

DNREC comments on Town of Cheswold Comp Plan

There are sensitive wetlands, forested areas, rare wildlife and plant species, and unique natural vegetative communities that occur within current Town boundaries and future annexation areas; however, the plan does not include any goals or recommendations that address protection of these natural resources. How will the town ensure that future developments are designed in an environmentally sensitive way if there are no action items in the plan providing guidance to residents or developers? Furthermore, there are no recommendations pertaining to natural resource protection in the plan at all, other than the need for the Town to ensure that stormwater management needs are met and that the town be cautious in becoming responsible for maintenance of these facilities.

DNREC would welcome the opportunity to work with the Town to develop measures to protect sensitive habitat including forests, high-value wetlands, stream quality and water resource protection areas.

Water Quality

Page 7, Floodplains and Wetlands

Please consider substituting the following short narrative on wetland regulatory issues:

“Regulatory protection of wetlands is mandated under Section 404 provisions of the Federal Clean Water Act. Certain other wetlands (mainly in tidal areas) are accorded additional regulatory protection under Title 7 Chapter 66 provisions of the State of Delaware’s Code. Compliance with these statutes may require an Army Corps of Engineers approved wetlands delineation and/or official DNREC wetland jurisdictional determination.”

Page 7, Soils

The plan should reference the recently completed NRCS soil survey update, not the 1974 SCS soil survey, for soils information in the immediate vicinity of Cheswold. Please contact the NRCS at 678-4172 for further information.

Page 6 or 7, Natural Features

We strongly recommend that the Plan contain a narrative about Total Maximum Daily Loads (TMDLs) as a “stand alone” section under the greater Natural Features Section. We suggest this narrative section be entitled “Water Quality Issues.” Please consider the following:

The Town of Cheswold is located within the greater St. Jones and Leipsic River watersheds.

Under Section 303(d) of the 1972 Federal Clean Water Act (CWA), states are required to identify all impaired waters and establish total maximum daily loads to restore their beneficial uses (e.g., swimming, fishing, and drinking water). A TMDL defines the amount of a given pollutant that may be discharged to a water body from point, nonpoint, and natural background sources and still allows attainment or maintenance of the applicable narrative and numerical water quality standards. A TMDL is the sum of the individual Waste Load Applications (WLA’s) for point sources and Load Allocations (LA’s) for nonpoint sources and natural background sources of pollution. A TMDL may include a reasonable margin of safety (MOS) to account for uncertainties regarding the relationship between mass

loading and resulting water quality. In simplistic terms, a TMDL matches the strength, location and timing of pollution sources within a watershed with the inherent ability of the receiving water to assimilate the pollutant without adverse impact.

A Pollution Control Strategy (PCS) specifies actions necessary to systematically achieve pollutant load reductions specified by a Total Maximum Daily Load for a given water body; and must reduce pollutants to level specified by the State Water Quality Standards. A variety of site-specific best management practices (BMPs) will be the primary actions required by the PCS to reduce pollutant loading(s).

The Town of Cheswold is located within the greater Delaware River and Bay drainage; specifically within the St. Jones and Leipsic River watersheds. The pollutants specifically targeted for reduction in the aforementioned watersheds are nutrients (e.g., nitrogen and phosphorus) and bacteria (See table 1). As mentioned previously, these TMDL pollutant reductions must be met in order to satisfy the water quality goals and criteria in the State Water Quality Standards (See table 1). The PCS for the St. Jones watershed is projected for completion/approval by July 2009, while no date has been projected for the Leipsic watershed.

Delaware River and Bay drainage	N- reduction requirements	P-reduction requirements	Bacteria-reduction requirements
St. Jones	40%	40%	90%
Leipsic	40%	40%	75%

Table 1: TMDL Nutrient (Nitrogen and Phosphorus) and Bacteria reduction requirements for the St. Jones and Leipsic watersheds.

