



DRAFT FOR PUBLIC COMMENT

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

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

Highlands Regulations for Development of Passaic County Lands and Facilities

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

November 2010

Regulations for Development of County Lands and Facilities

PASSAIC 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**

DATE: March 5, 2010

REVISED: November 2010

This document is based on a model prepared and provided to all Highlands counties by the New Jersey Highlands Water Protection and Planning Council.

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**PASSAIC COUNTY PRESERVATION AREA REGULATIONS FOR
DEVELOPMENT OF COUNTY LANDS AND FACILITIES**

ARTICLE 1. PURPOSE, SCOPE, APPLICABILITY

§ 1.1 PURPOSE

The purpose of these Land Development Regulations (“Regulations”) is to effectuate the policies, goals and objectives of the County Master Plan, in particular the Highlands Element of the Master Plan, while at the same time advancing the purposes of the County Planning Act (N.J.S.A. 40:27-1 et seq.), addressing the substantive goals and intents of the Highlands Water Protection and Planning Act (“Highlands Act,” N.J.S.A. 13:20-1 et seq.), and satisfying the goals, requirements and provisions of the Highlands Regional Master Plan (RMP).

§ 1.2 SCOPE

These Regulations are adopted by the Board of Chosen Freeholders regarding the use and development of county lands and facilities located within the Preservation Area, for which the applicable provisions of the County Master Plan, development review regulations and other pertinent regulations have been deemed by the New Jersey Highlands Water Protection and Planning Council (“Highlands Council”) to be in conformance with the Highlands RMP. These Regulations govern county land uses, development and redevelopment activities, and management and protection of resources, including but not limited to water resources, natural resources, agricultural resources, scenic resources and historic, cultural and archaeological resources. The provisions of these Regulations shall apply in conjunction with all other applicable rules and regulations of the County.

§ 1.3 APPLICABILITY

The requirements of these Preservation Area Regulations shall apply to the use and development of all County Facilities, County owned lands and the construction and reconstruction of any County infrastructure and improvements (including but not limited to roadway improvements, stormwater facilities, bridges, and parks) located within the County Preservation Area, that are subject to the authority and jurisdiction of the Board of Chosen Freeholders. They do not apply to lands or facilities owned by independent authorities established pursuant to the laws of New Jersey, nor to lands for which the County holds an easement but the land title is not owned by the County. These Regulations shall apply in conjunction with and as a supplement to existing County Regulations and all other rules, codes and regulatory provisions governing the use and development of County owned lands, County Roadways and County Drainage Facilities and Systems. In the event of conflicting provisions, the provisions of these Regulations shall supersede. Where provisions differ only by degree, the more restrictive of the applicable requirements shall supersede. Where any use, development or improvement proposed meets the disturbance and impervious surface thresholds found in § 2.1 then that use, development or improvement shall also be required to be submitted to the New Jersey Highlands Water Protection and Planning Council who may approve, disapprove or approve the project with conditions.

§ 1.3.1 Exclusions

Unless specifically indicated otherwise, and in that case only to the specific extent indicated, the provisions of these Regulations shall not apply to the following specific activities, developments, or improvements. (The purpose of Exclusions is to provide for certain activities, developments or improvements that may not qualify for an exemption from the Highlands Act solely due the time of construction of the project.)

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- A. Agricultural or Horticultural Use and Development (as defined at § 2.1). However such Agricultural or Horticultural Use and Development are subject to the New Jersey Department of Agriculture Rules N.J.A.C. 2:92 that establish the standards and criteria to be followed for agricultural and horticultural activities in the Preservation Area.
- B. The reconstruction of any building or other structure within the same footprint in the event of its destruction or partial destruction by fire, storm, natural disaster, or any other unintended circumstance.
- C. The repair or maintenance of any building or other structure, excluding any such activity that alters the footprint of the building or structure.
- D. The interior improvement, rehabilitation, or modification of any building or other structure, excluding any such activity that alters the footprint of the building or structure.
- E. Any change in use of a building or other structure, excluding any such activity that alters the footprint of the building or structure.
- F. The attachment of signs or other ornamentation to any building or structure, the installation of windows, doors, chimneys, vents, shafts, solar panels, heating, ventilation, or air conditioning equipment, or any other such improvement to a building or structure provided it occupies an additional surface area footprint of not more than 50 square feet.
- G. Any improvement or alteration to a building or structure necessary for compliance with the provisions of the Americans with Disabilities Act, or to otherwise provide accessibility to the disabled.

§ 1.4 MAJOR HIGHLANDS DEVELOPMENT

Any proposed project, development or activity that meets the definition of a Major Highlands Development (see Definitions, § 2.1) is subject to all applicable requirements and provisions of the New Jersey Department of Environmental Protection (NJDEP) Highlands Water Protection and Planning Act Rules (“NJDEP Preservation Area Rules,” N.J.A.C. 7:38-1 et seq.). By definition, such projects, developments and activities pertain solely to the Preservation Area of the Highlands Region. Nothing in this document shall be construed to waive, obviate, modify or otherwise exempt any covered project, development or activity, or any person(s) proposing or involved in such initiatives, from the provisions of the NJDEP Preservation Area Rules.

§ 1.5 NON-MAJOR HIGHLANDS DEVELOPMENT

Non-Major Highlands Development constitutes any development not defined as a Major Highlands Development. Any proposed project, development or activity that does not meet the definition of a Major Highlands Development shall remain subject to these Regulations, as provided (with specified exclusions) pursuant to § 1.1 above.

§ 1.6 CAPITAL AND OTHER PROJECT REVIEW

Plan proposals for all county capital and other projects proposing the ultimate disturbance of two acres or more of land or a cumulative increase in impervious surface by one acre or more for lands located within the Preservation Area are required to be submitted to the New Jersey Highlands Water Protection and Planning Council (“Highlands Council”). Because all such projects are by definition, Major Highlands Developments, applications for approval must be made to both the NJDEP (for an HPAA) and the Highlands Council. Until

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or unless notified of a streamlined dual agency review process, all such project proposals shall be submitted to each agency in accordance with all applicable requirements and procedures pertinent thereto. To ensure the most efficient use of state and county financial and professional resources, and to ensure consistency of all county projects with the RMP, all county capital projects and other projects proposed for lands within the Preservation Area, whether or not defined as Major Highlands Developments, shall henceforth be planned and designed in accordance with the Highlands RMP, as effectuated by compliance with the provisions of these Development Regulations. *(Note: Capital and Other Projects proposing the ultimate disturbance of two acres or more of land or a cumulative increase in impervious surface by one acre or more for lands located in the Planning Area of the Highlands Region are subject to nonbinding review and comment by the Highlands Council.)* The provisions of this section shall not apply to projects that qualify for Exemptions #9 and #10 of the Highlands Act at N.J.S.A. 13:20-28.

§ 1.7 EXEMPTIONS

The activities, improvements and development projects listed below are exempt from the provisions of the Highlands Act (at N.J.S.A. 13:20-28). To the extent applicable, these activities, improvements and development projects shall also be exempt from the provisions of these Regulations. Highlands Act exemptions shall not be construed to exempt County properties or facilities from any other regulations adopted by the county, however, specifically including but not limited to provisions regulating the operation and maintenance of on-site septic systems.

Exemption 1. The construction of a single family dwelling, for an individual's own use or the use of an immediate family member, on a lot owned by the individual on the date of enactment of the Highlands Act (August 10, 2004) or on a lot for which the individual entered into a binding contract of sale to purchase on or before May 17, 2004. (Note: the Highlands Act defines "an immediate family member" as a "spouse, child, parent, sibling, aunt, uncle, niece, nephew, first cousin, grandparent, grandchild, father-in-law, mother-in-law, son-in-law, daughter-in-law, stepparent, stepchild, stepbrother, stepsister, half brother, or half sister, whether the individual is related by blood, marriage, or adoption.")

Exemption 2. The construction of a single family dwelling on a lot in existence on the date of enactment of the Highlands Act (August 10, 2004), provided that the construction does not result in the ultimate disturbance of one acre or more of land or a cumulative increase in impervious surface by one-quarter acre or more.

Exemption 3. A Major Highlands Development that received, on or before March 29, 2004:

- a. One of the following approvals pursuant to the MLUL:
 - i. Preliminary or final site plan approval;
 - ii. Final municipal building or construction permit;
 - iii. Minor subdivision approval where no subsequent site plan approval is required;
 - iv. Final subdivision approval where no subsequent site plan approval is required; or
 - v. Preliminary subdivision approval where no subsequent site plan approval is required; and

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- b. At least one of the following permits from the NJDEP, if applicable to the proposed Major Highlands Development:
 - i. A permit or certification pursuant to the “Water Supply Management Act,” P.L.1981, c.262 (C.58:1A-1 et seq.);
 - ii. A water extension permit or other approval or authorization pursuant to the “Safe Drinking Water Act,” P.L.1977, c.224 (C.58:12A-1 et seq.);
 - iii. A certification or other approval or authorization issued pursuant to the “The Realty Improvement Sewerage and Facilities Act (1954),” P.L.1954, c.199 (C.58:11-23 et seq.); or
 - iv. A treatment works approval pursuant to the “Water Pollution Control Act,” P.L.1977, c.74 (C.58:10A-1 et seq.); or
- c. One of the following permits from the NJDEP, if applicable to the proposed Major Highlands Development, and if the proposed Major Highlands Development does not require one of the permits listed in subparagraphs (i) through (iv) of subparagraph (b) of this paragraph:
 - i. A permit or other approval or authorization issued pursuant to the “Freshwater Wetlands Protection Act,” P.L.1987, c.156 (C.13:9B-1 et seq.); or
 - ii. A permit or other approval or authorization issued pursuant to the “Flood Hazard Area Control Act,” P.L.1962, c.19 (C.58:16A-50 et seq.).

The exemption provided in this paragraph shall apply only to the land area and the scope of the Major Highlands Development addressed by the qualifying approvals pursuant to subparagraphs (a) and (b), or (c) if applicable, of this paragraph; shall expire if any of those qualifying approvals expire; and shall be deemed to have expired if construction beyond site preparation did not commence within three years after the date of enactment of the Highlands Act (August 10, 2004).

Exemption 4. The reconstruction of any building or structure for any reason within 125% of the footprint of the lawfully existing impervious surfaces on the site, provided that the reconstruction does not increase the lawfully existing impervious surface by one-quarter acre or more. This exemption shall not apply to the reconstruction of any agricultural or horticultural building or structure for a non-agricultural or non-horticultural use.

- a. For purposes of these Standards, this exemption shall not be construed to permit multiple 125% footprint expansions, but rather, to permit one or more reconstruction activities cumulatively resulting in a maximum 125% increase in the footprint of the impervious surfaces lawfully existing on the site, provided they do not cumulatively exceed the one-quarter acre limitation.
- b. For purposes of these Standards, the applicable date of lawful existence shall coincide with the date of enactment of the Highlands Act, or August 10, 2004.

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- c. For purposes of these Standards, these provisions shall not be construed to exempt any change in use of such reconstructed building or structure from the applicable provisions of these Standards.

Exemption 5. Any improvement to a single family dwelling in existence on the date of enactment of the Highlands Act (August 10, 2004), including but not limited to an addition, garage, shed, driveway, porch, deck, patio, swimming pool or septic system.

Exemption 6. Any improvement, for non-residential purposes, to a place of worship owned by a nonprofit entity, society or association, or association organized primarily for religious purposes, or a public or private school, or a hospital, in existence on the date of enactment of the Highlands Act (August 10, 2004), including but not limited to new structures, an addition to an existing building or structure, a site improvement, or a sanitary facility.

Exemption 7. An activity conducted in accordance with an approved woodland management plan pursuant to section 3 of the "Farmland Assessment Act," P.L.1964, c.48 (C.54:4-23.3) or the normal harvesting of forest products in accordance with a forest management plan approved by the State Forester.

Exemption 8. The construction or extension of trails with non-impervious surfaces on publicly owned lands or on privately owned lands where a conservation or recreational use easement has been established.

Exemption 9. The routine maintenance and operations, rehabilitation, preservation, reconstruction or repair of transportation or infrastructure systems by a state entity or local government unit, provided that the activity is consistent with the goals and purposes of the Highlands Act and does not result in the construction of any new through-capacity travel lanes.

Exemption 10. The construction of transportation safety projects and bicycle and pedestrian facilities by a state entity or local government unit provided that the activity does not result in the construction of any new through-capacity travel lanes.

Exemption 11. The routine maintenance and operations, rehabilitation, preservation, reconstruction, repair or upgrade of public utility lines, rights of way, or systems, by a public utility, provided that the activity is consistent with the goals and purposes of the Highlands Act.

Exemption 12. The reactivation of rail lines and rail beds existing on the date of enactment of the Highlands Act (August 10, 2004).

Exemption 13. The construction of a public infrastructure project approved by public referendum prior to January 1, 2005 or a capital project approved by public referendum prior to January 1, 2005.

Exemption 14. The mining, quarrying, or production of ready mix concrete, bituminous concrete, or Class B recycling materials occurring or which are permitted to occur on any mine, mine site, or construction materials facility existing on June 7, 2004.

Exemption 15. The remediation of any contaminated site pursuant to P.L.1993, c.139 (C.58:10B-1 et seq.).

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Exemption 16. Any lands of a federal military installation existing on the date of enactment of the Highlands Act (August 10, 2004) that lie within the Highlands Region.

Exemption 17. A Major Highlands Development located within an area designated as Planning Area 1 (Metropolitan), or Planning Area 2 (Suburban), as designated pursuant to the “State Development and Redevelopment Plan,” P.L.1985, c.398 (C.52:18A-196 et seq.) as of March 29, 2004, that on or before March 29, 2004 was the subject of a settlement agreement and stipulation of dismissal filed in the Superior Court, or a builder’s remedy issued by the Superior Court, to satisfy the constitutional requirement to provide for the fulfillment of the fair share obligation of the municipality. The exemption provided pursuant to this paragraph shall expire if construction beyond site preparation has not commenced within three years after receiving all final approvals required pursuant to the MLUL.

§ 1.8 EXEMPTION DETERMINATIONS

In the case of any proposed activity, improvement or development project that may be eligible for a Highlands Act exemption, the applicable County division, department, or agency shall not proceed until or unless proof of such exemption has been obtained in the form of a Highlands Applicability Determination from the NJDEP in coordination with the Highlands Council.

§ 1.9 REVIEW DESIGNEES

The County designates the following Passaic County Planning Department officials to be responsible for the oversight and review of any project(s) proposed that are subject to these regulations: Passaic County Planning Director and/or his/her designee.

