

Walnut Creek Watershed Protection and Restoration Plan

November 2008



Pennsylvania Department of Environmental Protection

**Walnut Creek Watershed
Protection and Restoration Plan**

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Introduction

In 2006, the Pennsylvania Department of Environmental Protection (DEP) identified Walnut Creek, tributary to Lake Erie, as a priority watershed within the twelve county Northwest Region based upon criteria that included the environmental, recreational, and economic benefits that the watershed provides to the surrounding communities. As a priority watershed, Walnut Creek is the subject of a pilot program that employs a comprehensive assessment of environmental quality, then DEP facilitation of activities that support the protection and restoration of the beneficial uses of the watershed.

Walnut Creek is a valuable watershed that provides significant recreational opportunities and commerce to the greater Erie area and Northwestern Pennsylvania. It is well known in the region, and throughout many areas of the country, as a challenging and exciting fishery providing local residents and visitors alike with quality angling experiences. In addition, Walnut Creek affects the local lake water quality and may impact the beaches of Pennsylvania's most visited state park, Presque Isle. Therefore, Walnut Creek is considered as one of Pennsylvania's most important tributaries to Lake Erie, also a local treasure and one of the nation's largest freshwater resources. Unfortunately, despite its value to the community and region, the Walnut Creek Watershed is experiencing significant commercial and residential development pressures and increased agricultural activity which are resulting in high volumes of polluted stormwater runoff affecting water quality.

DEP's Watershed Management Program conducted a comprehensive assessment to determine if the environmental conditions within this priority watershed support public health and safety, economic stability, and quality of life for Erie County residents. The assessment involved a detailed examination of: watershed features and characteristics; conditions affecting public health and safety; habitat and biological diversity; water use and sustainability; and community efforts to control pollution and conserve resources. The results of the assessment identified activities occurring within the watershed that both encourage support of, and conflict with, resource protection.

DEP's assessment culminated in the [Walnut Creek Watershed Environmental Quality Assessment Report](#) (Assessment Report) released in 2007. The findings of the Assessment Report identified a host of issues that are threatening the water quality and health of the watershed. These issues included: *E.coli* bacteria at elevated levels in Walnut Creek and its tributaries; limited groundwater resources used for drinking water that generally are not protected by source water protection programs; and an overall loss of wetlands reducing the benefits of those systems for wildlife habitat, flood control and natural water quality filtration. In addition, stream channel modification and increased stormwater runoff are of particular concern in that they cause accelerated erosion, stream scour and increased pollutant loading. Combined, these factors are negatively affecting water quality, depressing aquatic insect communities, and influencing the fish populations that depend on aquatic insects for sustenance.

The cumulative effect of stormwater runoff, specifically sedimentation and significant alteration of flow regime, is causing water quality impairment to most of the main stem of Walnut Creek and many of its tributaries. In 2004, the DEP, pursuant to [Section 303\(d\) of the Clean Water Act](#), listed three tributaries to Walnut Creek as impaired on the *Integrated Water Quality Monitoring and Assessment Report*¹. The 2008 report will also show much of the main stem and other tributaries as impaired. For streams that are impaired, the DEP typically develops a [Total Maximum Daily Load \(TMDL\)](#) that defines the maximum pollutant loads that the waterway can accept without experiencing an exceedance of water quality standards². A TMDL contains the total allowable pollutant loads that can be discharged by both point and non-point sources to an impaired water, and DEP must incorporate these loads into any permit decision it makes. When properly implemented, these pollutant loads can improve water quality and restore the waterway to its former status as attaining its designated uses. However, since Walnut Creek provides significant recreational and economic resources to the residents of Erie County and Northwest Pennsylvania, DEP is proactively addressing the impairment of Walnut Creek through the implementation of this protection and restoration plan long before any TMDL is developed for the watershed.