Water Resource Protection Areas

DNREC Water Supply Section, Ground Water Protection Branch (GPB) recognizes the Town’s efforts in preparing this Plan. However, the Plan contains contextual errors. In addition, on page 7, paragraph two, the applicant states in part that the Town should consider adopting protective measures for source water protective areas. This is confusing because the Town of Cheswold has already adopted source water protection codified as Section 12-2 thru 12-4 of the Municipal Code, 2nd Edition: September 10, 2007. As written, however, the ordinance is not protective of the resource.

Because the population of Town of Cheswold is projected to exceed 2000 persons, DNREC strongly recommends that the Comprehensive Plan formally adopt the source water protection maps prepared by DNREC in compliance with Title 7, Delaware Code, Chapter 60, Subchapter VI, § 6082 (b).

GPB recommends that the Town use the *Draft Model Ordinance for Smaller Municipalities of Kent and Sussex County* for language in revising their ordinance. This publication is located at the Source Water

Assessment and Protection Program home page. DNREC Source Water Assessment and Protection Program staff is available for assistances.

http://www.wr.udel.edu/swaphome/Publications/SWPOrdinances/FinalDraftModelOrdinanceKnS_041408.pdf

The Ground Water Protection Branch offers these comments concerning source water protection in Cheswold and related references in the town's plan:

- 1) On page 7, paragraph two refers to State legislation (Senate Bill 119) that passed in June 2001. The proper citation is Title 7, Delaware Code, Chapter 60, Subchapter VI, § 6082 (b).
- 2) The Plan places the reference to source water protection in the Floodplains and Wetlands Section. We suggest inserting a section for source water protection that characterizes source water protection by including all elements.
- 3) Map 6 Environmental Features shows only excellent ground-water recharge potential areas and not wellhead protection areas. Please include wellhead protection areas on a source water protection area map
- 4) Sections 12-2, 12-3, and 12-14 do not restrict nor limit impervious cover.

DNREC recommends:

- The portion of the new development within the wellhead protection area and/or the excellent ground-water recharge area should not exceed 20% impervious cover. Allowance for augmenting ground-water recharge must be considered if the impervious cover exceeds 20% but is less than 50% of that portion of the parcel within these areas. However, the development should not exceed 50% regardless. An Environmental Impact Assessment Report including a water balance calculation is necessary to determine the quantity of clean water necessary to be recharged via a recharge basin. The purpose of an impervious cover threshold is to minimize loss of recharge (and associated increases in storm water) and protect the quality and quantity of ground water and surface water supplies.
- 5) Sections 12-2 and 12-3 reference 40 CFR 116 and 117 substances. DNREC Tank Management Branch (TMB) does not use this nomenclature. Use nomenclature consistent with DNREC TMB.
 - 6) The ordinance uses confusing terms to define source water protection areas. Excellent ground-water recharge potential and wellhead protection areas are source water protection areas.

GPB recommends using the following terms:

- **Source Water Assessment Area:** The area delineated by DNREC Source Water Assessment and Protection Program that contributes water to a public water supply system.

- **Wellhead Protection Areas (WHPA):** Surface and subsurface areas surrounding public water supply wells or well fields where the quantity or quality of ground water moving toward the wells or well fields may be adversely affected by land use activity.
 - **Wellhead Protection (WHP) Zone 1** is the surface area extending to a minimum one-hundred and fifty (150) foot radius around the wellhead.
 - **Wellhead Protection (WHP) Zone 2** is the remaining surface area of the delineated wellhead protection area outside Zone 1.
- 7) Section 12-4 Excellent Recharge Areas does not limit land use, land cover, or activities. It does not protect the resource. Revise the existing ordinance using language that is protective
- 8) The definition in Section 12-4 should refer to the study used to develop the ground-water recharge potential maps.

GPB recommends using the following as a definition:

- **Excellent Ground-Water Recharge Potential Area:** Those areas with high percentages of sand and gravel that have "excellent" potential for recharge as determined through a Stack Unit Mapping Analysis delineated by the Delaware Geological Survey and presented in the Report of Investigations No. 66, Ground-water Recharge Potential Mapping in Kent and Sussex Counties, Delaware, Geological Survey, 2004.

