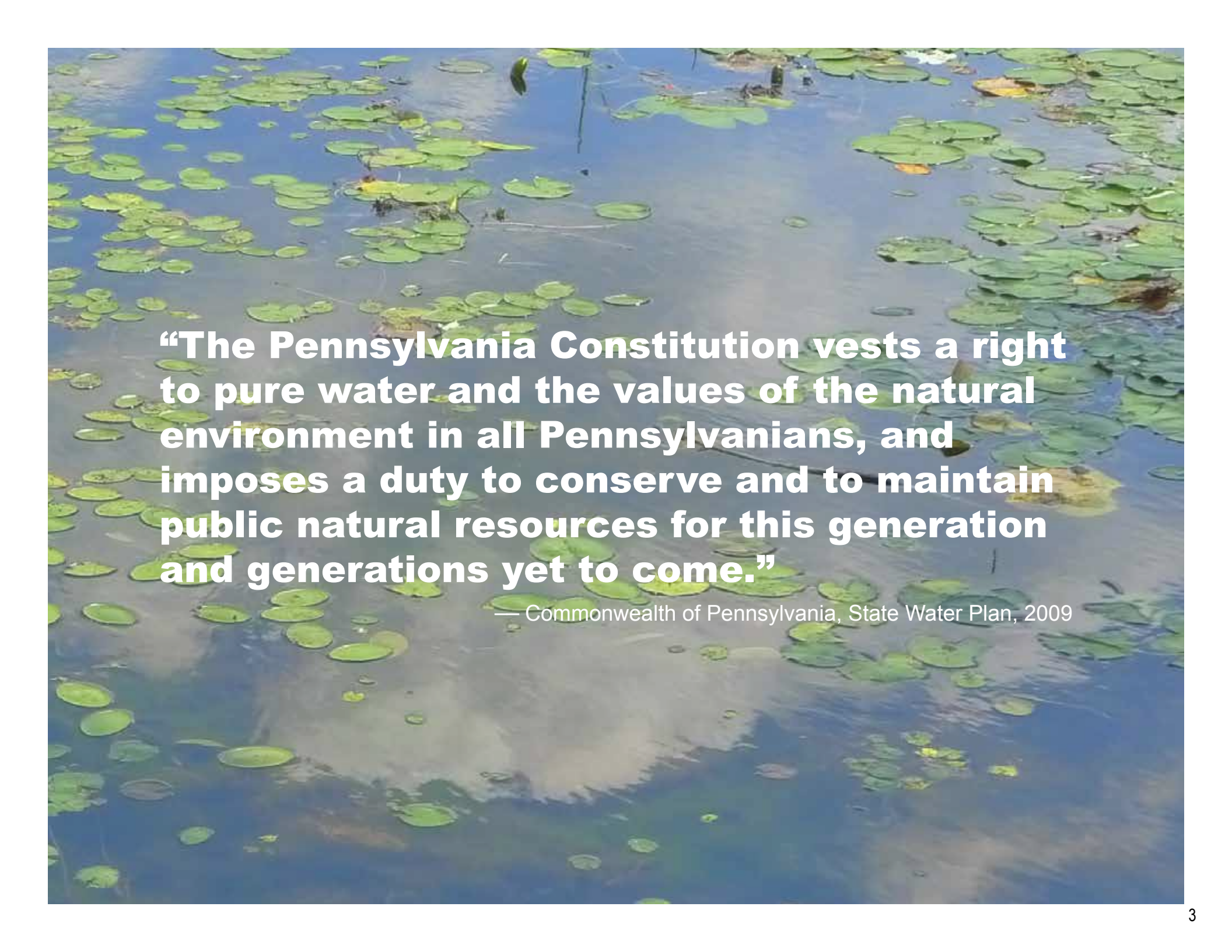




County Planning Directors Association of Pennsylvania | March 2016 | One Water Task Force





“The Pennsylvania Constitution vests a right to pure water and the values of the natural environment in all Pennsylvanians, and imposes a duty to conserve and to maintain public natural resources for this generation and generations yet to come.”

— Commonwealth of Pennsylvania, State Water Plan, 2009

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.



