhead Protection**

### General Policies

- **It is unclear how the council’s proposed “inventory” differs from the existing DEP programs or why the Council needs to keep a separate inventory.**

### **Site Specific Standards**

The three bullet points are confusing, unclear and inadequate. In the first point, some types of land uses are to be prohibited from the existing, delineated Tier 1, 2, and 3 wellhead protection areas.

Just what “pathogen sources” are is undefined. For example, pathogens may be expected to come from septic systems, confined feeding operations, agriculture, and some other forms of land use, like composting.

What is a “persistent organic chemical source” and why are they more of a concern than a “persistent non-organic chemical source” such as road salt storage, heavy metals sources, etc.? Does this category include gas stations, dry cleaners, and industrial sites using degreasing solvents or storage facilities?

What is meant by the “management of toxic chemical sources”? Are these not also “persistent organic chemical sources” or does the Council have something else in mind, like limitations on the use of pesticides, herbicides or road de-icers?

What is a “major discharge” that is to be prohibited?

There is a distinct need for clarity since these land uses are to be prohibited.

Having “prohibited” pathogen sources from Tiers, 1, 2, and 3, the second bullet indicates that we should “prohibit septic system discharges” from Tier 1. As pathogen sources, have we not prohibited them from Tiers 1,2 and 3 in the bullet above?

What is the rationale for the prohibition of “engineered stormwater infiltration” only within Tier 1?

What is the rationale for prohibiting “new discharges or expansion of existing discharges of sanitary or non-sanitary wastewater within only Tier 1 or Tier 2?

The two bullet points under the second site specific policy statement are equally vague and unclear. Just what is to be expected of municipalities when they “address wellhead requirements”? How will stormwater reuse for non-agricultural irrigation be “encouraged” at the site level and, perhaps more importantly is the depletive use of stormwater in a recharge area for a potable water supply a wise policy?

### **Pre-conformance Requirements**

Substantial vital components of a wellhead protection program are deferred to the “pre-conformance period”. The first bullet point indicates that the Council shall develop technical guidelines and procedures for the identification of potable sources at risk and protection of Wellhead Protection Areas for public water supply wells in the Highlands Region. Does the council intend to somehow distinguish “potable sources at risk” from the others? Are public-non-community wells to be included in these guidelines? What is meant by technical guidelines for “protection of Wellhead protection Areas?

The second bullet point deals with the development of technical guidelines for wellhead BMPs. Who will be responsible for implementing these on the ground and over time?

The third bullet point indicates that “model master plan elements” and “development regulations” shall be developed. Is it the Council’s intention to adopt model guidance from existing New Jersey practice or to create specifically designed language to implement the goals of the Act?

### **Conformance Requirements**

There is no policy guidance provided to address municipal actions “to address wellhead protection requirements” or amending wastewater management plans.

- **Although we agree with the objectives, the RMP must be much more specific about the required responses.**

### **Long Term Goals**

What is meant by “retrofit or upgrades” of existing land uses? Identifying future sites for public water supply wells and being proactive about surface planning and management is an excellent approach. However, how the Council intends to do this should be more explicit.

### **Local Participation Strategies**

This is an excellent objective. However, many of the public, non-community wells are operated by private entities that should be included in the audience.

### **Coordination and Consistency Strategies**

Monitoring of water quality region wide would seem to be achievable in the near term since all public community and non-community wells have existing monitoring requirements.

New wells should have their wellhead protection areas mapped as part of permit issuance.

- **The Council should analyze existing, delineated wellhead areas to determine the extent of agricultural or horticultural operations. BMPs currently existing for water quality protection may not be properly designed to protect wellhead areas.**

### **Mapping Issues**

At page 74, the Draft Regional Master Plan Presents a map titled “Wellhead Protection Areas”. However, the text (p.73) indicates that the map actually depicts “The WHPAs for *public community* water supply systems in the Highlands Region...” Either the text is in error or it would appear that the *public-non community wellhead protection areas* are not shown. There is no explanation as to why this class of well head protection area is not included. We can appreciate the difficulties arising from data acquisition and map composition.