Drainage/Stormwater

General Comments

- The annexation areas shown on the Land Use Plan map have drainage concerns associated with them. In the past, the Town has looked to the State Drainage Program for technical assistance and funding to resolve drainage issues. With numerous drainage concerns in the Cheswold planning area, the Town should be aware of the limited resources of the Drainage Program to assist the Town with drainage problems.
- The Drainage and Stormwater Section recommends subwatershed planning within the future annexation areas. By utilizing the drainage pattern, the Town may be able to combine habitat protection, recreation, and storm water management. The Town would need to partner with Kent County as the watersheds extend out of the proposed annexation area identified by the Town.

Page 7, Floodplains and Wetlands

- The Drainage Program recommends including wetlands setbacks as part of the ordinances to protect environmental resources. Wetlands should be protected and a setback of un-subdivided open space, surround them. No portion of any building lot should be within the setback. During prolonged wet periods, the area within the wetland setback may become too wet for normal

residential use. Designation as open space will aid in the prevention of decks, sheds, fences, kennels, and backyards being placed within the setback thereby reducing nuisance drainage complaints.

Page 12, Neighborhoods and Community Design

- The Drainage Program recommends that existing drainage ways be incorporated into open space plan. However, a maintenance plan needs to be in place should blockages from storm debris, beaver, or other sources occur. The Town should identify existing open channels within the Town boundary, along with potential annexation sites, as these channels may require maintenance in the future. Most of the channels have trees and wetlands adjacent to the channel and the riparian area provide a multitude of benefits for water quality and wildlife. There must be a balance between preserving the riparian area and having the capability to access the channel to perform maintenance. By identifying such areas now, future development would incorporate the areas into community open space thereby preserving the riparian area while allowing for channel maintenance access.
- Explore the use of drainage ways and other open space set aside for drainage maintenance for bicycle and pedestrian interconnections in new developments.

Page 18, Community Services and Facilities

- The Town should develop a Master Drainage Plan to identify existing open channels and stormwater pipes within the Town boundary, and future annexation areas, as these may require maintenance in the future. The riparian buffers along the channels provide a multitude of benefits to water quality and wildlife along with recreational opportunities. A Master Drainage Plan could also serve as a guide to link future development open space as greenways.
- The Town should consider developing a mechanism to provide the means of funding to resolve drainage issues within the Town; pursuing the acquisition of drainage easements within the Town boundary; obtaining drainage easements at the time of annexation for existing water conveyances on the property; acquiring a drainage easement for any water conveyance not on public right-of-way; and having the ability to hire a contractor for maintenance of the drainage conveyance.
- Streams and ditches will require periodic reconstruction at intervals dependent upon the sedimentation load from upstream. Periodic reconstruction involves the removal of sediment from the ditch bottom to establish or reestablish a design grade. The removed sediment, referred to as spoil, is typically disposed of by spreading or piling alongside the ditch. The Town should develop a Drainage Management Plan if they do not have one. A Drainage Management Plan would include a maintenance plan for drainage conveyances, include points of access for maintenance equipment, and designate spoil disposal areas.

Page 28, Building Permits, Plan Review and Inspection Services

- Lines and grades: If the Town does not have a lines and grades requirement for new construction, the Division recommends that this be considered to help resolve drainage issues

arising from new construction during and post construction. Building inspectors would be able to use approved lines and grades requirement to field verify prior to issuance of Certificate of Occupancy or building permit, as appropriate.

Page 30, Parks and Recreation

- Existing woodland provides valuable wildlife habitat as well as soil erosion protection, water quality filtering, and surface water uptake. Unless managed for timber, wooded areas typically were areas that were unprofitable for farming due to poor drainage. Without trees to absorb the surface water these areas tend to require intensive drainage. The Drainage Program recommends that such areas be incorporated into a parks and recreation plan and not be allowed to be cleared for the creation of stormwater management areas.

