

**Quick Facts about the Upper Chartiers Creek Watershed**

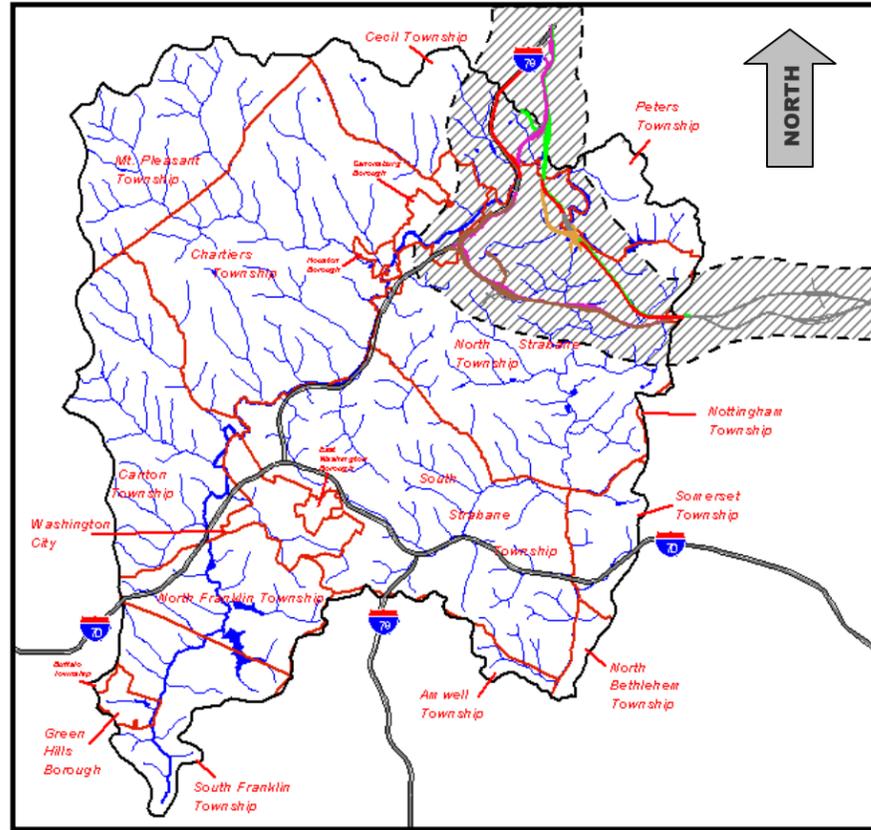
The Upper Chartiers Creek (UCC) Watershed is 88, 886 acres.

The population of the watershed is estimated to be 75,000 people (Census, 2000).

The Chartiers Creek watershed has more diverse types of water pollutants than any other watershed in Pennsylvania.

Two major roadways intersect in the UCC watershed (Interstates' 70 and 79), and with the construction of the Southern Beltway link of the Mon-Fayette Expressway, yet another major roadway will dissect the watershed.

*\*The gray-striped area on the map to the right indicates the possible areas affected by the Southern Beltway.*



# Upper Chartiers Creek Watershed River Conservation Plan

## Executive Summary

October 2002

### The Planning Process... Community Involvement and Visioning

The Steering Committee initiated the planning process in November of 2000. Throughout this process, the steering committee sought input from citizens, municipalities and government agencies. Several public meetings were held where stakeholders were encouraged to participate and provide comments.

In April 2001, Skelly and Loy, Inc. began to develop the River Conservation Plan (RCP). This process involved collecting, analyzing and evaluating data for natural, physical, cultural and socio-economic resources in the Upper Chartiers Watershed, and correlating their impacts to land development activities and trends. Information derived from this data has been presented, when possible, at the sub-basin level to assist in ranking implementation recommendations, goals and strategies.

Many sources of data and information were used in preparation of this plan, ranging from federal, state and local agencies, to the local knowledge of residents. From these sources a list of issues, constraints and opportunities was developed, which include-

- Zoning and comprehensive planning needs
- Farmland and prime farmland soils protection
- Waste site monitoring
- Abandoned oil and gas well capping
- Deep mining/abandoned mine land restoration
- Groundwater protection
- Floodplains, riparian forest buffers, wetland and forest protection
- Lake and pond enhancement
- Water quality protection and improvement
- Wildlife species management
- Land purchase for conservation
- Historical property preservation
- Adult and youth education
- Volunteer opportunities

