

Appendix A
Division Response to Public Comments

TO: Robert P. Haynes, Hearing Officer

FROM: John W. Schneider, Environmental Program Administrator,
Watershed Assessment Section, Division of Water Resources

DATE: September 23, 2008

SUBJECT: Response to public comments regarding the proposed "Regulations Governing the Pollution Control Strategy for the Indian River, Indian River Bay, Rehoboth Bay, and Little Assawoman Bay Watersheds"

Section 303(d) of the Clean Water Act requires states to identify water quality impaired waterways and to develop Total Maximum Daily Loads (TMDLs) for the pollutants that impair those waterways. The Division of Water Resources (Division) has determined that the water quality of the Indian River, Indian River Bay, Rehoboth Bay, Little Assawoman Bay, and their tributaries is impaired by elevated nutrient levels and low dissolved oxygen concentrations. Symptoms of nutrient enrichment include excessive macroalgae growth (sea lettuce and other species), frequent phytoplankton blooms (some potentially toxic), large daily swings in dissolved oxygen levels, loss of submerged aquatic vegetation, reduced populations of fish, shellfish, and other aquatic life, and fish kills. These symptoms threaten the future of the Inland Bays and their significant natural, ecological, and recreational resources, which may result in adverse impacts to the local and State economies through environmental degradation and habitat loss leading to reduced tourism, a decline in property values, lost revenues and a diminished quality of life. Hence, excessive nutrient levels pose a significant threat to the health and well being of people, animals, and plants living within the watershed.

The Division promulgated TMDLs for nitrogen and phosphorus for the Indian River, Indian River Bay, and Rehoboth Bay in 1998 and for the Little Assawoman Bay and the tributaries of these waterways in 2005. The TMDLs call for the systematic elimination of all point sources of nutrient loading, a 40-65% reduction in nonpoint phosphorus loading, and a 40-85% reduction nonpoint nitrogen loading. Point sources are any facility with a National Pollutant Discharge Elimination System (NPDES) permit. Nonpoint sources are diffused across the landscape and are most often associated with agriculture and the wastewater and stormwater from developed lands. The TMDLs also call for implementation through a Pollution Control Strategy (PCS).

Additionally, the State of Delaware Water Quality Standards, as amended July 11, 2004 (Section 5.6.3.4), call for the development of a Pollution Control Strategy for all waters that receive the Exceptional Recreational or Ecological Significance (ERES) designation. The Rehoboth Bay, Indian River Bay, Little Assawoman Bay, and the marine portions of the Indian River and Iron Branch are designated as ERES waters and as such must also have a PCS. The Standards require that the PCS include additional requirements, measures, and practices to prevent the violation of water

quality standards, protect all resources so that natural conditions can be maintained or restored, assure the protection and propagation of a balanced, indigenous population of fish, shellfish, aquatic vegetation, and wildlife, and provide for recreational activities in and on the water.

To identify PCS actions that could be implemented in the Inland Bays watershed, the Division worked with a diverse group of stakeholders, called a Tributary Action Team, for several years. The Team developed a set of recommendations, including voluntary and regulatory actions, to reduce nutrients in the Inland Bays watershed. The Division first presented the proposed Pollution Control Strategy at public workshops in February 2005. Modifications were made based on public comments and additional workshops were held in May 2005.

After these first two sets of workshops, a group of interested parties including the Delaware Farm Bureau, Delaware Association of Realtors, Positive Growth Alliance, and Delaware Home Builders Association lobbied the General Assembly to intervene in the PCS development process. The Division met with these parties for a year in order to incorporate their concerns and presented the revised Strategy at a third round of public workshops in August 2006. During these workshops, members of the scientific community raised substantive concerns relating to the buffer portion of the regulation. In June 2007, the Division held public hearings on a previously proposed version of the regulation that reserved the buffer provisions in anticipation of a county-wide buffer regulation later that year. This approach, however, was not well received and the previously proposed version of the regulation was never promulgated and later withdrawn.

The Division spent the next several months investigating buffer provision options that would provide several alternatives for developers while still providing benefits to water quality. Although changes have been made to address public comments received between 2005 and 2008, the Strategy is based upon the recommendations offered by the Inland Bays Tributary Action Team. In the June 1, 2008 *Delaware Register of Regulations*, the Division proposed Regulations to address the establishment of a buffer zone, sediment and stormwater controls, and performance standards for onsite wastewater treatment and disposal systems. The actions proposed in these Regulations are necessary to achieve water quality goals; therefore, any lessening of the proposed requirements would be inappropriate and would adversely affect the health and well being of people, animals, and plants living within the watershed.

These Regulations are based on solid environmental science, but since the requirements also affect a wide range of stakeholders within the Inland Bays watershed, they also take into consideration and accommodate a variety of factors. These factors include location within the watershed and proximity to water resources, site specific physical characteristics, subdivision, project, and system size, subdivision, project, and system stage of completion, future activities planned by other agencies/entities, and best available technologies. These Regulations also contemplate the issues associated with those living on fixed incomes, people with serious illness, people facing financial hardship, and owners of small parcels of land. Every attempt has been made to provide

predictability and flexibility for all activities contributing point and nonpoint source pollution affected by these Regulations.

The public comment period for the proposed “Regulations Governing the Pollution Control Strategy for the Indian River, Indian River, Bay, Rehoboth Bay, and Little Assawoman Bay Watersheds,” opened June 1, 2008 and closed at 4:30 PM June 30, 2008. The hearing, attended by more than 400 members of the public, was held June 23, 2008 at the CHEER Center in Georgetown. Numerous comments were received from the public regarding these proposed Regulations. A wide range of comments were received with some in opposition to the proposed Regulations, some in support of the Regulations as written, and some requesting additional regulatory actions. The majority of comments focused on the proposed buffer and onsite wastewater treatment and disposal system provisions. Following are responses to those public comments.

Section 4 – Buffer Zone Established

Comments relating to Section 4, the establishment of a buffer zone, were polarized. Comments in opposition to the buffer provisions included objections to buffering all of the water features as currently depicted on the proposed regulatory map and requests for the Regulations to specify that only grasses be required as opposed to leaving the term general. Concerns and questions were also raised regarding requirements placed on homeowners’ associations, including the use of certified nutrient handlers to implement nutrient management plans and management and maintenance of buffers. One commenter requested that a comprehensive cost-benefit analysis be done with regard to increased buffers and inclusion of forested ditches. Several comments expressed concern that a buffer requirement would decrease property values and constitute a taking and others argued that the Department does not have the authority to require buffers. Moreover, claims were made that buffers are not necessary to improve water quality and that other methods to reduce nutrient loadings can be utilized.

Comments offered by other individuals expressed concern that the proposed buffer provisions did not offer enough protection of water quality and requested additional measures. These requests included having the buffer apply to more properties and projects than currently proposed and removing or placing limits on activities currently excluded from the provisions. Others suggested including regulatory language to place limits on clearing of vegetation, specify buffer maintenance, describe a methodology to measure width, and include provisions to widen the buffer with increasing slopes. There was also concern that the Regulations as written do not offer assurance that nutrient management plans will be followed by homeowners’ associations. One commenter suggested broadening the buffer owner language to address other types of potential buffer owners in addition to homeowners’ associations. Several comments requested that wetlands also be buffered and that the Regulations specify that buffer vegetation only be composed of forested and native plants. Several other commenters expressed concern that the proposed buffer widths are not wide enough and are opposed to any narrowing of the buffer width. The Delaware Center for the Inland Bays submitted a document into public record entitled, *Recommendations for an Inland Bays Watershed Water Quality Buffer System*, that reviews scientific literature on buffer research focused

in the Atlantic coastal plain and provides recommendations for buffer systems that exceed the requirements of the proposed buffer provisions.

Given that the comments received on the proposed buffer provisions suggest that the Division is requiring both too much and too little, and the considerable amount of time spent requesting and responding to public and scientific input, the Division is convinced these provisions are scientifically sound and offer a level of predictability and flexibility that ensures equity. The Pollution Control Strategy and accompanying Regulations were developed as a comprehensive package and the water quality goals of the TMDLs can only be achieved when all of the voluntary and regulatory components are implemented in full. Within the Regulations, the buffer and stormwater provisions are linked – buffer widths may be reduced when combined with one of several advanced stormwater management options and with a development-wide nutrient management plan – hence, the Division recognizes that buffers are one of several tools to treat overland runoff as a result of storm events.

However, a substantial body of scientific literature demonstrates that buffers are also known to improve the quality of ground water and to improve the in-stream processing of nutrients and therefore offer numerous water quality protection and restoration functions that cannot be replaced by other best management practices. The Inland Bays are a ground water dominated system and having riparian buffers in place to improve the treatment of polluted ground water as it discharges into and travels down receiving waterways is essential in this watershed. Additionally, forested buffers naturally shade waterbodies allowing water temperatures to decrease. Cooler water holds more dissolved oxygen, which is essential for aquatic life. In fact, water quality of the bays can be expected to decline if existing buffers are removed as a result of losing all of these beneficial functions. All of the functions provided by riparian buffer are necessary to improve the quality of waters within the Inland Bays watershed and the water quality goals of the TMDLs can not be achieved by other means – buffers are a necessary component of the Pollution Control Strategy.

There is a wealth of scientific literature that supports the use of buffers for water quality improvements. Summaries of this literature can be found in a white paper developed by the Division, which is Appendix G of the PCS technical support document (Exhibit #2 of the Department record), as well as in the Center for the Inland Bays document referenced above.

Since the goals of Delaware's Surface Water Quality Regulations can only be achieved when all of the voluntary and regulatory components of the PCS are implemented in full, it is also essential to note the low level of assurance associated with the voluntary actions. The predominate source of nutrient load reductions called for in the PCS technical support document are from implementation of voluntary agricultural best management practices (BMPs). Included in this group of agricultural BMPs are 3,037 acres of forested buffers (16 times more acres than what existed in 2005) and 1,718 acres of grassed buffers (32 times more acres than what existed in 2005). Many factors, including land use trends of agricultural lands converting to developed lands, make achievement of these voluntary BMP goals uncertain. One could argue that since a large portion of the agricultural load reductions called for by the PCS rely on grassed

and forested buffers, that buffers are indeed necessary to achieve the TMDL and requirements for the installation of buffers as land use change are the only way to be certain that the load reductions anticipated by the PCS from the agricultural sector will be achieved. It is also important to ensure that buffers already in place on agricultural lands and performing vital water quality benefits are preserved so that those functions are not lost during the development process.

The Division has proposed a mapping approach to identify water features to buffer in order to satisfy the concerns of affected individuals who voiced a need for predictability. The map is based on the United States Geological Survey National Hydrography Dataset (NHD), which is high resolution spatial data of surface water features that are classified as perennial, intermittent, and ditch. The Division considers all perennial waterways as primary water features and intermittent waterways and ditches that flow within or adjacent to forests as secondary water features. State-regulated wetlands, as shown on the State wetland regulatory maps, are also considered primary water features.

Scientific research supports buffering wetlands, major waterways, and headwater streams since they are locations where considerable nutrient reductions can occur. Buffering of forested ditches ensures that ditches that currently have trees are retained since the shade, biomass, and woody debris supplied by the trees provide water quality benefits that non-forested ditches do not. Additionally, many forested ditches are located in the headwaters of the watershed which is a region identified by the scientific literature as most important for protecting and improving water quality. The Division is opposed to removing any of the currently identified water features from the proposed regulatory map since that will result in less protection of water quality. Section 9 of the Regulations provides procedures for challenging the classification of water features as depicted on the buffer regulatory map if a technical error is suspected.

The proposed regulatory map utilizes the best available spatial data and has been field verified. The Division believes that the level of protection provided by buffering the currently proposed water features as mapped will be adequate to meet water quality goals. If more water features, including wetlands, were buffered as suggested by several commenters, the level of assurance would be raised. The Division believes that incentives could be used at both the State and local levels to encourage buffering beyond what is required by the proposed Regulations.

Affected individuals also voiced a need for flexibility. Primary features receive a wider buffer than secondary features, but both widths may be reduced if combined with any one of four advanced stormwater management options contained in Section 5 of the proposed Regulations and with the implementation of a development-wide nutrient management plan. In order to arrive at the proposed buffer widths, the scientific literature was consulted, which recommended buffer widths anywhere from 15 to 300 feet for optimum nutrient removal. The Division believes that the level of protection provided by the currently proposed buffer widths (100 feet on primary waters that can be reduced to 50 feet; and 60 feet on secondary waters that can be reduced to 30 feet) will be adequate to meet water quality goals. Again, if wider widths were utilized, the level of assurance of attaining water quality goals would be increased and incentives at

both the State and local levels could be used to encourage buffering beyond what is required by the proposed Regulations.

Concern was raised regarding the assurance of nutrient management plans being created by developers and then followed by homeowners' associations. Since nutrient management plans must be produced if a development will have a reduced width buffer and one of the stormwater management options, the project plan will be reviewed by the Department's Sediment and Stormwater Program and/or the designated agency. In order to receive an approved stormwater plan, a developer must show that a nutrient management plan has been created by a certified nutrient consultant during concept and approval meetings with the Department/designated agency. The Department of Agriculture's Nutrient Management Program maintains a list of certified consultants on their web site. Once a development has been completed and turned over to a homeowners' association, Watershed Assessment Section staff trained in nutrient management will review the plans and perform site visits to ensure that plans are being followed. The Watershed Assessment Section will provide education and outreach and technical assistance, if necessary, to assist homeowners' associations with achieving compliance with their nutrient management plans and any other buffer management and maintenance issues.

