

**SUSQUEHANNA RIVER BASIN COMMISSION
4423 N. FRONT STREET
HARRISBURG, PA 17110**

**BUDGET RECONCILIATION
FY-2023**

JUNE 16, 2022

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SUSQUEHANNA RIVER BASIN COMMISSION

BUDGET FOR FISCAL YEAR 2023

LEGAL CITATION:

New York:	Laws of 1967, Chapter 785
Pennsylvania:	Session of 1968, Act No. 181
Maryland:	Acts of 1967, Chapter 391
United States:	Public Law 91-575

This budget anticipates the receipt of both appropriations from the Commission's member jurisdictions and other revenues needed to support the continuing operations of the Commission. This includes short-term programs deemed necessary to achieve the purposes of the Susquehanna River Basin Compact (Compact) and the objectives and goals set forth in the SRBC Comprehensive Plan.

The Compact provides that the Commission may receive and accept such payments, appropriations, grants, gifts, etc., (Article 15, Section 15.1(a) 2) as may be made available to it by the member jurisdictions, or any other public or private corporation or individual, for use in furthering the purposes of the Compact.


Attached are schedules presenting this budget request in detail for Fiscal Year 2023, which covers the twelve month period beginning July 1, 2022. Comparative amounts for the budget reconciliation for Fiscal Year 2022 and the adopted budget for 2023 are also included. All statements and explanations submitted herewith are true and correct to the best of our knowledge.

HEREBY APPROVED AND SUBMITTED BY:



Marcia E. Hutchinson
Director, Administration & Finance

June 16, 2022
Date



Andrew D. Dehoff
Executive Director

June 16, 2022
Date

SUSQUEHANNA RIVER BASIN COMMISSION
BUDGET FOR FISCAL YEAR 2023
IN SUPPORT OF APPROVED PROGRAMMATIC ACTIVITIES

The total expense budget request for Fiscal Year 2023 is \$18,777,500. The budget will support implementation of the Comprehensive Plan for the management of the Water Resources of the Susquehanna River Basin and is allocated to the Plan’s Priority Management Areas and administration as follows:

<u>Percent of Total Budget</u>	
I. PMA A. Water Supply	30%
II. PMA B. Water Quality	19%
III. PMA C. Flooding and Drought	25%
IV. PMA D. Watershed Management	17%
V. Administration, Coordination & Outreach	9%
 Total	 100%

Details of the proposed activities in each PMA and for Administration, Coordination & Outreach are presented starting on page 11, following detailed statements of Revenue Sources and Expenditures.

SUSQUEHANNA RIVER BASIN COMMISSION
BUDGET SUMMARY FOR FISCAL YEAR 2023
(July 1, 2022 – June 30, 2023)

	General Fund	Water Management Fund (1)	Total
Revenues:			
Member Jurisdictions	\$ 810,000		\$ 810,000
Grants & Contractual	3,247,500		3,247,500
Regulatory Program Fees	4,345,500	\$ 5,000,000	9,345,500
Other Income	305,000	1,365,000	1,670,000
TOTAL REVENUES	\$ 8,708,000	\$ 6,365,000	\$15,073,000
Expenditures:			
Personnel Services	\$ 5,580,000		\$ 5,580,000
Employee Benefits	3,000,000		3,000,000
Special Contractual Services	2,615,000		2,615,000
Travel & Subsistence	40,000		40,000
Commission Meetings & Public Hearings	20,000		20,000
Communications, Postage	72,500		72,500
Rent – Equipment Land & Buildings	35,000		35,000
Printing, Reproduction & Advertising	32,500		32,500
Software – License, Purchase & Maintenance	165,000		165,000
Repairs & Maintenance	118,000		118,000
Other Contractual Services	165,000		165,000
Utilities, Janitorial	95,000		95,000
Supplies & Materials	282,500		282,500
Grant Awards	120,000	3,900,000	4,020,000
Cowanesque/Curwensville Water Storage		1,000,000	1,000,000
Billmeyer Quarry Water Storage		45,000	45,000
Depreciation – Water Storage Rights		1,207,000	1,207,000
Capital Expenditures	285,000		285,000
TOTAL EXPENDITURES	\$12,625,500	\$ 6,152,000	\$18,777,500
EXCESS (DEFICIT) OF REVENUE OVER EXPENDITURES	\$ (3,917,500)	\$ 213,000	\$ (3,704,500)
Transfer from Water Management Fund	\$ 1,972,500 (2)	(1,972,500)	-
Transfer from Fiscal Stabilization Fund	\$ 445,000 (3)		\$ 445,000
Transfer from Sustainable Water Resources Fund	\$ 1,500,000 (4)		\$ 1,500,000
TRANSFERS IN (OUT)	\$ 3,917,500	\$ (1,972,500)	\$ 1,945,000
EXCESS (DEFICIT) AFTER FUND TRANSFERS	\$ -	\$ (1,759,500)	\$ (1,759,500)

(1) The Water Management Fund is designated for the financing of water supply related projects, including costs associated with the planning, engineering, design, and construction phases of new projects or the reformulation of existing projects, or any other project or study initiated by the Commission to address the cumulative impact of consumptive water use or otherwise to support low flow management in the Susquehanna River Basin. In FY-2022 the Commission launched a new grant program designed to support its Consumptive Use Mitigation Policy and is using accumulated reserves to fund the grant program. Grants and other projects and activities funded by the Water Management Fund are identified in the budget narrative starting on page 11.

(2) Costs for employees who are working on Water Management Fund projects are paid through the General Fund and reimbursed from the Water Management Fund.

(3) The Commission's regulations provide that certain withdrawals and consumptive uses that are in excess of the Commission's regulatory thresholds do not require Commission approval if they predated regulations and certain other conditions are met. In FY-2023, the Commission will continue to review applications which were submitted to register these projects. See Page 12 "Grandfathered Water Use Registrations" for a complete description of the anticipated activities. Application review costs in excess of available funding will be covered by the Commission's Fiscal Stabilization Fund. The Fund will also cover pension contributions that exceed 28.08% of payroll.

(4) Pursuant to Resolution 2016-06, monies in the Sustainable Water Resources Fund may be used to support projects and activities that the Commission finds necessary to support its mission as authorized under the Susquehanna River Basin Compact which do not have funding available through other sources. Specific projects and activities funded by the Sustainable Water Resources Fund are identified in the budget narrative starting on page 11.

SUSQUEHANNA RIVER BASIN COMMISSION

**GENERAL FUND
COMPARATIVE STATEMENT OF REVENUES
BY MAJOR SOURCES**

SOURCES	Budget Reconciliation FY 2022	Current Expense Budget FY2023	Budget Reconciliation FY2023
Member Jurisdictions: (5)			
New York	\$ 259,000	\$ 248,250	\$ 259,000
Pennsylvania	739,000	739,750	205,000
Maryland	346,000	493,000	346,000
United States		493,000	-
Subtotal – Member Jurisdictions	\$ 1,344,000	\$ 1,974,000	\$ 810,000
Other Income: (6)			
Grants & Contractual	\$ 2,728,250	\$ 2,725,000	\$ 3,247,500
Regulatory Program Fees	3,909,750	4,195,000	4,345,500
Interest Income, Building Rental & Other	275,000	275,000	305,000
Subtotal – Other Income	\$ 6,913,000	\$ 7,195,000	\$ 7,898,000
 TOTAL ALL SOURCES	 \$ 8,257,000	 \$ 9,169,000	 \$ 8,708,000

(5) In accordance with the Susquehanna River Basin Compact, Section 14.3(c), member jurisdictions are requested to include the apportioned amounts set forth in the current expense budget in their respective budgets next to be adopted, subject to such review and approval as may be required by their respective budgetary processes. Amounts included in the budget reconciliation reflect appropriations included in final approved budgets.