The Assessment Report recommends implementation of a comprehensive, community-based restoration plan for the Walnut Creek Watershed where partners take individual responsibility for working towards overall improvement. The Assessment Report makes numerous recommendations for actions that would improve the environmental quality of the watershed. In keeping with those recommendations, DEP has developed this Protection and Restoration Plan document to guide protection and restoration activities, and present the agency's goals for the Walnut Creek Watershed. These goals include:

1. Reduce *E. coli* bacteria levels from those measured during Creek Sweep³ and conduct subsequent follow-up monitoring;
2. By 2012, 85% of Community Water Supplies within the watershed will have adopted or be substantially implementing source water protection programs;
3. By 2019, attain all designated stream uses as defined in [Pa Code Chapter 93](#), including: Cold Water Fishes and Migratory Fishes for Walnut Creek, the Bear Run tributary, and Unnamed Tributaries to Walnut Creek; and High Quality-Cold Water Fishes and Migratory Fishes for the Thomas Run tributary;
4. To the maximum extent practicable, restore wetlands and stream riparian areas to predevelopment conditions, and;
5. Reduce the overall rate, volume and pollutant loading of urban stormwater runoff to a level where designated stream uses can be continually sustained.

¹ Formerly referred to as the 305b report and 303d list

² 25 Pa Code Chapter 93 water Quality Standards

³ [Surface Water E. coli Assessment of Tributaries to the Western Lake Erie Watershed](#) – December 2007 Report by DEP

Walnut Creek Protection and Restoration Activities

DEP participates in many activities that can aid in the protection and restoration of a watershed. The following sections identify specific activities that DEP will facilitate during protection and restoration efforts on Walnut Creek. This comprehensive approach addresses the major areas where progress can be made with regard to local community awareness, focusing Commonwealth funding opportunities, DEP permitting and planning of activities that impact the environment, continued environmental monitoring, and compliance and enforcement of laws and regulations.

I.) Watershed-Based Education and Outreach

Education and outreach programs allow individuals, government, business, community, and educational groups to receive information about watershed issues. This raises awareness, promotes positive behaviors, and engages the population which in turn promotes lasting effects within the community resulting in improved quality of life.

Education

DEP will continue to engage the community in numerous education-based activities including:

- Providing assistance and partnering opportunities to school districts and environmental educators on watershed education programs that increase public knowledge of the functions and values of wetlands, riparian stream buffers and forested stream corridors, and how individuals and landowners can protect these resources;
- Encouraging media-sponsored watershed education television programs and newspaper articles that increase public knowledge of water quality and environmental issues;
- Disseminating information to those working and operating in the field of stormwater management by participating in meetings, conferences, and other forums;
- Assisting the Erie County Conservation District and the Pennsylvania Farm Bureau in communicating proper agricultural best management practices to agricultural producers and operators;
- Providing regular updates to stakeholders and the public on the progress of restoration activities within the Walnut Creek Watershed;
- Supporting the development of a watershed informational kiosk at the Pennsylvania Fish & Boat Commission's Walnut Creek Access Area;
- Providing opportunities for municipalities and other local agencies to learn about effective management of stormwater flow, volume and quality, and extend municipal educational services to residents and developers on proper stormwater management techniques;
- Educating residential on-lot sewage treatment system owners about proper operation and maintenance practice; and.

- Participating in school-based environmental education opportunities, such as County Envirothon activities, that foster an advanced student understanding of watershed and environmental issues.

Outreach

The Department currently provides outreach and support to the county, municipalities, and community groups in the Lake Erie/Walnut Creek area. DEP will continue to conduct outreach activities through the following activities:

1. Providing training for municipal officials and environmental consultants on Erosion and Sediment Control, Waterway Management, Floodplain Management ([25 PA Code Chapters 102,105, and 106](#) respectively) and [Act 167](#) the Pennsylvania Stormwater Management Act;
2. Meeting with community water suppliers to encourage development of source water protection programs;
3. Conducting a workshop for Municipal Separate Storm Sewer (MS4) permittees to inform them of new permit conditions, compliance obligations and reporting requirements;
4. Reviewing and providing comments, through the Act 167 process, on municipal land development ordinances to encourage consistency with sound stormwater management principles. Making recommendations for the integration of beneficial options such as low impact development and riparian buffer protection practices;
5. Participating in Erie County and municipal Comprehensive Plan reviews and updates to encourage environmentally-sensitive land development techniques; and
6. Review and providing comments, through the Coastal Zone Management Program, on municipal land development ordinances to encourage consistency with [25 Pa Code Chapter 85 Bluff Recession and Setback Program](#).

II.) Commonwealth Funding for Protection and Restoration Projects

Commonwealth funds can provide opportunities to conduct protection and restoration projects in those areas where environmental problems and degradation are occurring and where there is no individual or party that is clearly responsible for the problem. Some grant programs are proactive planning devices that provide recommendations for protection of resources, while other grants provide funds for physical improvements to the watershed.

