

County Planning Directors Association of Pennsylvania (CPDAP)
adopted February 5th 2016

Position Statement
Integrated Water Resource Management and Planning
One Water

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 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.

Perhaps the best fit definition of IWRM for our purposes is that of the American Water Resources Association (AWRA), a national organization:

The coordinated planning, development, protection, and management of water, land and related resources in a manner that fosters sustainable economic activity, improves or sustains environmental quality, ensures public health and safety, and provides for the sustainability of communities and ecosystems.

AWRA explains that implementing IWRM involves commitment to the following:

- *Clean water is a basic human right, and an economic and ecological necessity;*
- *Planning for long term sustainability;*

- *Participatory decision making;*
- *Management based on sound science and hydrologic units;*
- *Realistic measurement of outcomes: and*
- *Continuous improvement of institutional capacity at all levels.*

The Problems and Some Solutions

Current management of the water resources is highly fragmented. The CPDAP-IWRM Task Force has identified two principal components of this complex situation that must be addressed. The first is **Data**, specifically the need for - and the lack of – consistent, reliable and integrated data sets for understanding and assessing water resources at the local and regional levels. This is primarily a GIS based need for a number of reasons, but in particular because of the geographic locations and intersections, and variability of the spatial components involved in water resources management. The second principal component is **Policy**, and again, the need for – and lack of - implementation of clear and consistent integrated water management policy. The PA State Water Plan (2008) presents state-wide integrated water policy, and encourages and supports IWRM, but has not been implemented at the state level.

Pennsylvania's "State Water Plan Principles" (2009) state, "...*land development, flooding, stormwater, wastewater, groundwater recharge, irrigation and water supply and withdrawals are elements of the same interconnected system.*" The three Principal Priorities of the State Water Plan include the following:

- *The efforts initiated in the plan to collect, interpret, and disseminate water resources information should continue into the future.*
- *An integrated approach to managing water resources should be encouraged and sustained.*
- *The Commonwealth should adopt policies that encourage technological advances designed to conserve and enhance water resources.*

The State Water Plan provides excellent recommendations for action, but counties and local governments are inhibited by the lack of state policy implementation. Where counties have undertaken IWRM planning, they had to first overcome the lack of state-wide consistent, accurate data and mapping, at significant cost. Thus, the following discussion focuses primarily on the need to improve state-wide data, and the need to implement the existing IWRM policies of the State Water Plan.

One of the great advantages we have in the Commonwealth is our abundant water; and yet there is no modern, state-wide digital base map and integrated database for that critical resource. The PAMAP Program (2003-2010) accomplished the complete statewide collection and public access to state-of-the-art color imagery and contour data – the first two elements of the modern basemap. PAMAP then fell victim to a difficult economy and changing technology despite essential elements that remain incomplete. Most unsettling of all is the rudimentary and inaccurate nature of current state-wide water data sets. The majority of water mapping and data that are available state-wide are spatially incompatible with the other widely used modern, digital base map data, and have basic accuracy of about 50 feet (as compared to 5+ feet for the more recent imagery). Location data errors of hundreds of feet are common – i.e.- they do not overlay properly with other mapped features affecting water quality. The headwaters, so critical to water resources planning, are not generally included at those scales, and especially the intermittent and ephemeral tributaries.

Adding to the data problem is the fact that, depending on the program and department, more than one of these "low accuracy" base maps are maintained with inconsistent data elements and units of measure.. In pursuit of clean water and sustainable supplies, laws and regulations have tended to segment water management activities into "silos", as each program has its own needs and legacy data to maintain. The end result is an incomplete picture of the state of our surface water and groundwater resources with data that is less credible and less usable. This situation is occurring at a time when many individual entities are involved in collecting more and better (albeit uncoordinated) information – water quality/chemistry, continuous flow data, precise wetland locations, aquatic habitat data, storm water infrastructure systems - related to water because of shale gas development, concerns for Chesapeake Bay sustainability,

stormwater regulatory implementation, watershed restoration, expanding land development, and simply due to technological advances. There is a critical need for a consistent, reliable, accurate state-wide database that can be used by these entities to minimize the need for further data gathering, and that can be used as a state-wide database for inclusion of the data collected by these entities for use by others.

Dramatic advances have been made in improving our knowledge of water resources over the last 40 years, and mending damage from past centuries, but describing, quantifying, planning and managing water resources must be done holistically. Is a flood just a quantity problem when huge sediment and pollutant loads are transported? Can the integrated nature of land use be ignored in maintaining temperature regimes and attenuating conditions along the margins of waterways? Can technicians and managers take full advantage of the power of modern computing, modeling, and communications, or compile and compare what they know about water resources without a singular, accurate, integrated, common digital model?

The most efficient way to understand who is collecting which data about water, and how those data streams might be merged, and perhaps simplified and streamlined, is to 1) establish a master glossary of terminology with standard units of measure for use in describing and reporting data; 2.) build a state-wide integrated water database and 3) build a consistent, accurate, reliable state-wide hydrologic base map. Armed with those tools, the land use planning and water management communities can efficiently integrate water resources planning and management.

Guiding Principles and Priority Actions

In order to aid in this data and policy discussion the following set of guiding principles and priority actions were developed for consideration by the County Planning Directors, the County Commissioners' Association of PA (CCAP), state legislators, and agencies of the Commonwealth.

Guiding Principles

This list is based on, and builds on, the Commonwealth's "State Water Plan Principles" (2009).

