

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

**REVISED  
BUDGET  
FY-2017**

**March 10, 2016**

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# SUSQUEHANNA RIVER BASIN COMMISSION

## BUDGET FOR FISCAL YEAR 2017

### 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.

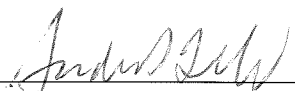
The Compact provides that the Commission may receive and accept such payments, appropriations, grants, gifts, etc., (Article 15, Section 15.1(a) 2) as may be made available to it by the member jurisdictions, or any other public or private corporation or individual, for use in furthering the purposes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

Attached are schedules presenting this revised budget request in detail for Fiscal Year 2017, which covers the twelve month period beginning July 1, 2016. Comparative amounts for the revised budgets for Fiscal Year 2016 and the initial budget for 2017 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

3-10-16  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Andrew D. Dehoff  
Executive Director

3/10/16  
\_\_\_\_\_  
Date

**SUSQUEHANNA RIVER BASIN COMMISSION**  
**PROPOSED BUDGET FOR FISCAL YEAR 2017**  
**(July 1, 2016 - June 30, 2017)**

	<b>General Fund</b>	<b>Water Management Fund (1)</b>	<b>Total</b>
<b>Revenues:</b>			
Member Jurisdictions	\$ 1,192,000		\$ 1,192,000
Grants & Contractual	2,677,700		2,677,700
Water Management Project Reimbursement	676,000 (2)		676,000
Regulatory Program Fees	4,673,800	\$ 3,600,000	8,273,800
Other Income	243,500	1,230,000	1,473,500
<b>TOTAL REVENUES</b>	<b>\$ 9,463,000</b>	<b>\$ 4,830,000</b>	<b>\$ 14,293,000</b>
<b>Expenditures:</b>			
Personnel Services	\$ 4,820,000		\$ 4,820,000
Employee Benefits	2,290,000		2,290,000
Special Contractual Services	1,090,000		1,090,000
Travel & Subsistence	90,000		90,000
Comm. Mtgs. & Public Hearings	48,000		48,000
Communications, Postage	105,000		105,000
Rent – Equip., Land & Bldgs.	35,000		35,000
Printing, Reprod. & Advertising	65,000		65,000
Software - License, Purchase & Maint.	120,000		120,000
Repairs & Maintenance	190,000		190,000
Other Contractual Services	115,000		115,000
Utilities, Janitorial	110,000		110,000
Supplies & Materials	300,000		300,000
O&M – Cowanesque/Curwensville		830,000	830,000
Water Mgmt. Project Reimbursement		676,000 (2)	676,000
Depr. – Water Storage Rights		1,131,000	1,131,000
Interest Expense		278,000	278,000
Capital Expenditures	505,000		505,000
<b>TOTAL EXPENDITURES</b>	<b>\$ 9,883,000</b>	<b>\$ 2,915,000</b>	<b>\$ 12,798,000</b>
<b>EXCESS OF REVENUE OVER EXPENDITURES</b>	<b>\$ (420,000)</b>	<b>\$ 1,915,000</b>	<b>\$ 1,495,000</b>
Transfer from Compliance Reserve Fund	\$ 420,000 (3)		\$ 420,000
<b>REMAINING AFTER TRANSFERS</b>	<b>\$ -</b>	<b>\$ 1,915,000</b>	<b>\$ 1,915,000</b>

(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. Revenue generated in excess of expenses is used to build the balance in the fund.

(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) In FY17 the Commission will upgrade a portion of its Remote Water Quality Monitoring Network and support several research studies designed to further its regulatory and environmental protection programs. The cost of these upgrades and studies will be covered by the Commission's Compliance Reserve Fund.

**SUSQUEHANNA RIVER BASIN COMMISSION**

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

<b>SOURCES</b>	<b>Revised Budget FY 2016</b>	<b>Budget FY 2017</b>	<b>Revised Budget FY 2017</b>
Member Jurisdictions: (4)			
New York	\$ 259,000	\$ 395,625	\$ 259,000
Pennsylvania	573,000	791,250	573,000
Maryland	360,000	395,625	360,000
United States	-	782,500	-
<b>Subtotal - Member Jurisdictions</b>	<b>\$ 1,192,000</b>	<b>\$ 2,365,000</b>	<b>\$ 1,192,000</b>
Other Income: (5)			
Grants & Contractual	\$ 2,305,000	\$ 1,814,300	\$ 2,677,700
Water Mgmt Project Reimbursement	1,275,000	1,010,000	676,000
Regulatory Program Fees	5,756,000	4,117,200	4,673,800
Interest Income, Building Rental & Other	355,000	393,500	243,500
<b>Subtotal - Other Income</b>	<b>\$ 9,691,000</b>	<b>\$ 7,335,000</b>	<b>\$ 8,271,000</b>
<b>TOTAL ALL SOURCES</b>	<b>\$ 10,883,000</b>	<b>\$ 9,700,000</b>	<b>\$ 9,463,000</b>

