

HAINESPORT TOWNSHIP

MUNICIPAL

**STORMWATER MANAGEMENT PLAN
(MSWMP)**

FEBRUARY 2005

REVISED FEBRUARY 2006

(Required by NJPDES Permit Number NJFO147834)

**Prepared in accordance with NJAC 7:8-4.2,
“Stormwater Management Rules.”**

Hainesport Township Municipal Stormwater Management Plan

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Introduction

This Municipal Stormwater Management Plan (MSWMP) documents the strategy for the Hainesport Township (“the Township”) to address stormwater-related impacts. The creation of this plan is required by NJAC 7:14A-25 Municipal Stormwater Regulations. This plan contains all of the required elements described in NJAC 7:8 Stormwater Management Rules. The plan addresses groundwater recharge, stormwater quantity, and stormwater quality impacts by incorporating stormwater design and performance standards for new major development, defined as projects that disturb one or more acre of land. These standards are intended to minimize the adverse impact of stormwater runoff on water quality and water quantity and the loss of groundwater recharge that provides baseflow in receiving water bodies. The plan describes long-term operation and maintenance measures for existing and future stormwater facilities.

A “build-out” analysis has been included in this plan, based upon existing zoning and land available for development. The plan also addresses the review and update of existing ordinances, the Township Master Plan, and other planning documents to allow for project designs that include low impact development techniques. The final component of this plan is a mitigation strategy for when a variance or exemption of the design and performance standards is sought. As part of the mitigation section of the stormwater plan, specific stormwater management measures are identified to lessen the impact of existing development.

Goals

The goals of this MSWMP are to:

- reduce flood damage, including damage to life and property;
- minimize, to the extent practical, any increase in stormwater runoff from any new development;
- reduce soil erosion from any development or construction project;
- assure the adequacy of existing and proposed culverts and bridges, and other in-stream structures;
- maintain groundwater recharge;
- prevent, to the greatest extent feasible, an increase in nonpoint pollution;
- maintain the integrity of stream channels for their biological functions, as well as for drainage;
- minimize pollutants in stormwater runoff from new and existing development to restore, enhance, and maintain the chemical, physical, and biological integrity of the waters of the state, to protect public health, to safeguard fish and aquatic life and scenic and ecological values, and to enhance the domestic, municipal, recreational, industrial, and other uses of water; and

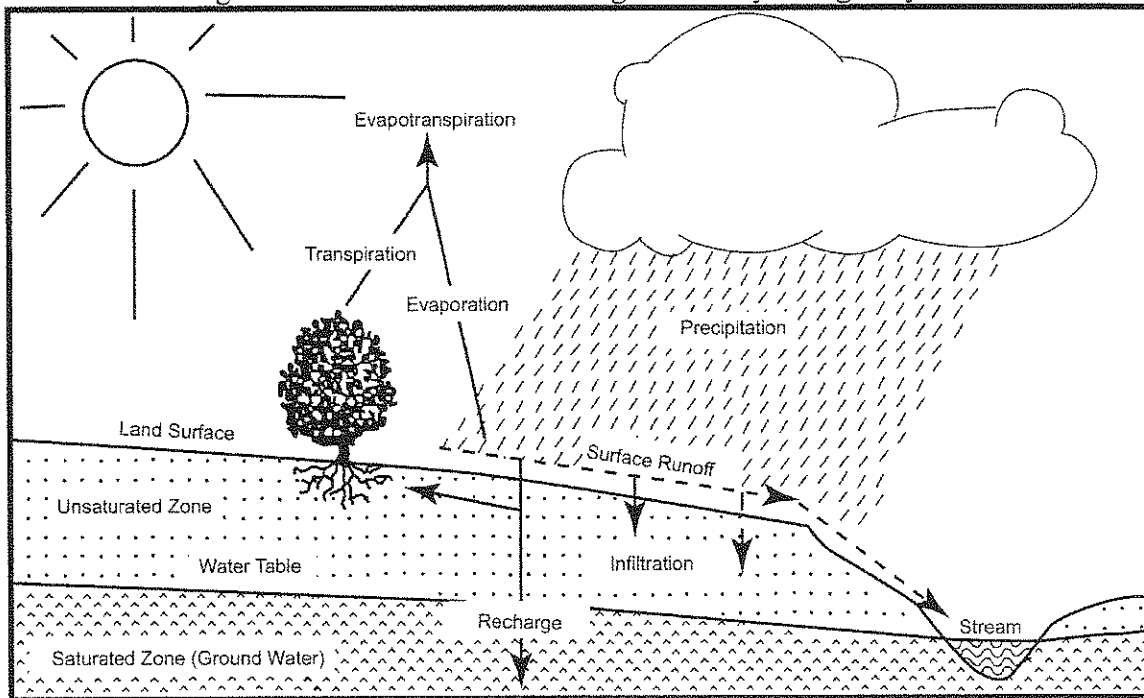
- protect public safety through the proper design and operation of stormwater basins.
- *Identify and protect the “Sensitive Receptors” that are critical in accomplishing the goals of this Stormwater Management Plan.*

To achieve these goals, this plan outlines specific stormwater design and performance standards for new development. Additionally, the plan proposes stormwater management controls to address impacts from existing development. Preventative and corrective maintenance strategies are included in the plan to ensure long-term effectiveness of stormwater management facilities. The plan also outlines safety standards for stormwater infrastructure to be implemented to protect public safety.

Stormwater Discussion

Land development can dramatically alter the hydrologic cycle (See Figure C-1) of a site and, ultimately, an entire watershed. Prior to development, native vegetation can either directly intercept precipitation or draw that portion that has infiltrated into the ground and return it to the atmosphere through evapotranspiration. Development can remove this beneficial vegetation and replace it with lawn or impervious cover, reducing the site's evapotranspiration and infiltration rates. Clearing and grading a site can remove depressions that store rainfall. Construction activities may also compact the soil and diminish its infiltration ability, resulting in increased volumes and rates of stormwater runoff from the site. Impervious areas that are connected to each other through gutters, channels, and storm sewers can transport runoff more quickly than natural areas. This shortening of the transport or travel time quickens the rainfall-runoff response of the drainage area, causing flow in downstream waterways to peak faster and higher than natural conditions. These increases can create new and aggravate existing downstream flooding and erosion problems and increase the quantity of sediment in the channel. Filtration of runoff and removal of pollutants by surface and channel vegetation is eliminated by storm sewers that discharge runoff directly into a stream. Increases in impervious area can also decrease opportunities for infiltration which, in turn, reduces stream base flow and groundwater recharge. Reduced base flows and increased peak flows produce greater fluctuations between normal and storm flow rates, which can increase channel erosion. Reduced base flows can also negatively impact the hydrology of adjacent wetlands and the health of biological communities that depend on base flows. Finally, erosion and sedimentation can destroy habitat from which some species cannot adapt.