The Regulations do not specifically address vegetation requirements, again, in order to provide flexibility for the affected community; however, the PCS technical support document contains four appendices that address vegetation. Appendix I contains a buffer evaluation form for any buffer property owner who may choose to evaluate the effectiveness of existing vegetated buffers on water resources, which may be submitted to the Department of Agriculture's Forest Service for addition planting recommendations. Appendix J contains a list of recommended plant species for the establishment, expansion, and enhancement of buffers, while Appendix K contains a list of invasive species, which are non-native to Delaware and should not be planted under any circumstances and should be removed from buffers as feasible. Finally, Appendix L contains guidance from the Department of Agriculture's Forest Service for the establishment of forested buffers. While the Regulations are intentionally vague, these reference documents support the use of native plants, including trees.

The Division is not aware of any research or local data that indicate property values will decrease as a result of establishing buffers as claimed in several comments. Because buffers are areas requiring no fertilization or mowing, individual homeowners, business owners, and homeowners' associations that manage buffers will realize significant savings. Additionally, property values may increase as a result of having a riparian buffer in place as they may be considered an aesthetic amenity and also add flood protection. Other comments claimed that the requirement of riparian buffers constitutes a taking. The Division disagrees with this position as well since the land contained within the buffer may be counted toward local open space requirements and therefore is still a valuable component of the development as a whole. A letter distributed to watershed residents by the Positive Growth Alliance claimed that since the regulation prohibits lot lines from extending into buffers that private boat docks will no longer be permitted. This statement is false, as Section 4.1.5 of the Regulation

clearly exempts these structures when it states that "permitted water-dependent facilities (maritime, recreational, education or fisheries activities) are excluded from the buffer provisions of this Regulation." Facilities such as docks, piers, boat ramps, shoreline stabilization projects, culverts and other water-dependent facilities will continue to be governed and permitted in accordance with the Subaqueous Lands Act (7 Del. C., Chapter 72) enacted in 1969 and the associated Regulations Governing the Use of Subaqueous Lands. The Division of Water Resources' Wetlands and Subaqueous Lands Section has long implemented this permitting program.

Finally, with regard to accusations that the Department does not have the authority to require buffers, this too is a point of disagreement. The Department is given multiple authorities to protect water resources under *7 Del. C. Ch. 40, 60, 66 and 72 and in 29 Del. C. §§ 8014(5) and 8025*. Riparian buffers are an excellent natural resource that protect and improve water quality by filtering and removing pollutants from overland runoff, ground waters, and surface waters. Over the past several years, the Division has consulted with the scientific community and other stakeholders in order to investigate buffer provision options that would provide several alternatives for developers while still providing benefits to water quality. The provisions provided in the proposed Regulations achieve these goals. Many comments were received requesting additional buffer measures; however, the Division believes these Regulations will provide an adequate level of protection and any further measures should be accomplished through incentive programs since they will add additional levels of assurance. The TMDL and water quality goals though will not be achieved if the Strategy in its entirety is not implemented, including the establishment of riparian buffers.

The Division of Soil and Water Conservation's Drainage Program submitted suggestions for two specific sections of the buffer provisions in order to address maintenance of buffers and any potential conflicts with existing drainage easements. The Drainage Program was concerned that language did not exist to ensure future access to water conveyances for maintenance purposes and also questioned where dredge spoils could be placed. The Division has agreed to address these concerns in the Pollution Control Strategy technical support document and is working with both the Drainage Program and the Department of Agriculture's Forest Service to develop appropriate guidance. The Drainage Program also expressed concern that the phrasing of Section 4.11 did not clearly indicate that tax ditch rights-of-ways (ROWs) will take precedence over the buffers. This was the Division's intent, as tax ditch organizations are legal entities created by Superior Court and existing tax ditch ROWs are existing easements on the land that will remain in effect even after a property is sold for development and will take precedence over the new buffer regulation. Additionally, since the buffer regulation does not require plantings, if an existing ROW easement plan prohibits certain plantings or includes specific plant spacing requirements, there will not be a conflict. Finally, the Drainage Program also noted that there has not been consistent terminology over the years on the types of ROWs in easement plans (some use the phrase maintenance ROW, some construction ROW, some just ROW, etc.) and confusion could be caused by specifying maintenance ROW in Section 4.11. Since the Division does not intend for the proposed Regulations to take precedence over existing

tax ditch organization easements and would like to minimize confusion, the Division has agreed to remove “maintenance” so that the final language will appear with the following minor, non-substantive, deletion:

- Modification - Section 4.11: In instances where a buffer is required adjacent to a tax ditch, the ~~maintenance~~ right-of-way may be included as part of the buffer. Access to the ditch for maintenance purposes shall be preserved.

Section 5 – Sediment and Stormwater Controls

Relatively few comments were received on Section 5 of the proposed Regulations and focused on Section 5.3.3.4. This item is one of four options that can be chosen to achieve compliance with the requirement to include design criteria to further reduce nutrient contributions from stormwater. Comments questioned how the value of 30% was derived, what “integral component of the project’s stormwater management plan” means, and opposition to the requirement of having the forests in common open space.

Forests and water quality are directly linked since forests capture, filter, and retain water, removing pollutants from atmospheric deposition, overland runoff, and ground waters. Forests are the most beneficial land use for protecting water quality and a reduction in forests leads to a disproportionate increase in nutrient loads to waterways. In 2006, the Chesapeake Bay Program’s Executive Council set a goal to expand efforts to link stormwater management with forest conservation and riparian buffers. These are the same goals that these Regulations attempt to achieve with the stormwater-buffer provisions. One method of satisfying the stormwater provisions is to establish 30% of the project parcel as forest in open space either through preservation of existing forest stands and/or creation of new forest stands.

The percentage of the parcel to exist as forest was selected for policy and scientific reasons. In earlier discussions with the development community on the stormwater section, members of that industry originally offered an option to preserve 30% of existing forests along with some buffering of water features. However, if a parcel originally has small or no forest stands, preserving 30% of what exists may only offer limited water quality benefits and may not satisfy the goals of the stormwater provisions. A more conservative approach to protecting water quality establishes 30% of the entire project parcel in forests. In cases where the parcel was originally more than 30% forested, water quality may still suffer as some forests will be replaced by land uses with higher loading rates. In cases where the parcel originally contained less than 30% forests, water quality will benefit as, typically, agricultural uses will be replaced by restored forests with much lower nutrient loading rates. Based upon discussions with the development community at the time, 30% appeared to be a point of agreement.

These forest stands are intended to achieve compliance with provisions requiring the advanced treatment of stormwater for nutrients and as such, should be placed within a project parcel so that they are integral components of the project’s stormwater management plan. Forest stands that have little or no connection with stormwater will not be considered part of the stormwater management plan and will not satisfy this requirement. In addition, the Division strongly believes that these forest stands for

stormwater management must exist in common open space in order to minimize encroachment by property owners.

There was also concern that the anticipated revision of the Sediment and Stormwater regulations could impact the amount of land consumed for stormwater ponds. This is a separate regulatory document not under consideration at this time. However, one of the guiding principles under the proposed revisions to the Sediment and Stormwater regulations is utilizing natural open space areas for infiltration and recharge to reduce stormwater runoff associated with new development. It is hoped these runoff reduction techniques would decrease the dependence on land consuming practices, such as ponds, while providing a linkage with the water quality goals of the Pollution Control Strategy.

Sections 6, 7, & 8 – Onsite Wastewater Treatment and Disposal Systems (OWTDS)

The comments received on the three sections related to onsite wastewater treatment and disposal systems (OWTDSs) ranged from procedural questions to requests for stricter controls to great concern regarding the associated costs of these measures.

Section 6 of the proposed Regulations outlines several general provisions for OWTDSs. One commenter questioned who would be responsible for replacing cesspools and when this replacement would occur (Section 6.2). The Division anticipates that the owner will be responsible for replacement once a cesspool is discovered during an inspection at property transfer or when remodeling an existing home. A schedule can be established to assist the property owner in bringing the system into compliance.

Another commenter suggested that language be added to Section 6.3 to stipulate that the frequency of holding tank pump outs be based on the estimated usage and size of the tank and that they be performed by a certified service provider. Several years ago the Division established a holding tank pump out and compliance program in the Inland Bays watershed, therefore the frequency of holding tank pump outs is already being addressed by that program. Furthermore, this compliance program has been adopted statewide. The *Regulations Governing the Design, Installation and Operation of On-Site Wastewater Treatment and Disposal Systems* also requires that holding tank owners enter into a contract with a licensed liquid waste hauler (Class F) to provide hauling services to the dwelling for the period it is utilized or until connection can be made to an approved wastewater facility and should the owners change waste haulers, a new contract must be submitted to the Division (5.13030(d)). Additionally, each holding tank installed under the *Regulations Governing the Design, Installation and Operation of On-Site Wastewater Treatment and Disposal Systems* must be inspected annually (5.13090). The Division inspects all holding tanks at least once a year and reviews hauling contracts and pumping records for that year. Pumping schedules are set by the licensees/owners and schedules are determined by the estimated and actual use (gallons per day) of that particular tank. Therefore, the need of any additional language to Section 6.3 of these Regulations is not necessary.

A third comment questioned if 30 days provides enough notice of Section 6.6, which prohibits new drainfields within a specified distance of waterways on newly recorded

parcels. The Division believes 30 days is adequate notice. Finally, a fourth comment was received on Section 6.7 requesting clarification as to whether or not the Performance Standard Nitrogen level 3 (PSN3) requirement only applied to innovative and alternative (I/A) treatment systems and not disposal systems. This was the intent of the Division.

Section 7 requires that all OWTDSs be pumped out and inspected at sale or property transfer and provides several options for complying with this requirement. Many comments were received questioning how this inspection process will proceed. Questions and Division responses are listed below.

- Who will notify the buyer and seller that inspections are required? What about properties that are for sale by owner?
The Division will provide press releases, educational outreach, and public service announcements to inform the public and the real estate community of this requirement. The Division also anticipates that a real estate agent will notify the seller and buyer that an inspection is required; however, it is the owner's responsibility to know the laws and regulations in cases where real estate agents are not involved.
- Who is responsible for inspections?
The Regulation implies that the property owner and/or trustee will have the system inspected prior to the sale or listing; however, the buyer may request to have the system inspected with the permission of the owner and/or trustee. The Division has slightly modified the text of Section 7.2 to provide better clarity.
- Can a buyer waive an inspection?
No; however, there are exceptions addressed in Section 7.2.
- How will the Department police real estate transactions?
To ensure compliance with this provision, the Division will check inspection reports submitted to the Division.
- Will homeowners' association, upon adoption, change the contract to note that septic inspections are mandatory?
Homeowners' associations may or may not change the contract. That will be up to each individual homeowners' association.
- Can a property still close if the system fails?
Yes; however, this will be determined by the parties involved. The mortgage company may require that the system be brought into compliance before closing. The Division would just require that the system be brought into compliance and may develop a compliance schedule.
- If sewer is available, will an inspection still be required or will the owner be forced to connect to sewer before closing?
An inspection will still be required. The owner will not be forced to connect to sewer before closing; however, Division regulations, County code, and/or municipal ordinances require connection to sewer. The mortgage company may require connection to the central system prior to closing.
- Will enforcement officers be assigned to monitor repairs/replacements identified as necessary from inspections?

No, an enforcement officer will not be assigned to each case. The Division currently places all reports into a database for tracking purposes and will continue with this practice. Cesspools, seepage pits, metal tanks, distribution boxes, overflowing systems, and/or open discharges to ditches or waterways are examples of unsatisfactory systems that will be required to be replaced. Technical staff will assist owners in achieving compliance, as it currently does, and may develop a compliance schedule.

A few commenters expressed concern that the provisions of Section 7 do not offer enough protection of water quality. These comments requested that inspections occur once every three years and not just at time of sale. The Division agrees that OWTDSs should be pumped and inspected once every three years for proper operation and maintenance. In fact, OWTDS permits currently include conditions to have systems pumped out once every three years. These comments also requested that the Regulation include language requiring the repair or replacement of systems that are identified as failing during inspections. The Division, as discussed above, places all inspection reports into a database for tracking purposes and will work with owners to achieve compliance.

Section 8 of the Regulations establishes performance standards for all types of systems. Comments pertaining to this section related to rumored failure rates of advanced treatment technologies, service contracts for these systems, opposition to Department staff entering private property for inspections, sewer connection availability dates as an exemption of achieving PSN3, and parcels affected by areas identified for early implementation of PSN3.

Prior to the June 23rd 2008 public hearing, a mass mailing by the Positive Growth Alliance (PGA) contained information on innovative and alternative (I/A) system failure rates that was not consistent with the Division's research. Contrary to the information reported in the PGA letter, I/A systems do not have a 70% failure rate. An I/A systems evaluation performed by Division staff that took into account the entire system, not just the advanced treatment units, demonstrated that approximately 33% of I/A systems that did not have a maintenance contract were problematic. Problematic was defined as blowers turned off by owners, tanks that needed pumping, filters that needed to be cleaned, alarm lights turned off, alarms not audible, peat and sand filters needing to be raked, and minor surfacing of disposal fields (minor surfacing of disposal fields was less than 10 percent). This demonstrates the importance of having a maintenance contract. Also contrary to the PGA letter, advanced treatment technology is not in its infancy; the Division has been permitting I/A systems and advanced treatment units since 1992. Prior to being approved for use in the State of Delaware, all I/A systems and/or advanced treatment units must demonstrate appropriate performance through submittal of documentation of rigorous third party testing and verification.

