

Appoquinimink River Association and Appoquinimink Tributary Action Team's  
Recommended Appoquinimink Pollution Control Strategy  
25 March 2005

Overview

The Delaware Department of Natural Resources and Environmental Control (DNREC) approached the Appoquinimink School District's Science Curriculum Coordinator in order to solicit her assistance in forming and facilitating a Tributary Action Team (Team) for the Appoquinimink watershed. This Team was tasked with recommending a Pollution Control Strategy (PCS) to DNREC for meeting the nutrient and dissolved oxygen Total Maximum Daily Loads (TMDLs) established by EPA in January 1998 (for the tidal portion) and to meet the future TMDLs (for the tributaries). In December 2003, another TMDL was established by EPA that included the entire watershed and required a more stringent reduction in nutrient loads. With the creation of the nonprofit organization the Appoquinimink River Association in April 2004 by members of the Team, they too became involved with creating additional recommendations to help strengthen the Pollution Control Strategy. This document includes the Team and Association's recommendations for that strategy.

This PCS recommends actions which will work towards achieving a 60% reduction in nonpoint source nutrient loadings to the River and its tributaries. It is based upon the guiding principles that were gleaned from a June 2001 public forum as well as meetings of the Association's Pollution Control Strategy Subcommittee in 2004 and 2005. The PCS is divided into four major issues: development, wastewater, residential behaviors, and agriculture.

The following guiding principles were discussed and agreed upon during the June 2001 public forum. These principles served to guide the writing of the actions within the Pollution Control Strategy.

GUIDING PRINCIPLES

- Concurrence of all applicable laws, regulations and ordinances are needed to achieve the TMDL.
- Regulation must be fair and reasonable; rules must apply to everyone equally.
- Watershed residents need to be informed as to the problems and solutions of water quality. (education)
- Participation by residents will be necessary in order to achieve the required nutrient reductions.
- We need to use a combination of policy and management tools in the PCS.
- There needs to be a mechanism in place that measures progress towards achieving water quality goals and communicates it to the public at regular intervals.

## POLLUTION CONTROL STRATEGY

The following are the actions that we recommend be taken in order to achieve the TMDL for the Appoquinimink River. This Pollution Control Strategy (PCS) addresses issues related to the various types of land use within our watershed—development, wastewater, residential behavior and agriculture. The PCS will impact all levels of government—State, County, and Municipalities. The recommendations tackle planning issues, design and implementation of best management practices as well as corrective measures that can be taken in order to reduce nutrient loading to the River and its tributaries. These issues are listed in alphabetical order and do not reflect priorities.

### Agriculture

- In order to further the TMDL goals for the Appoquinimink watershed, the State should encourage participation by anyone that will be covered by the Nutrient Management Act to implement a Nutrient Management Plan prior to mandatory compliance. The State should continue to responsibly fund nutrient management planning and implementation.
- The County and State should coordinate their efforts to preserve farmland in the Appoquinimink watershed. These lands provide water quality and quantity benefits when farmed responsibly. If the County decides to move forward without the State, this program should be a priority.
- The Team supports a recognition program for farmers in the Appoquinimink watershed who do the most to protect water quality.

### Development

The State should promulgate minimum standards for nutrient reduction as they relate to development. The County and municipalities must enact ordinances that will at least achieve those standards within one year of the promulgation of the PCS.

### *Conservation design*

- Given that the County is working with State agencies to better implement conservation design principles, the Team encourages these governmental bodies to define the concept of “conservation design” and to enact codes and regulations that allow for and promote “conservation design” principles with the goal of reducing nutrient loads.
  - Conservation design principles include practices that reduce surface water runoff of nutrients, such as promoting: infiltration, narrower roads and sidewalks, swales and grassed waterways, water use conservation, recycling, natural resource protection, open space preservation, and park creation, among other practices. Lot size and density considerations should also be included in conservation design plans.
  - The Team also asks that governments include citizen input by having the Team represented during their discussions.
- Municipalities shall have similar ordinances that meet or exceed the watershed protective properties of those ordinances passed by the County.