(4) In accordance with the Susquehanna River Basin Compact, Section 14.3( c), the respective member jurisdictions are requested to include the apportioned amounts set forth above in their respective budgets next to be adopted, subject to such review and approval as may be required by their respective budgetary processes.

(5) Income from other sources is estimated on the basis of past experience and authorized programs. Program activities are designed in recognition of the tentative and/or short-term nature of such funds and can be adjusted accordingly.

**SUSQUEHANNA RIVER BASIN COMMISSION**  
**COMPARATIVE STATEMENT OF EXPENDITURES**  
**BY OBJECT**

Class Titles	Revised Budget FY 2016	Budget FY 2017	Revised Budget FY 2017
Personnel Services	\$ 4,640,000	\$ 4,900,000	\$ 4,820,000
Employee Benefits	2,090,000	2,155,000	2,290,000
<b>Subtotal – Personnel &amp; Benefits</b>	<b>\$ 6,730,000</b>	<b>\$ 7,055,000</b>	<b>\$ 7,110,000</b>
Special Contractual Services	\$ 1,640,000	\$ 1,180,000	\$ 1,090,000
Travel & Subsistence	90,000	90,000	90,000
Commission Mtgs. & Public Hearings	40,000	40,000	48,000
Communications, Postage	110,000	110,000	105,000
Rent-Equip., Land & Bldgs.	35,000	35,000	35,000
Printing, Reproduction & Advertising	65,000	65,000	65,000
Software Licenses, Purchases & Maintenance	160,000	160,000	120,000
Repairs & Maintenance	145,000	145,000	190,000
Other Contractual Services	110,000	110,000	115,000
Utilities, Janitorial	100,000	100,000	110,000
<b>Subtotal – Contractual Services</b>	<b>\$ 2,495,000</b>	<b>\$ 2,035,000</b>	<b>\$ 1,968,000</b>
Supplies/Other	\$ 305,000	\$ 305,000	\$ 300,000
Capital Expenditures	\$ 300,000	\$ 305,000	\$ 505,000
<b>Total</b>	<b><u>\$ 9,830,000</u></b>	<b><u>\$ 9,700,000</u></b>	<b><u>\$ 9,883,000</u></b>

**SUSQUEHANNA RIVER BASIN COMMISSION  
MAJOR OBJECT CLASSIFICATION  
PERSONNEL SERVICES**

<b>Appropriation Class</b>	<b>Revised Budget FY 2016</b>	<b>Budget FY 2017</b>	<b>Revised Budget FY 2017 <sup>(6)</sup></b>
Salaries	\$ 4,600,000	\$ 4,900,000	\$ 4,820,000

**COMPARISON OF PERMANENT STAFFING  
FOR FISCAL YEAR 2017**

<b>Departments</b>	<b>Budget 2017</b>			<b>Revised Budget 2017</b>			<b>Change ( + Or - )</b>		
	<b>Prof.</b>	<b>Cler.</b>	<b>Total</b>	<b>Prof.</b>	<b>Cler.</b>	<b>Total</b>	<b>Prof.</b>	<b>Cler.</b>	<b>Total</b>
Executive	3	1	4	3	1	4	0	0	0
Administrative & Staff Services	7	2	9	7	2	9	0	0	0
Gov't/Public Affairs	1	0	1	1	0	1	0	0	0
Technical Programs	2	0	2	2	0	2	0	0	0
Project Review	12	3	15	15	3	18	3	0	3
Planning & Operations	6	0	6	6	0	6	0	0	0
Compliance	9	1	10	9	1	10	0	0	0
Grant Programs	16	1	17	15	1	16	-1	0	-1
<b>Total</b>	<b>56</b>	<b>8</b>	<b>64</b>	<b>58</b>	<b>8</b>	<b>66</b>	<b>2</b>	<b>0</b>	<b>2</b>

(6) The revised FY-2017 budget includes 3% for performance-based and 3% for cost of living increases.