Several questions were received regarding the requirement to have service contracts with a certified service provider for OWTDSs that must achieve PSN3 and implications for selling homes with these systems. Questions and Division responses are listed below.

- What happens if a property goes for sale without a mandatory operation and maintenance contract?

Once installed, all I/A systems and/or advanced treatment units must have a service contract for an initial two year period, which must then be renewed annually. The contracts are written with a transfer clause so that the contract applies to the system, not the owner. In the event of sale, if a contract is not maintained, it will be evident through failure to meet the Division's annual reporting requirements. In such cases, the Division will notify the new owner of the permit requirements. Additionally, the manufacturer must also inform the Division upon a contract expiration or cancellation.

- Can it be sold even though it has been tested by a Class H inspector?
A Class H inspector can be a service provider provided that the inspector has been certified by the manufacturer.
- What are the penalties if an inspection is done, but no contract?
Inspections are not done without a contract.

In response to the misinformation provided in the PGA letter, numerous comments were received voicing strong opposition to Department personnel entering private property to inspect I/A systems and/or advanced treatment units. The PGA letter also stated that once on private property, the Department can cite the owner for any environmental violations found, which was also a major concern voiced by many attendees at the public hearing. The Department already has the authority under current State of Delaware code (*Title 7, Chapter 60, §6024*) to enter private property and such authority is required to ensure compliance with this and other regulations. Additionally, all I/A systems and advanced treatment units installed prior to February 2007 contain permit provisions that allow the Division to inspect the system once every three years to verify that it is operating properly. Owners of these systems receive a memo from the Division providing ample notice of the upcoming inspection and provide the owner with the opportunity to reschedule the inspection so that they may be present. Once the inspection has been conducted, a copy of the inspection report is sent to the homeowner for their records.

Because of this inspection program, owners have been educated and started taking better care of their systems; this has led to a dramatic decrease in problematic systems. For example, in 2007, 22% were found to be problematic; this percentage is expected to be even less in 2008. Because of the mandatory operation and maintenance requirement, the Division no longer includes the triennial inspection provisions in permits for I/A systems. Additionally, the Division traditionally provides compliance technical assistance and education to correct any "violations" found on site. This may include getting all involved parties on site to investigate the issue including the manufacturer, installer, soil scientist, and Division personnel. Only a small percentage of problematic situations result in the use of the Department's enforcement authority.

As currently written, Section 8.4.5 provides an exemption for small systems from achieving PSN3 if central sewer will become available within five years. One commenter at the public hearing suggested increasing this period of time up to 10, 15, or even 20 years. Under Section 9, the Regulations allow waivers that can be applied under certain circumstances.

One commenter questioned what will determine if a property is within 1,000 feet of tidal waters and their associated tidal wetlands, where early implementation of PSN3 is required. The Division has produced a map of this area and investigated a number of approaches to determine whether or not a parcel is impacted by this requirement. These approaches include only considering parcels entirely within the boundary (least inclusive), only considering parcels that are 51% or more within the boundary, and considering any parcel intercepted by and within the boundary (most inclusive). This analysis revealed only a 2% difference in number of parcels affected between the least and most inclusive approaches. Based on this analysis, the Division has opted to utilize the least inclusive approach and considers any parcel that is 100% within the boundary to be affected by this requirement. A list of the tax parcels affected by the Regulations is available and will be posted on the Division's website.

Finally, many comments were received that expressed great concern over the costs associated with the OWTDS provisions. Several comments claimed that septic systems are not a significant source of nutrients, as also claimed in the PGA letter, and implied that the costs of the provisions outweigh the size of the problem. The Division affirms that OWTDSs are a definite source of nutrients and in order to achieve necessary load reductions, all sources, including residential sources, must reduce their nutrient contributions. Pump out and inspection programs will assure that systems are properly maintained and functioning at levels that minimize nutrient contributions to ground and surface waters. Compared to the loadings from standard systems, advanced treatment units will reduce nitrogen loads from residential wastewaters by 50%.

The PGA letter also added confusion to the situation by stating that septic systems contribute very small contributions of nutrients to the Chesapeake Bay. A comparison of Delaware's Inland Bays to the Chesapeake Bay, the nation's largest estuary, is inappropriate. The physical characteristics of the two waterbodies and their watersheds are very different. These differences include not only waterbody and watershed size, but flushing times of the bays (the Inland Bays are poorly flushed which means that pollutants reside within the system much longer), groundwater flow paths (paths are much shorter in the Inland Bays than the Chesapeake, impacting the timing and amount of nutrients from septic systems reaching receiving waters), and density of septic systems (there are many more septic systems within a small area in Delaware's Inland Bays watershed than the Chesapeake Bay watershed). Unlike the Chesapeake, nitrogen loads from septic systems to the Inland Bays are estimated to be 11% of the total nitrogen loads to the bays. Without advanced treatment technologies, and as other sources of nutrients are reduced, the nitrogen contribution from existing small systems will grow to 22%. Additionally, new small systems permitted within the Inland Bays Watershed, representing new sources of nutrients, will contribute twice the load if advanced treatment technologies are not required and the use of standard systems persists.

The Division does acknowledge that costs are associated with these provisions and that in some situations they may be significant. These costs are reviewed in more detail in the Regulatory Flexibility Act analysis (Attachment A). These Regulations, while based on solid environmental science, also take into consideration and accommodate a variety

of factors, including the ability of those affected to absorb or recover any added costs without suffering economic harm. With respect to the pump out and inspections at the time of sale or transfer, the cost of pumping out an OWTDS averages \$193 while the inspection averages \$300, for a total of \$493 per system per pump out. Since the pump out and inspection occur at the time of sale, financing is more readily available and those impacted will therefore be able to absorb or recover the added costs and avoid economic harm.

The economic impacts of the OWTDS performance standard provisions have also been considered. Cost estimates for large systems between 2,500 and 20,000 gallons per day (gpd) and greater vary greatly depending on system size, treatment requirements, and disposal methods (rapid infiltration basin versus drip irrigation, for example). Systems greater than 20,000 gpd are typically for subdivisions with more than 66 homes, therefore the cost of a new or replacement system that meets the appropriate performance standards is shared among all of the system users. Likewise, systems between 2,500 and 20,000 gpd typically serve small communities, manufactured housing communities, apartment buildings, shopping centers and mini malls, as well as other businesses and churches, that may have multiple users who can contribute to the cost of a new or replacement advanced treatment system. In addition, the Regulations also allow for ample time (60 months) to upgrade larger systems to an advanced technology once an operation and maintenance permit expires, again to allow system owners the ability to prepare for this expense.

However, most of the concerns expressed in comments focused on systems less than 2,500 gpd, which are typically individual on-lot systems. Advanced treatment units for these systems will add an additional \$3,500-\$6,000 to the total cost of a new or replacement system. In the case of new systems, which are associated with new homes, financing is more readily available. If, after January 1, 2015, an inspection at the time of sale or property transfer reveals that an existing system requires replacement, financing may also be more readily available. Also, owners of these small systems will not be required to upgrade to PSN3 if central sewer will become available within five years. The Regulations include procedures for requesting a hardship waiver from this specific requirement for owners of small new and replacement systems.

It is also important to note that the costs associated with contracting a service provider to maintain OWTDS (Section 8.4.4) are expected to drop over time as a result of competition as more service providers enter the area. Additionally, property owners may become certified by the Division under Section 5.04045 of the *Regulations Governing the Design, Installation and Operation of On-Site Wastewater Treatment and Disposal Systems* to service their own system after completing a training course.

The Division's Financial Assistance Branch (FAB) administers grant and low income loan programs to assist with these costs; however, because of concerns related to the impact of added costs of the OWTDS provisions on low and moderate income families, the Environmental Finance Center at the University of Maryland was retained to study the situation. The Center worked with the Department and the First State Community Action Agency to identify sustainable financing strategies to support the community financing needs as a result of the requirements of this Regulation. The resulting white

paper report entitled, "Community Financing for Septic System Management in the Inland Bays Watershed," was published in January 2008 (http://www.efc.umd.edu/pdf/DE_Septic_Report.pdf). The report discusses the financing needs, identifies existing funding sources and future opportunities, and provides seven recommendations to assist the Department in meeting the needs of the local communities that will be impacted by these Regulations. The Department plans to implement these recommendations, the first of which is to promulgate regulations.

The cost of proposed OWTDS provisions should be compared to other wastewater related costs. Based on information from FAB in recent years, connecting an OWTDS to a central sewer system may cost as much as \$13,000 per equivalent dwelling unit and the user could be expected to pay roughly \$200 in annual fees. Additionally, TMDL requirements calling for the elimination of point source discharges in the Inland Bays watershed, require those on central sewer to contribute to the cost of modifying facilities with surface water discharges to an alternative disposal method, which are typically multi-million dollar projects. Finally, where central sewer is not available, it should be noted that land values increase with the approval of an onsite system because this approval allows more uses, including development. In order to improve and protect water quality, improved management of OWTDS must occur, and the costs associated with these measures are justified especially when compared to the increased value of the property as a result of an onsite system approval.

General Comments

Other comments related to the Regulations in general. One comment claimed that the Regulation targets undeveloped property owners. The Division strongly disagrees with this statement as businesses and individual homeowners will also be impacted by the OWTDS provisions. Additionally, several small communities are dealing with the significant costs of eliminating their point source discharges. Several comments requested that the Division comply with *Title 29, Chapter 104* of State code which requires an analysis of the Regulatory Flexibility Act and interaction with both the House Energy and Natural Resources and the Senate Natural Resources and Environmental Control committees. The Division has completed an analysis of the proposed Regulation under the Regulatory Flexibility Act and submitted this analysis to both respective committees for comment. It is included herewith as Attachment A.

Other comments suggested that the Strategy as a whole relied too heavily on voluntary actions and several comments suggested that the certificate of occupancy should be withheld until a site inspection reveals that all applicable sections of PCS Regulations have been met. The Division has spent several years considering alternative strategies, contemplating costs, and requesting and responding to public and scientific input in order to craft this set of Regulations. In addition to offering predictability, flexibility, and equity, these Regulations are scientifically sound. While there are many, the Division is fully prepared to work with all stakeholders to implement the voluntary actions prescribed in the PCS technical support document. The Pollution Control Strategy and accompanying Regulations were developed as a comprehensive package and the water quality goals of the TMDLs can only be achieved when all of the voluntary and regulatory components are implemented in full.

Appendix
Regulatory Flexibility Act Analysis of
the Proposed “Regulations Governing the Pollution Control Strategy
for the Indian River, Indian River Bay, Rehoboth Bay and Little
Assawoman Bay Watersheds”

September 2008

Regulatory Action: The Department is proposing to adopt Regulation 7403 which will establish requirements to reduce nonpoint source pollution from lands within the Inland Bays watershed. The Indian River, Indian River Bay, Rehoboth Bay, Little Assawoman Bay and their tributaries do not meet State of Delaware water quality standards, and pursuant to the Federal Clean Water Act Section 303(d), were placed on a list of impaired waters requiring Total Maximum Daily Loads (TMDLs). Nitrogen and phosphorus TMDLs were established for these waterways in 1998 and 2005. The Department worked with the Inland Bays Tributary Action Team, a group of stakeholders, to recommend a set of actions to reduce nonpoint source pollution from agricultural and developed lands, as well as from onsite wastewater treatment and disposal systems. These recommendations, consisting of voluntary and regulatory components, are called a Pollution Control Strategy. The actions proposed by the Department are necessary to achieve Delaware’s water quality goals.

Background on the Regulatory Flexibility Act

- The purpose of the Act is “to establish as a principle of regulatory policy that regulatory and reporting requirements fit the scale of those being regulated, that fewer, simpler requirements be made of individuals and small businesses and that to achieve these ends agencies be empowered and encouraged to issue regulations which apply differently to individuals and small businesses than to larger entities.”
- To qualify for consideration under the Act, entities must first be classified as 1) an individual or 2) a small business.
- In the Act, a small business is defined as, “not-for-profit enterprises, sheltered workshop or business enterprise which is engaged in any phase of manufacturing, agricultural production or personal service, regardless of the form of its organization, when such enterprise or workshop employs less than 20 persons, has gross receipts of less than \$4,000,000 and is not owned, operated or controlled by another business enterprise.”

