Please Note: This document should be read in concert with the Final Consistency Review and Recommendations Report prepared by Highlands Council Staff for Bethlehem Township.

Prior to adoption: a) this cover page will be replaced in its entirety with one using the municipality's formatting and logo; b) the document will be finalized; and c) all instructional text will be removed.

Highlands Element for Bethlehem Township Master Plan

Prepared by the State of New Jersey Highlands Water Protection and Planning Council in Support of the Highlands Regional Master Plan

November 2010

HIGHLANDS ELEMENT

DRAFT MASTER PLAN SUPPLEMENT
BETHLEHEM TOWNSHIP
HUNTERDON COUNTY, NEW JERSEY

DRAFT FOR SUBMISSION TO THE NEW JERSEY HIGHLANDS WATER PROTECTION AND PLANNING COUNCIL TOWARD ACHIEVING PLAN CONFORMANCE WITH THE HIGHLANDS REGIONAL MASTER PLAN

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The Planning Board presented, discussed, and accepted public comment on this draft Master Plan supplement at its duly-noticed public meeting of October 26, 2009. Copies of the document were made available for review by the public at least 10 days prior to that meeting, and adequate notice of the meeting advising that the Highlands Element was on the agenda for discussion and public comment, was provided.

This document is based on a model Highlands Element prepared and provided to all Highlands municipalities by the New Jersey Highlands Water Protection and Planning Council. Modifications required to tailor it for application to the Township of Bethlehem were provided by the individual indicated below.

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INTRODUCTION

The Township of Bethlehem is located in the New Jersey Highlands Region. It is one of 88 municipalities protected by and subject to the provisions of the Highlands Water Protection and Planning Act ("Highlands Act," N.J.S.A. 13:20-1 et seq.). The Highlands Act was enacted by the State Legislature on August 10, 2004 for the purpose of protecting, enhancing, and restoring Highlands natural resources, in particular water resources, which provide drinking water to over 5 million New Jersey residents. The Highlands Act created the Highlands Water Protection and Planning Council (the "Highlands Council") and charged it with crafting a comprehensive master plan for the Highlands Region.

To complete that task, the Highlands Council engaged in a four-year planning process involving extensive scientific and technical analysis of the Region, along with an intensive program of public outreach and participation. The Highlands Council solicited the advice and input of all stakeholders and interested parties through a variety of means, including but not limited to: initiation of the "Partnership Program" for municipal and county government representatives; formation of 18 Technical Advisory Committees comprised of technical experts and practitioners in relevant fields such as land use planning, engineering, agriculture, real estate appraisal, transportation, and business; and development of the "Network," a forum for information-sharing and outreach to the general public. In addition, the Highlands Council has held and continues to adhere to a regular schedule of open public meetings providing continuous opportunity for public comment, and has provided for on-going data sharing and access to information through its internet website.

The Highlands Regional Master Plan (RMP) was adopted by the Highlands Council on July 17, 2008, and became effective on September 8, 2008. As the product of a long-term, participatory, and region-wide planning effort, the RMP is representative of the collective response of the wider community to the Legislature's call for a Highlands comprehensive master plan. The Township places value in the regional planning process that was undertaken to fully develop the RMP and acknowledges its role in furthering the vision that it represents.

The Highlands Region encompasses some 1,343 square miles in the northwest part of New Jersey. The Highlands Act designates about half of the seven-county Region as Preservation Area (415,000 acres) and the other half as Planning Area (445,000 acres). The Act requires that jurisdictions having lands in the Preservation Area conform to the Highlands RMP with respect to that area, while for lands located in the Planning Area, conformance is voluntary.

The Township of Bethlehem is located_partially in the Preservation and partially in the Planning Area. The municipality affirmatively seeks to align its land use planning program with the provisions of the RMP with respect to the whole of the municipality. For purposes of this document, these lands shall henceforth be referred to as the "Township Highlands Area." As to voluntary conformance for the Planning Area, the Governing Body adopted General Ordinance #____ on ___ (insert date) indicating its intention to revise the municipal Master Plan and development ordinances, as applicable to the development and use of land in the Planning Area, to conform with the goals, requirements, and provisions of the

Highlands RMP.) This supplement to the Township Master Plan, designated the "Highlands Element," represents a first step toward achieving full conformance with the Highlands RMP.

The Highlands Element sets forth the policies that shall guide the future land use and development of the Township Highlands Area. It provides the rationale and the framework for the adoption of land use regulations that are protective of Highlands resources and consistent with the Highlands RMP. With regard to specific regulatory requirements, these shall apply primarily (but not exclusively) to non-exempt land use activities in the Highlands Area. "Non-exempt" land use and development refers to uses, activities, and development projects not expressly listed as exemptions in the Highlands Act (N.J.S.A. 13:20-28). Highlands Act exemptions pertain to specific "activities, improvements and development projects." With the exception of the lands of federal military installations existing at the time of enactment of the Highlands Act, the exemptions do not apply across-the-board to lots, tracts, or any other divisions of land, whether existing or proposed at the time of passage of the Act. Land use activities, improvements, and development projects that are exempt from the Highlands Act shall remain subject to all other applicable provisions of the underlying municipal Master Plan, Zoning and Land Use Ordinances, and Development Regulations.

The Highlands Element amends or creates in limited form (where not already existing), each of the components of the municipal Master Plan, as provided in the sections that follow. The Highlands Element is intended to apply in conjunction with the language of the existing Township Master Plan to the maximum extent feasible. In the event of conflicts between the two, the Highlands Element shall supersede, unless the existing municipal Master Plan provisions are more restrictive.

POLICIES, GOALS & OBJECTIVES

The Township Highlands Area encompasses the whole of the municipality. It consists of approximately 13,310 acres of land (see Exhibit A, Township Highlands Area). Of the total acreage approximately 1,137 acres (9 percent) lies within the Highlands Planning Area while 13,310 acres (91 percent) lies within the Preservation Area.

The Township Highlands Environmental Resource Inventory (ERI) (prepared by Clarke Caton Hintz, and dated June 2009 [*to be updated on completion of ERI*]) provides detailed information concerning the physical features, natural resources, and specific characteristics of the municipal Highlands Area. That ERI document and all associated mapping are hereby incorporated into this Highlands Master Plan Element. The municipal Highlands ERI includes all of the information available through the Highlands Regional Master Plan and supporting technical documents, which document the wide array of natural and cultural resources that characterize the New Jersey Highlands Region.

The municipality recognizes the unique value of the Township Highlands Area and seeks to protect and enhance it, in keeping with the Highlands Act and the Highlands RMP. Accordingly, the overarching land use policy with respect to the Township Highlands Area is to place priority emphasis on the protection, enhancement and restoration of Highlands natural and cultural resources while ensuring that land use and development activities therein occur only in a manner and location that is consistent with the Highlands RMP.

In keeping with this policy, the following goals of the Highlands Act and Highlands RMP are embraced by the municipality and shall guide the land use and development of the Township Highlands Area:

A. PRESERVATION AREA GOALS

1. To protect, restore, and enhance the quality and quantity of surface and ground waters;

2. To preserve extensive and, to the maximum extent possible, contiguous areas of land in its natural state, thereby ensuring retention of the unique and significant natural, scenic, and other resources representative of the Township Highlands Area;

3. To protect the natural, scenic, and other resources of the Township Highlands Area, including but not limited to contiguous forests, wetlands, vegetated stream corridors, steep slopes, and critical habitat for fauna and flora;

4. To preserve farmland, historic sites, and other historic resources;

5. To preserve outdoor recreation opportunities on publicly owned land;

6. To promote conservation of water resources;

7. To promote Brownfield remediation and redevelopment, where applicable;

8. To promote compatible agricultural, horticultural, recreational, and cultural uses and opportunities within the framework of protecting the environment of the Township Highlands Area; and

9. To prohibit or limit to the maximum extent possible construction or development which is incompatible with preservation of this unique area.

B. PLANNING AREA GOALS

1. To protect, restore, and enhance the quality and quantity of surface and ground waters;

2. To preserve to the maximum extent possible any environmentally sensitive lands and other lands needed for recreation and conservation purposes;

3. To protect and maintain the essential character of the Township Highlands Area environment;

4. To preserve farmland, historic sites, and other historic resources;

5. To promote the continuation and expansion of agricultural, horticultural, recreational, and cultural uses and opportunities;

6. To preserve outdoor recreation opportunities on publicly owned land;

7. To promote conservation of water resources;

8. To promote Brownfield remediation and redevelopment, where applicable;

9. To encourage as applicable, and consistent with the State Development and Redevelopment Plan and smart growth strategies and principles, appropriate patterns of compatible residential, commercial, and industrial development, redevelopment, and economic growth, in or adjacent to areas already utilized for such purposes, and to discourage piecemeal, scattered, and inappropriate development, in order to accommodate local growth and economic development in an orderly way while protecting the Township Highlands Area environment from the individual and cumulative adverse impacts thereof; and

10. To the extent applicable: To promote local transportation opportunities that are consistent with smart growth strategies and principles.

C. GENERAL PURPOSES OF ZONING

The afore-listed goals for the use and development of lands located within the Township Highlands Area are consistent with and intended to apply equally and in conjunction with the purposes of zoning as expressed by the New Jersey Municipal Land Use Law (MLUL) (N.J.S.A. 40:55D-1 et seq.). Nothing in the body of the Highlands Element shall be construed to imply that the provisions of the MLUL are not also applicable to the Township in

exercising its authority to engage in land use planning and regulation pertinent to the Highlands Area.

The intents and purposes of the MLUL (N.J.S.A. 40:55D-2) are expressly incorporated herein for application to Township land use planning and management of the Highlands Area, as follows:

a. To guide the appropriate use or development of all lands under Township jurisdiction, in a manner which will promote the public health, safety, morals, and general welfare;

b. To secure safety from fire, flood, panic and other natural and man-made disasters;

c. To provide adequate light, air and open space;

d. To ensure that the development of the Township does not conflict with the development and general welfare of neighboring municipalities, the county, or the state as a whole;

e. To promote the establishment of appropriate population densities and concentrations that will contribute to the well-being of persons, neighborhoods, communities and regions and preservation of the environment;

f. To encourage the appropriate and efficient expenditure of public funds by the coordination of public development with land use policies;

g. To provide sufficient space in appropriate locations for a variety of agricultural, residential, recreational, commercial and industrial uses and open space, both public and private, according to their respective environmental requirements in order to meet the needs of all citizens;

h. To encourage the location and design of transportation routes which will promote the free flow of traffic while discouraging location of such facilities and routes which result in congestion or blight;

i. To promote a desirable visual environment through creative development techniques and good civic design and arrangement;

j. To promote the conservation of historic sites and districts, open space, energy resources and valuable natural resources in the Township and to prevent urban sprawl and degradation of the environment through improper use of land;

k. To encourage planned unit developments, where appropriate, which incorporate the best features of design and relate the type, design and layout of residential, commercial, industrial and/or recreational development to the particular site;

l. To ensure sufficient availability of senior citizen community housing;

m. To encourage coordination of the various public and private procedures and activities shaping land development with a view of lessening the cost of such development and to the more efficient use of land;

n. To promote utilization of renewable energy resources; and

o. To promote the maximum practicable recovery and recycling of recyclable materials from municipal solid waste through the use of planning practices designed to incorporate the State Recycling Plan goals and to complement municipal recycling programs.

D. RELATIONSHIP BETWEEN HIGHLANDS ACT & MLUL

The Municipal Land Use Law gives authority to New Jersey municipalities to govern land use and development within their borders. The Highlands Act augments that authority to allow municipalities the power to enforce the goals, policies, objectives, and programs of the Highlands Regional Master Plan. The Highlands Act and the RMP together provide the regional perspective from which local decisions and actions will emanate.

As a result of the passage of the Highlands Act, the future of land use planning has significantly changed for both municipalities and counties in the Highlands Region. The New Jersey Supreme Court, in upholding the constitutionality of the Highlands Act in OFP, LLC v. State, 197 N.J. 418 (2008), affirmed the Appellate Division's decision, which emphasized the broad scope of the Highlands Act to protect the natural and agricultural resources of the Highlands through a coordinated system of regional land use controls. The Highlands Act creates a system in which a regional plan is designed to be implemented primarily through local government units. The net effect is that the statutory authority of local government units in the Highlands Region, inclusive of that provided under the Municipal Land Use Law (MLUL), is not preempted by the Highlands Act, but rather is supplemented through the passage of the Highlands Act and the adoption of the Highlands Regional Master Plan. The Highlands Act provides, through the conformance of municipal master plans and ordinances with the Highlands RMP, authorities for municipal regulation that are in addition to those of the MLUL.

Accordingly, the criteria for approval of development applications under the ordinances that ultimately effectuate this Highlands Element will incorporate aspects of both the Municipal Land Use Law and the Highlands Act. To the extent that MLUL criteria for approval of variances, waivers, exceptions and/or any other relevant aspect are altered or supplemented by provisions indicated in the Highlands Element, authority for such modifications derives from passage of the Highlands Act.

1. A waiver may be issued or authorized by the Highlands Council on a case-by-case basis from the requirements of the RMP or any amendments to a master plan, development regulations, or other regulations adopted by a local government unit specifically to conform them with the RMP: 1) if determined to be necessary in order to protect public health and safety; 2) for redevelopment in accordance with a

Highlands Redevelopment Area Designation (see Land Use Plan, Section F); or 3) in order to avoid the taking of property without just compensation. Any waiver issued shall be conditioned upon a determination that the proposed development meets the requirements prescribed for a finding as listed in Section 36.a of the Highlands Act to the maximum extent possible. Waivers to requirements of the RMP are addressed separately from New Jersey Department of Environmental Protection (NJDEP) waivers to its Highlands Preservation Area regulations at N.J.A.C. 7:38.

2. Variances for density of development (i.e., permitted number of dwelling units per acre) in excess of that permitted by a Land Use Ordinance that has been approved by the Highlands Council for conformance with the RMP, or for any use, bulk standard, or other requirement of such Ordinance that would result in an increase in the permitted use of septic system yield shall be authorized by the Highlands Council, only where: 1) water availability, water supply utility capacities and either wastewater utility capacities or septic system yield are in excess of development yield based on municipal zoning limitations and moreover, are sufficient to support the development proposal; 2) Highlands resources will not be adversely affected by virtue of the proposed increase in density or use of septic system yield; and 3) the applicant secures Highlands Development Credits (HDCs) in sufficient quantity to meet criteria to be set forth and established by the Highlands Council. This provision shall not apply in the case of a variance requested pursuant to a specific development or land use activity that is exempt from the Highlands Act.

3. With respect only to the Preservation Area, the Highlands Council will coordinate with NJDEP during Highlands permit review for any major Highlands development including the review of waivers on a case-by-case basis: 1) if determined to be necessary in order to protect public health and safety; 2) for redevelopment in accordance with a Highlands Redevelopment Area Designation (see Land Use Plan, Section F); or 3) in order to avoid the taking of property without just compensation.

LAND USE PLAN

A. HIGHLANDS ZONES AND SUB-ZONES

The Highlands Zones include three primary zones (the Protection Zone, Conservation Zone, and Existing Community Zone) and four sub-zones (Wildlife Management Sub-Zone, Conservation Zone–Environmentally Constrained Sub-Zone, Existing Community Zone–Environmentally Constrained Sub-Zone, and Lake Community Sub-Zone) each with its own purpose, application and development criteria.