(6) Income from other sources is estimated on the basis of past experience and authorized programs.

SUSQUEHANNA RIVER BASIN COMMISSION
COMPARATIVE STATEMENT OF EXPENDITURES
BY OBJECT

Class Titles	Budget Reconciliation FY 2022	Current Expense Budget FY2023	Budget Reconciliation FY 2023
Personnel Services	\$ 5,375,000	\$ 5,640,000	\$ 5,580,000
Employee Benefits	2,891,000	3,085,000	3,000,000
Subtotal – Personnel & Benefits	\$ 8,266,000	\$ 8,725,000	\$ 8,580,000
Special Contractual Services	\$ 1,717,000	\$ 1,798,000	\$ 2,615,000
Travel & Subsistence	65,000	65,000	40,000
Commission Mtgs. & Public Hearings	20,000	25,000	20,000
Communications, Postage	80,000	80,000	72,500
Rent-Equip., Land & Buildings	40,000	45,000	35,000
Printing, Reproduction & Advertising	47,500	48,000	32,500
Software Licenses, Purchases & Maintenance	150,000	165,000	165,000
Repairs & Maintenance	144,500	153,000	118,000
Other Contractual Services	150,000	150,000	165,000
Utilities, Janitorial	110,000	110,000	95,000
Subtotal – Contractual Services	\$ 2,524,000	\$ 2,639,000	\$ 3,358,000
Supplies/Other	\$ 378,000	\$ 385,000	\$ 402,500
Capital Expenditures	\$ 195,000	\$ 195,000	\$ 285,000
TOTAL	\$11,363,000	\$11,944,000	\$12,625,500

SUSQUEHANNA RIVER BASIN COMMISSION

**MAJOR OBJECT CLASSIFICATION
PERSONNEL SERVICES**

Appropriation Class	Budget Reconciliation FY 2022	Current Expense Budget FY 2023	Budget Reconciliation FY 2023 (7)
Salaries	\$ 5,375,000	\$ 5,640,000	\$ 5,580,000

**COMPARISON OF STAFFING
FOR FISCAL YEAR 2023**

Departments	Current Expense Budget FY 2023			Budget Reconciliation FY 2023			Change (+ Or -)		
	Prof.	Cler.	Total	Prof.	Cler.	Total	Prof.	Cler.	Total
Executive	4	1	5	4	1	5	0	0	0
Administrative & Staff Services	7	2	9	8	1	9	1	-1	0
Gov't/Public Affairs	2	0	2	2	0	2	0	0	0
Technical Programs	2	0	2	1	0	1	-1	0	-1
Project Review	13	2	15	13	2	15	0	0	0
Planning & Operations	8	0	8	7	0	7	-1	0	-1
Compliance	9	1	10	9	1	10	0	0	0
Grant Programs	14	1	15	15	1	16	1	0	1
TOTAL	59	7	66	59	6	65	0	-1	-1

(7) The FY-2023 current expense budget includes 3% for performance-based increases and bonuses, and 4% for cost of living increases.

SUSQUEHANNA RIVER BASIN COMMISSION

**MAJOR OBJECT CLASSIFICATION
EMPLOYEE BENEFITS**

Appropriation Class	Budget Reconciliation FY 2022	Current Expense Budget FY 2023	Budget Reconciliation FY 2023
Medical Insurance	\$ 725,000	\$ 770,000	\$ 725,000
Social Security - Commission Share	380,000	395,000	400,000
Worker's Compensation	18,000	20,000	25,000
Employee Life Insurance	33,000	35,000	35,000
Unemployment Compensation	10,000	10,000	10,000
Recognition & Rewards	25,000	25,000	25,000
Retirement Plan – Commission Share (8)	1,700,000	1,830,000	1,780,000
TOTAL	\$ 2,891,000	\$ 3,085,000	\$ 3,000,000

(8) Retirement employer contribution rate budgeted for FY-2023 is 31.9% of payroll.

SUSQUEHANNA RIVER BASIN COMMISSION

MAJOR OBJECT CLASSIFICATION CONTRACTUAL SERVICES

Appropriation Class	Budget Reconciliation FY 2022	Current Expense Budget FY 2023	Budget Reconciliation FY 2023
Fees, Financial Services	\$ 50,000	\$ 50,000	\$ 50,000
Fees, Legal & Investigative Services	25,000	25,000	20,000
Fees, Cooperative Programs	68,000	68,000	50,000
Fees, Research & Laboratory Services	200,000	200,000	100,000
Fees, Computer Services Other	25,000	25,000	20,000
Other Services – Professional (9)	1,349,000	1,430,000	2,375,000
Travel & Subsistence	65,000	65,000	40,000
Commission Meetings	15,000	15,000	15,000
Public Hearing Expenses	5,000	10,000	5,000
Communications Expenses	65,000	65,000	57,500
Postage	15,000	15,000	15,000
Rent – Land, Buildings & Equipment	40,000	45,000	35,000
Printing & Reproduction	45,000	45,000	30,000
Advertising	2,500	3,000	2,500
Software Purchase, License & Maint.	150,000	165,000	165,000
Repairs & Maint. – Building & Grounds	77,500	85,000	60,000
Repairs & Maint. – Office Equipment	2,000	3,000	3,000
Repairs & Maint. – Auto Equipment	25,000	25,000	15,000
Repairs & Maint. – Lab Equipment	40,000	40,000	40,000
Insurance	125,000	125,000	140,000
Dues & Memberships	25,000	25,000	25,000
Electric, Heat, Water & Sewage	75,000	75,000	70,000
Janitorial Service	35,000	35,000	25,000
TOTAL	\$ 2,524,000	\$ 2,639,000	\$ 3,358,000

(9) The FY-2023 budget includes agreement with independent contractors. The Executive Director is authorized by the resolution adopting this budget to execute any and all agreements up to the total amount budgeted for contractors for the fiscal year.

SUSQUEHANNA RIVER BASIN COMMISSION

**MAJOR OBJECT CLASSIFICATION
SUPPLIES AND OTHER**

Appropriation Class	Budget Reconciliation FY 2022	Current Expense Budget FY 2023	Budget Reconciliation FY 2023
Office Supplies	\$ 25,000	\$ 25,000	\$ 20,000
Automotive Supplies (10)	40,000	40,000	25,000
Janitorial Supplies	5,000	5,000	2,500
Computer Supplies	20,000	25,000	50,000
Laboratory Supplies (11)	100,000	100,000	100,000
Miscellaneous Supplies	3,000	-	-
Subscriptions & Publications	10,000	10,000	10,000
Moving & Recruiting Expenses	10,000	5,000	5,000
Staff Training & Seminars	40,000	50,000	50,000
Grant Awards (12)	120,000	120,000	120,000
Miscellaneous	5,000	5,000	20,000
TOTAL	\$ 378,000	\$ 385,000	\$ 402,500

(10) Also includes fuel costs

(11) Includes replacement parts for continuous in-stream monitoring stations

(12) Grants awarded under the Commission's Water Level Grant Program – see page 12 for more details

SUSQUEHANNA RIVER BASIN COMMISSION

**MAJOR OBJECT CLASSIFICATION
CAPITAL EXPENDITURES**

Appropriation Class	Budget Reconciliation FY 2022	Current Expense Budget FY 2023	Budget Reconciliation FY 2023
Computer Equipment	\$ 40,000	\$ 40,000	\$ 45,000
Automotive Equipment (13)	75,000	75,000	75,000
Office Furniture & Fixtures	5,000	5,000	5,000
Scientific & Laboratory (14)	75,000	75,000	160,000
TOTAL	\$ 195,000	\$ 195,000	\$ 285,000

(13) Two Commission vehicles will be replaced in FY-2023.