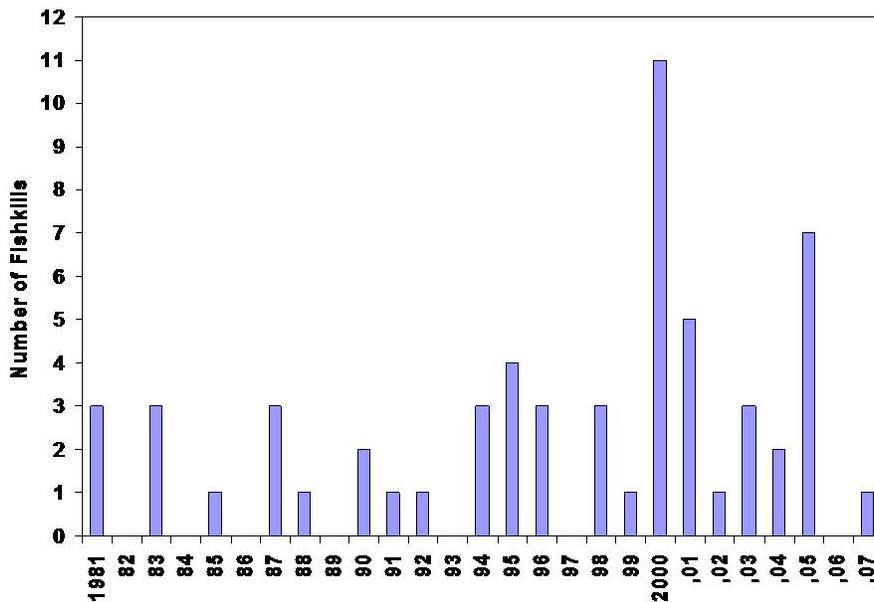
- In making the consideration for qualifying small business entities, the Department must consider the following:
 1. The nature of any reports and the estimated cost of their preparation by individuals and/or small businesses which would be required to comply with a new rule;
 2. The nature and estimated costs of other measures or investments that would be required by individuals and/or small businesses in complying with a rule;
 3. The nature and estimated cost of any legal, consulting and accounting services which individuals and/or small businesses would incur in complying with a rule;
 4. The ability of individuals and/or small businesses to absorb the costs estimated under paragraphs (1), (2) and (3) of this subsection without suffering economic harm and without adversely affecting competition in the marketplace;
 5. The additional cost, if any, to the agency of administering or enforcing a rule which exempts or sets lesser standards for compliance by individuals and/or small businesses; and
 6. The impact on the public interest of exempting or setting lesser standards of compliance for individuals and/or small businesses.

Background on the Proposed Regulation 7403

- Section 303(d) of the Clean Water Act requires States to identify water quality impaired waterways and to develop Total Maximum Daily Loads (TMDLs) for the pollutants that impair those waterways. The Department has determined that the water quality of the Indian River, Indian River Bay, Rehoboth Bay, Little Assawoman Bay, and their tributaries is impaired by elevated nutrient levels and low dissolved oxygen concentrations. Symptoms of nutrient enrichment include excessive macroalgae growth (sea lettuce and other species), frequent phytoplankton blooms (some potentially toxic), large daily swings in dissolved oxygen levels, loss of submerged aquatic vegetation, reduced populations of fish, shellfish, and other aquatic life, and fish kills. These symptoms threaten the future of the Inland Bays and their significant natural, ecological, and recreational resources, which may result in adverse impacts to the local and State economies through environmental degradation and habitat loss leading to reduced tourism, a decline in property values, lost revenues and a diminished quality of life. Hence, excessive nutrient levels pose a significant threat to the health and well being of people, animals, and plants living within the watershed. Examples of impairments related to nutrient pollution in the Inland Bays watershed are included below.
 - There is a permanent caution regarding swimming in the Indian River Bay, Rehoboth Bay, and Little Assawoman Bay particularly after heavy rains, which carry nutrients that feed harmful bacteria into these poorly flushed inland waters. The most common concerns are acute gastroenteritis resulting in diarrhea from accidental ingestion as well as increased risk of ear, nose, throat, eye, and skin infections. All of which can result in discomfort, inconvenience, and potentially significant direct and indirect medical costs.
 - Shellfish harvesting is prohibited for any reason at any time in several areas of Delaware's Inland Bays, as mapped by the Division of Fish and Wildlife

(<http://www.fw.delaware.gov/Fisheries/Documents/2008%20Delaware%20Fishing%20GuideS8pdf.pdf>). Consuming shellfish from waters that are off-limits to harvesting can potentially cause severe gastrointestinal illness. Excessive nutrient levels act as a food source for bacteria, which shellfish accumulate as they continuously filter water while feeding.

- A record of fish kills in Delaware’s Inland Bays from 1981 through 2007 shows that 83% of the 59 kills were attributed to low dissolved oxygen (Figure 1). All of these kills occurred in man-made dead end canals (lagoons) and the sluggish upper reaches of creeks where the effects of nutrient pollution are most pronounced.



Source: 1981-2007. Annual summaries of fishkill investigations. Data from: DNREC, Division of Fish and Wildlife, Fisheries Section. Graph by Robin M. Tyler Ph.D. DNREC Division of Water Resources, Environmental Laboratory Section. 89 Kings Highway, Dover, DE 19901.

Figure 1. Record of fish kills in Delaware’s Inland Bays watershed, 1981 – 2007.

- The Department promulgated TMDLs for nitrogen and phosphorus in the Indian River, Indian River Bay, and Rehoboth Bay in 1998 and in the Little Assawoman Bay and the tributaries of these waterways in 2005. The TMDLs call for the systematic elimination of all point sources of nutrient loading, a 40-65% reduction in nonpoint phosphorus loading, and a 40-85% reduction nonpoint nitrogen loading (Figure 2). Point sources are any facility with a National Pollutant Discharge Elimination System (NPDES) permit. Nonpoint sources are diffused across the landscape and are most often associated with agriculture and the wastewater and stormwater from developed lands. The TMDLs also call for implementation through a Pollution Control Strategy.

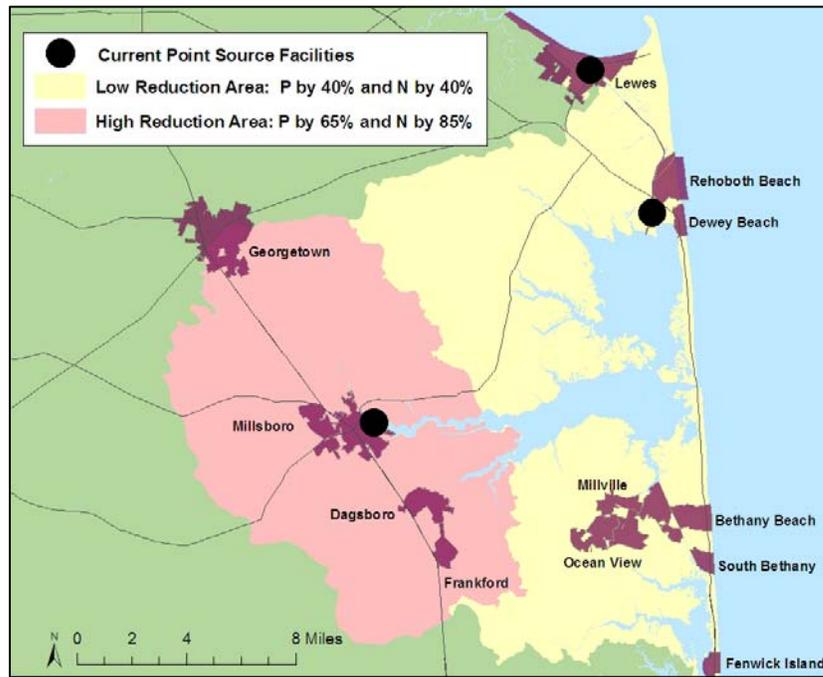


Figure 2. Map of the Inland Bays TMDL high and low nonpoint source reduction areas and current point source facilities.

- The requirements of these Regulations affect a wide range of stakeholders within the Inland Bays watershed including individuals and small businesses that qualify for consideration under the Regulatory Flexibility Act, as well as larger businesses that would not be considered small according to the Regulatory Flexibility Act definition.
- The Regulations consider and accommodate a variety of factors including location within the watershed and proximity to water resources, site specific physical characteristics, subdivision/project/system size, subdivision/project/system stage of completion, future activities planned by other agencies/entities, and the cost-effectiveness of best available technologies. Every attempt has been made to provide predictability and flexibility for all activities contributing point and nonpoint source pollution affected by these Regulations. These Regulations contemplate the issues associated with those living on fixed incomes, people with serious illness, people with financial hardship, and owners of small parcels of land.
- The actions proposed in these Regulations are necessary to achieve water quality goals, therefore any lessening of the proposed requirements would be inappropriate and would adversely affect the health and well being of people, animals, and plants living within the watershed.

Regulatory Flexibility Act Considerations

1. Nature and cost of reporting.

In order to better assess and track implementation efforts to reduce the loads of nonpoint source nitrogen and phosphorus reaching the waters of the Inland Bays watershed and to ensure compliance of these Regulations, the Department has proposed four new reporting requirements.

Section 4.4.1 – If a developer opts to install riparian buffers of a reduced width instead of standard width buffers, these Regulations propose to require the creation of a development-wide nutrient management plan and if nutrients are applied within the development, all applications must be administered by a certified nutrient handler. The homeowners association must submit an annual summary report of nutrient applications to the Department of Agriculture’s Nutrient Management Program. To meet this reporting requirement, the HOA need only compile the information supplied by the certified nutrient handler, which is neither a regulatory burden nor cause of financial harm. Additionally, this requirement may be avoided since more than one buffering option is presented in the Regulations.

Section 6.4 – The Regulations allow a temporary holding tank to be permitted if the Department receives a letter (with an approved Certificate of Public Convenience and Necessity, where applicable) stating that central sewer will become available within five years from Sussex County, the appropriate municipality, or the wastewater utility. Current sewer district boundaries as well as proposed projects and associated schedules are available on Sussex County’s web site: <http://sussexcountyde.gov/dept/engineering/sw/>. This reporting requirement is not burdensome and will allow the system owner to avoid purchasing a more expensive standard or advanced on-site wastewater treatment and disposal system (OWTDS).

Sections 7.2 and 7.4 – This Regulation proposes to require the pump out and inspection of on-site wastewater treatment and disposal systems (OWTDS) prior to sale or transfer of property ownership. Any one of several documents may be submitted to the Department to meet this requirement: (1) the certificate of completion for transfers of a new property, (2) documentation of a pump out and inspection within the previous 36 months, (3) proof of a licensed operator or service contract with a certified service provider, or (4) completed inspection report by a licensed Class H System Inspector. In the case of items (1-3), the system owner (may be an individual, small, or large business) must only provide the Department with prior existing documentation, which is not burdensome with respect to time or finances. In the case of item (4), the system inspector submits a copy of the report to the Department, which is already a requirement and not burdensome with respect to time or finances for system inspectors, some of which may be considered small businesses.

Section 8.4.5 – The Regulation proposes to require all new and replacement small OWTDSs having flows less than or equal to 2,500 gallons per day to achieve Performance Standard Nitrogen level 3. This requirement, however, will be waived if the Department receives a letter (with an approved Certificate of Public Convenience and Necessity (CPCN), where applicable) stating that central sewer will become

available within five years from Sussex County, the appropriate municipality, or the wastewater utility. Current sewer district boundaries as well as proposed projects and associated schedules are available on Sussex County's web site: <http://sussexcountyde.gov/dept/engineering/sw/>. This reporting requirement is not burdensome and will allow the system owner to avoid purchasing a more expensive advanced treatment unit.

2. The nature and cost of required measures or investment.

In order to protect and improve water quality, these Regulations require the implementation of activities related to riparian buffers, sediment and stormwater controls, and onsite wastewater treatment and disposal systems.

Section 4 – These regulations propose the establishment of riparian buffers to protect and improve water quality. The buffer is only required for new major subdivisions and new activities requiring a site or major subdivision plan approved by Sussex County or other local government. The buffer width may be reduced when combined with the provisions outlined in Section 5 and contingent upon the creation of a development-wide nutrient management plan created by a certified nutrient consultant and implemented by a certified nutrient handler. This section also prohibits lot lines from extending into buffers and requires that the buffers be clearly demarcated, designated, and recorded on final site plans or final major subdivision plats. Property owners must maintain the buffer in perpetuity and install boundary signs or markers or distinctive vegetation identifying the upland edge of the buffer and buffer property owners or managers must manage the buffer to maintain water quality benefits.

Individuals, small, and large businesses may all be affected by these buffer provisions. Considerable increases in property design and engineering work, however, are not anticipated as a result of the issuance of these Regulations. The land contained within the buffer can be counted toward County and local open space requirements and development density calculations; therefore, this land is still a valuable component of the development as a whole and the value of the land is not lost due to the Regulation. Additionally, the Regulations do not require establishing vegetation in the buffer; therefore, if vegetation is not already present, it may naturally propagate, adding no additional cost. If a developer chooses to plant a buffer in vegetation, which is not required by these Regulations, the cost can be estimated by looking at agricultural cost share programs, which report it costs roughly \$300/acre to install a grass buffer and \$425/acre on average to install a forest buffer. Because buffers are areas requiring no fertilization or mowing, individual homeowners, business owners, and homeowners associations will realize significant savings. Additionally, property values may increase as a result of having a riparian buffer in place as they may be considered an aesthetic amenity and also add flood protection.

Buffer property owners, who are first the developer and then the homeowners association, are responsible for installing boundary markers and buffer management. Standards have not been specified for the boundary markers or for the management of buffers; therefore, property owners may choose the option that best fits their constraints. Buffers implemented on agricultural lands

in cost share programs cost approximately \$5/acre/year to maintain and this value may be used to estimate potential maintenance costs of buffers on developed lands.