At a minimum, the map should be re-titled to read “Public Community Wellhead Protection Areas” but more importantly, the map should be revised to show the locations and wellhead protection areas for the public non-community wells.

- **Public non-community wells and their wellhead protection areas must be shown to meet the requirements of the Act.**

The RMP relies on the DEP’s SWAP mapping of wellhead protection areas. This uncritical acceptance of data created by the Department raises several issues. First, the Department was faced with the task of delineating wellhead protection areas statewide, and under constraint or both time and funding.

The tasks of the Council differ, in that a much smaller area is covered and fewer wells are involved. There are no apparent time constraints and, importantly, the goals for water resources protection established in the Act are broader and more comprehensive than those used by the Department .

The methodologies used by the Department to derive these map areas (Combined Model/Calculated Fixed Radius Model for public community wells and the Calculated Fixed Ratio Model for public non-community wells ) may not meet the requirements of a

comprehensive water resources protection effort applied at a regional, rather than statewide scale.

The “Highlands Draft Water Resources Technical Report, Vol. II-Water Use and Availability (P.179) indicates, “Other methods for ground water source delineations, such as the arbitrary fixed radius method, or analytical methods that use computer models and a variety of data points, were not used because they were considered too simple (agree) or ***too complex for statewide use***, respectively”. While the use by the Department of advanced wellhead delineation techniques may have been, at the time, too complex for ***statewide*** application, we strongly suggest that ***the regional approach necessitated by the Highlands Act, favors the use of advanced delineation techniques to define the wellhead protection areas.***

Furthermore, experience has shown that the application of advanced delineation techniques, when supported by high quality data, can result in radically different wellhead protection zones than those that result from the application of the Combined Model Calculated Fixed Ratio Model as accepted by the Council in its mapping.

One clear example known to the reviewer is found in the Alamatong Wellhead Protection Study, Dec. 1998, (DEP funded with technical assistance from NJGS and USGS). This study was supported with technical data developed by the U.S. Geological Survey, “Hydrogeology of, and Ground-Water Flow In, A Valley -Fill and Carbonate-Rock Aquifer System Near Long Valley in the New Jersey Highlands, (***U.S.G.S. Water-Resources Investigations Report 93-4157***), “Simulation of Ground-Water-Flow Patterns and Areas Contributing Recharge to Streams and Water-Supply Wells in a Valley-Fill and Carbonate-Rock Aquifer System, Southwestern Morris County, New Jersey (***U.S.G.S. Water-Resources Investigations Report 97-4216***), and “Simulated Effects of Alternative Pumping Strategies on Ground-Water-Flow Patterns and Areas Contributing Recharge to Selected Wells Near Kenvil, Morris County, New Jersey” (***U.S.G.S. Water Resources Technical Report 01-4180***).

A comparison of the wellhead protection areas defined with by the SWAP program (depicted on the Wellhead Protection Area” map and the results obtained in the Alamatong study reveals a wide divergence of land areas, not only for the two, five, and twelve year time of travel zones but for total contributing areas. These superior results (in our view) are ***not incorporated*** in the mapping presented. We suspect that such delineations, or adequate data to allow such delineations, may exist for other wells within the planning region.

Because, the resulting land area delineations are heavily influenced by the selected pumping rate used during the analysis, and because the Council is charged with ***protecting water resources in a sustainable manner***, these analyses ***should be made using the full allocation pumping rates, not current pumping rates or projected pumping rates.***

Thus we strongly recommend that :

- **The RMP should advocate the use of advanced wellhead delineation techniques in the entire Highlands rather than relying on existing, less valid methodological approaches used by the Department under the limitations of the SWAP and previous Wellhead Protection Programs.**
- **The Council should more carefully evaluate existing hydro-geological data to determine if and where more advanced delineation techniques could be supported with existing data available in the planning region.**
- **Based on these analyses, the Council, in co-ordination with the Department, NJGS and USGS and other interested parties, should prepare a priority schedule for application of advanced wellhead area delineations throughout the planning region.**
- **The Council, in co-ordination with the Department, NJGS and USGS and other interested parties, should provide technical assistance and funding assistance to complete advanced wellhead delineations on this priority schedule.**
- **Where adequate data has been determined not to exist to support advanced wellhead delineation, the Council, while currently relying on the current SWAP delineations, should, in co-ordination with the Department, NJGS and USGS and other interested parties, provide technical and funding assistance to develop these data on an ongoing basis.**
- **Advanced wellhead delineations should always be made using full allocation pumping rates.**

