



**ONE WATER**  
**INTEGRATED WATER RESOURCES MANAGEMENT PLANNING**

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**CASE STUDIES - ONE WATER – August 2017**

**County Planning Directors Association of Pennsylvania – One Water Task Force**

## Overview

Everything that happens on the land impacts, to some degree, the quality and/or quantity of groundwater and/or streams, and causes singular – and cumulative – impacts to water resources that can be difficult and costly to remedy. Simultaneously, it is essential to protect the quality and quantity of groundwater and streams to provide adequate water supplies, transportation, recreation, and wastewater assimilation that are needed to support future growth and economic development, and to preserve a healthy ecosystem. Minimizing impacts while managing water use to support growth often involves “conflicting” planning objectives, which, without an “integrated” approach, can lead to unintended consequences to either the natural water resources or to growth management - or both.

To achieve these competing objectives requires a planning framework that combines - or “integrates” - planning for the sustainable use (e.g., withdrawals, discharges, etc.) and protection (e.g., runoff control, riparian corridors, etc.) of the natural water resources together with comprehensive land use planning for growth, economic development, transportation, recreation, water supply and wastewater service. Some aspects of this approach have been routinely undertaken by local comprehensive planning in PA. But, lacking adequate tools, data and planning principles, fully integrated planning has been an overwhelming and unachievable task. In recent years, “integrated water resources planning” (IWRP) has been conducted in certain areas of Pennsylvania where the need for such planning, the necessary data, and the planning resources have existed.

The Commonwealth of Pennsylvania has recognized the importance of IWRP and “Integrated Water Resources Management” (IWRM) for some time in Pennsylvania. The Commonwealth completed the Pennsylvania State Water Plan in 2008, which is a state-wide integrated water resources plan that outlines some excellent recommendations, but implementation was stalled by lack of resources. Meanwhile, more data and tools are now available to look within and beyond county boundaries and to coordinate this integration of planning principles to look more holistically at water resources and land use planning. The Task Force has taken to calling it **One Water** for brevity and ease of reference.

The County Planning Directors of PA (CPDAP) formed an IWRM Task Force in effort to expand the understanding and implementation of IWRM as a method for PA counties and local governments to better address complex water resources and land planning issues. The role of the Task Force is: to explore the need and value of IWRM to Pennsylvania counties; to review the extensive body of information available from across the Commonwealth and the Nation; and to recommend actions to expand the implementation of IWRM (and IWRP) in PA.

Provided herein are highlights of four case studies of integrated water resources planning efforts completed or underway by counties in Pennsylvania. These represent unique situations where extensive county-led coordination efforts brought together the necessary



funding, staff and technical data needed to achieve the individual plan objectives. No two plans or approaches are alike; however, the concept of integrating the use and protection of the natural watershed resources within the context of land use and growth management are fundamental similarities. These efforts were driven by strong needs and issues encountered at the local level, and the resulting plans did and will provide effective, comprehensive frameworks to guide communities to move forward individually and collectively to use and protect their natural watershed resources while accommodating planned growth. These case studies demonstrate what *can be* done when sufficient data and planning resources are available. Currently many of the needed components should be, but are not, available in a readily usable, reliable form on a state-wide basis and therefore must be developed individually by the planning agency, adding the total costs and time needed to complete integrated planning efforts. Following the case studies is a listing of additional examples of notable watershed-based coordination and collaborative planning initiatives that could lead to IWRP outcomes with additional statewide technical resources and guidance.

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### Case Studies

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The Program is collaboration between the Berks County Planning Commission, Berks County Water & Sewer Association, Department of Environmental Protection to provide leadership and funding for the development of a county-wide Source Water Protection Program.
- Chester County, PA - *“Watersheds – An Integrated Water Resources Management Plan for Chester County, PA and Its Watersheds”*  
Chester County Water Resources Authority developed a watershed-based integrated water resources planning initiative to assess and plan for the future use and protection of the County’s streams, reservoirs and groundwater.
- Lancaster County, PA – *Blueprints: An Integrated Water Resources Plan for Lancaster County*  
This is the Water Resources Element of the Lancaster County Comprehensive Plan and the PA DEP approved Countywide Act 167 Stormwater Plan. The plan encourages a “systems thinking” approach to water resources.
- York County, PA – *Integrated Water Resources Plan (IWRP)*  
The Plan was the result of a joint effort between the York County Planning Commission (YCPC) and PA DEP to develop a model IWRP. It is both the Water Resources Element of the York County Comprehensive Plan and the PA DEP approved Countywide Act 167 Stormwater Plan.