DEP Growing Greener Grants

The Commonwealth has instituted several grant programs to fund environmental resource restoration and protection projects. One of these programs, Growing Greener, provides funds for projects that invest in watershed improvement projects. Growing Greener funding is increasingly directed to projects that are identified by DEP as the region’s most important initiatives.

DEP has identified Walnut Creek as one of three priority watersheds within the twelve county Northwest Region as a priority for Growing Greener funds in the 2008 grant round. Projects within the Walnut Creek Watershed that: implement innovative and educational stormwater management practices; implement nutrient reduction and agricultural Best Management Practices (BMP) programs; and follow recommendations from current watershed-based plans will receive higher priority than other projects in the regional and state-wide ranking of grant applications.

Source Water Protection Technical Assistance Program ([SWPTAP](#))

Local source water protection programs are effective tools for public health protection, water supply security, and managing operational and capital costs through improved or maintained source water quality. SWPTAP pays for the services of a contractor to provide technical expertise and assistance for the development of local source water protection programs for community water supplies. SWPTAP is a cooperative effort between a community water supply, members of the community, DEP staff, and the contractor. The results are a detailed delineation of areas needing source water protection, identification of potential sources of contamination, and development of management strategies to protect the drinking water supply. Through this program, the community is given the tools it needs to achieve substantial implementation of a source water protection plan.

Act 167 Stormwater Management Planning Grants

Stormwater management planning as conducted according to Act 167 identifies the stormwater conditions and challenges that are unique to each watershed and each county in Pennsylvania. As stipulated by Act 167 and 25 Pa. Code [Chapter 111](#), DEP will continue to support stormwater management planning efforts by funding 75% of the costs incurred by counties to create the plans, as well as 75% of any annual fiscal losses incurred by municipalities for the implementation and enforcement of stormwater management ordinances after the plans are approved by DEP.

Other Sources of Grant Funding

DEP and the Pennsylvania Department of Conservation and Natural Resources (DCNR) have been successful in leveraging their respective grant resources and developing projects that implement commonly-shared environmental protection and resource conservation goals. Many of the recommendations from the Assessment Report will be incorporated into the DCNR-funded Lake Erie River Conservation Plan. The integration of DEP water quality improvement initiatives into the River Conservation Plan will allow DCNR to consider not only riparian buffer improvement and land conservation projects for grant funding, but also stormwater and agricultural BMP projects.

DEP also will coordinate watershed protection and restoration activities with other entities that issue grants to the Lake Erie region, such as the Pennsylvania Fish & Boat Commission (PFBC), United States Geological Survey, United States Army Corps of Engineers, United States Department of Agriculture, Great Lakes Protection Fund, and Great Lakes Commission. In addition, the DEP regional office will

coordinate with the DEP Office of Great Lakes and the DEP Coastal Zone Management Program to provide input into potential projects and identify sources of funds.

III.) Commonwealth Permitting and Planning of Activities that Impact the Environment

DEP is given responsibility for the permitting of new activities that impact watercourses and wetlands through the [Clean Streams Law](#), the [Dam Safety and Encroachments Act](#) and their associated regulations. Federal Regulations at [40 CFR 122.26](#), revised in 1999 (also referred to as Phase II stormwater regulations) significantly modified stormwater regulations that existed prior to 1999. In particular, the regulatory revisions modified the requirements for obtaining National Pollution Discharge Elimination System (NPDES) permits for construction activities and municipal stormwater systems. As a state agency that has been delegated the NPDES program by EPA, DEP incorporates these federal regulations in to its own regulation by reference in [25 Pa Code Chapter 92.2](#). In addition to requiring permitted activities to address erosion and sediment controls to be implemented during each point in the construction process, the regulations also require the development and implementation of a post-construction stormwater management plan (PCSM).

Additionally, DEP is charged with assuring that loss of wetlands and impacts to the floodway of watercourses are avoided through the Dam Safety and Encroachments Act and Chapter 105 permitting program. DEP has also been given approval in most cases to grant the required federal authorization for impacts to wetlands and floodways.

DEP's permit decisions must prevent impairment to streams that are meeting their designated uses, and must not allow the applicant to add to existing stream impairments. In the Walnut Creek watershed, DEP will assure that its permitting programs protect stream reaches that are meeting water quality requirements, and also protect, if not improve, those reaches that are currently impaired. DEP will take the following approach when making decisions related to new permits and amendments to existing permits:

NPDES – Discharges Associated with Construction Activities

Permits for construction activities within the Walnut Creek Watershed and the PCSM component of the permit are particularly important as they demonstrate how the applicant will avoid contributing to impairments within the watershed.