When buffers of reduced widths are utilized, a development-wide nutrient management plan must be created by a certified nutrient consultant and implemented by a certified nutrient handler. Using data provided from the agricultural sector, it costs an average of \$4.35/acre to develop a three-year nutrient management plan, or \$1.45/acre/year. It is anticipated that the cost of developing nutrient management plans in developments will be similar.

Section 4 of these Regulations offers flexibility while still maintaining predictability by providing several alternatives to achieve compliance. The Regulations also include procedures to challenge water features to be buffered and procedures for requesting a waiver for those with site-specific constraints.

Section 5 – These Regulations require the inclusion of design criteria in permanent sediment and stormwater management plans, when the creation of these plans is required by the Delaware Sediment and Stormwater Regulations. Compliance with this Section may be achieved by implementing one of several options, including the installation of a riparian buffer (consistent with the provisions of Section 4) either independently or in combination with other best management practices that reduce nutrient loadings (three options for determining achievement) or the establishment of 30% of the project parcel as forest in common open space.

Individuals, small, and large businesses may all be affected by these sediment and stormwater provisions. Additional computations, done using a simple spreadsheet approach, may be necessary depending on which option is chosen to achieve compliance. Considerable increases in property design and engineering work, however, are not anticipated as a result of the issuance of these Regulations since consistency will be determined at the conceptual stormwater plan process step. This step is early in the process and should therefore minimize any redesign work at later stages after time, energy and funds and been expended. Compliance will be determined before approval of final site or subdivision plans.

Section 5 of these Regulations offers flexibility while still maintaining predictability by providing several alternatives to achieve compliance. The Regulations also cite that waiver requests from the stormwater management requirements of Section 5 should follow the procedures outlined in the Delaware Sediment and Stormwater Regulations.

Sections 6, 7, and 8 – These Regulations increase controls on on-site wastewater treatment and disposal systems (OWTDSs).

The general provisions outlined in Section 6 prohibit the use of cesspools and seepage pits; allows the permitting of new temporary holding tanks provided that central sewer service will become available within five years; prohibit the placing of new drainfields on newly recorded parcels within 100 feet of certain water features; and require all

innovative and alternative technologies for systems less than or equal to 2,500 gallons per day (gpd) to comply with Performance Standard Nitrogen 3.

Individuals, small, and large businesses may all be affected by the general OWTDS provisions. As cesspools and seepage pits are identified, those owners must replace the antiquated system with either a standard or advanced treatment OWTDS, depending on system location and timing of the replacement. The Regulations include procedures for requesting a hardship waiver from this specific requirement. The cost of installing a standard OWTDS ranges between \$3,000 to \$25,000, depending on system type and site characteristics, while an advanced treatment OWTDS will add an additional \$3,500 to \$6,000 to the total cost (Table 1). The provision that requires new drainfields on newly recorded parcels to be at least 100 feet from certain water features should not result in increased property design and engineering work. The Regulations also include procedures for requesting a waiver for those with site specific constraints.

Table 1: Septic System Type and Estimated Replacement Cost*

System Type	Cost Range	Application
Gravity systems	\$3,000 - \$6,500	>47 inches to limiting zone, 6-60 mpi percolation rate 0 - 15 % slopes.
Low pressure pipe	\$5,000 - \$8,000	27 to 47 inches to limiting zone, 0-120 mpi percolation rate 0-10% slopes permitted with a single manifold > 10% slopes require a split manifold.
Elevated sand mound	\$9,500 - \$20,000	20 to 47 inches to limiting zone, 0-120 mpi percolation rate Slopes: - For rates slower than 60 mpi, 0 - 6% - For rates faster than 60 mpi, 0-12%.
Innovative and alternative	\$14,000 - \$25,000	Consists of an advanced treatment unit followed by either subsurface drip irrigation, peat filter or elevated sand mound. Currently alternative systems may or may not meet proposed performance standards.
Best available technology (BATs) to meet performance requirements	\$3,500 - \$6,000	Additional treatment technology that reduces nitrogen levels dispersed to soils. Proposed for new and replacement systems.

*Environmental Finance Center, 2008, *Community Financing for Septic System Management in the Inland Bays Watershed: A White Paper Report*.

The provisions of Section 7 outline requirements for having all properties that are sold or otherwise transferred to other ownership to have their systems pumped out and inspected prior to the completion of sale. Any one of several documents may be submitted to the Department to meet this requirement: (1) the certificate of completion for transfers of a new property, (2) documentation of a pump out and inspection within the previous 36 months, (3) proof of a licensed operator or service contract with a certified service provider, or (4) completed inspection report by a licensed Class H System Inspector.

Individuals, small, and large businesses may all be affected by the OWTDS pump out and inspection provisions. In the case of items (1-3), the system owner need only provide the Department with existing documentation, which is not burdensome with

respect to time or finances. In the case of item (4), where the system is being pumped out and inspected at the time of sale, the buyer and seller may negotiate who pays for this service, although currently it typically is the buyer. The cost of pumping out an OWTDS averages \$193 while the inspection averages \$300, for a total of \$493 per system per pump out and inspection. Should the system fail the inspection, again, it will be up to the buyer and seller to negotiate how the repair is financed.

Section 8 of the Regulations outlines performance standards for all sizes of new and replacement OWTDSs. In addition, systems larger than 2,500 gpd will need to be upgraded to an advanced treatment technology within 60 months of their operation and maintenance permit expiration. Three levels of performance standards are available for nitrogen (PSN1, PSN2, and PSN3), while two levels are available for phosphorus (PSP1 and PSP2). Performance standards are assigned based upon the capacity of the individual OWTDS. This is an acknowledgement of the technological ability of the various treatment systems to achieve the performance standards since the treatment technologies become more effective and efficient as the capacity of the system increases.

Individuals, small, and large businesses may all be affected by the OWTDS performance standard provisions. Cost estimates for large systems between 2,500 and 20,000 gpd and greater vary greatly depending on system size, treatment requirements, and disposal methods (rapid infiltration basin versus drip irrigation, for example). Systems greater than 20,000 gpd are typically for subdivisions with more than 66 homes, therefore the cost of a new or replacement system that meets the appropriate performance standards is shared among all of the system users. Likewise, systems between 2,500 and 20,000 gpd typically serve small communities, manufactured housing communities, apartment buildings, shopping centers and mini malls, as well as other business and churches, that have multiple users who can contribute to the cost of a new or replacement advanced treatment system.

Finally, systems less than 2,500 gpd are typically individual systems and the advanced treatment will add an additional \$3,500 – \$6,000 to the total cost of a new or replacement system (Table 1). In the case of new systems, which are associated with new homes, the cost of the advanced treatment technology can be incorporated in the purchase price of the home. If, after January 1, 2015, an inspection at the time of sale or property transfer reveals that an existing system requires replacement, the cost of replacing the system with an advanced treatment technology can be considered in the sale transaction. Owners of these small systems will not be required to upgrade to PSN3 if central sewer will become available within five years. The Regulations include procedures for requesting a hardship waiver from this specific requirement for owners of small new and replacement systems to utilize PSN3. In addition, the Regulations include procedures for requesting waivers due to site specific constraints.

Because of concerns related to the impact of added costs of the OWTDS provisions on low and moderate income families, the Environmental Finance Center at the University of Maryland was retained to study the situation. The Center worked with the Department and the First State Community Action Agency to identify sustainable financing strategies to support the community financing needs as a result of the

requirements of this Regulation. The resulting white paper report entitled, “Community Financing for Septic System Management in the Inland Bays Watershed,” was published in January 2008 (http://www.efc.umd.edu/pdf/DE_Septic_Report.pdf). The report discusses the financing needs, identifies existing funding sources and future opportunities, and provides seven recommendations to assist the Department in meeting the needs of the local communities that will be impacted by these Regulations. The Department plans to implement these recommendations, the first of which is to promulgate regulations.

3. The nature and cost of legal, consulting and accounting services.

There are no requirements in the proposed Regulations that would necessitate a need for legal and/or accounting services, however, in order to improve water quality, these Regulations may result in individuals, small, and large businesses needing to secure consulting services.

Sections 4.3 and 4.4 – When buffers of reduced widths are utilized instead of standard width buffers, a development-wide nutrient management plan must be created by a certified nutrient consultant and implemented by a certified nutrient handler. Using data provided from the agricultural sector, it costs an average of \$4.35/acre to develop a three-year nutrient management plan, or \$1.45/acre/year. It is anticipated that the cost of developing nutrient management plans in developments will be similar. This requirement may be avoided since more than one buffering option is presented in the Regulations.

Section 5 – These Regulations require additional sediment and stormwater controls and offer several options, including mathematical computations, for complying with this requirement. A developer, which may be an individual, small, or large business, may choose to have an engineering consultant perform these computations; however, this is not a requirement of these Regulations. A comprehensive guidance document entitled, “Achieving Stormwater Pollution Control Strategy Reductions for Water Quality,” has been developed and contains example calculations for ease of use by a lay person. As such, this requirement should not result in any additional costs for consulting services.

Section 9.2 – If during the planning stages of a new major subdivision or new activity, a developer, which may be an individual, small, or large business, believes a technical error related to primary and/or secondary water feature classification exists, the developer must adhere to Section 9.2 of the Regulations in order to formally challenge the regulatory map adopted as part of these Regulations. This Section requires following the procedures outlined in the guidance document entitled, “Procedures for Challenging the “Map of Water Features to be Buffered in the Inland Bays Watershed.”” This guidance document contains instructions for conducting a field assessment by a qualified environmental consultant, who should have experience making geomorphic, hydrologic, and biologic observations in streams. Such consultants routinely perform similar analyses on other aspects of development planning, such as wetland delineations. One consultant in the watershed estimated that the analyses required to investigate and support such a map challenge would cost a minimum of \$2,000, but would vary depending on the size and complexity of the project. Stream analyses by environmental consultants will only be performed when a developer chooses to pay for

this analysis, typically because a change in water feature designation will benefit their project plans, not because the Regulations require this expense.

4. The ability of the entity to absorb or recover the added costs without suffering economic harm and without adversely affecting competition in the marketplace.

These Regulations are based on solid environmental science, but also take into consideration and accommodate a variety of factors, including the ability of individuals, small, and large businesses to absorb or recover any added costs without suffering economic harm and without adversely affecting competition in the marketplace. These considerations are discussed below.

Section 1 – These Regulations include effective date language, primarily contained in Section 1, which considers project or system size, stage of completion, and location within the watershed for determining when each Section of the Regulations will go into effect. These factors were incorporated into effective date determinations in order to avoid adversely impacting any individual, small, or large business that may be affected by these Regulations. Effective dates were specifically designed to allow those impacted to be able to avoid additional costs if already at a late project stage as well as plan for future costs by allowing ample preparation time.

Section 4 – This Section contains applicability language clearly stating which activities will and will not be affected by the buffer provisions, which was included in order to avoid economic harm to owners of small lots, small projects, and certain water dependent projects.

Sections 6.4 and 8.4.5 – These Sections allow exemption from certain OWTDS requirements if central sewer will become available within five years, which was included in order to avoid economic harm to those system owners.

Section 7 – The OWTDS operation, maintenance, and inspection program required by Section 7 of the Regulations is required at the time of property sale or transfer, because that is a time when financing is more readily available and those impacted will therefore be able to absorb or recover the added costs and avoid economic harm.

Section 8 – The performance standards required in Section 8 of the Regulations consider numerous factors including system size, whether it is a new or replacement system, and if certain site-specific conditions are present. These considerations were incorporated into the Regulations so as to not have a one-size-fits-all solution, but rather, more stringent requirements for larger and newer systems and those that may be placed in a location more likely to impact water quality. Large systems typically serve multiple users who can contribute to covering costs and financing is more readily available for newer systems. In addition, the Regulations also allow for ample time (60 months) to upgrade a system to an advanced technology once an operation and maintenance permit expires, again to allow system owners the ability to prepare for this expense.

It is also important to note that the costs associated with contracting a service provider to maintain OWTDS (Section 8.4.4) are expected to drop over time as a result of

competition as more service providers enter the area. Additionally, property owners may become certified by the Department under Section 5.04045 of the Regulations Governing the Design, Installation and Operation of On-Site Wastewater Treatment and Disposal Systems to service their own system after completing a training course.

In addition to the above considerations, these Regulations also contain procedures for requesting waivers and include specific hardship waiver procedures from Sections 6.2 (elimination of cesspools and seepage pits) and 8.4 (advanced treatment of <2,500 gpd systems) of the Regulations. Therefore, these Regulations include many accommodations so that individuals, small, and/or large businesses can absorb or recover any potential added costs without suffering economic harm and without adversely affecting competition in the marketplace.

5. The added cost to the Department if exemptions or lesser requirements were promulgated.

The actions proposed in these Regulations are necessary to achieve water quality goals therefore any lessening of the proposed requirements would be inappropriate and would adversely affect the health and well being of people, animals, and plants living within the watershed. These Regulations already incorporate exemptions from specific Sections and include procedures for requesting a waiver, which may result in the implementation of a lesser requirement. These exemptions and potential waivers may result in negative environmental impacts, however, the Regulations are designed to minimize or mitigate these impacts. The Department will track all waivers from these Regulations approved by the Secretary, which will require staff time and associated administrative costs.

