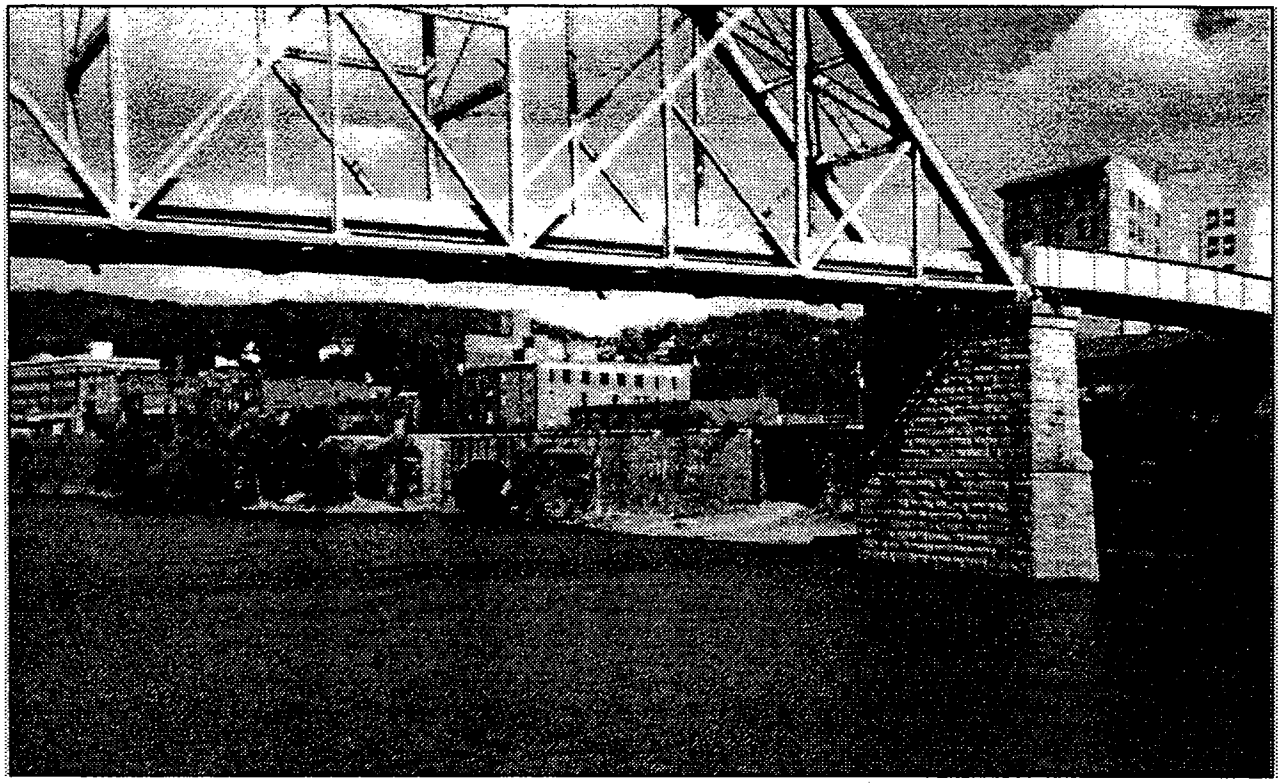
*Executive Summary*
*for the*

# *MONONGAHELA RIVER CONSERVATION PLAN AT BROWNSVILLE*

*Final Report*



November 24, 1997

*PREPARED FOR:*
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## PENNSYLVANIA RIVERS CONSERVATION PROGRAM

On July 19, 1995, the Borough of Brownsville was awarded a $20,000 grant to create a Rivers Conservation Plan for a 25 mile stretch of the Monongahela River (navigational mile 49.5 to 74) in southwestern Pennsylvania, as part of the first round of River Conservation Program grants approved by the Pennsylvania Department of Conservation and Natural Resources (DCNR). The plan was designed to include seven municipalities, in two counties. The projects outlined in the plan as Management Options will be eligible to receive 50 percent matching funds from DCNR.

## PROJECT BACKGROUND

During the Industrial Revolution, the Monongahela River valley provided a primary means of transportation and a source of raw materials that fueled this nation and turned it into a world economic leader. Still today the Mon. Valley remains a source of efficient transportation; bringing raw materials from the mountains to the factories and refineries.

The goal of this River Conservation Plan is to heal the scars from decades ago and provide a framework for long-term growth that conserves natural resources, promotes our cultural heritage, plans for development, and creates a special place to live and work.

This plan identifies the environmental, historical, cultural and recreation resources which are important to the community (assets); identifies threats to those resources (pollution, lack of utilities, limited river access, and river safety); then creates a set of management options to mitigate those threats while enhancing, protecting and promoting the assets.

Public comments concerning the issues and management options of this report are encouraged. The management options will become the *eligible projects for 50 percent funding*.

The comments received on the Preliminary Findings Report (presented in August) and the Draft Report (presented in October) were added to comprise this Final River Conservation Plan. This plan will now be submitted as the Final Monongahela River Conservation Plan at Brownsville to DCNR for inclusion to the Pennsylvania Rivers Registry.

## ISSUES, CONCERNS, CONSTRAINTS, AND OPPORTUNITIES

LAND RESOURCES

Land Use and Zoning

- Because of steep slopes and the lack of road and utility infrastructures, future development is mostly limited to existing towns and villages (in-fill development), abandoned industrial sites and slag dump sites.

- The municipalities of Coal Center and West Brownsville, do not have land sue regulations which could result in land uses that are in conflict with the goals and priorities of the river conservation plan and community residents.

Sites and Building Reuse

- Abandoned industrial sites and brownfields are two primary areas for reuse and development within the study corridor. The two largest tracts of industrial land, Hillman Barge and the La Belle Processing Plant, now owned by Canestrale Contracting (Luzerne Township), are currently vacant. Attracting tenants to the remaining sites is a crucial part of future economic development in the study corridor.

- Due to the high number of locally and nationally recognized historic structures in the study corridor, adaptive reuse (renovating older buildings for new uses) as it relates to tourism and the heritage parks ins a very feasible opportunity. Brownsville has a great potential for the adaptive reuse of buildings.

Ferry Terminals

- The abandoned ferry terminals within the study corridor have the potential to provide several beneficial advantages to the surrounding communities and the river. The additional river access, a renewed mode of transportation across the river, and an attraction for recreation and tourism development opportunities.

Abandoned Railroads

- The two abandoned railroads lines, along Dunlap Creek and Redstone Creek, are potential recreational development areas. The tow lines are directly related to the ethnic and economic history of the study corridor, making them ideal for conversion to trails and linking the rivers to the surrounding communities.

Brownfield Sites

- The brownfield sites in the study corridor are places for adaptive reuse. Many of the vacant industrial sites have river terminals, which offers means for intermodal transportation. The slag piles scattered within the study corridor could be leveled for possible future development. Brownfield sites provide an opportunity for increasing river access and future commercial and recreational development.

Abandoned Coal Structures

- Coal tipples within the study area depict the industrialized history of the Mon Valley and these structures have the potential to be used in the Rivers of Steel Heritage Area as interpretive sites. However, in their current conditions, they are a public safety hazard. The Isabella coal tipple and conveyor is recognized as a National Registered eligible structure.

WATER RESOURCES

- Several river-based organizations are attempting to nominate the Allegheny and Monongahela Rivers watershed as an American Heritage River. This would allow communities to protect and revitalize these rivers. It would also expand the river's recognition and ability to attract funding.

Major Tributaries

- Tributaries within the study corridor are impacted by abandoned mine drainage (AMD), sewage effluent, and other man made sources. Implementation of a water quality management program would identify areas for reclamation and establish continued monitoring. Dunlap

Creek and Pike Run, an approved trout water fishery, are impacted by agricultural runoff, sewage and AMD. Redstone Creek is impacted by "yellow boy" or abandoned mine drainage. Information on the remaining twenty-three tributaries is limited.

Water Quality

Point Sources

- Although the problems of acid mine drainage and sewage discharge have greatly improved in the last decade, this does not mean they can presently be disregarded. The most severe point source pollutants within the corridor are the "wildcat" sewers. The boroughs without sewage or septic services are contributing a great deal to the degradation of the Monongahela River. Although PADEP requires all municipalities to develop an official sewage plan to account for their present and future needs, many of these municipalities do not have the financial means of implementing these plans, since they are often too costly to realize without external funding.

- Acid mine drainage was also identified as a pollutant of the Monongahela River. As discussed above, there are 10 abandoned mines within the study corridor. All of these abandoned sites may contribute to the acid mine drainage problem. There are numerous management techniques for the treatment of acid mine drainage. Application of limestone to neutralize the acid is successfully being utilized in a couple different watersheds within the state to ameliorate acid mine drainage. Wetland systems are a new area of research within acid mine drainage treatment.

Non-point Sources

- Although the Monongahela River has historically been a sediment laden river, it is added to by the commercial utilization of the river, stormwater runoff and unvegetated banks. The sedimentation of the river is increased in the areas utilized by barges and industrial docks. These areas seldom retain well maintained vegetated banks and stormwater runoff is the greatest in these areas due to the increased pavement and impervious surfaces.

Monitoring

- There appears to be no comprehensive, complete and all encompassing water quality monitoring being conducted. The water and sewage treatment plants conduct daily water tests but these are limited to their point of intake. Maxwell Lock and Dam along with, several state and federal agencies have also provided water quality studies on specific areas of concern or interest along the river. Unfortunately, these studies are only undertaken when the agencies are contacted about a severe problem.

BIOLOGICAL RESOURCES

Important Habitats

- The California Overlook and the Blainsburg Floodplain were identified as significant natural features by the Western Pennsylvania Conservancy in the Washington County Natural Heritage Inventory.

## CULTURAL RESOURCES

### River Safety

- The Monongahela River has historically been a commercial river and is still heavily utilized by the barge industry. Safety is a major concern for both the barge shipping and recreation industry.

### Recreation

- Within the study corridor, public access areas and parks are scattered and few. There are a limited number of parks with sufficient facilities within the area. Several of the river access areas are unmaintained and dangerous for launching boats into the river.

### Historical Sites

- There are a number of locally recognized historic structures in the study corridor as well. Brownsville alone has 7 historical structures, 7 eligible and over 90 more which are locally recognized. These structures may also be attractive locations for interpretive sites. The Nemacolin Castle in Brownsville is an example of a historic building that is a destination for tourists.

- The Steel Industry Heritage Corporation ha plans for future landing sites as part of it's Rivers of Steel Heritage Area. Brownsville and other towns within the corridor are potential locations for historic tourism landing sites.

- The National Road Heritage Park and the Rivers of Steel Heritage Park, which converge in Brownsville, have determined through their Action Plans that they will incorporate interpretive sites into their parks. This opens a number of opportunities for connecting the historical sites and structures within the local communities.

Attached are the management options (recommendations), potential partnerships and potential funding sources for the conservation, restoration and/or enhancement of the river based resources of the Monongahela River at Brownsville.

| PHASE AND PLAN CATEGORY | MANAGEMENT OPTIONS AND PRIORITIES | POTENTIAL PARTNERSHIPS and/or RESPONSIBLE PARTIES | POTENTIAL FUNDING SOURCES | SCHEDULE FOR IMPLEMENTATION |
|---|---|---|---|---|
| | (Refer to the Report, Section VII, for additional information about each management option.) | *Monongahela River Association (MRA) will act as a clearing house for partnerships and funding for each option. | *Department of Conservation and Natural Resources (DCNR) will be matching 50% of the costs. | |
| | | | PA Department of Community and Economic Development (DCED) provides a variety of programs for planning, infrastructure development, and project implementation. | |
| **Phase One** | | | | 1998-2001 |
| Management | | | | |
| | Develop a Monongahela River Association (MRA) to be responsible for managing the plan, reviewing/updating the plan, and acting as a clearing house for funding sources and planning/development partnerships. | MRA | DCNR Circuit Rider for funding a Coordinating/Enforcement Officer | |
| | Develop and begin to solicit funds for an "emergency fund" to protect threatened resources that are important to the River Conservation Plan. | MRA | Private Foundations (Eberly Foundation, J. Hardy) | |
| Sewage | | | | |
| | Investigate alternative funding to update malfunctioning septic systems within the corridor. | Department of Environmental Protection (DEP), local engineering firms, local municipality, county planning (grant writing) | DCED: PA Governors Action Team (PA infrastructure Investment Authority) PENNVEST provides low interest loans for work on wastewater systems within the state, Fayette County Redevelopment Authority (FCRA) | |
| | Acquire funds to review existing conditions, project future demands, assist in the acquisition of additional funding, and implement updates to existing sewage lines and facilities along the corridor. | DEP, local engineering firms, local municipality, county planning (grant writing) | FCRA, DCED: Communities of Opportunity (Comm.OP.), Appalachian Regional Commission (ARC), Community Revitalization (Comm.Rev.) | |
| | Install upgrades to existing sanitary facilities in the Boroughs of California and Brownsville. | DEP, local engineering firms, local municipality, county planning (grant writing) | " ", EPA reauthorization of the Federal Safe Drinking Water Act (EPA) | |
| | Install a sewage treatment facility to serve West Brownsville borough and other surrounding communities, or extend lines from W. Brownsville to the existing system at Brownsville. | DEP, local engineering firms, local municipality, county planning (grant writing) | FCRA, DCED: PA Infrastructure Development Program (IDP), Shared Municipal Services (SMS), Section 108 Loan Guarantees, EPA | |
| | Investigate the possibilities of installing or extending sewage services to the following towns in Centerville Borough and Luzerne Township: Denbeau Heights, Denbo, Vesta #6, Maple Glen, Melrose, Maxwell, Dutch Hill, La Belle, East Fredricktown, etc... | DEP, local engineering firms, local municipality, county planning (grant writing) | " " | |
| River Safety | | | | |
| | Develop partnerships between the Waterways Association, the Port of Pittsburgh, the US Army Corps of Engineers, the Pennsylvania Fish and Boat Commission and the US Coast Guard to ensure safety issues and industry concerns are satisfied... | Waterways Association, the Port of Pittsburgh, the US Army Corps of Engineers, Pennsylvania Fish and Boat Commission (PFBC) and the US Coast Guard | Association: no direct costs involved | |
| | Develop a River Rescue Facility/Operation. The facility would be located in Brownsville and accessed from Bank Street. It would be operated by the local fire, police and ambulance services and be supported by the local hospital. | Southside Fire Company, Brownsville police, ambulance, hospital, municipality, county planning, PFBC, US Coast Guard | DCED: PA Infrastructure Development Program (IDP), Shared Municipal Services (SMS), Washington County Council on Economic Development (WCCED), Fay-Penn Economic Development Corp. (Fay-Penn), private foundations | |
| Water Quality | | | | |
| | Form a water quality monitoring group for the river. Publish the results. Partner with other local water-related groups to monitor tributaries to the river. | PA Department of Environmental Protection (DEP), Environmental Protection Agency-region 3 & 4 (EPA), Army Corps of Engineers, United States Geological Service (USGS), PFBC, PA Cleanways, California University Biology Department (Cal.U, Biology) | DEP (Citizens Volunteer Monitoring Program) | |
| | Implement comprehensive water quality sampling points throughout the study corridor - including chemical analysis, macro invertebrate and fish sampling. | DEP, EPA, Army Corps, PFBC, USGS, PA Cleanways, Cal. U., Biology, Pennsylvania Environmental Council, POWR, Ohio River Sanitary Commission (ORSANCO) | Private Foundations (Heinz (HJ) Endowments, RK Mellon, Fish America, National Fish and Wildlife, Westinghouse, Benedum) | |
| | Monitor water quality on Pike Run, Dunlap Creek and Redstone Creek to pinpoint "wildcat" sewage and abandoned mine drainage sources. | DEP, EPA, Army Corps, PFBC, USGS, PA Cleanways, Cal. U., Biology, POWR, ORSANCO | Private Foundations (Heinz Endowments, RK Mellon, Armco and Benedum Foundations), EPA reauthorization of the Federal Safe Drinking Water Act. | |
| | Conduct population surveys on the benthic and aquatic life within the river, in particular focus on macroinvertebrate and fish species. | DEP, EPA, Army Corps, PFBC, USGS, Cal.U., Biology, local sportsmen's groups | Private Foundations | |
| Management/ Marketing | | | | |