### Additional Examples of Water Resource Management Projects

- Ten Examples of additional related projects from around Pennsylvania

## ***Berks County Source Water Protection Program***

Location: Berks County – [www.countyofberks.com/planning](http://www.countyofberks.com/planning)

Credit: Berks County Planning Commission/Berks County Water & Sewer Association

Water Resources Planning & Protection (June 2017)

The Berks County Planning Commission, the Berks County Water & Sewer Association, and the PA Department of Environmental Protection (PaDEP) have provided leadership and funding to develop a county-wide **Source Water Protection Program** that encompasses community water systems (CWS) interested in protecting their drinking water sources. Of the 69 CWS operating in the county, the 29 participants have individually-approved source water protection plans or a Substantial Implementation designation by PaDEP. These 29 CWS provide public water service to over 266,000 people in Berks County.

Under this program, participating water systems will share opportunities and resources for implementation of management strategies selected by a strong and varied Source Water Protection Committee, which counts government agencies, private businesses, environmental organizations, and other concerned citizens among the members. Collaborative effort from a larger group lifts a financial and human resource burden from individual water systems and other organizations, and can provide assistance that crosses municipality and watershed borders.

A county-wide initiative also offers an opportunity to incorporate overlapping programs like the county's Municipal Separate Storm Sewer System (MS4) stormwater management program, which transcends watershed boundaries. Since polluted stormwater can negatively impact both ground and surface source water,

integration can be beneficial to both water systems and municipalities, and meet similar goals of the reduction of pollutants in Berks County waterways. Additionally, the Berks County Planning Commission will coordinate outreach to water suppliers, developers and municipalities when completing Act 247 reviews. The Berks County Conservation District's Watershed Coordinator will help coordinate implementation of the Plan. The Berks County Department of Emergency Services will be involved in notifications of suppliers during emergency events.

Pictured below:

Maiden Creek spillway underneath SR 73, water supply for the City of Reading



Blue Marsh Lake, water supply for Western Berks Water Authority



Prepared by: Spotts, Stevens & McCoy  
Funded by: The Pennsylvania Source Water Protection Program

## ***“Watersheds” – An Integrated Water Resources Management Plan for Chester County, PA and Its Watersheds***

Location: Chester County – [www.chesco.org/water](http://www.chesco.org/water)

Credit: Chester County Board of Commissioners and Chester County Water Resources Authority

A Component of the Chester County Comprehensive Plan, *Landscapes2* (September 2002)

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In response to several county, regional and inter-state water resources and growth management concerns facing Chester County in 1998, the Chester County Water Resources Authority undertook a watershed-based integrated water resources planning initiative to assess and plan for the future use and protection of the County’s streams, reservoirs and groundwater. The Plan involved extensive analyses of historic, current and projected future water use and water quality data to assess past, current and future impacts of land use and growth on the sustainability of the quantity and quality of the County’s water resources.

The County’s watersheds are source waters for water supplies for the County’s 500,000 population, as well as the cities of Wilmington, DE, Chester, PA and Philadelphia, PA. In addition, the County’s watersheds are shared with six counties in three states (PA, DE, and MD), and drain to both the Delaware Estuary and the Chesapeake Bay. This sets a landscape of complex local and inter-state watershed and water management issues, whose solutions begin at their headwaters within Chester County.

Working with a task force of 30 county stakeholders, 13 federal, state, inter-state and county agencies, and county, state and federal funding support, the Authority developed “*Watersheds*” to

provide scientifically-sound goals, objectives and strategies for accommodating existing land uses and planned growth while maintaining the integrity of the County’s watershed resources. It addresses many complex and inter-related issues of water quality and quantity for groundwater and surface waters. It presents a framework of goals and objectives for sustainable use of the resources, for planning for growth and future water use and supplies, roles and strategies for implementation, and measures of progress. For each watershed, it prioritizes county-wide and individual management priorities.

