

SUSQUEHANNA RIVER BASIN COMMISSION

Annual Report 2018



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CONTRIBUTORS

Michael Appleby, John Balay, Brent Bauman, Rachelle Eby, Andrew Gavin, Tyler Shenk, and Benjamin Pratt

EDITOR

Pat Devlin

On the cover: Deep Freeze
Susquehanna River, Lancaster and York counties, as seen from the Turkey Hill Trail. Managed by the Lancaster County Conservancy, the Turkey Hill Trail traverses the steep River Hills region south of Washington Boro.

Photo Credit: Nicholas A. Tonelli

Below: Columbia, Pa (Photo credit: SRBC)



2018 COMMISSIONERS



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Commander
North Atlantic Division
U.S. Army Corps of Engineers

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Chamberlayne
2nd Alternate: Amy M. Guise



NEW YORK (CO-CHAIR)
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New York State Department of
Environmental Conservation

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2nd Alternate: Paul D'Amato
3rd Alternate: Scott Foti



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PATRICK MCDONNELL
Secretary
Pennsylvania Department of
Environmental Protection

1st Alternate: Timothy Schaeffer
2nd Alternate: Jennifer Orr-Greene



MARYLAND
BEN GRUMBLES
Secretary
Maryland Department
of the Environment

1st Alternate: Saeid Kasraei
2nd Alternate: Virginia Kearney

COMMISSION LEADERSHIP

EXECUTIVE STAFF

Andrew D. Dehoff, P.E.
Executive Director

Andrew J. Gavin
Deputy Executive Director

Marcia E. Hutchinson, MBA
Director, Administration and Finance

GENERAL COUNSEL

Jason E. Oyler, *General Counsel and
Secretary to the Commission*

MANAGERS

John W. Balay, P.E., P.H.
Planning and Operations

Paula B. Ballaron, P.G.
Policy Implementation and Outreach

Todd D. Eaby, P.G.
Project Review

Gordon D. Lauger
Accounting

Brydon H. Lidle, III
Information Technology

Gene G. Veno
Governmental Affairs & Public Advocacy

Eric R. Roof
Compliance and Enforcement

James P. Shallenberger
Monitoring and Protection

EXECUTIVE DIRECTOR'S *Message*

The Susquehanna River Basin Commission is no stranger to partnering with agencies of its member states. But in an era of limited financial resources, expanding demands and expectations on the quality and quantity of our water, water infrastructure challenges and more extreme hydrologic events, the Commission is finding itself more and more in collaborative efforts with local communities.

The articles in this year's report highlight a sampling of the community partnership efforts the Commission has undertaken. For example, mapping of areas prone to flooding is a longstanding priority of the Commission, and we have embraced new technology to provide more accurate maps at a lower cost. Such mapping efforts have always been a partnership, often reflecting federal interest in helping vulnerable communities have the tools they need to prepare for increasingly frequent flooding. The protection of life and property from flooding is optimized when forecasts of pending flood conditions are delivered as accurately and with as much advance warning as possible. Enhanced forecasts and warnings are the primary focus of the interagency Susquehanna Flood Forecast and Warning committee,

which the Commission has been coordinating for over 30 years to ensure collaboration between the agencies that collect hydrologic data, generate forecasts and operate infrastructure, to best serve our local communities.

Stormwater runoff can certainly entail flooding issues, but it also degrades the water quality in our local streams that support recreation and fishing, as well as provide for our drinking water. Communities are under state and federal obligations to address stormwater and water quality impacts, and are seeking innovative and collaborative outlets to meet those obligations while faced with infrastructure financing challenges. The Commission has worked to develop watershed-based solutions in partnership with communities and expects interest in such efforts to continue well into the future. The Commission's focus is on identifying cost-effective stormwater management efforts that not only satisfy local obligations but also address Chesapeake Bay restoration goals and reduce flooding. Previous editions of our



Andrew D. Dehoff, P.E.

annual report highlighted recent projects in Lancaster and Cumberland counties, and can be viewed in the Reports Library on www.srbc.net.