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ARTICLE 2. DEFINITIONS

§ 2.1 DEFINITIONS

For purposes of these Regulations the following definitions shall apply:

Agricultural or Horticultural Development – Construction for the purposes of supporting common farmsite activities, including but not limited to, the production, harvesting, storage, grading, packaging, processing, and the wholesale and retail marketing of crops, plants, animals, and other related commodities and the use and application of techniques and methods of soil preparation and management, fertilization, weed, disease, and pest control, disposal of farm waste, irrigation, drainage and water management, and grazing.

Aquifer – A geologic formation, group of formations, or partial formation containing saturated permeable rock, sand or gravel sufficient to store and transmit usable quantities of water to wells and springs.

Archaeological Resources – Any material remains of past human life or activities which are of archaeological interest, such as tools, structures or portions of structures, pit houses, rock paintings, rock carvings, intaglios, graves, human skeletal materials, or any portion or piece of any of the foregoing items.

Best Management Practices (BMP) – Structural or nonstructural methods used to prevent or reduce the movement of sediment, nutrients, pesticides and other pollutants from the land to surface or ground water.

Capital or Other Projects – The use and development of lands and facilities under the jurisdiction of the Board of Chosen Freeholders, including the construction and reconstruction of infrastructure and other improvements (including but not limited to roadway improvements, stormwater facilities, bridges, and parks).

Carbonate Rock – Rock consisting chiefly of calcium and magnesium carbonates, such as limestone and dolomite.

Clear-Cutting – A forestry or logging practice in which most or all of the trees in a harvest area are cut down.

Community Based On-Site Wastewater Facilities – Sanitary sewerage treatment facilities (i.e., domestic treatment works) that discharge treated wastewater to ground waters as regulated by a NJPDES permit under N.J.A.C. 7:14, which provide service to one or more parcels that are approved and constructed as a single development or planned development.

Conditional Water Availability – The amount of water availability allowed in a deficit HUC14 subwatershed, subject to certain mitigation requirements, as determined by the Highlands Council.

Consumptive Water Use – Any use of water that results in its evaporation, transpiration, incorporation into products or crops, consumption by humans or animals, or removal by any other means from a watershed or subwatershed, other than by conveyances as untreated water supply, potable water, or wastewater.

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Contaminant – A substance capable of causing contamination of a water supply.

Contamination – The presence of any harmful or deleterious substances in the water supply, other than natural substances in natural concentrations, including but not limited to hazardous substances, hazardous wastes, and substances that are listed in the New Jersey Administrative Code at N.J.A.C. 7:9C (Ground Water Quality Standards), N.J.A.C. 7:9B (Surface Water Quality Standards) and N.J.A.C. 7:10 (NJ Safe Drinking Water Act Regulations), and as these regulations may be amended from time to time.

Cultural Resources – Sites, artifacts, or materials that relate to the way people live or lived, for example, archaeological sites, rock carvings, ruins, and the like. These resources are generally defined based on existing documentation or artifacts discovered relating to activities of people who lived, worked, or recreated in an area during a period in history.

Current Deficit Area – A HUC14 subwatershed characterized by negative Net Water Availability, meaning that existing consumptive and depletive water uses exceed the capacity of the ground water supply to sustain them.

Deforestation – The conversion of forested areas to non-forested areas, whether for use as urban land, or any other non-forest land use; disturbance of an area characterized as “forest” pursuant to the procedures provided in APPENDIX A, herein, the extent or effect of which is to disqualify the area from such designation.

Depletive Water Use – Use of water whereby it is withdrawn from a HUC14 subwatershed and transported outside of the subwatershed (through utility conveyances as untreated water supply, potable water, or wastewater), resulting in a net loss of water to the subwatershed from which it originated.

Density – The permitted number of dwelling units per gross acre of land to be developed.

Density, Septic System – The gross acreage of land area required per individual septic system to physically contain and support its functions in keeping with the specified wastewater design flow.

Development – The division of a parcel of land into two or more parcels, the construction, reconstruction, conversion, structural alteration, relocation, or enlargement of any county building, facility or other structure, or of any mining excavation or landfill, the construction and reconstruction of any public infrastructure improvements (including but not limited to roadway improvements, stormwater facilities, bridges, and parks) and any use or change in the use of any building or other structure, or land or extension of use of land.

Discharge – Any intentional or unintentional action or omission, unless pursuant to and in compliance with the conditions of a valid and effective federal or state permit, resulting in the releasing, spilling, pumping, pouring, emitting, emptying or dumping of a hazardous substance into the waters or lands of the state or into waters outside the jurisdiction of the state when damage may result to the lands, waters or natural resources within the jurisdiction of the state.

Dissolution – The process by which a space or cavity in or between rocks is formed by the solution of part of the rock material.

Disturbance – The placement of impervious surface, the exposure or movement of soil or bedrock, or the clearing, cutting, or removing of vegetation. (Pursuant to § 4.2.5.B of this Regulation, when considering

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land for conversion to non-agricultural land uses in a Highlands Open Water buffer, historic or current agricultural land uses shall not be considered “land improvements,” “development,” “land disturbances,” or “land uses” for purposes of calculating the previously disturbed area.)

Endangered Species – Species included on the list of endangered species that the NJDEP promulgates pursuant to the Endangered and Nongame Species Conservation Act, N.J.S.A. 23:2A-13 et seq., and the Endangered Plant Species List Act, N.J.S.A. 13:1B-15.151 et seq., and any species or subspecies of wildlife appearing on any federal endangered species list or any species or subspecies of plant designated as listed, proposed, or under review by the federal government pursuant to the Endangered Species Act of 1973, 16 U.S.C. §§ 1531 et seq.

Existing Constrained Areas – Stream flows within any HUC14 subwatershed(s) upstream of a Current Deficit Area.

Facility Expansion – The expansion of the capacity of an existing capital improvement in order that the improvement may serve new development.

Floor Area – The area of each floor of a building lying within the inside perimeter of its exterior walls excluding vent shafts, courts, and unfinished areas such as basements or attics having ceiling heights less than that required for habitable space under the building code.

Forest – A biological community as determined by the method set forth under APPENDIX A, as adapted from NJDEP Preservation Area Rules, at N.J.A.C. 7:38-3.9.

Forest Area, Upland – A biological community that is a “forest,” as defined above, and that is not located in an area designated as Highlands Open Waters (i.e., not a forested wetland or other Highlands Open Waters).

Forest Area, Total – The percentage of total area that is covered in forest.

Forest, Core – The area and percent of a forest patch that is greater than 300 feet from a forest edge.

Forest Integrity – An expression of the application of landscape metrics to evaluate the effects of forest fragmentation across the landscape, thereby recognizing the ability of forests to provide essential ecosystem functions.

Forest Patch – A contiguous tract of forest bordered by either altered land or a road.

Forest Patch, Mean Distance to Closest (MDCP) – The average edge-to-edge distance between distinct forest patches located within a 1,000-foot search radius of one another. The MDCP provides a measure of forest patch isolation within the landscape area of interest.

Forest Management Plan – A written guidance document describing the forest resources present on a property, the county’s management goals and objectives, and the recommended practices or activities to be carried out over time on the land. This tool is used to evaluate a forest land’s current state and provide a management process which, over time, meets the county’s objectives, while maintaining health and vigor of the resource. Forest Management Plans are typically written for a ten-year period.

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Ground Water – Water contained in the interconnected voids of a saturated zone in the ground. A saturated zone is a volume of ground in which the voids in the rock or soil are filled with water at greater than or equal to atmospheric pressure.

Ground Water Availability – The total amount of water assigned by the Highlands Council to a HUC14 subwatershed that can be used for consumptive and depletive water uses by water uses that do not draw from water supplies with a NJDEP-approved safe yield.

Habitat Value – The value of an ecosystem area for maintenance of a healthy population of a species as determined by quantity, quality, type, and function.

Hazardous Substance – Any substance designated under 40 CFR 116 pursuant to Section 311 of the Federal Water Pollution Control Act Amendments of 1972 [Clean Water Act] (Public Law 92-500; 33 U.S.C. 1251 et seq.), the Spill Compensation and Control Act, N.J.S.A. 58:10-23.11 et seq., or Section 4 of the New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and as these regulations may, from time to time, be amended. Substances listed include petroleum, petroleum products, pesticides, solvents and other substances.

Hazardous Waste – Any solid waste that is defined or identified as a hazardous waste pursuant to the Solid Waste Management Act, N.J.S.A. 13:1E et seq., N.J.A.C. 7:26-8, or 40 CFR Part 261.

Highlands Applicability Determination – The determination made by the NJDEP of whether a project proposed for the Preservation Area is a major Highlands development, whether any such major Highlands development is exempt from the Highlands Act, and whether the project is consistent with the applicable areawide water quality management plan.

Highlands Historic and Cultural Resource Inventory – The listing of historic, cultural and archaeological resources within the Highlands Region, including but not limited to: all properties listed on the New Jersey or National Register of Historic Places; all properties which have been deemed eligible for listing on the New Jersey or National Register of Historic Places; and all properties for which a formal opinion of the State Historic Preservation Office (SHPO) has been issued.

Highlands Open Waters – All springs, streams including intermittent streams, wetlands, and bodies of surface water, whether natural or artificial, located wholly or partially within the boundaries of the Highlands Region, but not including swimming pools. Highlands Open Waters include seeps, lakes, ponds, and vernal pools; all categories (including springs, streams, and wetlands) as described and defined in the Borough/Township/Town Environmental Resource Inventory.

Highlands Open Waters Buffer – A 300-foot buffer adjacent to Highlands Open Waters in which no disturbance is permitted, except as provided in N.J.A.C. 7:38-3.6. With respect to wetlands and other Highlands Open Waters features, the feature shall include a protection buffer of 300 feet, measured from the mapped wetlands (not from the wetlands buffer) delineated in a Letter of Interpretation or Highlands Resource Area Determination, as applicable, as provided by NJDEP.

Highlands Preservation Area Approval (HPAA) – A permit to engage in a regulated activity in the Highlands Preservation Area issued by the NJDEP pursuant to the Highlands Act and the NJDEP Highlands Water Protection and Planning Act Rules (N.J.A.C. 7:38), including an HPAA that contains a waiver pursuant to N.J.S.A. 13:20-33b. Highlands Preservation Area Approval includes Highlands

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general permits issued pursuant to N.J.S.A. 13:20-33d and promulgated at N.J.A.C. 7:38-12. HPAA, when used in these Regulations, includes Highlands general permits unless explicitly excluded.

Highlands Public Community Water Supply System – Public water supply systems in the Highlands Region that pipe water for human consumption to at least 15 service connections or that regularly serve at least 25 year-round residents.

Highlands Redevelopment Area – A property, portion 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 Region. A Highlands Redevelopment Area may include the intervening or surrounding lands which are significantly affected by or necessary to support such sites, and is subject to a Highlands Council-approved redevelopment plan setting forth the scope and details of any redevelopment project(s) and/or activities permitted to occur.

Highlands Scenic Resource Inventory – The inventory of regionally significant lands within the Highlands Region that encompasses elements of high scenic quality worthy of protection, as approved by the Highlands Council.

Historic District – One or more historic sites and intervening or surrounding property significantly affecting or affected by the quality and character of the historic site or sites.

Historic Resources – Buildings, structures, objects, districts, sites, or areas that are significant in the history, architecture, archaeology, engineering or culture of a place or time.

Historic Site – Any real property, man-made structure, natural object or configuration of any portion or group of the foregoing of historical, archaeological, cultural, scenic, or architectural significance.

HUC – Hydrologic Unit Code; identification number developed by the USGS to designate drainage basins including watersheds and subwatersheds.

HUC14 Subwatershed – A delineated subwatershed area identified by a 14-digit HUC, within which water drains to a particular receiving surface water body.

Impervious Surface – Any structure, surface, or improvement that reduces or prevents absorption of stormwater into land, including, but not limited to, porous paving, paver blocks, gravel, crushed stone, decks, patios, elevated structures, and other similar structures, surfaces, or improvements.

Individual Subsurface Sewage Disposal System – A system authorized by and regulated under N.J.A.C. 7:9A for disposal of sanitary sewage into the ground which is designed and constructed to treat sanitary sewage in a manner that will retain most of the settleable solids in a septic tank and to discharge the liquid effluent to a disposal field, disposal bed, or disposal trench or trenches. The term “septic system” is equivalent in meaning.

Karst – A distinctive topography that indicates solution of underlying carbonate rocks (such as limestone and dolomite) by surface water or ground water over time, often producing surface depressions, sinkholes, sinking streams, enlarged bedrock fractures, caves, and underground streams.

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Light Detection and Ranging (LiDAR) – Technology that uses an active sensor, similar to radar that transmits laser pulses to a target and records the time it takes for the pulse to return to the sensor receiver. This technology is used for high-resolution topographic mapping.

Linear Development – Infrastructure, utilities and the associated right-of-ways therefor, including but not limited to such installations as railroads, roads, sewerage and water supply pipelines, stormwater management pipes and channels, natural gas and liquid fuel pipelines, electric, telephone and other transmission lines, and in all cases, the associated right-of-ways therefor.

Low Impact Development – An environmentally sensitive approach to land use planning that uses a variety of landscape and design techniques to manage development activities to mitigate potential adverse impacts on the natural environment.

Major Highlands Development – Except as otherwise provided pursuant to subsection a. of section 30 of the Highlands Act (“Exemptions”): (1) any non-residential development in the Preservation Area; (2) any residential development in the Preservation Area that requires an environmental land use or water permit from the NJDEP or that results in the ultimate disturbance of one acre or more of land or a cumulative increase in impervious surface by one-quarter acre or more; (3) any activity undertaken or engaged in the Preservation Area that is not a development but results in the ultimate disturbance of one-quarter acre or more of forested area or that results in a cumulative increase in impervious surface by one-quarter acre or more on a lot; or (4) any capital or other project of a state entity or local government unit in the Preservation Area that requires an environmental land use or water permit from the NJDEP or that results in the ultimate disturbance of one acre or more of land or a cumulative increase in impervious surface by one-quarter acre or more. Major Highlands Development shall not include any agricultural or horticultural development or agricultural or horticultural use. Solar panels shall not be included in any calculation of impervious surface. (As defined by the Highlands Act, N.J.S.A. 13:20-1 et seq., as amended.)

Major Potential Contaminant Sources (PCS) – Land uses and activities determined by the Highlands Council to pose a major risk of ground water contamination (see APPENDIX B).

Minor Potential Contaminant Sources (PCS) – Land uses and activities determined by the Highlands Council to pose a minor risk of ground water contamination (see APPENDIX C).

Municipal Land Use Law (MLUL) – The New Jersey Municipal Land Use Law, N.J.S.A. 40:55D-1 et seq..