### **Recommended Policy Approach**

It is our view that the Highlands Act mandates a *unified approach* to the protection of *water quantity* in a *sustainable* manner as well as the protection of *water quality*. Both of these efforts should include not only human use considerations but also ecological needs related to water quality and flows of surface water bodies.

- **Thus it appears that the specific provisions of the Wellhead protection section of the RMP are deficient in meeting the requirements of the Act.**

The Draft RMP and the supporting water related technical papers highlight the criticality of protecting these water supplies for the present and future residents on the Highlands Region.

To meet the requirements of the Act, we propose the use of a *special overlay district mechanism* to focus local, county, regional and state planning, regulation, and education on discrete, objectively defined land areas directly related to protecting groundwater supplies drawn from public community and public non-community wells. These districts

should be shown on the LUCM when revised. While individual wells will be found within these areas, they are not the focus of this approach. However, they would receive a measure of indirect protection from its use.

- **We propose to call these areas “Special Water Resources Management Areas” (SWRMAs). Spatially, these areas are to include:**
  - The existing, delineated wellhead protection areas, (2, 5 and 12 year areas)
  - The *entire recharge areas for* the existing public community and public non-community wells, as developed by advanced wellhead delineation where available.
  - The upstream drainage areas of water bodies crossing or contained in the wellhead protection zones
  - The land areas that contribute surface water run-off to the delineated wellhead protection areas.

### **Rationale for Spatial Delineation of SWRMAs**

#### **1. Inclusion of Total Recharge Areas**

The existing delineated 2, 5, and 12 year wellhead protection zones *provide a measure of water quality protection* for the public community and non-community wells. However, the time frame involved is, at a maximum, 12 years. This is inadequate to meet the requirement to protect water quality in a *sustainable manner over the long term*. However, because these sometimes flawed data, currently exist, they are included in the SWRMA areas. (See Mapping Issues below).

The existing DEP wellhead protection program, based on the 2, 5 and 12 year time of travel areas, does not address the requirement to protect *water quantity* available at the wellhead in a *sustainable, long term manner*. Protection of the *total recharge area* to assure continued infiltration and recharge of the portion of the aquifer serving the well(s) is required.

We recognize that these data are not available for all the public community and public non-community wells in the Highlands Region. However, advanced wellhead delineation data superior to that accepted by the Council and presented in the RMP *do exist* for some areas within the Highlands Region (e.g., Alamatong Wellhead Protection Study, 1998).

- **Where advanced wellhead delineation data do exist, the Council should immediately incorporate the more accurate mapping of both the wellhead protection areas and the total recharge zones, sometimes referred to as “total contributing zones” into the RMP.**
- **As a matter of policy, the Council should commit to facilitating advanced wellhead delineations for the public community and public non-community wells in the Highlands Region.**

These efforts can be prioritized to favor those wells where the data exist, by size or relative importance and by willingness of responsible parties (municipalities, purveyors, NJGS and USGS) to co-operate.

## **2. Groundwater Contributed by Surface Water**

The Alamatong study mentioned above also identified several surface water bodies, including both streams and lakes that were directly linked to the recharge of water supply wells. Stream flows declined as these streams crossed through the recharge areas of these wells.

It is highly likely, due to the geologic conditions of the Highlands, that such situations exist elsewhere within the planning region. In these situations, surface water quality is a critical concern to the long term, sustainable protection of the groundwater sources.

- **Thus, the quality of surface waters that contribute groundwater flows to wells should be managed to be protective of the potable groundwater source.**

In cases where such studies have not been completed we suggest that it is prudent to assume that *all surface water bodies* present in the delineated wellhead protection (2, 5, and 12 year areas) zones are contributing recharge to the water supply wells in question.

The use of an advanced wellhead delineation methodology would allow the determination of actual conditions.