SUSQUEHANNA RIVER BASIN COMMISSION

MAJOR OBJECT CLASSIFICATION  
EMPLOYEE BENEFITS

<u>Appropriation Class</u>	<u>Revised Budget FY 2016</u>	<u>Budget FY 2017</u>	<u>Revised Budget FY 2017</u>
Medical Insurance	\$ 670,000	\$ 685,000	\$ 685,000
Social Security-Commission Share	355,000	370,000	360,000
Workmen's Compensation	30,000	30,000	30,000
Employee Life Insurance	35,000	35,000	35,000
Unemployment Compensation	10,000	10,000	10,000
Retirement Plan - Commission Share (7)	990,000	1,025,000	1,170,000
<b>Total</b>	<b>\$ 2,090,000</b>	<b>\$ 2,155,000</b>	<b>\$ 2,290,000</b>

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(7) Retirement employer contribution rate budgeted for FY 2017 is 26.5%.



**SUSQUEHANNA RIVER BASIN COMMISSION**

**MAJOR OBJECT CLASSIFICATION  
CONTRACTUAL SERVICES**

<b>Appropriation Class</b>	<b>Revised Budget FY 2016</b>	<b>Budget FY 2017</b>	<b>Revised Budget FY 2017</b>
Fees, Financial Services	\$ 40,000	\$ 40,000	\$ 40,000
Fees, Legal & Investigative Services	25,000	25,000	25,000
Fees, Cooperative Programs	30,000	30,000	50,000
Fees, Research & Laboratory Services	200,000	190,000	200,000
Fees, Custom Software Development	10,000	10,000	-
Fees, Custom Software Support	10,000	10,000	-
Fees, Computer Services Other	25,000	25,000	25,000
Other Services - Professional (8)	1,300,000	850,000	750,000
Travel & Subsistence	90,000	90,000	90,000
Commission Meetings	35,000	35,000	40,000
Public Hearing Expenses	5,000	5,000	8,000
Communications Expenses	90,000	90,000	85,000
Postage	20,000	20,000	20,000
Rent, Land & Buildings	30,000	30,000	30,000
Rent, Machinery & Equipment	5,000	5,000	5,000
Printing & Reproduction	60,000	60,000	60,000
Advertising-Legal	5,000	5,000	5,000
Software Purchase, License & Maint.	160,000	160,000	120,000
Repairs & Maint.-Bldg. & Grounds	40,000	40,000	40,000
Repairs & Maint.-Office Equip.	5,000	5,000	5,000
Repairs & Maint.-Auto. Equip.	25,000	25,000	25,000
Repairs & Maint.-Lab. Equip.	75,000	75,000	120,000
Repairs & Maint.-Computer Equip.	-		
Insurance	95,000	95,000	100,000
Dues & Memberships	15,000	15,000	15,000
Electric, Heat, Water & Sewage	75,000	75,000	75,000
Janitorial Service	25,000	25,000	35,000
<b>Total</b>	<b>\$ 2,495,000</b>	<b>\$ 2,035,000</b>	<b>\$ 1,968,000</b>

(8) The FY-2017 budget includes agreements 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**

<b>Appropriation Class</b>	<b>Revised Budget FY 2016</b>	<b>Budget FY 2017</b>	<b>Revised Budget FY 2017</b>
Office Supplies	\$ 15,000	\$ 15,000	\$ 15,000
Automotive Supplies (9)	70,000	70,000	60,000
Janitorial Supplies	5,000	5,000	5,000
Computer Supplies	10,000	10,000	40,000
Laboratory Supplies (10)	100,000	100,000	75,000
Miscellaneous Supplies	2,500	2,500	2,500
Subscriptions & Publications	2,500	2,500	2,500
Moving & Recruiting Expenses	10,000	10,000	10,000
Staff Training & Seminars	75,000	75,000	75,000
Miscellaneous	15,000	15,000	15,000
<b>Total</b>	<b>\$ 305,000</b>	<b>\$ 305,000</b>	<b>\$ 300,000</b>

(9) Also includes fuel costs

(10) Includes replacement parts for sondes

**SUSQUEHANNA RIVER BASIN COMMISSION**

**MAJOR OBJECT CLASSIFICATION  
CAPITAL EXPENDITURES**

<b>Appropriation Class</b>	<b>Revised Budget FY 2016</b>	<b>Budget FY 2017</b>	<b>Revised Budget FY 2017</b>
Computer Equipment	\$ 50,000	\$ 50,000	\$ 30,000
Automotive Equipment (11)	120,000	125,000	140,000
Office Furniture & Fixtures	10,000	10,000	10,000
Scientific & Laboratory (12)	120,000	120,000	325,000
<b>Total</b>	<b>\$ 300,000</b>	<b>\$ 305,000</b>	<b>\$ 505,000</b>

(11) Two Sayre-based and two Harrisburg-based Commission vehicles will be replaced in FY-2017.