Figure C-1: Groundwater Recharge in the Hydrologic Cycle



Source: New Jersey Geological Survey Report GSR-32.

In addition to increases in runoff peaks, volumes, and loss of groundwater recharge, land development often results in the accumulation of pollutants on the land surface that runoff can mobilize and transport to streams. New impervious surfaces and cleared areas created by development can accumulate a variety of pollutants from the atmosphere, fertilizers, animal wastes, and leakage and wear from vehicles. Pollutants can include metals, suspended solids, hydrocarbons, pathogens, and nutrients.

In addition to increased pollutant loading, land development can adversely affect water quality and stream biota in more subtle ways. For example, stormwater falling on impervious surfaces or stored in detention or retention basins can become heated and raise the temperature of the downstream waterway, adversely affecting cold water fish species such as trout. Development can remove trees along stream banks that normally provide shading, stabilization, and leaf litter that falls into streams and becomes food for the aquatic community.

Background

The Township encompasses a 6.72 square mile area in Burlington County, New Jersey. In recent years, the Township has been under significant development pressure. The population of the Township has increased from 3,236 in 1980, to 3,249 in 1990, to 4,126 in 2000. This population increase has resulted in considerable demand for new development; changes in the landscape have most likely increased stormwater runoff volumes and pollutant loads to the waterways of the municipality. Figure C-2 illustrates the waterways in the Township. Figure C-3 depicts the Township boundary on the USGS quadrangle maps.

The New Jersey Department of Environmental Protection (NJDEP) has established an Ambient Biomonitoring Network (AMNET) to document the health of the state's waterways. There are over 800 AMNET sites throughout the state of New Jersey. These sites are sampled for benthic macroinvertebrates by NJDEP on a five-year cycle. Streams are classified as nonimpaired, moderately impaired, or severely impaired based on the AMNET data. The data is used to generate a New Jersey Impairment Score (NJIS), which is based on a number of biometrics related to benthic macroinvertebrate community dynamics. The waterways which flow through the Township are the North and South Branches of the Rancocas Creek, and Mason's Creek.

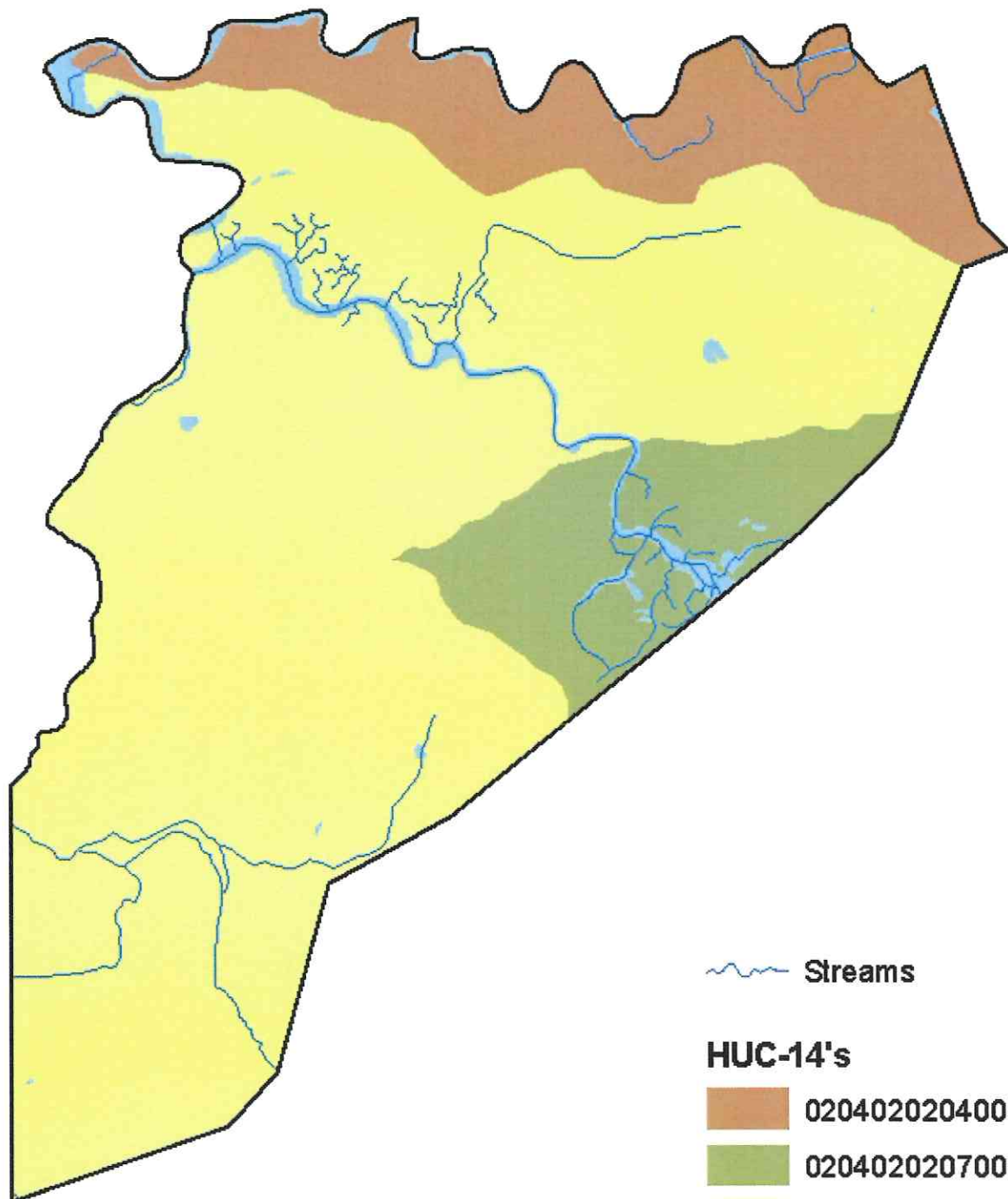
The Rancocas Creek, Water Management Area (WMA) 19, at the NJ Turnpike bridge (Site ID# AN0176R), and at Route 38 (Site ID# AN0176S) have an overall assessment of moderately impaired. The parameters causing this assessment are arsenic cadmium, chromium, lead, copper, mercury, nickel, selenium, phosphorus, and fecal coliform as determined by NJDEP/Metal Recon. The Township will maintain consistency with these impairments with the goal of not causing an increase in the TMDL. The "Summary of Amnet" results and the "NJ-2002 List of Integrated Waterbodies" (two (2) sheets) are attached.