“*Watersheds*” was adopted in 2002 by the County Commissioners as a component of the Chester County Comprehensive Plan (*Landscapes2*), and in 2013 it was amended and adopted by the County Commissioners and approved by the PA Department of Environmental Protection as the “*County-Wide Act 167 Stormwater Management Plan for Chester County*”.

*“Watersheds” mission - to protect, sustain, and enhance the quality and quantity of all water resources to insure the health, safety, and welfare of the citizens, and preserve the diverse natural resources and aesthetic and recreational assets of Chester County and its watersheds.*



## ***Blueprints: An Integrated Water Resources Plan for Lancaster County***

Location: Lancaster County, Pennsylvania

Credit: Lancaster County Planning Commission (LCPC)

<http://pa-lancastercountyplanning.civicplus.com/131/Blueprints>

**Purpose:** *Blueprints: An Integrated Water Resources Plan for Lancaster County*, serves as the Water Resources Element of the Lancaster County Comprehensive Plan and the PA DEP approved Countywide Act 167 Stormwater Plan. The plan encourages a “systems thinking” approach, and promotes watershed-based integrated water resources planning (IWRP) and management (IWRM) to protect, conserve and improve water resources in Lancaster County. It advances the concepts of IWRP and IWRM by emphasizing the relationships among water resource issues and programs, such as storm water management and drinking water supply or source water protection and manure management, and recommending strategies to address these issues more effectively.

*Blueprints* recognizes the connection between smart growth and water resources protection, and the strategies in *Blueprints* supports the implementation of *Balance, The Growth Management Element of Lancaster County’s Comprehensive Plan*.

**Planning Process:** *Blueprints* was prepared by the LCPC with input from the public, private and non-profit sectors. Input was received at forums, events and stakeholder discussions which helped frame the vision, goals, objectives and strategies outlined in the plan. The process began in April 2008 with a water resources forum. Stakeholders included state, local government,

NGO’s, water/sewer authorities, manufacturing and agricultural sectors. The Lancaster County Board of Commissioners adopted *Blueprints* by unanimous vote on October 10, 2012.

**Goals and Objectives:** *Blueprints* was developed as a strategic plan, containing three strategies, Collaborate, Accelerate Implementation of Existing Plans, and Improve Planning and Design, along with five supporting objectives and fourteen actions.

When the three strategies are implemented, the plan will help protect, conserve, and improve surface and groundwater resources for human and non-human use.

*Blueprints* provides a framework for the institutional change necessary to reach these objectives and lead to water quality improvements for Lancaster County.

**Implementing *Blueprints*:** *Blueprints* helps draw connections among many water resource management issues, providing a framework for integration of various programs. In order to succeed, integrated water resources planning relies on collaboration. Consequently, *Blueprints* calls for the County to periodically convene key stakeholders for facilitating collaboration and advancing integrated water resources planning and management.



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## York County *Integrated Water Resources Plan (IWRP)*

Location: York County <http://ycpc.org/reports-documents.html>

Credit: York County Planning Commission

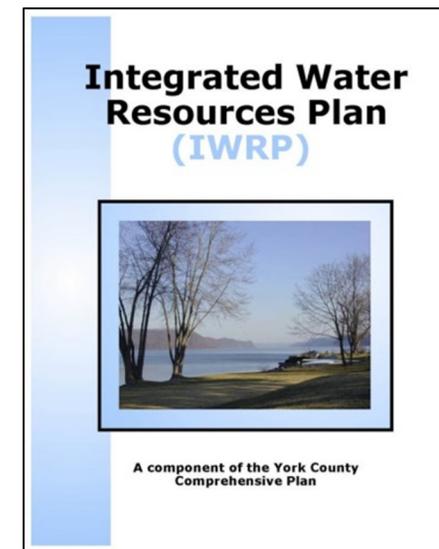
### Integrated Water Resources Plan

The Pennsylvania Department of Environmental Protection (PA DEP) approved York County's Integrated Water Resources Plan (IWRP) in April 2011. This plan was the result of a joint effort between the York County Planning Commission (YCPC) and PA DEP to develop a model IWRP. Upon approval, the County's IWRP became the water component of the York County Comprehensive Plan, and served as the York County Stormwater Management (Act 167) Plan. Many recommendations identified in the IWRP have been, or are, being implemented including: regional MS4 permit compliance, feasibility analysis and development of a County stormwater authority, County Watershed Implementation Plan development, and water partnerships between local and state agencies, as well as public and private entities to achieve water quality improvements. In York County, the long simmering task of Integrated Water Resources Planning has been accomplished.