(12) In FY17 the Commission will replace 25 sondes units, which are part of its Remote Water Quality Network. The cost of the new units will be covered by the Commission's Compliance Reserve Fund.

**SUSQUEHANNA RIVER BASIN COMMISSION**  
**ALLOCATION BY PRIORITY MANAGEMENT AREA**  
**FOR FISCAL YEAR 2017**

The revised total expense budget request for Fiscal Year 2017 is \$12,122,000<sup>13</sup>. The proposed budget will support the Commission's programs as follows:

<u>Percent of Total Budget</u>		
I.	Water Supply	59%
II.	Water Quality	13%
III.	Flooding	2%
IV.	Ecosystems	10%
V.	Chesapeake Bay	3%
VI.	Coordination, Cooperation, Public Information and Admin.	13%
	Total	100%

<sup>13</sup>The total expense budget equals expenses for both the General Fund and the Water Management Fund adjusted for transfers between funds of \$676,000.

## PRIORITY MANAGEMENT AREA A: WATER SUPPLY

### Desired Result

To meet immediate and future water needs of the people of the basin for domestic, municipal, commercial, agricultural and industrial water supply and recreational activities, in order to maintain sustainable economic viability, protect instream uses, and ensure ecological diversity through regulation and planning.

### Programs

#### **AREA A: Water Supply**

Regulation of Water Users - Permits.....	\$ 2,120,000
Regulation of Water Users - ABR.....	366,000
Compliance and Enforcement .....	1,550,000
Drought Coordination, Conditions & Planning .....	80,000
Cumulative Water Use and Availability Study.....	128,000
F.J. Sayers Section 1135 Study .....	130,000
Cowanesque/Curwensville Reservoir Operations .....	2,240,000
Consumptive Use Mitigation Strategy .....	237,000
General Hydrologic Studies .....	55,000
Hydrologic Model Updates .....	36,000
Public Water System Assistance Initiative .....	110,000
Hydroelectric Regulation & Relicensing .....	75,000
<b>Total</b>	<b>\$ 7,127,000</b>

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

**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).

**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 the approval, and enforcement actions against companies that fail to gain SRBC approval or violate the terms and conditions of approvals. These costs also include the cost of maintaining the Sayre, Pennsylvania office.

**Drought Coordination, Conditions & Planning** - 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 and will revise the Drought Coordination Plan and related implementation tools as needed. Staff are also partnering with Hazen & Sawyer on a NOAA grant project that will lead to the development of a

Drought Planning Tool for the basin that integrates drought early warning indices, hydrologic forecasts, and a system operations model to inform and guide proactive responses to projected near- and medium term dry periods.

**Cumulative Water Use and Availability Study** - Commission staff initiated this study in FY-2014. The study 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-2017, staff will evaluate additional refinements to the tool, conduct more detailed analyses in priority watersheds, and implement study recommendations.

**F.J. Sayers Section 1135 Study** - Foster Joseph Sayers Dam and Reservoir, owned and operated by the U.S. Army Corps of Engineers (USACE), is a multiple purpose project providing flood control, recreation, and water quality control in Centre County, Pennsylvania. Currently, the reservoir is drawn down a total of 20 feet in late fall and winter and returned to normal pool level by late spring. Commission staff believe the in-lake ecosystem would benefit from some potential environmental modifications and that low flow augmentation from the reservoir during critical low flow periods would benefit the downstream ecosystem. A feasibility study will be conducted to determine if alternative measures exist that may provide environmental benefits and also be consistent and not conflict with project purposes.

**Cowanesque/Curwensville Reservoir Operations** - The Commission owns water supply storage at Cowanesque and Curwensville Lakes. The Commission pays a share of the operating and maintenance costs for Cowanesque, which are passed through to Exelon and PPL. Costs also include depreciation of water storage rights (\$1,131,000), interest on the Cowanesque loan (\$278,000), and operating and maintenance costs for Cowanesque and Curwensville Lakes (\$830,000).