### A Pathway to Conservation and Sustainable Activities

The Upper Chartiers Creek River Conservation Plan (RCP) is an essential first step along the pathway to conservation and sustainable activities in this area of Washington County. This document is not the end of the path, but the beginning of the second stage in the planning process. The document serves as a dynamic and integrative tool for local and multi-municipal planning efforts. Management Recommendations listed in this document can be completed by stakeholders and are eligible for grant monies [i.e., Growing Greener Program, Keystone Grant Program, etc. (Please see the 'Management Recommendation Matrix' insert in the middle of this summary)]. The Management Recommendations discussed will assist in improving the natural resources (i.e., water quality and aquatic habitat), and also assist municipal and state governments in reducing costs associated with maintaining community infrastructure. Benefits of these projects also assist in improving degraded conditions to neighboring communities as well, thus benefiting those who live downstream.

The Upper Chartiers Creek Watershed is approximately 139 square miles in size and drains a large portion of Washington County, Pennsylvania. The watershed has an estimated 282 stream miles. Waters of the Upper Chartiers Creek Watershed flow into the Lower Chartiers Creek Watershed at the confluence of Chartiers and Little Chartiers Creeks. Chartiers Creek then flows through the Allegheny County portion of the watershed into the Ohio River at McKees Rocks.

### Project Purpose and Goals

The purpose of this project and the River Conservation Planning process is to complete a comprehensive and holistic review of the watershed. Through the planning process, methods to improve its resources (natural, physical, and cultural) were delineated. The intent of this planning process is to provide the needed information to develop an effective River Conservation Plan for the Upper Chartiers Creek Watershed. Once the RCP is placed on the Pennsylvania Rivers Conservation Registry, communities that lie within the watershed are eligible for grant dollars made available through the Keystone Grant Program. The overall goals of the project are to:

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|---|---|
| • Improve water quality                           | • Prepare for future growth                     |
| • Promote sustainable land development            | • Encourage compatible economic development     |
| • Enhance existing recreational opportunities     | • Foster communication among stakeholders       |
| • Protect the natural, historic and scenic beauty | • Advocate for environmental education programs |

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**IMPORTANT INFORMATION ABOUT YOUR COMMUNITY AND ENVIRONMENT!**

This is the Executive Summary for the Upper Chartiers Creek River Conservation Plan. Please read through this pamphlet to find out what your neighbors are doing to improve the quality of life in your neighborhood!!!



Created for the Washington County Watershed Alliance  
by Skelly and Loy, Inc.

## Issues, Constraints, and Opportunities

The determination of management recommendations is a keystone in the development of a RCP. Upper Chartiers Creek Watershed contains a varied combination of issues and opportunities. During the data collection and analysis portion of the RCP, several of the issues and opportunities were determined to be significant.

### Sprawl, Zoning, and Comprehensive Planning

An area of concern identified by the study is the general issue of urban sprawl. This issue will need to be approached by a combined effort of promoting sound development throughout the watershed while at the same time providing for economic stability. Appropriate or minimally acceptable zoning ordinances are needed for some municipalities in the study area. Additionally, comprehensive planning is also needed in most of the municipalities in the study area. Improved or updated zoning ordinances and the completion of a municipal comprehensive plan are very important issues and also a very important opportunity for sound land management and development activities at the local level. Additionally, in order to standardize the content in the comprehensive plans, the currently on-going countywide comprehensive planning effort should be completed to assist local municipalities. This will help to address all of the resource issues that concern both the municipalities and the general public. This will also help to create a system of prioritizing natural resource issues countywide.

### Farmland and Prime Farmland Soil(s) Protection

Agriculture is a major land use activity (44.1%) and industry in the Upper Chartiers Creek Watershed, protection of farmland and prime farmland soils at the municipal level is an important issue. The Pennsylvania Municipalities Planning Code (MPC, January 2001), states that Ordinance Provisions must meet and/or exceed state and federal laws and regulations. MPC Section 603 (g)(1) states that, zoning ordinances shall protect prime agricultural land and promote the establishment of agricultural security areas. Further, MPC Section 604 (3) states that, the purpose of zoning ordinances shall be designed: to preserve prime agriculture and farmland considering topography, soil type, and classification, and present use.

