

TO: PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
FROM: LANCASTER COUNTY CLEAN WATER CONSORTIUM- *CHESAPEAKE BAY INITIATIVE*
RE: COMMENTS ON PA DEP WATERSHED IMPLEMENTATION PLAN

The Lancaster County Clean Water Consortium (“LCCWC”) believes that the Pennsylvania Watershed Implementation Plan could be significantly strengthened by emphasizing solution-oriented approaches to the underlying TMDL causes.

The LCCWC offers the following specific examples to strengthen DEP’s Watershed Implementation Plan. The first example is a solution-oriented MS4’s example of a watershed overlay, holistic MS4 approach and could serve as the pilot project to demonstrate its TMDL pollutant reduction results.

The Lancaster County Clean Water Consortium proposes to facilitate county-wide compliance with new federal regulations for water quality in the Chesapeake Bay by establishing a resource organization known as the Lancaster County Clean Water Consortium. The Consortium, organized in 2010, will serve Lancaster stakeholders by proactively initiating compliance with stringent pollution reduction standards proposed in the Pennsylvania Chesapeake Watershed Implementation Plan. The goal of the Consortium is to enable the cooperative implementation of water quality and quantity projects between federal, state, and local governments, watershed associations, watershed residents, and community stakeholders.

To encourage the utilization of the most cost-effective proven and/or emerging technologies, the Consortium is in the process of securing funds to obtain technical assistance in 2011 to:

- Develop a coordinated, watershed overlay Municipal Separate Storm Sewer System (MS4) which will support the Model Stormwater Ordinance under development by the Lancaster County Planning Commission and design a pilot stream bank restoration project that will take into consideration the impact of point-source outfalls and surrounding land uses;
- Provide detailed cost estimates to assist in the evaluation, the selection, and the funding of a variety of agricultural best management practices and nutrient reduction techniques.

In subsequent years, the Consortium will use this information to guide the selection of Lancaster County priority implementation projects to effectively achieve watershed & county goals; identify appropriate state and federal funding sources for implementing projects; leverage local dollars from municipalities, businesses and foundations; and submit applications to finance implementation projects with watershed- wide impact on nutrient and sediment loads.

Solutions: Projects and People

Lancaster County has been identified as one of the top three contributors of agricultural pollutants in the Chesapeake Bay. While early introduction of agricultural best management practices have accomplished some reductions in nitrogen, phosphorous and sediment loads, much remains to be done.

The success of the Lancaster County’s approach will depend on the ability to implement the commitments and achieve the required nutrient and sediment reductions described in the Commonwealth’s Watershed Implementation Plan (WIP). If the goals of the state WIP are not achievable, the repercussions of USEPA consequences will affect all source sectors in the county (and state), especially within the agricultural sector. Lancaster County consists of a unique farming community that includes a preponderance of small farms beleaguered by marginal operating economics. A successful program must be carefully crafted to encourage participation without undue economic hardship, and must also address how to involve the large numbers of independent farms in order to

provide the information, leadership, education, and training necessary for successfully implementing nutrient load-reducing practices. There are also unique considerations that apply to plain-sect farmers; some programs may have varying rates of success within the distinct local communities that dominate each of the county's watershed basins. The Chesapeake Bay Program, through data collection and modeling, has generated a considerable amount of information related to efficiencies and costs of implementing agricultural management practices, but Pennsylvania is a state where one-size does *not* fit all. The far-reaching implications of the WIP necessitate a close examination of the agricultural strategies that are best for Pennsylvania and Lancaster County. This makes "the Development of a Tool to Estimate the Costs to Meet the Nutrient and Sediment Reduction Goals" critical for the state and the county to preserve the county's water quality goals. In other words, identifying and implementing the programs and practices that give the best nutrient and sediment reduction for the dollars spent is essential for success.

In anticipation of more stringent EPA regulations, Lancaster County must proactively evaluate the best combination of agricultural management practices, storm water management systems, point source, and legacy sediment stream restoration projects to maximize the TDML reductions in a cost effective manner. With the information gathered in the three programs proposed for funding year 2011, the Consortium will be able to help municipalities, landowners, and watershed groups prioritize their implementation projects and help them secure funds. This model of jurisdiction (County) wide cost evaluation and coordinate stormwater protocols Consortium model is replicable in any County and the base costs for project implementation will be of use in other parts of the Chesapeake Bay Watershed and Pennsylvania for many years.