Figure C-2: HUC14s and Waterways

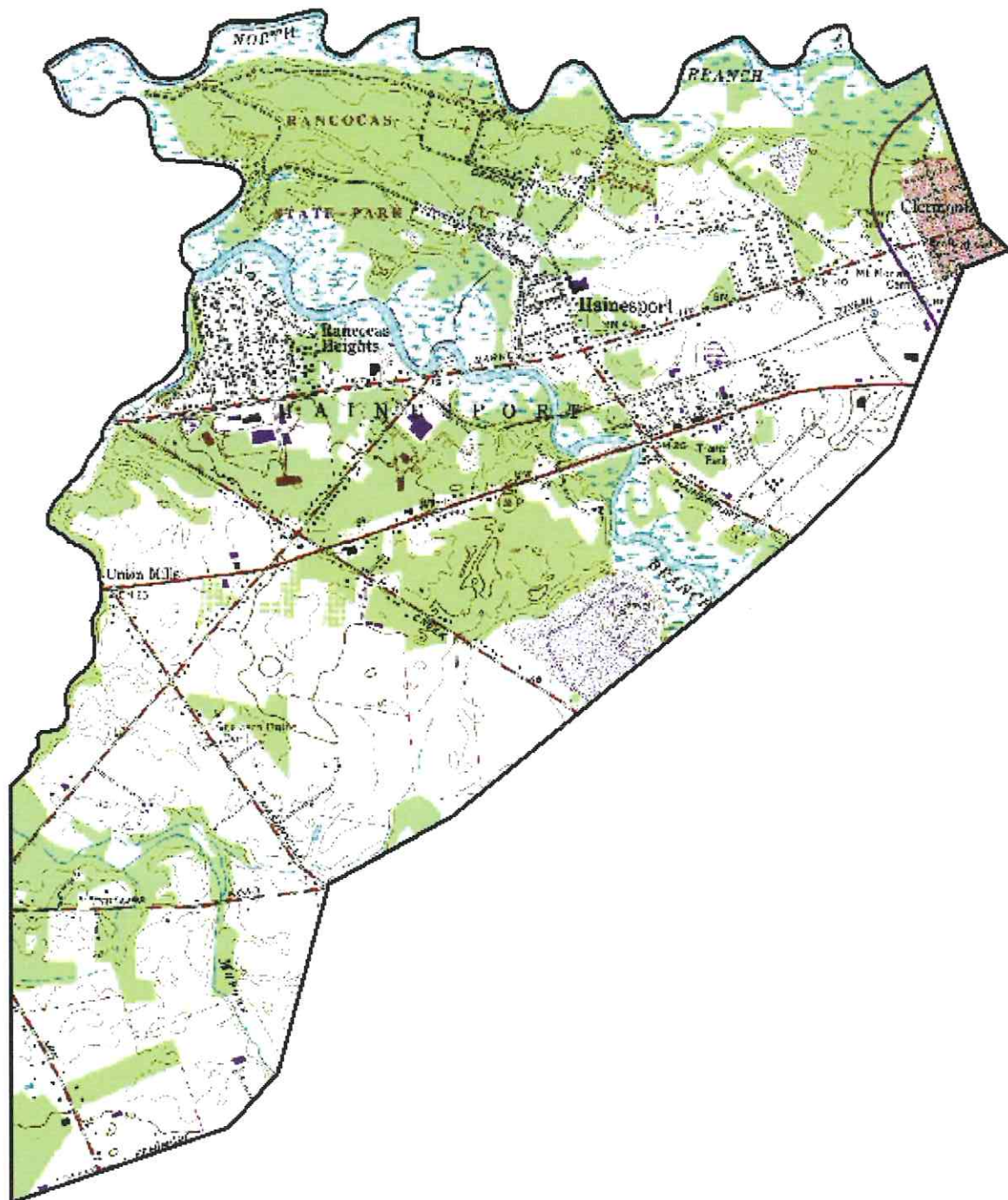
Analysis:

Since a large quantity of TSS, TN, and TP loading occurs from the Non-Point Source loads at Build-Out in the R-1, R-2, and RR-5 areas of HUC-14 Zone 02040202070030, particular attention will be given to increase quality, decrease surface flow, and increase groundwater recharge in these areas of Hainesport Township.