Page 31, Stormwater Management

- Be advised that the Sediment and Stormwater Program is currently undergoing revisions to the sediment and stormwater regulations. It is unclear at this time when the new regulations will be promulgated.
- The Town should pursue drainage easements along waterways, ditches, and storm drains where currently there are none. The Drainage Program is aware that the Town does not want the responsibility of routine maintenance on the conveyances. However, the Town should have the ability to remove blockages either natural or manmade.
- The Division of Soil and Water Conservation is requesting that the Town incorporate a requirement for a stormwater and drainage review into the Town's preapproval requirements for new development requests. Proposed development projects should hold a pre-application meeting with the delegated agency, the Kent Conservation District, to discuss stormwater and drainage prior to the town reviewing and/or approving plans or issuing building permits. The Sediment and Stormwater Program is set to begin requiring a pre-application meeting for all proposed land disturbing activities that require a detailed Sediment & Stormwater Plan within the coming year. These meetings are structured to assist developers in the design process and for early notification of approval requirements. In order to schedule a pre-application meeting, the applicant must forward a completed Stormwater Impact Study (SIS) to the appropriate Delegated Agency. Please contact Elaine Webb with the DNREC Sediment and Stormwater Program if you have any questions regarding this new process. Please note that this process does not replace the State's PLUS process. The SIS Findings report will also be provided through that process.
- Explore the feasibility of stormwater utility to fund upgrades to existing stormwater infrastructure. Upgrades to the stormwater system may reduce pollutant loads and help reach the established total maximum daily load for nitrogen, phosphorus, and bacteria. Reach out to the Kent Conservation District, Kent County and the Delaware Clean Water Advisory Council as partners in funding stormwater retrofits.

- As the Town of Cheswold updates any land use or subdivision codes, the Sediment and Stormwater Program requests the Town make a note of the Sediment and Stormwater requirements on any construction-related project application checklists, etc.
- Evaluate the existing drainage patterns within the area of future annexation to ensure adequate drainage for the cumulative stormwater impact upon full build out of the Cheswold Planning Area. The Town should be mindful of potential stormwater impacts from the Town on county residents.
- The plan mentions the consideration of establishing buffers along the waterways in Town. The Drainage and Stormwater Section agrees with the establishment of buffers. However, the planting of riparian buffers should consider future drainage maintenance. When applied in conjunction with a Drainage Management Plan, existing buffers should be enhanced or new buffers planted to obtain riparian buffers on each side of the existing water conveyance. A tree and shrub planting on buffers with the tallest trees planted on the south and west side of the water conveyance will maximize shading of water. Trees and shrubs should be native species, spaced to allow for mechanized drainage maintenance at maturity. Tree and shrub planting in this manner will provide a shading effect promoting water quality while allowing future drainage maintenance. Do not plant trees closer than 5 feet from the top of the bank to avoid future blockages from tree roots. Plant the balance of the buffer, as well as stream and ditch banks, with herbaceous vegetation to aid in the reduction of sediment and nutrients entering into water conveyance. Grasses, forbs and sedges planted within these buffers should be native species, selected for their height, ease of maintenance, erosion control, and nutrient uptake capabilities. Remove invasive vegetation prior to the planting of native species. The construction of pedestrian and bicycle paths within the buffer should be encouraged.

Rare Species/Unique Natural Communities

We highly recommend that the Town require developers, or applicants of development projects, to contact the Natural Heritage and Endangered Species Program (NHESP) to determine if their project activities will impact a Species of Greatest Conservation Need (SGCN¹). In some cases a site visit may be requested in order to provide the necessary information. The Town should then consider requiring implementation of recommendations provided by the NHESP before approving site plans.

Contact information:

c/o Environmental Review Coordinator
Natural Heritage and Endangered Species Program

¹ Species of greatest conservation need (SGCN) are indicative of the overall diversity and health of the State's wildlife resources. Some may be rare or declining, others may be vital components of certain habitats, and still others may have a significant portion of their population in Delaware. SGCN are identified in the Delaware Wildlife Action Plan (DEWAP) which is a comprehensive strategy for conserving the full array of native wildlife and habitats-common and uncommon- as vital components of the state's natural resources. This document can be viewed via our program website at <http://www.dnrec.state.de.us/nhp>. This document also contains a list of species of greatest conservation need, species-habitat associations, and maps of key wildlife habitat.