NJDEP – New Jersey Department of Environmental Protection

NJDEP Preservation Area Rules – The regulations established by the NJDEP to implement requirements of the Highlands Act, titled “Highlands Water Protection and Planning Act Rules,” and codified at N.J.A.C. 7:38-1 et seq.

NJDOT – New Jersey Department of Transportation

NJPDES – New Jersey Pollutant Discharge Elimination System

NJPDES Permit – A permit issued by the NJDEP authorizing certain discharges to ground or surface waters of the State of New Jersey pursuant to the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., as amended, and its implementing rules at N.J.A.C. 7:14A.

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NJ Soil Erosion and Sediment Control Act Rules – Regulations adopted by the State Soil Conservation Committee at N.J.A.C. 2:90-1, incorporating requirements for Best Management Practices regarding temporary and permanent soil erosion control.

Non-Public Well – Any water supply well used for potable purposes other than a public community or non-community water supply well.

Non-Structural Stormwater Management – Techniques and practices devised to manage stormwater runoff and reduce pollution levels, without extensive construction efforts. Non-structural management strategies often mimic the natural hydrology of a site and utilize site planning and design to accomplish stormwater control.

Operations and Contingency Plan – A management plan regarding an existing or proposed Major or Minor Potential Contaminant Source (PCS), that: a) documents the specific PCS(s) existing or proposed for the site; b) describes the types and quantities of substances and/or wastes expected to be used, discharged or stored on the site; c) indicates the means by which spillage, leakage or discharge of such materials will be prevented; d) provides the means or methods to be used to contain or remedy any accidental spill, leak, discharge or migration of such materials from the site directly or indirectly into ground water, surface water bodies, or the land surfaces that provide recharge to the underlying aquifer; e) indicates the procedures to be undertaken to notify the appropriate administrative authorities, including but not limited to the NJDEP, the local Board of Health, and the County Health Department, regarding any accidental spillage or discharge of such materials; and f) demonstrates that best management practices have been incorporated into the design and management of both the site and the particular PCS(s) it contains to ensure against such discharges.

Person – Any individual, public or private corporation, company, partnership, firm, association, owner or operator, political subdivision of this State, and any state, federal or interstate agency or an agent or employee thereof.

Planning Area – Lands within the Highlands Region that are not located in that portion designated by the Highlands Act as the “Preservation Area” (see metes and bounds description at N.J.S.A. 13:20-7b). For purposes of these Regulations, this terminology shall also be used to refer to Planning Area lands located solely within the County.

Potential Contaminant Source (PCS) – Activity or land use that may be a source of a contaminant that has the potential to move into ground water withdrawn from a well.

Preservation Area – Lands within the Highlands Region that are located in that portion designated by the Highlands Act as the “Preservation Area” (see metes and bounds description at N.J.S.A. 13:20-7b). For purposes of these Regulations, this terminology shall also be used to refer to Preservation Area lands located solely within the County.

Public Community Water System – A public water system that serves at least 15 service connections used by year-round residents or regularly serves at least 25 year round residents.

Public Community Well – A well that provides water to a public water system serving at least 15 service connections used by year-round residents or regularly serving at least 25 year-round residents.

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Public Non-Community Water System – A public water system that is not a public community water system and is either a “public non-transient non-community water system” or a “public transient non-community water system” as defined herein.

Public Non-Community Well – A well that is not a public community well and that provides water to a public water system regularly serving at least 25 individuals for at least 60 days in any given calendar year.

Public Non-Transient Non-Community Water System – A public water system that is not a public community water system and that regularly serves at least 25 of the same persons for more than six months in any given calendar year.

Public Transient Non-Community Water System – A public water system that is not a public community or a public non-transient non-community water system and that serves at least 25 transient individuals for at least 60 days in any given calendar year.

Public Water System – A system for the provision to the public of water for human consumption through pipes or other constructed conveyances, if such system has at least 15 service connections or regularly serves at least 25 individuals daily for at least 60 days out of the year. Such term includes any collection, treatment, storage and distribution facilities under control of the operator of such system and used primarily in connection with such system, and any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. A public water system is either a “public community water system” or a “public non-community water system” as defined herein.

Rare Species – Wildlife species that are not endangered or threatened wildlife species but are considered by the NJDEP to be species of special concern as determined by a panel of experts, or that are ranked S1 (critically imperiled in New Jersey because of extreme rarity), S2 (imperiled in New Jersey because of rarity), S3 (rare in New Jersey), G1 (critically imperiled globally), G2 (imperiled globally because of rarity) or G3 (globally very rare and local throughout its range or found locally in a restricted range) in the Natural Heritage Database, and Plant Species of Concern listed pursuant to N.J.A.C. 7:5C-3.1.

Reforestation – The restoration (replanting) of a forest that has been reduced by fire, cutting, or any other cause.

Riparian Area – Areas adjacent to and hydrologically interconnected with Highlands Open Waters rivers and streams consisting of flood prone areas, wetlands, soils that are hydric, alluvial, or have a shallow depth to ground water, and including wildlife passage corridors within 300 feet of surface Highlands Open Waters features.

Riparian Area, Flood Prone Portion – Areas delineated by the Highlands Council based on NJDEP flood prone and FEMA Q3 flood area mapping (NJDEP 1996, FEMA 1996) including USGS documented (by prior flood events) and undocumented flood prone areas and Federal Emergency Management Agency (FEMA) 100-year floodplain.

Riparian Soils – Soils associated with Highlands Open Waters that are hydric, alluvial, or exhibit a shallow depth to seasonal high water table.

Riparian Area Wildlife Corridor – A 300-foot corridor on each mapped stream bank or from the stream centerline if no stream bank is mapped.

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Riparian Area Integrity Score – The value (High, Moderate, Low) of Highlands Riparian Areas within each Highlands HUC14 subwatershed as established by the Highlands Council through an analysis of the relative amount of impervious cover, agricultural land use, density of roadway stream-crossings, vegetative condition, and habitat for wetland/water-dependent, threatened, and endangered wildlife species of the Riparian Areas.

SCD – Soil Conservation District, as established in accordance with the Soil Conservation Act, N.J.S.A. 4:24-1 et seq.

Scenic Resources – Sites and landscapes that are distinctive and remarkable for their geology, topography, history, culture, and aesthetics or can be representative of the defining character of a community. They may include prominent ridgelines, mountainsides or hillsides, panoramic vistas, community gateways and landmarks, river valleys, and agricultural landscapes.

Sedimentation – The process of deposition of a solid material from a state of suspension or solution in a fluid (usually air or water).

Septic System – A system authorized by and regulated under N.J.A.C. 7:9A for disposal of sanitary sewage into the ground which is designed and constructed to treat sanitary sewage in a manner that will retain most of the settleable solids in a septic tank and to discharge the liquid effluent to a disposal field, disposal bed, or disposal trench or trenches. The term “Individual Subsurface Sewage Disposal System” is equivalent in meaning.

Shoreline – The Ordinary High Water Mark, or point on the bank or shore up to which the presence and action of the water is so continuous as to leave a distinct mark either by erosion, destruction of terrestrial vegetation, or other easily recognized characteristic.

SIC – Standard Industrial Classification

Site Disturbance – The placement of impervious surface, the exposure or movement of soil or bedrock, or the clearing, cutting, or removing of vegetation.

Slope (or “Grade”) – An area of land forming an incline; a measure used to describe the degree of inclination of an area of land; the difference in vertical elevation (“rise”) of a land area occurring over a specified horizontal distance (“run”). For example, a land area having a one (1)-foot vertical rise over a 10-foot horizontal run, has a slope of 10%. A 10-foot vertical rise over a 25-foot horizontal run indicates a slope of 40%.

Slope, Steep – Any slope having a grade of 15% or more, or if situated in a Riparian Area, of 10% or more.

Slopes, Constrained – All non-Riparian Area lands having a slope of 15% to less than 20% which are non-forested and exhibit one or more of the following characteristics: a) highly susceptible to erosion; b) shallow depth to bedrock; or c) a Soil Capability Class indicative of wet or stony soils.

Slopes, Limited Constrained – All non-Riparian Area lands having a slope of 15% to less than 20%, which are non-forested, are not highly susceptible to erosion, and do not have a shallow depth to bedrock or a Soil Capability Class indicative of wet or stony soils.

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Slopes, Moderately Constrained – All forested non-Riparian Area lands having a slope of 15% to less than 20%.

Slopes, Severely Constrained – All lands having slopes of 20% or greater and all lands within Riparian Areas having slopes of 10% and greater.

Soil Capability Class – Soil class designated by the United States Department of Agriculture (USDA) “Soil Survey,” available from the Natural Resource Conservation Service and containing descriptions of soil series on a county-by-county basis (available online at www.soildatamart.nrcs.usda.gov).

Solar Panel – An elevated panel or plate, or a canopy or array thereof, that captures and converts solar radiation to produce power, and includes flat plate, focusing solar collectors, or photovoltaic solar cells and excludes the base or foundation of the panel, plate, canopy, or array. (As defined by the Highlands Act, N.J.S.A. 13:20-1 et seq., as amended.)

Species of Special Concern – Wildlife species identified by the NJDEP that warrant special attention because of evidence of population decline or inherent vulnerability to environmental deterioration or habitat modification that would result in the species becoming threatened if conditions surrounding the species begin or continue to deteriorate. The term includes species for which there is little knowledge of current population status in the state.

Stormwater Management Rules – NJDEP rules at N.J.A.C. 7:8 that set forth the required components of regional and municipal stormwater management plans, and establish the stormwater management design and performance standards for new (proposed) development.

Structure – A combination of materials to form a construction for occupancy, use or ornamentation whether installed on, above, or below the surface of a parcel of land.

Subsidence Sinkholes – Sinkholes formed by the downward settlement of unconsolidated overburden into openings in underlying, soluble bedrock.

Surface Water – Any waters of the State of New Jersey which are not ground water.

Threatened Species – An indigenous nongame wildlife species of New Jersey designated pursuant to the Endangered and Nongame Species Conservation Act, N.J.S.A. 23:2A-13 et seq., and its implementing rules, N.J.A.C. 7:25-4.17, as most recently amended.

Time of Travel – The average time that a volume of water will take to travel through the zone of saturation from a given point to a pumping well.

Total Maximum Daily Load (TMDL) – The pollutant loading that a surface water body may assimilate without violating NJDEP Surface Water Quality Standards (N.J.A.C. 7:9B) and a determination of the extent to which pollutant loadings to a water body must be reduced to restore that water body to a water quality that complies with the Surface Water Quality Standards. A TMDL includes an allocation of allowable pollutant loads to specific point sources (Wasteload Allocations) and categories of non-point sources (Load Allocations), after subtraction of a Margin of Safety and, where appropriate, a Reserve Capacity (for future pollutant loads).

Viewshed – An area of land, water or other physical features visible from a fixed vantage point.

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Wastewater Utility – A publicly, privately, or investor-owned utility that collects and may treat sanitary wastewater, as regulated by the NJDEP.

Water Availability, Conditional – The amount of water availability allowed in a deficit HUC14 subwatershed, subject to certain mitigation requirements, as determined by the Highlands Council.

Water Availability, Net – The value assigned by the Highlands Council to a HUC14 subwatershed resulting from subtracting consumptive and depletive surface and ground water uses from ground water availability.

Water Conservation – Implementation of BMPs to ensure maximum water use efficiency and reduction in water use and losses; measures may include low impact development techniques, water conserving fixtures, water valves, beneficial re-use systems and capture of stormwater.

Water Quality Management Plan (WQMP) – A plan prepared pursuant to sections 208 and 303 of the Federal Clean Water Act, 33 U.S.C. § 1251 et seq., (33 U.S.C. § 1288 et seq. and 1313 respectively) and the Water Quality Planning Act, N.J.S.A. 58:11A-1 et seq., including the Statewide WQMP, or areawide or county WQMP as defined under N.J.A.C. 7:15.

Water Use and Conservation Management Plan – A municipal- or watershed-based planning document approved by the Highlands Council to ensure the sound use and management of water resources. Water Use and Conservation Management Plans document the current state of water availability and use in the subwatersheds of interest, set priorities for the use and protection of available water, and establish methods to reduce and, where feasible, eliminate net water availability deficits where they exist.

Wellhead – The well, borehole, and appurtenant equipment for a public community well, public non-community well, or non-public well within a cluster of non-public wells.

Wellhead Protection Area (WHPA) – A plan-view representation of the portion of an aquifer from which water flows to a public well within an average 12-year time of travel.

Zone of Saturation – A layer within or below the soil profile that is saturated with ground water either seasonally or throughout the year.

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ARTICLE 3. PRESERVATION AREA REGULATIONS

§ 3.1 HIGHLANDS DISTRICTS

The provisions of these Regulations apply to the Preservation Area (depicted in Exhibit 1), including all Land Use Capability Map Zones (Exhibit 2), and all Highlands Resource Areas and Special Protection Areas (Exhibits 3 through 17), each as delineated and described within the Highlands Element of the County Master Plan and incorporated herein by reference.

§ 3.2 DEVELOPMENT REGULATIONS

The provisions of this Article shall regulate any County development project located in the Preservation Area.

§ 3.2.1 Specific Regulations

- A. ***Prime Ground Water Recharge Area.*** Any use (or structure related or devoted to such use) which is designated as a Minor Potential Contaminant Source (PCS) by the Highlands Council (see APPENDIX C), or as Major PCS #17 of Appendix B pertaining to livestock, shall not be created in a Prime Ground Water Recharge Area except in compliance with the following conditions:
1. Submission, approval and implementation of an Operations and Contingency Plan; and
 2. Facility and site design shall incorporate best management practices to prevent unintentional discharge of contaminants to ground water, surface water bodies, and land areas supporting or proximate to the facility or facility operations.
- B. ***Wellhead Protection Area, Tier 1.*** Any use (or structure related or devoted to such use) which is designated by the Highlands Council as either Minor Potential Contaminant Source (PCS) #12 or Minor PCS #14, each as listed in APPENDIX C, or as Major PCS #17 of Appendix B, shall not be created within a designated Tier 2 Wellhead Protection Area, except in compliance with the following conditions:
1. Submission, approval and implementation of an Operations and Contingency Plan; and
 2. Facility and site design shall incorporate best management practices to prevent unintentional discharge of contaminants to ground water, surface water bodies, and land areas supporting or proximate to the facility or facility operations.
- C. ***Wellhead Protection Area, Tier 2.*** Any use (or structure related or devoted to such use) which is designated as a Minor Potential Contaminant Source (PCS) by the Highlands Council (see APPENDIX C), or as Major PCS #17 of Appendix B pertaining to livestock, shall not be created within a Tier 2 Wellhead Protection Area, except in compliance with the following conditions:
1. Submission, approval and implementation of an Operations and Contingency Plan; and
 2. Facility and site design shall incorporate best management practices to prevent unintentional discharge of contaminants to ground water, surface water bodies, and land areas supporting or proximate to the facility or facility operations.