Hainesport Township HUC-14's and Waterways



Hainesport Township USGS Topography

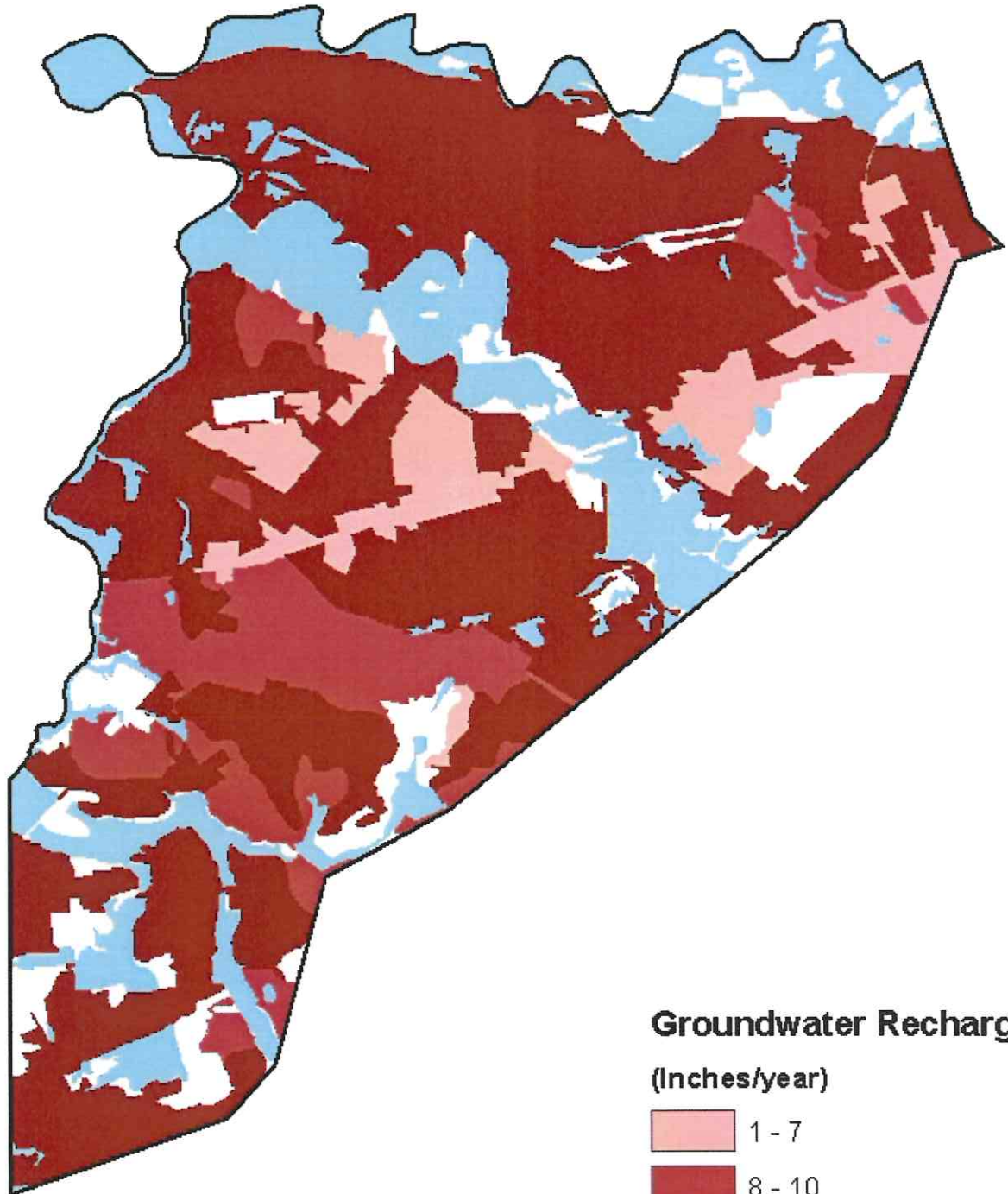


All three (3) are moderately impaired, based upon AMNET data. All three (3) streams are tidal in Hainesport Township. In addition to the AMNET data, the NJDEP and other regulatory agencies collect water quality chemical data on the streams in the state.

The New Jersey Integrated Water Quality Monitoring and Assessment Report (305(b) and 303(d)) (Integrated List) is required by the Federal Clean Water Act to be prepared biennially and is a valuable source of water quality information. This combined report presents the extent to which New Jersey waters are attaining water quality standards, and identifies waters that are impaired. Sublist 5 of the Integrated List constitutes the list of waters impaired or threatened by pollutants, for which one or more TMDLs are needed. *(See C-5, attached.)*

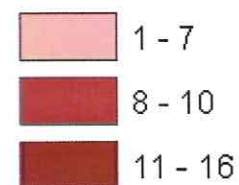
In addition to water quality problems, the Township has exhibited some water quantity problems including minor flooding and stream bank erosion.

Hainesport Township Groundwater Recharge Rates & Wetlands



Groundwater Recharge

(Inches/year)



Wetlands

Created by Burlington County
Office of Resource Conservation
October 2004

Sources: Burlington County Engineering municipal boundaries,
NJDEP wetlands, NJGS groundwater recharge rates.
Breakdown of recharge rates based on state-wide values determined by NJGS.

Design and Performance Standards

The Township will adopt the design and performance standards for stormwater management measures as presented in NJAC 7:8-5 to minimize the adverse impact of stormwater runoff on water quality and water quantity and loss of groundwater recharge in receiving water bodies. The design and performance standards include the language for maintenance of stormwater management measures consistent with the stormwater management rules at NJAC 7:8-5.8 Maintenance Requirements, and language for safety standards consistent with NJAC 7:8-6 Safety Standards for Stormwater Management Basins. The ordinances will be submitted to the county for review and approval by April 1, 2006.

During construction, Township inspectors will observe the construction of the project to ensure that the stormwater management measures are constructed and function as designed.

Plan Consistency

The Township is not within a Regional Stormwater Management Planning Area, and no TMDLs have been developed for waters within the Township; therefore, this plan does not need to be consistent with any regional stormwater management plans (RSWMPs) nor any TMDLs. *A TMDL for total phosphorus is under development in the Rancocas Creek. When* RSWMPs or TMDLs are developed in the future, this Municipal Stormwater Management Plan will be updated to be consistent *with the RSWMP. Hainesport Township will initiate or revise ordinances and/or standards to comply with new TMDL's. The January 2005 "Little Creek and Masons Creek Regional Stormwater Management Plan Guidance Document," prepared by the Burlington County Soil Conservation District, can be used in RSWMP planning.*

The Municipal Stormwater Management Plan is consistent with the Residential Site Improvement Standards (RSIS) at NJAC 5:21. The municipality will utilize the most current update of the RSIS in the stormwater management review of residential areas. This Municipal Stormwater Management Plan will be updated to be consistent with any future updates to the RSIS.