(14) In FY-2023 the Commission will replace data loggers, which are a component of its Continuous In-stream Monitoring Network.

PRIORITY MANAGEMENT AREA A: WATER SUPPLY

Goal: Water supply is sufficient to meet diverse demands.

Vision: All users of the Basin’s water resources have reliable, conflict-free, and sustainable water supply for current and future generations, even as demographic, economic, and climate conditions evolve.

Programs

AREA A: Water Supply

Regulation of Water Users – Permits	\$ 1,310,000
Regulation of Water Users – ABR	345,000
Regulation & Policy Updates	235,000
Compliance and Enforcement	1,395,500
Grandfathered Water Use Registrations	325,000
Hydroelectric Project Regulation & Relicensing	<u>45,000</u>
Subtotal – General Fund/Fiscal Stabilization Fund	\$ 3,655,500
Water Level Grant Program	200,000
Public Water Supply Assistance Initiative	125,000
Project Sponsor Assistance Initiative	100,000
Regulatory Fee Discounts for Municipalities	<u>165,000</u>
Subtotal – Sustainable Water Resources Fund	\$ 590,000
Cumulative Water Use & Availability Study	125,000
Hydrologic Model Updates	80,000
Consumptive Use Mitigation Grant Program Administration.....	283,000
Consumptive Use Mitigation Grants – Demand Modification Projects	<u>890,500</u>
Subtotal – Water Management Fund	\$ 1,378,500
TOTAL PMA A: WATER SUPPLY	\$ 5,624,000

Activities which will be conducted under Priority Management Area A: Water Supply

Funding Provided by the General Fund/Fiscal Stabilization Fund:

Regulation of Water Users – Permits – Commission staff will review and make recommendations on appropriate actions to take on applications, modifications and renewals for water withdrawal and consumptive uses.

Regulation of Water Users – ABR - This expedited Approval-by-Rule process is used by companies interested in using a source of water that has already been approved for use (e.g., a public water supply) or a source that is of lesser quality (e.g., wastewater discharge, mine water).

Regulation & Policy Updates - The Commission continuously reviews and periodically proposes updates to its regulations and policies which are designed to provide clarity to project sponsors, target only the most appropriate activities, and improve efficiency and effectiveness of regulatory reviews.

Compliance and Enforcement– The Commission requires metering at all withdrawal sites to document daily quantities of water which have been withdrawn or used. Metering data are reported quarterly by project sponsors online. Staff use the data to monitor approval conditions such as protective passby flows. The Commission’s compliance program also

includes field inspection of approved projects both during construction and periodically during the term of approval, and enforcement actions against companies that fail to gain Commission approval or violate the terms and conditions of approvals. These costs also include the cost of maintaining the Sayre, Pennsylvania office.

Grandfathered Water Use Registrations - The Commission's regulations provide that certain withdrawals and consumptive uses that are in excess of the Commission's regulatory thresholds do not require Commission approval if they predated regulations and certain other conditions are met. This exemption is referred to as "grandfathering". In FY-2023, the Commission will continue to review applications received to register grandfathered projects with the Commission. Once registration is complete, grandfathered projects will report water withdrawal and consumptive use data to the Commission. Costs that are in excess of fees charged for the program are covered by the Commission's Fiscal Stabilization Fund. Costs may also include assistance to registrants for monitoring/metering equipment.

Hydroelectric Project Regulation and Relicensing - The Commission will continue to be actively engaged with partner agencies and stakeholders in the relicensing of hydroelectric projects located in the Susquehanna River Basin. Key resource issues of focus typically include environmental flows, fish passage, water quality, sediment/nutrient management, etc. Staff have and will continue to coordinate with partner agencies and stakeholders on study requests, study plan/report reviews, National Environmental Policy Act document reviews, Section 401 Water Quality Certificate conditions, license requirement implementation, etc. throughout the relicensing processes.

Funding Provided by the Sustainable Water Resources Fund:

Water Level Grant Program – Water level measurements in a supply well often can be a primary source of information about the characteristics of an aquifer and the influence that a project's groundwater withdrawal has on the aquifer. Collecting and maintaining a record of routine water level data during ongoing withdrawals develops a valuable resource of operational water level data. Because the Commission recognizes the importance of water level measurements, the Commission developed this grant program to assist projects with purchasing, installing or maintaining water level monitoring equipment. The grant program offers grant awards not to exceed \$2,500 per source, with a facility cap of \$7,500 per year, to qualifying facilities. Funding for this grant program includes grant awards of \$120,000.

Public Water Supply Assistance Initiative – Through this initiative Commission staff provide both general and focused education and system-specific guidance to small municipal water supply project sponsors that meet eligibility requirements, lack financial and technical capabilities, and are subject to Commission groundwater withdrawal regulations. Staff also provide technical assistance related to groundwater withdrawal application process and aquifer testing requirements, and hydrogeologic guidance to assist in the development, management and protection of groundwater sources. Assistance also included requirements related to satisfying post-approval conditions, including technical assistance, loaning or purchasing equipment, and initial review of short-term data collection activities.

Project Sponsor Assistance Initiative – This effort is an extension of the Public Water Supply Assistance Initiative described above. Staff will provide technical assistance, including meeting prior to water withdrawal applications being submitted, to small financially-challenged project sponsors to facilitate the completion of the Commission's aquifer testing and application requirements.

Regulatory Fee Discounts for Municipalities – The Commission provides discounts on its regulatory fees to municipalities, which are defined as political subdivisions of the member states, which includes counties, townships, towns, boroughs, villages, cities, authorities, boards or any other organizations or public benefit corporations created by the member jurisdictions and not having jurisdiction-wide authority. When a municipality engages in commercial or private enterprise activities, including those unrelated to traditional delivery of potable water to residences and businesses within its prescribed service area, fees associated with such activities are subject to the standard fees applicable to any private enterprise.

Funding provided by the Water Management Fund:

Cumulative Water Use and Availability Study – This study, which was initially completed in 2016, compiled a comprehensive, basin-wide water use data library and refined procedures for computing existing and projected cumulative consumptive water use at the project and watershed scales. Staff determined sustainable water availability limits for watersheds throughout the basin, and developed a GIS-based tool for automating the cumulative water use and availability analysis and illustrating results to inform regulatory and planning activities. In FY-2023, staff will maintain and update the water use database, evaluate additional refinements to the tool, and conduct more detailed analyses in priority watersheds.

Hydrologic Model Updates – Commission staff will continue to make necessary updates and refinements to our existing basin-wide OASIS hydrologic model. Improvements will include updated software, hydrologic records, demand data, and project operations as well as model documentation, training, and support. Hydrologic modeling and analysis support will be provided by Hazen & Sawyer at a cost not to exceed \$50,000.

Consumptive Use Mitigation Grant Program Administration - This grant program focuses on soliciting and funding consumptive use mitigation projects within priority watersheds in the basin. Costs for administration of the grant program and for the Commission’s annual solicitation for proposals and review and selection of projects it will fund are included.