- These governments shall coordinate efforts to provide an on-going education and outreach program for communities in order to help maintain the elements of their community design.

#### *Stormwater*

- Local governments (municipalities and the County) will establish, or increase capacity of, a community stormwater runoff education and maintenance program for the watershed. This program will provide resources to educate homeowner maintenance organizations (HMOs) and other groups maintaining stormwater structures and design on their proper maintenance. Inspections shall be carried out as required. While this is a local government function, DNREC shall provide guidelines, technical standards and assistance.
- Within 6 months from the promulgation of the PCS, DNREC shall convene a group composed of Municipal, County and State government, and community representatives who shall establish a stormwater retrofit process for the Appoquinimink watershed.
  - This program will use monitoring data (DNREC) to prioritize areas where current stormwater treatment does not optimally remove nutrients and bacteria associated with those nutrient loads.
  - A schedule shall be developed for the retrofitting of these stormwater structures based on the priority ranking.
  - Funding for these retrofits shall come from multiple sources.
- All permanent sediment and stormwater management plans shall be designed and implemented to include design criteria that will reduce nutrient loading by the percentage required to meet TMDL required nutrient load reductions of ground and surface waters to the maximum extent practicable.
  - The percent reductions shall be based on a comparison between the post-developed condition with and without stormwater quality management best management practices.
- Encourage the creation of a stormwater utility pilot project in the Appoquinimink Watershed.
- Where feasible, encourage County and municipal governments and agencies to fast-track innovative stormwater management techniques and designs for implementation where appropriate.

#### *Impervious cover limits*

- The State should promulgate a watershed-wide limit for impervious coverage with consideration for site-specific mitigation.
- The Appoquinimink Tributary Action Team recommends that the State adopt regulations for the Appoquinimink watershed restricting development in Water Resource Protection Areas at least as strict as those in the New Castle County Unified Development Code

(UDC). These limits should include an impervious coverage limit of 20% in all Water Resource Protection Areas, limiting building to 50% of the site.

- The State, Municipalities, and the County shall decrease the maximum permitted percentage of impervious cover in areas where soil type, ground water recharge, and other factors dictate that pervious areas are needed to prevent nutrient over enrichment of nearby surface waters. DNREC will determine those factors.
- Suggestions and incentives for use of alternative pervious materials and strategies (to take the place of traditional impervious ones) for sidewalks, parking lots and roadways will also be provided to developers by all governmental entities. Once the parcel reaches 12% impervious coverage, these entities will require the use of these alternative pervious materials and strategies.

#### *Open Space*

- All open space land uses shall be designed and managed for water quality protection, including reduced nutrient loading. Reforestation, meadow development, wetlands construction, etc., shall be encouraged through increased outreach efforts by the appropriate jurisdictions and the Appoquinimink watershed coordinator (see below).
- Early implementation of the Nutrient Management Act for turf management over 10 acres shall be encouraged.
- The State, County and local governments should develop guidelines to maintain community open space.
- Programs such as the NRCS cost-share efforts and other incentive efforts should be better publicized to residents and maintenance corporations in order to support enhancement of the open spaces they manage.

#### *Land Disturbing Activities*

- With non-agricultural land disturbing activities in excess of 5,000 square feet, a nutrient budget must be produced.
  - This budget, based on the best available data, shall illustrate the current nutrient loading of that area to ground and surface water and the proposed nutrient loading from the new use. The nutrient budget must illustrate that the future land use will reduce nutrient loading by the percentage required to meet TMDL nutrient load reductions for the waterbody in which watershed the particular location exists. DNREC and its delegated agencies shall not issue any water quality related permit for an area unless a submitted and approved nutrient budget shows that the area will achieve the TMDL nutrient load reductions once the construction or changes are complete.