Working together to address flooding and water quality issues is an obvious approach when entities share a common goal. Perhaps it's a bit less obvious, but the shared goal of best management of our water resources also offers opportunities for the Commission to serve as a partner to communities subject to the Commission's regulatory oversight. History and experience tell us that the review of municipal water withdrawal requests can be accomplished more effectively and at less cost when the Commission builds relationships with permittees early in the approval process. I firmly believe that the Commission and the communities under its regulatory auspices share the objective of sustainable and reliable water supplies, and it's a high priority of mine that we foster relationships that lend themselves to collaborative permitting and partnered resource management.

CLOSING DATA GAPS *in* WATER RESOURCE MANAGEMENT

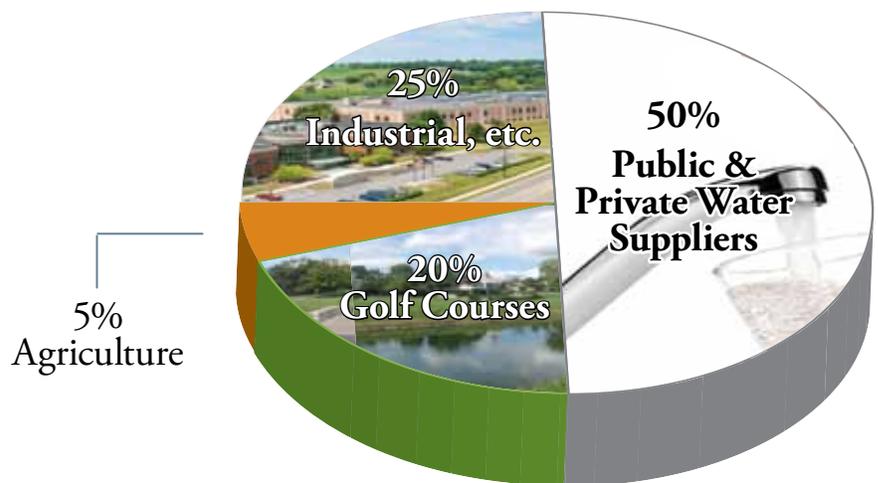
The Commission develops a program that closes significant knowledge gap regarding older, unpermitted (grandfathered) water uses.

In a recent study that compiled all available data to characterize Basin water use and availability—the *Cumulative Water Use and Availability Study for the Susquehanna River Basin*—the Commission estimated that there are possibly more than 700 older, unpermitted facilities with an estimated water use of nearly one billion gallons per day. If accurate, this volume of water use is roughly equal to the total amount currently accounted for, and managed by, the Commission across the entire Basin.

With such large quantities in question, the Commission developed a program that would close this significant knowledge gap regarding older, unpermitted water use (also known as *grandfathered*) to ensure the Commission's ability to effectively manage the water resources of the Basin.

During the first six months of the two-year long program, approximately 280 facilities submitted registrations. For the facilities with completed registrations:

- about 10 percent fall below the Commission's regulatory thresholds that require a permit application;
- around 10 percent are ineligible due to triggering the Commission's regulations and will need to apply



Approximate breakdown of registered facilities in the first six months of the Commission's new grandfathered water use registration program. Facilities must register their grandfathered withdrawals and consumptive water uses by December 31, 2019.

- for a permit; and
- more than 70 percent appear eligible for the registration program.

Under this new program, facilities must register their grandfathered withdrawals and consumptive water uses by December 31, 2019, to preserve the exemption from obtaining a permit into the future.

The registered facilities span a variety of sectors across Maryland, Pennsylvania, and New York with less than one percent from Maryland, 80 percent from Pennsylvania, and 20 percent from New York. Roughly 50 percent of the facilities are public and private

drinking water suppliers, 20 percent are golf courses, five percent agriculture, with the remaining 25 percent encompassing colleges, prisons, mining, manufacturing, and other facilities.

These data are important to the Commission's management of the Basin's water resources as water use is on the rise and availability can be limited in certain areas. Approximately 10 percent of the Basin's watersheds have a slim margin between water use and water availability. There are also increasing concerns with competing water uses in certain areas of the Basin.

WORKING *to* RESTORE LOCAL WATERWAYS *and the* CHESAPEAKE BAY

The Commission contributes its expertise in data collection and monitoring to help local partnerships adapt their approaches to improving water quality.