Consumptive Use Mitigation Grants - Demand Modification Projects – The Commission’s Consumptive Use Mitigation Grant Program was established to accelerate implementation of on-the-ground projects to mitigate for consumptive use, especially during critical low flow periods and droughts. This includes demand modifications that result in increased water conservation, recycling, and reuse. Costs for demand modification projects funded by the grant program are estimated at \$850,000 for FY-23.

PRIORITY MANAGEMENT AREA B: WATER QUALITY

Goal: Waters throughout the Basin exhibit good quality.

Vision: The waters of the Basin meet or exceed water quality standards and are able to support desired water supply, aquatic life, and recreational uses.

Programs

AREA B: Water Quality

Subbasin Surveys	\$ 90,000
Large Waters Assessment	60,000
National Aquatic Resource Surveys	75,000
Enhanced Basin Research	90,000
Total Maximum Daily Loads for Impaired Stream Reaches	145,000
Lower Susquehanna Source Water Protection Program	85,000
Water Quality Restoration and Protection	45,000
Chesapeake Bay Sediment & Nutrient Assessment Program	550,000
Chesapeake Bay WIP Support	130,000
Chiques-Conoy-Conewago Regional Partnership	13,000
Bear Creek AMD Project	33,000
Harmful Algal Bloom Studies	30,000
Morris Run Abandoned Mine Drainage Treatment Plant	1,325,000
Continuous In-stream Monitoring Network	<u>550,000</u>
Subtotal – General Fund/Fiscal Stabilization Fund	\$ 3,221,000
Legacy Mining Feasibility Studies	188,000
Continuous In-stream Monitoring Network Data Logger Replacement	130,000
Chiques-Conoy-Conewago Regional Partnership	<u>24,000</u>
Subtotal – Sustainable Water Resources Fund	\$ 342,000
TOTAL PMA B: WATER QUALITY	\$ 3,563,000

Activities which will be conducted under Priority Management Area B: Water Quality

Funding Provided by the General Fund:

Subbasin Surveys - The Commission has been conducting water quality and biological surveys of streams in each of the six major subbasins on a rotating basis. Subbasin Surveys involve collection of chemical, biological, and physical data. Subbasin-scale watershed assessments provide valuable macroinvertebrate, water quality, physical habitat, and discharge information to interested federal, state, and local parties located within the targeted subbasins. The Commission will analyze probabilistic data that were collected in the Upper Susquehanna Subbasin in FY-2022 and in FY-2023, probabilistic sample design will be applied in the Middle Susquehanna Subbasin. The data and findings collected as part of this program will provide information to member state agencies (NYSDEC and PADEP) for use in the 305(b) portion of their Integrated Reports.

Large Waters Assessment – In 2002, the Commission conducted a pilot study to determine appropriate methods to assess the biological conditions of large rivers in the Susquehanna River Basin. In subsequent years, the large river assessment program was expanded to include biological and water quality monitoring at approximately 25 stations on the main stem Susquehanna River and along sections of the West Branch Susquehanna River, the Juniata River, the Chemung River, as well as the series of reservoirs on the Lower Susquehanna River. The Commission also continues to

coordinate with the states and USEPA, as well as integrate source water protection monitoring activities to enhance protection of public drinking water supplies that rely on the main stem Susquehanna River and its major tributaries. Focus for FY-2023 will be the non-wadable rivers throughout the entire Basin. A probabilistic sample design that captures 8-10 locations and includes: water chemistry parameters, instantaneous water quality indicators, macroinvertebrates, fish, and eDNA measurements will be implemented.

National Aquatic Resource Surveys – The EPA National Aquatic Resource Survey Program is a nation-wide initiative to sample aquatic resources in a statistically-relevant and categorical process. The Commission participates in the National Lakes and National Rivers and Streams Assessment components (NLA, NRSA, respectively) according to EPA’s schedule of rotation. Since inception of the National Aquatic Resource Survey Program, the Commission has participated in NLA and NRSA sampling in the Basin as well as within one or more of the state jurisdictions of the Basin. In FY-2023, the Commission will survey 25 NLA sites and up to 10 NRSA sites in Pennsylvania and New York.

Enhanced Basin Research - The Commission has spent decades collecting chemical, physical, and biological data in the Basin as part of numerous monitoring projects that have been funded by Section 106, member state funding, and/or internal funding. In addition, other state and federal agencies have been collecting data within the Basin as part of separate monitoring projects while striving to reach their own goals. Combination datasets offer the potential for analyses on temporal and spatial scales that surpass the individual project objectives for which the data were originally collected. Beginning in FY-2017, SRBC’s collective dataset was re-structured and augmented with GIS information to leverage knowledge gained in specific areas for more efficient use to characterize Basin resources and enhance scientific understanding overall. While much of SRBC’s focus in early fiscal years of the project emphasized compilation and structural enhancements of the dataset, SRBC staff also began to use the dataset to study an array of other issues and for FY-2023 Enhanced Basin Research includes: (i) continued refinement of SRBC’s Water Quality Index tool; (ii) on-going integration of high-resolution meteorologic, LiDAR/bathymetric, in-stream/in-lake CIM data, and eDNA; (iii) further exploration of relationships and processes between nutrient enrichment, excess sediment, and aquatic community functions; and, (iv) analyses of CIM and other data resources to independently validate and explore PADEP’s Eutrophication Cause Determination protocol as well as inform Chesapeake Bay Program Partner Science and Technical Advisory Committee work groups focused on Local Watershed Monitoring and Nutrient and Sediment Load Reductions for Abandoned Mine-related restoration activities.

Total Maximum Daily Loads for Impaired Stream Reaches - The federal Clean Water Act requires that certain impaired waters be included on a Section 303(d) list for each state. After USEPA approves the state lists, TMDLs must be prepared for the listed waters. The Commission will coordinate with its member jurisdictions regarding TMDL and Section 303(d) issues, including the TMDL issues associated with the Chesapeake Bay restoration effort. The Commission also will assist the states in developing TMDLs. TMDL work in each member jurisdiction will be performed in accordance with the jurisdiction’s development plan; with the Commission developing TMDLs on streams affected by urban runoff, agriculture, and other causes of impairment. The Commission will coordinate closely with the appropriate agencies on the Commission’s TMDL activities. Underway since FY-2015, the Commission has continued its close coordination with PADEP on a pilot project for TMDL alternatives in the Chiques Creek watershed, referred to as the *Chiques Creek Restoration Initiative*. Focus in FY-2023 will include coordination of stakeholder groups, various watershed monitoring activities, including operation and maintenance of two real-time continuous in-stream monitoring (CIM) stations, documentation of best management practice (BMP) implementation and compilation of monitoring results in the Chiques Creek watershed. The Commission also will continue support of on-going TMDL activities in the Octoraro watershed in south-central Pennsylvania through continued operation and maintenance of two CIM stations, supplemental water quality and biologic data collection, and participation in stakeholder events.

Lower Susquehanna Source Water Protection Program - Staff will continue to support implementation of regional source water protection management measures for the majority of large public water supply systems within the Lower Susquehanna River Basin. Staff also will continue to operate, maintain, and provide data for the Early Warning System for public water suppliers, which was established by the Commission in 2003, and expanded in 2018. Staff also will continue to provide 24/7 support to members of PADEP’s Spill Response unit to furnish, real-time condition modeled estimates of travel time between suspected contaminant plumes and water supply intake features. Staff also anticipates trial testing an enhanced travel time model interface that is currently being developed for the Commission by Harrisburg

University. In FY-2023, the Commission will continue to organize and formalize aspects of the Lower Susquehanna Source Water Protection Partnership through promotion of awareness among members/affiliates about topical issues, as well as participation in regional and national source water protection collaborative efforts and activities.