The Township Highlands Area includes the Highlands Zones and Sub-Zones listed above, with the exception of the Lake Community Sub-Zone. The applicable Highlands Zones and Sub-Zones are described below. These Zones are configured as depicted in Exhibit A ("Township Highlands Area") and are herewith incorporated into the Land Use Plan as an overlay to the existing Land Use Plan. The Highlands Council delineation of Highlands Zones finds basis in the underlying natural resources, the extent of existing development and supporting infrastructure, and the potential to support new development and/or redevelopment. Highlands Zones are intended to ensure that the density and intensity of future development and/or redevelopment do not exceed the capacity of the land, natural resources, and existing infrastructure to support it.

1. **Protection Zone.** The Protection Zone consists of the highest quality natural resource value lands that are essential to maintaining water quality, water quantity and sensitive ecological resources and processes. Land acquisition is a high priority for lands in the Protection Zone and development activities will be extremely limited. Any development will be subject to stringent limitations on consumptive and depletive water use, degradation of water quality, and impacts to environmentally sensitive lands and natural resources.

    a. **Wildlife Management Sub-Zone.** The Wildlife Management Sub-Zone consists of areas managed by the United States Fish and Wildlife Service as part of the National Wildlife Refuge System, and lands within the Wildlife Management Area System administered by the NJDEP Division of Fish & Wildlife's Bureau of Land Management. These areas are part of a network of lands and waters for conservation, management, and where appropriate, restoration of fish, wildlife and plant resources and their habitats and permit compatible wildlife-dependent recreational uses.

2. **Conservation Zone.** The Conservation Zone consists of areas with significant agricultural lands interspersed with associated woodlands and environmental features that should be preserved when possible. The Conservation Zone is intended primarily for agricultural use and development, including ancillary and supporting uses and activities. Non-agricultural development activities will be limited in area and intensity due to infrastructure constraints and resource protection goals. Where non-agricultural development does occur it must be designed to ensure compatibility with agricultural uses.

b. **Conservation Zone–Environmentally Constrained Sub-Zone.** The Conservation Zone–Environmentally Constrained Sub-Zone consists of significant environmental features within the Conservation Zone that should be preserved and protected from non-agricultural development. Development activities will be limited and subject to stringent limitations on consumptive and depletive water use, degradation of water quality, and impacts to environmentally sensitive lands.

3. **Existing Community Zone.** The Existing Community Zone consists of areas of concentrated development representing existing communities. These areas tend to have limited environmental constraints due to previous development patterns, and may have existing infrastructure that can support additional development and/or redevelopment. Where served by adequate supporting infrastructure, lands within the Existing Community Zone are suited to higher densities and intensities of development (see Section C, below) than other Zones.

   a. **Existing Community Zone–Environmentally Constrained Sub-Zone.** The Existing Community Zone–Environmentally Constrained Sub-Zone consists of significant contiguous critical habitat, steep slopes and forested lands within the Existing Community Zone that should be protected from further fragmentation. They serve as regional habitat "stepping stones" to larger contiguous critical habitat and forested areas. As such, they are not appropriate for significant development, and are best served by land preservation and protection. Development is subject to stringent limitations on consumptive and depletive water use, degradation of water quality, and impacts to environmentally sensitive lands.

B. LAND USES

The intents and purposes for each municipal land use category or zoning district, as set forth by the underlying Land Use Plan, are herewith amended to recognize and give priority to the intents and purposes listed above for the Highlands Zones and Sub-Zones. As to land use classifications (e.g., single- or multi-family residential, commercial, industrial) and specific permitted land uses, a thorough review and comparison between municipal and Highlands Zones and Sub-Zones must be undertaken to assess compatibility and to determine whether zoning amendments (pertinent to non-exempt development) are necessary to achieve consistency. Until such time as that examination is complete, permitted uses shall remain in effect for non-exempt development, with the significant caveat that each is subject to compliance with: a) all resource constraints (discussed at length in the Conservation Plan Element); b) all applicable provisions of both the NJDEP Highlands Water Protection and Planning Act Rules (N.J.A.C. 7:38) and the New Jersey Department of Agriculture (NJDA) Agricultural Development in the Highlands Rules (N.J.A.C. 2:92); and c) the density and intensity requirements set forth in the section that follows (see Section C, Density and Intensity of Development).

Specific immediate changes to permitted uses will include the following, each pending the adoption of implementing ordinance provisions approved by the Highlands Council:

1. ***Agricultural Resource Area.***

    a. Upon adoption of the appropriate regulatory provisions, permitted principal uses for any lands defined and delineated as part of the "Agricultural Resource Area" (as defined and delineated in the Agriculture Retention/Farmland Preservation Plan of this Highlands Element) shall include agricultural and horticultural uses (at minimum, as defined by the Highlands Act); permitted accessory uses to such agricultural and horticultural uses shall include ancillary, incidental and/or otherwise related supporting uses and the accessory structures devoted to such uses.

    b. Upon adoption of a Cluster Development Ordinance, the permitted principal residential use for any zoning district, or portion of any zoning district, which is located within the "Agricultural Resource Area" and which otherwise permits detached single-family residential development as a principal use, shall be restricted to residential cluster development wherever the minimum thresholds (e.g., lot size) for residential cluster development pursuant to the Cluster Development Ordinance can be satisfied (see Section D). Any lawfully existing or approved single-family residential development in the Agricultural Resource Area as of the date of adoption of the implementing Ordinances, if permitted by the underlying municipal Zoning Ordinance, shall remain a permitted use.

2. ***Carbonate Rock Area.*** Upon adoption of the appropriate regulatory provisions, the following principal and/or accessory uses and/or structures, where otherwise permitted by the municipal ordinance, shall be explicitly prohibited from any portion of the Highlands Area designated a "Carbonate Rock Area" (as defined and delineated in the Conservation Plan Element) or from any lands identified as draining into a designated Carbonate Rock Area: solid waste landfills, hazardous waste storage and disposal facilities, hazardous materials storage and handling facilities, and underground storage tanks.

3. ***Prime Ground Water Recharge Area.*** Upon adoption of the appropriate regulatory provisions, any principal and/or accessory use or structure related or devoted to such use, which is designated as a Major Potential Contaminant Source (PCS) by the Highlands Council (see Appendices A and C), where otherwise permitted by the municipal ordinance, shall be expressly prohibited from any portion of the Highlands Area delineated as a "Prime Ground Water Recharge Area" (as defined and delineated in the Conservation Plan Element).

4. ***Wellhead Protection Area (Tier 1).*** Upon adoption of the appropriate regulatory provisions, any principal and/or accessory use or structure related or devoted to such use, which is listed as a Major or Minor Potential Contaminant Source (PCS) or

which is designated by the Highlands Council as a potential source of pathogenic contaminants (see Appendices A, B and C), where otherwise permitted by the municipal ordinance, shall be expressly prohibited from any portion of the Highlands Area delineated as a "Tier 1 Wellhead Protection Area" (as defined and delineated in the Conservation Plan Element).

5. ***Wellhead Protection Area (Tier 2).*** Upon adoption of the appropriate regulatory provisions, any principal and/or accessory use or structure related or devoted to such use, which is designated as a Major Potential Contaminant Source (PCS) by the Highlands Council (see Appendices A and C) where otherwise permitted by the municipal ordinance, shall be expressly prohibited from any portion of the Highlands Area delineated as a "Tier 2 Wellhead Protection Area" (as defined and delineated in the Conservation Plan Element).

6. ***Highlands Special Environmental Zone.*** Upon adoption of the appropriate regulatory provisions, the permitted principal and accessory uses (and any structures related or devoted to such uses) applicable to any land falling within a designated "Highlands Special Environmental Zone" (as defined and delineated in the Land Preservation & Land Stewardship Plan Element), shall be modified such that they remain valid only in conjunction with a waiver permitting such use from the Highlands Council.

C. DENSITY AND INTENSITY OF DEVELOPMENT

The physical potential for development and/or redevelopment in each Highlands Zone and Sub-Zone of the Township Highlands Area is limited by existing natural features, resource protection priorities, and the capacity of the land and available infrastructure to support it. This section sets forth a capacity-based planning framework intended to ensure that future development and redevelopment do not exceed carrying capacity.

To the extent that the existing development density and intensity standards of the underlying zone districts (as defined and applied under the existing Land Use Plan and Zoning Ordinance) are consistent with the parameters of this section, they shall remain in effect. Where any density or intensity goals of the existing Land Use Plan are inconsistent with these limits, they are herewith modified with respect to the Highlands Area, to the extent necessary to conform to the Highlands RMP. For purposes of these provisions, density of development standards refer to the requirements of the underlying Zoning Ordinance that regulate the permitted number of dwelling units per acre of land, whether specifically defined as density standards or set forth as minimum lot size requirements for application to specific zoning districts. Intensity of development standards refer to those requirements used to define the relationship between the permitted extent, form and location of development of a lot, to the size, shape, and configuration of the lot on which it is situated (e.g., floor area ratio, building coverage, building height, yard setbacks, number of stories).

In the context herein, modifications to the underlying density or intensity of development standards will occur only to the extent that existing standards conflict with provisions of the Highlands Act, NJDEP Preservation Area Rules, or RMP, in particular those concerning water availability or available septic system yield. These modifications shall not apply to lawfully existing or approved development in the Highlands Area at the time of adoption of the ordinances that effectuate such provisions. They shall apply, however, if modifications or improvements to such existing development result in an increase in demand for water availability or septic system yield (excluding any increase directly attributed to exercise of a Highlands Act exemption).

Permitted densities and intensities of development shall comport with the provisions of the Highlands RMP, Highlands Council Technical Reports and all data related thereto, and the applicable provisions of the Preservation Area Rules adopted by the NJDEP (N.J.A.C. 7:38). As provided therein, the framework for setting development density/intensity guidelines relies primarily on water and wastewater capacity analyses, with natural resource constraints to be applied largely on a project-specific basis at the development review level.

Permitted density and intensity allowances for the Highlands Area must also reflect municipal intents with respect to growth and development of the community. A comprehensive analysis will be required as follow-up to adoption of the Highlands Element, to determine specific density and intensity allowances for future non-exempt development within the Highlands Area. The Board will, with the assistance of its professionals, complete this analysis to determine: 1) the capacity for future growth and development of the Highlands Area (based on the RMP, Technical Reports, NJDEP Rules); 2) the extent to which such growth may be appropriate within the relevant portions of the community; and 3) the specific allocation of such growth and development over the Highlands Zones and Sub-Zones. (This analysis will take place with assistance from the Highlands Council after the Borough/Township/Town has achieved Basic Plan Conformance.)

Until such time as the full analysis can be completed, applications for development within the Highlands Area require reviews for consistency on a project-by-project basis. The major criteria for assessing the proposed density/intensity of development include the following:

1. **Base Maps/Data.** Base data regarding water availability and wastewater treatment capacity appear in the technical information provided in the Conservation Plan and Utility Services Plan Elements, which includes associated mapping identified in the Highlands ERI. These include, respectively, the Township Highlands Area: "Net Water Availability Map" (see Exhibit O), "Public Community Water Systems Map" (see Exhibit S), and "Highlands Domestic Sewerage Facilities Map" (see Exhibit T). All are herewith adopted and incorporated as a component of the Highlands Element.

2. **Water Availability.** As provided under Conservation Plan Element Section G, Water Resources Availability.

3. **Public Water Supply and Wastewater Utilities.** Where properties are served by existing water and wastewater utility infrastructure having sufficient available

capacity, the density and intensity of new development shall be consistent with the requirements of existing zoning.

4. **Public Water Supply Utilities – Key Provisions**

   a. **Preservation Area.** New, expanded, or extended public water systems are prohibited unless approved through issuance of either a Highlands Applicability Determination indicating that a project is exempt from the Highlands Act, or a Highlands Preservation Area Approval with waiver pursuant to N.J.A.C. 7:38.

   b. **Planning Area – Protection Zone, Conservation Zone, and Environmentally-Constrained Sub-Zones.** New, expanded, or extended public water systems are permitted only where approved by the Highlands Council.

   ~~c. **Planning Area – Existing Community Zone** (excluding Environmentally-Constrained Sub-Zone). Given the small size and built-out nature of the two areas of Existing Community Zone within Bethlehem Township eExpansion or creation of public water systems should not be is permitted except to address public health and safety.~~

5. **Wastewater Utilities – Key Provisions**

   a. **Preservation Area.** New, expanded or extended wastewater collection and treatment systems and community on-site treatment facilities are prohibited unless approved through issuance of either a Highlands Applicability Determination indicating that a project is exempt from the Highlands Act, or a Highlands Preservation Area Approval with waiver pursuant to N.J.A.C. 7:38.

   b. **Planning Area – Protection Zone, Conservation Zone, and Environmentally-Constrained Sub-Zones.** New, expanded or extended wastewater collection and treatment systems and community on-site treatment facilities are permitted only where approved by the Highlands Council.

   ~~c. **Planning Area – Existing Community Zone** (excluding Environmentally-Constrained Sub-Zone). Given the small size and built-out nature of the two areas of Existing Community Zone within Bethlehem Township expansion or creation of wastewater collection and treatment systems and community on-site treatment facilities are should not be permitted except to address public health and safety. Such systems and facilities should they become necessary for health and safety reasons will be subject to all conditions of approval associated with amended Areawide Water Quality Management Plans, as authorized by the NJDEP in coordination with the Highlands Council and Bethlehem Township.~~

6. **Septic Systems – Key Provisions**

   a. **Major Highlands Development, Preservation Area.** Development proposals involving the installation of one or more new individual subsurface disposal systems (or aggregate of equivalent disposal units as provided at N.J.A.C. 7:38)

shall meet NJDEP septic system density requirements as set forth at N.J.A.C. 7:38. In the case of Cluster Development, the septic system density for the developed portion of the site shall be based on a nitrate dilution target not to exceed 10 mg/L, determined by application of the modified Trela-Douglas Nitrate Dilution Model, as provided below.

b. **Non-Major Highlands Development, Preservation Area; and all Development, Planning Area.**

i. **Nitrate Targets.** The following nitrate dilution targets shall apply to the calculation of septic system yields:

- **Existing Community Zone (and Sub-Zones)** – 2 mg/L, maximum
- **Conservation Zone (and Sub-Zones) –** 1.87 mg/L, maximum
- **Protection Zone (and Sub-Zones)** – 0.72 mg/L, maximum

ii. **Cluster Development Nitrate Targets.** New residential cluster development (see Section D) shall have a gross septic system density (for all parcels involved in the development proposal) based on the nitrate dilution target applicable to the Highlands Zone (6b.i, above). The septic system density for the developed portion of the site, however, shall be based on a nitrate dilution target not to exceed 10 mg/L.

iii. **Septic System Density/Yield.** Septic system densities will vary not only on the basis of nitrate targets for each Zone (as above), but by HUC14 subwatershed, on the basis of drought ground water recharge. Septic system yields will further vary based on the amount of undeveloped and underdeveloped lands where septic system densities can be applied.

iv. **Nitrate Dilution Model.** Development proposals involving any need for new or increased septic system capacity shall demonstrate compliance with the nitrate targets in 6b.i and, where applicable, 6b.ii above. Such compliance shall be determined by application of the modified Trela-Douglas nitrate dilution model (http://www.highlands.state.nj.us/njhighlands/planconformance) used by NJDEP, but with recharge based on drought conditions. This model provides the minimum acreage required per septic system, to ensure that recharge is sufficient to achieve a specified nitrate dilution target. The following factors, representative of a one-family household, or wastewater generation of 300 gallons per day, shall be used as inputs to the model: a household size of 4 persons, average nitrate loading of 10 pounds per person per year, and drought ground water recharge for the HUC14 subwatershed as dilution.

v. **Application of Results.** The septic system yield for a proposed project shall be determined by dividing the total project area by the minimum acreage required per septic system, as determined by this model. For non-residential development, the resulting acreage is that necessary to support every 300 gallons of daily wastewater flow generated by the proposed non-residential use (see conversion factors below). Where a project site is located within more than one HUC14 subwatershed, septic system yields shall be computed for and applied to each portion of the site, accordingly.