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- D. **Wellhead Protection Area, Tier 3.** Any use (or structure related or devoted to such use) which is designated as a Major or Minor Potential Contaminant Source (PCS) by the Highlands Council (see APPENDIX B and APPENDIX C), shall not be created within a designated Tier 3 Wellhead Protection Area, except in compliance with the following conditions:
1. Submission, approval and implementation of an Operations and Contingency Plan; and
 2. Facility and site design shall incorporate best management practices to prevent unintentional discharge of contaminants to ground water, surface water bodies, and land areas supporting or proximate to the facility or facility operations.
- E. **Highlands Special Environmental Zone.** No uses shall be created within the Highlands Special Environmental Zone unless:
1. For any non-Major Highlands Development proposal, a Special Environmental Zone waiver permitting such conditional use is issued by the Highlands Council; or
 2. For any Major Highlands Development proposal, an HPAA with waiver is issued by the NJDEP.

§ 3.2.2 **Prohibited Development**

The following uses shall not be created within the Highlands District classifications listed below. These provisions shall not apply to Appendix B Major PCS #17 pertaining to livestock, to Appendix C Minor PCS #12 pertaining to agricultural chemical storage, or to Appendix C Minor PCS#14 pertaining to livestock.

- A. **All Highlands Zones & Sub-Zones.** Where the development of any project is physically infeasible due to the maximum density of development requirements at § 3.3, below, such use is prohibited.
- B. **Carbonate Rock Area.** The uses and structures related or devoted to such uses, are expressly prohibited from any portion of the Carbonate Rock Area or from any lands identified as draining into a designated Carbonate Rock Area:
1. Solid waste landfills;
 2. Hazardous waste storage and disposal facilities;
 3. Hazardous materials storage and handling facilities; and
 4. Underground storage tanks.
- C. **Prime Ground Water Recharge Area.** Any use, or structure related or devoted to such use, which is designated as a Major Potential Contaminant Source (PCS) by the Highlands Council (see APPENDIX B) is expressly prohibited from any portion of the Prime Ground Water Recharge Area.
- D. **Wellhead Protection Area, Tier 1.** Any use, or structure related or devoted to such use, which is designated by the Highlands Council as a Major or Minor Potential Contaminant Source (PCS) or as a potential source of pathogenic contaminants (see APPENDIX B and APPENDIX C) is expressly prohibited from any portion of a Tier 1 Wellhead Protection Area.

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- E. **Wellhead Protection Area, Tier 2.** Any use, or structure related or devoted to such use, which is designated as a Major Potential Contaminant Source (PCS) by the Highlands Council (see APPENDIX B) is expressly prohibited from any portion of a Tier 2 Wellhead Protection Area.

§ 3.3 DENSITY AND INTENSITY OF DEVELOPMENT

Development in the Preservation Area shall occur only at densities and intensities that are appropriate to the water supply and wastewater treatment options available to support it. This section relates solely to ensuring that such county development: a) does not exceed the capacity of the land, resources and infrastructure available to support it; b) is designed to minimize land disturbance and protect natural resources; and c) in the case of new or extended public (or semi-public) infrastructure such as roadways, water and wastewater utilities, is configured to minimize per unit infrastructure costs while maximizing efficiency of use.

§ 3.3.1 Applicability

These provisions apply to new development and if modifications or improvements to existing development result in either, an increase in water demand by an average of 400 gallons per day or more, or for septic system yield by an average of 500 gallons per day or more.

§ 3.3.2 Base Maps

Base maps regarding water availability and wastewater treatment capacity appear in the technical information provided in the Conservation Plan of the County Master Plan Highland Element. These include the following: Net Water Availability by HUC14 Subwatershed (Exhibit 18), Public Community Water Systems Map (Exhibit 19), and Highlands Domestic Sewerage Facilities Map (Exhibit 20) Exhibit 21.

§ 3.3.3 Development Subject to Water Availability

All new development within the Preservation Area is subject to the availability of water sufficient in both quantity and quality to sustainably support it. Any proposed increase in the demand for water supply deriving from Preservation Area ground water sources or from surface water sources that are not associated with a NJDEP-approved safe yield, shall be accompanied by an analysis of sufficient water capacity, which analysis shall be provided by the Highlands Council. This provision shall apply to all development, expressly including any change in use (or modification to an existing use pursuant to § 3.3.1) that entails an increase in the demand for such water supply by an average 400 gallons per day or more. In the case of a Major Highlands Development such approval shall have been issued a Highlands Preservation Area Approval from the NJDEP. Specific requirements pertinent to new development reliant upon ground water supplies may be found at § 4.7. For purposes of determining net increases in water demand associated with modifications to existing uses pursuant to these requirements, the following unit/square footage figures shall apply as 400-gallon-per-day equivalents:

- A. Office and Commercial Uses – 2,400 square feet of floor area
- B. Industrial (Including Warehousing/Distribution) Uses – 18,182 square feet of floor area
(Excluding Process Wastewater Flow)

§ 3.3.4 Development Served by Septic Systems

Development proposals involving new or increased demand for septic system capacity shall be regulated in accordance with this section. Nothing herein applies to the replacement or repair of an existing septic system.

- A. *Major Highlands Development.* Any new individual subsurface disposal system (or aggregate of equivalent disposal units as provided at N.J.A.C. 7:38) proposed to serve a Major Highlands Development shall be

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authorized only by the NJDEP in accordance with NJDEP Preservation Area Rules (N.J.A.C. 7:38) and all other applicable requirements. The applicable septic system density requirements appear at C.1-5, below.

- B. *Non-Major Highlands Development.* Any new individual subsurface disposal system (or aggregate of equivalent disposal units) proposed to serve a development that does not constitute a Major Highlands Development shall be designed to meet the septic system density requirements of the Highlands Area Land Use Ordinance of the Preservation Area municipality in which it is located.
- C. *Septic System Density Requirements.* A new individual subsurface disposal system or aggregate of equivalent disposal units where the sanitary wastewater design flow is 2,000 gallons per day or less shall be permitted only in accordance with the density limitations, at 5.a. through 5.d., below. Forest under this subsection shall be identified and calculated as provided at APPENDIX A (from N.J.A.C. 7:38-3). For the purposes of this subsection, “equivalent disposal unit” means for non-residential development comprising structures other than single-family homes, 500 gallons of wastewater per day generated for the development type, as determined in accordance with N.J.A.C. 7:9A-7.4.
1. On a lot that contains all forest, there shall be no more than one individual subsurface disposal system or equivalent disposal unit for each 88 acres of the lot;
 2. On a lot that does not contain forest, there shall be no more than one individual subsurface disposal system or equivalent disposal unit for each 25 acres of the lot;
 3. For the purposes of this subsection, the acreage of a lot shall be the total area of the lot(s) on which the proposed development is located as described by deed(s) or subdivision plat(s) on file with the municipal or county clerk.
 4. For a lot containing both forest and non-forest areas, the total number of allowable individual subsurface disposal systems or equivalent disposal units permitted on the lot shall be determined by calculating the number of acres of the lot that are forest (as determined in accordance with APPENDIX A, from N.J.A.C. 7:38-3.9) and dividing that number by 88; calculating the remaining number of acres of the lot that are not forest and dividing that number by 25; and then summing the results. If the sum results in a fraction, the number shall be rounded down to the nearest whole number in order to determine the number of permitted individual subsurface disposal systems or equivalent disposal units.
 5. For purposes of this section, contiguous and noncontiguous lots in existence as of August 10, 2004 may be aggregated such that the number of individual subsurface disposal systems or equivalent disposal units that would be permitted under this section on one or more of the aggregated lots is transferred to one or more of the aggregated lots provided:
 - a) The proposed development on the lot or lots to receive the transferred individual subsurface disposal systems or equivalent disposal units complies with all federal, state and local laws;
 - b) In the case of a Major Highlands Development, the proposed development on the lot or lots to receive the transferred individual subsurface disposal systems or equivalent disposal units does not require a waiver of any requirement of N.J.A.C. 7:38 and is constructed in accordance with the Highlands Act and N.J.A.C. 7:38, inclusive of 3% maximum impervious surface limitations;

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- c) The lots to be aggregated under this paragraph are all located in the Preservation Area and for Major Highlands Developments, within the same HUC14; and
- d) The lot or lots from which the individual subsurface disposal systems or equivalent disposal units are to be transferred are subject to a conservation restriction against future disturbance. For Major Highlands Development such restrictions shall be in accordance with N.J.A.C. 7:38-6.3; for non-Major Highlands Development such restrictions shall be in accordance with these Regulations.

D. *Additional Septic System Requirements.* In addition to the requirements above, individual subsurface sewage disposal systems or equivalent disposal units shall satisfy the Standards for Individual Subsurface Sewage Disposal Systems (N.J.A.C. 7:9A) without extraordinary measures, including replacement of disposal field soil with permeable material or mounding of a disposal field to achieve the required depth to ground water or confining layer.

§ 3.3.5 **New or Extended Utility Infrastructure**

New, expanded or extended public water systems, 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.

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ARTICLE 4. PRESERVATION AREA RESOURCE REGULATIONS

§ 4.1 FOREST RESOURCES

§ 4.1.1 Forest Resource Area

All portions of the Preservation Area identified by the Highlands Council as Forest Resource Area appear in the map titled “Forest Resource Area” (Exhibit 22).

§ 4.1.2 Total Forest Area

All portions of the Preservation Area identified by the Highlands Council as containing forest (as defined at § 2.1) appear in the map titled “Total Forest Area” (Exhibit 22). The Total Forest Area includes forested portions of lands designated as Forest Resource Area. All portions of the Preservation Area identified by the Highlands Council as Forest Resource Area appear in the map titled “Forest Resource Area” (Exhibit 22).

§ 4.1.3 Forest Subwatershed Integrity Areas

The Highlands Council has evaluated and assigned forest integrity valuations to each of the HUC14 subwatersheds of the County Preservation Area. These valuations appear in the map titled “Forest Subwatersheds” (Exhibit 23).

§ 4.1.4 Clear-Cutting Prohibited

Clear-cutting is prohibited in any forested portion of the Preservation Area, whether the affected lands are delineated as Total Forest Area or Forest Resource Area, or consist of lands containing upland forest, as determined under the procedures provided at APPENDIX A.

§ 4.1.5 Regulations

- A. **Prohibitions.** Any forest disturbance that by definition constitutes deforestation (see § 2.1), is prohibited within any portion of the Forest Resource Area, with the exception of that authorized under an HPAA issued by the NJDEP.
- B. **Allowances.** Forest disturbance in the Forest Resource Area that does not by definition, constitute deforestation, shall be permitted only where authorized under an HPAA issued by the NJDEP, or where it is the minimum required in connection with:
 - 1. The maintenance of any lawfully pre-existing use or structure, expressly excluding the expansion of such use or structure; or
 - 2. Either a permitted non-Major Highlands Development or the expansion of any pre-existing use or structure, where accompanied by implementation of a Forest Mitigation Plan designed to minimize the extent of forest disturbance, protect forest areas adjacent or proximate to the disturbance area, and mitigate for loss of trees or other forest vegetation removed during the course of such disturbance.

§ 4.1.6 Forest Mitigation Plans

All Forest Mitigation Plans must be prepared by a State of New Jersey Approved Forester or other qualified professional. A Forest Mitigation Plan must include each of the components listed herein.

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- A. ***Mitigation Priority Area Map.*** Priority Areas are forested locations within the site having the highest ecological value to be targeted for conservation, restoration, or mitigation, including such areas as:
1. Highlands Open Waters and Buffers
 2. Riparian Areas, including Floodplains and Flood prone Areas
 3. Critical Habitat
 4. Steep Slopes and Ridgelines
 5. Core Forests and Contiguous Forest Patches
- B. ***Protection Plan.*** A plan providing the proposed methodology appropriate to, and by which the applicable mitigation priority areas will be protected throughout the period of forest disturbance and thereafter.
- C. ***Forest Protection Plan.*** A plan incorporating pre-construction and construction best management practices to ensure the well-being of forest areas adjacent or proximate to the disturbance area. Such plans shall include prescribed limits of disturbance to be mapped, field marked, and provided with protective fencing prior to the start of any construction activity. Plans shall indicate installation of tree protection fencing along the drip line of trees to be protected, with instructions barring encroachment by machinery or heavy equipment of any kind, and requiring regular inspection and maintenance of fencing throughout the construction period.
- D. ***Mitigation Description.*** A description of the proposed forest restoration, tree planting plan or other mitigation initiative proposed to provide equivalent or enhanced forest ecosystem benefit in consideration of the extent and type of disturbance or deforestation that would result if the use or activity is approved.
- E. ***Planting Plan.*** A detailed plan indicating the specific plantings proposed for restoration, reforestation or mitigation, including size, species, quantity, location, separation distances, planting details, deer and pest management protections, and maintenance plans.
- F. ***Maintenance Plan.*** A minimum 3-year maintenance plan that outlines care-taking responsibilities once the proposed planting has been completed. The maintenance plan must include monitoring of newly planted stands, provide for protection devices in working order for 3 years, and ensure at least a 75% survival rate after 3 years.

§ 4.2 HIGHLANDS OPEN WATERS & RIPARIAN RESOURCES

§ 4.2.1 Highlands Open Waters

Highlands Open Waters (Exhibit 4) include 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 Preservation Area. The map of Highlands Riparian Areas (Exhibit 5) includes all Highlands Open Waters and associated flood prone areas, riparian soils and wildlife corridors.

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§ 4.2.2 **Watershed Resource Value Areas**

The Highlands Council has evaluated and assigned watershed resource valuations to each of the HUC14 subwatersheds of the County Preservation Area. These valuations appear in the Master Plan Highlands Element map titled “Watershed Values” (Exhibit 24) Regulations.

§ 4.2.3 **Riparian Subwatershed Integrity Areas**

The Highlands Council has also evaluated the HUC14 subwatersheds of the Preservation Area on the basis of Riparian Area integrity, which are divided amongst three classes, as listed below. These appear in the Master Plan Highlands Element map titled “Riparian Integrity” (Exhibit 25).

§ 4.2.4 **Highlands Open Waters Protection Buffer**

All Highlands Open Waters shall include a minimum 300-foot wide protection buffer, as measured from the edge of the discernable bank of the Highlands Open Waters feature, or from the centerline where no discernable bank exists. These buffers are included in the map of Highlands Open Waters at Exhibit 4 with respect to streams, rivers, ponds, lakes and reservoirs. With respect to wetlands and other Highlands Open Waters features not mapped in Exhibit 4 (e.g., seeps, springs), each shall include a 300-foot wide protection buffer delineated through a Highlands Resource Area Determination issued by the NJDEP.