Water Quality Restoration & Protection - The Commission has long collaborated on inter-agency and other stakeholder organization partnerships to restore water quality and related ecosystem functions as the result of legacy mining impacts. Commission staff will continue to pursue and coordinate mine drainage restoration projects and related issues, as well as strengthen existing and develop new partnerships aimed at restoring/protecting water resources that are challenged by agricultural land use, stormwater management, and other development activities.

As warranted, Commission staff will furnish technical support related to site and watershed-scale restoration and protection in the form(s) of:

- collecting habitat and water quality data,
- completing biological community surveys,
- compiling historic data inventories,
- analyzing long-term water quality monitoring data for pollutant trends & loads,
- evaluating CIM data according to PADEP Eutrophication Cause Determination protocol that defines nutrients as a cause of stream impairment,
- designing site and watershed monitoring approaches,
- partnering for stakeholder outreach/education workshops, and/or,
- preparing concept-level site remediation plans.

Staff also will assist by coordinating among agencies and stakeholder groups to advance specific projects and/or initiatives aimed at elevating awareness or promoting support for restoration and protection activities.

Chesapeake Bay Sediment and Nutrient Assessment Program - This program was initiated in FY-1985, and provides data that are critical for calibration of the Chesapeake Bay watershed model and evaluation of tributary strategy activities. Monthly samples, base flow samples and daily or more frequent samples during a minimum of five storms will be collected from the six (6) long-term monitoring sites on the Susquehanna River at Towanda, Danville, and Marietta, the Juniata River at Newport, the West Branch Susquehanna River at Lewisburg and the Conestoga River at Conestoga. Monthly and storm samples also will be collected at 21 additional sites in Pennsylvania, New York, and Maryland. The Commission will continue to work with its member states, USEPA, USGS, and other partners to maintain and optimize information obtained from the monitoring network to support state tributary strategies and the overall Chesapeake Bay cleanup effort.

The Commission will use the data to analyze and update information from the long-term water quality monitoring program for the Susquehanna River Basin as well as to calculate pollutant loads and trends analysis. The data and analysis will help evaluate progress in meeting pollutant load reductions for the Susquehanna River Basin.

Chesapeake Bay WIP Support – Staff will provide technical, logistical, and administrative support for the PADEP Chesapeake Bay Office and serve in lead role in terms of modeling pollutant reductions using the Chesapeake Assessment Scenario Tool (CAST) on behalf of County Action Plan coordinators and their PADEP counterparts. Staff also will provide technical and GIS assistance to PADEP to support information exchange and messaging between PADEP, EPA and stakeholder groups engaged toward pollution reduction activities.

Chiques-Conoy-Conewago Regional Partnership – This project, which is aimed at providing outreach and technical assistance to farmers in the lower Susquehanna River region of Pennsylvania, will accelerate improved agriculture management through the implementation of forested riparian buffers, soil health practices, and stream restoration. The Commission will serve as a member of the Chiques Creek Reenvisioned Management Team, the Lancaster Clean Water Partners Watershed Action Team, and will provide monitoring support. Funding is provided by a National Fish & Wildlife grant received by the Pennsylvania State University Agriculture and Environment Center.

Bear Creek AMD Project - The Eastern Pennsylvania Coalition for Abandoned Mine Reclamation (EPCAMR), under a grant from Pennsylvania Department of Environmental Protection, will amend a previously-constructed AMD Treatment system in the Bear Creek Watershed. The project will focus on designing a system to treat two discharges in the lower portion of the Bear Creek Watershed (Dauphin County, PA). The Commission will support the project by providing a topographic and boundary survey of the project area. The Commission also will develop an AMD Treatment System design plan and an operation & maintenance repair/replacement plan. A majority of the support work will be subcontracted to the Commission's professional engineering services provider at an estimated cost of \$30,000.

Harmful Algal Blooms – Populations of certain algae and bacteria can grow explosively and cascade into various environmental, ecological, and even human health problems. The Commission is partnering with an interagency work group in Pennsylvania to exchange information and cultivate more thorough understanding of measures to protect, preempt, predict, and mitigate impacts that arise from HABs. Additionally, Commission staff are working with a research team at Harrisburg University on a pilot project to pair satellite-based multispectral sensor measurements with in-lake chlorophyll and turbidity data to explore relationships that may predict precursor conditions that ultimately trigger HAB events.

Morris Run Abandoned Mine Drainage Treatment Plant – An approximately 20-mile stretch of the Tioga River has long-standing impairment status owing to pollution from AMD within the watershed. Under contract to PADEP Bureau of Abandoned Mine Reclamation, the Commission will oversee Engineering Design activities for an active treatment plant (ATP) that will remediate the remaining principle mine drainage sources in the watershed, thereby fostering recovery of the Tioga River and enhancing downstream aquatic resources in the Chemung River. Initial design work was performed in FY-2022. In FY-2023, the Commission's treatment plant design contractor will complete a majority of the remaining design work at an estimated cost of \$1.1 million. Costs also include \$110,000 for the Commission's professional engineering contractor who will peer-review the design plans.

Continuous In-stream Monitoring Network – In early 2010, in the Marcellus Shale Gas Play portion of the Susquehanna River Basin, the Commission launched what has grown to be a 60⁺-station real-time continuous in-stream monitoring (CIM) project known as the Remote Water Quality Monitoring Network (RWQMN) that makes water quality indicator data publicly accessible in real-time through the Commission's web interface. In addition to the RWQMN, the Commission operates approximately 20 CIM stations throughout the Basin in support of various projects, partner initiatives, and data needs. The Commission's CIM program is supported by a blend of revenue sources that include internal resources as well as contracts with member jurisdiction agencies such as the Pennsylvania Department of Conservation and Natural Resources (DCNR) and PADEP, USEPA Clean Water Act and other grant-funded projects, and private industry. DCNR funding supports O&M and data analytics at 9 CIM stations that are located on State-owned lands.

In addition to the core water quality indicators, select stations are equipped with sensors that measure water level, chloride, nitrogen, and/or incident sunlight. Staff perform scheduled and trouble-shoot maintenance actions on CIM equipment as well as collect supplemental data/information such as aqueous chemistry, stream discharge, biologic community (benthic macroinvertebrate, fish, periphyton community), and habitat information. Data developed through the Commission's CIM projects support a growing myriad of aquatic science applications by members of the Commission as well as analysts in numerous other organizations – the Commission's CIM program is nationally and internationally recognized for its unparalleled scientific value.

Funding Provided by the Sustainable Water Resources Fund:

Legacy Mining Feasibility Studies – Dollar-for-dollar, the remediation of legacy coal mine impacts has consistently demonstrated tangible and positive investments in terms of natural resources service and function uplift. Over the years, tightening federal and state budgets have given funding priority to “shovel-ready” abandoned mine land and abandoned mine drainage (AML and AMD) projects, which has made it increasingly difficult to obtain funding to support the investigation, feasibility, design, permitting, and even certain types of implementation (e.g. soil decompaction & amendment, land-clearing, etc.) activities necessary to complete such projects. In FY-2023, the Commission will provide

funding from its Sustainable Water Resources Fund to support investigation, design, permitting, and certain related activities to ensure a steady progression of shovel-ready AML/AMD projects exists. Engineering services not to exceed \$15,000 will be provided by an independent contractor.