- Develop a Framework for linking, simplifying and consolidating the myriad of statewide programs such as: Sewage Facilities Planning, Stormwater Management, Source Water Protection, Water Supply and Wastewater, Flood Control, Water-based Transportation, and Watershed Restoration and Protection.
- Evaluate the Integrated Water Resource Plans and initiatives that have been undertaken and completed - such as York, Lancaster, Chester, Centre and Berks Counties - to enhance and revise what has been done and what has been learned.
- Solidify public understanding of the connection between land use and water resource management. Water is such a basic need that citizens should also be aware and engaged.
- Pursue provisions to integrate services to assist county and local government officials to prepare and implement **local** Integrated Water Resource Plans. This would include training to educate county and municipal officials about the practical benefits and fiscal advantages of integrated planning and management.
- Inventory existing model ordinances, guidance, standards and criteria recommended for use by local governments, solicitors, engineers and professional organizations and develop new guidance where lacking.
- Provide sufficient resources to re-establish one multi-agency single point of contact in the Governor's Office (SPOC) for Integrated Water Resource Plans. This multi-agency SPOC should be coordinated by the Governor's Center for Local Government and include (at minimum): DEP, DCNR, Penn VEST, Penn DOT, PEMA, and the PUC with a defined working alliance with the Susquehanna River Basin Commission and the Delaware River Basin Commission.

- Review current policies and regulations to identify potential roadblocks to integration. This would include legislative changes and amendments that would encourage more effective and efficient planning.
- Support DEP in “integrating” and blending the components and processes of Water Resource Management within DEP.
- Amend state regulatory requirements where it has been demonstrated that the capacity and capital are present for truly integrating water resource planning.
- Engage all agencies with water resources management responsibilities in this conversation and encourage them to develop inter- and intra-agency partnerships to implement and promote IWRM. For example, DCNR has the responsibility of managing State Forests for clean water, and houses the state’s mapping agency, the Bureau of Topographic and Geologic Survey.

Priority Actions to be Undertaken by the County Planning Directors

This list proposes actions to help address, or facilitate others to address, the need for improved data and policy implementation:

- Participate with the State Geospatial Coordinating Board and GIS Pros in their activities to develop the geospatial components of integrated datasets.
- Create opportunities to increase the capacity of County GIS and Planning Departments to implement integrated water resource management planning; including human capital and funding.
- Identify and assist in the development of the next generation of Counties’ Integrated Water Resource Management Plans.
- Compile a comprehensive list of agencies and water system providers and water-related major “players” for each county in PA to be invited to make input as various IWRM plans are being developed.
- Make recommendations to CCAP Committees for their inclusion in the CCAP Legislative Platform.

Priority Actions Needed to be Undertaken by Other Entities in Partnership With CPDAP

Re-engaging the relevant state agencies to commit to and take actions to implement IWRM at the state level is our highest priority; state leadership and statewide tools are urgently needed by counties to effectively implement IWRM at the county level to address critical water and land use planning needs. This list proposes actions to be undertaken by state agencies and other appropriate entities (e.g., DEP, DCNR, PEMA, FEMA [e.g., official floodplain delineation], Penn VEST [e.g., funding for mapping work and water/wastewater systems], Geospatial Coordination Board, etc.) to address the problem data and policy needs discussed above:

- Develop a Base Map of all Water Resources in the Commonwealth. (i.e., DEP and DCNR).
- Re-energize and promote the Commonwealth’s State Water Plan (2008) and its implementation as a multi-agency process.
- Work with the Geospatial Coordination Board and geospatial community to develop standards and policies to develop, database, and integrate water data state-wide.

- Improve coordination in the complex process of working across the various bureaus, agencies and commissions to share, develop and implement a “big picture view” of Integrated Water Resource Management and Planning.

Conclusion

The CPDAP Integrated Water Resource Management Task Force has attempted to simplify a complex issue that has far-reaching and important implications for the future of the Commonwealth. The Task Force has distilled the topic to two important “rivers” of needed actions: Data development; and Policy implementation, and has proposed some clear priority next steps that are critical for ALL involved – the Public, the Planners, the Water Managers, and Elected Officials.

One Water !

Respectfully submitted,

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References:

The Homepage of the County Planning Directors Association of PA (a CCAP Affiliate):

<http://www.cpdap.org/Pages/default.aspx>

Policy page of the American Water Resources Association:

<http://www.awra.org/policy/policy-statements-IWRM.html>

Link to Act 220 – enabling legislation for the State Water Plan

http://www.pawaterplan.dep.state.pa.us/docs/Legislation/Act_220.pdf

State Water Plan Homepage:

<http://www.pawaterplan.dep.state.pa.us/statewaterplan/docroot/default.aspx>

Details of the State Water Plan:

<http://www.pawaterplan.dep.state.pa.us/docs/Publications/LearnMore.pdf>

A series of interesting Water Data documents from PaMAGIC:

<http://www.pamagic.org/initiatives/Pages/WaterData.aspx>

The Homepage of PA GIS Pros (another CCAP Affiliate):

<http://www.countygispros.org/Pages/Home.aspx>

PA Municipalities Planning Code, Article III, Section 301 (a)(6) specifies that a Comprehensive Plan **shall include** “A plan for the protection of **WATER RESOURCES**.....wetlands and aquifer recharge zones,.....floodplains,

And Section 301 (b) specifies “The Comprehensive Plan shall include a plan for the reliable supply of water, considering current and future water resources availability, uses and limitations, including provisions adequate to protect water supply sources.

County Initiatives:

York County:

<http://www.ycpc.org/divisions/long-range-planning/water-planning-implementation.html>

Chester County:

<http://www.chesco.org/water>

Berks County:

www.countyofberks.com/planning

Lancaster County:

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

Centre County:

<http://www.uaja.com/>

Schuylkill River Watershed Counties:

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