This approach shall be applied on a project-specific basis until such time as the Septic System Yield is allocated among parcels through municipal zoning; the allocation of yield shall supersede this method. Regardless of whether a project-specific yield analysis or an allocation of Septic System Yield by zoning applies, the subwatershed yield shall in no case be exceeded; an increase in any one portion of a HUC14 subwatershed must be offset by an equivalent decrease elsewhere within the same subwatershed.

- For purposes of these analyses, the RMP septic system yield rules apply (see the Highlands Council *Regional Build-Out Technical Report*). For residential uses, the calculation assumes wastewater generation of 300 gallons per household per day. The RMP equivalent dwelling unit (EDU) value for non-residential septic uses equates to 2,400 square feet of Office/Commercial space and 18,182 square feet of Industrial space.

- For detached single-family residential development, where the underlying density allowances of the Master Plan and zoning regulations are higher than those resulting from the nitrate dilution analysis as provided herein, septic system yields and resultant system density (typically denoted as minimum average acreage per septic system) may be equated to maximum permitted dwelling unit yield and minimum average lot size. Alternatively, the underlying allowances may be applied over a portion of the project area, to the point at which the calculated septic system yield (by HUC14) is reached, with the remainder of the site left undeveloped. If a Highlands Council-approved Cluster Development Ordinance (see Section D, following) has been adopted, its provisions shall apply and may take precedence in making this determination, if so provided therein.

- For all other forms of development, projects shall be evaluated on the basis of overall wastewater disposal need and the capacity of the calculated septic system yield to support it.

D. **CLUSTER DEVELOPMENT**

In furtherance of the goals and objectives of the Highlands Element, and of the State Development and Redevelopment Plan (SDRP), this Land Use Plan embraces cluster and conservation design development. These concepts allow flexibility in the design and lay-out of development projects, providing opportunity for new construction while addressing other priorities, such as: protecting environmentally sensitive areas, preserving large contiguous areas of open space and agricultural land, and enabling the continuation of existing agricultural and/or horticultural land uses.

Specifically, this Plan provides for cluster development in the Agricultural Resource Area (as defined and delineated in the Agriculture Retention/Farmland Preservation Plan Element of this Highlands Element), wherein residential development shall be concentrated on a limited portion of a much larger tract, with the remaining land permanently deed-restricted for agriculture (as a priority), conservation or open space and either held in common by the homeowners or dedicated to the municipality (or other appropriate entity as required in the Cluster Development Ordinance).

To effectuate this component of the Land Use Plan, an RMP-consistent, Highlands Council-approved Cluster Development Ordinance must be adopted setting forth provisions applicable to such development, including but not limited to: minimum tract size, density and intensity allowances, applicable bulk standards, developed- and preserved-area allocations, and site design parameters, such as the use of smart growth principles and Low Impact Development practices (see Section K). Standards must also regulate conservation easements to ensure that they provide adequate resource protection, monitoring, and enforcement. These will include requirements for Farm Conservation Plans where preserved areas are dedicated to agriculture (see the Agriculture Retention/Farmland Preservation Element). The Highlands Council Cluster/Conservation Design Development Guidelines will assist in development of these regulatory provisions.

As follow-up to adoption of the Highlands Element, the Board will examine the opportunities for cluster development on a municipal-wide basis using a holistic planning approach. The Board will seek appropriate locations based on water and wastewater treatment capacity (as discussed at Section C, above), natural resource constraints, proximity to transportation and other support infrastructure, suitability by Highlands Zone and Sub-Zone, potential to enhance community character, and efforts to achieve center-based development while preserving the environs. The proposed Cluster Development Ordinance must be designed to maximize environmental protection and agricultural conservation while minimizing the overall number of isolated cluster developments in keeping with all other considerations. As part of this effort, the Board shall consider allowances for non-contiguous cluster development, wherein the development potential of scattered parcels may be transferred to one or a minimum number of individual cluster developments, each on the most suitable land in the most suitable location.

The Cluster Development Ordinance will incorporate all applicable provisions of the Highlands RMP, including the density provisions discussed at Section C, above. Upon adoption of a Cluster Development Ordinance, the permitted principal residential use for any zoning district, or portion of any zoning district, which is located within the "Agricultural Resource Area" and which otherwise permits residential development as a principal use, shall immediately be restricted to residential cluster development wherever the minimum thresholds for residential cluster development pursuant to the Cluster Development Ordinance can be satisfied. Any lawfully existing or approved residential development in the Agricultural Resource Area as of the date of adoption of the implementing Ordinances, if permitted by the underlying municipal Zoning Ordinance, shall remain a permitted use.

It is the long-term intent to require that where residential units of any kind are permitted in conjunction with, or as an accessory to any use in the Agricultural Resource Area, site development shall be "clustered" in accordance with conservation design requirements. This goal will be addressed through future supplements to the Cluster Development Ordinance or other land use ordinances, as appropriate.

E. **LAND USE INVENTORY**

Planning for the future of the Highlands Area requires a clear understanding and assessment of existing land uses and development within the Highlands Area, in the areas surrounding the Highlands Area, and throughout the municipality. The Township Land Use Inventory may be found on page ELU-3 of the Bethlehem Township Master Plan prepared by Coppola and Coppola, dated September 1984 is representative of land use and development conditions within the municipality. The Land Use Inventory requires an update to accurately represent existing land uses.

F. **REDEVELOPMENT PLANNING**

The Planning Board will examine the potential for redevelopment opportunities within the Highlands Area. The term "redevelopment" is used herein to refer to reconstruction or re-use of previously developed and underutilized properties (which may include Preservation Area sites that have 70% or greater of impervious surface, as well as other redevelopment and "grayfield" sites in the Planning Area), and to the rehabilitation and re-use of "brownfield" sites (identified as such by NJDEP where in the Preservation Area). Unless specifically stated otherwise, neither the term "redevelopment," nor the phrase "in need of redevelopment" is used herein to invoke the definitions, processes, powers or any other facet of the provisions of the New Jersey Local Redevelopment and Housing Law (N.J.S.A. 40A:12A-1 et seq.).

Rather, Highlands Area redevelopment planning refers to the identification of previously developed areas that: a) are suitable for re-use and/or reconstruction, or reversion to "greenfields," such as parklands, conservation areas, or open space; and/or b) may be

eligible for designation by the Highlands Council as Highlands Redevelopment Areas. Highlands Redevelopment Areas are typically characterized by ready access to or potential for water and wastewater utility infrastructure (and available or potential capacities); existing transportation infrastructure and/or services with links to viable transportation networks; proximity to supporting community facilities and services; and suitability for increased development intensity in keeping with smart growth planning principles. Where brownfields are involved in the Preservation Area, NJDEP identification of the brownfield site is a necessary step prior to Highlands Council designation of a Highlands Redevelopment Area. In the Preservation Area, such applications must be submitted to NJDEP for a Highlands Preservation Area Approval (HPAA) with Redevelopment Waiver.

It is the intent of this Plan to encourage redevelopment where appropriate within the Highlands Area, to ensure optimal and efficient use of land. By maximizing the use of previously developed areas and areas in need of environmental clean-up or other improvements, the municipality may provide for desirable new development (or new green spaces), while protecting lands that contain sensitive environmental features and important Highlands resources. This approach is intended to guide development toward the most suitable locations in the municipality, to encourage environmental clean-up where needed, and to maximize the use of existing infrastructure to meet future needs.

Redevelopment projects and activities that conform to density/intensity allowances and meet all other requirements of the applicable land use ordinances (specifically including those developed for the Highlands Area and the Highlands Preservation Area Rules at N.J.A.C. 7:38), do not require Highlands Redevelopment Area designation and may proceed as of right in accordance with all municipal procedural requirements. Any municipally-sponsored redevelopment project proposed pursuant to N.J.S.A. 40A:12A, while perhaps also requiring Highlands Council Redevelopment Area designation, must be advanced in accordance with all applicable statutory requirements, including preparation and adoption by the Governing Body of a Redevelopment Plan. The Planning Board, in making any Highlands Area determination of "area in need of redevelopment" pursuant to N.J.S.A. 40A:12A, will incorporate the considerations listed below for Highlands Redevelopment Area designations in evaluating the applicable criteria under N.J.S.A. 40A:12A-5.

1. **Definitions.**

    a. A "brownfield" site consists of a commercial or industrial site that is currently vacant or underutilized and on which there has been or is suspected to have been, a contaminant discharge.

    b. A "grayfield" site consists of a site supported by existing infrastructure that contains an industrial or commercial facility (not excluding one having a residential component) exhibiting signs of abandonment or underutilization, but without evidence or expectation of contamination.

c. A "redevelopment project" or "redevelopment activity" refers to the re-use, reconstruction, or conversion to alternate use, of a brownfield site, a grayfield site, or a previously developed site that is currently vacant or underutilized in the Highlands Area. Redevelopment projects and activities may include but are not limited to: removal, reconstruction, or adaptive reuse of existing buildings and other structures; construction of new buildings and other structures; and conversion/restoration of a site or portions of a site for open space, recreation or conservation purposes of any kind.

d. A "Highlands Redevelopment Area" consists of a property or group of properties designated as such by the Highlands Council, and which includes one or more of the following: a) a brownfield site; b) a grayfield site; and c) any previously developed site in the Highlands Area. A Highlands Redevelopment Area may include the intervening or surrounding lands which are significantly affected by or are necessary to support such sites, and will be subject to a Highlands Council-approved redevelopment plan setting forth the full scope and details of the proposed redevelopment project(s) and/or activities.

2. **Redevelopment Projects and Activities.**

a. Redevelopment projects and activities that comply with all applicable land use ordinances (specifically including those developed for the Highlands Area) are encouraged in all Areas, Zones, and Subzones of the Highlands Area. Such projects and activities are also subject to all applicable county, state, and federal regulatory requirements.

b. Redevelopment projects and activities involving conversion to greenfields are particularly encouraged in environmentally constrained areas, where compliance with Highlands Area ordinance provisions for new development may not be feasible.

3. **Highlands Redevelopment Areas.** In assessing the potential for Highlands Redevelopment Area designations, the Planning Board incorporates the following relevant considerations:

a. Highlands Redevelopment Area designation in the Preservation Area is confined to: a) sites having 70% or greater impervious coverage, and/or b) sites designated as "Highlands brownfields" in accordance with NJDEP Preservation Area Rules (at N.J.A.C. 7:38-6.6). In addition to Highlands Council approval, a waiver is required from the NJDEP in conjunction with a Highlands Preservation Area Approval (HPAA).

b. Highlands Redevelopment Area designation within the Planning Area will require Highlands Council approval of a detailed redevelopment plan. This plan will supersede all ordinances otherwise applicable to the Highlands Redevelopment Area, including those developed specifically for the Township

Highlands Area, and will fully regulate the use and development of lands within the Highlands Redevelopment Area.

c. Highlands Redevelopment Area designation will only be considered where lands are particularly suited to the proposed redevelopment plan, by virtue of a preponderance of existing characteristics such as, but not limited to: appropriate community location; availability of water and wastewater utility infrastructure and capacity; access to transit and/or other suitable transportation systems and networks; suitability for increased land use intensity or conversion to greenfields, as applicable; extensive coverage by impervious surfaces; proximity to community facilities and services; potential to embody and/or further smart growth principles; opportunity to protect resources; and potential to contribute to a sustainable local and/or regional economy.

d. Any redevelopment project or activity permitted under the auspices of Highlands Redevelopment Area redevelopment plan must be designed and developed in accordance with smart growth and Low Impact Development principles (see Section K).

e. Identification of opportunities for redevelopment projects and activities that are potentially suitable for Highlands Redevelopment Area designation in the Highlands Area should be assisted by the Highlands Council Redevelopment and Infill Analysis Tool. This review should also include any sites depicted in Exhibit C, "Highlands Contaminated Sites Inventory". Information on Highlands Contaminated Site Inventories is available in the Highlands Council *Regional Land Use Conditions and Smart Design Guidelines Technical Report*.

HOUSING PLAN

The Township of Bethlehem "Third Round Housing Element & Fair Share Plan" was prepared by Clarke Caton Hintz and adopted by the Township Planning Board on May 17, 2010. The language provided herein is incorporated as a supplement to the Township Housing Element and Fair Share Plan.

The overriding policy of the Housing Plan is to ensure provision of a variety of housing opportunities sufficient to address the needs of the community, including the need for affordable housing, while at the same time respecting the density limits of the Highlands Element Land Use Plan, the resource constraints applicable to the Highlands Area, and the numerous other policies, goals and objectives set forth by the Borough/Township/Town Master Plan. The Housing Plan furthers MLUL purposes of zoning (at N.J.S.A. 40:55D-2, specifically 2a., 2e., 2g., 2l.) and fulfills the requirements of the New Jersey Fair Housing Act (N.J.S.A. 52:27D-301 et seq.) which in keeping with New Jersey Supreme Court doctrine, as expressed in the "Mount Laurel" decisions, recognizes that every municipality in a "growth area" has a constitutional obligation to provide, through its land use regulations, a realistic opportunity for provision of a fair share of its region's present and prospective needs for housing for low- and moderate-income families.

A. GOALS AND OBJECTIVES

In furtherance of Borough/Township/Town efforts to ensure sound planning, this Plan incorporates the following goals and objectives with respect to future housing in the Highlands Area:

1. To the extent feasible, the zone plan will guide anticipated new residential development into compact, center-based projects (optional addition: incorporating a mix of housing types and/or mixed residential/commercial uses).

2. To provide a realistic opportunity for the provision of the municipal share of the region's present and prospective needs for housing for low- and moderate-income families.

3. To the maximum extent feasible, affordable housing units shall be incorporated into any new residential construction that occurs within the Highlands Area including any mixed use, redevelopment, and/or adaptive reuse projects.

4. To preserve and monitor existing stocks of affordable housing.

5. To reduce long term housing costs through:

    a. The promotion of green building and energy efficient technology in the rehabilitation, redevelopment and development of housing. Recent

innovations in building practices and development regulations reflect significant energy efficiency measures, and therefore cost reductions, through building materials, energy efficient appliances, water conservation measures, innovative and alternative technologies that support conservation practices, and common sense practices such as recycling and re-use.

b. The promotion of the use of sustainable site design, efficient water management, energy efficient technologies, green building materials and equipment, and retrofitting for efficiencies.

c. Maximizing the efficient use of existing infrastructure, through such means as redevelopment, infill and adaptive reuse.