### Waste Sites

Molycorp, Inc. Site: The Molycorp, Inc. - Washington Facility located in Canton Township near the outskirts of Washington, PA is an issue. Molybdenum oxide was manufactured starting in the 1920's and ending in 1991. Additionally, this facility produced ferrocolumbium and ferroalloys. This site is to be decommissioned in the future in accordance with the Decommissioning Plan Part 1 and Part 2, and amendments. A detailed schedule of the excavation and transport activities will be provided in the Decommissioning Plan Part 2 [Projected Date of October 2002] (Radiological Services, Inc., 1999). The projected October 2002 decommissioning date most likely will not be met. Therefore, the NRC and Molycorp, Inc. are currently in the process of determining a revised schedule to move the decommissioning of this site forward.



Canonsburg Site: This site has been cleaned up and the radioactive materials have been disposed of on site in an engineered disposal cell. This facility is owned, operated, and inspected by the United States Department of Energy (USDOE) as part of their Long Term Surveillance and Maintenance Program (LTSM). More information on this issue can be found by contacting the PADEP and the USDOE.

### Oil and Gas

The study area has 406 known oil and gas wells (PATOPGEO, 2002). Abandoned and orphaned wells are an issue in the study area. As of October 17, 2002, 210 wells have an active status, 11 wells have an inactive status, 42 abandoned wells have been identified, 92 wells have been plugged, and 51 wells have an unknown status in the study area. More abandoned wells exist but have yet to be identified. Historic wells date back to when no records were required. PADEP (1999) plans to plug 13 wells in the future.

### Land Purchase for Conservation and/or Historical Property Preservation

Another vehicle for encouraging conservation in strategically identified areas is the outright purchase of the properties by a land trust, conservation organization, and/or municipality. When land is purchased for conservation purposes, parcels can then be used for green/open spaces, prevention of development on fragile lands and the treatment of degraded water. The preservation of historical properties in a community helps to give the community its character. It is an important opportunity that can help improve and bind communities. People like to be located near historic properties because it helps to attract business and improves one's quality of life.



**When completed copies of the entire River Conservation Plan for the Upper Chartiers Creek Watershed can be found for your review at the following locations:**

- *The Washington County Conservation District Office*
- *The Citizens Library of Washington*
- *and at the municipal offices of ALL of the municipalities that are part of the watershed...*

### **ACKNOWLEDGEMENTS:**

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**PA Department of Conservation  
and Natural Resources**

*With Project Management and Administration by:*

**Washington County  
Watershed Alliance**

Many thanks to the **steering committee members, municipalities, organizations and agencies** that contributed important information and ideas for the development of this plan.

***For more information OR if you would like to become involved, contact...***

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### Deep Mining and Abandoned Mine Land Restoration

Deep mining is an issue in the study area. Three underground mining operations currently operate within the study area (the Eightyfour Mine, the Maple Creek Mine, and the Mathies Mine). Like many human activities, underground coal mining cannot be conducted without some impact on the environment. Potential impacts are to surface structures; hydrologic features such as wells and springs, and surface waters (streams and lakes); and surface land impacts. Abandoned Mine Land features can be found in a number of areas, and these locations are an issue. These areas are frequently located near streams; therefore, water pollution issues almost always exist at or near these sites.

### Groundwater

The protection of groundwater is another important issue. The geological units in Washington County are the Pennsylvania, Monongahela, and Conemaugh groups. Also included are the Permian-Pennsylvania-Age Washington Formation, the Permian-Age Greene Formation as well as unconsolidated Quaternary-Age deposits. The greatest yield of groundwater comes from the Quaternary deposits. These deposits are made of a generally permeable alluvium (material deposited by aquatic sources). When this alluvium is saturated, it can yield moderate to large stores of groundwater. The other geological units yield only small amounts of water. Poor water quality can be attributed to both man-made causes and natural causes. The most severe pollution problem in Washington County is caused by coalmine drainage. Most pollution inputs into the groundwater system can be attributed to pollution factors on the surface.

### Floodplains, Riparian Forest Buffers, Wetlands, and Forest

The protection and preservation of floodplains and riparian corridors are also important issues for the watershed. Increased developmental pressures have led to habitat modification and the consequent degradation of water quality, stream bank stability, and aquatic habitats. This has led to increased erosion and sedimentation problems to many streams in the watershed. Protection of flood prone areas, riparian zones, wetlands, and forest is essential to maintain the environmental health of the watershed.



### Lakes and Ponds

Canonsburg Lake is a 76-acre impoundment owned by the Pennsylvania Fish and Boat Commission (PFBC). Canonsburg Lake is utilized as a recreational fishery for public use. The largemouth bass (*Micropterus salmoides*) fishery would probably be ranked among the best in Area 8 of the PFBC. Efforts should be continued to inform the public of the excellent largemouth bass fishery through the promotion of a Largemouth Bass Fishing Tournament.