| PHASE AND PLAN CATEGORY | MANAGEMENT OPTIONS AND PRIORITIES | POTENTIAL PARTNERSHIPS and/or RESPONSIBLE PARTIES | POTENTIAL FUNDING SOURCES | SCHEDULE FOR IMPLEMENTATION |
|---|---|---|---|---|
| | Participate in existing marketing efforts by the Rivers of Steel Heritage Area and National Road Heritage Park to promote the areas vast historic, cultural, recreational and environmental opportunities. | Steel Industry Heritage Corporation (SIHC), Pennsylvania Historic Museum Commission (PHMC), local historic societies, Allegheny Conference | Association: no direct costs involved | |
| River Access/ Ferries | | | | |
| | Ensure the continued operation of the Fredericktown Ferry, the last cable drawn operating ferry in the western rivers of the United States, by improving the operation, maintenance and equipment. | Local engineering firms, local municipality, county planning, SIHC, National Road, PHMC, Allegheny Heritage Development Corporation (AHDC) | DCED: Community Development Block Grants (CDBG), National Institute for Conservation of Cultural Property (NIC), National Trust (NT), Washington County Council on Economic Development (WCCED), Fay-Penn Economic Development Corp. (Fay-Penn) | |
| | Improve existing boat launch sites at Union Street in California, the launch in Maxwell and the access point adjacent to the Intercounty Bridge in West Brownsville Borough | Local engineering firms, local municipality, county planning, Cal.U. Planning | CDBG, NIC, WCCED, Fay-Penn, Comm.Rev., Comm. Op., ARC | |
| | Evaluate the development potential for the East Fredericktown Ferry landing site to become a permanent public boat docking facility. | Local engineering firms, local municipality, county planning, Cal.U. Planning, PFBC | CDBG, NIC, WCCED, Fay-Penn, Comm.Rev., Comm. Op., ARC | |
| | Evaluate the potential for abandoned ferry sites, Newell-Coal Center (Simpson Ferry), Arensburg and East Riverside (Jacob Ferry), to be used as both future ferry launch sites and public boat launches | Local engineering firms, local municipality, county planning, Cal.U. Planning, PFBC | NIC, WCCED, NT, Fay-Penn, ARC | |
| | Acquire and rebuild abandoned ferry sites as public boat launch areas and possible ferry landing sites. (Refer to above sites) | Local engineering firms, local municipality, county planning, SIHC, National Road, PHMC, AHDC, PFBC | NIC, WCCED, NT, Fay-Penn, AHDC, ARC | |
| | Search for and begin to purchase abandoned ferry boats for use as interpretive centers and river tours. Another option may be to rebuild and build new replica ferries. | Local engineering firms, local municipality, county planning, Cal.U., SIHC, National Road, local historic societies, AHDC | NIC, WCCED, Fay-Penn, AHDC | |
| History | | | | |
| | Promote eligible historic structures to become listed on the National Register of Historic Places. | SIHC, National Road, PHMC, local historic societies, AHDC | no direct costs involved | |
| Recreation | | | | |
| | Conduct deed research and purchase abandoned railroad properties at Dunlap Creek and Redstone Creek for future bike/pedestrian trail development. These linear parks can become direct links connecting the community to the river... | PA Rails to Trails Conservancy, Regional Trail Corporation (RTC),CSX, Consol | ISTEA, NEXTEA, Private Foundations (Heinz (Vira) Endowments, RK Mellon Foundation, Armco Foundation, Westinghouse Foundation | |
| Management/ Planning | | | | |
| | Develop partnerships between the Steel Industry Heritage Corporation, the National Road Heritage Park, local historic associations, the Regional Trail Corporation and county planning departments to implement, promote and plan for the future. | SIHC, National Road, PA Rails to Trails Conservancy, RTC | Association: no direct costs involved | |
| | | | | |
| Recreation | | | | |
| | Foster partnerships and agreements with private marinas, the California Boat Club and the Knights of Columbus at West Brownsville, to provide public access | Local engineering firms, local municipality, county planning | Association: no direct costs involved | |
| | Acquire properties and build new boat launches at East Millsboro and Isabella. | Local engineering firms, local municipality, county planning | Private Foundations (Heinz Endowments, RK Mellon Foundation, Armco Foundation, Westinghouse Foundation) | |
| | Continue to plan and develop the proposed wharf at Brownsville. The wharf would include a landing site for entertainment barges and the Rivers of Steel Journey river based tourism trips. | SIHC, Washington County Council on Economic Development (WCCED), Fay-Penn Economic Development Corp. (Fay-Penn), National Road, county planning, local engineering firms, local municipality | Existing Funding Sources, DCED, private foundations | |
| | Continue to plan and develop the proposed marina at Brownsville. The marina would be located downstream of the Wharf and include private docking facilities for recreational watercraft. | Local engineering firms, local municipality, county planning, WCCED, Fay-Penn | Existing Funding Sources, private foundations | |
| | Acquire properties, plan and develop river front parks at Newell, California University, (The California Borough-Rotary Club-Walkway Park), Coal Center, Centerville (across from Hillman Barge), the Vesta #6 area, East Millsboro, and East Fredericktown. | PFBC, US Coast Guard, US Army Corps, Port of Pgh, local municipality, local historical societies, RTC, county planning | Private Foundations, DCED: Industrial Site Reuse Program (ISRP), ARC, Comm.Op, Comm.Rev., Sect.108 | |
| Biological Resources | | | | |
| | Encourage California Borough to incorporate regulations in their zoning ordinance to restrict ATV's and off-road motorcycles in the Blainsburg Floodplain so as to encourage the regrowth of this area | Local municipality, WPC, Cal.U, Biology, DEP, EPA, PFBC, PNDI | Association: no direct costs involved | |
| | Coordinate with the Western Pennsylvania Conservancy (WPC) or another land trust for the acquisition and preservation of the biologically diverse Blainsburg Floodplair | WPC | Association: no direct costs involved | |
| | Encourage West Brownsville to adopt protection procedures for the Blainsburg Floodplair | Local municipality, WPC, Cal.U, Biology | Association: no direct costs involvec | |
| Hazardous Areas/ Water Quality | | | | |

| PHASE AND PLAN CATEGORY | MANAGEMENT OPTIONS AND PRIORITIES | POTENTIAL PARTNERSHIPS and/or RESPONSIBLE PARTIES | POTENTIAL FUNDING SOURCES | SCHEDULE FOR IMPLEMENTATION |
|---|---|---|---|---|
| | Implement a survey of abandoned mines within the study corridor in order to develop a reclamation strategy. | Western Pennsylvania Coalition for Abandoned Mine Reclamation (WPCAMR), Fayette Forward Strategic Plan (Fayette County), Allegheny Heritage Foundation, National Research Center for Coal and Energy, Surface Mine Control & Reclamation (SMCRA) | Statewide Nonpoint Source Pollution Program (Federal Clean Water Act-Section 319, Rural Abandoned Mine Program (RAMP) and the Landowner Reclamation Program (LRP) through WPCAMR; DEP, Bureau of Abandoned Mine Reclamation, SMCRA | |
| Flooding | | | | |
| | Schedule flood awareness seminars through the National Weather Service | National Weather Service | Association: no direct costs involvec | |
| Land Use/ Planning | | | | |
| | Develop a plan to identify community in-fill sites for redevelopment and reuse (such as the Flatiron building in Brownsville) to attract new commercial businesses and increase tourism within the existing community. | Local municipality, county planning, Cal.U. Planning | DCED: Small Communities Planning Assistance Program (SCPAP), State Planning Assistance Program (SPAG), ISRP, CDBG. Enterprise Zone Program (EZP), ARC, Comm.Op., Comm. Rev., Sect.108 | |
| | Participate with other interests in considering potential uses for development (Hillman Barge site and the remaining Canestrale Contracting sites). | Land owners, Waterways Association, the Port of Pittsburgh, the US Army Corps of Engineers, CSX, CONSOL, local engineering firms, local municipality, county planning, Cal.U.Planning | Association: no direct costs involved | |
| | If reuse activities have not been implemented at the above sites, encourage municipalities to apply for environmental assessment money under Act 2 and Act 4 to begin the industrial reuse process | " " | ISRP, IDP | |
| | Encourage Coal Center and West Brownsville to adopt zoning as part of their land planning strategy. | PA Strategic Planning and Program Operation (PASPPO), PA Municipal Planning Code, local municipalities, county planning | SCPAP, SPAG | |
| Management | Update and revise the River Conservation Plan | MRA | Private Foundations | |
| **Phase Two** | | | | 2002-2004 |
| Management/ Marketing | | | | |
| | As part of marketing, support projects in the area that aim to improve water quality, land use, sewage, recreational needs and the general economics of the valley. Participate in publishing an annual report and hold annual symposium. | MRA | Association: no direct costs involved | |
| Land Use | | | | |
| | Review the existing ordinances of participating municipalities to ensure compatibility with future river development and conservation plans. | PA Strategic Planning and Program Operations (PASPPO) | SCPAP, SPAG | |
| | Participate in the ongoing efforts with the Port of Pittsburgh, the Waterways Association, county planning agencies, redevelopment authorities and economic development associations to identify and market existing sites with potential for development. | PASPPO, PA Municipal Planning Code, local municipalities, county planning | Association: no direct costs involved | |
| Bio. Resources/ Water Quality | | | | |
| | Conduct annual sampling of channel catfish and common carp to establish concentration trends in polychlorinated biphenyls (PCB's), chlordane and heavy metals within the Maxwell Lock and Dam area. | DEP, EPA, Army Corps, PFBC, USGS, Cal.U., Biology, local sportsmen's groups | Private Foundations (Heinz (HJ) Endowments, Richard King Mellon Foundation, Fish America Foundation, National Fish and Wildlife Foundation, and the Armco, Westinghouse Foundations) | |
| | Promote implementation for and enforcement of existing erosion and sedimentation plans for all municipalities through citizen awareness programs. | Conservation District, local municipality, county planning | Private Foundations | |
| | Promote implementation for and enforcement of existing storm water management ordinances for all municipalities through citizen awareness programs. | Local engineering firms, local municipality, county planning, | Private Foundations | |
| | Monitor the expanding range of zebra mussels. Coordinate efforts with local municipalities and private industries to ensure that intake or outflow pipe capacities are not decreased | DEP, EPA, Army Corps, PFBC, USGS, Cal. U. Biology, local sportsmen's group: | Private Foundations | |
| Management | | | | |
| | Review the DCNR study to categorize the Monongahela River as a Modified Recreational River for the Scenic Rivers Inventory. | MRA/DCNR | Association: no direct costs involved | |
| | Participate in the promotion of the Monongahela as an American Heritage River. | U.S. Department of the Interior, National Park Service, SIHC, National Road | Association: no direct costs involved | |
| Erosion Control/ Safety | | | | |
| | Encourage population centers along narrow river bends (Newell, Coal Center and California) to incorporate a 5 mile pe hour speed restriction for commercial traffic into their ordinances to prevent damage to facilities & control erosion of river banks... | Local municipality, Army Corps, US Coast Guard, Waterways Association, Port of Pgh, Conservation District | Association: no direct costs involved | |

| PHASE AND PLAN CATEGORY | MANAGEMENT OPTIONS AND PRIORITIES | POTENTIAL PARTNERSHIPS and/or RESPONSIBLE PARTIES | POTENTIAL FUNDING SOURCES | SCHEDULE FOR IMPLEMENTATION |
|---|---|---|---|---|
| | Encourage California, Coal Center, Newell and West Brownsville to plant native tree and shrub species, along with native rock installations to limit the erosion of earth banks. | Local municipality, Army Corps, US Coast Guard, Waterways Association, Port of Pgh, Conservation District, DEP | DEP Bureau of Watershed Conservation, local Conservation District | |
| Management | Update and revise the River Conservation Plan | MRA | Private Foundations | |
| **Phase Three** | | | | 2005-2007 |
| History | | | | |
| | Evaluate the potential for abandoned coal tipples, conveyors, former locks and launching areas to become historic interpretive sites. | SIHC, PHMC, Port of Pgh, local municipality, county planning, CONSOL, CSX | CDBG, NIC. National Trust (NT) | |
| Hazardous Areas | | | | |
| | Develop an action plan for the future use and/or removal of abandoned coal tipples, conveyors, former locks and launching areas. These may present safety hazards to recreational users | SIHC, PHMC, Port of Pgh, local municipality, county planning, CONSOL, CSX | CDBG, NIC, NT | |
| Recreation | | | | |
| | Investigate the possibilities for scenic railroad excursions along either Redstone Creek or the eastern side of the Mon. River on the CSX railroad line. | CSX, CONSOL, local engineering firms, local municipality, county planning, Cal.U. Planning | Private Foundations | |
| Biological Resources | | | | |
| | Conserve riparian habitat through education and best management practices. Encourage partnership agencies to promote citizen awareness programs at local events and community gatherings. | DEP, EPA, Army Corps, Cal.U. Biology | Private Foundations, DEP Bureau of Watershed Conservation, local Conservation District | |
| | Investigate the potential of the California Overlook and the Blainsburg Floodplain to be utilized as educational classrooms or natural interpretive areas | DEP, EPA, Army Corps, Cal.U. Biology | Private Foundations | |
| | Develop a nature center to educate the public about the past and present conditions of the river and promote the values of a clean water supply. | DEP, EPA, Army Corps, Cal.U. Biology | Private Foundations | |
| Recreation/ History | | | | |
| | Acquire properties, plan and develop river related parks to accent historical, educational, and recreational activities. Possibilities exist along Redstone Creek, Dunlap Creek and along the proposed river front park developments mentioned above. | SIHC, Regional Trail Commission (RTC), local municipality, county planning | NT, CDBG, NIC, WCCED, Fay-Penn, Private Foundations, ISTEA, NEXTEA | |
| | Acquire properties, plan and develop recreation and interpretive trail connections to the National Road at Brownsville and to the Youghiogheny River Trail (via the connection of Redstone Creek and Dunbar Creek) | SIHC, PA Rails to Trails Conservancy, RTC, local municipality, county planning | NT, CDBG, NIC, WCCED, Fay-Penn, Private Foundations, ISTEA, NEXTEA | |
| | Plan and integrate the use of the proposed wharf and marina developments at Brownsville with the culture and heritage activities of the Steel Industry Corporation's Rivers of Steel Program and the National Road Heritage Festival. | SIHC, National Road, local historic societies | NT, CDBG, NIC, WCCED, Fay-Penn, Private Foundations | |
| | Investigate the possibility of renovating the "old" Lock #5 for recreation/tourism reuse. | US Coast Guard, US Army Corps, PFBC, SIHC, local historical society | NT, CDBG, NIC, WCCED, Fay-Penn, Private Foundations | |
| | Investigate the reuse of barges as floating docks to support shops, restaurants and recreation (eg. swimming pool) and tourism attractions. | US Coast Guard, US Army Corps, PFBC, local economic development agency | CDBG, NIC, WCCED, Fay-Penn | |
| Management | Update and revise the River Conservation Plan | MRA | Private Foundations | |
| **Phase Four** | | | | 2008-2012 |
| Management | Continue with the planning, implementation and funding process for the above projects including: sewage update projects, river access, park construction, abandoned mine reclamation, water quality testing and remediation efforts | MRA | | |
| Tourism | Build a replica of the original steamboat first built in West Brownsville and Brownsville. Locate the craft in the West Brownsville-Brownsville area as an attraction. | SIHC, National Road, local historic societies, US Coast Guard, US Army Corps, PFBC, local economic development agency | Private Foundations | |
| Tourism/ Recreation | Implement a study to sign the river for use by recreational users; signing may include town names, significant historic sites, parks/other recreational opportunities, public facilities and emergency services. | SIHC, National Road, local historic societies, US Coast Guard, US Army Corps, PFBC, local economic development agency, municipality, county planning | NT, CDBG, NIC, WCCED, Fay-Penn, Private Foundations | |
| Management | Update and revise the River Conservation Plan | MRA | Private Foundations | |

# PROJECT BACKGROUND

The Pennsylvania Rivers Conservation Program is a grant program of the Keystone Recreation, Park and Conservation Fund, administered by the Pennsylvania Department of Conservation and Natural Resources (DCNR). Its goal is to develop partnerships with local governments and environmental organizations to conserve the state's water resources. .The program aids groups in accomplishing their local initiatives through planning, implementation, acquisition and development activities. One aspect of this is to provide grants to develop a River Conservation Plan that identifies natural, recreational and cultural resources. In addition, the plan aims to determine the issues and concerns which threaten those resources, and to make recommendations for conservation and enhancement of Pennsylvania's rivers and streams.