§ 4.2.5 **Highlands Open Waters Buffer Regulations**

Highlands Open Waters buffers shall be maintained in their undisturbed or pre-existing condition, unless a disturbance is unavoidable and in that case, undertaken in full accordance with the provisions of this section.

- A. ***Pre-existing Structures or Improvements.*** Any pre-existing structure or improvement located within a Highlands Open Waters protection buffer area as of the effective date of these Regulations may remain and be maintained or rehabilitated, provided that the existing area of disturbance attributed to or associated with such structure or improvement shall not be increased.
- B. ***Agricultural & Horticultural Land Uses.*** For purposes of this section, existing agricultural and horticultural uses, whether or not under active management or operation, shall not be included in any assessment of “previously disturbed” buffer areas with regard to proposals for non-agricultural development.
- C. ***Protection Buffer Expansion.*** The provisions of this section shall not be construed to preclude the imposition of a wider protection buffer requirement where site-specific analysis and evaluation by a qualified professional indicates that such expansion is essential to the protection of Highlands Open Waters, associated Riparian Areas, or the habitat of water or wetlands-dependent species (particularly in the case of rare, threatened or endangered species) located therein.
- D. ***Regulations.***
 - 1. ***Major Highlands Development.*** Any disturbance of a Highlands Open Water buffer proposed in connection with a Major Highlands Development shall be authorized and regulated only by the NJDEP in accordance with NJDEP Preservation Area Rules (N.J.A.C. 7:38) and all other applicable requirements. The pertinent Preservation Area regulations appear at G.3, below.
 - 2. ***Non-Major Highlands Development.*** Any disturbance of a Highlands Open Water buffer proposed in connection with a development that does not constitute a Major Highlands Development shall meet the requirements provided at G.3, below (from NJDEP Preservation Area Rules, N.J.A.C. 7:38).

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3. *Disturbance Prohibited Except Linear Development.* Development is prohibited within all Highlands Open Waters and adjacent 300-foot buffers except for linear development, which shall be permitted only provided that there is no feasible alternative for the linear development outside the Highlands Open Waters or Highlands Open Water buffer. To address the “no feasible alternative for linear development” standard, there shall be no other location, design or configuration for the proposed linear development that would reduce or eliminate the disturbance to a Highlands Open Waters feature or the adjacent buffer.

§ 4.2.6 **Riparian Area Regulations**

The provisions of this subsection shall apply only to those portions of the Riparian Area that extend beyond the limits of designated Highlands Open Waters and associated 300-foot Highlands Open Waters buffers. These provisions shall apply in all portions of the Preservation Area.

A. ***Protection Zone and Wildlife Management Sub-Zone.***

1. *Prohibitions.* Disturbance of any portion of a Highlands Riparian Area is prohibited except as provided at A.2, below, or where associated with an approved Riparian Area restoration or enhancement activity designed to improve the functional value of the Riparian Area, in accordance with the parameters listed at § 4.2.7, below.
2. *Allowances.* Disturbance of a Highlands Riparian Area is permitted only within portions of such Areas that have been previously disturbed. For purposes of this subsection, a previously disturbed Riparian Area is one in which one or more functional values, as listed at § 4.2.7 below, have been and remain compromised by prior development activity (excluding agricultural or horticultural uses) as evidenced by the existence of buildings or other structures (including parking areas and driveways, whether paved or gravel), and including associated graded or compacted areas, areas stripped of natural vegetation, maintained lawn areas, areas of fill or excavation, and other similar features. Any new disturbance of such previously disturbed areas shall occur only in accordance with the provisions of this subsection.
 - a) Any new disturbance within a previously-disturbed area shall only be permitted when the proposal meets the following requirements:
 - (i) The proposed new disturbance will occur fully within the previously-disturbed area(s), as evidenced by both the property survey and the plan proposal submitted in support of the application;
 - (ii) The proposal incorporates measures that will enhance the functional value of the affected buffer area by means such as, but not limited to: reducing impervious coverage, replacing maintained grass lawns with naturalized areas, upgrading soil erosion and sedimentation controls, and providing for planting of native trees, grasses, or other vegetation appropriate to the riparian environment that support the functions of the Highland Open Waters buffer;
 - (iii) The proposal incorporates Low Impact Development techniques (see § 5.1) appropriate to the nature of the activity and the riparian aspects of the buffer area in question; and
 - (iv) The proposed plan will enhance one or more of the buffer functions listed at § 4.2.7, below; will result in no net loss of any one of the listed buffer functions; and will provide

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an overall improvement in the functional value of the affected buffer area, when compared with pre-existing conditions.

- b) The allowances of this subsection do not authorize improvements or development activity of any kind within any portion of a Highlands Riparian Area if the previously-disturbed area, or any portion thereof, is proven to be the result of unlawful activity.

B. *All Other Zones and Sub-Zones.*

1. *High and Moderate Integrity Riparian Areas.* Disturbance is permitted only when it includes or satisfactorily addresses each of the following requirements:
 - a) The proposed disturbance can neither be avoided nor reduced in extent or loss of quality, while adequately providing for the proposed use;
 - b) The proposed disturbance will result in no net loss of the quality of adjacent Highlands Open Waters, in accordance with § 4.2.7, below;
 - c) The proposed improvement plan minimizes impacts to the other functional values of the affected Riparian Area, as provided at § 4.2.7, below;
 - d) Incorporation of Low Impact Development techniques (pursuant to § 5.1) appropriate to both the proposed activity and the riparian nature of the site, and designed to minimize Riparian Area disturbances while maximizing retention of natural features and Riparian Area functional value; and
 - e) Implementation of a Riparian Area Mitigation Plan providing for restoration of impaired Riparian Areas located either, or in combination, in the following order of preference: on the site of the proposed disturbance, within the same HUC14 subwatershed as the site of the proposed disturbance, within the nearest interrelated HUC14 subwatershed having impaired or disturbed areas in need of restoration, or within the nearest unrelated HUC14 subwatershed having impaired or disturbed areas in need of restoration. Mitigation shall at minimum, be commensurate in scale, effect and extent with the disturbance approved pursuant to this subsection. A Mitigation Plan pursuant to this subsection shall provide improvements to one or more Riparian Area functions, as listed at § 4.2.7, below, while ensuring no net loss in the quality or contributory effect of an existing function.
2. *Low Integrity Riparian Areas.* In the case of any Riparian Area that is determined through a functional value assessment performed in accordance with the parameters at § 4.2.7, below, to contribute significantly to the protection of a Highlands Open Waters feature, any proposed disturbance shall occur only in accordance with the provisions at § 4.2.6 B.1, above, for High and Moderate Integrity Riparian Areas. Disturbance of any other Riparian Areas shall be permitted contingent upon satisfaction of § 4.2.6 B.1.d through B.1.e, above.

§ 4.2.7 Functional Value Assessment Required

For any development plan proposing disturbance of a Highlands Open Waters buffer (with the exception of any Major Highlands Development approved pursuant to § 4.2.5 D.1, above) or of a Highlands Riparian Area regulated at § 4.2.6 above, a functional value assessment shall be performed to indicate the health and contributory value of the buffer or Riparian Area under existing conditions. All such assessments shall be

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completed by a qualified professional and shall include a general description and evaluation of each of the components listed herein below. In addition, assessments shall provide a net gain/loss projection concerning each of the functional values, as applicable, based upon anticipated post-disturbance conditions. Such projections shall take into account all facets of the proposed application to determine anticipated impacts, whether beneficial or detrimental to functional values. Key functional values 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.

- A. **Habitat.** A reduction in aquatic habitat functional value will occur in the event of a net loss of in-stream food sources or of access to such sources. A loss of terrestrial habitat functional value will occur in the event of a shift to a less valuable overall vegetative condition based on the following hierarchy from highest value to lowest: forest or wetland, scrub/shrub, pasture or meadow, agriculture, maintained lawn, unpaved impervious surface, other structures.
- B. **Water Quality.** A degradation of this functional value will occur if, as a result of the proposed land conversions, pollutant loads increase to the Highlands Open Waters.
- C. **Temperature Moderation.** A loss in temperature moderation functional value will occur if changes to the existing vegetation result in reduced shading of the Highlands Open Waters feature or of increased stormwater that discharges to Highlands Open Waters. Further, a loss in temperature moderation functional value may occur with the heating of stormwater by new structures and other impervious surface. Mitigation approaches include removing or relocating impervious surfaces away from the Highlands Open Water or ensuring that stormwater temperature is reduced through shading or other techniques.
- D. **Channel Integrity.** A loss of channel integrity functional value will occur if the project will result in: the loss of bank stabilizing vegetation; an increase in the peak rate of stream flow, or in localized scour potential, which will increase stream bank and stream bed erosion; or the removal or burial of aquatic habitat in any substantial part of a stream bed.

§ 4.3 STEEP SLOPES

§ 4.3.1 Applicability

The provisions of this section shall apply to the Steep Slope Protection Area (Exhibit 6) and to any other portion of the Preservation Area determined to consist of 5,000 square feet or more of contiguous steep slope(s) (as defined at § 2.1). For purposes of making such determinations, slopes shall be calculated for every two-foot contour interval over the full extent of the existing slope features, regardless of the location of property or other jurisdictional boundary lines.

§ 4.3.2 Steep Slope Regulations

- 1. **Severely and Moderately Constrained Slopes.** Disturbance of Severely Constrained and Moderately Constrained Slopes is prohibited, with the exception of that required in connection with a linear development. Such linear development, however, shall be permitted only in the event that there is no feasible alternative for such development outside of the Severely Constrained or Moderately Constrained Slopes. To address the “no feasible alternative for linear development” standard, there shall be no other location, design or configuration for the proposed linear

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development that would reduce or eliminate the disturbance of Severely Constrained or Moderately Constrained Slopes.

- B. ***Constrained or Limited Constrained Slopes.*** Disturbance shall be permitted when it includes or satisfactorily addresses each of the requirements following:
1. The proposed steep slope disturbance can neither be avoided nor reduced in extent, while adequately providing for the proposed use.
 2. Incorporation of Low Impact Development techniques (pursuant to § 5.1) appropriate to both the proposed activity and the steep slope environment, designed to reduce the extent of disturbance areas, stabilize areas that are disturbed, provide for stormwater management, and protect adjacent areas during site construction.
 3. Development layout shall be designed to:
 - a) Minimize the need for landform grading and retaining structures;
 - b) Incorporate a cluster development format, where feasible, to minimize the extent of development on steep slopes; and
 - c) Disturb steep slopes (where such disturbance cannot be avoided) having the minimum potential for slope instability.
 4. Site design shall:
 - a) Incorporate stabilization techniques that emphasize bioengineering;
 - b) Ensure minimized soil loss during and after construction through steep slope-appropriate soil erosion and sediment control techniques;
 - c) Prevent direct discharge of stormwater into streams or other Highlands Open Waters features;
 - d) Provide for control of stormwater velocity and volume such that no net increase in run-off rates occurs between pre- and post-conditions; and
 - e) Provide for maximum protection of existing trees, woodlands and surrounding natural vegetated areas.

§ 4.4 CRITICAL HABITAT

§ 4.4.1 Disturbance Prohibited

Disturbance of any portion of any lands located within designated Critical Habitat areas of the Preservation Area, including Critical Wildlife Habitat (Exhibit 7), Significant Natural Areas (Exhibit 8), and Vernal Pools, including the 1000-foot protection buffer, (Exhibit 9), is prohibited, with the exception only of such disturbance as may be authorized by the NJDEP through issuance of an HPAA for Major Highlands Development. Until or unless the county has adopted a Habitat Conservation and Management Plan or the county has endorsed any applicable municipally adopted Habitat Conservation and Management Plan (see §

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4.4.2), relief from this provision shall remain under the sole authority and jurisdiction of the New Jersey Highlands Council. Any development project entailing disturbance of Critical Habitat shall, prior to any action by the County, receive authorization from the Highlands Council in the form of a formal notification from the Executive Director of the Highlands Council, indicating by reference to specified plan drawings (including date, title, plan sheet number(s), and plan preparer) that the limits and extent of the disturbance proposed has been approved.

§ 4.4.2 **Habitat Conservation and Management Plan**

Upon County adoption of a Habitat Conservation and Management Plan or endorsement of a municipally adopted Habitat Conservation and Management Plan, which, inclusive of any accompanying rules or regulations, shall be approved by the Highlands Council, all proposed disturbance of a Critical Habitat area shall be reviewed and considered in accordance with the provisions and criteria provided therein.

§ 4.5 **CARBONATE ROCK**

§ 4.5.1 **Applicability**

The provisions of this section shall apply to all proposed development in the Carbonate Rock Area (Exhibit 10).

§ 4.5.2 **Geotechnical Investigation Required**

Any Development proposed within the limits of the Carbonate Rock Area shall be preceded by a Geotechnical Investigation, as provided in this subsection. No action will taken on any such development until such time as the Geotechnical Investigation program described herein has been satisfactorily completed, as certified by the individual(s) designated to review and make such findings on behalf of the county (see C., below).

- A. **Purpose.** The purpose for the Geotechnical Investigation is to locate karst features that may be affected by the development proposal, to reveal the potential threats to public health, safety or welfare, or ground water quality that may result, and to determine the most appropriate ways to address these issues in the design and implementation of the project proposal.
- B. **Professional Required.** The Geotechnical Investigation must be conducted by a qualified professional, such as geologist, soils or geotechnical engineer, or other licensed professional engineer having experience in karst area investigations and associated development.
- C. **Program.** The investigation shall occur in two phases, wherein the results of the first shall determine the need for and extent of requirements, pertinent to the second.
 - 1. *Phase I Investigation.*
 - a) The investigation shall commence with completion of a Phase I Geological Investigation that shall identify the geologic nature of the materials underlying the site. This assessment shall be based on review of existing available information, such as prior investigation reports on properties proximate to the subject parcel(s), aerial photography, as well as on-site field investigation.
 - b) Phase I findings shall be provided in a summary report including: a description of the site geology; ground water conditions such as depth to water table and direction of flow; an

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evaluation of the potential impact of the project on ground water quality; and identification of any karst features observed. In addition, the report shall include the geological professional's recommendations as to whether, in light of the proposed development plan, a Phase II Geological Investigation should be prepared.