- **However, in the absence of these data, we suggest that all surface water bodies within the total recharge area *be assumed to be contributing recharge to the wells, until proven otherwise by the application of advanced wellhead delineation techniques.***

A control system that includes planning, regulation, and education, should be applied to the drainage areas (watersheds) of these surface waters upstream of the point at which the water body enters the wellhead protection area as well as the reach within the wellhead protection area. These areas can be readily defined with topographic information (contours) and hydrography available to the Council. Completion of the LIDAR topographic information would facilitate more accurate delineations, based on the expected 2' contour resolution. These areas may also contain some portion of the "total contributing area" relieving uncertainty about the exact location to some degree. The SWRMA areas will include the *upstream drainage areas* of all water bodies passing through the delineated wellhead protection areas.

### **Overland Flows to Recharge Areas**

Finally, overland run-off originating up-gradient of the wellhead protection areas may pose contamination risks for the potable well. Areas up-gradient of the wellhead protection areas as determined by topographic information (contours) are included in the SWRMA.

## Conceptual Issues

### 1. The Council must protect water quantity as well as water quality.

The SWAP and previous Wellhead Protection Programs were developed to protect water quality and do not consider the protection of water quantity.

The Department's wellhead protection program limits its efforts to the two, five and twelve year recharge zones and is focused on short term protection of water quality. Because the Council is charged with protecting both water quality and water quantity in a sustainable manner, the **Department's focus, while essential, is inadequate to address the goals of the Act.** The Highlands Wellhead Protection efforts must protect water quantity as well as water quality.

The approach taken in the Draft RMP is heavily derived from the DEP's existing wellhead protection program and the Department's SWAP program. The approach presented in the RMP is entirely focused on the protection of water quality. The approach provides no additional or specifically tailored responses to the mandates of the Highlands Act to protect water resources.

- **We strongly recommend that the Council expand the spatial scope for wellhead protection to include the total recharge areas, rather than limiting its efforts (and duplicating the efforts of the Department) to the two, five and twelve year recharge zones. When the total recharge areas are defined by advanced wellhead delineation, they should become part of a Special Water Resources Management Area**

### 2. The Spatial Extent of Recharge Areas is not fixed but varies with pumping rate.

The spatial extent of the total recharge area must be known to protect both quantity and quality of ground water by regulating surface activities. These areas grow and shrink in response to changes in pumping rates. This fact implies that regulated land areas will also change size, shape, and location based on changes in pumping rates.

Thus, generally speaking, *full allocation* pumping rates will produce larger regulated land areas than current pumping rates, assuming that wells are not currently violating their allocation permits. This fact also indicates that **the size, shape and location of recharge zones can be varied by changing the pumping rates** of the wells, providing additional scope for management efforts.

- **Thus, from a policy perspective, pumping rates may be varied to achieve water resource protection objectives and modify the spatial extent of total recharge zones.**

From a planning perspective, the Council should be aware that *full allocation* withdrawals should be anticipated. It is quite possible that the existing allocations may

exceed the capacity based objectives of the RMP, especially in the deficit areas identified in the Draft RMP.

- **The Council should be fully aware that changing pumping rates (by changing allocation permits) is potentially a tool for land use regulation useful to protect water quality and quantity of public community and public non-community wells.**
- **The Council should not take current allocations (and their resulting recharge zones) as “givens”, but rather should critically evaluate current allocations to achieve its water resource protections mandate, in the broadest sense.**

### **3. Surface Water Interference is not addressed.**

It is entirely possible that pumping of groundwater wells may impact surface water base flows, a fact currently recognized in the water resource assessments of the water resource technical papers. However, the Draft RMP is silent on this crucial concern.

In the case of the Alamatonig Wellhead Protection Study, the Black River, Drakes Brook and an unnamed tributary of the Black River were found to be contributing flows to the supply wells. Lakes were also found to be within the wellhead recharge areas. These contributions are in effect surface water diversions, potentially impacting downstream allocations and in-stream ecology.