Under this program, a Pennsylvania Rivers Registry has been established by DCNR to recognize local river conservation efforts. The registry serves to promote the protection of rivers and recognizes rivers or river segments in communities who have completed River Conservation Plans.

On July 19, 1995, Brownsville Borough was awarded a $20,000 grant to create a Rivers Conservation Plan for a 25 mile stretch of the Monongahela River in southwestern Pennsylvania, as part of the first round of River Conservation Program grants approved by DCNR. Through the initiative of Brownsville Borough, the plan was designed to include seven municipalities, in two counties.

# I. PROJECT AREA CHARACTERISTICS

A. Location

The Monongahela River basin traverses northern West Virginia, southwestern Pennsylvania, and northwestern Maryland. The Monongahela, commonly called the Mon, is located in the headwaters of the Ohio River watershed. The river originates from the West Fork and Tygart Rivers in Fairmont, West Virginia and drains a 7,386 square mile area. From the confluence at Fairmont, the Monongahela flows northward for approximately 128 miles, where it joins the Allegheny River to form the Ohio River at Pittsburgh, Pennsylvania.

B. Size

The Monongahela River Conservation Plan at Brownsville covers only the portion of the Monongahela River located between the Borough of Newell and the Township of Luzerne, in Fayette County and from Coal Center Borough to Centerville Borough, in Washington County (Navigational river mile marker 49.5 to 74). The boundary of the study area was determined as a result of coordinated efforts between the Borough of Brownsville, the Department of Conservation and Natural Resources (DCNR) and Mackin Engineering Company. This plan covers approximately 25 river miles and includes portions of the municipalities of Newell, Coal Center, California, Brownsville, West Brownsville, Centerville, Luzerne, and Jefferson.

The entire western bank of the river within the study corridor is located in Washington County, while the eastern bank is in Fayette County. The western side of the corridor follows the river from the northern border of California Borough to the southern border of Centerville Borough. The eastern edge of the corridor extends from Newell's northern municipal border to Luzerne Township's southern municipal border. The width of the corridor extends approximately one mile to either side of the river or to the ridge of the steepest slope (Figure 1).

C. Topography

The study area is located in the Kanawha section of the Appalachian Plateau physiographic province. This particular section is deeply bisected by the Monongahela River and is characterized by deep, narrow valleys with steep slopes and a meandering floodplain. The relief, or slope height, in this area is typically 250 to 300 feet along smaller tributaries and 400 to 500 feet along major streams. Within the study corridor, the width of the valley floor varies from 0.4 to 0.6 miles. The highest and southern most river elevation located within the study corridor was 771.0 feet above sea level, while the river elevation located at the northern edge of the study corridor was 749.2 feet above sea level.

Much of the development along the river is governed by the floodplain patterns and steep topography of the river valley walls. As a result, development tends to concentrate along tributaries, in valleys and near former coal mining sites.

D. Major tributaries

There are three major tributaries to the Monongahela River within the study corridor: Pike Run, Redstone Creek and Dunlap Creek. Pike Run has a drainage area of 28.6 square miles and flows into the Monongahela from the west at Coal Center (river mile 51.36). As discussed in the Water Resources section of this report, this tributary has been the center of a large and successful land management plan incorporating several government agencies. Pike Run is also the only tributary in the study area that is designated as a Trout Stocked Fishery (TSF) by the Pennsylvania Department of Environmental Protection (PADEP) and is an Approved Trout Water by the Pennsylvania Fish and Boat Commission (PFBC).

Redstone Creek and Dunlap Creek, designated Warm Water Fisheries (WWF) by the PADEP, flow into the Monongahela from the east. Redstone Creek is the largest tributary in the study corridor, with a drainage area of 109 square miles. It joins the Monongahela at river mile 54.9 in Brownsville. This watershed is very extensive and reaches as far as Uniontown, Pennsylvania. The area surrounding Redstone Creek was historically subjected to extensive coal mining. Therefore, this tributary suffers from severe acid mine drainage.

Dunlap Creek has a drainage area of 41.6 miles, and flows into the Monongahela at river mile 56.16 in the southern portion of Brownsville. This tributary is also an Approved Trout Water by the PFBC.

E. Corridor

1. Land Use

Land uses within the study corridor are divided into seven categories: Institutional, Industrial, Commercial, Residential, Parks/Cemeteries, Open Space and Brownfield Sites. (Figure 2 , Table 1).

**Table 1**
**Land Uses Within the Study Corridor**

| LAND USE | ACREAGE | PERCENTAGE |
|---|---|---|
| Institutional | 69.675 | .84 |
| Residential | 1,566.350 | 18.85 |
| Commercial | 23.465 | .28 |
| Industrial | 439.653 | 5.30 |
| Parks | 75.201 | .90 |
| Open Space | 5,522.693 | 66.47 |
| Brownfield Sites | 611.292 | 7.35 |
| **TOTAL ACRES** | **8,308.329** | **99.99** |

Most of the corridor is open space characterized by forested tracts of land and steep slopes. In the southern half of the study corridor, steep, wooded slopes dominate the banks of the river. Low density housing along the river is found in scattered clusters and

can be seen on maps as small, unincorporated villages. These little towns are organized either linearly along the river's edge, or in the form of patch housing that emerged to support the many defunct coal mines in this area. The most densely populated areas in the corridor are the boroughs of Brownsville and California. These each have commercial strips or districts integrated with the residential land use.

There are four main industrial sites within the corridor: Welland Chemical in Newell Borough, Hillman Barge (owned by Trinity Industries Incorporated), Consol Docks Incorporated at Alicia and La Belle Processing Plant, in Luzerne Township. As to date, the processing plant in La Belle is now in use and under the ownership of Canestrale Contracting while Hillman Barge remains vacant. These sites represent the largest brownfields, or industrial redevelopment sites, in the study corridor.

Slag piles and abandoned mines are scattered across the study corridor landscape, as well. Some of the slag piles in Luzerne Township are so large that, although they are outside of the study corridor, they are still visible from the river. The Crucible and Isabella slag dumps are especially noticeable. In addition to the piles of slag, there are several locations where abandoned mining conveyor belts and coal tipples can be seen from the river. Many of these old, metal structures have fallen to ruin.

2. Zoning

There are portions of eight municipalities within the Monongahela River Conservation Plan study corridor. Four are in Washington County: Coal Center Borough, California Borough, West Brownsville Borough and Centerville Borough; and four are in Fayette County: Newell Borough, Jefferson Township, Brownsville Borough, and Luzerne Township (Table 2). Of these municipalities, only two have municipal zoning ordinances.

In Fayette County, there is a countywide zoning ordinance that goes into effect for those municipalities that have not adopted their own zoning ordinance and map. This is not the case in Washington County, where municipalities without their own zoning ordinance and map are simply left unzoned. Refer to Table 2.

**Table 2**
**Zoning Within the Study Corridor Municipalities**

| | Municipality | Municipal Office Address | Zoning Ordinance |
|---|---|---|---|
| ***Washington County*** | | | |
| | Coal Center Borough | 132 Water St. PO Box 174<br>Coal Center, PA 15423 | No |
| | California Borough | PO Box 696<br>California, PA 15419 | Yes |
| | West Brownsville Borough | 615 Woodland Avenue<br>West Brownsville, 15417 | No |
| | Centerville Borough | 685 National Pike West,<br>Brownsville, 15417 | Yes |
| ***Fayette County*** | | | |
| | Newell Borough | 46 Miller Run<br>Newell, PA 15466 | Countywide zoning |
| | Jefferson Township | RD #2 Box 142B<br>Perryopolis, PA 15473 | Countywide zoning |
| | Borough of Brownsville | Second and High Street<br>Brownsville, PA 15417 | Countywide zoning |
| | Luzerne Township | 415 Hopewell Road<br>Brownsville, PA 15417 | Countywide zoning |

Only two of the eight municipalities within the study corridor, California Borough and Centerville Borough in Washington County have municipal zoning ordinances and zoning officers to oversee the ordinances. This is a reflection of the low population densities and minimal development in the study corridor. Two municipalities in Washington County, Coal Center Borough and West Brownsville Borough, do not have municipal or county zoning ordinances governing the permitted uses of land.

F. Social Profile

1. Population Centers

Corridor municipalities, when totaled, have lost over 10 percent of their population between 1980 and 1990, this is greater than both Fayette County which lost 8.8 percent and Washington county which lost 5.7 percent of their populations. This is due to the decline in jobs and development within the study area region. During the period between 1980 and 1990 only California Borough increased its population, and in the 15 year period between 1990 and 2015 only Brownsville and California Boroughs are expected to grow in overall population (Table 3).

**Table 3**
**Municipal Population**

| Population | Year | | |
|---|---|---|---|
| *Municipality* | *1980* | *1990* | *2015 Predicted* |
| **Fayette County** | | | |
| Borough of Brownsville | 4043 | 3164 | 3385 |
| Jefferson Township | 2265 | 2047 | 1968 |
| Luzerne Township | 5549 | 4909 | 4666 |
| Newell Borough | 629 | 518 | 496 |
| **Washington County** | | | |
| California Borough | 5703 | 5748 | 6129 |
| Centerville Borough | 4207 | 3842 | 3695 |
| Coal Center Borough | 255 | 184 | 182 |
| West Brownsville Borough | 1433 | 1170 | 1139 |
| **TOTAL** | **24,084** | **21,577** | **21,660** |

Source: US Department of the Interior, 1990 Census Data
2015 Predicted Data Source: Southwestern Pennsylvania Regional Planning Commission (SPRPC) Cycle V Forecasts, June 1994.

Only the boroughs of Newell and Coal Center are located entirely within the study corridor, while only parts of the remaining municipalities are located within this area. The majority of the population in Luzerne Township, Jefferson Township, Centerville Borough, and West Brownsville Borough is located outside of the study corridor.

Jefferson Township has approximately 30 homes located within the corridor. The lower half of Brownsville Borough is included in the corridor which includes about 50 percent of the municipal population. The study corridor in Luzerne Township includes several villages such as Alicia, Melrose, Dutch Hill, La Belle, East Fredricktown, East Millsboro, and Isabella. These small villages are remnants of coal mining patch towns which developed near small mines formerly located in the area. Many residents of these small towns have remained since the mines closed in the 1970s and 1980s.

The majority of California's population is located within the study corridor, however the part of the borough located south of Rt. 88 known as the Harris Plan is not included. California is also home to California University of PA. When the university is in session the population of the borough nearly doubles do to the influx of college students.

Within Centerville Borough, the corridor includes the villages of Denbeau Heights, Denbo, and Maple. These villages are coal mining patch towns which make up only a small portion of Centerville's population.

As stated above, the segmented villages (patch towns) in the study corridor resulted from the prior coal mining industry that dominated the landscape from the 40s to the 70s. Many villages developed close to mine entrances which were located in the valleys of tributaries of the Monongahela River. These villages are small rural communities that function as their own neighborhoods. Many of the villages contain the same type housing and only have one access route.

2. Transportation Facilities

Throughout the United States, highway transportation has become the premier manner of transporting goods to businesses and industries. Route 40 and Route 88 are the primary roadways which provide highway access to municipalities of the corridor. Both roadways access Route 70 via the newly constructed Route 43 toll road . This toll road is slated to become part of the Mon/Fayette expressway project. When complete this limited access highway system will extend from Morgantown, WV to Pittsburgh, PA and will provide increased highway access.

Route 88 extends north/south along the western side of the river weaving in and out of the study area from California to Centerville. Penn DOT estimates that this roadway generates 3,650 trips a day in West Brownsville and accesses the western communities of the corridor.

Route 40 crosses the river in the east/west direction from Brownsville to West Brownsville. In this section, Penn DOT estimates the highway generates 8,747 trips a day. This is the only section of Route 40 that is located in the corridor but it is from Rt. 40 that smaller roadways access the patch towns located on the south-eastern side of the river. Here the river is traversed by two bridges, the new Rt. 40, Lane Bane Bridge, and the old Rt. 40, Intercounty Bridge.

River transportation is both commercial and recreational along this stretch of river. Commercially, between 1994 and 1996, 17,051 barges, operated by seven different companies transported 37,031,220 tons of coal, petroleum products and limestone through the Maxwell Locks and Dams. Coal is the most common cargo being transported, the majority being carried from mines in West Virginia. Two large power plants are located south of Brownsville, West Penn Power Company (Masontown, PA) and Monongahela Power Company (Fort Martin, WV), are two popular barge destinations.

Recreational boating is also common in this area. During the past three years 3,665 recreational boats carrying 32,267 people passed through the Maxwell Locks and Dams. During the summer months, a greater number of boaters travel within the pool without passing through the lock.

In addition to the road and river, the railroad industry still represents a strong transportation element in the study corridor. CSX Corporation and Conrail operate and

maintain railroad lines on both sides of the river that carry coal and steel towards the mills and preparation plants located down river. Trains travel through the corridor 15 to 25 times daily to and from the train yards located in West Brownsville, Newell, and Luzerne.

G. Economic Profile

The historic economic trends along the Monongahela River study corridor have been dominated by the introduction of new modes of transportation. The area has experienced its economic growth in combination with the development of roads, railroads, canals, and innovations in river-based transport.