#### Residential Behavior

- Establish guidelines that promote good lawn and yard stewardship through best management practices, including organic methods of care, for better nutrient management

and water quality. These guidelines should be disseminated throughout the watershed by DNREC and the Department of Agriculture. Brochures could be placed in stores that sell yard materials, restaurants, and in other public places and passed out at community events.

- The State should work with the University of Delaware Soils Lab to revise the soil test result sheets that go to homeowners in order to make them more understandable and easily implemented by the lay public. The State should also work with the Cooperative Extension Service to assist in disseminating soil test kits.
- The State and local governments should develop appropriate code changes and distribute guidelines for alternative lot landscaping that will reduce surface water runoff, etc. Information should be given to homeowners at the time of settlement.
- Explore the possibility of providing nutrient management education and training for those who sell fertilizers in retail outlets. The State should require that a stick-on label be placed on all bags of fertilizers sold in the watershed. The label should contain a warning in large letters that the overuse or improper use of fertilizers and pesticides harms our ground and surface waters. The label should be printed in English and Spanish. The label should state that fertilizer should not be applied when rain is expected and it should supply reasoning to support warning.
- All environmental information should be supplied periodically on the scrolling band under the picture on the Weather Channel. DNREC should find the money to pay for this if cable providers will not do it as a public service.

### Wastewater

#### *Inspection/replacement*

- The County and State should initiate as required by the UDC a septic system compliance program, which unifies both State permit requirements and UDC inspection provisions. This action would lead to the replacement and/or the repair of failing systems within the watershed.
- The State shall use this watershed as the area for a pilot program for septic system inspection in New Castle County. Under the pilot program, the county's tax bill mailing could be used to inform the owner of a septic system that their system needs to be inspected and that a certificate of inspection must be submitted when tax bill is paid.
- Seepage pits, cesspools and permanent holding tanks should be prohibited within the watershed.

- Convert as many lots as feasible (of less than 2 acres each) currently on septic to sewer connection in an equitable manner whereby those systems of high priority and feasibility (where there is already infrastructure in place) are converted first.
  - The State and DNREC should provide cost share and grant monies to these homeowners to help offset costs.

### *Compliance*

- Legislation should be passed that will authorize the DNREC to license septic system inspectors, an action that will support the compliance program.
- The legislature should amend real estate law to require, at the time of sale, certification that the septic system is properly functioning or that the system has been inspected under the compliance program within six months of the pending sale and a three-year written system history of maintenance. An education brochure on proper maintenance should also be provided at the time of sale.
- The State and County should work together to develop and disseminate homeowner education materials. The materials should inform septic system owners about maintaining their septic systems, based on the system type that they use (cesspools, holding tanks, septic tank, sewer), such that nutrient loading from the system is minimized. The materials should emphasize the benefits to the homeowner and the watershed of maintaining their septic systems.
- All new and replacement subdivisions, as defined by Delaware Code, in areas outside a legally established county sewer district shall be equipped with either individual onsite systems that meet TMDL required nutrient load reductions or best available technology nutrient load reductions OR a community system that utilizes technologies which meet TMDL required nutrient load reductions or best available technology nutrient load reductions.

### *Alternative Systems*

- The Team also encourages the scientific monitoring of standard and alternative septic systems to determine whether alternative systems further reduce nutrient discharge.
- Whereas septic systems contribute nutrients to the watershed, the Team recommends the use of wastewater treatment systems that reduce nutrients. These systems should use the most effective technology to reduce nutrient loading. Large community systems are preferred to individual septic systems.

### Future Needs

- There is a need for education on BMPs and an aggressive marketing program that promotes and helps fund them in the Appoquinimink watershed. The Team believes that an Appoquinimink watershed coordinator and BMP advocate should be hired to assist efforts in reducing nutrients using funds from various sources.

- We encourage both the County and State to re-establish a groundwater-monitoring program for southern New Castle County to ensure the quality of our drinking and surface water.
- The Team recognizes the potential value of forming a citizen's organization for the benefit of the Appoquinimink watershed.