Furthermore, where streams contribute to recharge, the quality of the surface waters has the potential to degrade the quality of well water. **Thus, where streams contribute recharge to public community and public non-community wells, the entire upstream watershed should be managed to be protective of the groundwater resource.**

To accomplish this objective the Council should:

- **Assume, as a rebuttable presumption, that all surface waters within defined wellhead protection zones may be contributing recharge to the wells.**
- **Delineate the contributing upstream watershed and its associated delineated wellhead protection area as a Special Water Resources Management area.**
- **Within the Special Water Resources Management Area:**
  - **The Council, in concert with DEP, should develop and apply a surface water quality and groundwater anti-degradation policy that is fully protective of the surface and groundwater resource. The policy must be applied to all point discharges, stormwater and non-point sources.**
  - **Municipalities should recognize and map these areas in local master plans. The Council should assure that all municipalities containing Special Water Resources Management Area map these areas in local master plans.**

- **The Council, municipalities and non-profits should educate the public, especially those persons within the Special Water Resources Management Area, about the importance of and methods to be used to protect the water resources.**
- **As a requirement of conformance, the Council should require municipalities to implement local land use controls by applying a Special Water Resources Management Area zoning overlay that:**
  - **Strictly limits new impervious surfaces**
  - **Protects and restores riparian zones**
  - **Prohibits the installation of underground storage tanks for all substances except potable and storm water.**
  - **Requires stormwater retrofits to meet non-degradation standards when site plans or building permits are issued.**
  - **Require publicly owned land areas to employ best management practices with the goal of precluding water quality degradation.**
  - **Provides for a public education program**
- **As a requirement of conformance, the Council should assure that municipalities implement, by ordinance, septic management programs within the Special Water Resources Management Areas. The municipal ordinance should contain, at a minimum:,**
  - **an annual registration**
  - **locational information of the discharge**
  - **identification of responsible operator**
  - **a pumping schedule.**
- **The Council, in concert with the DEP, should assure that responsible sewer agencies should conduct collection system integrity studies to preclude the leakage of untreated effluent into the Special Water Resources Management Area.**
- **The Council, in concert with the DEP, emergency responders and other responsible parties should develop a spill control educational program that stresses containment to protect water resources.**
- **The Council, in concert with the DEP, should prioritize, advocate and facilitate the remediation of all known contaminated sites within the Special Water Resources Management Area.**
- **The Council should require responsible transportation management agencies (municipal, county and state) to prepare management agreements that minimize the application of pesticides, herbicides and water soluble road de-icing chemicals**

**within the Special Water Resources Management Area, consistent with public safety.**

- **The Council should assure that government funded land preservation projects should prioritize open space acquisition to Special Water Resources Management Area properties that contain riparian zones, open waters, wetlands, abut surface waters or that contain prime aquifer recharge areas and,**
  - **Assure that lands acquired are managed to be protective of the water resource (non-agricultural, conservation and passive recreational uses only).**
  - **Assure that such areas are subject to management plans that protect, enhance and restore the water resources on site.**
- **Prioritize stream corridor stabilization, buffer strip installation, and reforestation/ aforestation projects to Special Water Resource Management Areas. Implement in a downstream order.**
- **Identify locations where surface waters recharge public community and public non-community wells as presently known through advanced wellhead delineations.**
- **Require, facilitate and provide funding assistance for advanced wellhead delineation where surface waters are located within wellhead protection areas.**
- **As advanced wellhead delineations are produced, assure that surface water interference areas and Special Water Resource Management Areas are revised, identified and mapped.**

#### **Lack of Specific Policies to Protect Wellhead Areas**

- The mapping presented indicates that many of the wellhead protection areas shown fall within the Planned Community /Specially Planned Areas Zone.
- The problem of maintaining water quality in these areas is mentioned, “Many wells are located in close proximity to the development they serve which poses the risk of contamination from existing and past development patterns”(RMP, p. 73). Protection of water quantity in a sustainable manner is not mentioned but is of equal concern in these areas. These problems will intensify as the public non-community wells are mapped and development continues within the Planned Community Zones.
- Yet the RMP contains no specific policies directed at these issues in the Planned Community Zone.