Impaired surface and ground waters, frequent flooding, stream warming, increased water supply and wastewater treatment costs, rapid growth pressure on community water and wastewater systems, eroded riparian properties, overstressed aquifers, reduced water-based tourism and damaged aquatic ecosystems are just a few of the problems that can come from not fully considering the impact of land use decisions on our water resources.

The Pennsylvania Municipalities Planning Code stipulates that Comprehensive Plans shall include a plan for the reliable supply of water, considering current and future water resources availability, uses and limitations, including provisions necessary to protect water supply sources.

It is essential, in fact our duty, to protect the quality and quantity of groundwater and streams to provide adequate water supply, transportation, recreation and wastewater assimilation to ensure the public health, safety and welfare; to support future growth and economic development; and to preserve a healthy ecosystem.

Minimizing adverse water resource impacts while managing water use to support growth often involves conflicting planning objectives, which, without a balanced and integrated approach, can lead to unintended consequences to either water resources or to growth management—or both.





Integrated Water Resources Management is:

“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.”

— American Water Resources Association





In Pennsylvania, local comprehensive planning has routinely undertaken some aspects of this approach. However, lacking adequate tools, data, planning principles and criteria, fully integrated planning is an overwhelming and possibly unachievable task. In recent years, certain areas in Pennsylvania with significant growth have conducted Integrated Water Resources Management planning without the benefit of complete and up-to-date state guidelines, standards and criteria, inhibiting the prospects for statewide consistency in water resources management and making the undertaking far more complicated and expensive than necessary.

The Commonwealth of Pennsylvania recognizes the importance of Integrated Water Resources Management as

evidenced by the **Pennsylvania State Water Plan update in 2009, which recommends Integrated Water Resources Management as a “direct and efficient way to confront complex topics and concerns as they emerge from the state water planning process.”**

The County Planning Directors Association of Pennsylvania formed an Integrated Water Resource Management Task Force in an effort to expand the understanding and implementation of Integrated Water Resources Management as a method for Pennsylvania 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 Integrated Water Resources Management 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 Integrated Water Resources Management in Pennsylvania.





American Water Resources Association asserts that clean water is a basic human right and an economic and ecological necessity and explains that implementing Integrated Water Resources Management involves commitment to the following:

- **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.**





Historically, water quality degradation, habitat degradation and water availability concerns have been problems throughout Pennsylvania. These problems are the result of land use decisions made without full consideration of the impacts on water resources. Our attempts to address them often created a program to fix a single problem at a fixed moment in time.

Thus, the current management of water resources is highly fragmented, with water issues (such as water availability, water quality, groundwater protection, sewage facilities and floodplain management) often considered in isolation both from one another and broader land use decisions, and often only within municipal boundaries.





The County Planning Directors Association of Pennsylvania Integrated Water Resources Management Task Force has identified three principal components of this complex situation.

The first is **Linking land use planning with Integrated Water Resources Management**. The interrelationships between water resource protection, future water supply needs and land use planning must be considered collectively to enhance the quality of life in Pennsylvania.

The second 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 Geographic Information System 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 third principal component is **Policy and Technical Guidance**, and again, the need for—and lack of—implementation of clear and consistent integrated water management policy, standards and criteria. The State Water Plan presents a statewide integrated water framework that encourages and supports Integrated Water Resources Management, but does not provide the complete policy and technical guidance for its implementation.





Pennsylvania's State Water Plan Principles 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 are noted below:

- **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 implementation of the recommended actions. Where counties have undertaken Integrated Water Resources Management planning, they had to first overcome the lack of consistent and accurate statewide data and mapping, at significant cost. Thus, the following discussion focuses primarily on the need to improve statewide resources available to the process, and the need to implement the existing Integrated Water Resources Management 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, statewide digital base map and integrated database for that critical resource. The PAMAP Program (2003-2010), a collaborative of federal, state and local government agencies administered by the Pennsylvania Department of Conservation and Natural Resources, Bureau of Topographic and Geologic Survey, 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 base map—but essential elements remain incomplete. Most unsettling is the rudimentary and inaccurate nature of current statewide water data sets. The majority of water mapping and data available statewide is spatially incompatible with the other widely-used, mod-

ern digital base map data, and has basic positional accuracy of about 50 feet (mapped location relative to true location) as compared to about 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, and especially the intermittent and ephemeral tributaries, are not generally included at those scales.