The first and possibly most important event in the economic development of the area was the building of the National Road. Prior to the construction of the road, Indian trails were used for transit. The National Road was the first federally-funded road signed into law by President Thomas Jefferson in 1806. In addition to connecting the states into a more unified nation, it set a constitutional precedent for the building of canals, railroads and highways that ignited the industrial revolution. The economic effects in Brownsville, which served as a main stopping point on the National Road, were most profound. The road was designated as a Pennsylvania National Road Heritage Park in April 1994.

Boat building and distilling were the original industries along the river in the study corridor. Steamboat transportation became the catalyst for opening the Ohio and lower Mississippi rivers to ports along the Monongahela in the early 1800's. The production of flatboats, keelboats, and later, steamboats became a major industry for places such as Brownsville. Based on this new economy, Brownsville became a leader in ship building until the trade gradually declined around the mid-1850s and the onset of the Civil War when river traffic was diverted to railroads.

The local industry changed to an economy based on coal mining beginning in the mid-1800's. Coal mining led to the development of numerous villages and coal patch towns along the river, and also created the need for intermodal transport using the railroads, barges and hard surface roads to move coal along the Monongahela from West Virginia to Pittsburgh. This pattern holds true in the study corridor today.

A number of industries along the study corridor have their own river terminals. These sites represent places where intermodal connections have been established, but may no longer be in use. Within the study corridor, the following sites have a river terminal:

**Table 4**
**Sites Containing A River Terminal (no longer in use)**

| Site | Municipality |
|---|---|
| Welland Chemical, Inc | Newell |
| Sager Coal Company Dock | West Brownsville |
| HBC Barge Outfitting Dock | Luzerne |
| HBC Barge Upper Dock | Luzerne |
| The New Marcus-Paulson, Inc. | Centerville, Luzerne |
| Boyle Land & Fuel Company | Centerville |
| National Mines Corporation | Luzerne |

The economic vitality of the area has suffered from the decline of the mining industry. Nevertheless, the area is not absent of businesses. Major employers in the study corridor are concentrated in the two population centers, Brownsville and California (Table 5). In the study corridor, businesses that employ over 10 people are considered a major employer.

**Table 5**
**Major Sources of Employment**

| Employer | Municipality | Employees |
|---|---|---|
| California University of PA | California | 737 |
| *Brownsville General Hospital | Brownsville | 360 |
| Brownsville Area School District | **Brownsville | 257 |
| Eighty-Four Lumber Company | Coal Center | 62 |
| Welland Chemical | Newell | 43 |
| Brownsville Ambulance Service | Brownsville | 42 |
| Pechin's Riverfront Complex | Centerville | 22 |
| Sheehan's Grocery | California | 20 |
| Brownsville Post Office | Brownsville | 18 |
| Sheehan's Grocery | Brownsville | 18 |
| Standard Auto | Brownsville | 15 |
| Brodack's Grocery | California | 12 |
| Tru Copy | Brownsville | 12 |
| Caileigh's Restaurant | Brownsville | 12 |
| Rite Aid | California | 10 |
| Borough of Brownsville | Brownsville | 10 |
| CONSOL | Luzerne | 10 |

*.3 miles outside the corridor
** includes all municipalities in the Brownsville Area School District

## H. Outstanding or Unique Features

### 1. River Flow

The Monongahela River flows north for its entire length, from Fairmont, West Virginia, to Pittsburgh, Pennsylvania. This has influenced the uses of the Monongahela, in particular for the transport of people and coal. For example, the Monongahela played a significant role in pre-Civil War history. Because it flows from south to north across the Mason-Dixon Line, it was ideal for transporting runaway slaves who were heading north via the Underground Railroad.

### 2. Heritage Parks

This segment of the Monongahela River is one of the few areas in Pennsylvania where two state heritage parks cross each other. These two heritage parks, the Rivers of Steel Heritage Area, and the National Road Heritage Park, converge at Brownsville.

The Rivers of Steel Heritage Area will eventually involve river-based tours to landing sites with interpretive programs and structures. One such landing site is proposed for Brownsville. This program is expected to provide new tourism-related employment and economic development for communities in the Mon Valley by assisting them in protecting and interpreting their history.

The National Road Heritage Park is a linear park in the form of a corridor along the National Road in Pennsylvania. Its main mission is to spur economic development through heritage tourism and promote the adaptive reuse of historical structures through historic preservation. The corridor passes through three counties and involves a visual context area where views and vistas from the National Road can be appreciated. Plans for the heritage park include local partnerships, interpretive centers and areas, transportation and recreational linkages and educational and cultural programs. The Brownsville Interpretive Center in the historic Flatiron Building explains the overlap of transportation systems and the connection of the National Road to the commercial and industrial development in the early 19$^{th}$ and 20$^{th}$ centuries.

### 3. Locks and Dams

The Monongahela River has been heavily used by commercial traffic, which is reflected in the series of locks and dams constructed over the years to aid commerce. Construction of a system of locks and dams to ensure year-round navigation on the Monongahela began in 1838 by a private company, but the passage of the Rivers and Harbors Act in 1871 led to the federal government's involvement, at which point the entire river became toll free. The size and shape of the structures is outstanding in comparison to their natural surrounding. These locks and dams create separate pools along the river that people and commercial traffic identify with. The Maxwell Lock and Dam is located within the study corridor at river mile 61.2.

4. Abandoned Coal Tipples and Conveyers

The abandoned mining equipment along the banks of the Monongahela is one of the defining features of the study corridor. These remnants of the massive coal mining era remain in open view to river traffic.

5. Ferry Terminals

There is only one operational ferry in the study corridor today. It is located at river mile 64 and traverses from Fredericktown in Washington County to East Fredericktown in Fayette County. This ferry moves on a cable and is owned by Fayette County. The cost is 15 cents for passengers and 75 cents for cars. Toll-ferries were once run at several locations in the study corridor including: near river mile 73 at East Riverside, near river mile 70.5 at Arensburg, river mile 62 near Dutch Hill (Maxwell Ferry) and at Coal Center/Newell, river mile 51 (Simpson Ferry). Although these abandoned ferry landings are not readily noticeable, they represent the time in history when the shores and communities along the Monongahela were connected by ferries. They are places for potential development of future river access.

## II. LAND RESOURCES

A. Soil Characteristics

Soils associations are locations that have distinct patterns of particular soils. Each of these associations is a unique natural landscape having characteristic topography, depth, slope, and drainage qualities. Associations usually consist of one or two major soil types and often include one minor soil type.

**Table 6**
**Monongahela River Study Corridor**
**Soil Associations**

| County | Soil Association | Characteristics |
|---|---|---|
| Fayette | Guernsey-Westmoreland-Clarksburg | Deep, well-drained to somewhat poorly drained, medium texture, nearly level to moderately steep, influenced by limestone bedrock |
| Fayette | Monongahela-Philo-Atkins | Deep, moderately well-drained and poorly drained, medium textured, nearly level to sloping, on stream terraces and floodplains |
| Washington | Dormont-Culleoka | Moderately well-drained and well drained, deep and moderately deep, gently sloping to very steep soils, on hilltops, ridges, benches, and hillsides |
| Washington | Dormont-Culleoka-Newark | Well-drained and somewhat poorly drained, deep and moderately deep, nearly level to very steep soils, on hilltops, ridges, benches, hillsides, and floodplains |

Source: Washington and Fayette Counties Soil Surveys

On the Fayette County side of the river corridor, the dominant soils are from the Guernsey-Westmoreland-Clarksburg association (Table 6). This unit consists of soils that are derived primarily from limestone formations, and is often underlain by the Pittsburgh Coal formations. Associated landscapes include rounded hilltops and series' of benches located along slopes. Also found along the eastern shore of the river are five regions of the Monongahela-Philo-Atkins association. The occurrence of these soils at the apex of oxbows in the river is due to the fact that they are formed primarily from alluvial deposits. This is a common association adjacent to the Monongahela River in southwestern Pennsylvania.

The Washington County side of the study corridor is almost entirely composed of the Dormont-Culleoka association. This association exists on hillsides, benches, and ridges. Most of this unit is associated with networks of small streams that provide drainage between adjacent hillsides. One small region of the Dormont-Culleoka-Newark association occurs near East Bethlehem. Regions of this association consist of hills and floodplains, and it is common between hillsides which are adjacent to larger streams.

Regions of prime agricultural soils are randomly dispersed on both sides of the study corridor (Figure 3). The land uses associated with these areas consists of forested open space and residential development (Figure 2). All of the soil associations listed in Table 6 contain components of prime agricultural or statewide important soils.

B. Ownership (%)

Most of the land is privately owned either by individuals, railroads, shipping, mining and other corporate and industrial interests. The amount of public land in the project corridor, including institutional, totals less than 2%.

1. Public - 2%
2. Private - 98%

C. Critical Areas

1. Biologically Significant Areas

Two biodiversity areas, determined by the Western Pennsylvania Conservancy, are within the corridor and considered critical areas because of their uniqueness. These areas, the Blainsburg Floodplain and the California Overlook, have been identified because of their high diversity of flora and fauna and outstanding geological features. A detailed description of each site can be found in the Biological Resources section of this plan under Important Habitats.

2. Steep Slopes

The corridor is marked by steeply sloped, forested areas in both Fayette and Washington Counties. These areas represent constraints to development because they exceed a 25% grade. The southern half of the corridor (from south of Brownsville to Palmer) has remained less developed than the rest of the corridor as a result of the steep slopes along the river.

3. Abandoned Railroad Lines

There are two abandoned railroad lines that fall within the study corridor. One is the former Monongahela Rail line that goes from Brownsville through the former Pike Mine to Knoxville, then continues southeast along Dunlap Creek and beyond the village of Superior in Fayette County (Figure 4). The second is a Conrail line, which travels along Redstone Creek through the villages of Linn and Braznell heading toward Grindstone, also in Fayette County.

These abandoned lines are critical because they exist as potential sites for rails-to-trails development, and they have related structures that may be historically significant and available for reuse. The Monongahela line has a unique triple-arched bridge that is located near the former Pike Mine in Brownsville. The bridge was constructed by Italian masons who lived in Brownsville. This structure is currently under private ownership. The abandoned Conrail line, passes through a railroad tunnel north of Superior, in Redstone Township, which might provide unique rail-trail features.

4. Brownfield Sites

Brownfield sites are tracts of vacant industrial land. They are critical because of their potential for reuse and redevelopment. However, some brownfields are sites of hazardous waste and may require remediation. State funding may be obtained for clean-up for brownfields through Pennsylvania Act 2 and Act 4.

In the study corridor there are two main brownfields: Hillman Barge (HBC) and the La Belle Processing Plant (Figure 2). HBC is located on the riverfront in Luzerne Township where the municipal line meets Brownsville Borough. This 43.78 acres site was sold to Trinity Industries Incorporated in the late 1980's and closed in 1995.

The other main brownfield is the Labelle Processing Plant, formerly the ITEC facility, and now owned by Canestrale Contracting. It is also located in Luzerne Township. This area consists of 5 tracts of land totaling 1,252.7 acres. This site includes underground conveyers and is located at the base of a number of abandoned mines. As to date, the site is being used by Canestrale Contracting with future plans for continued development.

Coal tipples, slag piles, mines and mine dumps were also considered brownfields. These are found scattered throughout the study corridor.

D. Hazardous Areas

1. Waste Sites

*A. Tipples and conveyors:* There are remains of abandoned coal tipples and conveyers scattered throughout the study corridor. Coal tipples are areas where coal screening took place and included apparatus used for "tipping" or emptying coal onto a barge. Many of the old metal conveyors and tipping apparatus now sit in ruins. They may present a public safety hazard, but they are also culturally significant to the areas history.

*B. Slag piles*: Slag, or cinder-like waste from coke production, is piled into mounds on land forming slag piles. These piles can be found throughout the study corridor. They are most noticeable in Luzerne Township at Crucible and Isabella. The main environmental concern related to this type of waste is pollution by heavy metals, which can leach out of the slag and into the soil and subsequently into the local groundwater. Slag piles are difficult to remediate due to their size, but they are sometimes leveled so that construction can take place on top of them. In the study corridor, slag piles are primarily found in areas away from other development.

## 2. Abandoned Mines

Pennsylvania has been a leading producer of coal since the mid-1800's. The Monongahela Valley was first mined for bituminous coal in the late 1700's and early 1800's. Before 1977, Pennsylvania had produced one-third of all coal mined in the United States, but Pennsylvania's coal production has steadily declined since then.

Mining in Pennsylvania is conducted using two methods: surface mining and deep mining. Surface, or strip mining, utilizes the removal of soil to expose coal located close to the surface. Deep mining involves tunneling underground into the coal formations. Both of these methods have left Pennsylvania's landscape scarred with abandoned mines, coal refuse and abandoned mine drainage. Abandoned mine drainage is further discussed in the water quality section of this report.

## III. WATER RESOURCES

A. Major Tributaries

Twenty-six tributaries were identified within the study corridor. There are 14 named tributaries, and 12 unnamed. The three largest tributaries are Pike Run, Redstone Creek and Dunlap Creek (Table 7).

**Table 7**
**Monongahela River Study Corridor Tributaries**

| Tributaries | Drainage Area ($mi^2$) | River Mile | Designations by DEP * |
|---|---|---|---|
| | | | |
| Wood Run Hollow | 0.89 | 49.46 | WWF |
| **Pike Run** | **28.6** | **51.36** | **TSF** |
| Lilly Run | 0.83 | 54.22 | WWF |
| **Redstone Creek** | **109.0** | **54.90** | **WWF** |
| **Dunlap Creek** | **41.6** | **56.16** | **WWF** |
| Two Mile Run | 4.86 | 58.22 | WWF |
| Rush Run | 3.0 | 59.20 | WWF |
| Kelley Run | 1.23 | 60.56 | WWF |
| Meadow Run | 1.87 | 60.84 | WWF |
| Barneys Run | 2.0 | 62.56 | WWF |
| Bates Run | 1.21 | 67.50 | WWF |
| "Hereford Hollow" | 0.7 | 70.55 | WWF |
| Wallace Run | 2.48 | 73.28 | WWF |
| Antram Run | 1.1 | 74.15 | WWF |
| 12 Unnamed Tributaries | | | |
| | | | |

* designated by Pennsylvania Department of Environmental Protection Chapter 93 Water Quality Standards; TSF = Trout Stocked Fishery WWF = Warm Water Fishery. Bold headings indicate major tributaries in the corridor.

Pike Run originates in West Pike Run Township and flows easterly for 11.3 miles where it enters the Monongahela River at Coal Center, Washington County. It is the only tributary in the study corridor that is designated as a Trout Stocked Fishery by the Pennsylvania Department of Environmental Protection (PADEP). It is also designated as an Approved Trout Water by the Pennsylvania Fish and Boat Commission (PFBC). It has a drainage area of 28.6 square miles and is characterized by moderate topographic relief and gently rolling hills.