DNREC-Division of Fish and Wildlife
4876 Hay Point Landing Rd
Smyrna, DE 19977
(302) 653-2880

Please note that our Division scientists have not surveyed most of the parcels within current Town boundaries and annexation/growth areas for SGCN and unique natural communities. The following information is based on what is currently in the Delaware Natural Heritage and Endangered Species Program database:

SGCN within Current Town Boundaries:

- According to our database, there is a black-ash seepage swamp that harbors at least 12 rare plant species along Alston Branch. To protect the integrity of this unique natural community, at least a 100-foot undisturbed vegetative buffer (not comprised of lawn grass) should be left intact. The Stonington development is proposing only 50-foot buffers.

Within areas proposed for future annexation:

- According to our current database, there are 10 rare plant species and a black ash seepage swamp along Willis Branch. Land considered for annexation borders this stream. In order to protect water quality and rare species, upland buffers along this stream should be at least 100 feet in width. Forested habitat along the stream corridor is also important for water quality and as habitat for wildlife.
- On April 1, 2004, our staff scientists evaluated tax parcel KH-00.56.00-01-12.00-000 (now proposed 'Villages of Noble Pond') for rare plants and unique natural communities. Two State-rare plants, a unique natural community (Coastal Plain Rich Woods), and a forest of high ecological quality were documented during the survey. This survey was not conducted during the growing season for most rare plants and there is a high probability that additional rare plant species occur. In addition, surveys for animal SGCN were not conducted.
- Our staff botanist conducted a rare plant species investigation of the site of the proposed Cheswold Village development, which is being considered for future annexation. No rare plants were observed during the survey, but a mid to late successional forest was observed. A large portion of the forested area is poorly drained, a habitat that could support an array of plant and animal species. It is important to note that surveys for rare *animal* SGCN were not conducted. However, adjacent landowners have noted the presence of an Eastern box turtle (*Terrapene Carolina*) population. Because this habitat is contiguous with the project parcel, it is possible that box turtle occur within the project parcels as well. Box turtles are land-based turtles that use forests, forest edges and wetlands as primary habitat. Females use open, sunny areas from May until late June to lay eggs and both males and females often use open areas along or near woodlands for basking. Although box turtles are generally considered a common species, they are recognized by many herpetologists as a species highly susceptible to extirpation (local extinctions). There are laws restricting collection and possession of box turtles; however, supporting habitat receives minimal protection in Delaware. The Natural Heritage and Endangered Species Program recommends a proactive approach to species protection by minimizing impacts to box turtle habitats.

Forested Wildlife Habitat

There is no mention in the plan of existing forested areas or desire to provide protection for this resource. Cumulative forest loss throughout the State is of utmost concern to the Division of Fish and Wildlife which is responsible for conserving and managing the State's wildlife. Tree clearing is planned or has already occurred for Saratoga (69 out of 80 acres according to PLUS 2007-05-06), the adjacent Airpark Property, Cheswold Village, Villages of Nobles Pond, and possibly other areas along streams.

- The Town should include action items that pertain to forest protection in their land-use plan.
- On page 31, the need for the Town to consider establishing buffers along waterways is noted, but there are no recommendations or action items in the plan that address this issue. Forested riparian areas within current town boundaries as well as those to be annexed should be afforded protection from clearing and degradation. In addition to water quality protection, forested riparian areas are critical to many species of wildlife, providing travel corridors, foraging, resting, and nesting areas.
- Forest blocks or forested wetlands could be considered for preservation. Incentive-based programs for wildlife management are available to private landowners through our agency. Please contact Shelly Tovell for more information (302-735-3600).

Coastal Plain Ponds

On page 7, the importance of leaving wetlands undisturbed is mentioned. The first goal listed on page 11 includes the need to protect wetlands. However, there are no recommendations or action items in the Plan that address how the Town is going to provide wetland protection.