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, stormwater 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 and accurate statewide database that can be used by these entities to

minimize the need for further data gathering, and that can be used as a statewide database for inclusion of the data collected by these entities for use by others.

Our knowledge of water resources has improved dramatically over the last 40 years, largely based on mending damage from past centuries, and we've learned that 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 data about water and how those data streams might be merged, and perhaps simplified and streamlined, is to

1) build a statewide integrated water database, and

2) build a consistent, accurate, reliable statewide hydrologic base map.

Armed with those tools, plus the policy and technical guidance for water resources management, the land use planning and water management communities can efficiently accomplish Integrated Water Resources Management planning.

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 Association of Pennsylvania, the County Commissioners Association of Pennsylvania, state legislators and agencies of the Commonwealth.

Guiding Principles

Develop a framework for linking, simplifying and consolidating statewide programs for water resources management, such as: Sewage Facilities Planning, Stormwater Management (including county and local municipal compliance with federal municipal separate storm sewer system requirements), Source Water Protection, Water Supply and Wastewater, Flood Control, Water-based Transportation, and Watershed Restoration and Protection.

Responsible Agencies: Pennsylvania Department of Environmental Protection

Evaluate the Integrated Water Resources Management Plans and initiatives that have been undertaken and completed, such as York, Lancaster, Chester, Centre and Berks counties, to enhance what has been done and make improvements based on what has been learned.

Responsible Agencies: Pennsylvania Department of Environmental Protection, counties, County Planning Directors Association of Pennsylvania, County Commissioners Association of Pennsylvania



Assist county and local government officials to prepare and implement Integrated Water Resources Management Plans. This includes: 1) training to educate county and municipal officials about the practical benefits and fiscal advantages of integrated planning and management, and 2) providing funding opportunities or incentives.

Responsible Agencies: Pennsylvania Department of Environmental Protection, state legislators

Solidify public understanding of the connection between land use and water resources management. Water is such a basic need that citizens should also be aware and engaged.

Responsible Agencies: Pennsylvania Department of Environmental Protection, counties, County Planning Directors Association of Pennsylvania, County Commissioners Association of Pennsylvania

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

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 Association of Pennsylvania, the County Commissioners Association of Pennsylvania, state legislators and agencies of the Commonwealth.

Guiding Principles

Provide up-to-date model ordinances, guidance, standards and criteria recommended for use by local governments, solicitors, engineers and professional organizations.

Responsible Agencies: Pennsylvania Department of Environmental Protection, state agencies, Susquehanna River Basin Commission, Delaware River Basin Commission, U.S. Geological Survey, U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, Federal Emergency Management Agency

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 Integrated Water Resources Management. For example, Department of Conservation + Natural Resources has the responsibility of managing State Forests for clean water and houses the state's mapping agency, the Bureau of Topographic and Geologic Survey, so at minimum, Pennsylvania Department of Environmental Protection and Department of Conservation + Natural Resources should have a partnership agreement.

Responsible Agencies: Pennsylvania Department of Environmental Protection, Pennsylvania Department of Conservation + Natural Resources, state agencies, Susquehanna River Basin Commission, Delaware River Basin Commission, U.S. Geological Survey, U.S. Army Corps of Engineers, Federal Emergency Management Agency



Review current policies and regulations to identify potential roadblocks to integration and amend as needed. This would include legislative changes and amendments that would encourage more effective and efficient planning.

Responsible Agencies: Pennsylvania Department of Environmental Protection, state agencies, Susquehanna River Basin Commission, Delaware River Basin Commission, U.S. Geological Survey

Provide sufficient resources to re-establish one multi-agency single point of contact in the Governor's Office for Integrated Water Resources Management Plans. This multi-agency single point of contact should be coordinated by the Governor's Center for Local Government.

Responsible Agencies: Pennsylvania Department of Environmental Protection, Pennsylvania Department of Conservation + Natural Resources, Pennsylvania Infrastructure Investment Authority, Pennsylvania Department of Transportation, Pennsylvania Emergency Management Agency, and the Pennsylvania Public Utility Commission, with a defined working alliance with the Susquehanna River Basin Commission and the Delaware River Basin Commission

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



Priority Actions to be Undertaken by Other Entities in Partnership With The County Planning Directors Association of Pennsylvania

Re-engaging the relevant state and federal agencies to commit to and take actions to implement Integrated Water Resources Management at the state level is our highest priority; state leadership and statewide tools are urgently needed by counties to effectively implement Integrated Water Resources Management at the county level to address critical water and land use planning needs.