The Pike Run watershed is dominated by agricultural, mining and residential land uses. As of 1994, there were still seven active mining companies operating in the

Pike Run watershed. Another pollution concern in the Pike Run watershed, is the sewage treatment facility in Centerville that discharges treated sewage and the "wildcat" sewers in the watershed that discharge raw sewage into Pike Run. As a result of the land uses within its watershed, this tributary has been plagued with abandoned mine drainage, sewage and agricultural runoff. Recently, an extensive watershed management plan, through the Pennsylvania Game Commission (PGC) Partners for Wildlife program, started implementing such techniques as stream bank fencing and the planting of warm season grasses in order to ameliorate some of these pollutants. It has been documented in past research conducted by the PGC that stream bank fencing improves water quality by prohibiting livestock from ruining the streambank and contaminating the water.

Redstone Creek, designated as a Warm Water Fishery by PADEP, is the largest tributary in the corridor with a drainage area of 109 square miles. It originates north of Uniontown and flows in a northwesterly direction to Brownsville where it meets the Monongahela River at river mile 54.9. The Redstone Creek watershed contains 11 municipalities and receives flow from 18 tributaries. The predominant land use in the watershed is agriculture, woodland and open space. In past years, the area surrounding Redstone Creek was subjected to extensive coal mining. Therefore, this tributary suffers from severe acid mine drainage, also known as "yellow-boy".

Redstone Creek has significant iron deposition resulting in a bright orange color, but the pH of this stream is near neutral, indicating that the acidity is being neutralized. However, the iron deposition is still a severe problem. The PADEP estimates that 20 miles of the main stem of Redstone Creek are degraded by acid mine drainage. There is also a concern about the problem of stormwater management. According to a 1991 stormwater management report prepared by Chester Engineers, not all of the municipalities within the Redstone Creek watershed have stormwater management plans and those that do, usually do not enforce the regulations.

Dunlap Creek has a drainage area of 41.6 square miles, originates near New Salem and flows into the Monongahela at river mile 56.16 at Brownsville. This tributary, like Pike Run, is an Approved Trout Water as designated by the PFBC. It has often been characterized as a slow moving, turbid stream. According to an agricultural watershed assessment report prepared by the Washington County Conservation District, there are indications that Dunlap Creek is receiving municipal/sewage contamination.

B. Wetlands

One of the necessary criteria for palustrine (composed of herbaceous and/or scrub shrub vegetation) wetland ecosystems to develop is the ability of an area to remain inundated or saturated by surface water at a frequency and duration sufficient to support a dominance of hydrophytic (i. e. water-loving) vegetation. The presence

of steep, wooded slopes within the study corridor generally prohibits this due to rapid drainage with negligible water retention time.

With the exception of two riverine wetlands, the Monongahela River and the associated Blainsburg Floodplain (which is discussed in greater detail in the Biological Resources section under Important Habitats), wetlands greater than 10 acres do not occur within the study corridor. Wetland systems which are less than 10 acres may occur in the study corridor, but an inventory of these is not maintained by Southwest Pennsylvania Regional Planning Commission (SPRPC). Smaller systems found within the study corridor would consist primarily of vertical slope wetlands which exist on valley slopes and are typically associated with spring seep discharges.

C. Floodplains

Due to the steep slopes that border the Monongahela River study corridor, the one hundred and five-hundred year floodplains are generally restricted between narrow regions of the river valley. However, there are low-lying areas at risk for flooding. These are concentrated near tributary valleys and river oxbows (Figure 5).

The National Weather Service (NWS) operates river forecast points at several locations along the Monongahela River. This information is available through recorded messages, the NWS internet site (www.nws.noaa.gov\er\pitt), and National Oceanic and Atmospheric Administration (NOAA) weather radio.

D. Water Quality

In a 1994 stream assessment report prepared by PADEP, the Monongahela River watershed was classified as highly degraded by point and non-point pollutants ranging from acid mine drainage to sewage discharges. Water quality problems resulting from these pollution sources are elevated water temperatures, reduced dissolved oxygen levels, increased iron and sulfate levels, and high turbidity and suspended solids.

1. Point Sources

Point source pollution, also known as end-of-pipe discharge, occurs when the pollutant involved can be traced to one definable source. Typically, these pollutants include industrial dumping, sewage discharges and abandoned mine drainage. The Monongahela River is impacted by all of these contaminants.

One of the most recognizable pollutants of the Monongahela River is untreated sewage. There is currently a lack of sewage facilities in West Brownsville Borough, Centerville Borough and Luzerne Township within the study corridor. Over 15 miles of the 25 mile corridor contain on-lot septic systems or direct "wildcat" lines, where untreated sewage flows into the river. West Brownsville, which comprises less than two miles of the length of the corridor, contains eight

direct lines to the river. These, along with the unincorporated villages of Vesta #6, Maxwell, East Fredericktown and East Riverside, are responsible for approximately 20 wildcat lines into the river along the study corridor. According to PADEP, the unincorporated towns of La Belle, East Millsboro, Arensburg and Isabella also contain wildcat lines. The majority of these areas have tried to receive grants to construct their own treatment plants or hook up with existing treatment plants in the area but have been unsuccessful.

The remaining areas within West Brownsville, Centerville and Luzerne all use on-lot septic systems. Although on-lot septic systems are significantly more efficient than wildcat lines, they require a great deal of individual attention to regulations and requirements. They need to be properly designed and installed, and they require strict concurrence with the regulations set forth in the PADEP Sewage Facilities Act 537. On-lot septic systems also need to be properly drained every few years. This alone can cost several hundred dollars. Many homeowners in the study corridor are not financially able to adhere to the proper construction and maintenance of these systems, and therefore, numerous malfunctioning septic systems are located within the study corridor.

California, Coal Center, Newell and Brownsville all have sewage treatment facilities (Figure 5). California, which services California University of Pennsylvania and Coal Center, is already functioning at its maximum design capacity of 1 million gallons per day. The borough also faces the dilemma of having a combined storm and sewer system. This causes severe overflows of the treatment plant when any significant amount of precipitation falls in the area. The borough is currently trying to rectify this situation by separating the two systems. There is also a proposal by the Washington County Planning Commission to increase the service area of the California facility, which would require expansion of the treatment plant. Centerville Borough has recently conducted a feasibility study to determine if the incorporation of a sewage treatment facility is a rational and feasible addition to the borough. Although the borough needs a treatment plant, the financial burden of installing a sewage system is too much for this borough to undertake. Many of the non-sewered areas mentioned above are trying to tap into California's treatment plant as well.

All of the problems related to the treatment of sewage create a potentially severe public health issue. The direct flow and backflow from these various systems into the Monongahela River may cause the contamination of public and private drinking water by surface or groundwater contamination, leaving humans and animals exposed to bacteria, viruses and parasites. Although PADEP requires all municipalities to develop an official sewage plan to account for their present and future needs, many of these municipalities do not have the financial means of implementing these plans, since they are often too costly to realize without external funding. The implementation of these plans would allow homeowners to avoid the costs associated with the replacement or repair of a malfunctioning

septic system and municipalities to avoid the costs of having to extend sewer lines to include surrounding areas.

Another major pollutant within the Monongahela River basin is acid mine drainage. According to a PADEP 1994 report, mining accounts for 70.6% of the Monongahela watershed's degradation. As recent as the 1960s, the Monongahela River from the confluence of the Youghiogheny River upstream to the Tygart River was so severely degraded by acid mine drainage that it was unable to support any significant fish or aquatic invertebrate populations. Since the 1970s, there has been an enormous abatement of acid mine drainage, enough that several viable populations of game fish and other aquatic life are now present in this stretch of the Monongahela.

Within the study corridor, there was one abandoned mine near the village of East Riverside that, until recently, discharged significant amounts of acid mine drainage. Currently, this discharge is being treated with a liming pool. The addition of lime to the acid mine drainage balances the acid and allows it to precipitate out of the water as a harmless element.

Also noted during field observation of the study corridor, was one tributary, Bates Run, that appeared to possess the characteristic reddish-orange color associated with acid mine drainage.

Industrial waste has the potential to be an extremely serious problem along the river as well. Companies that dump their wastes into the river may be dumping toxic or volatile chemicals. In 1970, the Federal Water Quality Improvement Act established that industries planning to dump waste into navigable waters had to first obtain a permit. The permit identifies such items as the type of waste, the type of treatment to be provided and all outfall sewers related to the discharge. All of the major industrial discharges along the study corridor are on file at the DEP as acquiring this permit and the majority of the discharge from these industries is stormwater runoff.

2. Non-Point Source

According to a 1994 PADEP Stream Assessment report, the Monongahela River watershed contains 353.7 miles of streams degraded by non-point source pollutants. The Monongahela is listed as a high priority area on the Non-Point Source Priority Watershed list. This list determines where non-point source pollution problems are most likely to be located, based on historical water quality data. Non-point source pollution is the result of adjacent land use: storm runoff from parking lots, streets, construction sites and residential property; cultivation of agricultural fields; and deforested hillsides.

Sedimentation is a major, non-point source pollutant within the study corridor, especially around the main population areas. Although the Monongahela River

has historically been characterized as a muddy-bottom, turbid river, agricultural activities, construction sites and strip mine refuse piles along the river still contribute to the sedimentation problem. Sedimentation can cause severe damage to the surrounding ecosystem. Stream channels accumulate sediments resulting in more frequent flooding, which in turn causes an increase in stream bank erosion. This accumulation also causes the river to appear cloudy and unsightly, hindering the interest in utilizing the river as a recreational area. Aquatic life is also damaged by sedimentation through the destruction of habitat, the smothering of plant life, and suffocation of fish by clogging their gills. Sediments can also occupy water treatment plants causing a reduction in storage capacity, a decrease in water quality and blockage of the filtering purification system.

The evidence of sedimentation along the Monongahela River is apparent when increased turbidity and degraded river bottom are considered. The substrate of the river is dominated by fine sand, silt and clay-sized particles from runoff, which contributes to the cloudy appearance of the water. Another factor influencing the turbidity of the river is the continuous presence of commercial traffic. This traffic disturbs the bottom sediments, allowing them to be moved downstream. Another factor identified when investigating sedimentation is the topic of dredging material from the bottom of the river. This activity stirs up the sediments and along with the sediments any pollutants that have settled out of the water. This can create serious health problems, especially within the area around the Maxwell Lock and Dam contaminated with PCB's and chlordane.

3. Monitoring

Numerous sources were utilized to prepare this section of the conservation plan, none of which were comprehensive or specific to our corridor. As mentioned in the Biological section of this report, the Pennsylvania Bass Federation in West Brownsville does conduct some monitoring but it is limited to local fishing areas. There is also water quality testing conducted at the Maxwell Lock and Dam and at each of the water treatment plants.

E. Water Supply

1. Public/Private

The majority of the homes along the Monongahela River have their water supplied by public water companies. According to 1990 census data, there are very few remaining individual wells in use today. There are four water authorities within the corridor including: the Newell Water Authority, Pennsylvania American Water Company, Tri-County Water Authority, and Southwest Pennsylvania Water Company (Figure 5).

The Newell Water Authority supplies water to all of Newell Borough. The water authority is located adjacent to the sewage treatment plant and serves a population of 518 people. The plant receives an average of 315,000 gallons per day from the Monongahela River.

Pennsylvania American Water Company supplies all of Coal Center, California, West Brownsville, Brownsville and part of Luzerne Township from Hiller to Melrose. The water treatment facility is located in Brownsville and serves over 12,000 homes with 4,800 connections. The plant's capacity is 3.1 million gallons per day, although they draw 1.22 million gallons per day from the river.

Tri-County Water Authority services Luzerne from Melrose to East Millsboro. The water treatment plant is located in Fredericktown, Washington County. Within the study corridor, Tri-County Water Authority serves 1,368 homes and 56 businesses in Centerville and 258 homes and 5 businesses in Luzerne. Extraction from the Monongahela River averages 700,000 gallons per day for the area within the corridor. Although their total service area includes a population of 6,200 people and the total uptake from the river is on average 1.16 million gallons per day.

Southwest Pennsylvania Water Company supplies Luzerne from East Millsboro south to Palmer. The treatment plant is located in Greene County across the river from Arensburg. Southwest Pennsylvania Water Company extracts an average of 3.5 million gallons per day from the Monongahela River.

# IV. BIOLOGICAL

## A. Wildlife

### 1. Terrestrial

Wildlife populations within the Monongahela River have undergone a severe reduction since the 1960s as a result of industrial and residential development. The loss of habitat has limited the wildlife in this area to those species tolerant to human encroachment. Typically, these include mammals like the white-tail deer (*Odocoileus virginianus*), gray squirrel (*Sciurus carolinensis*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), eastern cottontail (*Sylvilagus floridanus*), and many small rodents. Avian species in the study corridor, such as the Eastern wild turkey (*Meleagris gallopavo*), red-tailed hawk (*Buteo jamaicensis*), and various songbirds, inhabit the wooded slopes of the river valley. According to the Breeding Bird Atlas from 1983 to 1989 prepared by the Pennsylvania Game Commission (PGC), the Monongahela River is also utilized by several migratory bird species.

### 2. Aquatic

The aquatic community within the Monongahela River had historically been significantly reduced as a result of the degradation of water quality, but within the last 30 years there has been a concerted effort to clean up the river, resulting in an increase in the aquatic community.

According to the Pennsylvania Bass Federation, a nationwide organization interested in the quality of rivers and streams for fisheries purposes, the most abundant fish in this segment of the Monongahela River are channel catfish (*Ictalurus punctatus)* and common carp (*Cyprinus carpio*). There are also white bass (*Morone chrysops*), muskellunge (*Esox masquinongy*), and walleye (*Stizostedion vitreum*). Within the past 15 years, there has been a significant, viable population of large mouth bass (*Micropterus salmoides*) and small mouth bass (*Micropterus dolomieui*), although within the last 5 years, their population has been drastically reduced. The PA Bass Federation believes the decrease is due to the collapse of the forage base as a result of severe flooding in the area.

The benthic macro invertebrate community, which forms a critical link in the aquatic food chain, has also shown immense improvement in recent years. A study conducted by the U.S. Department of the Interior Federal Water Pollution Control Administration in 1968 indicates that the aquatic community of the Monongahela River contained a low species diversity and that all of the species collected were pollution-tolerant species. A 1988 study conducted by the US Army Corps of Engineers (USACOE) presents a more diverse invertebrate community, containing more than 125 taxa, including several species that require a more pollution-free environment.

There have been numerous studies conducted on the accumulation in fish tissue of polychlorinated biphenyls (PCBs), a group of industrial chemicals; and chlordane, an insecticide. The chemicals are present in the water and sediments of the study corridor because of industrial and agricultural pollution. As a result, an advisory has been posted warning people not to consume the channel catfish and the common carp taken from the Monongahela River near Maxwell Locks and Dams to avoid ingesting these chemicals.

One potential addition to the aquatic community in the study corridor is the zebra mussel (*Dreissena polymorpha*). These small, freshwater mollusks have recently been discovered at Lock and Dam No. 3 on the Monongahela River in Elizabeth Borough. Although there were only 14 mussels collected at this point, there is the potential for further migration down the Monongahela to the Maxwell Lock and Dam. The zebra mussel is a dime-sized black and white striped mussel that began its journey in the ballast of a ship en route to Lake Erie from Europe. The mussels have already invaded the Great Lakes, the Hudson River in New York, and the Mississippi Delta in Louisiana, and continue to spread throughout the Allegheny and the Ohio Rivers. Problems result when they block water intakes of public water systems or power plants.