The Commission has recently renewed its long standing commitment to the cleanup of the Chesapeake Bay through an agreement with Pennsylvania to assist with the development of restoration plans (commonly referred to as Watershed Implementation Plans, or WIPs).

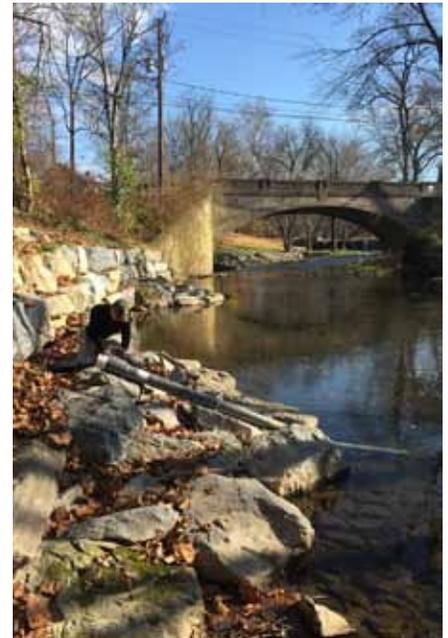
Commission staff are working closely with other scientists, citizen groups, local governments, agricultural organizations, universities and other stakeholders to determine the best strategies for reducing pollution in the Basin's rivers and streams, which in turn will lead to restoring the Chesapeake Bay ecosystem. Additionally, staff are collecting and analyzing water samples for pollutants, providing analytical support for formulating the best pollution reduction practices and assisting local stakeholder groups in need of guidance for implementing those practices.

Chiques Creek – An Innovative Approach

The Commission is partnering with the Pennsylvania Department of Environmental Protection, the Penn State Agriculture and Environment Center, Lancaster County Conservation District, local municipalities, and other stakeholders to collaborate on an innovative approach for achieving water

quality improvements in the Chiques Creek Watershed, Lancaster and Lebanon counties, Pennsylvania. Instead of pursuing the more prescriptive Total Maximum Daily Load (TMDL) approach of assigning pollutant allocation loads and dictating restoration goals, this diverse stakeholder group will develop a plan for restoring the watershed's streams and creeks through a collaborative process established under a new TMDL-Alternative framework. This framework is an adaptive management approach that lets decision makers learn and track which restoration practices work best based on data from monitoring the watershed. The intent is to improve long term water quality outcomes.

Initiated in 2016, the restoration work in the Chiques Watershed includes hydraulic/hydrologic modeling efforts that will also help develop a strategy for local communities to lower flood risks and implement projects to reduce flood damages and polluted storm flows overall. The models are being used to characterize existing flood conditions, evaluate flood reduction alternatives, and inform recommendations for improving flood resiliency in Manheim Borough, PA, and the Chiques Creek watershed. Throughout the process, checkpoints will be established to evaluate progress and make adjustments



A monitoring sonde along Chiques Creek, Lancaster County, Pa collects data that is analyzed to learn which land use practices are working to improve water quality.

to the approach in support of the adaptive management model. Upon successful completion, the model will be implemented in other areas.



COORDINATING FLOOD *and* ICE MONITORING EVENTS

The Commission applies new technology in its coordination of the multi-agency Flood Forecast and Warning System.

With more than 49,000 miles of waterways, the Susquehanna River Basin is one of the most flood-prone regions in the country. Floods isolate residents and businesses, creating challenges for first responders and damaging property. Since 1985, the Commission has coordinated the work of the multi-agency Susquehanna Flood Forecast and Warning System that has provided flood forecasts that have saved lives and reduced flood related property damage.

As coordinator of the SFFWS, the Commission staff has been leading the effort to provide emergency managers and the public with flood stage forecast maps. These maps predict where flood waters will rise based on a flood forecast from the National Weather Service.

With evolving technology, the Commission is partnering with Huntingdon, Dauphin, and Lancaster counties, Pennsylvania, with nine cellular-based web cameras in known flood hazard locations. The cameras provide real-time observations of actual conditions and facilitate an early warning of flood conditions.