The Pollution Control Strategy developed by the Department and based on recommendations from the Inland Bays Tributary Action Team includes both voluntary and regulatory actions. As written, the Strategy calls for the large majority of voluntary practices to be from the agriculture sector since best management practices (BMPs) on agricultural lands are cost effective with known nutrient reduction efficiencies. An optimization procedure was used to identify the best suite of agricultural BMPs that are both highly effective at reducing nutrients and take the least amount of cropland out of production in order to minimize effects on the farmer. Therefore, if these PCS Regulations are not implemented as proposed, additional voluntary actions by the agricultural community will be necessary and will require cropland to be taken out of production to install BMPs, which may result in a financial detriment to those farming and related businesses. This approach also contains a high level of uncertainty as agricultural lands are under development pressure. The level of certainty that implementation of additional voluntary BMPs if these Regulations are not promulgated as proposed is very low and water quality will therefore not improve.

These Regulations are primarily designed so that expenses are incurred as land use changes, as property ownership changes, and as OWTDSs fail, which are all times when funds must already be spent and the added costs can be incorporated. If the Regulations are not promulgated as proposed, the burden will be on the Department to finance these projects with partners that are willing to voluntarily participate.

6. The impact on the public interest of exempting or setting lesser requirements of compliance.

The actions proposed in these Regulations are necessary to achieve water quality goals, which will benefit the health and well being of people, animals, and plants living within the watershed. If the exemptions and lesser requirements are allowed, there will be less assurance that water quality standards will be achieved, which may result in increased occurrences of excessive macroalgae growth (sea lettuce and other species), phytoplankton blooms (some potentially toxic), large daily swings in dissolved oxygen levels, loss of submerged aquatic vegetation, reduced populations of fish, shellfish, and other aquatic life, and fish kills. These symptoms of environmental degradation and habitat loss threaten the future of the Inland Bays and their significant natural, ecological, and recreational resources, which may result in adverse impacts to the local and State economies leading to reduced tourism, a decline in property values, lost revenues and a diminished quality of life.

The Delaware Economic Development Office reports that tourism contributed \$1.5 billion to the State's economy in FY2007 and much of this industry is centered in eastern Sussex County and the Inland Bays Watershed. A visitor profile study of Sussex County reported that 3 million people visited in 2006 with the majority reporting that time was spent engaging in beach and waterfront activities. Additionally, the year round population of this resort region has increased in recent years as retirees from neighboring and nearby states have relocated to Delaware's coast. These very activities and amenities will be threatened if water quality is not protected.

Analyses of water quality data show flat trend lines in the Inland Bays watershed despite significant past and present efforts to eliminate point sources, remove septic systems, and implement best management practices on agricultural lands. These trends analyses support the argument that it is necessary to increase implementation efforts in order to meet water quality standards in the future.

Parties responsible for the 1997 lawsuit (*American Littoral Society & Sierra Club v. EPA et al. Civil No. 96-591*), which prompted the US Environmental Protection Agency and the Department to accelerate efforts to establish TMDLs for Delaware's impaired waterbodies, may consider exemption and lesser requirements a disenfranchisement. Achieving Water Quality Standards is clearly a requirement of the Clean Water Act.

Conclusions

After thorough consideration of the proposed Regulation 7403 under the *Regulatory Flexibility Act, 29 Del. C. Ch. 104, (Act)*, the Department concludes the following:

- The requirements of these Regulations affect a wide range of stakeholders within the Inland Bays watershed including individuals and small businesses that qualify for consideration under the Regulatory Flexibility Act, as well as larger businesses that would not be considered small according to the Regulatory Flexibility Act definition. The Department attempted to identify small businesses within the watershed that may be impacted by these Regulations, but was unable to locate a map or listing of these entities. The Sussex County Small Business Development Center indicated that due to confidentiality reasons, this information was not available.

- These Regulations contain reasonable reporting requirements to ensure monitoring and compliance, but do not impose an undue regulatory or financial burden on individuals or small businesses. In some situations reporting requirements can be avoided by selecting an alternative option offered by the Regulations, while in other situations, reporting requirements will result in a cost savings.
- These Regulations require additional measures and investments in order to protect and improve water quality; however, these Regulations also provide predictability and flexibility in order to minimize impacts on those affected.
- These Regulations do not create a need for legal and/or accounting services, while they may result in individuals, small, and large businesses securing consulting services, but not to the extent that they cause either a regulatory burden or financial harm. The only consulting requirement can be avoided by selecting an alternative option offered by the Regulations.
- These Regulations consider and accommodate a variety of factors including the ability of individuals, small, and large businesses to absorb or recover from any added costs without suffering economic harm and without adversely affecting competition in the marketplace.
- If these Regulations are not promulgated as proposed, water quality requirements will not be met, which will result in a detriment to the health and well being of people, animals, and plants living within the watershed. Additional voluntary best management practices would be needed from the agricultural sector to compensate, however this would result in cropland being taken out of production which would be a financial detriment to the farmer and related businesses. Additionally, with the current trends of agricultural lands being converted to development, there is a very low level of assurance that any additional voluntary agricultural BMPs could be implemented and hence a low level of assurance that water quality could improve utilizing an approach that does not include these Regulations.
- The Delaware Economic Development Office reports that tourism contributed \$1.5 billion to the State's economy in FY2007 and much of this industry is centered in eastern Sussex County and the Inland Bays Watershed. A visitor profile study of Sussex County reported that 3 million people visited in 2006 with the majority stating that time was spent engaging in beach and waterfront activities. Additionally, the year round population of this resort region has increased in recent years as retirees from neighboring and nearby states have relocated to Delaware's coast. These very activities and amenities will be threatened if water quality is not protected.
- Analyses of water quality data show flat trend lines in the Inland Bays watershed despite significant past and present efforts to eliminate point sources, remove septic systems, and implement best management practices (BMPs) on agricultural lands (approximately \$162 million in capitol costs have been spent since the TMDL baseline period to implement nonpoint source BMPs in the watershed). These

trends analyses support the argument that it is necessary to increase implementation efforts in order to meet water quality standards and preserve the natural, ecological, and recreational resources.

- The regulatory approach offers a fair and equitable manner in which to engage private individuals and small and large businesses in water quality improvements. These are the same entities that benefit economically from an enhanced quality of life as a result of environmental improvements.
- Individuals and businesses utilizing onsite wastewater treatment and disposal systems (OWTDSs) are currently responsible for a much higher per capita nutrient load to the aquatic environment than are individuals and businesses utilizing municipal wastewater collection and treatment systems. Further, OWTDS users bear far less of an economic burden than do users of municipal systems. For example, a new homeowner utilizing an OWTDS may be paying a few extra dollars per month as part of their mortgage payment for their system and the cost of an every 3-year pump-out and discharging 40-60 mg/liter of nitrogen to the environment while a municipal system user might be paying \$25 to \$100 per month for an effluent concentration of 3 to 10 mg/liter.

Appendix B
Regulations Recommended to be Adopted

**DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL
CONTROL**

DIVISION OF WATER RESOURCES

Watershed Assessment Section

Statutory Authority

7 Delaware Code Chapters 40, 60, 66, 70, and 72

29 Delaware Code §§ 8014(5) and 8025

**REGULATIONS GOVERNING THE POLLUTION CONTROL STRATEGY
FOR THE INDIAN RIVER, INDIAN RIVER BAY, REHOBOTH BAY AND
LITTLE ASSAWOMAN BAY WATERSHEDS**



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FORWARD

For years, various governmental and private entities have encouraged the use of voluntary practices in order to reduce nutrient loading into the Indian River, Indian River Bay, Rehoboth Bay, Little Assawoman Bay and their tributaries (the Inland Bays) such that water quality standards are achieved in support of their designated uses. While reducing pollutant loads to an extent, these attempts have not resulted in the desired outcome of controlling pollution and improving water quality. In order to achieve the Total Maximum Daily Loads (TMDLs), determined through vigorous research and modeling, the following Pollution Control Strategy regulations must be implemented.

In addition, the Department will consider the use of water quality trading to achieve point and nonpoint source load reductions. All trading proposals will be in support of the TMDL required load reductions and are subject to Department approval.

It is the policy of the Department of Natural Resources and Environmental Control to implement each component of the Pollution Control Strategy and these Regulations in a timely fashion. The Department supports review of all related ordinances, regulations and laws in order to promote consistency among all legal instruments.

1.0 AUTHORITY AND SCOPE

These Regulations are adopted by the Secretary of the Department of Natural Resources and Environmental Control under and pursuant to the authority set forth in 7 Del. C. Ch. 40, 60, 66, 70, and 72 and in 29 Del. C. §§ 8014(5) and 8025.

1.1 These Regulations apply to the public and private lands draining into the Indian River, Indian River Bay, Rehoboth Bay and Little Assawoman Bay and their tributaries (collectively referred to as “the Inland Bays”).

1.2 Unless otherwise stated in these Regulations, the effective date of these Regulations is 60 days from the date of publication of the final Regulations.

1.3 Proposed major subdivision plans, site plans, concept plans, initial stage calculation sheets, requests for service level evaluation, or requests for scoping meetings which have been received by DeLDOT prior to the effective date of this regulation for a development proposal, for the purpose of securing a letter of no objection, support facilities report, entrance location, or entrance approval, are not subject to the buffer and stormwater requirements of these Regulations, Sections 4 and 5. If after 5 years from the effective date, an application for the project has not been submitted to the appropriate county or local government and substantial expenditures have not been made for the project to proceed, all stormwater and buffer provisions of these Regulations will be applicable to the project.

1.3.1 In instances where submissions to DELDOT are not required prior to filing an application with Sussex County or local government, projects for which applications have been submitted to the County or a municipality prior to the effective date of these Regulations are not subject to the buffer and stormwater provisions, Sections 4 and 5, of these Regulations.

1.3.2 For projects within the County, the effective date of Sections 4 and 5 shall be 10 calendar days after the date of publication of the final Regulations in the Delaware Register of Regulations. For projects on lands located within municipalities as of the date of publication of these Regulations, the effective date of Sections 4 and 5 of these Regulations shall be one year from the date of publication of the final Regulations in the Delaware Register of Regulations.

1.4 Section 6 of these Regulations will become effective 30 days from the date of publication of the final Regulations.

1.5 Section 7 of these Regulations will become effective 180 days from the date of publication of the final Regulations.

1.6 New systems, as described in Sections 8.2.1 and 8.3.1 of these Regulations, that have submitted a Site Investigation Report (SIR) and a Preliminary Groundwater Impact Assessment (PGIA) or a Site Selection and Evaluation Report (SSER) within 60 days from the date of publication of the final Regulations, are not subject to the general onsite wastewater treatment and disposal system provisions of these Regulations.

1.7 Section 8.4 of these Regulations shall be effective for all permit applications whose site evaluations have been submitted to the Department 60 days or more after the date of publication of the final Regulations when those sites lie within 1000 feet of the mean high water line of the Indian River, Indian River Bay, Rehoboth Bay, or Little Assawoman Bay or their tributaries, or from their associated tidal

wetlands shown on Delaware's 1992 State Wetland Mapping Project Maps. The 1000 foot boundary line from these tidal wetland and water areas is depicted on the map entitled "Areas Requiring Early Implementation of PSN3" contained in Appendix B of this Regulation.

1.8 All complete permit applications received on or after January 1, 2015 for new and replacement systems throughout the Inland Bays Watershed shall comply with Section 8.4 of these Regulations.

2.0 DEFINITIONS

The following words and terms, when used in these Regulations, should have the following meaning unless the context clearly indicates otherwise:

"Best Management Practice (BMP)" means a system or procedure that has been determined to be an effective, practical means of preventing or reducing nonpoint source pollution. These include conservation practices or management measures which control soil loss and reduce water quality degradation caused by nutrients, animal wastes, toxins, sediment, and runoff.

"Buffer" means an existing or purposely established area of vegetation which protects water resources from pollution.

"Certified Service Provider" means an individual representative of a manufacturer/supplier who holds a Department Class E System Contractor or Class H System Inspector license, or a Class E System Contractor who is certified, through Department approved training, on the operation and maintenance of the advanced treatment unit or system, or a Class H System Inspector who has become certified through Department approved training on the operation and maintenance of the advanced treatment unit or system, or a homeowner who has obtained Department individual home service provider certification and has been through Department approved training on the operation and maintenance of their advanced treatment unit or system. The Department homeowner certification allows the homeowner to operate and maintain their advanced treatment unit or system at their primary place of residence.

"Clean Water Act (CWA)" means the Federal Water Pollution Control Act, 33 U.S.C. §§1251-1387.

"Department" means the Delaware Department of Natural Resources and Environmental Control.

"Drainfield" means a system of open-jointed or perforated piping, alternative distribution units, or other seepage systems for receiving the flow from septic tanks or other treatment facilities and designed to distribute effluent for oxidation and adsorption by the soil within the zone of aeration.

"End of Pipe" means the location where effluent discharges from the end of the advanced pretreatment unit before ultimately dispersing into the soil drainfield. This is

the location where nitrogen and phosphorus sampling may occur in order to determine compliance with the applicable performance standard.

“High potential for phosphorus mobility” means an area where:

- the site’s soils have a Fertility Index Value (FIV) of greater than 100 for phosphorus or a soil test value of over 100 parts per million (ppm) by the Mehlich 3 soil test; and
- the groundwater phosphorus content is above 0.034 mg/l and there is an indication that groundwater is anoxic due to low dissolved oxygen or oxidation reduction potential below 200 mV; and
- the disposal area contains soils with a seasonal high water table above 27 inches.