Research on the aquatic community in the Monongahela River is revealing new information all the time. California University of Pennsylvania is expanding their capabilities through the purchase of two research vessels. In the past, the university has utilized the river to some extent, but now they possess the ability to use the river as an interactive classroom. Dr. Brian Paulson, a biology professor at the university, is planning to use a grant from the State System of Higher Education to utilize the new boats to conduct research on local populations of the eastern spiny soft-shell turtle (*Trionyx spiniferus*). Little is known about this species, except that it lives in the Monongahela River. This species has a spiny shell with black spots, and may grow up to 18 inches long. Although the eastern spiny soft-shell turtle utilizes external respiration, they seldom come out of the water. Several sightings have been made in the study corridor and Dr. Paulson hopes to trap, tag and track the turtles in order to learn more about their home range and general movement patterns.

B. Vegetation

1. General description

The majority of the study corridor consists of second-growth, mature, deciduous forest areas. Dominant species are oaks (*Quercus spp.*), maples (*Acer spp.*), and beeches (*Fagus spp.*). Other species that occur in the project area are various elm species (*Ulmus spp.*) and wild cherry (*Prunus serotina*). The understory is typically dominated by spicebush (*Lindera benzoin*), garlic mustard (*Alliaria petiolata*), touch-me-nots (*Impatiens sp.*) and Japanese knotweed (*Polygonum cuspidatum*). A narrow band of riparian vegetation exists along the water's edge, including willows (*Salix spp.*) and eastern sycamores (*Platanus occidentalis*).

2. Riparian Forest Buffers

A riparian forest buffer is an area of trees, usually accompanied by a scrub/shrub component and other vegetation, that is adjacent to a body of water. This buffer serves to maintain the integrity of stream channels and shorelines; reduces the impact of upland sources of pollution by trapping, filtering, and converting sediments, nutrients, and other chemicals; and supplies food, cover, and thermal protection to fish and other wildlife. Riparian forest buffers are extremely beneficial in river conservation. In undisturbed ecosystems, riparian buffers protect most rivers and streams in North America, but due to deforestation and urban development, most of these buffers are now gone. The removal of riparian buffers results in adverse effects on water quality, wildlife and aquatic habitat, streambank stabilization and aesthetics of the waterway.

Of greatest importance to the Monongahela River is the degradation of the water quality. Recent research has shown that riparian forest buffers can benefit water quality in several ways. First, forest buffers slow surface runoff allowing for sediment to be filtered out on the forest floor and not in the watercourse. Sediments that drop out in a river or stream can reduce the stream channel capacity causing flooding. They can also block the sunlight from penetrating to the river bottom resulting in poor aquatic habitat for benthic plants.

A second benefit of riparian forest buffers is the transformation of pesticides and other pollutants, such as nitrogen, into harmless or beneficial compounds. This is accomplished by the bacteria, fungi and plant species in the forest which transform the pollutant and utilize the remaining element or release it back into the air as a harmless gas. Forest buffers also allow nutrients to be stored in the leaf litter for extended periods of time until the trees or plants need them. This leaf litter is sometimes deposited in the river by flooding, where it provides shelter and food for aquatic life. The shade from the trees and the leaf litter also serve to maintain the water within a certain temperature range, which further benefits aquatic life.

Over 50% of the land within the Monongahela River study corridor is categorized as open space, the majority of which is forested. This wooded area provides a riparian forest buffer. More populated areas along the river do not have the benefit of this buffer. Another obstacle to having riparian buffers within the Monongahela River corridor is the fact the river is flanked on both sides by active railroad tracks.

C. PNDI Species

The Pennsylvania Department of Conservation and Natural Resources (DCNR) is responsible for the upkeep and distribution of Pennsylvania Natural Diversity Inventory (PNDI) information.

The PGC indicated that there are no threatened or endangered species under their jurisdiction located within the study corridor. PGC holds jurisdiction over birds and mammals in Pennsylvania.

The Pennsylvania Fish and Boat Commission (PFBC) states that the threeridge (*Amblema plicata*) and the wabash pigtoe (*Fusconaia flava*), both freshwater mussels, listed as having candidate status in Pennsylvania, have historically been identified within the study corridor. The candidate status indicates that these animals could become endangered or threatened in the future. The PFBC holds jurisdiction over fish, reptiles, amphibians and aquatic organisms.

DCNR holds jurisdiction over plant species. They located the following occurrences within the study corridor:

| Scientific and Common Names | Type of Occurrence | Status | Last Observed | Habitat Conditions |
|---|---|---|---|---|
| *Lithospermum latifolium*; American gromwell | Confirmed | Endangered | 1992 | Rich, wooded slopes and hilltops |
| *Erigenia bulbosa*; Harbinger-of-spring | Confirmed | Threatened | 1993 | Seeps and springs on wooded slopes |
| *Hypericum drummondii*; Nits and Lice | Historical | Undetermined | 1927 | Dry slopes and stony fields |
| *Passiflora lutea*; Passion-flower | Historical | Endangered | 1940 | Riverbanks and thickets |
| *Carya laciniosa*; Big shellbark hickory | Historical | Undetermined | 1970 | Moist, rich bottomlands and slopes |
| *Cacalia muehlenbergii*; Great indian-plantain | Historical | Undetermined | 1901 | Woods and floodplains |

D. Important Habitats

The Western Pennsylvania Conservancy (WPC) completed a Natural Heritage Inventory for Washington County in January, 1994. Within the study corridor,

WPC identified two unique natural areas (Figure 3). The first is known as the California Overlook and is situated just north of Coal Center, on a steep sloped bank of the Monongahela River. This area is documented as an outstanding geological site.

Another area of important habitat is the Blainsburg Floodplain Biological Diversity Area. It is located between the Conrail freight yard and the Monongahela River in Blainsburg. This area is a recovering forested floodplain community containing several small inland pools. The herbaceous vegetation consists of sedges (*Carex spp.*), soft rush (*Juncus effusus*), wool grass (*Scirpus cyperinus*), swamp milkweed (*Asclepias incarnata*), blue vervain (*Verbena hastata*) and various other species. Scrub/shrub sections of the floodplain are composed of young black willow (*Salix nigra*), cottonwood (*Populus deltoides*), and eastern sycamore (*Platanus occidentalis*). Native butterfly and dragonfly populations also thrive in the area.

WPC is currently preparing to conduct a study for Fayette County.

# V. CULTURAL RESOURCES

## A. Recreation

Recreation on the Monongahela River has historically been restricted by the topography, water quality, industrial and commercial utilization, and navigational obstacles such as locks and dams. The Monongahela River has typically been dominated by commercial river traffic, which is a reflection of the extensive mining industry and the use of the river for transporting coal.

Since the coal mining industry has decreased in recent years, the focus on river-based recreation has been renewed. There are numerous possibilities for recreation on the Monongahela, including fishing, boating, swimming and personal watercraft devices. A hiking/biking trail has been the subject of discussion by the Steel Industry Heritage Corporation, along with the possibility of boat tours and historical interpretive areas. Also, the National Road has an interest in combining a bike trail along its length. This trail could be connected to the proposed Monongahela River Trail, creating a link between land and water based recreation/tourism.

With the introduction of the river-based recreation industry, there are rising concerns about safety. Abandoned coal conveyors, tipples and barge tie-offs represent safety concerns for both the shipping industry and the recreation industry. Tow boats, pushing an average of 6 barges, have difficulty in seeing and reacting to the smaller personal watercraft devices, canoes, and motorboats. Both the commercial shipping industry and the recreation industry are concerned with safety and future changes to the shipping industry (larger tow boats pushing more barges) and the growth of river-based recreation industry will only add to such concerns.

Obstacles to the recreation industry exist both in and out of the river. For example, railroad tracks and steep slopes generally restrict public access to the river throughout the corridor. There are a number of private household docks and points of river access, but public access by swimmers, boaters and fishermen is limited within the study corridor. Another concern is water quality. Degradation by point and non-point source pollutants has deterred people from swimming and fishing in many areas of the study corridor.

There were 10 public parks identified within the study corridor. Two (2) of these provide river-related facilities such as boat ramps and docks (Table 8).

**Table 8**
**Existing Recreational Areas**

| Site Location | River Mile | Description |
|---|---|---|
| California Borough | N/A | Rotary park, walking track, fishing in Pike Run (tributary to Monongahela River) |
| California Borough | N/A | Playground equipment, basketball courts |
| California Borough | N/A | Playground equipment, basketball courts |
| California Borough | N/A | David Szalley Memorial park, basketball courts, tennis courts, playground equipment |
| *West Brownsville Borough | 55.3 | Privately owned by the American Legion, boat ramp, baseball field, basketball courts *includes river access for public use |
| West Brownsville Borough | N/A | Playground equipment |
| Brownsville Borough | N/A | Little league field, basketball courts, playground equipment, refreshment stand |
| Luzerne Township | N/A | Brownsville/Luzerne Community Park, baseball fields, basketball courts, soccer fields, motor cross track, fishing in pond, pavilions, picnic tables, playground equipment |
| Luzerne Township at Maxwell | N/A | Baseball field and playground equipment |
| *Centerville Borough | 58.8 | Privately owned Pechin's (Denbo) marina and restaurant, over 100 docks, boat ramp, storage area, walking trail, and comfort facilities *includes river access for public use |

There are 7 public river access points within the project area (Table 9); and an even greater number of private facilities, including both private clubs and residential docks and launches. In addition to public river access points, the California Boat Club, located at river mile 60.2, is a private facility.

Just outside of the project boundary exist approximately 5 more private (non-residential) facilities. They include the Green County Ten Mile Run Marinas (Green Cove, Engles, Sunset, the County facility), and Packrall's Bay. Additionally, a Pennsylvania Fish and Boat Commission public launch area exists at Rice's Landing in Green County.

**Table 9**
**Existing Public River Access**

| Access locations | River mile | Description |
|---|---|---|
| California Borough | 51.7 | Launching ramp |
| Brownsville Borough | 56.2 | Launching ramp |
| West Brownsville | 55.9 | Launching ramp |
| Maxwell | 62.0 | Launching ramp |
| East Fredericktown | 64.0 | Pennsylvania Fish and Boat Commission launch |
| Arensburg | 70.7 | Site of the abandoned Arensburg Ferry |
| East Riverside | 72.8 | Site of the abandoned East Riverside Ferry |

Motor boating and jet-skiing appear to be the major boating activities in the Monongahela River. In recent years, there has been an increase of more than 50% in the number of boater registrations within Washington and Fayette counties. Fishing is also a popular past time within the corridor. The Pennsylvania Bass Federation has a very active chapter located in West Brownsville that participates in clean water projects, water quality monitoring and fishing tournaments.

The Pennsylvania Scenic Rivers Inventory provided by the Department of Conservation and Natural Resources (DCNR) lists the Monongahela River from Point Marion, PA to Pittsburgh, PA as a proposed Modified Recreational river. This designation describes the ability of the river to provide and maintain recreational use while balancing residential, commercial and industrial uses. The criteria for a Modified Recreational Classification state that this classification may contain calm water that can be, or is being, restored to support appropriate water-based recreation, aquatic and fish life. There are also specific criteria related to impoundments, water quality, development and accessibility.

B. Historical Sites

1. Overview

Nationally registered and eligible historic resources within the Monongahela River corridor are substantially concentrated within the Borough of Brownsville, although several historic sites can be found in Luzerne Township and the boroughs of California, Newell, West Brownsville and Centerville (Figure 4, Tables 10 & 11). In addition to listing on the National Register of Historic Places, numerous buildings and structures are recognized for their historical significance at the local level (Table 12).

**Table 10**
**National Register of Historical Places**

| Municipality | County | Site |
|---|---|---|
| Brownsville | Fayette | Brownsville Intercounty Bridge |
| Brownsville | Fayette | Commercial Historic District |
| Brownsville | Fayette | Dunlap Creek Bridge |
| Brownsville | Fayette | Nemacolin (Bowman's) Castle |
| Brownsville | Fayette | Northside Historic District |
| Brownsville | Fayette | St. Peter's Church |
| Brownsville | Fayette | Thomas H. Thompson House (Wayside Manor) |
| California | Washington | Jenning's/Gallagher House |
| California | Washington | Molly Fleming House |
| California | Washington | Old Main |
| California | Washington | PA Railroad Passenger Station |
| Centerville | Washington | Joseph Dorsey House |

**Table 11**
**National Register of Eligible Sites**

| Municipality | County | Site |
|---|---|---|
| Brownsville | Fayette | Central Auto Company (141 Market St.) |
| Brownsville | Fayette | Monongahela Freight Station |
| Brownsville | Fayette | Monongahela Hotel |
| Brownsville | Fayette | Monongahela Railway, Brownsville Complex |
| Brownsville | Fayette | Railroad bridge across Dunlap Creek |
| Brownsville | Fayette | Railroad bridge arch near Brownsville Avenue |
| Brownsville | Fayette | Three Kegs Tavern |
| Luzerne | Fayette | Isabella Coal River Barge Tipple |
| Newell | Fayette | Pittsburgh & Lake Erie RR Complex |
| W. Brownsville | Washington | H.B. Sinsley Buick Garage |

**Table 12**
**Locally Recognized Historical Sites**

| | | | |
|---|---|---|---|
| Brownsville | Fayette | 200 Front Street | BARC, hd |
| Brownsville | Fayette | 212 Front Street | BARC, hd |
| Brownsville | Fayette | 216 Front Street | BARC, hd |
| Brownsville | Fayette | 218 Front Street | BARC, hd |
| Brownsville | Fayette | 315 Front Street | BARC, hd |
| Brownsville | Fayette | 320 Front Street | BARC, hd |
| Brownsville | Fayette | 402 Front Street | BARC, hd |
| Brownsville | Fayette | 410 Market Street | BARC, hd |
| Brownsville | Fayette | 502 Market Street | BARC, hd |
| Brownsville | Fayette | 510 Market Street | BARC, hd |
| Brownsville | Fayette | 512 Front Street | BARC, hd |
| Brownsville | Fayette | 515 Front Street | BARC, hd |
| Brownsville | Fayette | Berky Electric | BARC |
| Brownsville | Fayette | Black Horse Tavern | BARC, hd |
| Brownsville | Fayette | Bridgeport Coal Mine and Patch Houses | BARC |
| Brownsville | Fayette | Brown Estates | BARC, hd |
| Brownsville | Fayette | Brownsville Academy | BARC, hd |
| Brownsville | Fayette | Brownsville Brewery | BARC |
| Brownsville | Fayette | Brownsville Clipper Newspaper Office | BARC, hd |
| Brownsville | Fayette | Brownsville Elks | BARC |
| Brownsville | Fayette | Brownsville Public Library | BARC, hd |
| Brownsville | Fayette | Brownsville Trust Company Building | BARC, hd |
| Brownsville | Fayette | Captain Isaac Woodward House | BARC, hd |
| Brownsville | Fayette | Christ Episcopal Parish House | BARC |
| Brownsville | Fayette | Christian P. Gummert Shoemaker Shop | BARC, hd |
| Brownsville | Fayette | Crawford Building | BARC, hd |
| Brownsville | Fayette | Crawford House | BARC, hd |
| Brownsville | Fayette | Edminston Building | BARC, hd |
| Brownsville | Fayette | Fiddles' Confectionary | BARC, hd |
| Brownsville | Fayette | First Baptist Church | BARC, hd |
| Brownsville | Fayette | First United Methodist Church | BARC, hd |
| Brownsville | Fayette | Flatiron Building | BARC, hd |
| Brownsville | Fayette | George Dawson Commercial Building | BARC, hd |
| Brownsville | Fayette | George Dawson House | BARC, hd |
| Brownsville | Fayette | Goldman and Bernstein Car Dealership | BARC, hd |
| Brownsville | Fayette | Goodloe H. Bowman House | BARC, hd |
| Brownsville | Fayette | Gottlieb Schmid House | BARC, hd |
| Brownsville | Fayette | Greek and Colonial Revival Homes | BARC, hd |
| Brownsville | Fayette | Hamburger Distillery Site (Park & Tillford) | BARC |