Commission staff are also partnering with the National Oceanic and Atmospheric Administration and U.S. Army Corps of Engineers on flood



Ice Jam Floods

Ice can interrupt the normal flow of water when temperatures are cold enough for ice to form shore to shore in river systems. Ice jams may result from ice break-up and movement causing flooding upstream. A sudden release of water from an ice jam may cause flash flooding. Ice jams are unpredictable and require constant monitoring for potential hazards.

mapping efforts in order to add to the suite of completed inundation maps of the Basin for the benefit of residents and businesses of the Wyoming Valley (which includes Sunbury, Bloomsburg, Danville, and Wilkes-Barre) and Swatara Creek watershed in Pennsylvania.

Ice Jams 2018

Brutally cold temperatures that settled into the region in late December and January 2018 gave way to ice forming from shore to shore on the Susquehanna

in many communities in the Basin. Numerous flooding challenges existed as warming temperatures and rainfall resulted in ice jams, or when the break-up and subsequent movement of ice causes flooding. While many ice jams were reported across the Basin, the most significant jams occurred in Broome and Steuben counties in New York and in Wyoming, Lackawanna, Luzerne, Columbia, Union, York and Lancaster counties in Pennsylvania.

ASSISTING SMALL MUNICIPALITIES *with* TECHNICAL SUPPORT

The Commission develops action plans and continues training for small public water suppliers.

The Commission recognizes the challenges facing smaller municipal water supply systems to keep abreast of current regulatory requirements. Initiated in 2012, the Public Water Supply Assistance Program is intended to ease the technical and financial burdens faced by small public water supply systems when meeting regulatory requirements.

In addition to providing system-specific assistance, the Commission is offering general outreach and education on regulatory requirements, training on the preparation and implementation of aquifer testing plans, groundwater withdrawal application preparation, and other educational programs specifically for public water systems.

In 2018, Commission staff developed action plans that provide guidance on collecting appropriate data to support a waiver of the aquifer testing requirement for eligible municipal public water supply systems (see examples in box). These action plans are developed using system-specific information and identify data gaps that need to be filled to support a waiver request. The Commission encourages all facilities to utilize existing data to reduce costs and streamline the renewal process.

Strasburg Borough Authority, Lancaster County, Pennsylvania

Following a Commission staff meeting with the Authority's board, it was decided that an aquifer testing plan would be developed in order to better understand the capacity of the Authority's well. Staff provided the results of the environmental screening and toured the Authority's facility and water source areas to help develop an appropriate monitoring network.

Millersburg Area Authority, Dauphin County, Pennsylvania

Staff met with the Authority manager to discuss the renewal of two wells and provided an environmental screening that summarized the expiring approvals and the results of a Pennsylvania Natural Diversity Inventory Report completed for each well. Staff is working with the Authority to develop an action plan.

Shrewsbury Borough Authority, York County, Pennsylvania

Staff completed an environmental screening to support the renewal of an approved groundwater source. As part of the screening, staff initiated a Pennsylvania Natural Diversity Inventory Report that identified a potential conflict with a rare, threatened, or endangered species protected under the United States' Endangered Species Act. Staff worked with the Authority to evaluate renewal strategies and operational monitoring plans to resolve the potential conflicts with regulations from both the U.S. Fish and Wildlife Service and the Pennsylvania Department of Environmental Protection.



Training Workshops

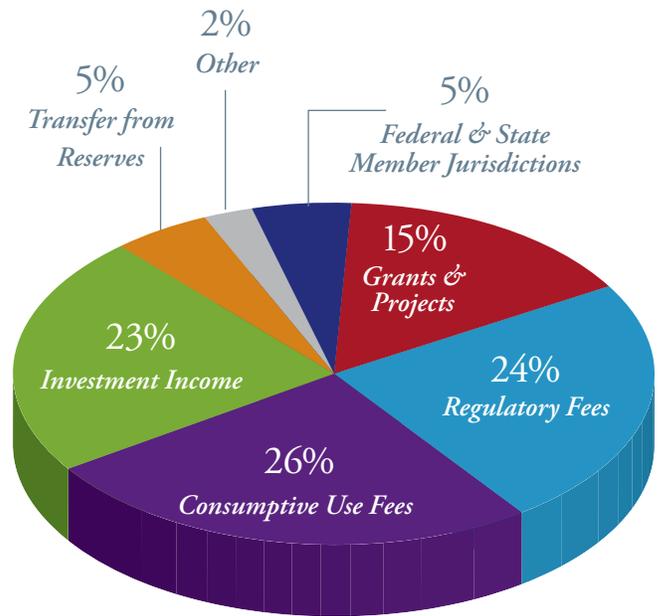
The Commission delivered four workshops during the year that included such topics as funding considerations, principles of asset management, predicting maintenance issues, water loss management, and other technical and regulatory considerations. These workshops trained more than 180 representatives of public water supply systems, governmental agencies, and a variety of consulting firms that work directly with the water supply systems.