“Indian River Watershed” means the lands that drain into the Indian River and its tributaries as illustrated by the Delaware watershed map available from the Watershed Assessment Section, Division of Water Resources, Department of Natural Resources and Environmental Control.

“Indian River Bay Watershed” means the lands that drain into the Indian River Bay and its tributaries as illustrated by the Delaware watershed map available from the Watershed Assessment Section, Division of Water Resources, Department of Natural Resources and Environmental Control.

“Innovative and Alternative (IA) onsite wastewater treatment and disposal systems” means anything other than a conventional onsite wastewater treatment and disposal system.

“Little Assawoman Bay Watershed” means the lands that drain into the Little Assawoman Bay and its tributaries as illustrated by the Delaware watershed map available from the Watershed Assessment Section, Division of Water Resources, Department of Natural Resources and Environmental Control.

“Major subdivision” means a subdivision of land involving a proposed new street or the extension of an existing street.

“Mean high water (MHW)” means the point on the bank, tidal flat, beach or shore, up to which the presence or action of the water leaves a distinct mark, either by erosion, destruction of terrestrial vegetation (non-aquatic), physical markings or characteristics, and known vegetation lines, and may be further identified by tidal gauge data, or any other suitable means of delineating the mean height reached by a rising tide.

“National Pollutant Discharge Elimination System (NPDES)” means the program prescribed by the Federal Water Pollution Control Act for point sources of pollution.

“Nonpoint source (NPS) pollution” means pollution originating from diffuse areas having no well-defined source.

“Nutrient” means any element or compound essential as a raw mineral for organism growth and development and, for the purpose of this regulation, is limited to nitrogen and phosphorus.

“Onsite wastewater treatment and disposal system (OWTDS)” means a conventional or innovative and alternative wastewater treatment and disposal systems installed or proposed to be installed on the land of the owner or on other land to which the owner has the legal right to install the system.

“Ordinary high water mark” means, for nontidal waters, the line where the presence and action of water are continuous enough during ordinary rainfall years to leave a mark upon the soil of the bed or banks of the waterbody.

“Performance Standard Nitrogen level 1 (PSN1)” means where total nitrogen levels achieve either:

- an average annual concentration of 5 mg/l (parts per million (ppm)) total nitrogen in effluent sampled at the end-of-pipe of the pretreatment unit; or
- a 90% reduction in the effluent total nitrogen concentration when compared to the influent total nitrogen concentration; or
- an average annual concentration of 5 mg/l beneath any permitted wastewater spray irrigation field as verified by monitoring in-field lysimeters, providing that the design percolate concentration does not exceed 5 mg/l on an average annual basis.

Discharge limitations are to be expressed as a mass, based on average design flows (221 gallons per day per unit for residential systems).

“Performance Standard Nitrogen level 2 (PSN2)” means where total nitrogen levels achieve either:

- an average annual concentration of 10 mg/l (parts per million (ppm)) total nitrogen in effluent sampled at the end-of-pipe of the pretreatment unit; or
- an 80% reduction in effluent total nitrogen concentration when compared to the influent total nitrogen concentration; or
- an average annual concentration of 10 mg/l beneath any permitted wastewater spray irrigation field as verified by monitoring in-field lysimeters, providing that the design percolate concentration does not exceed 10 mg/l on an average annual basis.

Discharge limitations are to be expressed as a mass, based on average design flows (221 gallons per day per unit for residential systems).

“Performance Standard Nitrogen level 3 (PSN3)” means where total nitrogen levels achieve either:

- an average annual concentration of 20 mg/l (parts per million (ppm)) total nitrogen in effluent sampled at the end-of-pipe of the pretreatment unit; or
- a 50% reduction in effluent total nitrogen concentration when compared to the influent total nitrogen concentration.

“Performance Standard Phosphorus level 1 (PSP1)” means where total phosphorus levels achieve either:

- an average annual concentration of 3.9 mg/l (parts per million (ppm)) total phosphorus in effluent sampled at the end-of-pipe of the pretreatment unit; or
- a 75% reduction in effluent total phosphorous concentration when compared to the influent total phosphorus; or
- an average annual concentration of 3.9 mg/l beneath any permitted wastewater spray irrigation field as verified by monitoring in-field lysimeters, providing that the design percolate concentration does not exceed 3.9 mg/l on an annual average basis.

Discharge limitations are to be expressed as a mass, based on average design flows (221 gallons per day per unit for residential systems).

“Performance Standard Phosphorus level 2 (PSP2)” means where total phosphorus levels achieve either:

- an average annual concentration of 7.85 mg/l (parts per million (ppm)) total phosphorus in effluent sampled at the end-of-pipe of the pretreatment unit; or
- a 50% reduction in effluent total phosphorus concentration when compared to the influent total phosphorus concentration.

Discharge limitations are to be expressed as a mass, based on average design flows (221 gallons per day per unit for residential systems).

“Person” means any individual, business enterprise, or business entity, including but not limited to, a trust, firm, joint stock company, partnership corporation (including government corporation), limited liability company or association, any state, municipality, commission, or political subdivision of a state, any federal agency, any interstate body, or other such entities as allowed by law.

“Point source pollution” means pollution discharged directly from a specific site such as a municipal sewage treatment plant or an industrial outfall pipe.

“Pollution Control Strategy (PCS)” means a document that specifies actions necessary to systematically achieve pollutant load reductions specified by a Total

Maximum Daily Load for a given waterbody. The regulatory actions are included in these Regulations.

“Pre-engineered plan” means a design using packaged mechanical devices such as equipment of cataloged design which complies with all applicable regulations and approved by the Department, or listed by a third party testing authority for a specific application recognized and approved by the Department.

“Primary water features” means State-regulated wetlands and those waters depicted by the United States Geological Survey on the National Hydrography Dataset as perennial, and identified on maps developed by the Department and adopted as part of this Regulation in Appendix A. Such features may be adjusted in accordance with Section 9.2 of these Regulations.

“Rehoboth Bay Watershed” means the lands that drain into the Rehoboth Bay and its tributaries as illustrated by the Delaware watershed map available from the Watershed Assessment Section, Division of Water Resources, Department of Natural Resources and Environmental Control.

“Secondary water features” means those waters depicted by the United States Geological Survey on the National Hydrography Dataset as intermittent, and those forested ditches that flow within or are directly adjacent to forested lands, and identified on maps developed by the Department and adopted as part of this Regulation in Appendix A. Such features may be adjusted in accordance with Section 9.2 of these Regulations.

“Site plan” means a drawing illustrating proposed residential planned communities, conditional uses, dwellings, multiple family dwellings, townhouses, houses of worship, hotels, motels or motor lodges, docks or piers, footbridges or walkways, business and office buildings, commercial buildings or industrial buildings, mobile home parks, campgrounds, borrow pits, or amusement places, circuses, or carnival grounds.

“State-regulated wetlands” means those wetlands depicted on maps adopted pursuant to 7 Del Code Ch. 66 or otherwise field verified or adjusted.

“Systematically eliminate” means to require the elimination of waste loading into the affected waterbody by point sources on a firm, fixed schedule as approved by the Department. This elimination must occur within five years of the expiration of the facility’s current NPDES permit unless a longer period of time is provided for in a State or Federally enforceable Consent Order, Decree, or Administrative Order.

“Total Maximum Daily Load (TMDL)” means the amount of a given pollutant that may be discharged to a waterbody 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 Allocations (WLAs) for point sources and Load Allocations (LAs) 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.

“**Treatment train**” means a series of best management practices for stormwater.

“**Watershed**” means a region or area delineated by a topographical divide and draining ultimately to a particular watercourse.

3.0 POINT SOURCE IMPLEMENTATION

3.1 Permitted discharges of nutrients into the Indian River, Indian River Bay, Rehoboth Bay, Little Assawoman Bay or their tributaries under the NPDES program shall be systematically eliminated through their NPDES renewal process.

3.2 Subject to approval by the Department, point sources may choose to engage in water quality trading on a case-by-case basis in accordance with the following:

3.2.1 Trades must occur within the same watershed (Indian River, Indian River Bay, Rehoboth Bay, or Little Assawoman Bay) as the point source discharge is located.

3.2.2 Trades must involve a trading ratio of at least 2:1 between nonpoint sources and point sources.

3.2.3 The nutrient load reduction involved in the trade must constitute reductions that occur beyond the baseline or the point or nonpoint source nutrient reductions required under the TMDL and this Pollution Control Strategy.

4.0 BUFFER ZONE ESTABLISHED

This section requires riparian buffers in order to protect and improve water quality.

4.1 Applicability.

4.1.1 A buffer is only required for new major subdivisions and new activities requiring a site or major subdivision plan approval by Sussex County or other local government. For redevelopment projects, new improvements within the respective buffer shall be permitted at the existing set back or greater in accordance with applicable county or local ordinances.

4.1.2 This buffer provision does not apply to major subdivisions, site plans, or individual lots used for detached single family homes recorded prior to effective date of this regulation.

4.1.3 This buffer provision does not apply to any land or buildings deemed to be in agriculture use as prescribed in 9 Delaware Code 6902(b).

4.1.4 On-lot improvements requiring a site plan impacting less than 5000

square feet are excluded.

4.1.5 Excluded from the buffer provisions of this Regulation are permitted water-dependent facilities (maritime, recreational, educational or fisheries activities that cannot exist outside of the buffer by reason of the intrinsic nature of their operation) and the permitted installation, operation, repair or maintenance of any sanitary sewer system, stormwater facility, culvert, bridge, public utility, street, drainage facility, pond, recreational amenity, pier, bulkhead, boat ramp, waterway improvement project or erosion-stabilization project that has received the joint approval of the appropriate federal, state and local agencies.

4.1.6 Isolated, stormwater and farm ponds are excluded from the buffer provisions.

4.2 For purposes of this Section, buffers are hereby established for primary and secondary water features.

4.2.1 Buffers of 100 feet are hereby established landward from State-regulated wetlands, or landward from the mean high water line of all tidal waters, whichever extends farther upland, and landward from the ordinary high water mark of all other primary water features.

4.2.2 Buffers of 60 feet are hereby established landward from the ordinary high water mark of all secondary water features.

4.3 Buffer widths may be reduced to the widths specified below when combined with the provisions outlined in Section 5 and contingent upon the creation of a development-wide nutrient management plan created by a certified nutrient consultant and implemented by a certified nutrient handler in accordance with the Regulations Governing the Nutrient Management Program.

4.3.1 Buffers of 50 feet are hereby established landward from State-regulated wetlands, or the mean high water line of all tidal waters, whichever extends farther upland, and from the ordinary high water mark of all other primary water features.

4.3.2 Buffers of 30 feet are hereby established landward from the ordinary high water mark of all secondary water features.

4.4 When Section 4.3 applies, the applicant shall ensure that deed restrictions and the homeowner's association bylaws include the following statement: "This development is subject to a nutrient management plan, which shall be implemented by a certified nutrient handler. The nutrient management plan is designed to reduce pollutants entering the Inland Bays. The nutrient management plan must be maintained and implemented in accordance with the Inland Bays Pollution Control Strategy and Regulations of the Pollution Control Strategy for the Indian River, Indian River Bay, Rehoboth Bay and Little Assawoman Bay Watersheds, Delaware." In addition, the following requirements must also be met:

4.4.1 The homeowner's association must retain the nutrient management plan on file and maintain records of nutrient applications. A summary of nutrient application records must be submitted to the Delaware Department of Agriculture, Nutrient Management Program on an annual basis.

4.4.2 The homeowner's association must sign and accept any and all responsibility for implementation of these requirements.

4.5 In order to protect buffers and thus water quality, no landowner or their representative shall extend lot lines into buffers.

4.6 Determination of the areas of State jurisdiction, including the limit of State-regulated wetlands as mapped or otherwise field adjusted, the mean high water line of tidal waters and the ordinary high water line of non-tidal waters and the upland edge of buffers will be made by the Department.

4.7 No person shall submit final site plans or final major subdivision plats without including buffers as defined and described in these regulations that are clearly demarcated, designated, and recorded on such plans or plats.

4.8 Property owner(s) shall maintain the buffer in perpetuity in accordance with these regulations. Property owners shall install boundary signs or markers or distinctive vegetation identifying the upland edge of the buffer.

4.9 Buffer property owners or managers shall manage buffers to maintain their water quality benefits.

4.10 Allowable uses within the buffer are:

4.10.1 Flood control structures, where permitted,

4.10.2 Utility rights of way/structures, where permitted,

4.10.3 Stormwater best management practices may be placed within the buffer, but no closer than 25 feet to the feature being buffered, provided that the buffer is in open space,

4.10.4 Unpaved, pervious single-track trails or footpaths no wider than 5 feet, or pervious or impervious footpaths that encompass 5% or less of the buffer area, (in instances where the trail area is greater than 5% of the buffer area, the buffer will require 1/1 mitigation on a per square foot basis), and

4.10.5 Road crossings, where permitted,

4.11 In instances where a buffer is required adjacent to a tax ditch, the right-of-way may be included as part of the buffer. Access to the ditch for maintenance purposes shall be preserved.