Continuous In-stream Monitoring Network Data Logger Replacement - The datalogger and communication relay components of the Commission's real-time CIM network were fielded more than 10 years ago and the hardware is reaching its functional lifespan. The Commission began to replace dataloggers throughout the real-time CIM network in FY-2022; the remainder of datalogger replacement will occur in FY-2023 and FY-2024.

Chiques-Conoy-Conewago Regional Partnership – This project, which is aimed at providing outreach and technical assistance to farmers in the lower Susquehanna River region of Pennsylvania, will accelerate improved agriculture management through the implementation of forested riparian buffers, soil health practices, and stream restoration. The Commission will serve as a member of the Chiques Creek Reenvisioned Management Team, the Lancaster Clean Water Partners Watershed Action Team, and will provide monitoring support. Funding is provided by a National Fish & Wildlife grant. The Commission is providing matching funds of \$24,000.

PRIORITY MANAGEMENT AREA C: FLOODING AND DROUGHT

Goal: Communities are more resilient to flooding and drought.

Vision: Basin communities will be prepared for and equipped to mitigate the effects of flooding and drought in a changing climate, minimizing loss of life and property, economic disruption, and adverse environmental impacts.

Programs

AREA C: Flooding and Drought

Flood Coordination.....	\$ 100,000
Tri-County Flood Warning System	30,000
Flood Studies	75,000
Susquehanna Flood Warning & Response System	75,000
Middle Susquehanna Flood Mitigation Project	100,000
Silver Jackets	35,000
Drought Monitoring	50,000
Drought Management Strategy Update	45,000
General Hydrologic Studies	50,000
Subtotal – General Fund/Fiscal Stabilization Fund	\$ 560,000
Climate Change Studies and Research	100,000
Public Water Supply Reservoir Network Study	68,000
Susquehanna Flood Warning & Response System.....	225,000
Subtotal – Sustainable Water Resources Fund	\$ 393,000
Cowanesque/Curwensville Reservoir Operations	2,194,000
Consumptive Use Mitigation Planning	230,000
Low Flow Augmentation Operations	40,000
Consumptive Use Mitigation Grants – Project Operations	1,041,000
Billmeyer Quarry Consumptive Use Mitigation Project	313,000
Subtotal – Water Management Fund	\$ 3,818,000
TOTAL PMA C: FLOODING AND DROUGHT	\$ 4,771,000

Activities which will be conducted under Priority Management Area C: Flooding and Drought

Funding Provided by the General Fund:

Flood Coordination – Commission staff will facilitate existing partnerships and work to develop new partnerships at the federal, state and community level that leverage available resources to provide flood risk reduction techniques and technology to impacted communities across the basin. Focusing on community based needs, partnerships will plan, design, and implement solutions to facilitate understanding and response to flood events. Additionally, staff will be responsive to media, legislative, and general request for flood related information and products.

Tri-County Flood Warning System – Commission staff, under a Federal Emergency Management Agency (FEMA) grant, conducted a pilot project in Huntingdon, Lancaster, and Dauphin Counties focused on developing camera-based flood warning systems. The project will enhance situational awareness through a variety of pathways including existing mobile technologies, cellular based camera imagery, and a web-based data portal. In FY-2023, costs for the project include maintenance of the cameras and data portal.

Flood Studies – The persistent challenge of flooding in basin communities requires appropriate mitigation planning to minimize ongoing risks to life and property. The Commission will be responsive to partner requests for assistance relative to hydraulic and hydrologic studies that seek to characterize the nature and extent of flood risk within the basin. Efforts typically include river bathymetry surveys, hydraulic structure surveys, stormwater facility surveys, hydrologic analyses and modeling, flood mapping quality assurance reviews, technical report preparation, etc. Staff will assist the United States Army Corps of Engineers (USACE) with the Juniata Subbasin Flood Study. In addition, the Commission will continue to leverage a long standing partnership with NOAA National Weather Service by continuing work to operationalize recent advancements to the National Water Model and related flood inundation map projects.

Susquehanna Flood Warning & Response System – Originally developed to serve riverine communities protected by the Wyoming Valley Levee System, SRBC, in partnership with USACE and others, completed Version 1.0 of the Susquehanna Flood Warning and Response System. The online tool provides expected damages associated with various levels of flooding as well as response actions related to forecast stage. This project will expand the functionality and accessibility of Version 1.0 by developing additional reporting features and incorporating additional communities with available inundation map libraries. Providing a tool such as this, to community officials and stakeholder agencies, facilitates hazard mitigation planning, flood event response, and recovery after an event.

Middle Susquehanna Flood Mitigation Project – The Commission will assist the Pennsylvania Emergency Management Agency (PEMA) with hazard mitigation planning in the Susquehanna River Basin. Through funds obtained by PEMA from the Federal Emergency Management Agency’s Flood Mitigation Assistance Program, PEMA and the Commission will focus on ten Pennsylvania counties in the Middle Susquehanna and West Branch subbasins. The project will develop mitigation strategies and obtain data to prioritize, select and develop a minimum of five projects eligible for annual FEMA grand funding. Commission staff will coordinate outreach and provide technical assistance to PEMA and other key stakeholders. The Commission’s technical assistance will include assessing county plans, including Hazard Mitigation Plans. Staff will also provide GIS and flood modeling support. Ultimately, the implemented projects will help ensure Basin communities are more resilient to flooding under existing conditions, as well as any changing conditions brought about by climate change, and advance the Commission’s mission for reducing flood damage to communities.

Silver Jackets – Commission staff will continue to seek leveraged solutions for flood mitigation projects through coordination with Silver Jackets teams in the basin. The Silver Jackets effort is spearheaded by the USACE and involves multiple federal and state agencies with a common mission of protecting life and property during flood events. Statewide teams typically compete for pilot projects that match team member funds to USACE funds to complete mitigation projects.

Drought Monitoring – The Commission established a basin-wide Drought Coordination Plan with its member jurisdictions to promote consistency when determining, responding to and informing the public of droughts, and convenes the Drought Coordinating Committee as drought conditions emerge to share information and identify possible response actions. Staff will continue to consult with the Drought Coordinating Committee during drought conditions.

Drought Management Strategy Update – The Commission’s Drought Coordination Plan describes the Commission’s drought management authority, drought watch, warning, and emergency stages, monitoring data and criteria for determining drought stage, and drought response actions by the Commission and partner agencies. Since adoption of the plan in 2000, monitoring networks have changed, data portals have improved, new drought indicators have emerged, and climate science research has provided new insights. Accordingly, there is a need to update the Commission’s drought monitoring, early warning, and management procedures and tools to increase drought preparedness in the Basin.

General Hydrologic Studies – Commission staff are continually monitoring basin hydrologic conditions and improving hydrologic datasets and tools to guide regulatory and planning decision making. Specific efforts include monitoring flood/drought conditions and associated mitigation operations, maintaining a comprehensive stream gage database containing basin characteristic and streamflow statistic data, improving passby flow determination datasets and spreadsheet tools, preparing low flow forecasts for Conowingo Pond Management Workgroup meetings, enhancing ecosystem flow recommendations compliance tool, etc.

Funding Provided by the Sustainable Water Resources Fund:

Climate Change Studies - The Commission's new Comprehensive Plan outlines climate change as a cross-cutting challenge that will need to be addressed throughout the Susquehanna River Basin. Staff will continue to assess regional climate projections and their implications to future hydrologic conditions in both surface water and groundwater settings. The Basin's member jurisdictions' published policies and guidance on climate change and environmental justice will be used to inform the relevant climate change objectives within the Commission's Comprehensive Plan, and will prevent duplication of efforts with those of our member jurisdictions. And we will continue to participate in research funded by the Department of Energy, run by leading climate science experts across the country. All of this work will provide valuable climate science insight and data for informing the Commission's water resources planning and management efforts.