### Water Quality

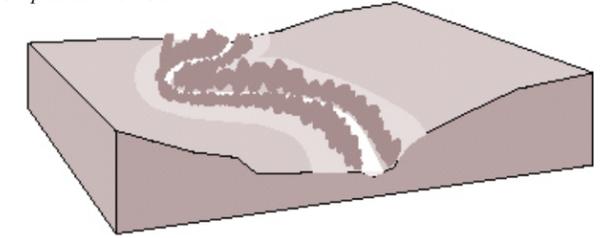
Water quality improvement is the focus of this plan. Available data indicate that approximately 77% of the project areas streams are considered impaired because they do not meet PADEP water quality standards. Moreover, this impairment is due to a variety of interrelated causes. This plan delineates primary causes of water pollution by the geographically smaller, sub-basin unit. This delineation of the problem areas will assist in the long-term determination of remediation strategies. The basic question is "What can be done to implement improvements to the impacted resources?" The major water quality problems in the Upper Chartiers Creek Watershed are:

- Habitat Modification
- Nutrient Enrichment
- Abandoned Mine Drainage
- Sewage

### Habitat Modification

Habitat Modification pollution is an important issue and involves many types of water pollution (i.e., turbidity, thermal, salinity, oil, siltation, etc.) but is primarily driven by high stream flows (stormwater). This type of stream flow is associated with areas of the watershed that have been experiencing high developmental pressures and lack stormwater management facilities. Typically these areas have roads, parking lots, and structures whose impervious surfaces prevent precipitation from entering groundwater, thus overwhelming the channel capacity of these streams. These receiving waters (usually first- through third-order streams) are not able to transmit the high flows easily, thus causing erosion and flooding. Critical areas to protect include riparian forest buffers, wetlands, and floodplain areas because of their ability to control high flow events and flooding.

Graphic source: USDA



### **Diagram of a riparian/streamside vegetative buffer.**

Stream side buffers lower stream water temperatures, improve wildlife habitat, restrict sediment flows, and reduce pesticides and other pollutants from entering the stream.

### Nutrient Enrichment

Nutrient Enrichment is a water quality parameter that involves water polluted by agricultural, golf course, and residential runoff (i.e., animal feedlots, leaking septic systems, home gardens and lawns, athletic fields, golf courses, etc.). Nutrient enrichment was found to be a major problem in the PADEP 303(d) investigation of the Upper Chartiers Creek Watershed. Malfunctioning and/or non-existent on-lot septic systems and large-scale animal production farming facilities impact the water quality of the streams of the Upper Chartiers Creek Watershed. This pollutant is primarily observed in parts of the watershed associated with agricultural land uses. Of the main water quality problems in the project area, nutrient enrichment may be the simplest to correct through the implementation of conservation practices or restoration alternatives.

### Abandoned Mine Drainage

Abandoned Mine Drainage (AMD) is an important water quality issue in the watershed and problems vary from site to site. The source of AMD discharges can be from deep mines, surface mines, and coal refuse piles. AMD involves various water quality parameters and has seasonal discharge flows. It is critical to have good water quality and discharge flow data in order to fully understand and thus treat a discharge properly. Additionally, AMD remediation projects can involve multiple property owners and, therefore, require much coordination. This makes each problem and solution quite unique.

### Sewage

The Upper Chartiers Creek Watershed's water quality is impacted by both old sanitary sewer systems that are no longer functioning properly and malfunctioning and/or non-existent on-lot septic systems. In portions of the project area, water quality degradation caused by sewage effluent is masked by AMD.

### Wildlife Species Management

A concern in the project area is the protection of the Great Blue Heron rookery. The Pennsylvania Game Commission (PGC) has noted that the Great Blue Herons are a "species of special concern" because Great Blue Herons are colonial nesters and land development of their nesting habitat could have a major impact on the rookery population.