One key accomplishment from the IWRP is the development, adoption and implementation of a municipal stormwater ordinance that meets the Act 167 requirements, thereby also meeting the MS4 permit requirement for urbanized municipalities. All of the MS4 municipalities within York County have adopted this model ordinance. The ordinance, by meeting the MS4 permit requirements, shifts the philosophy of stormwater management to address water quality along with quantity.

Although many of the recommended actions identified in the IWRP are underway in York County, the more important task of Integrated Water Resources Management is lagging behind. Those who have the authority and obligation of managing the Commonwealth's water resources have not had the mechanism to do so. Management of water resources does not have to be complicated. A key component within the IWRP is a flowchart that provides a comprehensive perspective on how to tie together everything related to water resources. The flowchart guides the user through the steps and key decision points to address water issues on all projects, regardless of type, size or ownership. It does not matter whether you are a private citizen, a local government, a builder or developer, anyone can navigate the flowchart to proactively address water quality issues. The flowchart begins to integrate water management issues at a project level. The hope is that decision makers will use the flowchart tool when planning projects and expand their understanding of integrated water resources planning and management.

The link to the flowchart tool is <http://www.paiwrp.com>



Below is a listing of additional examples of notable watershed-based coordination and collaborative planning initiatives that could lead to IWRP outcomes with additional statewide technical resources and guidance:

Pennsylvania In the Balance (Statewide)

<http://agsci.psu.edu/aec/research-extension/conferences-and-workshops/pa-in-balance>

Chiques Creek Restoration Initiative (Lebanon and Lancaster Counties, PA)

<http://www.srb.net/programs/chiques/meetings.htm>

Conewago Creek Initiative (Lancaster, Lebanon & Dauphin Counties, PA)

<http://www.conewagoinitiative.net/>

Christina Basin Clean Water Partnership (Chester Co., PA & New Castle Co., DE)

<http://www.wrc.udel.edu/public-service/christina-basin-clean-water-partnership/>

Christina Municipal Watershed Partnership (PA)

<http://www.brandywineredclay.org/watershed-conservation/christina-watershed-municipal-partnership-cwmp/>

Octoraro Creek Source Water Collaborative (Lancaster and Chester Counties, PA, Cecil County, MD)

<https://www.allianceforthebay.org/2017/01/growing-partnerships-with-farmers-key-to-restoring-octoraro-watershed/>

Eastern Delaware County Stormwater Collaborative (Delaware County, PA)

<http://www.edcsc.org/>

Wissahickon Clean Water Partnership (Montgomery County, PA)

<http://www.wvwa.org/cleanwater/>

Schuylkill Action Network - SAN (Schuylkill River Watershed – Philadelphia, Chester, Montgomery, Berks and Schuylkill Counties)

Coordinator: Partnership for the Delaware Estuary

[www.schuylkillwaters.org](http://www.schuylkillwaters.org)

Building Green Infrastructure in Blair County (Blair County, PA)

<https://www.allianceforthebay.org/2014/06/building-green-infrastructure-in-blair-county/>

## Documents Associated With the **One Water** Efforts

Located at [WWW.PACOUNTIES.ORG/MEDIA](http://WWW.PACOUNTIES.ORG/MEDIA)

### **One Water Guiding Principles** – 2016

What is **One Water** and why is it important to us all.

### **County Planning Directors Association of Pennsylvania Position Statement** – 2/23/2016

A document that gives the CPDAP's position on the Guiding Principles and Priority Actions needed to move forward in Pennsylvania to achieve Integrated Water Resources Management – **One Water**

### **Planners Guide & Checklist**

A guide and checklist developed to assist Municipal planning agencies to better integrate water resources considerations and implications into all comprehensive and local land use planning, land use decisions, and development plan reviews and approvals and through those efforts to assist local communities to achieve optimal decision-making and more cost-effective utilization, protection, restoration and management of water resources.