The issuing agency for NPDES Chapter 102 permits in Erie County is primarily the Erie County Conservation District. DEP will work closely with the Erie County Conservation District on permitting activities. Applications for NPDES Chapter 102 Permits will be reviewed to ensure: adequate stormwater volume and rate control is demonstrated; that the new development or redevelopment results in no net increase

in pollutant loading to attaining and impaired waters; and that adequate protection is provided to community water supply sources.

NPDES – MS4 Permit

The Federal regulations that established the requirements for protection of water quality during earth disturbance activities also established the requirement for implementation of a municipal stormwater program. These regulations require that operators of small municipal separate storm sewer systems in urbanized areas obtain an NPDES MS4 permit. Accordingly, in the Walnut Creek Watershed, Summit, Millcreek and Fairview Townships have been issued MS4 permits to manage point source stormwater discharges from municipally owned property and new land development activities. MS4 permits require each municipality to control the quality and quantity of stormwater discharged by implementing six minimum control measures, including:

- 1.) Public education and outreach;
- 2.) Public participation and involvement;
- 3.) Illicit discharge detection and elimination;
- 4.) Construction site runoff control;
- 5.) Post-construction stormwater management; and
- 6.) Pollution prevention and good housekeeping for municipal operations

DEP is working with regulated municipalities to achieve and maintain compliance with MS4 regulations. The regulations hold the MS4 municipalities responsible for developing and implementing local programs, including local ordinances, to control all stormwater discharges. The regulations also require regulated municipalities to evaluate and periodically report the effectiveness of their stormwater programs for each of the six minimum control measures.

Dam Safety and Waterway Management –25 PA Code, Chapter 105

Among other things, Chapter 105 “Provides for the comprehensive regulation and supervision of dams, reservoirs, water obstructions and encroachments in the Commonwealth in order to protect the health, safety, welfare and property of the people”. The Assessment Report identified hydro-modifications, defined as alterations to the natural flow of water through a landscape that often includes obstructions, encroachments, and channel modifications, as a cause of unfavorable physical stream conditions resulting in bed and bank erosion problems. Also identified in the Assessment Report was a net loss of wetlands within the watershed, and DEP will identify opportunities within its permitting processes to restore the original quality and quantity of wetlands in Walnut Creek. Also, DEP will coordinate permitting activities within the watershed to assure that the individual and cumulative impacts of permitted projects are protective of water quality, the natural flow regime of the waterway, and flood carrying capacity of the watershed.

The Pennsylvania Stormwater Management Act – Act 167 of 1978

Erie County is currently conducting countywide watershed-based stormwater management planning for the entire county. The planning is being conducted with DEP input and 75% state funding. The hydrologic conditions within Walnut Creek will be assessed as part of the planning activities, which will identify problems within the watershed and present conceptual solutions based upon hydrologic modeling and engineering. DEP is an active partner in this planning process responsible for ensuring the quality of the stormwater management plan and protection of water resources within Walnut Creek as well as all of Erie County's watersheds. Completion of the plan includes a public hearing, adoption by the county and submission to DEP for final approval. During the approval process, DEP will assess the consistency of the plan with other state and local environmental programs and requirements including the local plans for the Walnut Creek Watershed. DEP will then work with the county and municipalities to implement municipal ordinances and protection efforts within the county that are consistent with the Plan and the Act.

Integrated Water Resource Management

DEP will promote the creation of a single, local entity to manage stormwater in the Lake Erie Watershed, with that entity holding a single MS4 permit and operating on behalf of each municipality. DEP envisions that the entity would implement Act 167-based stormwater management ordinances through qualified local programs, and implement other watershed protection ordinances as delegated by participating municipalities.