The Foundation plans to support the ongoing operations of the Consortium through:

- Annual financial contributions from 5 classes of members:
 - Municipalities & Authorities;
 - Non-profits (*e.g.* Lancaster Farmland Trust, Watershed Alliances, Trout Unlimited Chapters);
 - Agriculture (landowners and charitable contributions from agri-business);
 - Business (local corporations & developers);
 - Individuals that share a commitment to environmental stewardship and clean water initiatives.
- Administration fees from planning grants and project implementation grants.
- Sponsorship from individuals and firms.
- Contributions from developers and landowners to offset MS4 or water quality impacts.

Solutions: Funding

Nutrient and sediment reduction in the Chesapeake Bay is a priority for DEP funding. This proposal will result in the information necessary to meet Lancaster County's assigned goals as well as for all other impacted counties within the Commonwealth. The relative costs of agricultural nutrient control practices and the programs that will be needed to implement them need to be better understood in order to set priorities for efficient allocation of public funding and promote overall pollution reduction cost-effectiveness. On one hand, it is important that investigations into the identification of "preferred programs and practices" involve an independent assessment of the programs and practices tentatively identified in the Commonwealth's draft WIP. It is also important to take a fresh look into new, emerging, and innovative ideas drawn from a broad knowledge base comprising the latest findings of academic

experts, governmental agencies, farmers, and practitioners engaged in the research, management, and operations of the state and County farming community. Again, this makes funding of the “Methods and Costs to Reduce Loads”, “Identification of Technology and Innovative BMPs”, and “Recommendations for Preferred Agricultural Programs” critical needs for immediate funding. Work on these projects will supply necessary information to make cost-effective decisions about designing and funding preferred programs that will provide the leadership necessary to achieve required water quality goals.

In addition to meeting the financial priorities of the Commonwealth and DEP, this proposal could save hundreds of thousands of dollars of public and private funds by eliminating the need for redundant studies, project plans and cost estimates. Lancaster County’s progress toward reaching TMDLs for nutrient and sediment reduction will be enhanced through the coordinated efforts of the Consortium. By combining plans and strategies on a watershed basis, the Consortium will maximize every dollar spent on water quality projects. The limited grant preparation and administration capacity of County stakeholders will be supplemented by the Consortium staff and the deliverables will streamline and enhance quality proposals that are more likely able to secure coordinated multi-source funding. Our efforts will supplement the activities of the Lancaster County Conservation District and the Lancaster County Planning Commission by focusing on the Chesapeake Bay Nutrient Reduction programs, projects and milestone reporting.

The implementation of coordinated watershed restoration strategies and innovative demonstration projects will provide Lancaster County's urban, suburban and rural communities with a better quality of life as nutrient and sediment loadings are reduced in the county's rivers and streams via non-point municipal and agricultural run-off as well as sewage treatment plants and other point sources. The countywide WIPs will also demonstrate where and how the county can absorb more population growth while still keeping county waters clean for drinking, fishing and swimming.

The success of the Lancaster County’s approach will depend on the ability to implement the commitments and achieve the required nutrient and sediment reductions described in the Commonwealth’s Watershed Implementation Plan (WIP). If the goals of the state WIP are not achievable, the repercussions of USEPA consequences will affect all source sectors in the county (and state), especially within the agricultural sector. Lancaster County consists of a unique farming community that includes a preponderance of small farms beleaguered by marginal operating economics. A successful program must be carefully crafted to encourage participation without undue economic hardship, and must also address how to involve the large numbers of independent farms in order to provide the information, leadership, education, and training necessary for successfully implementing nutrient load-reducing practices. There are also unique considerations that apply to plain-sect farmers; some programs may have varying rates of success within the distinct local communities that dominate each of the county’s watershed basins. The Chesapeake Bay Program, through data collection and modeling, has generated a considerable amount of information related to efficiencies and costs of implementing agricultural management practices, but Pennsylvania is a state where one-size does *not* fit all. The far-reaching implications of the WIP necessitate a close examination of the agricultural strategies that are best for Pennsylvania and Lancaster County. This makes funding for “the Development of a Tool to Estimate the Costs to Meet the Nutrient and Sediment Reduction Goals” critical for the state and the county to preserve the county’s water quality goals. In other words, identifying and implementing the programs and practices that give us the best nutrient and sediment reduction for the dollars spent is essential for success.