**Management Recommendations Matrix\***

Management Issue	Management Recommendation	Responsible Entity	Potential Assistance Sources	Implementation Schedule
<b>A. Project Area Characteristics</b>				
<b>1. Sprawl</b>	1. Establishment of Environmental Advisory Councils (EACs) would assist making improvements to natural resources by providing needed input to local planning commissions. 2. Promote types of municipal frameworks and partnerships that would provide for coordinated or unified comprehensive plans, zoning codes, and subdivision and land development ordinances to assist in curbing sprawl, and to enhance the conservation of resources.	The county planning commission and 19 municipal planning commissions and the local conservation organizations.	Washington County Planning Commission and PADCNR: Keystone Funds.	2003
<b>2. Model Land-use Ordinances</b>	Develop example or model ordinances i.e., zoning ordinances, sub-division and land development ordinances, and Official Map) that are protective of agricultural soils, steep slopes, open space, riparian buffers, parks, and floodplain resources. These are especially important in the communities that are developing at a higher rate near the Southern Beltway corridor.	Local municipal officials and conservation organizations.	Pennsylvania Department of Community and Economic Development (DCED) and PADCNR: Keystone Funds. Potential Assistance Sources.	2003
<b>3. Washington County Comprehensive Plan</b>	Washington County Planning Commission is currently in the process of developing a countywide comprehensive plan. The development of a county comprehensive plan will assist in having minimally acceptable planning standards for communities throughout the watershed.	Washington County Planning Commission	Pennsylvania Department of Community and Economic Development (DCED) and PADCNR: Keystone Funds. Potential Assistance Sources.	2002-2003
<b>B. Land Resources</b>				
<b>1. Farmland and Prime Farmland Soils Protection</b>	Complete a comprehensive plan by inventorying watershed farmland (active/inactive), prime soils, and farmland of statewide importance. This can include PA Acts 43 (Agricultural Security Areas), 71 (water and sewer assessment exemption), 100 (Agricultural Land Condemnation Approval Board- reviews transportation & solid waste issues related to farmland), and 319 (Clean & Green) properties as it relates to farmland protection.	USDA-Natural Resources Conservation Services, WCDC, local municipalities, and conservation organizations.	US Department of Agriculture (USDA) Public Law 83-566 Program, PADEP, PADCNR (Keystone Funds), and WCDC.	2003
<b>2. Waste Sites: Molycorp, Inc. and Canonsburg Borough Sites</b>	Continued monitoring of the two sites by the NRC and PADEP. Monitor the progress of the decommissioning/remediation planning activities for the Molycorp site in Canton Township.	USDOE and PADEP for monitoring and remediation activities. Local municipal leaders to be updated of changing circumstances.	USDOE and PADEP.	On-going
<b>3. Oil and Gas</b>	Complete the closure of the abandoned and orphaned oil and gas wells per the PADEP abandoned and orphaned well program.	PADEP and municipalities.	Pennsylvania Department of Environmental Protection (PADEP)	2002+
<b>4. Mining: Deep Mining Abandoned Mine Land (AML) Sites</b>	1. Public awareness of deep mining issues and coordination with municipal and PADEP officials, and 2. Complete the remediation of AML sites. Remediation of AML sites could assist with the re-development activities in local communities.	PADEP, local municipal officials, local citizens, and conservation organizations.	PADEP [AML] 10% Set Aside, Growing Greener, and WRAP Programs, PADCNR: Keystone Funds, US Environmental Protection Agency (EPA) 104 and 319 Programs, and Western Pennsylvania Coalition for Abandoned Mine Reclamation (WPCAMR) Funds.	2002+  2006
<b>C. Water Resources</b>				
<b>1. Groundwater Protection Plan</b>	Complete a Groundwater Protection Plan that includes a <b>Groundwater Inventory</b> and a <b>Groundwater Use and Needs Survey</b> . This plan would include i. Private Water, ii. Public Water, and iii. Commercial Water supplies (immediate and future use).	Local and County government, PADEP, EPA, WCWA, and ChCWA.	EPA, PADCNR: Keystone Funds, PADEP (Growing Greener), WPWPP, McKenna Foundation, Pittsburgh Foundation, Mellon Foundation, CVI, etc.	2003-2007
<b>2. Floodplains</b>	Floodplains have been developed and impacted for years in the watershed. Analysis of the watershed to determine the priority flood prone areas is needed to protect community resources and enhance existing/remaining habitats.	Washington County Planning Commission, PADEP, and municipalities.	PADEP (Growing Greener Program), FEMA	2003
<b>3. Lakes and Ponds</b>	Initiation of a <b>Largemouth Bass Tournament</b> at Canonsburg Lake, one of the PFBC's finest largemouth bass fisheries in the region.	Municipal officials and PFBC	PFBC and American Sportfish Association and Foundation.	2003