According to our GIS database and State wetland maps, there are wetlands known as Coastal Plain ponds, or Delmarva bays, within current Town boundaries (Saratoga development) and in areas to be annexed (Area #1 and long range planning areas). These unique wetlands provide breeding habitat for a variety of animals, including amphibians and invertebrates, and often support a unique and rare assemblage of plants. Coastal Plain ponds are usually small in size, but typically support a high diversity of species, many of which are considered rare. Upland forest buffers around these ponds are critical, protecting the wetland from excess nutrients and invasion by non-native species. Forest buffers also provide critical habitat for wetland dependent species (such as salamanders) during most of their annual life cycle.

At least one Coastal Plain Pond occurs on property slated for development (PLUS 2007-05-06 Saratoga). The site plan that was submitted during the State's Preliminary Land Use review (PLUS) didn't include adequate buffers to protect this unique wetland. During our PLUS review, we recommended that a cul-de-sac be removed from the site plan because of close proximity to this coastal plain pond; however, we are unaware of any changes made to protect this wetland.

The Town should identify coastal plain pond wetlands within its current boundaries as well as those in Area #1 and in long-range planning areas and develop a strategy that would protect these unique wetlands. In most cases, a buffer of at least 300 feet should be left intact around coastal plain ponds.

Parks and Recreation

With an increasing population and planned annexations, the Town of Cheswold should consider creating an ordinance that would require new developments to incorporate publicly accessible open space and park areas. The following is an overview of updated information to keep in mind when planning various park facilities:

In May and June 2008, the Delaware Division of Parks and Recreation conducted a telephone survey of Delaware residents to gather information and trends on outdoor recreation patterns and preferences as well as other information on their landscape perception. These findings are the foundation of the 2009-2011 Statewide Comprehensive Outdoor Recreation Plan (SCORP) providing guidance for investments in needed outdoor recreation facilities. The SCORP can be a useful document when addressing parks and recreation facilities and needs within county and municipal comprehensive plans. For the purpose of refining data and research findings, Delaware was divided into five planning regions. The Town of Cheswold is located within SCORP Planning Region 3.

Importance of Outdoor Recreation

When looking at the findings from the 2008 telephone survey, it is apparent that Delawareans place a high importance on outdoor recreation. Statewide, 91% of Delaware residents indicated that outdoor recreation had some importance in their lives, while 64% said it was very important to them personally. These findings are very close to the results of the same question asked in the 2002 public opinion telephone survey, indicating a continued demand for outdoor recreation opportunities throughout the state.

Placing high importance on outdoor recreation resonates throughout the five SCORP regions. In Region 3 (Kent County), 88% of residents indicated that outdoor recreation had some importance in their lives, while 61% said it was very important to them personally.

Participation in Outdoor Recreation

In SCORP Region 3 (Kent County), walking and jogging (83%) was the most participated in household activity followed by visiting historic sites (67%), swimming at the beach (67%), swimming in a pool (65%), picnicking and passive recreation in the outdoors (both 64%).

Reasons for Participating in Outdoor Recreation

In Region 3, 52% of the residents said that they participate in outdoor recreation for their physical fitness. This is a 10% increase from the same question asked in 2002. This increase is a clear indication of a growing demand for walking paths and trails. Other top reasons for participating in outdoor recreation in Region 3 include; for relaxation, to be close to nature, and to be with family and friends

Outdoor Recreation Needs/Priorities

Based on the public opinion survey, the most needed outdoor recreation facilities in Cheswold include: High facility needs:

- Walking and jogging paths

- Swimming Pools
- Bicycle paths
- Open Space and Passive Recreation Areas
- Fishing Areas
- Playgrounds
- Picnic Areas
- Hiking Trails
- Camping Areas
- Nature Programs

Moderate facilities needs:

- Public Golf Courses
- Basketball Courts
- Baseball/Softball Fields
- Access for Boating (kayak/canoe/powerboat)
- Soccer Fields
- Football Fields
- Tennis Courts
- Volleyball Courts
- Hunting Areas
- Skate Park
- Equestrian Trails

The Town of Cheswold is encouraged to work toward incorporating and/or continuing to offer some of these opportunities in the development of their Comprehensive Plan.