The Township's Stormwater Management Ordinance requires all new development and redevelopment plans to comply with New Jersey's Soil Erosion and Sediment Control Standards. During construction, Township inspectors will observe on-site soil erosion and sediment control measures and report any inconsistencies to the local Soil Conservation District.

This MSWMP is consistent with the Mission Statement and goals of the "Management Plan of the Rancocas Creek Watershed," dated March 2003.

Nonstructural Stormwater Management Strategies

The Township has reviewed the master plan and ordinances, and has provided a list of the sections in the Township land use and zoning ordinances that are to be modified to incorporate nonstructural stormwater management strategies. These are the ordinances identified for revision. Once the ordinance texts are completed, they will be submitted to the county review agency for review and approval by April 1, 2006. A copy will be sent to the Department of Environmental Protection at the time of submission.

Chapter 104 of the Township Code, entitled Land Use, was reviewed with regard to incorporating nonstructural stormwater management strategies. Several changes will be made to Article XII of this Chapter, entitled "Design and Performance Standards" to incorporate these strategies.

Section 104-101: Buffers and Screening will require buffer areas along all lot and street lines separating residential uses from arterial and collector streets, and along all street lines where loading and storage areas can be seen from the street. The landscape requirements for these buffer areas in the existing section do not recommend the use of native vegetation. The language of this section will be amended to require the use of native vegetation, which requires less fertilization and watering than nonnative species. Additionally, language will be included to allow buffer areas to be used for stormwater management by disconnecting impervious surfaces and treating runoff from these impervious surfaces. This section will require the preservation of natural wood tracts and limits land disturbance for new construction.

Section 104-102: Curbs and Gutters requires that concrete curb and gutter, concrete curb, or Belgian block curb be installed along every street within and fronting on a development. This section will be amended to allow for curb cuts or flush curbs with curb stops to allow vegetated swales to be used for stormwater conveyance and to allow the disconnection of impervious areas in the RR-5 District.

Section 104-103: Drainage requires that all streets be provided with catch basins and pipes where the same are necessary for proper drainage. This section will be amended to allow the use of natural vegetated swales in lieu of inlets and pipes in the RR-5 District.

Section 104-128: Natural Features will be added, which requires that natural features, such as forested areas, brooks, swamps, hilltops, and views, be preserved whenever possible, and that care be taken to preserve selected trees to enhance soil stability and landscaped treatment of the area. Forested areas will ensure that leaf litter and other beneficial aspects of the forest are maintained in addition to the trees.

Section 104-95: Off-Tract Improvements describes essential off-site and off-tract improvements. Language will be added to this section to require that any off-site and off-tract stormwater management and drainage improvements must conform to the "Design and Performance Standards" described in this plan and provided in Chapter 104 of the Township Code.

Section 104-115: Off-Street Parking and Loading details off-street parking and loading requirements. All parking lots with more than ten (10) spaces and all loading areas are required to have concrete or Belgian block curbing around the perimeter of the parking and loading areas. This section also requires that concrete or Belgian block curbing be installed around all landscaped areas within the parking lot or loading areas. This section will be amended to allow for flush curb with curb stop, or curbing with curb cuts to encourage developers to allow for the discharge of impervious areas into landscaped areas for stormwater management. This section also provides guidance on minimum parking space requirements. These requirements are based on the number of dwelling units and/or gross floor area. The section allows a developer to demonstrate that fewer spaces would be required, provided area is set aside for additional spaces if necessary. This section will be amended to allow pervious paving to be used in areas to provide overflow parking, vertical parking structures, smaller parking stalls, and shared parking.

Sections 104-53: Regulations Applicable to All Zones; Subsection O provides pollution source control. It will be revised to prohibit materials or wastes to be deposited upon a lot in such form or manner that they can be transferred off the lot, directly or indirectly, by natural forces such as precipitation, evaporation, or wind. It also will require that all materials and wastes that might create a pollutant or a hazard be enclosed in appropriate containers.

Section 104-120: Shade Trees will require a minimum of three (3) shade trees per lot to be planted in the front yard. In addition, the Township has a Tree Preservation Ordinance that restricts and otherwise controls the removal of mature trees throughout the Township. This ordinance recognizes that the preservation of mature trees and forested areas is a key strategy in the management of environmental resources, particularly watershed management, air quality, and ambient heating and cooling. These sections set out a “critical footprint area” that extends twenty feet (20') beyond the driveway and building footprint where clearing of trees cannot occur. This complies with minimizing land disturbance, which is a nonstructural stormwater management strategy.

Section 104-121: Sidewalks describe sidewalk requirements for the Township. Although sidewalks are not required along all streets, the Township can require them in areas where the probable volume of pedestrian traffic; the development's location in relation to other populated areas and high vehicular traffic; pedestrian access to bus stops, schools, parks, and other public places; and the general type of improvement intended indicate the advisability of providing a pedestrianway. Sidewalks are to be a minimum of four feet (4') wide and constructed of concrete. Language will be added to this section to require developers to design sidewalks to discharge stormwater to neighboring lawns where feasible to disconnect these impervious surfaces, or use permeable paving materials where appropriate.

Section 104-24: Soil Erosion and Sediment Control addresses soil erosion and sediment control by referencing The Burlington County Soil Conservation District's Soil Erosion and Sediment Control Standards.

Section 104-125: Streets describes the requirements for streets in the Township. The Township has several street classifications, ranging from “Major Arterial,” which has a minimum right-of-way of 120 feet, to “Minor,” which has a minimum right-of-way of 50 feet. Street paving widths are a function of the number of units served, whether a street is curbed, whether on-street parking is permitted, whether the interior streets serve lots of two (2) acres or larger, and whether on-site topographical constraints allow design flexibility. Depending on these factors, paving width for secondary local streets has a range from 20 to 32 feet, but must comply with the “RSIS” Standards.