**Consumptive Use Mitigation Strategy** – 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 develop a Consumptive Use Mitigation Policy to provide 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 to memorialize contemporary consumptive use mitigation criteria utilized by the Commission in formulating and implementing consumptive use mitigation projects.

**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 annual Conowingo Pond Management Workgroup meetings, enhancing ecosystem flow recommendations compliance tool, etc.

**Hydrologic Model Updates** – Commission staff, with technical support from Hazen and Sawyer, HydroLogics, and Riverside, will continue to make necessary updates and refinements to its 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.

**Public Water System Assistance Initiative** – Through a PADEP grant, staff will provide both global and focused education and system-specific guidance to small public water systems that meet eligibility requirements, lack financial and technical capabilities, and are subject to Commission groundwater withdrawal regulations. Staff will also provide technical assistance related to the groundwater withdrawal application process and aquifer testing requirements, and will provide hydrogeologic guidance to assist in the development, management and protection of groundwater sources.

**Hydroelectric Regulation and Relicensing**- Over the past several years, the Commission has been actively engaged with partner agencies and stakeholders in the relicensing of the York Haven, Muddy Run, and Conowingo Hydroelectric Projects on the lower Susquehanna River. Recently, staff have also been involved in relicensing of the Colliersville Hydroelectric project on the upper Susquehanna River. Key resource issues of focus have included 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, comment letters, National Environmental Policy Act document reviews, Section 401 Water Quality Certificate conditions, etc. throughout the relicensing processes.

## PRIORITY MANAGEMENT AREA B: WATER QUALITY

### Desired Result

To support the existing and designated uses of all water bodies by achieving water quality that meets or exceeds standards.

### Programs

#### **AREA B: Water Quality**

Subbasin Surveys .....	236,500
Large River Assessment .....	100,000
Total Maximum Daily Loads for Impaired Stream Reaches .....	265,000
Interstate Source Water Protection and Security Activities .....	67,000
Remote Water Quality Monitoring Network .....	870,000
Stormwater BMP Demonstration Project.....	26,000
<b>Total</b>	<b>\$ 1,564,500</b>

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

**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. Local, state and federal coordination are considered in the sampling design to ensure that the data collected are not duplicative, and provide justification and support for future protection, enhancement and restoration efforts. Data are provided to the member states and local groups to support TMDL efforts, as well as watershed restoration and protection projects. The Commission's subbasin surveys include regional sampling during typical (summer) base flow conditions, followed by a year of more intensive sampling efforts focused on specific objectives such as acid mine drainage and stormwater Best Management Practice (BMP) projects. In FY-2017 we will be performing broad surveys of the West and Juniata subbasins, and intensive sampling within the Middle and West subbasins.

**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 mainstem Susquehanna River and along sections of the West Branch Susquehanna River, the Juniata River, the Chemung River, and the series of reservoirs on the Lower Susquehanna River. The Commission also continues to coordinate with the states and USEPA to refine the overall large waters monitoring program, as well as integrate source water protection monitoring activities to enhance protection of public drinking water supplies utilizing the main stem Susquehanna River and its major tributaries. The focus for FY-2017 will be main stem rivers in Middle, Upper, and Chemung subbasins.

**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 will continue to work closely with PADEP in FY-2017 on a pilot project for TMDL alternatives in the Chiques Creek watershed. Our primary roles including coordination of an "Agency Effort" in conjunction with parallel stakeholder activities related to general watershed stewardship and flood mitigation; development of a



Watershed Implementation Plan; development of a long-term monitoring framework; and, various watershed monitoring activities.

**Interstate Source Water Protection and Security Activities** - 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 will also continue to operate, maintain, and expand the Early Warning System for public water suppliers, which was established by the Commission in 2003. In FY-2017, the Commission will continue to organize and formalize aspects of the Lower Susquehanna Source Water Protection Partnership through increased data and information sharing, development of technical and issue steering committees, and promotion of awareness among members/affiliates about topical issues.

**Remote Water Quality Monitoring Network** – In early 2010, the Commission began installing what has grown to be a 60-station remote water quality monitoring network in the Marcellus Shale Gas Play portion of the Susquehanna River Basin. In FY-2017, the Commission will begin a four-year program to replace all of its stations with upgraded equipment. Stations will continue to transmit real-time monitoring data, which is made available to the public through our Remote Water Quality Monitoring Network website. Staff will continue to perform routine maintenance checks on the monitoring equipment as well as collect aqueous chemistry, instantaneous discharge, macroinvertebrate community, and habitat information. Data developed through the RWQMN program support a myriad of aquatic science applications including an annual status and trends report. In FY-2017, staff will also implement recommendations informed by a detailed in-house evaluation which was conducted in FY-2016; such recommendations afford efficiencies and cost-savings in labor and sample collection as well as involve re-positioning of approximately twelve (12) stations to geographic regions in the Basin that were under-represented in the initial network.