Town of Cheswold Parks and Recreation Facility Inventory

There is one Park and Recreation facility in the Town of Cheswold:

School Lane Park - Located south of School Lane and West of Commerce Street.

Delaware Land and Water Conservation Trust Fund (DTF)

The Division of Parks and Recreation provides matching grant assistance through the Delaware Land and Water Conservation Trust Fund (DTF) to local governments for land acquisition and for park development. Lands that have received DTF assistance must remain as open space for conservation or recreation purposes in perpetuity. The Town of Cheswold could benefit from this program when incorporating new outdoor recreational facilities or adding amenities to their existing park. For more information on the Delaware Land and Water Conservation Trust Fund, please contact: Robert Ehemann @ 302.739.9235.

Brownfields

DNREC's Site Investigation and Restoration Branch (SIRB) encourages the development of Brownfields and can provide assistance when investigating and remediating Brownfield sites. Although SIRB has no

specific comments regarding the proposed comprehensive plan at this time, if any future development occurs on sites with previous manufacturing, industrial, or agricultural use, SIRB recommends that a Phase I Environmental Site Assessment be conducted prior to development, due to the potential for a release of hazardous substances. If a release or imminent threat of a release of hazardous substances is discovered during the course of future development (e.g., contaminated water or soil); construction activities should be discontinued immediately, and DNREC should be notified at the 24-hour emergency number (800-662-8802). In addition, SIRB should be contacted as soon as possible at 302-395-2600 for further instructions.

Plan Implementation

The Plan should offer more specific “actionable” environmental protection strategies than currently offered. Within the Environmental Concerns section, we strongly recommend proposing an ordinance or ordinances which would:

- a) Require all applicants to submit to the City a copy of the development site plan showing the extent of State-regulated wetlands (as depicted by the State Wetland Regulatory Maps), and a United States Army Corps of Engineers (USACE) approved wetlands delineation as conditional approval for any new commercial and/or residential development. Additionally, the site plan should depict all streams and ditches which are jurisdictional pursuant to the Subaqueous Act (7 Del. C., Chapter 72) as determined by DNREC.
- b) Help protect freshwater wetlands where regulatory gaps exist between federal and state jurisdictions (i.e., isolated wetlands such as the aforementioned coastal plain ponds and headwater wetlands).
- c) Require a 100-foot upland buffer width from all wetlands or water bodies (including ditches) to protect water quality; however, larger protective zones may be required to safeguard certain species, such as those that depend on the coastal plain ponds.

Based on a review of existing buffer research by Castelle et al. (1994), an adequately sized buffer that effectively protects wetlands and streams, in most circumstances, is about 100 feet in width. In recognition of this research and the need to protect water quality, the Watershed Assessment Section recommends that the applicant maintain/establish a minimum 100-foot upland buffer (planted in native vegetation) from the landward edge of all wetlands and water bodies (including all ditches).

- d) Require an impervious surface mitigation plan for all residential and commercial developments exceeding 20% imperviousness. In commercial developments, it is strongly recommended that pervious paving materials be required on at least 50% of the total paved surface area(s).
- e) Require the calculation for surface imperviousness (for both commercial and residential development) take in to account all constructed forms of surface imperviousness - including all paved surfaces (roads, parking lots, and sidewalks), rooftops, and open-water stormwater management structures.
- f) Require the assessment of a project’s TMDL nutrient loading rate through use of the Department’s nutrient budget protocol. The applicant should be further required to use any combination of

approved Best Management Practices (BMPs) to meet the required TMDLs for the affected watershed(s) in question.

- g) Exclude structural Best Management Practices (BMPs) such as community wastewater treatment areas, open-water stormwater treatment structures and natural areas containing regulated wetlands from consideration as open space.
- h) Prohibit development on hydric soil mapping units. Proof or evidence of hydric soil mapping units should be provided through the submission of the most recent Natural Resources Conservation Service soil survey mapping of the parcel, or through the submission of a field soil survey of the parcel by a licensed soil scientist.
- i) Require the applicant to use “green-technology” stormwater management in lieu of “open-water” stormwater management ponds whenever practicable.