6. To use a smart growth approach to achieving housing needs:

a. Use land more efficiently to engender economically vibrant communities, complete with jobs, houses, shopping, recreation, entertainment and multiple modes of transportation.

b. Support a diverse mix of housing that offers a wide range of choice in terms of value, type and location. In addition, seek quality housing design that provides adequate light, air, and open space.

c. Target housing to areas with existing higher densities and without environmental constraints, within walking distance of schools, employment, services, transit and community facilities with sufficient capacity to support them.

CONSERVATION PLAN

The basis for the Conservation Plan Element is the Highlands Area Environmental Resource Inventory (ERI), which is herewith adopted and incorporated in its entirety as an integral component of the Master Plan. The ERI (which will be further supplemented through the Plan Conformance process) was developed based on the vast store of resource information, technical data, and scientific analyses that provide foundation for the Highlands Regional Master Plan, including all Highlands Technical Reports and guidance documents. The ERI identifies, categorizes and delineates the wide array of natural resources and resource areas existing in the Township Highlands Area, and serves as a preeminent guidance document in Highlands Area community planning. In keeping with the general goals of the Highlands Element, it is the overarching policy of the Conservation Plan to safeguard the natural resources of the Township Highlands Area, ensuring sustainable use of renewable resources, protecting environmentally critical areas, and preserving significant natural areas. This policy directly advances the intents and purposes of the Highlands Act and is consistent with and furthers a number of the specific purposes of zoning as set forth under the MLUL (N.J.S.A 40:55D-2).

A. FOREST RESOURCES

Highlands Area Forest Resource delineations appear in the ERI maps: "Forest Resource Area," (see Exhibit C) "Total Forest Area," (see Exhibit D) "Forest Subwatersheds." (see Exhibit E)

This Plan seeks to balance the need to protect forest resources, biodiversity and water resources with the economic use and continued sustainable management of forests. It encourages active stewardship of forest resources in order to optimize the benefits and services forests provide such as clean air, clean water, soil protection, recreation area, wildlife habitat, and availability of forest products. The below-listed goals and objectives will guide the regulation and management of Township Highlands Area Forest Resources.

1. **Preservation Area**

    a. To protect and preserve extensive and, to the maximum extent possible, contiguous forests.

    b. To limit development in the Forest Resource Area.

    c. Where development is permitted in the Forest Resource Area, to avoid deforestation and require submission of and compliance with a Forest Mitigation Plan.

    d. To prohibit clear-cutting in the Forest Resource Area except in accordance with a Forest Management Plan approved by the State Forester.

e. To require compliance with NJDEP Preservation Area Rules (N.J.A.C. 7:38) regarding forest protection in the case of all "major developments," as defined therein.

2. **Planning Area**

a. ***Protection and Conservation Zones.*** To limit development of High- and Moderate Integrity Forest Subwatersheds, while requiring for all Forest Resource Areas and all Forest Subwatersheds, incorporation of Low Impact Development Best Management Practices (see Section K) and adherence to Forest Mitigation Plans.

b. ***Existing Community Zone.*** To limit deforestation in connection with development in the Forest Resource Area and in High Integrity Forest Subwatersheds to that which will not diminish forest integrity, while requiring incorporation of Low Impact Development Best Management Practices and adherence to Forest Mitigation Plans.

3. **Planning & Preservation Areas**

a. To ensure that site-specific forest resources are identified through project review and that those to remain are protected both during the construction of an approved development project and by conservation easement post-construction.

b. To prohibit clear-cutting within any portion of the Total Forest Area except pursuant to a Forest Management Plan approved by the State Forester.

c. To permit forestry activities within a Forest Resource Area or within the forested lands within a High Integrity Forest Subwatershed only in compliance with an approved Forest Management Plan.

d. To maintain forest cover in the natural and built environment of the Township Highlands Area to the maximum extent possible.

B. HIGHLANDS OPEN WATERS AND RIPARIAN AREAS

Highlands Open Waters and Riparian Areas within the Highlands Area are mapped in the ERI and entitled "Highlands Open Waters", (see Exhibit F) "Highlands Riparian Areas" (see Exhibit G), "Watershed Value," (see Exhibit H) and "Riparian Integrity." (see Exhibit I) This Plan recognizes and incorporates the descriptions, definitions, delineations, and values regarding Highlands Open Waters and Riparian Areas as discussed in the ERI.

Highlands Open Waters are defined by the Highlands Act as all springs, streams including intermittent streams, wetlands, and bodies of surface water, whether natural or artificial (excluding swimming pools), located wholly or partially within the boundaries of the Highlands Region. The Highlands Act and the Highlands RMP establish the importance of providing protective buffers adjacent to Highlands Open Waters. Key functional values that

such buffers provide or contribute to, include but are not limited to habitat, stormwater and flood water retention and filtration, water quality protection, temperature moderation, aquatic ecosystem integrity and channel integrity. Highlands Riparian Areas are the lands associated with and bordering Highlands Open Waters, but often extending beyond the Highlands Open Water buffers, that provide critical hydrologic, ecologic and pollutant attenuation functions for the Open Waters.

The below-listed goals and objectives will guide the regulation and management of Highlands Open Waters and Riparian Areas in the Township Highlands Area.

1. To protect, restore and enhance Highlands Open Waters and Riparian Areas.

2. To require protective buffers adjacent to Highlands Open Waters of sufficient width and composition to protect the integrity of the water resource from impairment due to proximate land uses and/or development activities. Minimum standards for such buffers should be consistent with those of the NJDEP and the RMP.

3. To limit disturbances within established Highlands Open Waters buffer areas to previously disturbed areas, only, with jurisdiction over any waivers from this restriction left to the Highlands Council and/or the NJDEP, as applicable. Approval of buffer disturbances in previously disturbed areas should occur only where an applicant can satisfactorily demonstrate that: a) the encroachment cannot be avoided, b) the disturbance is the minimum feasible, and c) any adverse impacts will be mitigated to result in no net loss of functional value (in accordance with the functional value assessment methodology provided in the ERI).

4. To seek opportunities to restore the functional value of Highlands Open Waters buffers where existing development or land uses have reduced or impaired their quality.

5. To seek opportunities to enhance Highlands Open Waters buffers by improving functional values while ensuring no net loss (see ERI assessment methodology).

6. To develop a Stream Corridor Protection and Restoration Management Plan that identifies: a) substantially impaired Highlands Open Waters buffer areas in the municipality; b) opportunities for mitigation, restoration, and stabilization of such impaired buffer areas; c) stream corridor areas that require buffers in excess of minimum standards and the characteristics necessary to provide optimum functional value; and d) for Planning Area Category 2 surface waters, only, areas for which scientific analysis indicates that a lesser or alternative buffer is sufficient to maintain or improve protections, while at the same time, ensuring no net loss in functional value (see ERI assessment methodology).

7. To prohibit modifications to Riparian Areas in the Protection Zone except where a waiver is approved by the NJDEP or the Highlands Council.

8. To limit disturbance of existing natural vegetation or increases in impervious area within High and Moderate Integrity Riparian Areas in all other Zones and Sub-Zones to the minimum feasible in areas beyond Highlands Open Waters buffer requirements; protect the water quality of adjacent Highlands Open Waters; and maintain or restore habitat value of the Riparian Area.

9. To restrict modifications to Riparian Areas in Existing Community and Conservation Zones, other than those addressed by Objective 8, above, that would alter or be detrimental to the water quality and habitat value of a Riparian Area.

10. To require use of Low Impact Development Best Management Practices (see Section K) for any development activity proposed within a Riparian Area to minimize both alteration of natural vegetation and increase in impervious area and to provide for mitigation through restoration of impaired Riparian Areas in the same HUC14 subwatershed.

C. STEEP SLOPES

Steep slopes within the Highlands Area appear in the ERI mapping entitled "Steep Slope Protection Areas." (see Exhibit J) This Plan recognizes and incorporates the descriptions, definitions, delineations, and values regarding steep slopes as discussed in the ERI.

The Township is particularly concerned with the potential negative impacts of land development practices that do not properly consider the constraints and challenges presented by steep slope areas. As discussed in the ERI, disturbance of such areas can trigger erosion and sedimentation, resulting in the loss of topsoil. Silting of wetlands, lakes, ponds and streams damages and degrades wetland and aquatic habitats, especially trout streams, which require rigorous water quality protections. Steep slope disturbance can also result in the loss of habitat quality, degradation of surface water quality, silting of wetlands, and alteration of drainage patterns. These processes, when severe, can result in land slumping and landslides that can damage both developed property and ecosystems. The severity and extent of slopes, soil characteristics, and land cover all affect the potential for damages from the disturbance of steep slopes.

Accordingly, the below-listed goals and objectives will guide the regulation and management of Township Highlands Area Steep Slope Protection Areas.

1. Maps and delineations of Steep Slope Protection Areas should be updated and improved as better information becomes available (i.e., through enhanced mapping anticipated to be made available from the Highlands Council) and/or as new areas are identified through project reviews pertaining to individual sites and properties.

2. Land disturbance within all Steep Slope Protection Areas should incorporate Low Impact Development (see Section K) techniques to minimize the extent of such disturbance and the potential negative impacts resulting from it.

3. Land disturbance within areas of Severely and Moderately Constrained Slopes should be prohibited altogether, with exceptions only for linear development meeting the requirements of NJDEP Preservation Area Rules (at N.J.A.C. 7:38-3.8(c)1-4).

D. CRITICAL HABITAT

Critical Habitat within the Highlands Area appears in the ERI mappings entitled "Critical Wildlife Habitat," (see Exhibit K), "Significant Natural Areas," (see Exhibit L), and "Vernal Pools" (see Exhibit M). This Plan recognizes and incorporates the descriptions, definitions, delineations and values regarding Critical Habitat as discussed in the ERI.

Biodiversity is the variety of plant species, animal species, and all other organisms found in a particular environment and is a critical indicator of ecological integrity. Habitat protection is critical to maintaining biodiversity including the many rare, threatened and endangered plant and animal species of the Highlands Region. There are three categories of Critical Habitat in the Highlands Region: 1) Critical Wildlife Habitat (habitat for rare, threatened or endangered animal species); 2) Significant Natural Areas (regionally significant ecological communities, including habitat for documented threatened and endangered plant species); and 3) vernal pools (confined, ephemeral wet depressions that support distinctive, and often endangered, species that are specially adapted to periodic extremes in water pool levels). Critical Wildlife Habitat and Significant Natural Areas are designated based on the presence of, and associated habitat required for, the survival and propagation of species of concern. Vernal pools shown in Exhibit O are those certified by the NJDEP. To protect the habitat requirements of vernal pool-breeding wildlife, the Highlands Council has determined that a terrestrial habitat buffer of 1,000 feet around vernal pools is required.

The below-listed goals and objectives will guide the regulation and management of Township Highlands Area Critical Habitat.

1. To prohibit the direct impact of new human development or expansion or increased intensity of existing development within Critical Habitat.

2. To promote the restoration and enhancement of impaired lands in Critical Habitat.

3. To develop and adopt a Habitat Conservation and Management Plan(s), including minimum performance standards and criteria as outlined below, for the protection, enhancement and restoration of lands within Critical Habitat.

    a. Require use of Low Impact Development Best Management Practices (see Section K) to, in this order: 1) avoid the disturbance of Critical Habitat, 2) minimize impacts to Critical Habitat, and 3) mitigate all adverse modification to Critical Habitat so that there is no net loss of habitat value. Habitat value is determined by quantity (e.g., acreage), quality (e.g., core forest vs. edge forest), type (e.g., scrub-shrub), and function (e.g., winter hibernacula for timber rattlesnakes). The mitigation requirement of no net loss of habitat value shall ensure that all four elements are accounted for and included in the mitigation

design. Mitigation must meet the habitat and life-cycle requirements of the specific impacted species.

b. Establish criteria for mitigation of disturbed Critical Habitat. Mitigation should be required for all adverse modification to Critical Habitat so that there is no net loss of habitat value.

c. Establish performance standards for the enhancement or restoration of historically disturbed Critical Habitat.

d. Provide a GIS or map-series Critical Habitat Overlay to identify Critical Habitat, that highlights:

   i. Habitat in need of protection from fragmentation and other anthropogenic impacts;

   ii. Habitat critical to maintaining wildlife and plant populations; and

   iii. Habitat that serves other essential ecosystem functions, including, but not limited to, carbon sequestration and ground water recharge.

e. Develop guidelines for habitat stewardship, including, but not limited to prevention of habitat fragmentation through open space preservation and corporate, non-profit, and community involvement in creating, protecting, and restoring habitat.

4. To require that applications for development affecting Critical Habitat be subject to the standards and criteria outlined in the applicable Habitat Conservation and Management Plan.

   a. Prohibit direct impacts from new development or expansion or increased intensity of existing development that will jeopardize the continued existence of, or result in the likelihood of the destruction or adverse modification of Critical Habitat, except as permitted through the issuance of a waiver from the Highlands Council or the NJDEP.

   b. Prohibit indirect impacts from activity that is off-site, adjacent to, or within Critical Habitat that will jeopardize the continued existence of, or result in the likelihood of the destruction or adverse modification of Critical Habitat, except as permitted through the issuance of a waiver from the Highlands Council or the NJDEP.

   c. Prohibit modification of a vernal pools protection buffer, except as permitted through the issuance of a waiver from the Highlands Council or the NJDEP.

   d. Prohibit modifications to the delineation of Critical Wildlife Habitat and Significant Natural Areas, except as permitted through the issuance of a waiver from the Highlands Council or the NJDEP.

E. **CARBONATE ROCK**

Carbonate Rock Areas within the Highlands Area appear in the ERI mapping entitled "Carbonate Rock Areas." (see Exhibit N).This Plan recognizes and incorporates the descriptions, definitions, delineations, and issues of concern regarding carbonate rock areas as discussed in the ERI.

Of particular concern to the Township, are the potential negative impacts of land development practices that do not properly consider the constraints and challenges presented by carbonate rock areas. As discussed in the ERI, dissolution of underlying carbonate rocks (such as limestone and dolomite) by surface water or ground water can cause surface depressions and the development of such features as sinkholes, sinking streams, enlarged bedrock fractures, caves and underground streams. Sinkholes function as funnels, directing surface water runoff into karst aquifers with little or no attenuation of any transported contaminants. Stormwater basins, septic system leaching fields, sewers, agricultural runoff, lawn runoff, underground pipelines, and soil disturbance may also contribute contaminants directly to ground water through karst features. Soils in sinkhole bottoms may be thin or non-existent. In addition to ground water concerns, karst areas can lead to public safety concerns. Sinkholes present a geologic hazard as they may undermine such infrastructure as stormwater basins, roads, sewer lines, septic systems, and natural gas lines.

Accordingly, the below-listed goals and objectives will guide the regulation and management of Township Highlands Area Carbonate Rock Areas.

1. To continuously update and improve maps and delineations of Carbonate Rock Areas as better information becomes available (i.e., through enhanced mapping technologies) and/or as new areas are identified through project reviews pertaining to individual sites and properties.

2. To develop maps identifying all lands that drain into established Carbonate Rock Areas, for easy reference by applicants, reviewing officials, and Land Use Boards. This will ensure that consideration is given to the protection of affected Carbonate Rock Areas (whether on- or off-site) during the course of development reviews.