**Table 12 (cont.)**
**Locally Recognized Historical Sites**

| | | | |
|---|---|---|---|
| Brownsville | Fayette | Henry Shreve House | BARC, hd |
| Brownsville | Fayette | Hogg House | BARC, hd |
| Brownsville | Fayette | J.C. Graff House | BARC, hd |
| Brownsville | Fayette | James W. Jeffries House | BARC, hd |
| Brownsville | Fayette | John Johnston House | BARC, hd |
| Brownsville | Fayette | John L. Dawson House | BARC, hd |
| Brownsville | Fayette | Krepps' Ferry Site | BARC |
| Brownsville | Fayette | Lafferty Drug Store | BARC, hd |
| Brownsville | Fayette | Lockmaster's House | BARC |
| Brownsville | Fayette | Monongahela Bank Building | BARC, hd |
| Brownsville | Fayette | Monongahela National Bank | BARC, hd |
| Brownsville | Fayette | Monongahela Wharf | BARC, hd |
| Brownsville | Fayette | Moorehouse Tavern | BARC, hd |
| Brownsville | Fayette | National Deposit Bank | BARC, hd |
| Brownsville | Fayette | Odd Fellows Building | BARC, hd |
| Brownsville | Fayette | Peter Humrickhouse Building | BARC, hd |
| Brownsville | Fayette | Philander Knox House | BARC, hd |
| Brownsville | Fayette | Plaza Theater | BARC, hd |
| Brownsville | Fayette | Railroad Shops | BARC |
| Brownsville | Fayette | Railroad Express Office | BARC, hd |
| Brownsville | Fayette | Robert Rogers Commercial Building | BARC, hd |
| Brownsville | Fayette | Robinson's Pharmacy | BARC, hd |
| Brownsville | Fayette | Saint Mary's Catholic Church | BARC, hd |
| Brownsville | Fayette | Saint Nicholas Byzantine Catholic Church | BARC, hd |
| Brownsville | Fayette | Samuel E. Taylor House | BARC, hd |
| Brownsville | Fayette | Scott/Bell House | BARC, hd |
| Brownsville | Fayette | Second National Bank | BARC, hd |
| Brownsville | Fayette | Snowdon Building | BARC, hd |
| Brownsville | Fayette | Snowdon Square | BARC, hd |
| Brownsville | Fayette | The Commons | BARC, hd |
| Brownsville | Fayette | Underground Railroad Station | BARC |
| Brownsville | Fayette | Union Station | BARC, hd |
| Brownsville | Fayette | William Dean House | BARC, hd |
| Brownsville | Fayette | William Johnston House | BARC, hd |
| Brownsville | Fayette | William L. Lafferty House | BARC, hd |
| Brownsville | Fayette | William L. Wilkinson House | BARC, hd |
| Brownsville | Fayette | Zachariah W. Carmack House | BARC, hd |
| Brownsville | Fayette | Brashear Tavern | BARC, hd |

**Table 12 (cont.)**
**Locally Recognized Historical Sites**

| Municipality | County | Site | Group |
|---|---|---|---|
| Brownsville | Fayette | Steele House | BARC, hd |
| Brownsville | Fayette | St. Ellien Antiochian Church | BARC. hd |
| Luzerne | Fayette | Old Jacobs House | DHS, hd |
| Luzerne | Fayette | Old Jacobs Ferry | DHS, hd |
| Brownsville<br>Centerville<br>W. Brownsville | Fayette | National Road | NRHP<br>BARC, hd |

**Key to Local Historical Organizations**

| Acronym | Name | County |
|---|---|---|
| BARC | Brownsville Area Revitalization Corporation | Fayette |
| DHS | Dunlap Historical Society | Fayette |
| NRHP | National Road Heritage Park | Fayette & Washington |
| hd | located within a nationally recognized historic district | |

A limited number of the historical structures within the study corridor can be viewed from the river. The exceptions are the various bridges, historic structures and districts located in Brownsville. For over 200 years, Brownsville has played an integral part in the development of industrial western Pennsylvania. Fortunately, many of the original buildings remain intact. Structures like the Brownsville Intercounty Bridge, the Monongahela Railway (Brownsville Complex), the Flatiron Building, St. Peter's Church, and the Monongahela Freight Station are clearly visible by boat. In addition, those in slow moving water-craft can catch glimpses of the Nemacolin Castle and sections of Brownsville's two historic districts.

2. Historic Sites & Districts

A. Brownsville

Brownsville is home to seven National Register listed and seven eligible historic structures. In addition, two registered historic districts are located along Brownsville's waterfront. Perhaps the most widely recognized structure is Nemacolin (Bowman's) Castle. The castle began as a simplistic trading post, constructed by Jacob Bowman in 1789. Bowman, who was active in local government and became Brownsville's first postmaster, later built what is known today as Nemacolin Castle. This twenty-two room structure is representative of several architectural trends from the past two-hundred years.

Brownsville is also home to the first cast iron bridge in America, which traverses Dunlap Creek. Known only as Dunlap Creek Bridge, this structure was constructed in 1839 and is still in use today. In addition to a listing on the

National Register, Dunlap Creek Bridge has received numerous awards for its engineering and historical significance. Other National Register structures in Brownsville include the Brownsville Intercounty Bridge, constructed in 1914 (replacing the original covered bridge, circa 1830); St. Peter's Church, 1845; and the Thomas H. Thompson House, constructed in 1906. The Thompson House won the Outstanding Achievement Award of the Pennsylvania Historic & Museum Commission for restoration in 1994.

Two National Register listed historic districts are also located in Brownsville. The Brownsville Northside Historic District, encompasses a commercial district, which is heralded as one of the oldest districts west of the Allegheny Mountains. Included within this district are several of the region's finest examples of Gothic, Greek and Colonial Revival architecture. The Christ Episcopal Church and cemetery, dating to 1859, is the resting place of the founder of Brownsville, Thomas Brown, and Jacob Bowman who established Nemacolin Castle. Other noteworthy sites within the district include the First Methodist Church, it's first service dating to July 4, 1776; the Black Horse Tavern, which was the site of the first and last meetings of the Whiskey Rebellion; and St. Peter's Church, constructed by Irish stone masons in 1845 and considered to be one of America's premier examples of provincial Gothic architecture.

The Ohio River Basin in which the Monongahela is included, was the site of the beginning of the first war of the worlds, the French and Indian War. In 1754 the French traveled the waterways from Fort Duquesne to Fort Redstone en-route to Fort Necessity to battle against George Washington.

The Brownsville Commercial Historical District, located downtown, also contains numerous important historic structures. Most noteworthy is the Flatiron Building (named for its unique curved corner facade, resembling a clothes iron used during the period) which was constructed circa 1835 and served as Brownsville's post office and first library. The structure has recently received significant renovations and currently functions as an interpretive museum and visitor's center, with space dedicated to a gift shop, a cappuccino bar and other businesses.

The Brownsville Interpretive Center at the Flatiron Building is part of the National Road Heritage Park's plan to recognize the historic and cultural legacy of the National Road. Now designated as a State Heritage Park, the historic National Road was commissioned in 1806 by President Thomas Jefferson to stretch 600 miles from Cumberland, Maryland to Vandalia, Illinois. It was considered the highway to the west, and helped tie the Mid-West to the East economically as well as politically. The road lost its place as the premier route through the area when the Pennsylvania Railroad was completed in 1852. In the 1920s the road became part of the National Old Trails Road (National Road).

Complementing Brownsville's rich heritage of national historic sites are over ninety locally recognized historic structures. Many of these sites are emblematic of the industrial, coal, and river transportation revolutions that occurred throughout the Mon Valley.

The entire Brownsville historic region is easily accessible from the river via the public wharf at Bank Street. This access point is planned for further development into a riverfront interpretive center detailing the historic and cultural resources of Brownsville. The proposed wharf project will help to establish a cultural complex in conjunction with a riverside activity area along Brownsville's waterfront. Access is also available from the National Road (U.S. Route 40). The wharf project is currently being pursued by the Borough of Brownsville and the Brownsville Chamber of Commerce.

B. California

Although not visible from the Monongahela River, four National Register listed buildings are located in California Borough. Old Main of the California University of Pennsylvania campus was constructed in 1868, and served as the administration building at California University for over 100 years. Several efforts over the years have restored Old Main to its original Romanesque Revival architecture, a style which is considered rare in southwestern Pennsylvania.

The Pennsylvania Railroad and Passenger Station located on Water Street was constructed circa 1910 and is generally recognized as a model example of Pennsylvania's small railroad depots. Today, the station serves as a public library.

Construction of the Jennings/Gallagher House, another of the listed buildings in California, began in 1903. Its significance lies in the fact that it is a rare, intact specimen of early twentieth century architecture in California Borough. Situated adjacent to smaller fragmented rows of commercial buildings, the Jennings/Gallagher House is representative of Queen Anne and Colonial Revival styles, common in the borough earlier in this century.

As with the Jennings/Gallagher House, the Molly Fleming House is one of the few to avoid purchase and subsequent alteration by California University. This structure is described as a regionally important example of twentieth century bungalow architecture, utilizing Craftsman and Colonial Revival styles.

C. Centerville

The Joseph Dorsey House is regarded as one of America's best preserved eighteenth century houses and an eminent illustration of Post Colonial architecture. This style is considered unique because endemic builders utilized Georgian, Roman Classical, and Adamesque styles in its conception. Once a functioning plantation, the Dorsey House has remained so remarkably intact it has been described by the Pennsylvania Historic & Museum Commission as

"transcending its Post Colonial counterparts." Local folklore lists this house as being an integral link in the operations of the underground railroad.

D. Newell

The Borough of Newell is home to one National Register eligible site, the Pittsburgh and Lake Erie Railroad Complex. In 1903, the historic railway was built through the town to transport coal and coke. John Newell, for whom the town was later named, was the first director of the railroad company. Construction of the complex began in 1904 and continued for over twenty years.

Typical of the railways throughout the Mon Valley, the Pittsburgh and Lake Erie Complex was built adjacent to the river and is easily viewed by boaters.

E. West Brownsville

A National Register eligible site, the H.B. Sinsley Buick Garage, is situated along the National Road in West Brownsville. Although lack of maintenance and poor facade upgrades detract from its historic significance, this garage typified the need for service garages during the explosion in highway transportation throughout the region.

F. Luzerne

The Isabella Coal River Barge Tipple is a National Register eligible site located in the unincorporated coal patch town of Isabella. Dating to circa 1907, the tipple at one time served 360 beehive and rectangular ovens at the Isabella-Connellsville Coke Works. According to the Pennsylvania Historic & Museum Commission, complete and intact tipples are very rare. In fact, the Isabella site is one of only two in western Pennsylvania. In addition to the barge loading facility, several other well-preserved coke works structures remain intact at this complex.

# VI. ISSUES, CONCERNS, CONSTRAINTS, AND OPPORTUNITIES

## I. PROJECT AREA CHARACTERISTICS

### Land Use and Zoning

Due to the fact that Washington County does not have countywide zoning, the municipalities of Coal Center and West Brownsville have no land use regulations. This could result in land uses that are in conflict with the goals and priorities of river conservation and the two state heritage parks, which coincide in the corridor.

Luzerne Township contains 17 of the total 25 river miles adjacent to the river. Although, much of the land is limited to development due to steep slopes and the lack of road and utility access. Because development on slopes is difficult and expensive, much of the riverbanks will most likely remain undeveloped. These areas may be best suited for recreation with in-fill development (commercial and residential) at existing towns and ferry access points. However, the large tracts of former industrial sites, with river and rail access, are certain candidates for many kinds of redevelopment. Refer to River Terminal Sites and Reuse below.

Additional development opportunities exist by encouraging small businesses to locate in the downtown areas and along the river fronts (with existing utility and road infrastructures) of Coal Center, Newell, California, Centerville, West Brownsville, and Brownsville. Refer to Site and Building Reuse below.

- Coal Center and West Brownsville currently lack any form of zoning ordinance.
- Within the corridor, development is limited in Luzerne Township due to it's very steep slopes, few roads and lack of utility infrastructure.
- Development is limited to existing towns with utility and road infrastructures (in-fill development) and along river fronts that can support the new businesses/industries.

### River Terminal Sites and Reuse

Reusing the industrial land along the riverfront is another opportunity for economic development. Table 4 in Section I lists the sites within the corridor that contain river terminals. These are sites that are suitable for reuse in the form of commercial, industrial, or recreation/tourism-related development.

- River terminals exist in a number of locations in the corridor and should be considered for attracting new tenants into vacant sites.

### Sites and Building Reuse

The study corridor has a number of brownfields which are comprised of large tracts of land adjacent to the river and active rail lines. In addition to the vacant industrial sites, there are buildings within the study corridor, that could provide opportunities for adaptive reuse (renovating older buildings for new uses). This may be related directly to tourism, recreation, commercial activity, or residential

uses. Due to the high number of locally and nationally recognized historic buildings in Brownsville and their proximity to potential river landing areas, reuse as it relates to tourism or one of the heritage parks is a feasible opportunity.

- Abandoned industrial sites and brownfields are two primary areas for reuse and development within the study corridor. The two largest tracts of industrial land, Hillman Barge and the La Belle Processing Plant are located near the river. Hillman Barge remains vacant while the La Belle Processing Plant, now Canestrale Contracting, (Luzerne Township) has started operations. Attracting tenants to the remaining sites is a crucial part of future economic development in the study corridor.
- Brownsville has a great potential for the adaptive reuse of buildings.

Ferry Terminals

The abandoned ferry terminals within the study corridor have the potential to provide several beneficial advantages to the surrounding communities and the river. The additional river access, a renewed mode of transportation across the river, and an interesting historical focal point are a few of the opportunities that the ferry terminals can bring to the area.

- Abandoned ferries are places for potential development and future river access.

## II. LAND RESOURCES

Soils

Regions of Prime Agricultural soils are scattered throughout the study corridor. Although most of these areas are limited for agricultural purposes due to topography, future land use and development should evaluate for the presence and regional significance of these soils where appropriate.

- Areas of prime agricultural soils do exist within the study corridor but the usefulness of these for agricultural purposes should be examined on a site-specific basis.

Abandoned Railroads

The two abandoned railroad lines that fall within the study corridor are potential recreational development areas. The former Monongahela rail line, located along Dunlap Creek, was approved for abandonment in 1977 and is currently owned by Conrail. However, as a condition of a debt settlement with M & Y Services, a construction and excavation company located in Uniontown, Pennsylvania, 13 parcels of the property were offered as payment. Transfer of the deeds for these parcels remains in litigation and a settlement is expected in October, 1997.

The property operational rights of the Conrail line located along Redstone Creek were held by Conrail until April 1, 1976, at which time complete ownership was returned to Penn-Central Properties, Inc., a real estate company located in

Cincinnati, Ohio. The lines remained abandoned until the fall of 1995, when Penn-Central sold the property at auction to an unknown bidder.