Several changes were made to Article VII of the Township Code entitled “Zoning Districts; Dimensional and Use Regulations.” The Township has fifteen (15) types of districts. Each district has a maximum percent impervious surface allocation, ranging from 20 percent for the RR-5 District, which has a minimum lot size of five (5) acres for detached single-family homes, to 80 percent for the AC and SRC Districts, which have a minimum lot size of 20,000 square feet for Commercial with Residences. The Township Code will be amended to remind developers that satisfying the percent impervious requirements does not relieve them of responsibility for complying with the Design and Performance Standards for Stormwater Management Measures contained in Section 104-103 – Drainage. The Township will evaluate the maximum allowable impervious cover for each zone to determine whether a reduction in impervious cover is appropriate and a maximum percent of disturbance for each zone, for those areas identified as natural features in Section 104-128. Also, if a developer is given a variance to exceed the maximum allowable percent imperviousness, the developer must mitigate the impact of the additional impervious surfaces. This mitigation effort must address water quality, flooding, and groundwater recharge.

Land Use/Build-Out Analysis

A detailed land use analysis for the Township was conducted. Figure C-5 illustrates the existing land use in the Township based on 1995/97 GIS information from NJDEP. Figure C-2 illustrates the HUC14s within the Township. The Township zoning map is shown in Figure C-6. The build-out calculations for impervious cover are shown in Table C-1. As expected when developing agricultural and forest lands, the build-out of these two HUC14s will result in a significant increase in impervious surfaces. The pollutant loads at full build-out are presented in Table C-2.

HAINESPORT TOWNSHIP BUILD-OUT CALCULATIONS

HUC14 and Zone	Total Area (Acres)	Wetlands/ Water Area (Acres)	Developable Area (Acres)	Allowable Impervious (%)	Build-Out Impervious (Acres)
02040202040050					
Residential (R-2)	299.85	68.40	231.45	27%	62.49
Rancocas State Park (RSP)	164.53	42.12	122.41	1%	1.22
Senior Citizen District (SC)	117.69	45.32	72.37	55%	39.80
TOTALS	582.07	155.84	426.23	24%	103.52
02040202070030					
Accessory Commercial (AC)	22.89	4.35	18.54	80%	14.83
Business Commercial (BC)	19.10	0.72	18.38	40%	7.35
General Commercial (GC)	71.75	0.70	71.05	70%	49.74
Highway Commercial (HC)	130.54	2.48	128.06	65%	83.24
Industrial (I)	250.43	22.20	228.23	70%	159.76
Industrial (I-1)	7.10	0.13	6.97	70%	4.88
Office (O)	53.83	6.49	47.34	65%	30.77
Professional Office (PO)	8.93	0.00	8.93	70%	6.25
Residential (R-1)	385.76	4.11	381.65	25%	95.41
Residential (R-1A)	7.33	0.68	6.65	70%	4.66
Residential (R-2)	543.58	42.73	500.85	27%	135.23
Residential (R-3)	42.87	0.00	42.87	70%	30.01
Residential (RR-5)	1,159.82	346.78	813.04	20%	162.61
Rancocas State Park (RSP)	418.94	140.47	278.47		278.47
Senior Citizen District (SC)	111.25	20.01	91.24	55%	50.18
Special Restricted Commercial (SRC)	5.52	0.00	5.52	80%	4.42
TOTALS	3,239.64	591.85	2,647.79	42%	1,117.80
02040202070020					
Highway Commercial (HC)	56.98	10.82	46.16	65%	30.00
Industrial (I)	82.80	2.94	79.86	70%	55.90
Office (O)	0.23	0.00	0.23	65%	0.15
Professional Office (PO)	16.33	0.00	16.33	70%	11.43
Residential (R-1)	222.40	69.93	152.47	25%	38.12
Residential (R-1A)	86.62	5.65	80.97	70%	56.68
Residential (RR-5)	1.11	0.00	1.11	20%	0.22
TOTALS	466.47	89.34	377.13	51%	192.51