3. To carefully examine land development applications for potential impacts to Carbonate Rock Areas, whether by direct disturbance, or by indirect means such as introduction of additional stormwater runoff.

    a. To require submission of any and all information, technical data, geotechnical studies and/or analyses that may be necessary to locate and determine the extent of affected carbonate rock features during the course of development reviews.

    b. To ensure that potential carbonate-rock-related hazards to public health or safety, to existing structures (including public infrastructure), and to ground or surface water quality are avoided, minimized or otherwise addressed by

incorporation of appropriate measures and/or design features into project plans prior to approval of such development applications. Preference should be given to nonstructural approaches, where feasible, such as avoiding carbonate rock features altogether, and ensuring that existing conditions relating to them (where satisfactory) are not modified.

4. To ensure that issues and concerns related to carbonate rock are similarly evaluated and addressed in the planning, design, construction and maintenance of public infrastructure projects, including those discussed in the Utilities Service and Transportation/Circulation Plan Elements of this Master Plan.

5. To prohibit, from Carbonate Rock Areas and from lands identified as draining into such areas, the construction or installation of new uses, structures or facilities that present an unacceptable risk of discharge, including but not limited to: solid waste landfills, hazardous waste storage and disposal facilities, hazardous materials storage and handling facilities, and underground storage tanks.

F. **[*RESERVED*]**

G. WATER RESOURCES AVAILABILITY

Highlands Area water availability is represented by the ERI mapping entitled, "Net Water Availability." (see Exhibit O) This Plan recognizes and incorporates the descriptions, definitions, analyses and issues of concern regarding water availability as discussed in the ERI. Based on the Low Flow Margin analytical method described in the ERI, the Township lies within two HUC14 subwatersheds having positive net water availability, and six HUC14's determined to be in deficit.

The availability of water for human use is a critical factor in determining the capacity for growth and continued economic vitality in the Township Highlands Area. The availability of water for ecological purposes is critical to sustaining the aquatic ecosystems of streams, ponds and lakes. Of particular concern to the Township is the potential for overuse of water to reduce base flows, impair ecological function and integrity, and reduce the reliability of potable water supplies that the municipality depends upon.

Accordingly, the below-listed goals and objectives will guide the regulation and management of Township Highlands Area water availability.

1. To protect, restore (if applicable) and enhance the availability of surface and ground water in the Township Highlands Area.

2. To ensure that increasing water demands do not exceed Net Water Availability or exacerbate existing deficits of subwatersheds.

3. To strictly limit consumptive and depletive water uses to the water availability in each HUC14 subwatershed.

4. To provide limited water availability (Conditional Water Availability) within a Current Deficit Area with appropriate standards regarding its use and rigorous requirements for mitigation, effective only until such time as a municipal Water Use and Conservation Management Plan has been developed and adopted.

5. Within Protection Zone and Conservation Zone subwatersheds, to give highest priority for the use of non-agricultural Net Water Availability or Conditional Water Availability addressing a documented existing or imminent threat to public health and safety from contaminated domestic and other on-site water supplies that is of sufficient scale to justify a public water supply and where no alternative is feasible that would sufficiently assure long-term protection of public health and safety. To assign secondary priority to the following:

    a. A designated Highlands Redevelopment Area;

    b. A cluster development that complies with the Cluster Development Ordinance; and

    c. Any project proposing affordable housing in excess of the obligation otherwise generated by it.

6. Within Existing Community Zone subwatersheds, to give highest priority for use of Net Water Availability or Conditional Water Availability to addressing a documented threat to public health and safety from contaminated water supplies. To assign secondary priority to the following:

    a. Designated TDR Receiving Zones;

    b. Infill development;

    c. Designated Highlands Redevelopment Areas;

    d. Projects proposing affordable housing in excess of the obligation otherwise generated by them; and

    e. New areas for development that meet all other requirements.

7. To encourage agricultural and horticultural enterprises located in Conservation Zone watersheds to minimize consumptive water uses through efficiency measures.

8. To require the use of water conservation, recycling and reuse methods (where appropriate) and devices for any redevelopment or development activity, including renovations to existing buildings, to minimize consumptive water use. This should include mandatory collection and use of stormwater to serve non-agricultural irrigation needs and to the extent feasible, other non-potable purposes.

9. To ensure that proposed public water supply and wastewater service areas, and new or increased water allocations and transfers will not directly or indirectly cause or contribute to a Net Water Availability deficit, and where feasible will help mitigate any existing deficit.

10. To ensure efficient and effective use of water availability, reduction and elimination of water deficits, and mitigation of new consumptive or depletive use in any Current Deficit Areas or subwatersheds that could become deficit areas based on projected development and water uses.

11. To permit new consumptive or depletive water uses within a Current Deficit Area only under the auspices of a Water Use and Conservation Management Plan; or until such a Plan is in place, to permit such uses only within the allocated Conditional Water Availability and provided that mitigation of the proposed use is accomplished within the same HUC14 subwatershed through: a permanent reduction of existing consumptive and depletive water uses; ground water recharge in excess of the requirements of N.J.A.C. 7:8 (Stormwater Management Rules); or other permanent means.

12. To develop and implement a Water Use and Conservation Management Plan that sets forth the manner and mechanisms by which to achieve each of the preceding goals and objectives.

    a. Where developed for Current Deficit Areas, the Plan must include provisions to reduce or manage consumptive and depletive uses of ground and surface waters as necessary to reduce or eliminate deficits in Net Water Availability, or to ensure continued stream flows to downstream Current Deficit Areas from Existing Constrained Areas, to the maximum extent practicable within each HUC14 subwatershed.

    b. For Current Deficit Areas, the Plan must in addition include a detailed implementation plan and schedule indicating how and when the current deficit will be resolved in the applicable subwatershed(s) prior to approval of new water uses in the subwatersheds with the most severe deficits (e.g., in excess of 0.25 million gallons per day), and the plan shall be implemented prior to initiation of new water uses.

    c. The Plan must also ensure that transfers between or from Highlands Subwatersheds occur only where no viable alternative exists to meet public health, safety and welfare needs and where no impairment of subwatershed resources will result.

H. **PRIME GROUND WATER RECHARGE AREAS**

Prime Ground Water Recharge Areas within the Highlands Area appear in the ERI mapping titled "Prime Ground Water Recharge Areas." (see Exhibit P) This Plan recognizes and incorporates the descriptions, definitions and delineations for Prime Ground Water

Recharge Areas (PGWRAs) as discussed in the ERI. Prime Ground Water Recharge Areas are those lands within a HUC14 subwatershed that most efficiently provide in the aggregate, 40 percent of total drought recharge volume for the HUC14 subwatershed, as determined in accordance with parameters set forth in the ERI. Protection of such areas is clearly vital to maintaining the quality and quantity of the ground water resources upon which both human and non-human communities in the Highlands Area so heavily rely.

Accordingly, the below-listed goals and objectives will guide the regulation and management of Township Highlands Prime Ground Water Recharge Areas.

1. To protect, enhance, and restore the quantity and quality of Prime Ground Water Recharge Areas.

2. To require use of Low Impact Development (see Section K) and other Best Management Practices to maximize natural ground water recharge and minimize the need for engineered recharge methods.

3. To restrict land use and development activities that reduce natural ground water recharge volumes in PGWRAs or that may contribute to or result in degradation of ground water quality, whether directly or indirectly.

4. To avoid disturbance of lands identified as PGWRAs to the maximum extent feasible, and to minimize such disturbance where it cannot be avoided. Where disturbances do occur in PGWRAs, to require mitigation measures to enhance pre-construction recharge volumes.

5. To prohibit land uses and activities that pose significant risk of ground water contamination from locations delineated as PGWRAs. Such uses (and any structures devoted or related thereto) should include at minimum, those designated as Major and/or Minor Potential Contaminant Sources (PCS) by the Highlands Council (see Appendices A, B and C)).

6. To identify and implement opportunities for the restoration or enhancement of recharge in Prime Ground Water Recharge Areas and other lands through such means as the retrofit or rehabilitation of stormwater recharge facilities, land management improvements and reforestation.

7. To achieve a net improvement in ground water volume and quality through enhanced infiltration, pretreatment and other available means.

I. WATER QUALITY

This Plan incorporates the descriptions, definitions and summary data regarding water quality by HUC14, as discussed in the ERI. In addition, it incorporates the map titled "HUC 14's on NJDEP Impaired Waters List." (see Exhibit Q)Water quality affects drinking water, recreation, ecosystems and aesthetic beauty. The most common parameters that may impair surface and ground water quality are fecal coliform bacteria, phosphorus,

temperature, arsenic and nitrate-nitrogen. These and other contaminants can either cause health risks if ingested or harm native biota, resulting in non-attainment of designated water uses for the water body.

Water quality is influenced by the type and intensity of land use adjacent to and upstream of the water body. Pollutants are contributed to the environment from a wide variety of nonpoint sources (NPS) including human development (through stormwater and residential runoff, septic systems, fertilizer applications on lawns, and Brownfields or contaminated sites), domestic or captive animals, agricultural practices (crop farming, livestock, and manure applications), and wildlife (large populations). Pollutants from these sources can reach water bodies directly, through overland runoff, or through stormwater conveyance facilities. Point sources also exist, primarily wastewater treatment plants serving communities or industrial facilities.

Accordingly, the below-listed goals and objectives apply to the management and regulation of water quality in the Township Highlands Area.

1. To protect, restore (if applicable) and enhance water quality in the Highlands Area.
2. To remedy the pollutant sources associated with existing or historic land uses in conjunction with redevelopment opportunities.
3. To ensure that land use and development is permitted only in such locations, at such densities, and in such manner as to ensure sustainable use of Highlands Area water resources and continued protection and management of critical lands for water quality purposes.
4. To ensure that the municipal portion of any Areawide Water Quality Management Plan or Wastewater Management Plan will not directly or indirectly support development that would be in violation of any adopted Total Maximum Daily Load (TMDL) limits established by NJDEP.
5. To adopt and implement stormwater management controls through a municipal Stormwater Management Plan.
6. To require use of applicable Low Impact Development (see Section K) and Best Management Practices to protect the quality of ground and surface waters.

J. WELLHEAD PROTECTION

Wellhead Protection Areas within the Highlands Area appear in the ERI mapping titled "Wellhead Protection Areas." (see Exhibit R) This Plan recognizes and incorporates the descriptions, definitions and delineations for Wellhead Protection Areas (WHPAs) as discussed in the ERI. Highlands Area WHPAs are delineated for community water supply wells based upon time of travel, reflecting the time required for ground water to flow into the well. WHPAs are composed of three tiers based upon a 2-year (Tier 1), 5-year (Tier 2), and 12-year (Tier 3) time of travel. Each tier includes the area of each smaller tier within it.

Protection of ground water resources that directly provide water to potable water supply wells is vital to the public health, safety, and welfare of the community. It is also of primary importance to ensure continued availability of clean drinking water to all that rely upon it. Through regulation of land use, physical facilities and other activities within WHPAs, the potential for ground water contamination can be reduced by preventing the introduction and migration of pollutants into ground water sources that supply water supply wells.

Accordingly, the below-listed goals and objectives will guide the regulation and management of Township Highlands Wellhead Protection Areas.

1. To identify and ensure proper management of existing land uses within Wellhead Protection Areas that have a significant potential for contributing pollutants of concern to ground water.

2. 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.

3. To prohibit land uses and activities that pose significant risk of ground water contamination from locations delineated as Tier 1 Wellhead Protection Areas. Such uses (and any structures devoted or related thereto) should include at minimum, those designated by the Highlands Council as Major and/or Minor Potential Contaminant Source (PCS) and/or as potential sources of pathogenic contaminants (see Appendices A, B and C).

4. To prohibit land uses and activities that pose significant risk of ground water contamination from locations delineated as Tier 2 Wellhead Protection Areas. Such uses (and any structures devoted or related thereto) should include at minimum, those designated as Major and/or Minor Potential Contaminant Source (PCS) by the Highlands Council (see Appendices A, B and C).

5. To require that land uses and activities that pose significant risk of ground water contamination in locations delineated as Tier 3 Wellhead Protection Areas, incorporate ongoing management of toxic chemical sources and prohibition of non-permitted discharges, so that the potential for ground water contamination is minimized and the opportunity for discharge discovery and control is maximized.

6. To ensure that stormwater management plans pertinent to both development applications and municipal-wide planning, address wellhead protection requirements.

7. To encourage stormwater reuse for non-agricultural irrigation and other non-potable water purposes to minimize the volume of stormwater discharges (other than from clean sources) within a Tier 1 or Tier 2 Wellhead Protection Area.

8. To restrict development activities that pose threats to the water quality of public water supply wells.

9. To ensure that development activities and existing land use activities implement best management practices to protect the quality of ground water within Wellhead Protection Areas.

10. To ensure that the uses, structures or activities permitted within utility service areas, as proposed within the municipal portion of the Areawide Water Quality Management Plan or Wastewater Management Plan, will not adversely affect any Wellhead Protection Area.

K. **LOW IMPACT DEVELOPMENT**

This Plan embraces the concept of Low Impact Development (LID) and seeks to ensure its maximum use in land development activities throughout the Highlands Area. LID encompasses a broad array of development and management techniques that can minimize or mitigate the potential adverse impacts of land use and development on the natural environment. LID is used in stormwater management, resource management, "green" building, and sustainable site design. In stormwater management for example, LID techniques can be employed to capture rainfall, filter it through existing vegetation, and maximize its absorption by on-site soils in order to recharge ground water supplies. In site design, LID would incorporate strategies to reduce site disturbance, limit impervious coverage, and integrate existing natural features affecting the site and/or its immediate surroundings into the proposed layout and design.

To accomplish such aims, specific LID standards should be developed and incorporated into Township land use regulations. Because LID practices and innovations continue to emerge, these should include, but by no means be limited to the following:

1. Stormwater management LID standards that preserve or mimic the natural hydrologic features and characteristics of the land.

    a. Use of stormwater management features that maintain, restore and enhance the pre-existing natural drainage patterns of the site.

    b. Limitations on impervious coverage allowances to maximize stormwater infiltration and reduce runoff.

    c. Requirements for site-specific hydrologic studies which identify the velocity, volume and pattern of water flow into, through and flowing from a parcel proposed for development.

    d. Requirements that stormwater management systems employ a "design with nature" approach by use of grass channels, dry swales, wet swales (vegetated channels designed to retain water or marshy conditions that support wetland vegetation), infiltration basins, bio-swales and water gardens, constructed wetlands, green roofs, and other low impact approaches to attenuate and control stormwater and provide multiple environmental benefits.

2. LID practices that minimize land disturbance during construction activities.

    a. Requirements for site-specific analysis of environmental features and constraints as an integral component of site design.

    b. Limitations on site disturbance, soil compaction, clearing and grading to the minimum necessary to allow for permissible development.

    c. Provisions to minimize soil erosion and airborne dust during construction and to protect streams and other water bodies from silt and sedimentation.

3. LID best management practices where any development application proposes disturbance of a Highlands Area resource, including but not limited to Steep Slope Protection Areas, Forest Areas, Critical Habitat Areas, Highlands Open Waters and Riparian Areas, and Prime Ground Water Recharge Areas.

    a. Highlands Area resources should be identified as a first step in site planning.

    b. To the maximum extent practicable Highlands Area resources should be avoided or their disturbance minimized through site design.

    c. The quality and value of Highlands Area resources located on development sites should be maintained by use of LID strategies that minimize the impacts of development to the maximum extent possible.