5.0 SEDIMENT AND STORMWATER CONTROLS

5.1 Sediment and stormwater runoff shall be managed for nutrient reductions where practicable.

5.2 When the Delaware Sediment and Stormwater Regulations require the creation of a permanent sediment and stormwater management plan, that plan shall be designed and implemented to include design criteria to further reduce nutrient contributions. Consistency will be determined at the conceptual stormwater plan process step. Compliance will be determined before approval of final site or subdivision plans.

5.3 Compliance with 5.2 of these Regulations shall be achieved using one of the following methods:

5.3.1 For properties that contain primary and/or secondary water features, establish buffers consistent with Section 4.2 of these Regulations; or

5.3.2 For properties that contain primary and/or secondary water features, establish buffers consistent with Sections 4.3 and 4.4 of these Regulations in combination with any of the options listed in 5.3.3 of this Section; or

5.3.3 For properties that utilize a reduced width buffer or do not contain primary or secondary water features, select any of the options listed in 5.3.3.1 – 5.3.3.4 below:

5.3.3.1 Reduce nutrient contributions by the percentage required by the TMDL for the watershed in which the project is located, based on a comparison between the post-developed condition with and without stormwater quality management best management practices using the procedures outlined in the guidance document entitled, "Achieving Stormwater Pollution Control Strategy Reductions for Water Quality"; or

5.3.3.2 Reduce nutrient contributions so as to achieve irreducible concentrations of nutrients using the procedures outlined in the guidance document entitled, "Achieving Stormwater Pollution Control Strategy Reductions for Water Quality"; or

5.3.3.3 Reduce nutrient contributions using three practices within a treatment train using the procedures outlined in the guidance document entitled, "Achieving Stormwater Pollution Control Strategy Reductions for Water Quality"; or

5.3.3.4 Establish 30% of project parcel as forest in common open space through preservation and protection of existing forest stands or creation of new forest stands in accordance with the guidance document entitled, "Forestry Guidance for Inland Bays Pollution Control Strategies." In order to comply with the stormwater management requirements of this section, to the extent practicable, the forested area shall be an integral component of the project's stormwater management

plan.

5.4 When Sections 5.3.1 or 5.3.2 apply, the buffer zone shall be established in accordance with Section 4 of these Regulations.

6.0 ON-SITE WASTEWATER TREATMENT AND DISPOSAL SYSTEMS— GENERAL

6.1 This section of the Regulations of the Pollution Control Strategy for the Indian River, Indian River Bay, Rehoboth Bay and Little Assawoman Bay Watersheds complements sections of the Regulations Governing the Design, Installation and Operation of On-Site Wastewater Treatment and Disposal Systems. If inconsistencies exist, these Regulations of the Pollution Control Strategy for the Indian River, Indian River Bay, Rehoboth Bay and Little Assawoman Bay Watersheds control.

6.2 All cesspools or seepage pits are prohibited within Indian River, Indian River Bay, Rehoboth Bay and Little Assawoman Bay watersheds and shall be replaced in accordance with the Regulations Governing the Design, Installation and Operation of On-Site Wastewater Treatment and Disposal Systems and these Regulations of the Pollution Control Strategy for the Indian River, Indian River Bay, Rehoboth Bay and Little Assawoman Bay Watersheds.

6.3 Existing holding tanks must be operated in accordance with their permits and their conditions.

6.4 In instances where central sewer service will become available within five years, temporary holding tanks will only be permitted after the Department receives a letter (with an approved Certificate of Public Convenience and Necessity (CPCN) where applicable) stating when central sewer will become available from Sussex County, the appropriate municipality, or the wastewater utility.

6.5 Existing onsite wastewater treatment and disposal systems which are repaired or replaced and new systems on parcels recorded prior to 30 calendar days after the date of publication of these final Regulations in the Delaware Register of Regulations shall be subject to the setback requirements of these Regulations and the Regulations Governing the Design, Installation and Operation of On-Site Wastewater Treatment and Disposal Systems. However, if it is impossible to comply with such requirements due to lot size limitations, the system shall conform to the maximum extent practicable.

6.6 No new drainfields on parcels recorded 30 calendar days or more after the publication of these final Regulations in the Delaware Register of Regulations may be present within 100 feet landward from State-regulated wetlands, or landward from the mean high water line of all tidal waters, whichever extends farther upland, and landward from the ordinary high water mark of all other primary water features.

6.7 All innovative and alternative onsite wastewater treatment and disposal systems having flows of less than or equal to 2,500 gallons per day must comply with Performance Standard Nitrogen level 3.

7.0 ON-SITE WASTEWATER TREATMENT AND DISPOSAL SYSTEM OPERATION, MAINTENANCE AND INSPECTION PROGRAM

7.1 An operation, maintenance and inspection program for individual onsite wastewater treatment and disposal systems (OWTDS) is hereby established for the Indian River, Indian River Bay, Rehoboth Bay and Little Assawoman Bay watersheds.

7.2 For all properties utilizing an OWTDS that are sold or otherwise transferred to other ownership, the owner or trustee shall have their systems pumped out and inspected prior to the completion of the sale.

7.2.1 For transfers of a new property, the certificate of completion will fulfill the requirements of this section.

7.2.2 If an inspection has occurred within the previous 36 months and the property owner can provide documentation of such pump out and inspection, then such documentation will fulfill the requirements of this section.

7.2.3 If the owner of an individual OWTDS provides proof of a licensed operator or has an annual service contract with a certified service provider then the requirements of this section have been met.

7.3 Pump outs shall be performed by a licensed Class F Liquid Waste Hauler. Inspections shall be performed by a licensed Class H System Inspector.

7.4 Standard inspection forms, developed by the Department, shall be used by the system inspector. The property owner shall provide the system inspector with all available pertinent information. The completed inspection report shall detail the results of the inspection. The system inspector shall provide the Department and the property owner with a written copy of the inspection report.

7.5 The Department will maintain a list of all licensed Class H System Inspectors and certified service providers which will be available for review.

8.0 ON-SITE WASTEWATER TREATMENT AND DISPOSAL SYSTEM PERFORMANCE STANDARDS

8.1 All OWTDSs in the Indian River, Indian River Bay, Rehoboth Bay and Little Assawoman Bay Watersheds are required to reduce their nutrient wastewater loads.

8.2 Requirements for large OWTDSs having flows greater than 20,000 gallons per day (gpd):

8.2.1 All new systems shall meet Performance Standard Nitrogen level 1 (PSN1).

8.2.2 All replacement systems shall meet Performance Standard Nitrogen level 2 (PSN2).

8.2.3 When the operation and maintenance permit expires for an existing system, the Department will require the system to meet Performance Standard Nitrogen level 2 (PSN2). If the Department deems that the OWTDS must be redesigned to meet PSN2, the owner or operator of the system will have up to 60 months from the permit expiration date to bring the OWTDS into compliance with the new standard.

8.2.4 Where the system location is identified as having high potential for phosphorus mobility, new OWTDSs shall meet a Performance Standard Phosphorus level 1 (PSP1).

8.2.5 When the operation and maintenance permit expires for an existing system, and the system location is identified as having high potential for phosphorus mobility, the system must comply with the Performance Standard Phosphorous level 1 (PSP1). If the Department deems that the system must be redesigned to meet PSP1, the owner or operator of the system will have up to 60 months from the permit expiration date to bring the OWTDS into compliance with the new standard.

8.3 Requirements for large OWTDSs having flows greater than 2,500 gpd but less than 20,000 gpd:

8.3.1 All new systems shall meet a Performance Standard Nitrogen level 2 (PSN2).

8.3.2 All replacement systems shall meet a Performance Standard Nitrogen level 3 (PSN3).

8.3.3 When the operation and maintenance permit expires for an existing system, the system must meet a Performance Standard Nitrogen level 3 (PSN3). If the Department deems that the large OWTDS must be redesigned, the owner or operator of the system will have up to 60 months from the permit expiration date to bring the OWTDS into compliance with the new standard.

8.3.4 When the operation and maintenance permit expires for an existing

system and the system location is identified as having high potential for phosphorus mobility, the system must comply with the Performance Standard Phosphorous level 2 (PSP2).

8.4 Requirements for small OWTDSs having flows less than or equal to 2,500 gpd:

8.4.1 All new and replacement systems shall meet a Performance Standard Nitrogen level 3 (PSN3).

8.4.2 Department approval and use of advanced treatment units shall be in accordance with the Regulations Governing the Design, Installation and Operation of On-Site Wastewater Treatment and Disposal Systems and the Innovative and Alternative System Approval Checklist.

8.4.3 All permit applications shall be prepared in accordance with the Regulations Governing the Design, Installation and Operation of On-Site Wastewater Treatment and Disposal Systems and these Regulations.

8.4.4 To provide proper operation and maintenance of the innovative and alternative onsite wastewater treatment and disposal system, the permittee is required to adhere to Department permit conditions. These permit conditions require mandatory operation and maintenance for the life of the system by maintaining a service contract with a certified service provider.

8.4.5 In instances where central sewer will become available within five years, the requirements of Section 8.4 will be waived after the Department receives a letter (with an approved Certificate of Public Convenience and Necessity (CPCN) where applicable) stating when central sewer will become available from Sussex County, the appropriate municipality, or the wastewater utility.

8.5 Large systems will be operated and monitored in accordance with permit conditions, and the following:

8.5.1 Large systems shall be operated by a Department licensed operator. The class level of the operator required and frequencies of inspections will be in accordance with the Regulations for Licensing Operators of Wastewater Facilities.

8.5.2 Large systems shall be sampled as outlined in the permit conditions.

9.0 ENFORCEMENT, CHALLENGES, AND WAIVERS

9.1 Enforcement of these regulations shall be as outlined in Title 7, Chapter 60, Section 6005 of the Delaware Code.

9.2 Technical errors related to primary and/or secondary water feature classifications may be brought to the Department's attention by following the procedures outlined in the guidance document entitled, "Procedures for Challenging the "Map of Water Features to be Buffered in the Inland Bays Watershed." If an on-site evaluation by the Department establishes that a technical error exists in the Map of Water Features to be Buffered in the Inland Bays Watershed that has been adopted by the Department as part of this Regulation, the map containing the error may be corrected by the Department after the Department documents, in writing, the results of the on-site evaluation, and the Department gives the public notice of any proposed correction. For purposes of this subsection, the term "public notice" shall consist of having notice of the proposed correction, the name of the property owner, location of the property in issue and a description of the error, published in a daily newspaper of general circulation throughout the State and a newspaper of general circulation in the county in which the activity is proposed. Such notice shall be published at least 20 days in advance of any correction to a map by the Department. If the Department determines that it has received a meritorious objection to any proposed correction set forth in a public notice, the Department may hold a public hearing if necessary in accordance with the procedures and laws required by the State of Delaware.

9.3 Technical errors related to the location of the tidal wetlands depicted on the map entitled "Areas Requiring Early Implementation of PSN3" may be brought to the Department's attention by following the procedures outlined in Title 7, Chapter 66 of the Delaware Code.

9.4 Waiver requests from the stormwater management requirements of Section 5 shall be determined through the procedures outlined in the Delaware Sediment and Stormwater Regulations.

9.5 Waiver requests for all other sections of these Regulations shall follow these procedures. Upon the applicant's request, the Secretary may grant a waiver from the strict application of this Regulation after an opportunity for formal public notification and review.

9.5.1 Notice shall be provided to the public including all contiguous property owners.

9.5.2 A public hearing will be held if a meritorious request is received within a reasonable time as stated in the advertisement.

9.5.3 A public hearing request shall be deemed meritorious if it exhibits a familiarity with the waiver request and has a reasoned statement of the waiver's probable impact.

9.5.4 No waiver shall be granted unless the said variance meets the following criteria:

9.5.4.1 The action will not result in substantial adverse effect on water quality, in general; and

9.5.4.2 The waiver must minimize the effects to the water quality goals of these Regulations to the greatest extent possible; and

9.5.4.3 A denial of the desired waiver would preclude a reasonable use of the property; and

9.5.4.4 The justification for the waiver is not related to a self-imposed special condition.

9.6 In addition to the waivers available in 9.4, the Secretary may grant hardship waivers from Sections 6.2 and 8.4 of these Regulations as outlined below.

9.6.1 The Secretary may consider the following factors in reviewing an application for a waiver based on hardship:

9.6.1.1 Advanced age or bad health of the applicant; or

9.6.1.2 Need of applicant to care for aged, incapacitated, or disabled relatives; or

9.6.1.3 Lack of funding programs and/or institutional opportunities for low and fixed income applicants.

9.6.2 Hardship waivers granted by the Secretary may contain but are not limited to conditions such as:

9.6.2.1 Permits for the life of the applicant; or

9.6.2.2 Limiting the number of permanent residents using the system; or

9.6.2.3 Use of non-nutrient reducing on-site wastewater treatment and disposal systems for a specified period of time.

9.6.3 Documentation of hardship must be provided before the application is referred to the Secretary for action.

9.6.4 Department personnel shall strive to aid and accommodate the needs of the applicants for waivers due to hardship.

9.7 In the event that more than one waiver from these Regulations is required, the Secretary may coordinate the review of such waivers.

10.0 SEVERABILITY

Should any section, paragraph, or other part of this document be declared invalid for any reason, the remainder shall not be affected.

11.0 OTHER (RESERVED)