- **The Council should require municipalities to delineate the SWRPAs and apply special overlay zoning.**

## **Section III (H) Implementation**

### **Pre-Conformance Education**

- **The Council should begin a press and public information campaign highlighting the findings of the technical reports to prepare municipal officials for conformance.**
- **A general press campaign of releases drawn from the Technical Reports should be implemented to condition public opinion about the facts revealed in the Reports. The Council should also be prepared to have trained, designated staff available for press contact.**
- **A series of fact sheets and FAQ sheets about subjects of municipal interest should be prepared posted on the website and distributed. Some possibly important subjects for consideration include:**
  - **Conformance and the State Planning Process**
  - **Conformance and COAH**
  - **Conformance Steps**
  - **Consequences of Non-Conformance.**

These should be designed to serve as “advanced organizers” for the conformance process.

Overall, a system of regular communication with municipalities should be created and personal contacts established.

### **Layout and Presentation**

Currently the Draft RMP presents the conformance process in Section H, Implementation Framework. However, additional specifics are contained in Section III, The elements of the Plan and in each section, at various points throughout the plan.

- **This form of organization makes it extremely difficult for local officials to “get their arms around the requirements for conformance. The process of conformance as well as the specific requirements should be presented together in the RMP or presented as a separate “Conformance Guide” for easy access by municipalities.**

### **Municipal Environmental Commissions**

Municipal environmental commissions will play an important role in conformance and implementation of the RMP. Commissions may be established at the municipal level under N.J.S.A. 40:56A.

Under the statute, (40:56A-2), Powers of Commissions:

- Shall have the power to conduct research into the use and possible use of the open land areas of the municipality
- May coordinate the activities of unofficial bodies organized for similar purposes
- May advertise, prepare print and distribute books, maps, charts, plans and pamphlets which in its judgment it deems necessary for its purposes.
- Shall keep an index of all open areas, publicly or privately owned, including open marshland, swamps and other wetlands, in order to obtain information on the proper use of such areas
- May, from time to time, recommend to the planning board, or if none, to the mayor and governing body of the municipality plans and programs for inclusion in a municipal master plan and the development and use of such areas.

Under 40:56A-3, Acquisitions by commissions, commissions may:

- ....with the approval of the governing body, acquire property both real and personal, in the name of the municipality by gift, purchase, grant, bequest, devise or lease for any of its purposes and shall administer the same for such purposes subject to the terms of the conveyance or gift. This includes land acquisitions in fee, partial interests including development rights, easements, covenants including contractual rights and reverters on “land and water areas in the municipality”.

Under 40:56A-4 commissions are required to keep meeting records and to make an annual report to the governing body.

Under 40:56A-6, an environmental commission “shall have the power to study and make recommendations” concerning:

- open space preservation
- water resource management
- air pollution control
- solid waste management
- noise control
- soil and landscape protection
- environmental appearance
- marine resources
- protection of flora and fauna.

Under 40:56A-8 commissions can be established *jointly among two or more municipalities*

Under the Municipal Land Use Law (40:55-D-27), commissions who have “prepared and submitted to the planning board and to the board of adjustment an index of the natural resources of the municipality, the planning board or board of adjustment shall make available to the environmental commission *an informational copy of every application for development* submitted to either board”. These provisions have been commonly

interpreted to authorize the preparation of ERIs and to trigger (on an optional basis) a review of development applications by the commission.

ANJEC's data indicate that, within the Highlands Region, there are 19 highlands municipalities(22%) that do not have environmental commissions.

These are:

**Morris County:**

Netcong : Planning Area  
Morris Plains: Planning Area  
Boonton Town: Planning Area  
Riverdale Borough: Planning Area  
Butler: Planning Area  
Victory Gardens: Planning Area  
Mt. Arlington: Partial  
Rockaway: Partial  
Wharton: Planning Area

**Sussex County**

Franklin Township: Planning Area  
Hardyston: Partial  
Ogdensburg: Partial

**Warren County**

Alpha: Planning Area  
Oxford Twp.: Partial  
Phillipsburg: Planning Area  
Washington Borough (?): Planning Area

**Passaic County**

Wanaque: Partial

**Hunterdon County**

Glen Gardner: All Preservation Area  
Milford: Planning

Thus, all of the functions of environmental commissions in these areas are being performed by others or are not being performed as separate, identifiable functions.