4. LID practices in design of sites, buildings, structures and roadways. Development and redevelopment projects should follow a prescribed conservation design planning process that considers existing site features and site context; maximizes opportunities for open space and connections to open space systems; and incorporates LID practices in all aspects of stormwater management, site layout, and resource protection. In addition to the previously listed items (1-3, above) these include but are not limited to the following:

    a. Use of water conservation measures in site layout and structures, including but not limited to such practices as water efficient landscaping (including use of native and drought-tolerant plant species), rain collection systems, use of gray water, and water-efficient landscape irrigation.

    b. Use of low maintenance landscaping that encourages retention and planting of native vegetation and minimizes lawn areas and use of fertilizers and pesticides.

    c. Use of pervious paving materials and minimization of impervious surfaces.

    d. Use of micro-climate conditions to maximize solar gain for winter heating and minimize solar gain during high temperature summer conditions.

    e. Re-use and recycling of building materials when development involves demolition.

f. Inclusion of energy-efficient features in site layouts and buildings.

g. Roadway design standards (subject to RSIS limitations) that incorporate LID techniques to address stormwater management, limit impervious coverage, ensure planting of native and drought-resistant vegetation, and integrate other "green street" design initiatives.

UTILITY SERVICES PLAN

It is the overarching policy of this Plan to ensure that development of the Highlands Area does not exceed the available environmental and infrastructural capacity to support it. The Utilities Services Plan recognizes and incorporates the following maps described and discussed in the Highlands ERI : "Public Community Water Systems Map", (see Exhibit S) and "Highlands Domestic Sewerage Facilities Map", (see Exhibit T)..

This Plan recognizes that future development must only occur within the carrying capacity of water resources, as to both quality and quantity. It also recognizes the importance of ensuring that water supply and wastewater utility capacities are made available in ways that provide maximum benefit within the constraints of water availability and water quality protection, and are used in ways that provide cost-effective and efficient service. Utility services support more dense development than on-site wells and septic systems, and therefore can provide for more housing and job creation per square mile. They also can result in more intensive environmental impacts, however, and a greater strain on available water resources. It is of particular concern to the Township, that utility service locations occur in the most appropriate portions of the Highlands Area and that development reliant upon wells and/or septic systems occur only at densities that can be sustained by existing environmental characteristics.

Accordingly, the below-listed goals and objectives will guide Township regulation and management of water and wastewater utilities, and use and maintenance of septic systems.

A. PRESERVATION AREA

1. To prohibit the expansion or creation of public water supply systems, wastewater collection and treatment systems and community on-site treatment facilities in the Preservation Area unless approved through a Highlands Applicability Determination (HAD) or an HPAA with waiver pursuant to the NJDEP Preservation Area rules at N.J.A.C. 7:38.

2. To identify those lands of the Preservation Area that may be appropriate for the extension or creation of public water supply systems, wastewater collection and treatment systems and community on-site treatment facilities for redevelopment that would meet the waiver requirements of the NJDEP Preservation Area rules at N.J.A.C. 7:38 regarding public health and safety or redevelopment.

B. PLANNING AREA

1. To ensure that all existing and future development in the Highlands Area using public water supply systems and wastewater collection and treatment systems are served by adequate and appropriate infrastructure.

2. To ensure that proposed public water supply and wastewater service areas will not directly or indirectly cause or contribute to a Net Water Availability deficit, and where feasible, will mitigate any deficit.

3. To prohibit the creation or extension of public water supply systems and wastewater collection and treatment systems within the Protection Zone, the Conservation Zone and the Environmentally-Constrained Sub-Zones until or unless authorized by the Highlands Council with approval from Bethlehem Township.

4. ~~To allow for the creation or extension of public water supply systems and wastewater collection and treatment systems for health and safety protections only where appropriate within the Existing Community Zone (excluding the Environmentally-Constrained Sub-Zone) in accordance with the conditions of approval applicable to any amended Areawide Water Quality Management Plan (as authorized by the NJDEP in coordination with the Highlands Council).~~

   a. ~~The highest priority for allocation of excess or additional wastewater treatment capacity is to areas where there are clusters of failed septic systems that are located within or adjacent to Existing Areas Served.~~

   b. ~~Secondary priority for such systems should be assigned to TDR Receiving Zones, infill development, redevelopment and affordable housing projects.~~

C. PLANNING & PRESERVATION AREAS

1. To require that development supported by new or expanded public water supply systems and/or wastewater collection and treatment systems occur at a density and intensity that ensures efficiency and cost-effectiveness of the public infrastructure.

2. To ensure that Carbonate Rock Areas and Wellhead Protection Areas are considered and appropriately protected in the design and construction of any new or expanded wastewater collection/treatment system.

3. To ensure that on-site wastewater system discharges do not exceed the natural capacity of ground water to attenuate loadings, exacerbate existing nitrate impairment, or contribute to potential nitrate impairment for subwatersheds of the Highlands Area.

4. To ensure that all development in areas not served by public water supply or wastewater collection and treatment systems is at a density that can be supported by on-site wells and subsurface septic systems, respectively. With respect to septic systems, to determine such densities on the basis of median nitrate concentrations in ground water and nitrate dilution modeling.

5. To ensure the development of a Township-wide septic system management/maintenance plan.

6. To develop a Wastewater Management Plan for the Township Highlands Area.

CIRCULATION PLAN

The existing Master Plan has a Circulation Plan Element providing detailed information on existing and proposed transportation infrastructure within, or providing access to and from the municipality, including information on all modes and supporting facilities and services. This Plan supplements the existing Element, as applicable to the Highlands Area, to include the additional information and goals and objectives listed below.

The "Highlands Roadway Networkand "Highlands Transit Network" maps, (see Exhibits U and V), duplicated from the ERI together illustrate the regional transportation network and facilities of the Township Highlands Area. Municipal roadways and transportation features interface with those of the region and the state as a whole, as discussed and illustrated in the underlying Circulation Plan Element for the municipality.

As discussed in the ERI, future and existing development and redevelopment in the Highlands Area relies upon a complex network of roads, railways and bridges serving not only the municipality, but the county, the region and the state as a whole. A variety of modes of transportation are vital to ensuring efficient movement of people and goods, including but not limited to automobile, bus, rail, truck, bicycle and pedestrian. By promoting smart growth principles and efficient land use, the municipality and the Highlands Region as a whole can expand access to a multi-modal transportation system while protecting environmentally sensitive areas and Highlands resources.

Accordingly, the following goals and objectives shall guide the development, improvement, and on-going management of the transportation network and supporting facilities of the Township Highlands Area.

1. To ensure that transportation facilities and infrastructure are designed and located in a manner that achieves optimal efficiencies in land use and provision of service, while at the same time, protecting the environmental resources and critical environmental areas of the Highlands Area.

2. To enhance opportunities for pedestrian and bicycle access, mobility and safety, through provision of sidewalks, walking trails, pedestrian crosswalks, bicycle lanes and trails, bicycle racks, and networked linkages that both access and connect community facilities, parks, schools and shopping areas.

3. To improve public safety through implementation of traffic calming measures in areas with high pedestrian activity.

4. To provide for safe and efficient pedestrian connections including features such as sidewalks, proper lighting, signage, shelters and "green street" initiatives such as those of the New Jersey Department of Transportation's (NJDOT) Pedestrian Safety Initiative.

5. To enhance roadway corridors and encourage pedestrian activity, where appropriate, by installation of ample sidewalk areas with aesthetic enhancements such as street trees, decorative lighting, and benches.

6. To promote safe routes for children to travel to and from school, potentially with the financial and technical assistance of NJDOT's Safe Routes to School Program.

7. To optimize use of existing roadway capacity by appropriate means, such as increased bus, van, jitney and car pool ridership.

8. To identify roadways designated as scenic byways and, to the extent of municipal jurisdiction, to protect and preserve their defining characteristics in conjunction with the scenic viewsheds they provide access to.

9. To recognize and support the unique needs of the agricultural industry to move farm vehicles and goods along transportation corridors, and to establish safe travel routes for farmers and agri-tourism, as appropriate in the Highlands Area, to ensure the safety and viability of farming as an occupation.

10. To evaluate the potential growth-inducing effects of roadway improvements that will increase traffic capacity, such as substantial new land use, new residents or new employment.

11. To prohibit road improvements in areas for which a Growth-Inducing Study demonstrates that proposed improvements do not support the resource protection and smart growth policies otherwise established by the Highlands Element, or that are likely to be growth-inducing for lands with limited or no capacity to support human development without adverse impact on Highlands Area resources.

12. To limit road improvements where roads are constrained by topography, adjacent forested lands, or other sensitive environmental features such as critical habitat.

13. To ensure that road improvements are designed to enhance community character and to avoid adverse impacts to adjoining or otherwise affected properties.

14. To promote land use patterns that support a balance of jobs to housing as a means of reducing motor vehicle trips and average trip lengths.

15. To seek and encourage to the extent applicable, development and redevelopment in areas proximate to rail stations and along bus routes.

16. To promote development of mixed land uses, where appropriate, in locations that result in reduced motor vehicular trips and average trip lengths.

17. To permit and encourage use of shared parking areas, driveways, and other such infrastructure to limit paved surfaces and maximize efficiencies.

18. To ensure coordination between transportation planning and the Land Use Plan Element and to integrate smart growth principles into both.

19. To permit and encourage use of shared parking areas, driveways, and other such infrastructure to limit paved surfaces and maximize efficiencies.

20. To ensure coordination between transportation planning and the Land Use Plan Element and to integrate smart growth principles into both.

21. To enhance the visual and aesthetic qualities of all roadway networks by following the best practices for restoring, preserving and enhancing roadside beauty.

22. To consider the policies, principles, and guides recommended by national environmental and planning organizations for transportation corridors and adjoining land development.

LAND PRESERVATION AND LAND STEWARDSHIP PLAN

The existing Master Plan has an Open Space Plan Element providing detailed information on existing and proposed open space preservation and recreational opportunities in the community. This Plan supplements the existing Element, as applicable to the Highlands Area, to include the additional information and goals and objectives listed below

A mapped inventory of Preserved Lands in the Township Highlands Area, current through June, 2009 [*to be updated on completion of ERI*], can be found in the Highlands ERI entitled "Preserved Lands", (see Exhibit W).. This Plan in addition incorporates (from the ERI) maps entitled "Highlands Conservation Priority Areas", (see Exhibit X), "Highlands Special Environmental Zone", (see Exhibit Y), "Highlands Agricultural Priority Area", (see Exhibit CC). This Plan recognizes and incorporates the definitions, derivations and delineations used to develop these maps, as provided in the ERI.

Preserved Lands in the Township Highlands Area include lands under ownership by the municipality, the county, the state, and non-profit land trusts. In addition, Preserved Lands includes dedicated easements (such as Conservation Easements) to the extent these are currently known and identified (i.e., by deed description) for mapping purposes. (The Planning Board recognizes and will address the need for a more complete inventory of all such easements after Basic Plan Conformance has been attained, with the assistance of the Highlands Council.) In total, the maps indicate 4,371 acres of Preserved Lands. 29 % constitutes preserved farmland, and __71_% is set aside for other preservation purposes, including passive recreational uses.

Highlands Conservation Priority Area lands are those designated a high priority for preservation due to exceptional water and ecological resource value. The priority order derives from the Highlands Council Resource Assessment methodology, which identifies and ranks Highlands lands based on a combination of indicators, including but not limited to: watershed conditions, Highlands Open Waters, riparian areas, prime ground water recharge areas, forests, critical habitat and steep slopes.

Lands within the Highlands Special Environmental Zone are those having the highest priority ranking for preservation based on the Highlands Council Resource Assessment and for which development is expressly prohibited. Preservation of these lands is vital to: a) protecting Highlands Area water resources and environmentally sensitive lands; b) protecting water supply reservoirs and other critical water features; c) creating large contiguous areas of environmentally sensitive lands; d) creating habitat corridors; and e) connecting existing preserved open space.

The Highlands Agricultural Priority Area, lastly, consists of those lands determined by the Highlands Council, in coordination with the NJDA and the State Agriculture Development Committee (SADC), based on an agricultural resource assessment, to have the highest agricultural resource values.

The following goals and objectives will guide the future identification, prioritization, dedication, and stewardship of Preserved Lands in the Township Highlands Area:

1. To recognize and consider Highlands Council prioritization criteria in addition to existing Township criteria, in making determinations regarding non-agricultural Land Preservation (whether by fee simple or easement dedication). Highlands priorities are ordered as follows:

    a. Lands within the Highlands Special Environmental Zone;

    b. Lands within Highlands Conservation Priority Areas; and

    c. Lands within Highlands Resource Areas generally, including but not limited to forested portions of Forest Resource Areas, Critical Habitat Areas, and Riparian Areas, particularly any portion of a Resource Area designated as "High Integrity" or "High Resource Value."

2. To maintain a current Recreation and Open Space Inventory (ROSI) where required by the NJDEP Green Acres Program.

3. To seek ways to establish and fund local land acquisition for preservation and stewardship programs or to expand existing open space and stewardship programs.

4. To identify lands subject to stewardship programs within this Land Preservation and Land Stewardship Plan and to provide that information to the Highlands Council.

5. To require that conservation or land stewardship easements imposed during the course of development applications be enforceable by the Highlands Council and at least one of the following entities, as qualified and amenable in accordance with the particular circumstances: the Township, the County Agriculture Development Board, the SADC, Green Acres, or a non-profit land trust organized pursuant to § 501 (c)(3) of the federal tax code and engaged in the protection of land for the purpose of providing long-term stewardship of land resources.

6. To establish a stewardship and monitoring program for preserved lands owned by or dedicated to the Township. This objective may be accomplished with the assistance of a non-profit land trust organized pursuant to § 501 (c)(3) of the federal tax code and engaged in the protection of land for the purpose of providing long-term stewardship of land resources.

7. To develop and implement a Forest Management Plan or Forest Stewardship Plan consistent with the standards of the NJ Forest Stewardship Program for application to municipally-owned forest lands.

8. To ensure periodic monitoring of easement restrictions protecting Critical Habitat Areas, associated species and ecological communities from any changes in land use or management practices that would impair these resources.

9. To implement Riparian Area restoration practices on Preserved Lands that give priority to ecological and watershed protection measures.

10. To identify and preserve opportunities for outdoor recreation, including a variety of active and passive recreation options, in such locations and in such manner as to ensure environmental resource protections, while addressing the needs of the local population for physical activity, social interaction, connection with nature and the natural environment, and enjoyment of the outdoors.

11. To ensure maximum protection for scenic and aesthetic values by adopting the best practices that will enhance and preserve open space, protect and enhance visual quality, and develop livable communities.

AGRICULTURE RETENTION/FARMLAND PRESERVATION PLAN

The existing Master Plan has an Agriculture Retention/Farmland Preservation Plan Element providing detailed information on existing and proposed farmland preservation priorities in the community. This Plan supplements the existing Element, as applicable to the Highlands Area, to include the additional information and goals and objectives listed below.

A mapped inventory of Preserved Farmland in the Township Highlands Area, current through June, 2009, may be found in the Highlands ERI titled "Preserved Farms, SADC Easements, All Agricultural Uses",(see Exhibit Z). In addition, this Plan incorporates the maps titled "Important Farmland Soils", (see Exhibit AA), "Agricultural Resource Area", (see Exhibit BB), and "Highlands Agricultural Priority Area", (see Exhibit CC). This Plan recognizes and incorporates the definitions, derivations, and delineations used to develop these maps, as provided in the ERI and in all background technical data which derive from: the NJDA, the SADC, the NJDEP, and the Natural Resources Conservation Service (NRCS), the Highlands RMP and Highlands Council *Sustainable Agriculture Technical Report*.