I. MS4 Watershed Overlay Permit

Scope of Work To provide assurance that across Lancaster County, the most cost-effective and environmentally sound implementation projects are undertaken, the Consortium would like to complete a pilot project analysis to integrate :

- MS4s
- BMP Installation
- Point Source discharges
- Legacy sediment - nutrient and stormwater credits

Coordinated MS4 Protocol and Little Chiques Creek Pilot Project Analysis - Develop a watershed or county-wide coordinated protocol with specific tools to assist Lancaster County municipalities in meeting MS4 requirements. This will include a template for addressing applicable TMDLs in addition to the six Minimum Control Measures (MCMs) required as part of PAG-13. Also included will be an evaluation of alternatives that may exceed the MCM requirements but would require individual permit approval. Alternative measures may be more cost effective with greater water quality benefits. Some of these alternative measures may involve regional coordination and multi-municipal efforts.

Approximately 40 miles of stream segments of Little Chiques will be analyzed including Main Stem, Brubaker and Back Run. Seven (7) representative reaches would be selected to obtain field data such as geo probes, nutrient analysis, storm water management – storage volume. One (1) location would include data intensive for credit trading purpose for nutrients and stormwater. The Mount Joy Borough and Mount Joy Borough Authority are committed to repairing the stream banks along the Little Chiques Creek in the borough park. An unusual aspect of this proposed project area is that part of the stormwater flows impacting the stream come from an industrial park in the Donegal Region Urban Growth Area. This development has a master-planned, integrated storm water system that serves over 400 acres of businesses that provide more than 3,000 jobs.

- **Objective:** Develop stormwater permit protocols that are consistent with a new model Stormwater Ordinance developed by the Lancaster County Planning Commission.
- **Objective:** Provide spatial and depth data. Useful for assessments in effort to reduce field work. Data can be used in rough estimate calculations for items 1-3 above.
- **Objective:** Establish riparian buffers and restore disturbed areas along the Susquehanna river, Conestoga River, and smaller waterways.
- **Objective:** Provide guidance to municipalities and watershed groups to support the requirement for comprehensive watershed analysis on all watershed areas prior to funding request for streambank projects.

1. **Deliverable** – MS4 watershed overlay compliance protocol for Lancaster County Municipalities

AG-13 Compliance - Multi-Municipal agreements to cooperatively meet MCM responsibilities more efficiently

- Public Outreach and Education
- Public Involvement
- Illicit Discharge Detection and Elimination
- Construction Site Runoff
- Post Construction Stormwater Management
- Pollution Prevention/ Good Housekeeping

Strategies to implement existing and develop new Watershed Implementation Plans (WIPs) to meet TMDL requirements

Individual Permit Alternatives

Develop watershed- based stormwater management/ water quality strategies

- Incorporate Act 167 plans, WIPs
- Multi-municipal coordination

Plan and implement Regional Stormwater Management/ Water Quality Facilities

Develop framework for applying stormwater offsets to new development sites

Develop incentives for participation in regional efforts

Identify long-term maintenance needs and responsibilities (including inspections)

Negotiation with DEP/ EPA regarding application of alternative strategies

Establish reliable protocol so that municipalities can be confident of compliance through alternative measures

2. **Deliverable:** Comprehensive Report with Data for Pilot Project Report including:

- Mapping - LIDAR photography & Video – aerial logging photography
- Field Assessment: Ground Truthing, Photo documentation
- Data collection (nitrogen, phosphorus, sediment)
- Determine locations of point source discharges
- Identify Restoration opportunities – Regional SWM, Wetlands, buffers, etc
- Integration of the two other studies – Resolution 215 (Program I) and the MS4 Protocols (Program III)

Summary –

The landowner and municipalities of Lancaster County will make better progress toward reaching TMDL for nutrient and sediment reduction through the coordinated efforts of the Consortium. By combining plans and strategies on a watershed basis, the Consortium will maximize every dollar spent on water quality projects. Resources will be concentrated to better deliver quality proposals and secure coordinated funding. Our efforts will build on the prior activities of the Lancaster County Conservation District and the Lancaster County Planning Commission by focusing on the Chesapeake Bay Nutrient Reduction programs and implementation projects.

The members of the Consortium recognize that stormwater runoff is best considered a valuable and reusable resource; not a waste that must be quickly moved away.

Stormwater can be effectively managed through properly constructed and maintained best management practices (BMPs) which remove pollutants, facilitate ground water recharge,

provide base flow for surface waters, and protect and maintain the stability and environmental integrity of our ground and surface water resources. Managing increases of stormwater runoff to minimize pollutant loading includes reducing or avoiding the generation of new or increased sources of these pollutants as well as restoring and protecting the natural systems that are able to remove pollutants. These objectives can be accomplished through various BMPs such as stream buffers, vegetated systems, infiltration, and the reuse, recycle or collection of stormwater. Although stormwater runoff cannot be eliminated, the effects of excess stormwater on our citizens and land and water resources are minimized through better management and treatment.