Public Water Supply Reservoir Network Study - Reservoir storage levels at key water supply facilities and reported public water supply problems are two of six indicators considered in assessing regional hydrologic conditions in the Susquehanna Basin. Reservoir storage remains the only one that is not readily available via online tools and monitoring. Commission staff will engage Susquehanna Drought Coordinating Committee (DCC) members in a targeted outreach effort to improve partnerships and enhance data exchange and communication with Public Water Suppliers (PWS). Specifically, the DCC will establish a Basin-specific drought indicator related to PWS reservoir storage levels. In addition to using storage rule curves where available, reservoir levels will be correlated with existing standard indicators (streamflow, groundwater wells, precipitation departures) and aggregated in a digital dashboard to provide stakeholders an online tool to efficiently visualize and interpret related data.

Susquehanna Flood Warning & Response System – Utilizing the Planning Assistance to States program, SRBC will partner with USACE to hire a mobile LiDAR contractor at an estimated cost of \$225,000 to collect first floor elevations for at risk structures in the Upper Susquehanna Subbasin. These data will be integral to expanding the system to additional flood prone communities in the Basin.

Funding Provided by the Water Management Fund:

Cowanesque/Curwensville Reservoir Operations - The Commission owns water supply storage at Cowanesque and Curwensville Lakes. Costs include depreciation of water storage rights (\$1,169,000), and operating and maintenance costs for Cowanesque and Curwensville Lakes (\$1,000,000). The Commission's share of the operating and maintenance costs for Cowanesque Lake are passed through to Constellation Generation, LLC and Talon Generation, LLC.

Consumptive Use Mitigation Planning – Staff will continue to implement recommendations in the Consumptive Use Mitigation Plan related to the evaluation of water storage and low flow augmentation release potential within the basin including USACE reservoirs, state/private lakes, abandoned mine pools, and other feasible sources. Staff will also implement a Consumptive Use Mitigation Policy which provides guidance regarding the determination of an acceptable manner of mitigation to be provided by project sponsors whose consumptive use is subject to review and approval and memorializes contemporary consumptive use mitigation criteria utilized by the Commission in formulating and implementing consumptive use mitigation projects. Engineering support will be provided by the Commission's professional engineering contractor at a cost not to exceed \$100,000.

Low Flow Augmentation Operations – The Commission continues to monitor hydrologic conditions throughout the basin and coordinate closely with partner agencies, particularly with respect to low flow events and operational triggers at consumptive use mitigation and environmental restoration projects. These projects currently include Curwensville Lake, Whitney Point Lake, Lancashire 15 Abandoned Mine Drainage Treatment Plant, Cresson Abandoned Mine Drainage Treatment Plant, and Billmeyer Quarry.

Consumptive Use Mitigation Grants – Project Operations - The Commission's Consumptive Use Mitigation Grant Program was established to accelerate implementation of on-the-ground projects to mitigate for consumptive use, especially during critical low flow periods and droughts. This includes project operations that result in improved

reservoir, conjunctive use, and drought operations. Costs for project operations projects funded by the grant program are estimated at \$1,024,000 for FY-23.

Billmeyer Quarry Consumptive Use Mitigation Project – In December 2018, the Commission entered into a water storage agreement with LCSWMA for the use of up to 425 million gallons of stored water in Billmeyer Quarry for consumptive use mitigation. During FY-2023, staff will continue to implement the project operations plan (pending low flow conditions) and conduct ongoing monitoring related to aquatic invasive species and groundwater levels. Costs also include \$45,000 of interest for payments due to LCSWMA under the Water Storage Agreement, and depreciation of water storage rights of \$38,000. In FY-23 the Commission will also pay an estimated \$150,000 to its selected pumping contractor.

PRIORITY MANAGEMENT AREA D: WATERSHED MANAGEMENT

Goal: – Watersheds exhibit a healthy and sustainable balance between land and water management.

Vision: - Integrated land use and water management practices allow watersheds to function in a natural and sustainable manner to protect and improve the quantity and quality of water resources in the Basin.

Programs

AREA D: Watershed Management

American Eel Restoration	\$ 45,000
Conowingo Watershed Implementation Plan – Financing Authority	<u>75,000</u>
Subtotal – General Fund/Fiscal Stabilization Fund	\$ 120,000
Eels in the Classroom	35,000
Stormwater Management	75,000
Stream Salinization Study	35,000
Lower Susquehanna eDNA Monitoring.....	<u>30,000</u>
Subtotal – Sustainable Water Resources Fund	\$ 175,000
DCNR Reservoir Environmental Flow Enhancements	75,000
Kehm Run Dam Removal & Restoration Project	600,000
Critical Aquifer Recharge Area Pilot Projects	50,000
Octoraro Consumptive Use Mitigation Study	125,000
Consumptive Use Mitigation Grants – Environmental & Water Quality Projects.....	<u>2,078,000</u>
Subtotal - Water Management Fund	\$ 2,928,000
TOTAL PMA D: WATERSHED MANAGEMENT	\$ 3,223,000

Activities which will be conducted under Priority Management Area D: Watershed Management

Funding Provided by the General Fund:

American Eel Restoration - Migration of historically-abundant American eels to and from the basin has been restricted by the presence of dams and hydroelectric projects on the Lower Susquehanna River since the early 1900s. Additionally, populations of the basin’s formerly most prevalent freshwater mussel species, which relies on American eel as a host species for part of its life cycle, have plummeted. In 2008, the US Fish and Wildlife Service began a limited, but successful, eel reintroduction program. Begun in FY-2016, the Commission embarked on a long-term study aimed at discerning changes to freshwater ecosystem traits following reintroduction of American eels in specific sub-watersheds, including evaluations of shifts in fish and macroinvertebrate community composition, re-establishment of mussel populations, and water quality improvements.

Conowingo Watershed Implementation Plan – The Conowingo Watershed Implementation Plan (CWIP) is a road map toward achieving a “pollution diet” like those in place for the entire Chesapeake Bay watershed. One of the keys to the CWIP is establishing a financing authority to manage restoration activity and funding associated with the CWIP effort. In FY-2023 the Commission will continue to work with a coalition of state agencies (Virginia, Maryland, Pennsylvania, and New York) and the University of Maryland CWIP project team to execute agreements, and to develop and implement processes and procedures designed to establish the Commission as the CWIP financing authority.

Funding Provided by the Sustainable Water Resources Fund:

Eels in the Classroom – This project leverages Commission expertise and broader efforts to restore eel populations. Commission staff have a list of more than 20 willing school districts with responsible personnel who have experience raising fish in aquaria. Preference will be given to school districts located in environmental justice areas. Participant schools will be allotted a nominal number of juvenile American eels (~10 to 15), and students will raise them for several months, then release the fish to local streams. Through this project students are taught the value and importance of aquatic connectivity, ecosystem function and migratory fish restoration. Commission staff will furnish instructional material to teachers and participate in eel release activities for a subset of classrooms.

Stormwater Management – Commission staff will provide technical support to agencies as well as provide technical and regulatory coordination assistance to municipalities to improve stormwater management through structural and non-structural management practices to best manage increasing challenges associated with stormwater and nuisance flooding. Support will include, but is not limited to, providing guidance on development of educational/outreach materials for stakeholder implementation, technical assistance with developing stormwater reduction strategies, support for prioritizing and implementing best management practices in critical areas, and coordination support among local, state and federal interests.