Preserved Farmland includes farms that are preserved through the SADC Farmland Preservation Program, farms that have final approval from the SADC, and farms under the SADC eight-year easement program. *All Agricultural Uses* includes lands currently serving farming and/or other agricultural purposes, whether permanently deed restricted or not. The map of *Important Farmland Soils* provides a delineation of the four farmland soil classifications as prepared by the U.S. Department of Agriculture (USDA), NRCS, Soil Survey Geographic Database for farmland soil quality, including:

a) Prime Farmland Soils - Soils having the best combination of physical and chemical characteristics for producing food, feed, forage, fiber and oilseed crops. It has the soil quality, growing season, and moisture supply needed to produce high yields of crops when treated and managed according to acceptable farming methods. Prime farmland soils are not excessively erodible or saturated with water for a long period of time, and they either do not flood frequently or are protected from flooding.

b) Soils of Statewide Importance – Soils that produce high yields of crops when treated and managed according to acceptable farming methods. This soil may support yields as high as Prime farmland if conditions are favorable.

c) Unique Farmland Soils - Soils used for special crops (such as cranberries in the New Jersey Pinelands). Unique soils are determined on a statewide basis by the State Soil Conservation Committee.

d) Locally Important Farmland Soils - Soils designated and ranked by the County Agriculture Development Board. Locally Important soils include those soils that are not Prime or of Statewide Importance and are used for the production of high value food, fiber, or horticultural crops.

The Agricultural Resource Area consists of those areas of most concentrated and contiguous agricultural uses in the Highlands Area, using Important Farmland Soils as a critical factor in the delineation. Highlands Agricultural Priority Areas, lastly, are those determined by the Highlands Council, in coordination with the NJDA and SADC, based on an agricultural resource assessment, to have the highest agricultural resource values.

The overriding policy of this Plan is to ensure the long-term sustainability of agricultural resources and the viability of agriculture as a business in the Highlands Area. Achieving this aim requires maintenance of a healthy agricultural environment with a sufficient agricultural land base. Accordingly, the below-listed goals and objectives will guide the future land use and management of the Township Agricultural Resource Area.

1. To promote farmland preservation and limit non-agricultural uses within the Agricultural Resource Areas.

2. To apply Highlands Council prioritization criteria in making determinations regarding Agricultural Land Preservation (whether by fee simple, easement dedication, transfer of development rights, or other agricultural land conservation techniques), which are ordered as follows:

    a. Farmland designated as Agricultural Priority Area, as defined in the Agriculture Retention/Farmland Preservation Plan Element and delineated in Exhibit CC; and

    b. Farmland located within an Agricultural Resource Area, as defined in the Agriculture Retention/Farmland Preservation Plan Element and delineated in Exhibit BB.

3. To limit non-agricultural uses within the Agricultural Resource Area to the extent feasible, to those designed to support the preservation of farmland, avoid conflicts with agriculture, maintain and enhance the sustainability and continued viability of the agricultural industry, protect Important Farmland Soils, and meet the resource management and protection requirements of the Conservation Plan Element.

4. To require that, where preservation of agricultural lands within the Agricultural Resource Area is not feasible, any residential development be permitted only under conservation design parameters, such as cluster development.

    a. To require that cluster or conservation design development within the Agricultural Resource Area support the preservation of farmland, avoid conflicts with agriculture, maintain and enhance the sustainability and continued viability of the agricultural industry, protect Important Farmland Soils, and meet resource management and protection requirements of the Conservation Plan Element.

    b. To require that all cluster or conservation design development within the Agricultural Resource Area be buffered appropriately to avoid conflicts

between non-agricultural development and agricultural activities, and to protect existing agricultural uses and sensitive environmental resources.

c. To require that all land preserved in perpetuity for agricultural purposes as a result of clustering be subject to a conservation easement enforceable by the Highlands Council and at least one of the following: the municipality, the County Agriculture Development Board or the SADC.

d. To permit retention of the original farmstead or construction of new farmsteads associated with preserved agricultural lands in cluster developments, wherever feasible.

e. To require implementation of best management practices, including development and implementation of a Farm Conservation Plan that addresses the protection of water and soil resources prepared by the USDA NRCS, Technical Service Provider (TSP), appropriate agent or NJDA staff, and approved by the local Soil Conservation District (SCD).

5. To permit family and farm labor housing in the Agricultural Resource Area as appropriate, to support the viability of permitted agricultural operations, subject to compliance with the resource management and protection requirements of the remainder of the Highlands Element.

6. To promote the Right to Farm Act and to incorporate land use regulations that are consistent with and further its intents and purposes.

7. To protect and enhance surface and ground water quality and natural resources within the ARA by promoting the use of Best Management Practices including the use of USDA NRCS and Farm Service Agency cost-share programs.

8. To promote the long-term viability of the local agricultural industry by promoting and utilizing existing county, state, and federal agriculture related programs and developing land use regulations and programs where appropriate, in support of direct marketing, organic farming, niche markets, agri-tourism initiatives such as farmers' markets and roadside stands (located on or off the site of an active farm), ancillary business opportunities, community supported agriculture, and other such projects, programs, or activities.

COMMUNITY FACILITIES PLAN

The existing Master Plan does not have a Community Facilities Plan Element providing detailed information on all existing community facilities, including but not limited to government offices, fire, police, and rescue squad facilities, parks and playgrounds, educational facilities, libraries, public works facilities and yards, treatment works, storage depots, and so forth. It is the intent of the Planning Board to develop and adopt such an Element, at minimum applicable to community facilities located within the Highlands Area. It will include a mapped inventory of such facilities, a brief description of each, and applicable goals and objectives including but by no means limited to those listed below.

The overriding policy of this Plan is to ensure that community facilities reflect community needs while minimizing resource impacts and maximizing the efficiency of resource use. Achieving this aim requires attention to the design and location of community facilities. Accordingly, the below-listed goals and objectives will guide community facilities in the Township.

1. To locate and maintain community facilities and services that support compact development patterns and shared services, and provide a high level of service.

2. To identify existing and planned community facilities and to encourage shared service opportunities, whether at intra- or inter-municipal levels.

3. To identify for all such facilities, realistic options to enhance energy efficiencies, incorporate "green" building materials and technologies, reduce pollutant emissions, and minimize "carbon footprints;" and to develop a community strategy for implementing them.

4. To consider and incorporate all feasible Low Impact Development techniques in the design, development, operation and management of existing and proposed community facilities. (For description and discussion of LID techniques, see Conservation Plan Element.)

5. To incorporate the goals, objectives and resource protections discussed throughout this Highlands Element into the planning and development of properties and facilities under municipal jurisdiction.

6. To develop strategies to reduce visual blight and clutter and thereby maintain an economic environment that retains existing businesses and attracts new businesses that complement the character of the surrounding area and are consistent with livable communities.

SUSTAINABLE ECONOMIC DEVELOPMENT PLAN

A sustainable economy is important to the well-being of the Township and the wider economic region of which it is a part. It is the intent of the Planning Board to examine this issue and to prepare an economic development plan for future adoption, which will set forth strategies for strengthening the local economy and/or the municipal contribution toward the wider economy to which it belongs.

The goals and objectives of the Sustainable Economic Development Plan in addition include, but are not limited to:

1. To develop appropriate strategies to improve the local tax base and create jobs and economic opportunities, while remaining consistent with the other policies and objectives of the Highlands Element.

2. To ensure opportunities for home office, entrepreneurial and other small business activities, as appropriate.

3. To identify appropriate opportunities for development and/or redevelopment, including possible brownfield redevelopment that may further the goal of economic sustainability.

4. To encourage development of small business incubator programs, particularly those focused on advancing specific goals and objectives of the Highlands Element, such as initiatives in compact design, native species landscaping, Low Impact Development, energy efficiency and resource conservation.

5. To coordinate with the Highlands Council and other applicable state and/or county agencies to develop or participate in eco-, agri-, and/or heritage tourism programs, as appropriate.

HISTORIC PRESERVATION PLAN

The existing Master Plan has an Historic Preservation Plan Element adopted in May 2006. This document includes a list and photographic record of documented historic sites in Bethlehem Township. The Historic Preservation Master Plan Element is included as Appendix A in the Comprehensive Environmental Review of Bethlehem Township Master Plan and Related Development Regulations prepared by Princeton Hydro, LLC dated October 2006. This Plan supplements the existing Element, as applicable to the Highlands Area, to include the additional information and goals and objectives listed below.

A. HISTORIC, CULTURAL, AND ARCHAEOLOGICAL RESOURCES

The Township survey of historic sites appears as a map within the ERI entitled "Historic, Cultural, and Archaeological Resource Inventory", (see Exhibit DD). The list comes directly from the Highlands Region Historic, Cultural, and Archaeological Resources Inventory (as of November 2007), which includes: 1) all properties listed on the State or National Register of Historic Places; 2) all properties which have been deemed eligible for listing on the State or National Register; and 3) all properties for which a formal State Historic Preservation Office (SHPO) opinion has been issued.

This Plan recognizes that the historic, cultural and archaeological resources of the Highlands Area form an essential component of its character and aesthetic quality. They preserve a part of the history of the Township Highlands Area and provide a link to its past. They remind us of significant people, places and events in our history and they provide vital information about what life was like in this community in earlier times.

The below-listed goals and objectives shall apply to the Historic, Cultural, and Archaeological resources in the Highlands Area.

1. To examine the character and qualities of the community's Historic, Cultural, and Archaeological resources to gain further understanding of the extent of their contributions to the aesthetics, character, economic vitality, and sense of place of the community.

2. To consider the educational value of the community's Historic, Cultural, and Archaeological resources and encourage opportunities to celebrate and share information about the community's heritage.

3. To consider the character and qualities of the community's Historic, Cultural, and Archaeological resources in any development application that may affect them, whether directly or indirectly.

4. To examine the potential for development and adoption of regulatory provisions that are protective of the Historic, Cultural, and Archaeological resources of the community.

5. To consider the character and qualities of the community's Historic, Cultural, and Archaeological resources in development of the Land Use Plan, Community Facilities Plan, Circulation Plan, and all other aspects of the Highlands Element.

The following sites, districts and properties are listed in the Highlands Historic and Cultural Resources Inventory:

a) **Asbury Historic District (ID#2749)** County Routes 623 and 643, Maple Avenue, Kitchen Road and School Street

b) **Bethlehem Township Town Hall (ID#4604)** 292 Asbury - West Portal Road

c) **Bridge over Creek (ID#273)** NJ Transit Raritan Valley Line, Milepost 60.03 over Creek

d) **Central Railroad of New Jersey Main Line Corridor Historic District (ID#3500)** Railroad Right-of-way from Phillipsburg to Bayonne, including all associated features

e) **Lehigh Valley Railroad Historic District (ID#4154)**

f) **Stone Fences - Pfauth Property (ID#3863)** JCP&L Right of Way south of Gross Drive

B. SCENIC RESOURCES

The Township baseline survey of scenic resources appears in the ERI titled "Baseline Scenic Resources Inventory.", (see Exhibit EE). The specific list of affected properties can be referenced in the ERI. The list comes directly from the Highlands Council as a first-step inventory of Scenic Resources having potential for local and/or regional designation. It includes national historic landmarks and federal, state and county publicly-owned parks, forests, and recreation areas.

The Highlands Council also adopted a Procedure for Nomination, Evaluation and Inventory of Highlands Regionally Significant Scenic Resources which establishes the process for formal nomination and inclusion of additional scenic resources in the Highlands Scenic Resource Inventory. The process requires the adoption and implementation of management plans to ensure that the scenic resources are protected and maintained.

This Plan recognizes the value and importance of scenic resources in preserving the aesthetic qualities of the Township Highlands Area. Accordingly, the below-listed goals and objectives shall apply to the future management of Scenic Resources in the Highlands Area.

1. To ensure that human development does not adversely affect the character or value of resources which are listed on the Highlands Scenic Resources Inventory.

2. To require that the impact of proposed human development on the scenic resources of the Highlands Area be addressed during local development review.

3. To utilize Highlands Scenic Resource designation standards, as applied at the local level, in considering scenic resources for designation.

4. To require that all development applications include identification of any scenic resources in the Highlands Region that are listed on the Highlands Scenic Resources Inventory and may be affected by the proposed development.

5. To develop regulatory standards to protect Scenic Resources from negative impacts due to development.

6. To develop minimum standards for the protection and enhancement of the Scenic Resources listed in the Highlands Scenic Resources Inventory.

7. To consider scenic conservation principles, policies, and guides established or recommended by national environmental and planning associations to establish, preserve, protect, and enhance Scenic Resources.

8. To consider nomination of additional resources to the Highlands Scenic Resources Inventory, in particular with respect to designation of scenic byways in the Township.

RELATIONSHIP OF MASTER PLAN TO STATE/REGIONAL/LOCAL PLANS

By adoption of this Highlands Element, the Township Master Plan is brought into alignment with the Highlands Regional Master Plan (RMP). The Highlands Element incorporates all of the policies, goals, and objectives of the Highlands RMP that are relevant to the use and development of land in the Township Highlands Area. The Highlands Element calls for the development and adoption of various land use regulations and specific environmental management plans, which together will effectuate its vision and in so doing, advance the intents and purposes of the Highlands RMP.

The Highlands Act provides that any portion of a municipality located in the Highlands Preservation Area is exempt from the State Planning Commission (SPC) Plan Endorsement process. It provides further that once the RMP has attained Plan Endorsement from the SPC for the Planning Area, Highlands Council approval of Plan Conformance with respect to lands in the Planning Area shall be deemed the equivalent of Plan Endorsement.

By aligning the municipal Master Plan with the Highlands RMP, its consistency with the State Development and Redevelopment Plan (SDRP) is achieved. A map depicting the municipality's SDRP Planning Areas may be examined in Exhibit FF. The Highlands Element furthers SDRP policies, goals, and objectives in many ways, not least of which are the following:

1. Seeking to protect, preserve, restore, and enhance the natural resources of the Highlands Area;

2. Encouraging the use of smart growth principles in locations of the Area deemed appropriate for development and/or redevelopment;

3. Protecting historic, cultural and aesthetic resources;

4. Encouraging a sustainable local economy;

5. Protecting agricultural resources, supporting local agricultural businesses, and promoting sustainable agricultural practices;

6. Preserving open space and providing for an array of active and passive recreational opportunities; and

7. Ensuring a viable and well-integrated transportation network that incorporates and encourages multi-modal options and efficiency of land use.

The Highlands Element modifies the relationship of the Township development plan to those of the county and contiguous municipalities insofar as it affects the intents for land use and development within the Township Highlands Area. Given that the Highlands Element introduces a substantial number of new constraints to development based on environmental resources and carrying capacities, it is anticipated that the future impacts from development of the Highlands Area will be reduced from previous trends. A complete understanding will not exist however, until further analysis is undertaken to determine the full impacts of conformance with the RMP on the municipal Land Use Plan. An important

component of that analysis will be in regard to watershed-based planning. To the extent that the Township shares a HUC14 subwatershed with other municipal and/or county entities, a cooperative planning effort involving all parties will be vital to ensuring sound use and management of the available water resources. It will also be important to understand which, if any, of the adjoining municipalities and/or the county conform to the Highlands RMP and for what portions of their land areas. The land uses, the permitted densities and intensities of development, and the locations and extent of anticipated growth in neighboring Highlands communities that are also pursuing conformance with the RMP are all subject to change. Until information is available concerning such decision-making, a comparison between these master plans will not be meaningful. Further discussion of these aspects will therefore be provided in the next amendment to the Master Plan.