**Stormwater Best Management Practice (BMP) Demonstration Project** - Consistent with the Commission's goals to be a leader regarding the Basin's water resources; to educate the public about water resources issues; and, to encourage excellence among staff by providing opportunities for professional development, this Demonstration Project will utilize Commission grounds to advance an understanding of stormwater BMP in an urban setting. Staff will estimate the runoff-generating capacity of various stormwater-contributing areas on-site; measure pollutant concentrations in stormwater within various components of the site and conveyance system; calculate pollutant loading and attenuation; monitor stormwater time-of-concentration peaks following storm events; develop and execute operation and maintenance (O&M) plans for the sustainable use of stormwater BMP features; conduct cost/benefit analyses of BMP; and, generate and promote public outreach information. In FY-2017, staff will issue a work plan proposing modifications of existing BMP features that were shown to be ineffective, as well as propose new BMP features/practices elsewhere on the grounds.

## PRIORITY MANAGEMENT AREA C: FLOODING

### Desired Result

To prevent loss of life and significantly reduce future damages from floods within the basin through an integrated system of structural and nonstructural flood damage reduction measures.

### Programs

#### **AREA C: Flood Coordination**

Flood Coordination.....	\$	65,000
Tri-County Flood Warning System.....	\$	72,000
Silver Jackets.....	\$	20,000
Chiques Flood Resiliency Project.....	\$	135,000
<b>Total</b>	<b>\$</b>	<b>292,000</b>

### **Activities which will be conducted under Priority Management Area C: Flooding**

**Flood Coordination** – Since the mid-1980s, the Commission has coordinated an interagency committee to improve basin-wide flood forecast and warning and dissemination of public information related to flood hazards and events. The Commission will continue to coordinate the interagency committee with the involved states, federal agencies, local interests, and Congress. Staff will serve as liaison between the public and partner agencies to aid in development of useful flood forecast and preparedness products and reliable dissemination techniques.

**Tri-County Flood Warning System** – Commission staff, under a FEMA grant, will conduct a pilot project in partnership with 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 smartphone technologies, cellular based camera imagery, and a web-based data portal.

**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 type projects.

**Chiques Flood Resiliency Project** - This project will analyze the hydrology in critical reaches of the Chiques Creek Watershed for use in evaluating green infrastructure techniques that may accomplish needed reduction to pollutant loadings and flood hazards. The project will focus on providing recommendations for implementing riparian corridor restoration and floodplain reconnection as primary techniques in a region that is heavily impacted by nonpoint/point source stormwater runoff and legacy sediment, but will also consider green infrastructure approaches within the “built” environment consistent with Pennsylvania’s runoff reduction strategy under the MS4 Program. A complete hydrologic model (HEC-HMS) and hydraulic model (HEC-RAS) will be developed to best characterize the dynamics of the system for mitigating/reducing pollutant loadings and flood impacts. Modeling results will be integrated with both the Chiques Pilot Study nonpoint/point source loading analyses and local communities’ channel/floodplain restoration analyses efforts for development of a comprehensive green infrastructure implementation strategy.

## PRIORITY MANAGEMENT AREA D: ECOSYSTEMS

### Desired Result

To achieve healthy ecosystems that provide groundwater and surface water of sufficient quality and in adequate supply to support abundant and diverse populations of aquatic, riparian, and terrestrial organisms, as well as human use.

### Programs

#### **AREA D: Ecosystems**

Migratory Fish Restoration and Invasive Species Control .....	\$	14,000
American Eel.....		40,000
Aquatic Resource Surveys .....		80,000
Research Studies.....		120,000
Ecological Flow Management Study - Phase II .....		60,000
Birch Island.....		355,000
Sandy Run.....		125,000
Rausch Creek.....		230,000
Low Flow Monitoring.....		80,000
Dirt & Gravel Roads Study.....		100,000
<b>Total</b>	<b>\$</b>	<b>1,204,000</b>

#### **Activities which will be conducted under Priority Management Area D: Ecosystems**

**Migratory Fish Restoration and Invasive Species Control** - The Commission will continue to participate in the Migratory Fish Restoration Program, in cooperation with the owners of major dams in the basin, various government agencies, and environmental and recreational organizations. These activities are all part of our ultimate goal of restoring American shad and other migratory fishes to the Susquehanna River Basin.