Stream Salinization Study – Stream salinization is an emerging topic in freshwater aquatic scienc. Increasing chloride concentrations, primarily from road salt runoff, in freshwater can be toxic and have been shown to be harmful to aquatic organisms, alter food webs and decrease diversity. The combination of on-going development coupled with climate change projections for more severe weather events will likely lead to an intensification of this issue. This study will 1) examine the magnitude of chloride concentrations; 2) document the temporal extent of road salt runoff influence, and 3) identify any co-occurrence of changes in other ion composition at 8-12 sentinel monitoring sites.

Lower Susquehanna eDNA Monitoring - Since 2019 the Commission has used eDNA for monitoring fishes in the Susquehanna River Basin, particularly in response to the range expansion of Northern snakehead and Blue catfish throughout the Chesapeake Bay and lower Susquehanna River. Timely monitoring of these species has been identified as an essential element by regional resource agencies tasked with managing the Susquehanna's aquatic invasive species of concern. Based on results of prior years' monitoring and the continued range expansion of both of these species, ongoing annual surveillance will be conducted.

Funding Provided by the Water Management Fund:

DCNR Reservoir Environmental Flow Enhancements – The purpose of this study is to assess opportunities for enhancing environmental flows at Pennsylvania Department of Conservation and Natural Resources (DCNR) lakes in the Susquehanna River Basin and addressing related goals and objectives cited in DCNR's Climate Change Adaption and Mitigation Plan. Specifically, the Plan expresses a desire to 1) evaluate the operation of each dam and determine impacts downstream when water levels are reduced; 2) examine measures to compensate for low flows such as releasing compensation flow downstream to address conservation or recreation impacts; 3) develop and/or retrofit state park lakeshore infrastructure to be adaptable to changing pool depths; and 4) conduct water releases that mimic historical and natural variability. Additionally, the Plan summarizes strategies focused on improving conditions within watersheds upstream of DCNR lakes. These efforts entail restoration of riparian buffers, increasing stream thermal cover, management of invasive species, erosion and sediment control, and increasing overland flow retention leading to increased groundwater infiltration.

Kehm Run Dam Removal and Restoration Project – In 2020, SRBC and American Rivers partnered to remove a high hazard dam on Kehm Run in York County, Pennsylvania. The full project consists of removing the dam structure and appurtenances, restoring the associated stream channel, floodplain, and wetlands and addressing adjacent stormwater issue to decrease sedimentation and enhance groundwater recharge. The project is being completed in three phases: 1) dewatering and initial dam breach, 2) removal of remaining dam and pipe, and 3) restoring stream channel, floodplain, and wetlands, as well as addressing stormwater impacts. In FY-23 staff will engage with a contractor to complete the post-dam removal environmental restoration work at the project site at an estimated cost of \$500,000.

Critical Aquifer Recharge Area Pilot Projects – Groundwater recharge is the primary means of ensuring water is available to refill aquifers and support base flow to streams. Different geologic materials, structures, or surficial land use impact these conditions. This project aims to identify areas of the basin that provide greater recharge and baseflow support and are critical to maintaining adequate water supply to restore/improve hydrologic resiliency. Upon identification, Commission staff, in partnership with organizations such as the Upper Susquehanna Coalition, the Upper Susquehanna Conservation Alliance, North Central PA Conservancy and similar partners, will develop and implement preservation, restoration, or enhancement projects at preferred locations. Protecting and enhancing critical aquifer recharge and baseflow support to streams will help provide drought resiliency, enhance water quality and preserve the water supply for the future.

Octoraro Consumptive Use Mitigation Study – Chester Water Authority’s (Authority) right to divert up to 30 million gallons per day (mgd) from the Octoraro Reservoir and 30 mgd from the Susquehanna River is recognized in the Commission’s Comprehensive Plan as an authorized pre-Compact diversion. Recent service area expansions are not covered by the pre-Compact authorization and have been subject to Commission review, approval, and mitigation requirements. The Commission’s work will identify project operation and water quality improvement alternatives that would adequately mitigate the Authority’s diversion and consumptive use and will also include implementation of a water quality improvement demonstration project in partnership with the Octoraro Source Water Collaborative.

Consumptive Use Mitigation Grants - Environmental & Water Quality Projects – The Commission’s Consumptive Use Mitigation Grant Program was established to accelerate implementation of on-the-ground projects to mitigate for consumptive use, especially during critical low flow periods and droughts. This includes environmental and water quality improvements that result in increased groundwater recharge, wetland and stream restoration, mine drainage treatment, stormwater management, and floodplain restoration. Costs for environmental and water quality projects funded by this grant program are estimated at \$2,026,000 for FY-23.

ADMINISTRATION, COORDINATION AND OUTREACH

The Commission’s 2021 Comprehensive Plan focuses on the four Priority Management Areas (PMAs) presented in this budget: Water Supply, Water Quality, Flooding and Drought, and Watershed Management. The 2021 Comprehensive Plan also includes two cross-cutting streams that enable and support achievement of PMA goals: coordination and outreach to partners and the public, which plays an important role through all four PMAs, and technology and data analytics, which will expand water resources management capabilities in all areas. The Commission is also cognizant of the overarching influence of climate change and the importance of environmental justice, and will look to address these challenges to improve management as conditions change and support more equitable treatment of Basin communities.

Programs

Administration, Coordination and Outreach

Watershed Coordination and Outreach Functions and Activities	\$ 400,000
Comprehensive Plan and Water Resources Program	65,000
General Program Administration	684,500
Technology and Data Analytics	<u>447,000</u>
Total	\$ 1,596,500

Activities which will be conducted under Administration, Coordination and Outreach

Coordination and Outreach - Coordination and outreach to partners and the public are essential and mandated responsibilities of the Commission. The purpose of coordination is to minimize duplication of efforts, maximize limited resources and reduce conflicts among federal, state and local governments sharing responsibility for management of the basin's water resources. Outreach efforts will focus on communication and education to river basin communities and stakeholders of the challenges and opportunities in water resources management, and will be enhanced to ensure disadvantaged and underserved communities have the opportunity and ability to provide feedback on the Commission’s activities.

Comprehensive Plan and Water Resources Program - The Compact states that the Commission shall develop and adopt, and may from time to time review and revise, a Comprehensive Plan for the immediate and long range development and use of the water resources of the basin. It also asserts that the Commission shall annually adopt a Water Resources Program, based upon the Comprehensive Plan, consisting of the projects and facilities which the Commission proposes to be undertaken by the Commission and by other authorized governmental and private agencies, organizations, and persons during the ensuing six years or such other reasonably foreseeable period as the Commission may determine. In FY-2023, the Commission will continue to implement the updated 2021 Comprehensive Plan. Staff will also prepare an annual update to the Water Resources Program.

General Program Administration - Internal and external meetings occur that do not relate directly to specific Commission programs. In addition, time is spent on program development, budgeting, periodic program summaries, annual reports, and responses to our signatory members and elected officials. This budget category also includes costs for the Commission’s administrative personnel and programs, such as executive, finance, human resources and government relations.

Technology and Data Analytics - The importance of the Commission’s information technology systems continues to grow. The Commission will continue to enhance our proprietary systems and Internet-based databases, and will strive to make increasing amounts of data available electronically via our website, including both water quality and water quantity data. We will also work to develop new systems and processes to share data internally and externally. Costs for FY-23 also include routine upgrades to servers and laptop computers.