2. *Phase II Investigation.*

- a) The purpose of the Phase II Investigation is to delineate and define karst features noted or suspected in the Phase I Geological Investigation, to evaluate the effects of those features on the proposed development, and to propose methods of protection and mitigation if needed.
- b) A Phase II Investigation Plan shall include a narrative describing the types of features to be investigated, their locations, the types of direct/indirect methods to be used and the reasons for their use. Indirect *methods include the use* of aerial photography, satellite imagery and geophysical procedures, such as ground penetrating radar, electrical conductivity, electrical resistivity, magnetic field, very low frequency measurement, gravity field recording and seismic velocity measurements. Direct methods shall include test pits, test probes, test borings or other appropriate methods. A plan indicating the areas of investigation, proposed locations of testing and types of testing shall accompany the Phase II Investigation Plan.
- c) At the completion of the Phase II Investigation, a formal Geotechnical Evaluation Report shall be prepared which shall include a geologic interpretation of the observed subsurface conditions, including soil and rock type, geologic unit, jointing, faulting, voids, fracturing, grain size and sinkhole formation. In addition:
 - (i) The Report shall provide all information gathered in the course of the testing protocol, including, as applicable: logs of all borings, test pits, and probes including evidence of cavities; loss of drilling fluid circulation during drilling; voids encountered and similar cavities; type of drilling or excavation technique employed; drawings of monitoring or observation wells as installed; time and dates of explorations and tests; reports of chemical analyses of on-site surface and ground water; names of individuals conducting tests if other than the applicant's designated professional; analytical methods used on soils, water samples, and rock samples; a 1" = 100' scale topographic map of the site (at a contour interval of two feet) locating all test pits, borings, wells, seismic or electromagnetic conductivity or other geophysical surveys; and analysis of the ground water including any potentiometric maps constructed from site data or aquifer tests with rate and direction of flow.
 - (ii) The Report shall include an evaluation of the geotechnical findings in relation to the proposed development, and recommendations for the planning, engineering design and construction techniques to be utilized in accomplishing the project. All design recommendations shall minimize, to the greatest extent practical, impacts upon water quality and structural hazards associated with carbonate rock formations. The engineering solutions proposed to minimize environmental and structural impacts must be clearly detailed.
- d) The County Engineer (or project design engineer as applicable) shall consider the data, formal reports, maps, drawings and related submission materials to ensure that the proposed project design satisfactorily provides:

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- (i) Sufficient design, construction and operational information to ensure that the proposed development of the tract will not adversely affect the health, safety and welfare of the community;
- (ii) Proof that the proposed method of development of the tract will minimize any adverse effects on the quality of surface or subsurface water, and will not alter the character of surface and/or subsurface water flow in a manner detrimental to known on-site or off-site conditions;
- (iii) Specific details insuring that design concepts and construction and operational procedures intended to protect surface and subsurface waters will be properly implemented; and
- (iv) Specific details on inspection procedures to be followed during construction and after project completion.

§ 4.5.3 **Carbonate Rock Drainage Area**

Development activities proposed in subwatersheds that drain directly to the Carbonate Rock Area shall conduct a Phase I Geological Investigation. The Phase I investigation and County Engineer's review shall ensure that any proposed development activity having potential to alter the types, volumes, or rates of runoff entering the Carbonate Rock Area, shall be designed to prevent the formation or enlargement of sinkholes, the introduction of contaminated surface water into ground water aquifers via sinkholes or cavities, or the lowering of the water table.

§ 4.5.4 **Conditions of Development Application Approval**

For all development requiring a Geotechnical Investigation, the recommendations and requirements of the County geological professional shall be incorporated into any development proposal.

- A. In no case shall any action be taken by the county on any Development, in either the Carbonate Rock Area or in a subwatershed that drains directly to the Carbonate Rock Area, unless it has been demonstrated to the satisfaction of both the geological professional and the County Engineer that all potential hazards to public health and safety, structures and ground water are fully addressed and mitigated, with the maximum emphasis given to nonstructural measures, including, but not limited to avoidance of modifications to the karst features.
- B. The following conditions shall apply to any development project in the Carbonate Rock Area:
 - 1. The location of all sinkholes, disappearing streams or karst features shown on documents submitted under the Phase I and/or Phase II Geologic Investigations shall be drawn on all plans. These shall also note any site remediation techniques to be utilized to stabilize any solution channels or subsidence karst features.
 - 2. In the event a previously unidentified carbonate rock feature posing a geologic hazard is discovered during construction, the following procedures shall be followed:
 - a) Report the occurrence of the hazard to the County Engineer within twenty-four (24) hours of discovery;
 - b) Halt construction activities which would affect the geologic hazard;

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- c) Prepare a report on the geologic hazard which analyzes the impact of the hazard and details a remediation plan for review and approval by the County Engineer;
- d) After obtaining approval from the County Engineer, perform necessary remediation of the hazard to prevent or minimize damage to buildings, structures, utilities, driveways, parking areas, roadways and other site improvements, and to minimize pollution of the ground water;
- e) Repair any damage to improvements and restore ground cover and landscaping;
- f) In those cases where the hazard cannot be repaired without adversely affecting the development, the county shall prepare an amended plan in compliance with the provisions of the county regulations.

§ 4.6 LAKE MANAGEMENT AREA

§ 4.6.1 Lake Management Areas

The Lake Management Area (Exhibit 11) contains all lakes located within the Preservation Area that have a surface area greater than ten (10) acres.

§ 4.6.2 Shoreland Protection Tier

Highlands Open Waters Buffer Rules Apply. The Shoreland Protection Tier encompasses the lands surrounding a Lake Management Area lake that lie within 300 feet of its shoreline. As such, these lands coincide with and are defined as Highlands Open Waters buffers pursuant to § 4.2.5, above. All provisions applicable to Highlands Open Waters buffers, shall apply fully to the Shoreland Protection Tier of any lake in the Lake Management Area.

§ 4.6.3 Water Quality Management Tier

Any development proposing a disturbance within the Water Quality Management Tier shall protect lake water quality, by implementation of the requirements of this subsection. The Water Quality Management Tier consists of all lands draining into a Highlands lake that lie within 1,000 feet of its shoreline, subsuming the whole of the Shoreland Protection Tier. As such, these provisions shall not be construed to waive or obviate the requirements of either the preceding section § 4.6.2, or of § 4.2.5 above concerning Highlands Open Waters buffers.

- A. ***Water Quality Protection Requirements.*** To prevent or minimize continuous pollutant sources that can contribute pollutants overland or through ground water to the lake from greater distances than the Shoreland Protection Tier, the following measures shall be incorporated into all development proposals:
 - 1. All disturbed parcels shall be provided with landscape or garden elements that retain stormwater, minimizing the potential for increases in the volume, time of concentration, or concentrated flow of runoff from the property. Such elements shall be designed to ensure to the maximum extent feasible, that during larger storms, water is released through overland sheet flow across a vegetated, naturally landscaped area.
 - 2. All new development shall direct runoff from roofs, driveways and patios into landscape or garden elements that retain and filter stormwater, or to infiltration basins, trenches or other such appropriate stormwater management devices.

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3. Stormwater management plans shall be designed to direct run-off away from the shoreline and to avoid stormwater discharges directly to the lake to the maximum extent feasible.
4. Stormwater shall be directed to a stormwater treatment train that cleans and reduces the rate of runoff to the maximum extent possible. Stormwater treatment trains shall maximize the use of swales with natural vegetation, infiltration mechanisms or constructed wetlands, and discharge through a constructed wetland or other channel that maximizes aeration and cleaning of water to the maximum extent feasible.
5. The discharge of stormwater shall be through sheet flow, where feasible, which may require the construction of an outlet that disperses the water over a substantial distance at a constant elevation so that water sheet flows over the top.

§ 4.6.4 **Scenic Resources Tier**

The Scenic Resources Tier includes lands surrounding Highlands lakes that lie within 300 feet of the shoreline (the Shoreland Protection Tier) plus lands within 1,000 feet of the shoreline that fall within the viewshed observable from the opposite shoreline. The provisions of this section apply to any development in the Scenic Resources Tier. These requirements regarding the Scenic Resources Tier are applied in addition to all requirements applicable to the Shoreland Protection Tier and Water Quality Management Tier.

- A. ***Scenic Resources Tier Mapping.*** For purposes of this section, it may be established that all lands falling within 1,000 feet of the shoreline of a Highlands lake constitute the designated Scenic Resources Tier viewshed. In the alternative, the actual limits of the affected viewshed area must be delineated and mapped for submission by a licensed Land Surveyor, Professional Engineer, Landscape Architect, or other qualified professional. Such delineations shall be based upon the topography of the lands surrounding the Highlands lake, with the highest observable elevations from the opposing shoreline forming the viewshed perimeter. For purposes of these Regulations, observable elevations shall be those projected by use of topographic maps, regardless of any intervening building, structure, tree or other natural vegetation, along sight lines drawn radially from relevant vantage points along the opposing shoreline; such vantage points being sufficient in number and location to yield the full extent of the potential view. The viewshed perimeter shall in no location be less than the 300-foot depth of the Shoreland Protection Tier.
- B. ***Protection Standards.*** For all lakes with public access (i.e., with shorelines that are not entirely privately-held and managed through a lake association), and for privately-held and managed lakes to the extent not contrary to statutory law or previously approved lake community development plans, the protection of visual and scenic resources in the Scenic Resource Tier is achieved through implementation of the following requirements:
 1. Assess the extent to which the proposed development will be visible from the opposite shore of the lake. If the proposed development will be completely obscured from view by virtue of existing topographic features (specifically excluding buildings, structures, trees or other vegetation) intervening between the opposite shoreline and the development site, the remaining provisions of this subsection shall not apply.
 2. Buildings shall be screened from view by trees and other native plant material to the maximum extent practicable and compatible with the existing character of the lake community, to minimize the visual intrusion on views from the opposing shorelines.

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3. The massing of structures shall be designed and oriented to minimize lot disturbance, including cut and fill work, and to avoid blockage of views to the maximum extent possible.
4. The exteriors of all new or redeveloped buildings shall be designed and constructed with materials that minimize visual intrusion on the lake community character.
5. The clearing of trees shall be limited to the minimum extent needed to develop the site.
6. Any exterior lighting shall utilize full cut-off fixtures with light directed downward and away from the shoreline to the extent feasible.

C. ***Highlands Scenic Resources.*** In the event that a development within the Scenic Resources Tier involves a lot, lots, or other property that either contain, or lie adjacent to a property that contains a Highlands Scenic Resource as illustrate in Exhibit 17 and listed in the Highlands Element of the Master Plan, the provisions of § 4.11 , shall apply.

§ 4.7 WATER CONSERVATION & DEFICIT MITIGATION

§ 4.7.1 Applicability

The provisions of subsection § 4.7.2 below, shall apply to all development projects within the Preservation Area. The remaining provisions of this section shall apply to any development project proposing a new or increased use of potable or nonpotable water derived from: a) any ground water source in a Preservation Area HUC14 subwatershed, whether through a public community or non-community water supply system well, a non-public well, or an individual private well; or b) any surface water source in a Preservation Area HUC14 subwatershed that is not associated with a safe yield determined by the NJDEP through a water allocation permit. Specifically excluded from these provisions (§ 4.7.3 through § 4.7.6), are modifications or improvements to existing uses and structures that result in neither, for residential development (or any residential portion thereof) an increase in the number of residential units, nor, for non-residential development (or any non-residential portion thereof), an increase in water demand by an average of 400 gallons per day or more.

§ 4.7.2 Water Conservation Requirements

All development projects shall incorporate as applicable, the following water conservation measures to promote sound resource use, reduce supply deficits, and reduce the need for additional utility infrastructure:

- A. Meet all applicable building code requirements for the use of water conservation fixtures and appliances in new or rehabilitated structures;
- B. Provide automatic controls based on rain sensors (or soil moisture) for all new and replacement lawn irrigation systems, as required by the electrical subcode at N.J.A.C. 5:23-3.16;
- C. Design all non-potable irrigation water uses to ensure that only the necessary amounts of water are used to achieve optimum plant growth, to the maximum extent practicable;
- D. Provide for internal recycling or beneficial reuse of reclaimed water in new development projects, to the maximum extent practicable;

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- E. Rely on stormwater for irrigation purposes to the maximum extent practicable, including but not limited to methods recommended by the U.S. Green Building Council through its Leadership in Energy and Environmental Design (LEED) program;
- F. Reduce water losses to the maximum extent practicable, in the rehabilitation of on-site water supply utility infrastructure, through such means as application of American Water Works Association/International Water Association water loss analysis methods (AWWA Manual M-36 or most recent version).

§ 4.7.3 **Net Water Availability**

Net Water Availability has been calculated by the Highlands Council for each HUC14 subwatershed located within or partially within the Preservation Area (Exhibit 18). Expressed in million gallons per day (MGD), the values assigned to each HUC14 subwatershed derive from subtracting consumptive and depletive surface and ground water uses for a baseline year, from total ground water availability. Where Net Water Availability figures are negative numbers, the subwatershed is identified as a Current Deficit Area, meaning existing uses exceed sustainable supplies. The map of Net Water Availability by HUC14 Subwatershed provided at Exhibit 18 is incorporated as a component of these Regulations.

§ 4.7.4 **Conditional Water Availability**

For subwatersheds designated as Current Deficit Areas, the Highlands Council has assigned a limited amount of Conditional Water Availability, the use of which is conditioned upon satisfying certain mitigation requirements. Jurisdiction over the use of Conditional Water Availability lies solely with the Highlands Council and shall apply in the case of Current Deficit Areas until such time as a Water Use and Conservation Management Plan applicable to such subwatersheds has been adopted and put into effect. .

§ 4.7.5 **Water Use and Conservation Management Plan**

Where a Highlands Council-approved Water Use and Conservation Management Plan has been established for a municipality, HUC14 subwatershed, or group of HUC14 subwatersheds in which the proposed project is located, any County development involving the use of water derived from such subwatershed(s) shall be regulated fully in accordance with the requirements of such Plan. Adherence to the provisions of an adopted Water Use and Conservation Management Plan provides satisfactory compliance with all of the provisions of this section, including those pertaining to Net Water Availability and Conditional Water Availability.

§ 4.7.6 **Absence of Water Use and Conservation Management Plan**

In the absence of a Highlands Council-approved Water Use and Conservation Management Plan for a municipality, HUC14 subwatershed, or group of HUC14 subwatersheds, any development project involving the use of use water derived from such subwatershed(s) shall be subject to requirements of this subsection.

- A. **Net Water Availability.** The provisions of this subsection shall apply to any county project proposing the use of Net Water Availability. These requirements shall apply regardless of whether such water is supplied from an on-site well or through a water supply utility.
 - 1. *Highlands Council Analysis Required.* No action shall be taken by the County on any development project until or unless the New Jersey Highlands Council has provided an analysis indicating that the proposed consumptive or depletive water use will not exceed the remaining Net Water Availability for the source HUC14 subwatershed(s).
 - 2. *Analysis Determinative.* Any development revised from that reviewed by the Highlands Council pursuant to A.1, above, shall have no action taken upon it by the County unless the proposed use

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of Net Water Availability remains equal to or less than that reviewed by the Highlands Council through its analysis.