Develop a Geographic Information System database and Base Map of all Water Resources in the Commonwealth.

Responsible Agencies: Pennsylvania Department of Environmental Protection, Pennsylvania Department of Conservation + Natural Resources and State Geospatial Coordinating Board

Re-energize and promote the Commonwealth's State Water Plan and its implementation as a multi-agency process and 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 Resources Management.

Responsible Agencies: Pennsylvania Department of Environmental Protection, state and federal agencies, Susquehanna River Basin Commission, Delaware River Basin Commission

Through the required 5-year update of the State Water Plan, develop statewide guidance, standards and criteria to allow for the assessment of water availability and the impacts of land use decisions on water resources.

Responsible Agencies: Pennsylvania Department of Environmental Protection, Pennsylvania Department of Conservation + Natural Resources





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 data sets.

Enhance human capital and funding of County Geographic Information System and Planning Departments to implement Integrated Water Resources Management planning.

Assist in the development of the next generation of Counties' Comprehensive Plans through incorporation of Integrated Water Resources Management planning.

Compile a comprehensive list of agencies and water system providers and water-related major “players” for each county in the Commonwealth to be invited to provide input as various Integrated Water Resources Management Plans are being developed.

Make recommendations to County Commissioners Association of Pennsylvania Committees for their inclusion in the County Commissioners Association of Pennsylvania Legislative Platform.

Conclusion

The County Planning Directors Association of Pennsylvania Integrated Water Resources Management Task Force has attempted to simplify a complex issue that has far-reaching and important implications for the future of the Commonwealth.





The One Water Task Force has distilled the topic to three important components requiring needed action: **linking land use planning with Integrated Water Resources Management; data development; and policy and technical guidance**, and has proposed some clear priority next steps that are critical for ALL involved—the Public, the Planners, the Water Managers and Elected Officials.

Acknowledgements

Water Lillies at Camp Mosey Wood - Luzerne County

Front Cover, Pages 2-3, Rear Cover - Courtesy of William Deegan

Fall Canoe at Sweet Arrow Lake - Schuylkill County

Page 4 - Courtesy of Bob Evanchalk/Schuylkill County Parks + Recreation

Lehigh Gorge Waterfall - Carbon County

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Silver Creek Mine Drainage - Schuylkill County

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GIS Watershed Map - Lancaster County

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Locks + Dams - Beaver County

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Morning Glory Spillway at Wildwood Lake - Dauphin County

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The mission of The County Planning Directors Association of Pennsylvania is to improve planning practices in the Commonwealth of Pennsylvania by: providing for the collection, distribution, and exchange of information relating to planning at the county level among its members; by improving public relations; informing members about legislation intended to modify planning functions; providing information and guidance to the County Commissioners Association of Pennsylvania and the American Planning Association – PA Chapter on legislative, regulatory, and policy matters; and cooperating with other interested agencies in the promotion of the objectives of the County Planning Directors Association of Pennsylvania.

It is the vision of the County Planning Directors Association of Pennsylvania to effectively represent community planning as a means of improving the quality of life for all citizens of the Commonwealth of Pennsylvania. The Association will provide an opportunity for statewide county to county networking and for enhancing the visibility and effectiveness of county planning.

Respectfully submitted,

One Water Task Force Members

Joshua Billings | Lycoming County Planning

Janet Bowers | Chester County Water Resources Authority

Eric Jespersen | PaMAGIC

Shannon Rossman | Berks County Planning

Laura Simonetti | County GIS Professionals Association of Pennsylvania

Susan Smith | Schuylkill County Planning

Jerry Walls | The County Planning Directors Association of Pennsylvania Consultant

Jim Weaver | Chair, Tioga County Planning

Designed + Edited by The Lehigh Valley Planning Commission:

Becky Bradley, Susan Rockwell, Geoff Reese, Eric McAfee, William Deegan + Alice Lipe