Source: Growing Together, LIMC Comprehensive Plan

The Consortium is dedicated to utilizing the best, affordable technologies in a holistic Chesapeake Bay watershed approach. We wish to use existing plans but seek to streamline the permitting process for municipalities, farmers, and developers. Our focus will be to provide guidance and an awareness of the opportunities, not to obstruct the EPA process. Our intended service to our constituents is to clearly deliver what are the best and most cost-effective methods for accomplishing compliance with the forthcoming TMDL regulations.

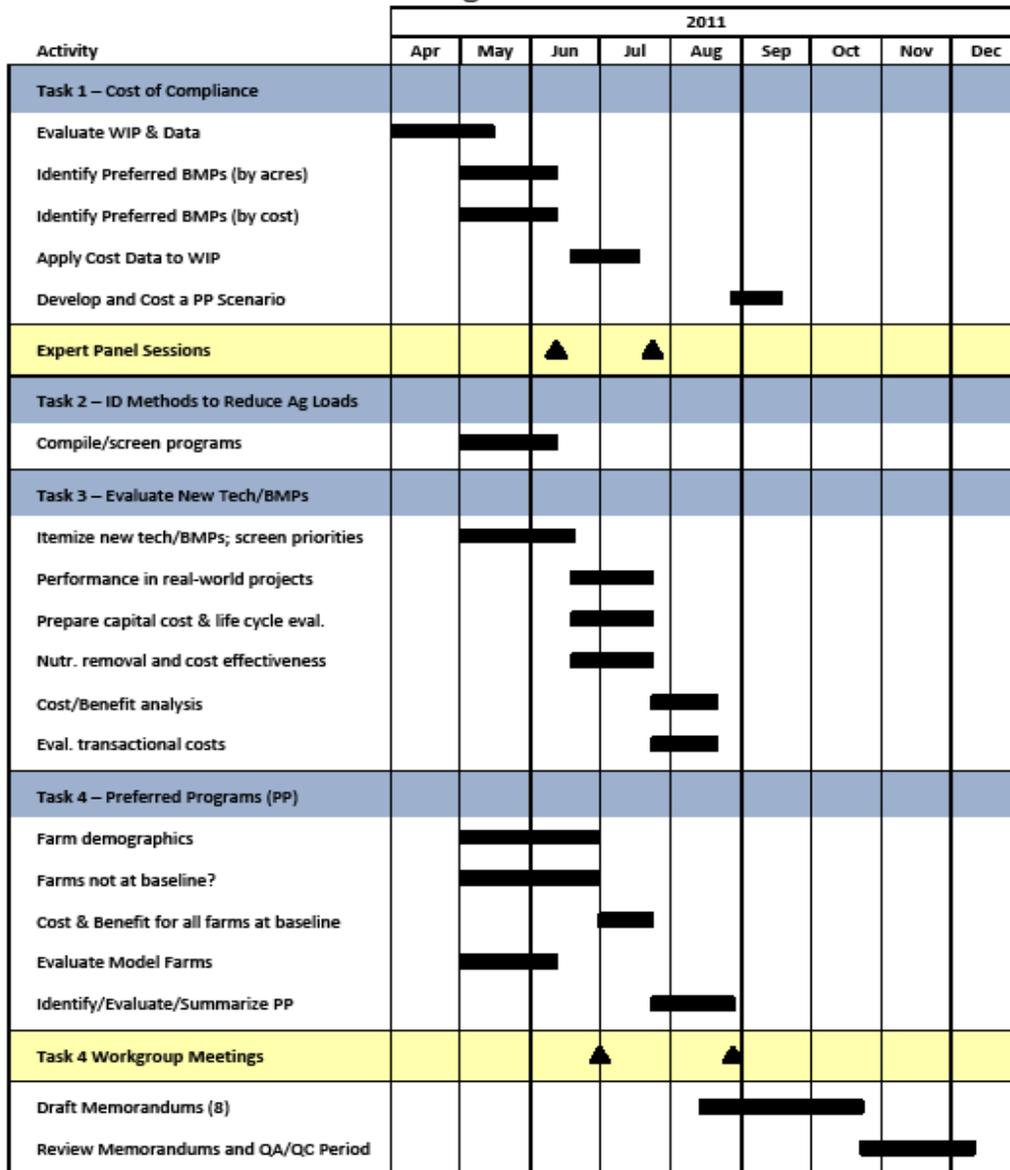
II. TMDL Efficiency Tool

Scope of Work - The mission of the Consortium is to undertake a variety of efforts to develop a proactive, cohesive countywide strategy to restore the County's waterways and facilitate compliance with looming federal and state regulations intended to clean up the Chesapeake Bay.