ACRONYMS

CADB	County Agriculture Development Board
ERI	Environmental Resourced Inventory
EDU	Equivalent Dwelling Unit
FAR	Floor Area Ratio
GIS	Geographic Information Systems
HAD	Highlands Applicability Determination
HDC	Highlands Development Credit
HPAA	Highlands Preservation Area Approval
HUC	Hydrologic Unit Code
LID	Low Impact Development
MLUL	Municipal Land Use Law (of the State of New Jersey)
NJDA	New Jersey Department of Agriculture
NJAC	New Jersey Administrative Code
NJDEP	New Jersey Department of Environmental Protection
NJDOT	New Jersey Department of Transportation
NJSA	New Jersey Statutes Annotated
NPS	Nonpoint Source
NRCS	Natural Resources Conservation Service
PCS	Potential Contaminant Source
PGWRA	Prime Ground Water Recharge Area
RMP	Regional Master Plan (of the New Jersey Highlands Water Protection and Planning Council)
ROSI	Recreation and Open Space Inventory
SADC	State Agriculture Development Committee
SCD	Soil Conservation District
SDRP	State Development and Redevelopment Plan
SHPO	State Historic Preservation Office
SPC	State Planning Commission
TDR	Transfer of Development Rights
TMDL	Total Maximum Daily Load
TSP	Technical Service Provider
USDA	United States Department of Agriculture
WHPA	Wellhead Protection Area

EXHIBITS

A. Township Highlands Area

B. Highlands Contaminated Sites Inventory

C. Forest Resource Area

D. Total Forest Area

E. Forest Sub Watersheds

F. Highlands Open Waters

G. Highlands Riparian Areas

H. Watershed Values

I. Riparian Integrity

J. Steep Slope Protection Areas

K. Critical Wildlife Habitat

L. Significant Natural Areas

M. Vernal Pools

N. Carbonate Rock Areas

O. Net Water Availability

P. Prime Ground Water Recharge Areas

Q. HUC 14's on NJDEP Impaired Waters List

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W. Preserved Lands

X. Highlands Conservation Priority Areas

Y. Highlands Special Environmental Zone

Z. Preserved Farms, SADC Easements, All Agricultural Uses

AA. Important Farmland Soils

BB. Agricultural Resource Areas

CC. Agricultural Priority Areas

DD. Historic, Cultural, and Archeological Resource Inventory

EE. Baseline Scenic Resources

FF. State Development and Redevelopment Plan Map

APPENDIX A MAJOR POTENTIAL CONTAMINANT SOURCES

Land uses and activities determined by the Highlands Council (based on New Jersey Safe Drinking Water Act regulations and NJDEP regulations) to be Major Potential Contaminant Sources include the following:

1. Permanent storage or disposal of hazardous wastes, industrial or municipal sludge or radioactive materials, including solid waste landfills.
2. Collection and transfer facilities for hazardous wastes, solid wastes that contain hazardous materials, and radioactive materials.
3. Any use or activity requiring the underground storage of a hazardous substance or waste in excess of an aggregate total of 50 gallons.
4. Underground fuel and chemical storage and oil tanks regulated by NJDEP under provisions of the Underground Storage of Hazardous Substances Act (N.J.S.A. 58:10A-21 et seq.).
5. Above-ground storage facility for a hazardous substance or waste with a cumulative capacity greater than 2,000 gallons.
6. Any industrial treatment facility lagoon.
7. Any industrial facility with a SIC Code number included under the New Jersey Safe Drinking Water Act Regulations at N.J.A.C 7:10A-1.14, Table II(N)A, with a toxicity number of II or greater. (See Appendix C.)
8. Automotive service center (repair & maintenance).
9. Landfill.
10. Dry cleaning processing facility.
11. Road salt storage facility.
12. Cemetery.
13. Highway maintenance yard.
14. Truck, bus, locomotive maintenance yard.
15. Site for storage and maintenance of heavy construction equipment and materials.
16. Site for storage and maintenance of equipment and materials for landscaping, excluding household storage and maintenance of such equipment.

17. Livestock operation containing 300 or more Animal Units (AU) [1 AU= 1000 pounds of live animal weight] as defined by the NJ Department of Agriculture in its Criteria and Standards for Animal Waste Management, at NJAC 2:91.

18. Quarrying and/or mining facility.

19. Asphalt and/or concrete manufacturing facility.

20. Junkyard/auto recycling and scrap metal facility.

21. Residential or agricultural motor fuel in NJDEP exempted underground storage tanks (i.e., under 1,000 gallons).

APPENDIX B MINOR POTENTIAL CONTAMINANT SOURCES

Land uses and activities determined by the Highlands Council (based on New Jersey Safe Drinking Water Act regulations and NJDEP regulations) to be Minor Potential Contaminant Sources include the following:

1. Underground storage of hazardous substance or waste of less than 50 gallons.
2. Underground heating oil storage tank with a capacity of less than 2,000 gallons.
3. Sewage treatment facility regulated by a NJPDES permit granted under NJAC 7:14A.
4. Sanitary sewer system, including sewer line, manhole, or pump station.
5. Industrial waste line.
6. Septic leaching field.
7. Facility requiring a ground water discharge permit issued by the NJDEP pursuant to N.J.A.C 7:14A et seq.
8. Stormwater retention-recharge basin.
9. Dry well.
10. Storm water conveyance line.
11. Waste oil collection, storage and recycling facility.
12. Agricultural chemical bulk storage and mixing or loading facility including crop dusting facilities.
13. Above-ground storage of hazardous substance or waste in quantities of less than 2,000 gallons.
14. Livestock operation containing 8 or more Animal Units (AU) [1 AU= 1000 pounds of live animal weight] or those receiving 142 or more tons of animal waste per year as defined by the NJ Department of Agriculture pursuant to its Criteria and Standards for Animal Waste Management, at NJAC 2:91.
15. [*Optional – Insert other Potential Contaminant Sources of similar nature that are not listed in (1) through (14) above, or as Major Potential Contaminant Sources in Appendix B, but are of concern to the municipality.*]

APPENDIX C MAJOR POTENTIAL POLLUTANT SOURCES

Facilities with Toxicity Ratings of II or Greater
N.J.A.C. 7:10A-1.14(c)4, Table II(N)A

*SIC Code for Industrial Facility**	*Description of Industrial Facility which includes activities that may release hazardous substances*	*Toxicity Rating*
Any SIC Code	All ground water remediation of toxic substances, including priority pollutants	V
Any SIC Code	Contaminated storm water runoff from any type of facility listed below	
0721	Crop dusting and spraying	IV
10xx	Metal mining	V
12xx	Coal mining	III
1475	Phosphate rock mining	IV
22xx	Textile mills with finishing operations (dyeing, coating, etc.)	V
2491	Wood preserving	VI
2493	Reconstituted wood products	II
25xx	Furniture & fixtures with metal finishing	V
261x, 262x, 263x	Pulp, paper, and paperboard mills	V
27xx	Printing & publishing	II
2812	Inorganic chemicals, alkalies & chlorine	V
2813	Indus trial gases	II
2816	Inorganic pigments	IV
2819	Industrial inorganic chemicals	IV
282x	Plastic materials & synthetic resins	V
283x	Drugs	V
284x	Soaps, detergents, etc.	III
285x	Paints, etc.	IV
2861	Gum & wood chemicals	III
2865, 2869	Industrial organic chemicals	VI
2879	Pesticides & agricultural chemicals	VI
289x, except 2891	Miscellaneous chemical products	IV
2891	Adhesives & sealants	V
29xx	Petroleum refining	V
30xx	Rubber & plastic products	IV
3111	Leather tanning & finishing	IV
331x, except 3313	Steel mills	VI
3313	Electrometallurgical products, except steel	III
332x	Iron & steel foundries	V
333x	Primary smelting, nonferrous metals	VI
334x	Secondary smelting, nonferrous metals	V
335x	Rolling, drawing, extruding, nonferrous metals	V
336x	Nonferrous foundries	V
339x	Miscellaneous primary metals products	V

**SIC (Standard Industrial Classification) Codes are determined from the Federal Manual (1987) issued by the United States Office of Management and Budget.*

*SIC Code for Industrial Facility**	*Description of Industrial Facility which includes activities that may release hazardous substances*	*Toxicity Rating*
341x, 342x, 343x, 344x, 345x, 346x, except 3431 & 3463	Fabricated metal products, with metal finishing	V
3431	Enameled sanitary ware, cast iron basis	VI
3463	Nonferrous forgings	V
347x	Plating & coating	V
348x	Ordinance, with metal finishing	V
348x	Ordinance, explosive load, assembly, packing	IV
349x, except 3497	Miscellaneous fabricated metal products, with metal finishing	V
3497	Metal foil & leaf	V
35xx	Industrial/commercial machinery & equipment, with metal finishing	V
36xx	Electronic equipment, with metal finishing or porcelain enameling	V
3624	Carbon & graphite products	V
3671	Cathode ray tubes	V
3672	Printed circuit boards	V
3674	Semiconductors	VI
3679	Electronic crystals only	III
3691, 3692	Batteries	IV
37xx, except 3731	Transportation equipment, with metal finishing	V
3731	Ship building	IV
38xx	Measuring, analyzing & controlling instruments, with metal finishing	V
3844, 3845	Measuring, analyzing & controlling instruments, with electron tube manufacture	V
3861	Photographic related chemicals	V
39xx	Miscellaneous manufacturing industries, with metal finishing	V
4231	Trucking terminals	III
4493	Marinas	III
4499	Water transportation services	III
46xx	Pipelines, except natural gas	V
4911, 4931	Electric services	IV
4941	Water supply treatment (public and industrial)	IV
4953	Solid waste facilities	IV
4953	Hazardous waste treatment facilities	VI
5052	Coal & other minerals & ores	V
5093	Scrap & waste materials	VI
5169	Chemicals & allied products	VI
5171	Petroleum bulk stations & terminals	V
5191	Farm supplies	IV
7211, 7215, 7216 & 7217	Laundries, dry-cleaning & carpet/upholstery cleaning	II

SIC Code for Industrial Facility*	***Description of Industrial Facility which includes activities that may release hazardous substances***	***Toxicity Rating***
7213, 7218	Linen supply & industrial launderers	IV
7342	Disinfecting & pest control services	VI
7389	Solvents recovery services only	VI
7542	Car & truck washes	II
7699	Repair shops, with metal finishing	V
8062	General medical & surgical hospitals	VI
8069	Specialty hospitals	VI
8071	Medical laboratories	VI
8731	Commercial research organizations	IV
8733	Non-commercial research organizations	IV

**SIC (Standard Industrial Classification) Codes are determined from the Federal Manual (1987) issued by the United States Office of Management and Budget.*

BETHLEHEM TOWNSHIP

Preservation Area

Municipal Boundaries

1 inch = 1.255 miles

Highlands Council
New Jersey

N

Exhibit A. Township Highlands Area

Highlands Contaminated Site Inventory

BETHLEHEM TOWNSHIP

- *Tier 1 Sites*
- *Tier 1 Sites (Polygons)*
- *Tier 2 Sites*
- Preservation Area
- Municipal Boundaries

1 inch = 1.255 miles

Highlands Council
New Jersey

N

Exhibit B. Highlands Contaminated Sites Inventory

Exhibit C. Forest Resource Area

Exhibit D. Total Forest Area

Exhibit E. Forest Sub Watersheds

Exhibit F. Highlands Open Waters

Exhibit G. Highlands Riparian Areas

Watershed Values by HUC14 Subwatershed

- *Low*
- *Moderate*
- *High*
- Preservation Area
- Municipal Boundaries

BETHLEHEM TOWNSHIP

1 inch = 1.255 miles

Highlands Council
New Jersey

N

Exhibit H. Watershed Values

Riparian Integrity by HUC14 Subwatershed

- *Low*
- *Moderate*
- *High*
- Preservation Area
- Municipal Boundaries

BETHLEHEM TOWNSHIP

1 inch = 1.255 miles

Highlands Council
New Jersey

N

Exhibit I. Riparian Integrity

Steep Slopes

- *Moderate*
- *Severe*
- Preservation Area
- Municipal Boundaries

BETHLEHEM TOWNSHIP

1 inch = 1.255 miles

Highlands Council
New Jersey

N

Exhibit J. Steep Slopes

Exhibit K. Critical Wildlife Habitat

Exhibit L. Significant Natural Areas

Exhibit M. Vernal Pools

Carbonate Rock Area
Preservation Area
Municipal Boundaries

BETHLEHEM TOWNSHIP

1 inch = 1.255 miles

Highlands Council
New Jersey

N

Exhibit N. Carbonate Rock Areas

Exhibit O. Net Water Availability

Exhibit P. Prime Groundwater Recharge Areas

Exhibit Q. HUC 14's on NJDEP Impaired Waters List

Exhibit R. Well Head Protection Areas

Exhibit S. Public Community Water Systems

Exhibit T. Highlands Domestic Sewerage Facilities

Roadway Network

Interstate Highways

U.S. Routes

State Routes

County Routes

Local Routes

Preservation Area

Municipal Boundaries

BETHLEHEM TOWNSHIP

1 inch = 1.255 miles

Highlands Council
New Jersey

N

Exhibit U. Highlands Roadway Network

Exhibit V. Highlands Transit Network

Exhibit W. Preserved Lands

Exhibit X. Highlands Conservation Priority Areas

Exhibit Y. Highlands Special Environmental Zone

Exhibit Z. SADC Easements, All Agricultural Uses

Important Farmland Soils

- *Prime Farmland*
- *Farmland of Local Importance*
- *Farmland of Statewide Importance*
- *Farmland of Unique Importance*
- Preservation Area
- Municipal Boundaries

BETHLEHEM TOWNSHIP

1 inch = 1.255 miles

Highlands Council
New Jersey

N

Exhibit AA. Important Farmland Soils

Agricultural Resource Area
Preservation Area
Municipal Boundaries

BETHLEHEM TOWNSHIP

1 inch = 1.255 miles

Highlands Council
New Jersey

N

Exhibit BB. Agricultural Resource Areas

BETHLEHEM TOWNSHIP

Agricultural Priority Area

- *Low*
- *Moderate*
- *High*
- Preservation Area
- Municipal Boundaries

1 inch = 1.255 miles

Highlands Council
New Jersey

N

Exhibit CC. Agricultural Priority Areas

Exhibit DD. Historic, Cultural& Archeological Resource Inventory

Scenic Resources
Municipal Boundaries
Preservation Area

BETHLEHEM TOWNSHIP

1 inch = 1.255 miles

Highlands Council
New Jersey

N

Exhibit EE. Baseline Scenic Resources

Exhibit FF. State Development and Redevelopment Plan

2001 SDRP

State Planning Areas

Bethlehem Township, Hunterdon County, NJ August 2010

Clarke Caton Hintz
Architects
Planners
Landscape Architects