- B. **Conditional Water Availability.** The provisions of this subsection shall apply to any development project proposing the use of Conditional Water Availability. These requirements shall apply regardless of whether such water is supplied from an on-site well or through a water supply utility.
1. *Highlands Council Analysis Required.* No action shall be taken by the County on any development project until or unless the New Jersey Highlands Council has provided an analysis of the project indicating that: a) the proposed consumptive or depletive water use will not exceed the remaining Conditional Water Availability for the source HUC14 subwatershed(s); b) that the County has correctly determined the associated mitigation requirement; c) that the proposed development plan will incorporate or otherwise provide for acceptable methods of deficit mitigation; and d) that the mitigation measures proposed can be reasonably anticipated to meet the required level of mitigation.
 2. *Analysis Determinative.* Any development revised from that analyzed by the Highlands Council pursuant to B.1, above, shall have no action taken upon it by the County unless: a) the proposed use of Conditional Water Availability remains equal to or less than previously found by the Highlands Council through its analysis; b) the proposed methods of deficit mitigation are consistent with those reviewed during the analysis; and c) the anticipated levels of mitigation are sufficient to meet the associated mitigation requirements.
 3. *Deficit Mitigation Requirements.* Developments proposing the use of Conditional Water Availability shall comply with the deficit mitigation requirements herein.
 - a) The mitigation requirement applicable to any development project derives from the Highlands Council *Scaled Mitigation Requirements* table, provided below (Table 1). The figures represent the applicable recharge requirement as a percentage of consumptive/depletive water use.

Table 1. Scaled Mitigation Requirements

Deficit (MGD)	Proposed Consumptive or Depletive Water Use (gpd)				
	<= 1,000	1,001 – 5,000	5,001 – 10,000	10,001 – 25,000	>25,000
0.0001 – 0.050	125%	125%	125%	150%	150%
0.051 – 0.100	125%	125%	125%	150%	150%
0.101 – 0.250	125%	125%	150%	150%	175%
0.251 – 0.500	125%	150%	150%	175%	200%
0.501 – 1.000	125%	150%	175%	175%	200%
1.000 – 7.100	150%	175%	175%	200%	200%

- b) Deficit mitigation must be provided within the same HUC14 subwatershed as from which the source Conditional Water Availability derives. If the project and water source are not located in the same subwatershed, however, only mitigation measures that benefit the source HUC14 subwatershed may be utilized to mitigate the deficit.
- c) Any development proposing off-site deficit mitigation measures, whether through enhanced recharge or offsets from water conservation, shall be subject to the receipt of approvals from

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the Highlands Council and any other entities having jurisdiction over the activities proposed at the off-site location (whether located within or outside of the county).

- d) On-site deficit mitigation measures, whether from enhanced recharge or offsets from water conservation shall be subject to the following criteria:
 - (i) Water Conservation Measures. Water Conservation Measures may be credited toward mitigation requirements only with respect to existing land uses with consumptive or depletive water uses. (Such measures must be incorporated into the design of any new improvements, in accordance with § 4.7.2, above.) Any development project including such measures shall not be occupied or put into operation until or unless the measures have been implemented.
 - (ii) Recharge Measures. The development shall include the proposed mitigation measures in the project stormwater management plan, stormwater operation and maintenance manual, and applicable components of site design. The stormwater management plan and O&M manual shall achieve permanent maintenance and routine monitoring of the mitigation measure(s) so that the required rate of recharge is continuously achieved.
 - e) No action shall be taken on any development, for which deficit mitigation requirements cannot be achieved. The development proposal may be modified, however, to reduce the consumptive or depletive water uses to a level at which achieving deficit mitigation requirements is feasible. All developments shall comply with these Regulations through submission of a Deficit Mitigation Plan, as provided below.
4. *Deficit Mitigation Plans.* A Deficit Mitigation Plan shall be prepared for any development proposing deficit mitigation which shall include the following elements:
- a) Detailed justification for the proposed Conditional Water Availability use and documentation that the amount of consumptive or depletive use is minimized (including the conservation measures outlined in subsection § 4.7.2, above).
 - b) Engineering plans and drawings of mitigation facilities proposed to provide the necessary mitigation in the source HUC14 subwatershed.
 - c) Demonstrate that the mitigation measures are individually feasible and in the aggregate will meet or exceed the mitigation requirement.
 - d) Substantiate that the facility will recharge the ground water table such that it reasonably can be expected (e.g., using general ground water flow models) to support aquifer recharge, or to support stream flow with a travel time in excess of one month.
 - e) Proposed implementation schedule with the following timeframe targets:
 - (i) Satisfaction of mitigation requirements within one (1) year of issuance of building permit(s) if the consumptive or depletive water use is less than 10,000 gpd, on average.
 - (ii) Satisfaction of mitigation requirements within a longer time period for larger amounts, up to five (5) years from issuance of building permit(s), but no later than upon initiation of

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the consumptive or depletive water use, except for projects that involve a combination of high current water deficits and large proposed consumptive and depletive water uses as shown in the shaded areas of the table *Scaled Mitigation Requirements* (Table 1., above), in which case, on-site mitigation shall be successfully completed prior to initiation of the water use but may be implemented concurrent with on-site construction. Off-site mitigation shall be successfully completed prior to any on-site construction.

- (iii) Mitigation requirements may be phased in keeping with the level of consumptive and depletive water use that actually occurs based on phased construction of a project.
 - f) Proposed operation, maintenance and monitoring requirements to ensure that sufficient recharge is maintained over time. These requirements shall at a minimum be sufficient to comply with N.J.A.C. 7:8 stormwater maintenance requirements.
5. **Conditions.** The following conditions shall apply to any development project for which a Deficit Mitigation Plan is required, pursuant to this subsection:
- a) Designate an entity responsible for the Deficit Mitigation Plan.
 - b) Ensure that the entity designated to implement the Deficit Mitigation Plan is qualified and capable of carrying out the plan, regardless of the timeframe involved.
 - c) Provide a cost estimate for implementation of the Deficit Mitigation Plan, inclusive of a 10% contingency.
 - d) Ensure that the responsible entity shall report annually to the Highlands Council regarding implementation of the Deficit Mitigation Plan until fully implemented, unless reporting is achieved through effectuation of a Water Use and Conservation Management Plan.
 - e) Establish an ongoing system of such reporting which must operate until the relevant subwatershed is no longer in deficit, or until the reporting responsibility is absorbed into implementation of an approved Water Use and Conservation Management Plan.

§ 4.8 PRIME GROUND WATER RECHARGE AREAS

§ 4.8.1 Applicability

The provisions of this section apply to any development involving the Prime Ground Water Recharge Area (Exhibit 12).

§ 4.8.2 Regulations

Disturbance of Prime Ground Water Recharge Area (PGWRA) shall be permitted only where the proposal complies with the provisions of this subsection.

- A. **Avoidance.** The proposed disturbance cannot be avoided. Development shall not occur in Prime Ground Water Recharge Areas unless either, the entirety of the subject property is located within a Prime Ground Water Recharge Area and thus cannot be avoided, or the disturbance represents the only viable alternate means to avoid Critical Habitat, Highlands Open Waters buffers, Moderately

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Constrained Steep Slopes, or Severely Constrained Steep Slopes, to the extent that these resources are also present upon the subject property.

- B. **Minimization.** The proposed disturbance cannot be minimized. Where total avoidance is not feasible, total recharge area disruption (i.e., alteration of natural recharge patterns or volumes) shall not exceed 15% of the Prime Ground Water Recharge Area located within the affected parcels, placed where feasible on those parts of the PGWRA having the lowest relative recharge rates and the least potential for aquifer recharge based upon site analysis.
- C. **Low Impact Development.** The proposal incorporates Low Impact Development practices. Low Impact Development practices (see § 5.1) shall be used in the design of the development proposal to reduce total recharge disruption to the minimum feasible, within the 15% cap.
- D. **Mitigation.** The proposal includes a PGRWA Mitigation Plan. Any development involving disturbance of a Prime Ground Water Recharge Area shall be accompanied by a mitigation plan, providing for an equivalent of 125% of pre-construction recharge volumes for that portion of the Prime Ground Water Recharge Area that will be disturbed. The recharge mitigation shall occur within the following areas, in order of priority: (1) the same development site to the maximum extent feasible; (2) the same HUC14 subwatershed; or (3) where no feasible option exists in the same HUC14 subwatershed, an interrelated HUC14 subwatershed approved by the Highlands Council.

§ 4.8.3 **Potential Contaminant Sources**

For any Major or Minor Potential Contaminant Source (PCS) (as listed at APPENDIX B or APPENDIX C) proposed within a Prime Ground Water Recharge Area, the Regulations of subsection § 4.9.2. below, shall apply in addition to the preceding requirements.

§ 4.9 **WELLHEAD PROTECTION**

§ 4.9.1 **Applicability**

The provisions of this section shall apply to all proposed development activities in designated Wellhead Protection Areas (Exhibit 13) in the Preservation Area.

§ 4.9.2 **Potential Contaminant Sources**

For any Major or Minor Potential Contaminant Source (PCS) (as listed at APPENDIX B or APPENDIX C) proposed within a Wellhead Protection Area, the Regulations of this subsection shall apply.

- A. **Best Management Practices.** All Potential Contaminant Sources shall be designed in a manner that prevents the unintentional discharge of toxic or hazardous pollutants to ground water, surface water bodies, or the land surface from internal areas, loading and storage areas, transfer areas, etc. Best management practices include but are not limited to: primary and secondary containment; and prevention of contact between pollutants and precipitation, stormwater and flood waters. Any one of the permits and authorizations listed below shall be considered equivalent to the best management practices of these Regulations. As applicable to the PCS involved, these may also be submitted in lieu of an Operations and Contingency Plan, as otherwise required under subsection B, following.
 - 1. A NJPDES permit approved by NJDEP pursuant to N.J.A.C. 7:14A;
 - 2. An underground storage tank approved by NJDEP under N.J.A.C. 7:14B;

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3. A Discharge Prevention, Containment and Countermeasure Plan (DPCC) approved by NJDEP pursuant to N.J.A.C. 7:1E;
 4. A hazardous waste remedial action approved by NJDEP pursuant to N.J.A.C. 7:26B, 26C, 26D or 26E, or by the United State Environmental Protection Agency pursuant to the Resource Conservation Recovery Act (RCRA) or the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA);
 5. A hazardous waste facility approved by NJDEP pursuant to N.J.A.C. 26G;
 6. Approval by the SCD of a Farm Conservation Plan or Resource System Management Plan pursuant to N.J.A.C. 2:92;
 7. A solid waste facility approved by NJDEP pursuant to N.J.A.C. 26H; and
 8. A high-density Animal Waste Management Plan, an Animal Waste Management Plan, or a Comprehensive Nutrient Management Plan, as appropriate, developed pursuant to N.J.A.C. 2:91.
- B. ***Operations and Contingency Plans.*** Unless one of the permits or approvals listed above is issued, an Operations and Contingency Plan shall be prepared and filed with the appropriate entities for development of any new Potential Contaminant Source within a WHPA.
- C. ***Required Content of Operations & Contingency Plans.*** An Operations and Contingency Plan shall be developed for each Potential Contaminant Source or group of Potential Contaminant Sources (where multiple sources exist within a single facility) and shall address the following elements. An Operations and Contingency Plan for a Minor Potential Contaminant Source must demonstrate that the potential for a significant discharge is minimized to the extent practicable. An Operations and Contingency Plan for a Major Potential Contaminant Source must demonstrate that the potential for a significant discharge is the lowest technologically feasible.
1. Documentation of the Major and Minor Potential Contaminant Sources for the site;
 2. Types and quantities of hazardous substances or wastes that may be used, discharged or stored on site;
 3. Means used to prevent the spillage, leakage or discharge of such materials;
 4. Means to be used to contain or remedy accidental spillage, leakage, discharge or migration of such materials from the site directly or indirectly into ground water;
 5. At a minimum, utilize best management practices as defined above and as specified by NJDEP and the United States Environmental Protection Agency, including but not limited to the regulations and guidance in the following areas: Discharge Prevention Containment and Countermeasures [N.J.A.C. 7:1E-4.2 (or most current)], Spill Prevention Control and Countermeasures [40 CFR 112.3 et seq.(or most current)], Stormwater and Non-point Source Pollution Control Best Management Practices Manual [NJDEP, April 2004 (or most current)].

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6. Specific training of facility personnel to contain or remedy accidental spillage, leakage, discharge or migration of such materials from the site directly or indirectly into ground water, or surface water bodies or the land surface that provide recharge to the underlying aquifer.
 7. Procedures for notifying the appropriate administrative authorities, including but not limited to NJDEP, the local fire and police, local office of emergency management and the Board of Health, regarding any spillage or discharge of such materials; and
 8. Demonstration that the proposed Potential Contaminant Sources are designed to employ best management practices to the maximum extent feasible.
- D. An Operations and Contingency Plan for the following Potential Contaminant Sources, shall not be required to meet the requirements of D.7 or D.8 above, unless the Potential Contaminant Source constitutes a significant threat to ground water or water supply quality due to particular site conditions:
1. Individual Subsurface Disposal System (i.e., septic system) leach field in Tier 2 or Tier 3 of a WHPA, or within a PGWRA;
 2. Individual Subsurface Disposal System (i.e., septic system) leach field where such systems are subject to a routine, mandatory inspection and pumping schedule pursuant to Board of Health Ordinance [*insert citation*];
 3. Underground heating oil storage tanks with a capacity of less than 250 gallons;
 4. Sanitary sewer lines and manholes;
 5. Stormwater infiltration basins for non-industrial land uses;
 6. Dry wells for non-industrial land uses;
 7. Stormwater conveyance lines for non-industrial land uses; or
 8. Any category of existing, proposed or replacement Major or Minor Potential Contaminant Source where the Operations and Contingency Plan commits to having no potential contaminants stored, discharged, manufactured or used on-site.

§ 4.10 HISTORIC, CULTURAL & ARCHAEOLOGICAL RESOURCES

§ 4.10.1 Applicability

The provisions of this section shall apply to any development involving property which is located either, among those identified as containing Highlands Historic, Cultural and Archaeological Resources at Exhibit 16 (and listed as such in the Highlands Element of the Master Plan), or which lies adjacent to any property containing or partially containing such Resources. These provisions shall not apply in the event of a proposed Major Highlands Development requiring issuance of an HPAA from the NJDEP.