- A. Objective/Work Element** - Estimate the cost to meet the agricultural source nutrient reduction goals of the Chesapeake Bay Program and agricultural allocations as defined in the State WIP, including but not limited to determining a cost per unit removed (nitrogen, phosphorus, or sediment) for best management practices that are considered or recommended. A panel of Academic Experts and consultants (experienced in development of the Chesapeake Bay model), will participate to obtain and confirm input data for the development of an assessment tool. Cost data, nutrient removal efficiencies, and implementation aspects will be checked or areas of concern identified. These data will be used to build a "reference" cost analysis, then will be refined based on the Pennsylvania-specific information our team will gather as we execute work elements B, C, and D.
1. **Deliverable** – Data management tool for composite scenario costing of the agricultural non-point-source portions for on-site pollution-reduction practices. This tool will utilize data collected and evaluated in elements B and C. In turn, the tool is in part utilized in the identification and evaluation of priority practices in element D.
 2. **Deliverable** – Technical Memorandum outlining the following - baseline cost of compliance for the agricultural sector, evaluation of BMP cost and effectiveness ranges, and cost of WIP compliance for the Commonwealth's agricultural sector.
- B. Objective/Work Element** - Identify methods (including their costs) employed in other states to reduce loads from agricultural sources and make findings as to their applicability and impact to the agricultural community of this Commonwealth, particularly Lancaster County.

1. **Deliverable** – Conduct surveys and prepare technical report on other state WIP programs that will draw on; readily available Chesapeake Bay Program and state-prepared documents, 2010 Draft WIP and 2010-2011 milestones, new technologies being demonstrated in other states (from Work Element C), and nutrient trading programs in other states; relative to the potential impact on future Lancaster County watershed allocations. A Technical Memorandum will be prepared to describe effective agricultural management practices employed outside the state.
- C. Objective/Work Element** - Evaluate the potential of new technology and innovative best management practices generally to address nutrient loads from agricultural sources. As part of the evaluation, the relative cost compared with established technologies, practices and pro-grams will be developed. A panel of Academic Experts and an Agricultural Work Group will be used to identify and list technologies and innovative BMPs, including those established and those not widely established in the Commonwealth. The short listing process will consider any programs not otherwise selected, but currently being emphasized as part of the Chesapeake Bay Program or the Draft WIP as key initiatives for achieving the Commonwealth’s nutrient reduction goals. The “short list” of promising and key initiative options will then be subjected to a planning-level evaluation based on demonstration site visits, data from manufacturers, published literature, or previous studies to the extent achievable within the timeframe of this study. Results will be summarized, with a focus on highlighting technologies or innovative BMPs with the potential to become a more significant component of the Lancaster County’s watershed nutrient reduction strategy.
1. **Deliverable** - A weighted set of screening criteria; planning-level budgetary capital cost estimates; 20-year life cycle cost estimates, cost effectiveness ratios (cost per pound of nutrient removed), “transactional” cost estimates (the cost of education, outreach and technical support to promote the technology or practice) and potential impact of the technology or practice on meeting overall nutrient removal goals. A Technical Memorandum will be prepared to summarize new technologies or innovative BMPs with potential to become a more significant component of the state’s and county’s nutrient reduction strategy.
- D. Objective:** Make recommendations for preferred programs for the agricultural community that overcome structural obstacles, encourage participation, accelerate bringing agricultural lands to baseline, facilitate the application of cost-effective technology and innovative best management practices and stimulate the generation of nutrient credits that are valued by point sources.
1. **Deliverable:** Recommendations that set criteria for and identify preferred programs based on the costs and benefits, training and technical support requirements, regulatory and other obstacles, and relative incentives. A Technical Memorandum will be prepared to summarize: existing and innovative programs that are effective and are relevant to PA farm baseline requirements and information gathered, potential load reductions from meeting baseline compared to reductions needed to meet WIP requirements, and impact on availability for nutrient trading and will provide a list of preferred programs and basis for the list.

Cost Assessment of Agricultural - NPS Reductions



V 2010/09/14