**American Eel** - 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. Similarly, freshwater mussel populations, which rely on American eels as a host species, have also been on the decline in the Susquehanna basin. In 2008, the US Fish and Wildlife Service began a limited, but successful, reintroduction program, which is planned to be expanded. This project aims to study changes to freshwater systems after further reintroduction of American eels, including evaluations of shifts in fish and macroinvertebrate community structure, re-establishment of mussel populations, and water quality improvements.

**Aquatic Resource Surveys** – As part of our surface water withdrawal application process, staff perform aquatic resource surveys. The surveys include fish and macroinvertebrate sampling, invasive species survey, habitat assessment, water quality testing and hydrologic parameter testing. ARS findings support the Commission’s Project Review Program. Moreover, ARS research enhances the Commission’s understanding of potential impacts due to water withdrawal activities and is used to verify the effectiveness of pass-by restrictions.

**Research Studies** – On an annual basis the Commission requests proposals for studies which further the mission and work of the organization. In FY17 the Commission, through funding provided by its Compliance Reserve Fund, will support three studies: (1) building a timeline for the presence of *Didymosphenia geminata* in the mid-Atlantic region; (2) monitoring young of year smallmouth bass in the New York portion of the Susquehanna River Basin; and (3) pre-construction sampling, continuous monitoring and post-construction monitoring of Constitution Pipeline stream crossings in New York.

**Ecological Flow Management Study – Phase II** – The Commission and the U.S. Army Corps of Engineers, with significant contributions from The Nature Conservancy and agency partners, have been working jointly since late 2008 to assess ecosystem flow needs and recommendations for the Susquehanna River basin. Phase I of the study identified a suite of flow recommendations for the basin that are supportive of ecosystem health. Phase II of the study will identify and assess management measures to provide flow management for ecosystem health in the Susquehanna River basin consistent with the flow recommendations identified in Phase I.

**Birch Island Run and Sandy Run Restoration Projects** – In 2013, the Commission and the Clinton County Conservation District obtained two PA Growing Greener Program grants to restore water quality conditions degraded by abandoned mine drainage in the Birch Island Run and Sandy Run watersheds. The two restoration projects will address TMDLs established by PADEP by constructing treatment systems to reduce pollutant loads in both watersheds. For FY-2017, activities will include completing treatment system designs for the Birch Island projects and construction of the Sandy Run system. Subcontractors will be used for the Sandy Run construction, at a cost not to exceed \$100,000. The Birch Island project will be constructed in FY-2018.

**Rausch Creek Mine Pool Evaluation and Discharge Transport Project** – The Rausch Creek Treatment Plant was built in 1973, and was designed to intercept and treat the entire flow of Rausch Creek prior to mixing it downstream with Pine Creek. During periods of heavy rainfall flows exceed what the plant is capable of treating. The Commission, through mine pool mapping work completed by the Eastern PA Coalition for Abandoned Mine Reclamation (EPCAMR), has become interested in the potential of using the Brookside Mine Pool, which is drained by the Valley View Tunnel outfall, as a source of consumptive use mitigation/low flow augmentation water. Consequently, the Brookside Mine Pool could be utilized as an underground storage reservoir, storing water during times of heavy precipitation, possibly reducing flood flows, and discharging water during periods of drought to reduce the ecological impacts of drought flows and supply water to downstream water users.

Phase I of this project, which is funded through the Pennsylvania AMD Set-Aside Grant Program, will investigate the feasibility and cost of various options designed to transport flows, treat or convey discharges, and utilize the Brookside Mine Pool for consumptive use mitigation/ low flow augmentation storage. Subcontractors, at a cost not to exceed \$100,000, will be used to assist with additional mine mapping, water quality analysis and drilling. Pending the outcome of this project, a Phase II proposal would be prepared to fund construction of the preferred option(s).

**Low Flow Monitoring Project** - Water quantity and quality monitoring provide the data to assess the health of aquatic systems and support planning activities for the protection and restoration of aquatic resources. Few datasets exist that document the impacts of reduced flow on water quality and biological resources during actual events in the Susquehanna River Basin. Because of the paucity of data, increased monitoring during low flow events is a high priority that assists the Commission in assessing the effects of flow in managing water withdrawals and consumptive uses. Staff will continue to conduct low flow sampling during identified low flows during the late summer and early fall, in accordance to the quality assurance project plan (QAPP).