§ 4.10.2 Standards and Criteria

The standards and criteria applicable to Passaic County development projects involving or potentially affecting Highlands Historic, Cultural and Archaeological Resources, shall be those as promulgated and

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adopted by the Passaic County Board of Chosen Freeholders with respect to all such resources, as listed within the Passaic County Master Plan Highlands Element.

§ 4.11 SCENIC RESOURCES

§ 4.11.1 Applicability

The provisions of this section shall apply to any development involving property which is located either, among those identified as containing a Highlands Scenic Resource pursuant to Exhibit 17 (and listed as such in the Highlands Element of the Master Plan), or which lies adjacent to any property containing or partially containing such Resources.

§ 4.11.2 Development Prohibited

Development projects involving any property covered by § 4.11.1 above are prohibited. Relief from this provision shall remain under the sole jurisdiction and authority of the New Jersey Highlands Council. Such authorization shall be in the form of a formal notification from the Executive Director of the Highlands Council, indicating by reference to specified plan drawings (including date, title, plan sheet number(s), and plan preparer) that the application has been approved by the Highlands Council and may proceed.

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ARTICLE 5. PRESERVATION AREA GENERAL REGULATIONS

§ 5.1 LOW IMPACT DEVELOPMENT

§ 5.1.1 Regulations

- A. The project design process shall incorporate conservation design planning, including the following steps:
1. Preparation of an existing features and site analysis plan, including identification of Preservation Area resources and Resource Areas;
 2. Evaluation of site context through identification of the physical and community character of the surrounding area;
 3. Selection of open space conservation areas, where applicable, that maximize the retention of resource values, provide connections to existing trails, open spaces or greenways, and incorporate natural features and characteristics as site amenities;
 4. Establishment of development yield (e.g., retail, office) and apportionment of septic system yield, net water availability, and water supply and sewer utility availability, as applicable, and in keeping with all density and intensity requirements of § 3.3, above;
 5. Incorporation of low impact development design techniques for site design, stormwater management and resource protection; and
 6. Incorporation of resource standards and smart growth guidelines.
- B. Development must achieve stormwater management in compliance with § 5.2, below, including any applicable county stormwater management regulations or standards and all applicable NJDEP standards and requirements.
- C. The site preparation plan shall limit clearing, grading and soil compaction to the minimum required to construct the project in accordance with the approved plans, inclusive of area for construction equipment maneuvering, while ensuring protection of mature trees and habitat outside of the site development area.
- D. Landscaping shall use native, drought-tolerant (other than where used in rain gardens, biofiltration swales and other stormwater management facilities), disease-resistant plants, allowing for natural landscaping wherever feasible, and shall under no circumstances include invasive species.
- E. Building orientation and design shall be designed to take advantage of micro-climate conditions, to the maximum extent feasible, to maximize solar gain for winter heating, and to minimize solar gain during high temperature summer conditions except where desirable for the construction of solar energy systems. Other energy-efficient features shall be considered and incorporated into site layouts and buildings, as appropriate.

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- F. Ensure the reuse and recycling of building materials, to the extent possible, when development involves demolition.
- G. All low impact development features shall be maintained through a monitoring and maintenance plan, with procedures for replacing such features as necessary.

§ 5.2 STORMWATER MANAGEMENT

§ 5.2.1 Regulations

- A. ***Carbonate Rock Areas.*** Stormwater management plans shall be provided in connection with any development within a Carbonate Rock Area. Such plans shall be in full compliance with the provisions of § 4.5 above, and shall be approved only upon demonstration that potential hazards to public health and safety, structures and ground water quality due to concentrated surface water flows that dissolve carbonate rock, have been eliminated or otherwise addressed to the satisfaction of the reviewing engineer (or qualified professional). Development plans must indicate the means and methods by which such discharge shall be mitigated, with the maximum emphasis on use of nonstructural measures and avoidance of modifications to the karst features.
- B. ***Beneficial Stormwater Reuse.*** Development plans involving water demands for recreational uses, non-agricultural irrigation, and other non-potable uses shall demonstrate maximum practical stormwater reuse to minimize both the volume of stormwater discharges and the water demand sought for such purposes.
- C. ***Regional Stormwater Plans.*** The stormwater management aspects of any development plan shall comply with all applicable components of any regional stormwater management plans adopted by NJDEP pursuant to N.J.A.C. 7:8 and N.J.A.C. 7:15.
- D. ***Total Maximum Daily Loads (TMDLs).*** Development plans shall be designed in compliance with any TMDL adopted by NJDEP (pursuant to N.J.A.C. 7:15) or regional stormwater management adopted by NJDEP pursuant to N.J.A.C. 7:8), and any requirements of a county stormwater NJPDES permit under N.J.A.C. 7:14A.
- E. ***Prime Ground Water Recharge Areas.*** Where disturbance of Prime Ground Water Recharge Area (PGWRA) is permitted under § 4.8 compliance with all provisions therein shall be demonstrated.
- F. ***Water Quality.*** To the maximum extent feasible, the plan shall ensure recharge of clean stormwater rather than contaminated stormwater. Where runoff from contaminated areas is unavoidable, the applicant shall incorporate Low Impact Development (see H., below) and other Best Management Practices regulations to minimize the discharge of stormwater-entrained pollutants to ground and surface waters.
- G. ***Wellhead Protection Areas (WHPA).*** Any stormwater management structure located within a WHPA shall be permitted only in compliance with the provisions of § 3.2 and § 4.9.
- H. ***Low Impact Development (LID).*** To the maximum extent feasible, LID techniques shall be incorporated into the design of all development proposals, to preserve, mimic and enhance the natural

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hydrologic cycle, drainage patterns and natural land cover existing on the site, including but not limited to:

1. Implementation of on-site stormwater management features that maintain, restore and enhance the pre-existing natural drainage patterns of the site;
2. Achievement of an on-site stormwater capture performance standard of 80% for average annual precipitation, using low impact development design techniques preferentially, and structural stormwater measures only to the extent necessary;
3. Limitations on the amount of impervious cover on a site as a means to protect and increase stormwater infiltration and reduce stormwater runoff;
4. Use of a “design with nature” approach where natural features are used or enhanced to achieve management of runoff volume, rate and quality of stormwater;
5. Use of grass channels, dry swales, wet swales, infiltration basins, bio-swales and water gardens, green roofs, and other low impact approaches to attenuate and control stormwater and provide multiple environmental benefits; and
6. Minimization of: a) disturbances to natural vegetation and topography; b) exposure of stormwater runoff to pollutant-generating land uses; and c) alterations in the hydrologic response to precipitation through natural patterns.
7. Integration of stormwater management design features with public spaces, existing and proposed landscape features, and buffers, to the extent applicable.

§ 5.3 SPECIAL ENVIRONMENTAL ZONE

§ 5.3.1 Applicability

The provisions of this section shall apply to any development involving property that is located within the Special Environmental Zone (Exhibit 14).

§ 5.3.2 NJDEP Authorization Required

No action shall be taken on any development involving property located, or partially located, within the Special Environmental Zone, unless the proposal has been authorized by issuance of an HPAA with waiver from the NJDEP.

§ 5.4 SEPTIC SYSTEM DESIGN AND MAINTENANCE

The requirements herein apply to proposed development activities reliant upon installation of individual subsurface septic disposal systems, regarding the proper operation, design, development, monitoring, placement and maintenance of septic systems.

- A. The design of septic systems shall be in compliance with the Standards for Individual Subsurface Sewage Disposal Systems at N.J.A.C. 7:9A.

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- B. All developments shall incorporate the applicable requirements of N.J.A.C. 7:9A with respect to soils suitability, location, size, and separation distances.
- C. All developments proposing new septic systems shall incorporate reserve septic system disposal areas for each septic system, which are sufficient with respect to soils suitability, location and size to meet the requirements of N.J.A.C. 7:9A, to ensure the long-term viability of septic systems in new development.
- D. New development proposing to use septic systems shall be designed in a manner that ensures that untreated well water meets state drinking water quality standards for non-natural contaminants and minimizes the risk of well contamination due to the flow of septic systems plumes within or between developed lots, addressing general background water quality and flow patterns, major fracture systems and other appropriate geological, geophysical and hydrogeological issues.

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ARTICLE 6. REVIEW PROCEDURES

§ 6.1.1 **Development Requiring Prior Highlands Council Approval**

Where any capital or other project involves the ultimate disturbance of two (2) acres or more of land, or a cumulative impervious surface area of one (1) acre or more of land, authorization for such project shall be obtained from the Highlands Council prior to any action being taken by the applicable County department, division, or agency.

§ 6.1.2 **Developments Requiring Prior NJDEP Approval**

Approval by the NJDEP shall be obtained prior to the following actions by the County.

- A. ***Major Highlands Developments.*** Any Major Highlands Development as defined by the NJDEP Preservation Area rules at N.J.A.C. 7:38.
- B. ***New/Extended Utility Infrastructure.*** Any development proposing the installation of new or extended water supply or wastewater collection/treatment infrastructure.

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APPENDIX A. FOREST DETERMINATION

For purposes of these Regulations, the determination of whether a wooded area constitutes a forest, shall rely upon the Highlands Council procedures set forth herein, as adapted from NJDEP Preservation Area Rules (at N.J.A.C. 7:38-3.9). These regulations shall apply to the entirety of the Preservation Area.

A. The site plan shall identify all forest in existence on the lot as of August 10, 2004 as well as those forest areas that have subsequently developed. An upland forest area shall be determined in accordance with the following method:

1. The limit of the forest shall be identified using aerial photographs obtained from the NJDEP, free of charge, at www.state.nj.us/dep/gis/; and
2. If the aerial photograph contains areas of sporadic coverage that have not been identified as forest by the applicant, the applicant shall lay a one-half acre grid system over the photograph. A standard 142 square foot grid block shall be used, as provided by the NJDEP at its website. Any grid block containing 33 percent or greater forest cover shall be considered as forest, unless demonstrated otherwise using the procedure established in B., below.
3. If there is an approved forest management plan identifying forest on a site, the limits of the forest indicated in the plan may be used as an additional resource, but shall not be used in lieu of aerial photographs.

B. Alternatively, a forest determination may be made based upon the size and density of trees on the subject property, in accordance with the following method:

1. Select two 25-foot by 25-foot plots in every acre of the site potentially containing a forest.
 - a) The plots shall be located in the portion of each acre having the highest density of trees as determined by a visual inspection.
 - b) If the tree size and density are very uniform over some or the entirety of the site, one plot may be selected in the area of uniformity. However, the point total from the one plot shall be doubled to determine the total point value for the sampled acre pursuant to B.5., below.
2. In each plot, measure the diameter of each tree at four and one-half feet above ground (diameter at breast height, dbh).

3. Score each tree as follows:

<u>Diameter of Tree (dbh)</u>	<u>Points</u>
1 inch to 3 inches	2
Between 3 and 7 inches	4
7 inches to 12 inches	6
Greater than 12 inches	8

4. Add together the scores for all of the trees in each plot.

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5. If the total score for both plots is equal to or greater than 16, the sampled acre is regulated as a forest. For example, if the two 25-foot by 25-foot plots contain a total of three trees which are two inches in diameter, two trees which are six inches in diameter, and one tree which is 15 inches in diameter, the score for the sampled area would be: $(3 \times 2) + (2 \times 4) + (1 \times 8) = 22$, and the sampled acre is considered a forest.
 6. If a sampled acre is a forest, the applicant shall assume that a half-acre of ground surrounding all sides of the sampled acre is also forest except for the surrounding areas that are sampled by the applicant and score under 16. In that case, a sufficient number of plots in the surrounding area shall be sampled by the applicant to delineate the forest portion of the surrounding area.
 7. The results of field sampling data provided in B.1 through B.6 above shall be reviewed. The outer perimeter of all sample plots shall be flagged in the field and their locations shown on a plan.
 8. For a newly planted or regenerating forest, an area shall be considered forest if there are 408 seedlings or saplings per sampled acre, that is, the total number of seedlings or saplings in the two sample plots is 12 or more. For the purposes of this section, a tree will be considered a seedling or sapling if it has a caliper (diameter) of less than one (1) inch.
 9. Agricultural and/or horticultural uses such as orchards, tree farms and nurseries are not considered forest under this section.
- C. The limit of the forest shall be the outermost edge of the canopy of the forest area identified in A. through B., above.

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APPENDIX B. MAJOR POTENTIAL CONTAMINANT SOURCES

Land uses and activities determined by the Highlands Council (based on New Jersey Safe Drinking Water Act regulations at N.J.A.C. 7:10 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 D.)
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).

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APPENDIX C. MINOR POTENTIAL CONTAMINANT SOURCES

Land uses and activities determined by the Highlands Council (based on New Jersey Safe Drinking Water Act regulations at N.J.A.C. 7:10 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.

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APPENDIX D. 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**

<i>SIC Code for Industrial Facility*</i>	<i>Description of Industrial Facility which includes activities that may release hazardous substances</i>	<i>Toxicity Rating</i>
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	Industrial 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
341x, 342x, 343x, 344x, 345x, 346x, except 3431 & 3463	Fabricated metal products, with metal finishing	V

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

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<i>SIC Code for Industrial Facility*</i>	<i>Description of Industrial Facility which includes activities that may release hazardous substances</i>	<i>Toxicity Rating</i>
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
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.*

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APPENDIX E. EXHIBITS

- Exhibit 1. County Preservation Area
- Exhibit 2. Highlands Zones and Sub-Zones (Land Use Capability Map Zones)
- Exhibit 3. Forest Resource Area
- Exhibit 4. Highlands Open Waters
- Exhibit 5. Highlands Riparian Areas
- Exhibit 6. Steep Slope Protection Area
- Exhibit 7. Critical Wildlife Habitat
- Exhibit 8. Significant Natural Areas
- Exhibit 9. Vernal Pools
- Exhibit 10. Carbonate Rock Areas
- Exhibit 11. Lake Management Area
- Exhibit 12. Prime Ground Water Recharge Areas
- Exhibit 13. Wellhead Protection Areas
- Exhibit 14. Highlands Special Environmental Zone
- Exhibit 15. [*Reserved*]
- Exhibit 16. Highlands Historic, Cultural and Archaeological Resources
- Exhibit 17. Highlands Scenic Resources (Baseline Scenic Resources Inventory)
- Exhibit 18. Net Water Availability by HUC14 Subwatershed
- Exhibit 19. Public Community Water Systems
- Exhibit 20. Highlands Domestic Sewerage Facilities
- Exhibit 21. [*Reserved*]
- Exhibit 22. Total Forest Area
- Exhibit 23. Forest Subwatersheds
- Exhibit 24. Watershed Values
- Exhibit 25. Riparian Integrity