IV.) Watershed Monitoring

Ongoing monitoring of the watershed is necessary to identify the effectiveness of protection and restoration activities. It also provides an empirical baseline for identifying the effectiveness of future DEP protection and restoration efforts. DEP and its partners have established monitoring program goals that will result in the continuing assessment of the watershed including:

1. Continuing to support, and be an active part of, the Clean Beaches Task Force to find the sources of *E. coli* bacteria in surface waters and take action to mitigate problems from sewage discharges, malfunctioning on-lot sewer systems, agricultural runoff and stormwater runoff from regulated facilities;
2. Providing technical support to Mercyhurst College during their activities assessing the origin and extent of *E.coli* contamination within Walnut Creek and other Lake Erie waterways as defined in the scope of work of their 2007 Growing Greener project "Bacterial Monitoring in Lake Erie Watershed;"
3. Identifying actual and potential contribution of stormwater pollution from facilities constructed before stormwater regulations were revised in 1999. This will be accomplished by prioritizing those reaches and tributaries that were determined to be most impaired by the Assessment Report, and conducting an extensive land use evaluation to determine those parcels which are contributing the greatest pollutant loadings to the waterway. Professionally accepted event

- mean concentrations (EMCs) will be used to determine total stormwater pollutant loading from the sites;
4. Establishing a Water Quality Network station near the mouth of Walnut Creek that includes: a stream gage station with continuous measurements for flow, pH, dissolved oxygen, temperature, conductivity and turbidity with a real time data-link and webpage, bimonthly water chemistry sampling, and annual benthic analysis; and
 5. Reassessing the Walnut Creek Watershed in 2012 according to the standards and practices established by the 2007 Assessment Report.

V.) DEP Enforcement of Environmental Laws and Regulations

Individual development activities throughout the watershed have, for the most part, been conducted in compliance with applicable federal and state environmental laws and regulations. Unfortunately, as DEP documented in the Assessment Report, extensive impairment to the stream is being caused by the cumulative impacts of development pressures including: increased stormwater rate and volume; decreased quality of stormwater; habitat destruction; and the loss of wetlands.

The discharge of stormwater leading to the impairment of a designated use of a stream is considered pollution as defined by the [Pennsylvania Clean Streams Law](#). DEP will take the steps it deems necessary to restore the water resource, and these protection and restoration efforts within the Walnut Creek watershed, in part, will be achieved through the initiation of compliance and enforcement procedures. This will be accomplished by evaluating and addressing two significant groups of stormwater generators within the watershed:

1.) Review of NPDES Permits for Stormwater Discharges Associated with Construction Activities within Walnut Creek Watershed

DEP will evaluate all active NPDES Permits within the Walnut Creek Watershed for permit compliance and effectiveness of Post Construction Stormwater Management (PCSM) BMPs. Site inspections will be conducted as needed to confirm the status of stormwater management BMPs and determine their effectiveness in managing stormwater generated by the site. DEP will work to obtain compliance from those permit holders that are violation of their permit conditions. DEP will follow its current statewide policy for [Enforcement and Compliance](#) for those permittees choosing to remain out of compliance.

2.) Addressing stormwater management deficiencies contributing to impairment within Walnut Creek Watershed on sites constructed without or prior to NPDES Permits

Most sites constructed prior to NPDES permitting were required only to meet the stormwater management requirements of local municipal ordinances. The Assessment Report demonstrates that municipal stormwater management

requirements have not adequately protected the water resources of Walnut Creek, and have contributed to water quality impairments. DEP will address unmanaged and under-managed stormwater discharges from sites within the Walnut Creek Watershed as discharges of pollution as defined by the Pennsylvania Clean Streams Law.⁴ DEP will identify the owners/operators that are discharging stormwater pollution in the watershed, and will address these discharges in order of priority based on the severity of impairment. DEP will work with the owners/operators of facilities discharging pollution to identify and institute stormwater management controls on site. DEP will follow its current statewide policy for [Enforcement and Compliance](#) for those owners/operators choosing to remain out of compliance.

Annual Review and Adjustment

DEP will complete an annual review of this document to evaluate activities conducted during the previous year, and determine whether adjustments to the Protection and Restoration Plan are required. A status report describing actions in relation to this Protection and Restoration Plan will be compiled annually and made available for public review.

****DISCLAIMER****

The procedures outlined in this Plan are intended to supplement existing requirements. Nothing in this Plan shall affect regulatory requirements. The procedures herein are not adjudications or regulations. There is no intent on the part of DEP to give the procedures in this Plan that weight or deference. This document establishes the framework within which the DEP will exercise its administrative discretion in the future. DEP reserves the discretion to deviate from this Plan if circumstances warrant.

⁴ The Clean Streams Law, Act of 1937, P.L. 1987,, No 394, Section 1