County Planning Directors Association of Pennsylvania

Executive Board

President, Frank Mancini | Beaver County

Vice President, Amy McKinney | Lawrence County

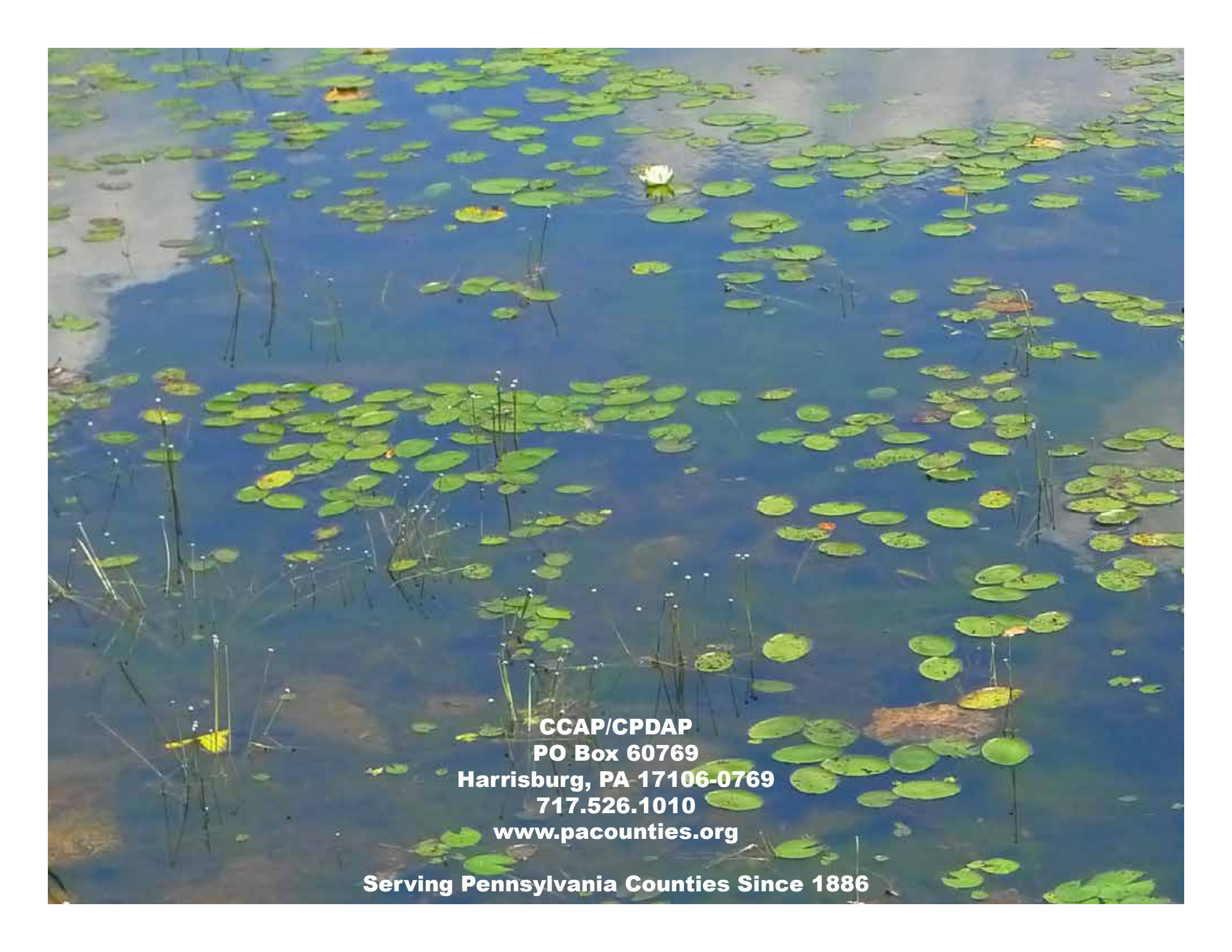
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Treasurer, Dan Glotz | Warren County

At Large member, Becky Bradley | Lehigh Valley Planning Commission

At Large member, Jim Weaver | Tioga County

Immediate Past President, Kirk Stoner | Cumberland County

A photograph of a pond filled with numerous green lily pads. A single white lily flower is in bloom in the upper center. Tall, thin stems rise from the water, some with small white buds. The water is a deep blue color.

CCAP/CPDAP
PO Box 60769
Harrisburg, PA 17106-0769
717.526.1010
www.pacounties.org

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