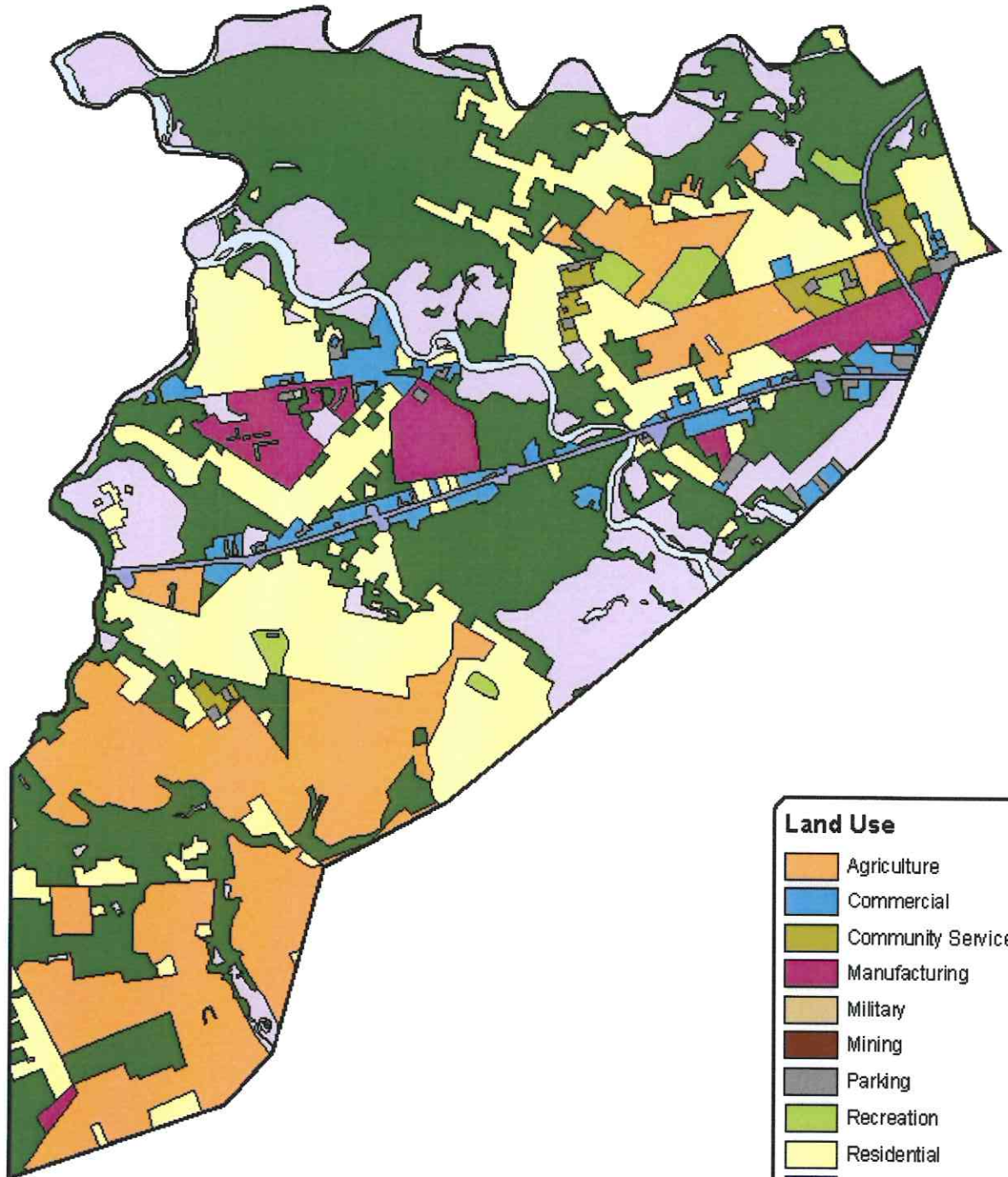
TABLE C-1

NONPOINT SOURCE LOADS AT BUILD-OUT FOR HAINESPORT TOWNSHIP

HUC14 and Zone	Build-Out Zoning	Developable Area (Acres)	TP (lbs/acre/yr)	TP (lbs/yr)	TN (lbs/acre/yr)	TN (lbs/yr)	TSS (lbs/acre/yr)	TSS (lbs/yr)
02040202040050								
Residential (R-2)	High, Medium Density Residential	231.45	1.4	324.03	15	3,471.75	140	32,403.00
Rancocas State Park (RSP)	Forest, Water, Wetlands	122.41	0.1	12.24	3	367.23	40	4,896.40
Senior Citizen District (SC)	High, Medium Density Residential	72.37	1.4	101.32	15	1,085.55	140	10,131.80
TOTALS		426.23		437.59		4,924.53		47,431.20
02040202070030								
Accessory Commercial (AC)	Commercial	18.54	2.1	38.93	22	407.88	200	3,708.00
Business Commercial (BC)	Commercial	18.38	2.1	38.60	22	404.36	200	3,676.00
General Commercial (GC)	Commercial	71.05	2.1	149.21	22	1,563.10	200	14,210.00
Highway Commercial (HC)	Commercial	128.06	2.1	268.93	22	2,817.32	200	25,612.00
Industrial (I)	Industrial	228.23	1.5	342.35	16	3,651.68	200	45,646.00
Industrial (I-1)	Industrial	6.97	1.5	10.46	16	111.52	200	1,394.00
Office (O)	Commercial	47.34	2.1	99.41	22	1,041.48	200	9,468.00
Professional Office (PO)	Commercial	8.93	2.1	18.75	22	196.46	200	1,786.00
Residential (R-1)	High, Medium Density Residential	381.65	1.4	534.31	15	5,724.75	140	53,431.00
Residential (R-1A)	High, Medium Density Residential	6.65	1.4	9.31	15	99.75	140	931.00
Residential (R-2)	High, Medium Density Residential	500.85	1.4	701.19	15	7,512.75	140	70,119.00
Residential (R-3)	High, Medium Density Residential	42.87	1.4	60.02	15	643.05	140	6,001.80
Residential (RR-5)	Low Density, Rural Residential	813.04	0.6	487.82	5	4,065.20	100	81,304.00
Rancocas State Park (RSP)	Forest, Water, Wetlands	278.47	0.1	27.85	3	835.41	40	11,138.80
Senior Citizen District (SC)	High, Medium Density Residential	91.24	1.4	127.74	15	1,368.60	140	12,773.60
Special Restricted Commercial (SRC)	Commercial	5.52	2.1	11.59	22	121.44	200	1,104.00
TOTALS		2,647.79		2,926.46		30,564.75		342,303.20
02040202070020								
Highway Commercial (HC)	Commercial	46.16	2.1	96.94	22	1,015.52	200	9,232.00
Industrial (I)	Industrial	79.86	1.5	119.79	16	1,277.76	200	15,972.00
Office (O)	Commercial	0.23	2.1	0.48	22	5.06	200	46.00
Professional Office (PO)	Commercial	16.33	2.1	34.29	22	359.26	200	3,266.00
Residential (R-1)	High, Medium Density Residential	152.47	1.4	213.46	15	2,287.05	140	21,345.80
Residential (R-1A)	High, Medium Density Residential	80.97	1.4	113.36	15	1,214.55	140	11,335.80
Residential (RR-5)	Low Density, Rural Residential	1.11	0.6	0.67	5	5.55	100	111.00
TOTALS		377.13		578.98		6,164.75		61,308.60