FISCAL YEAR 2018 FINANCIAL SUMMARY

Fiscal Year 2018 Total

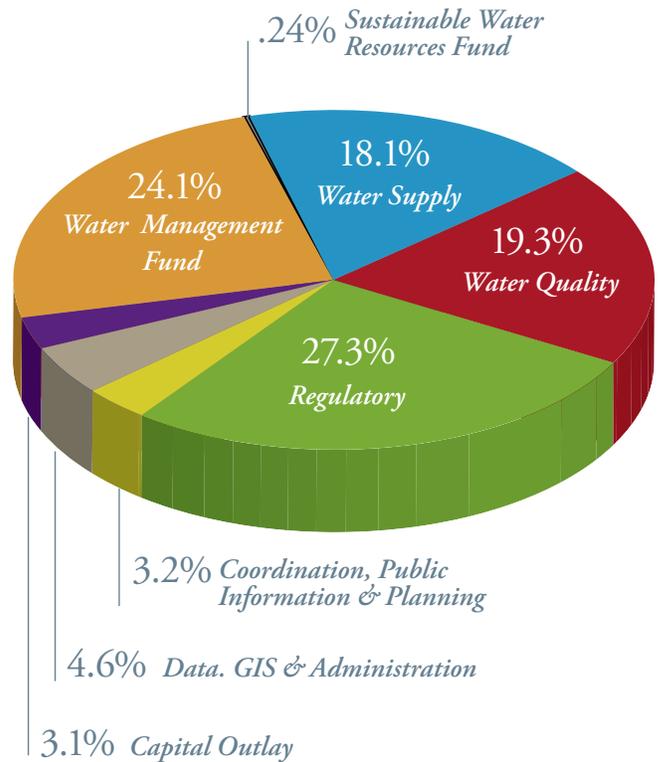
REVENUE

Federal & State Member Jurisdictions	\$	842,000
Grants and Projects	\$	2,477,652
Regulatory Fees	\$	3,786,931
Consumptive Use Fees	\$	4,098,406
Investment Income	\$	3,682,484
Transfer from Reserves	\$	794,830
Other	\$	386,314
TOTAL		\$ 16,068,617



EXPENDITURES

Water Supply	\$	2,913,783
Water Quality	\$	3,099,399
Regulatory	\$	4,381,129
Coordination, Public Information, and Planning	\$	521,130
Data, GIS, and Administration	\$	740,209
Capital Outlay	\$	503,599
Water Management Fund	\$	3,871,237
Sustainable Water Resources Fund	\$	38,131
TOTAL		\$ 16,068,617



AWARDS

2018 ANNUAL EXCELLENCE AWARD



Bret's vital role on projects, across many program areas, is a true reflection of the Commission's core values of teamwork, professionalism, and quality. Bret is regarded as an essential team member for his professional work ethic, quality work standards, and ability to get the job done. Bret's extensive knowledge and years of experience in working with the Commission's databases allows him the ability to provide valuable insight into how the system functions and support any new or updated policy, regulation, or program activity.

2018 QUARTERLY SPOTLIGHT AWARDS



FIRST QUARTER
Scott McFeaters
Environmental Scientist

SECOND QUARTER
Dave Haklar
Environmental Scientist

and

Graham Markowitz
Hydrologist

THIRD QUARTER
Can Liu
Hydrologist

FOURTH QUARTER
Donna Heiser
Accounting Assistant