<b>4. Stormwater Management Planning</b>	1. Complete a PA Act 167 Stormwater Management Plan in Washington and Allegheny Counties (Priority areas in the watershed include management units A, B, D and E); 2. Complete local stormwater management ordinances; and 3. Be aware of the PADEP Phase II Stormwater "Permitting" Program (MS4 Program) starting December 8, 2002.	Municipalities, Washington and Allegheny Counties, and PADEP.	EPA, PADEP (PA Act 167 program), and PADCNR: Keystone Funds.	2003
<b>5. Fluvial Geomorphology (FGM) Assessment</b> <i>*FGM assessments classify stream stability based on stream channel type.</i>	Complete FGM assessments in sub-basins which are currently impacted by high stormwater flows and in sub-basins that are experiencing high development activities. Priority areas in the watershed include management units A, B, D and E.	County government and PADEP.	EPA (319 program), USGS, PADCNR: Keystone Funds, PADEP (Growing Greener and Releaf Programs), PENNDOT/PTC stream/wetland mitigation funds, WPWPP, McKenna Foundation, Pittsburgh Foundation, Mellon Foundation, CVI, etc.	2004
<b>6. Nutrient Control Plan</b>	Complete development of a nutrient control plan in rural areas of the watershed which include management units B, E, and F.	County government and PADEP.	EPA and PADCNR: Keystone Funds.	2006
<b>7. Abandoned Mine Drainage (AMD) Plan</b>	The AMD Plan could be a component to the Water Quality Sampling Plan and would develop a strategic plan that assists in prioritizing restoration activities to make improvements to water quality in Management Units C, D, and E.	Chartiers Creek Watershed Conservation Organizations working with PADEP.	EPA (104 & 319 programs), PADCNR: Keystone Funds, PADEP (Growing Greener, Reclaim PA, Bond Forfeiture Program, etc.), Pennsylvania Department of Transportation (PENNDOT)/ Pennsylvania Turnpike Commission (PTC) mitigation funds, WPCAMR, and WPWPP.	2003
<b>8. Sewage Control Plan</b>	Encourage municipalities and municipal authorities to complete plans to make corrections to faulty sewer systems or to expand systems. This includes sewer (Combine Sewer Overflows [CSOs]) upgrades and septic system correction plans to make improvement to antiquated facilities of the watershed which include management units B and E.	Washington County and municipal governments, PADEP, and EPA.	County, State (PA Act 537 program), PADCNR: Keystone Funds, and Federal.	2006+
<b>D. Biological Resources</b>				
<b>1. Wildlife Species</b>	Protect the Great Blue Heron rookery from increased development by communicating with PGC.	Developers, municipal officials, and PGC.	PGC	On-going
<b>E. Cultural Resources</b>				
<b>1. Land Acquisition for Conservation Activities</b>	Purchase properties (e.g., Important Habitats, Natural Heritage Areas, Critical Areas, and Potential Remediation Sites) for conservation, preservation and/or remediation opportunities.	Allegheny Land Trust, WPC, and local conservation groups.	PADCNR: Keystone Funds and NPS – Rivers, Trails, and Conservation Assistance program.	On-going
<b>2. Historical Property Preservation</b>	Complete a historical properties inventory to assist in the preservation of these sites, so they are destination points for tourists.	Historic property owner(s), community historical societies, and local chamber of commerce.	PADCNR: Keystone Funds, PENNDOT/PTC cultural resource mitigation funds, and community and regional foundations.	On-going
<b>F. Educational Resources</b>				
<b>1. Adult and Youth Education</b>	Provide life long environmental education opportunities to encourage conservation ethics within the watershed. This would assist in promoting the watershed as a whole with conservation in mind as local citizens grow throughout their lives. Improve local organization's needs by improving and/or expanding environmental outreach programs, staff, equipment, and facilities.	WCWA, ChCWA, other local conservation groups, local school districts (Envirothon Program), and local/regional colleges and universities.	PADCNR: Keystone Funds, PADEP's Citizens' Volunteer Monitoring Program, CVI, Alliance for Aquatic Resource Monitoring, LWV – Citizen Education Fund, SWRC, and EPA Environmental Education Grant program.	2002+
<b>2. Conservation Groups/ Volunteer Opportunities</b>	Integrate watershed wide volunteer activities with local school district curriculum via conservation demonstration projects and awareness activities.	Local school districts, communities, and conservation groups.	EPA Environmental Education Grant program, PADCNR: Keystone Funds, Pennsylvania Department of Education (PADE), Environmental Education Program, LWV – Citizen Education Fund, and school district funded.	2002+

\*Please Note – This is not a complete list of the Watershed Management Recommendations and Options. For a complete list and description of each, please refer to the entire 'Upper Chartiers Creek River Conservation Plan'.