TABLE C-2

Hainesport Township Land Use Classification

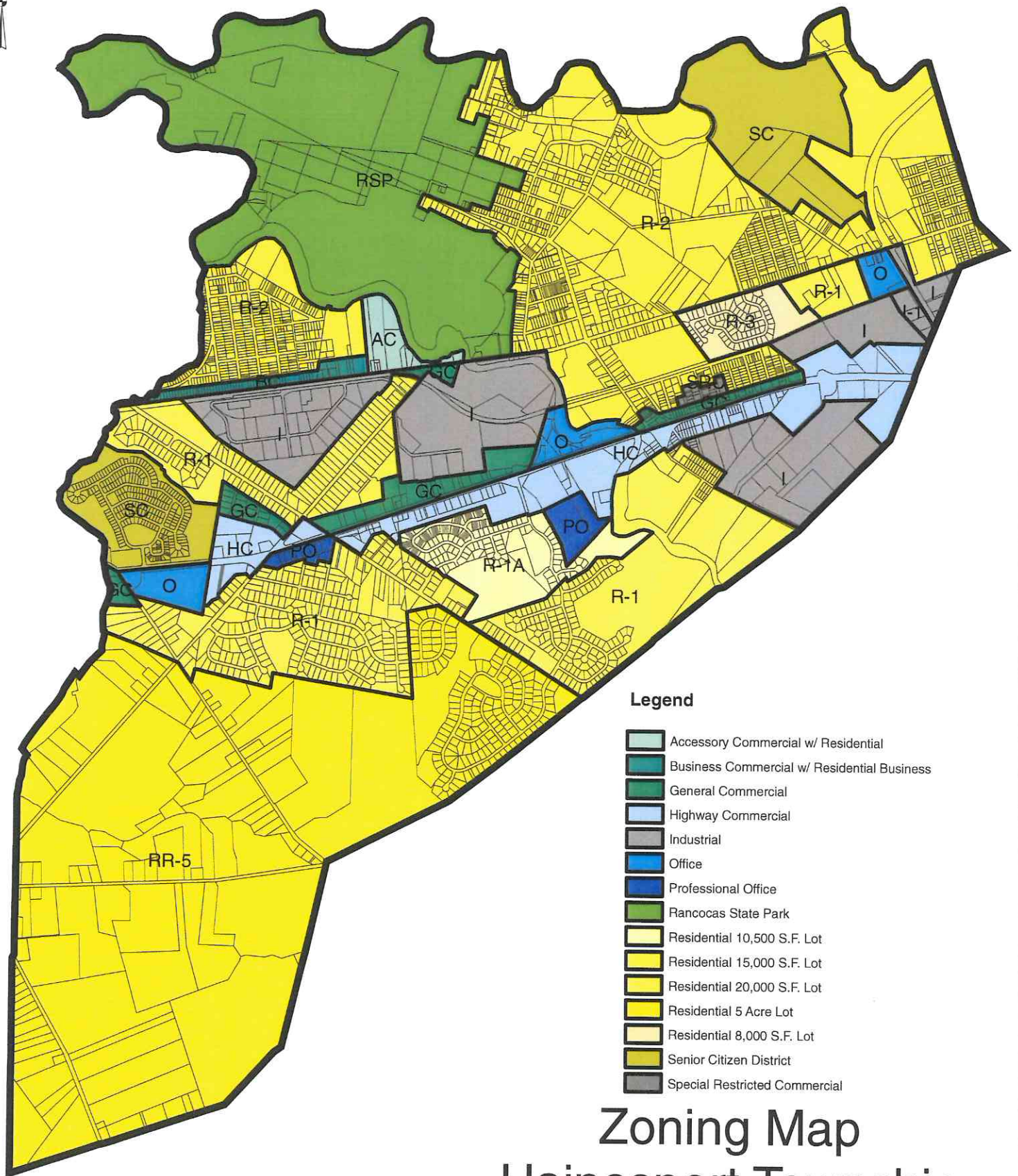


Land Use

- Agriculture
- Commercial
- Community Services
- Manufacturing
- Military
- Mining
- Parking
- Recreation
- Residential
- Transportation
- Utility
- Vacant
- Water
- Wooded

Created by Burlington County
Office of Resource Conservation
October 2004

Sources: Burlington County Engineering municipal
boundaries, DVRPC 2000 Land Use Data



Legend

-  Accessory Commercial w/ Residential
-  Business Commercial w/ Residential Business
-  General Commercial
-  Highway Commercial
-  Industrial
-  Office
-  Professional Office
-  Rancocas State Park
-  Residential 10,500 S.F. Lot
-  Residential 15,000 S.F. Lot
-  Residential 20,000 S.F. Lot
-  Residential 5 Acre Lot
-  Residential 8,000 S.F. Lot
-  Senior Citizen District
-  Special Restricted Commercial

Zoning Map Hainesport Township

Burlington County, New Jersey

N.T.S.

Mitigation Plan

This mitigation plan is provided for a proposed development that is granted a variance or exemption from the stormwater management design and performance standards. Presented is a hierarchy of options.

Mitigation Project Criteria

1. The mitigation project must be implemented in the same drainage area as the proposed development. The project must provide additional groundwater recharge benefits, or protection from stormwater runoff quality and quantity from previously developed property that does not currently meet the design and performance standards outlined in the Municipal Stormwater Management Plan. The developer must ensure the long-term maintenance of the project, including the maintenance requirements under Chapters 8 and 9 of the NJDEP Stormwater BMP Manual.
 - a. The applicant can select one of the following projects listed to compensate for the deficit from the performance standards resulting from the proposed project. More detailed information on the projects can be obtained from the Township Engineer. Listed below are specific projects that can be used to address the mitigation requirement.

Option 1 – Groundwater Recharge

- Retrofit the Hainesport School site and detention basin to provide an additional 10,000 CF of average annual groundwater recharge.

Option 2 – Water Quality

- Retrofit the existing stormwater management facility at Hainesport School to provide the removal of 80 percent of total suspended solids from the parking lot runoff.
- Retrofit the existing parking area at the Municipal Complex to provide the removal of 80 percent of total suspended solids. Due to site constraints, the retrofit BMP must be installed underground and cannot reduce the existing number of parking spaces.

Option 3 – Water Quantity

- Install stormwater management measures in the open space in the Municipal Complex to reduce the peak flow from the upstream development on the receiving stream.

2. If a suitable site cannot be located in the same drainage area as the proposed development, as discussed in Option 1, the mitigation project may provide mitigation that is not equivalent to the impacts for which the variance or exemption is sought, but that addresses the same issue. For example, if a variance is given because the 80 percent TSS requirement is not met, the selected project may address water quality impacts due to a fecal impairment. Listed below are specific projects that can be used to address the mitigation option.

Water Quality

- Provide goose management measures, including public education at Municipal Park.
3. *Another source of potential mitigation projects is within the “Prioritization of Potential Streambank Stabilization and Habitat Restoration Projects in the Rancocas Creek Watershed” prepared by the Burlington County Soil Conservation District.*
 4. The municipality may allow a developer to provide funding or partial funding to the municipality for an environmental enhancement project that has been identified in a Municipal Stormwater Management Plan, or towards the development of a Regional Stormwater Management Plan. The funding must be equal to or greater than the cost to implement the mitigation outlined above, including costs associated with purchasing the property or easement for mitigation, and the cost associated with the long-term maintenance requirements of the mitigation measure.

FIGURE C-7