It is important to note that only one municipality, Glen Gardner Borough in Hunterdon County, is wholly within the Preservation Area. Many of the municipalities that lack commissions are smaller, more densely populated areas tied closely to a surrounding township. These so called "Donut Holes" have the potential to negatively impact regional resources such as surface and ground water flowing from their jurisdictions. **Many of these are within the Planned Community/Specially Planned area of the RMP.**

## **Recommendations**

- **The Council should mandate that all municipalities in the Highlands Region form an environmental commission.**
- **The Council should consider providing technical assistance and funding for the creation of new municipal environmental commissions and for the training of new commissioners and periodic education of sitting commissioners.**
- **The Council should require the preparation of digital municipal ERIs incorporating highlands data and provide funding, minimum contents, standards and highlands digital data.**
- **The Council should require the adoption of the ERI as an element of the municipal master plan.**
- **The Council should require an environmental commission review of any project submitted to the Council as a condition of completeness.**
- **The Council should provide funding and training for municipal environmental commissioners to assure a basic level of literacy in environmental analysis and the use of GIS for environmental planning**

## **County Environmental Commissions**

It is currently unclear what role county environmental commissions might play in plan implementation. However, county environmental commissions could play an important role. County environmental commissions are not governed by the statute that established municipal commissions but rather can be created by a resolution of the County Freeholders. Thus, a county commission could be assigned roles and powers not available to the municipalities but desired by the Council. Counties may be viewed as more regional in focus and could play an important role in implementation at a larger scale than the municipality but smaller than the Highlands Planning Region.

ANJEC's data indicate that, within the Highlands Region, six of the seven counties (85%) do not have environmental commissions. Only one county (Warren) has a county environmental commission.

## **Recommendations**

- **The Council should explore the creation of County Environmental Commissions, focused on regional issues of extra municipal scale.**
- **The Council should prepare a minimum list of required powers and duties for the county environmental commissions.**

- **The Council should consider providing technical assistance and funding for the creation of county environmental commissions and for the training of new commissioners and periodic education of sitting commissioners.**
- **The Council should require the preparation of digital county wide ERIs accessible to municipalities that incorporate highlands data and provide funding, standards, minimum contents, and highlands digital data.**
- **The Council should require a county environmental commission review of any project with extra-municipal impacts, incorporating the municipal environmental commission report from the host municipality, to be submitted to the Council as a condition of completeness.**

### **Formation of “Highlands Conformance Advisory Committees”**

Since the release of the Draft RMP, ANJEC has been recommending that municipalities form a Highlands work group to facilitate understanding and cooperation between towns and the Council. To date, two municipalities, Bedminster and Mountain Lakes, have responded and formed working groups.

This idea has been given a more concrete form in the Municipal Plan Endorsement Guidelines issued by the Office of Smart Growth. Currently in draft form these guidelines indicate:

*OSG recommends appointment of a plan endorsement advisory committee to guide the plan endorsement process for your community. The committee members should be representative of all the community at large and include knowledgeable persons on a variety of relevant topics. Success depends on involving a good mix of people and organizations to put together and implement your plan. Important areas of expertise include: technical, leadership, communication, education, political and public policy. Members should include a representative of the local governing body, the planning board, the board of adjustment, the business administrator, town or staff planners, the budget committee, the Board of Education, the sewerage authority, the Environmental and Historic Preservation Commissions, and several public members representing diverse interests such as social, economic, housing, environmental, and agricultural. The size of the committee should be considered. The larger the committee, the more difficult it is to manage.*

*The committee should take the lead on the initial assessment-conduct the community inventory, facilitate the build out analysis, and prepare the draft community vision statement for consideration by the local governing body. It can also act as liaison with the State and county officials to ensure open and clear dialogue. It can negotiate and action plan with OSG, facilitate completion of action plan items, and eventually provide the governing body with a petition for endorsement to the SPC.*

- **The Council should implement a similar approach both to expedite the process of conformance and to assure parallel processes with the Plan Endorsement process.**