**Dirt & Gravel Roads Study** – Through a grant with the National Fish & Wildlife Foundation, staff and various partner organizations evaluated 4-plus years of monitoring data collected by the Commission’s Remote Water Quality Monitoring Network. Using GIS, terrain modeling, and ANCOVA modeling, the project links continuous in-stream monitoring to specific land use factors. Project findings will be refined into a catalogue of best management practices (BMPs) and an outreach program designed to arm gas operators, rural municipalities, and state agencies with the latest innovations in design, materials, and methods to minimize erosion and sediment input due to land disturbances and traffic on unpaved roads. Through the project team’s cooperative ties to the natural gas industry, as well as local/state regulators and other stakeholders, the project will conduct workshops that demonstrate practical and cost-effective ways to lower sediment input to the Marcellus Region's high-value streams.

## **PRIORITY MANAGEMENT AREA E: CHESAPEAKE BAY**

### **Desired Result**

To manage the water resources of the Susquehanna River Basin to assist in restoring and maintaining the Chesapeake Bay so it meets or exceeds applicable water quality standards and supports healthy populations of living resources, including oysters, crabs, fish, waterfowl, shore birds, and underwater grasses.

### **Programs**

#### **AREA E: Chesapeake Bay**

Chesapeake Bay Program Monitoring and Water Quality Trends Analysis .....	\$	<u>350,000</u>
<b>Total</b>	<b>\$</b>	<b>350,000</b>

#### **Activities which will be conducted under Priority Management Area E: Chesapeake Bay**

**Chesapeake Bay Program Monitoring and Water Quality Trends Analysis** - 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, baseflow 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 the 21 additional sites in Pennsylvania, New York, and Maryland that were established in FY-2004, FY-2005, and FY-2012. The Commission will continue to work with its member states, USEPA, and other partners to expand 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 non-tidal tributaries in the Susquehanna River Basin. Data from newly established monitoring sites in Pennsylvania and New York will also be summarized for future trends analysis. The data and analysis will help demonstrate progress in meeting cap loads for the Susquehanna River Basin.

## PRIORITY MANAGEMENT AREA F: COORDINATION, COOPERATION, PUBLIC INFORMATION AND ADMINISTRATION

### Desired Result

To maximize available human resources and achieve common and complementary management objectives by the Commission, its member jurisdictions and others; to promote the planning and management of the basin's water resources in the most efficient manner possible; to inform the public on the Commission's water management responsibilities; and to enhance the public's access to Commission information and decision making procedures.

### Programs

#### **Area F: Coordination, Cooperation, Public Information and Administration**

Watershed Coordination Functions and Activities .....	\$	146,000
Public Information and Education .....		30,000
Planning (Comprehensive, Strategic, and Water Resources) .....		85,000
General Program Administration .....		973,500
Information Technology and Geographic Information Systems (GIS) .....		350,000
<b>Total</b>	<b>\$</b>	<b>1,584,500</b>

#### **Activities which will be conducted under Priority Management Area F: Coordination, Cooperation, Public Information and Administration**

**Watershed Coordination Functions and Activities** - Coordination is an essential and mandated responsibility of the Commission. The purpose of the program 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. Specific coordination activities include management of the Water Quality Advisory Committee (WQAC) and the Water Resources Management Advisory Committee (WRMAC), coordination with state and federal agencies such as the USACE, USEPA, USGS and the NWS.

**Public Information and Education** - Commission staff will continue to provide public information activities, work to enhance media relations, and increase the Commission's outreach in various regions of the basin. Staff also will continue established public information activities and efforts, such as periodic news releases, the Commission's web site, and the electronic annual report.

**Planning (Comprehensive, Strategic and Water Resources)** - The Commission maintains and, as necessary, updates both a comprehensive plan for managing the basin's water resources and program area strategic plans to guide the Commission's work programs and establish program priorities. Implementing the recommended actions of the comprehensive plan will be the foundation for the Commission's Annual Water Resources Program. In FY2013 the Commission developed and adopted a strategic plan. This plan will be implemented through FY2018. In FY-2017 staff will evaluate our existing planning framework and documents with the goal of formulating recommendations for increased efficiency, utility, and value.

**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. This budget category also includes costs for the Commission's administrative personnel and programs, such as executive, finance, and human resources.

**Information Technology and Geographic Information Systems (GIS)** - 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.