Because both the tunnel and the triple-arched bridge are located on abandoned lines and both structures are under private ownership, there is the possibility that they may be destroyed or closed off for liability reasons. This would mean the loss of an outstanding recreational and tourism resource, as well as an important piece of local history.

The Rivers of Steel Heritage Park has identified Brownsville as one of its landing locations. According to their Management Action Plan, Rivers of Steel landing sites will incorporate a radial transportation network, which will serve to integrate the local communities with the heritage park. A major element of this transportation network will be bike/pedestrian routes. The two abandoned rail lines are directly related to the ethnic and economic history of the study corridor and connect directly to Brownsville, making them ideal for conversion to trails serving the radial transportation network of the heritage park.

- Although ownership and future land use plans have not been identified for these abandoned parcels, acquisition of these properties for trail development would augment recreational and tourism resources.

Brownfield Sites

The brownfield sites in the study corridor are places for adaptive reuse. Many of the vacant industrial sites have river terminals, which offers means for intermodal transportation. The slag piles scattered within the study corridor could be leveled for possible future development. The abandoned mines, many of which are contributing to the pollution in tributaries, are extensive and contain underground tunnels or conveyors in some cases.

- Brownfield sites provide an alternative resource for increasing river and trail access, and future economic and recreational development.

Waste Sites

Coal tipples and conveyors are scattered throughout the study corridor. The Isabella coal tipple and conveyor is recognized as a National Register eligible structure. Because of their historic significance and relevance to the cultural profile of the area and its numerous coal patch towns, these structures have the potential to be used in the Rivers of Steel Heritage Park as a interpretive area. However, their current conditions, with large pieces of abandoned industrial equipment left rusting along the river's edge, is a public safety hazard which should be addressed.

- Coal tipples within the study corridor depict the industrialized history of the Mon Valley and have the potential to be developed into historical and interpretive areas.

Abandoned Mines

There are 10 abandoned strip mines that are significant to the study corridor. Also identified was one deep mine on the river, around the unincorporated village of East Riverside. This mine is no longer in operation and the shaft has been sealed.

Abandoned mines created several potentially dangerous situations from acid mine drainage to open mining shafts. Reclaiming these sites and improving on their conditions is a necessary consideration for many municipalities within southwestern Pennsylvania. Reclaiming abandoned mine sites provides many benefits to the community. They contribute new jobs, increase property values, and eliminate unsightly and dangerous conditions. There are several abandoned mine reclamation efforts that incorporate techniques like refilling, regrading, and revegetation of strip mined lands and refuse dumps, and sealing off deep abandoned mines.

- Reclamation of the abandoned mine areas would benefit water quality conditions and the environmental safety of the region.

## III. WATER RESOURCES

Several river-based organizations are attempting to nominate the Allegheny and Monongahela Rivers watershed as an American Heritage River. This would allow communities to protect and revitalize these rivers. It would also expand the river's recognition and ability to attract funding. Inclusion in this federal program would provide a significant benefit not only to the organization and agencies involved with the Monongahela but also to the residents of the small towns located along its banks.

Major Tributaries

Although two of the three major tributaries within the study corridor are Approved Trout Waters by the Pennsylvania Fish and Boat Commission, there is still a need for more research and management of these streams. Pike Run is contaminated by acid mine drainage and sewage effluent, while Dunlap Creek is being impacted by municipal and sewage discharges. These pollutants have the potential to severely damage these trout waters leading to the elimination of the species and the destruction of the recreational fishing activities within these streams. The other major tributary within the study corridor, Redstone Creek, is still being impacted by "yellow-boy" or acid mine drainage. While there are some remediation projects being conducted further upstream of the study corridor, there appears to be a lack of management techniques within the corridor. Information on the remaining thirty-three tributaries located within the study corridor is limited.

- Tributaries within the study corridor are impacted by abandoned mine drainage, sewage effluent, and other man-made sources. Implementation of a water quality

management program would identify areas for reclamation and establish continued monitoring.

Wetlands

With the exception of the Monongahela River and the Blainsburg Floodplain, wetlands larger than 10 acres do not occur within the study corridor. However, the presence of smaller systems, vertical slope wetlands in particular, is highly likely. As the name implies, vertical slope wetlands systems occur on valley slopes and are often associated with spring seep discharges.

- Wetlands less than 10 acres most likely exist within the study corridor but there is a lack of quantitative information available.

Floodplains

Although the one hundred and five-hundred year floodplains are generally restricted between narrow regions of the river valley, existing developments do occur within the floodplains at locations in California, Coal Center, West Brownsville and Brownsville. These low-lying areas are at risk for flooding.

Water Quality

1. Point Sources

Although the problems of acid mine drainage and sewage discharge have greatly improved in the last decade, this does not mean they can presently be disregarded. The most severe point source pollutants within the corridor are the "wildcat" sewers. The boroughs without sewage or septic services are contributing a great deal to the degradation of the Monongahela River. Although PADEP requires all municipalities to develop an official sewage plan to account for their present and future needs, many of these municipalities do not have the financial means of implementing these plans, since they are often too costly to realize without external funding. If funding could be secured, the implementation of these plans would allow homeowners to avoid the costs associated with the replacement or repair of a malfunctioning septic system and municipalities could limit the costs of extending sewer lines to include surrounding areas

Acid mine drainage was also identified as a pollutant of the Monongahela River. As discussed above, there are 10 abandoned mines within the study corridor. All of these abandoned sites may contribute to the acid mine drainage problem. There are numerous management techniques for the treatment of acid mine drainage. Application of limestone to neutralize the acid is successfully being utilized in a couple different watersheds within the state to ameliorate acid mine drainage. Wetland systems are a new area of research within acid mine drainage treatment.

- The major point source pollutants within the Monongahela River are sewage effluent and acid mine drainage.

2. Non-point Sources

Although the Monongahela River has historically been a sediment laden river, it is added to by the commercial utilization of the river, stormwater runoff and unvegetated banks. The sedimentation of the river is increased in the areas utilized by barges and industrial docks. Some of the sedimentation within the study corridor is contributed by the main population centers. These areas seldom retain well maintained vegetated banks and stormwater runoff is the greatest in these areas due to the increased pavement and impervious surfaces. Another factor cause of sedimentation is the dredging of material from the bottom of the river. There was one area of dredging located along the river by East Millsboro by Bates Run.

- The major non-point pollutant within the study corridor is sedimentation.

3. Monitoring

There is a lack of water quality monitoring being performed within the corridor. The water and sewage treatment plants conduct daily water tests but these are limited to their point of intake. Maxwell Lock and Dam along with, several state and federal agencies have also provided water quality studies on specific areas of concern or interest along the river. Unfortunately, these studies are only undertaken when the agencies are contacted about a severe problem. There appears to be no comprehensive, complete and all encompassing water quality monitoring being conducted. This is an important aspect of identifying, treating and maintaining a water resource.

## IV. BIOLOGICAL RESOURCES

### Aquatic

The improvement of the water quality in the Monongahela River ultimately affects the diversity of aquatic life in the river. Therefore, when any water quality improvement projects are undertaken, there should also be a macro invertebrate and fish population study conducted. This will provide the area with a greater understanding of the aquatic life in the river and can contribute to the identification of new, unrecognized pollutants.

Although the zebra mussels of Lake Erie have not arrived in the section of the Monongahela River covered by this study, it is advised that any municipality or industry with water intakes and outflow pipes on the river ensure that their pipes do not get clogged by this species when and if they do appear.

### Forested Riparian Buffers

Forested riparian buffers which exist along much of the study corridor will improve the environmental degradation to the river, but proper maintenance, management, and integration with other river conservation techniques will also be required. In order to properly manage riparian forest buffers, there are several

guidelines or considerations that should be made. Most importantly, riparian forest buffers will not improve the water quality alone. There must be an integrated ecosystem approach including sediment and erosion plans, pollution abatement projects and proper land management techniques.

- Riparian buffers are an integral part of the river ecosystem. Proper management and education regarding these areas is essential to water quality and overall river conservation.

Important Habitats

The California Overlook and the Blainsburg Floodplain are observed by the Western Pennsylvania Conservancy in the Washington County Natural Heritage Inventory. These areas have the potential to be utilized as educational classrooms or naturalist interpretive areas.

In order to maintain the bio-diversity of the Blainsburg Floodplain, it is recommended that California Borough and West Brownsville Borough incorporate regulations restricting ATV's and off-road motorcycles in this floodplain so as to encourage the regrowth of this High Diversity Area. In California this could be included in the zoning ordinance, however since West Brownsville does not have zoning regulations, other means of restriction may have to be applied.

## V. CULTURAL RESOURCES

Recreation

Within the study corridor, public access areas and parks are scattered and few. There are a limited number of parks with sufficient facilities within the area. The only restaurant with river access is Pechin's Riverfront Complex in Denbo. Several of the river access areas appeared unmaintained and dangerous for boaters putting boats into the water. In particular, the boat launch in Coal Center appears to have a steep drop off at the end of the launch area, while the launch in West Brownsville remains steep and unpaved.

The Monongahela River has historically been a commercial river, this reputation has hindered the recreational utilization of the river. The Monongahela River is still utilized a great deal by the barge industry. The limited view of small recreational water craft from the barges appears to be a major concern. Potential answers to this problem should involve both interested parties. Some possible solutions may include educating the public about the proper safety requirements along the river and the implementation of limited speed zones. Refer to the Management Options section for additional solutions.

- There is limited public river access with related facilities.

- The river, although historically used as a commercial waterway, is now increasingly used by recreational water craft and sportsmen. Safety issues between commercial barge traffic and recreational water craft have resulted.

Historical Sites

Brownsville contains the highest concentration of historic sites within the study corridor. Many are on the National Register as eligible structures. As a result, the highest potential for attracting recreation and tourism exists here. The Nemacolin Castle in Brownsville is an example of a historic building that is a destination for tourists.

Historic structures include such things as bridges and coal tipples, along with taverns, churches, freight stations, and residential buildings. The National Road Heritage Park and the Rivers of Steel Heritage Park, which converge in Brownsville, have determined through their Action Plans that they will incorporate interpretive sites into their parks. This opens a number of opportunities for connecting the historical sites and structures within the local communities.

There are a number of locally recognized historic structures in the study corridor as well. These structures may also be attractive locations for interpretive sites. The combination of locally recognized and historically registered structures, particularly in Brownsville Borough, are a foundation upon which the tourism industry can expand.

- Historic sites, which are concentrated in one main area of the study corridor, coincide with the Action Plans of the heritage parks and the goals of local residents to preserve their communities as historic places.

# VII. MANAGEMENT OPTIONS

## MANAGEMENT OPTION PRIORITIES & TENTATIVE SCHEDULE FOR IMPLEMENTATION

**Phase One** **1998-2001**

Management

1. Develop a Monongahela River Association (MRA) to be responsible for managing the plan, reviewing/updating the plan, and acting as a clearing house for funding sources and planning/development partnerships. The MRA should meet at least twice a year to review, coordinate and update the plan and the planning process.

   The association should include a representative from each of the participating municipalities and each of the counties. Recommendations for other members may include the Steel Industry Heritage Corporation, the National Road, Port of Pittsburgh, Pennsylvania Fish and Boat Commission, US Coast Guard Auxiliary, California University, and the Federated Bass Association.

***It will be the responsibility of each municipality, county, and/or organization to complete each grant for the continued planning and/or implementation of each individual project.***

2. Develop and begin to solicit funds for an "emergency fund" to protect threatened resources that are important to the River Conservation Plan. This "emergency fund" will be used to quickly react to threatened resources and be funded by private foundations and individuals. This fund is in addition to the money needed for a 50/50 match from the State to implement this plan.

Sewage

3. Investigate alternative funding to update malfunctioning septic systems within the corridor.

4. Acquire funds to review existing conditions, project future demands, assist in the acquisition of additional funding, and implement updates to existing sewage lines and facilities along the corridor.

5. Install upgrades to existing sanitary facilities in the Boroughs of California and Brownsville.

6. Install a sewage treatment facility to serve West Brownsville borough and other surrounding communities, or extend lines from W. Brownsville to the existing system at California.

7. Investigate the possibilities of installing or extending sewage services to the following towns in Centerville Borough and Luzerne Township: Denbeau Heights, Denbo, Vesta #6, Maple Glen, Melrose, Maxwell, Dutch Hill, La Belle, East Fredricktown, East Millsboro, Arensburg, Isabella and East Riverside. The future services may include septic, sand mound, transfer lines and/or pumping stations or treatment facilities.

River Safety

8. Develop partnerships between the Waterways Association, the Port of Pittsburgh, the US Army Corps of Engineers, the Pennsylvania Fish and Boat Commission and the US Coast Guard to ensure both the commercial shipping and recreation industry interests are being met and safety issues are addressed. eg. partnerships could be used to plan for future development and to encourage the U.S. Coast Guard to revise standards for operating personal watercraft. Safety requirements may include the use of running lights during day and evening operations and the requirement for testing and licensing of users similar to that of motorcycles. Other safety improvements may include: creating "designated safe zones" for use by personal watercraft; implementing no wake zones for commercial traffic traveling through sensitive areas, eg.(areas with eroding earth banks, marinas, rip-rap walls, etc); and establishing navigational lanes at critical areas in the river. (marinas, bridges, etc.)

9. Develop a River Rescue Facility/Operation. The facility would be located in Brownsville and accessed from Bank Street. It would be operated by the local fire, police and ambulance services and be supported by the local hospital. The facility would include an appropriate boat with rescue equipment and be moored on either the proposed wharf or proposed marina facility near the mouth of Dunlap Creek.

Water Quality

10. Form a water quality monitoring group for the river. Publish the results as public information and make agencies aware of specific pollution problems. Partner with other local water-related groups to monitor tributaries to the river. Implement comprehensive water quality sampling points throughout the study corridor - including chemical analysis, macro invertebrate and fish sampling.

11. Conduct population surveys on the benthic and aquatic life within the river, in particular focus on macroinvertebrate and fish species.

12. Implement comprehensive water quality sampling points throughout the study corridor - including chemical analysis, macro invertebrate and fish sampling.

13. Monitor water quality on Pike Run, Dunlap Creek and Redstone Creek to pinpoint "wildcat" sewage and abandoned mine drainage sources.

Management/Marketing

14. Participate in existing marketing efforts by the Rivers of Steel Heritage Area and National Road Heritage Park to promote the areas vast historic, cultural, recreational and environmental opportunities.

River Access/Ferry Boats

15. Ensure the continued operation of the Fredericktown Ferry, the last cable drawn operating ferry in the western rivers of the United States, by improving the operation, maintenance and equipment.

16. Improve existing boat launch sites at Union Street in California, the launch in Maxwell and the access point adjacent to the Intercounty Bridge in West Brownsville Borough.

17. Evaluate the development potential for the East Fredericktown Ferry landing site to become a permanent public boat docking facility.

18. Evaluate the potential for abandoned ferry sites, Newell-Coal Center (Simpson Ferry), Arensburg and East Riverside (Jacob Ferry), to be used as both future ferry launch sites and public boat launches. Acquire and rebuild abandoned ferry sites as public boat launch areas and possible ferry landing sites.

19. Acquire and rebuild abandoned ferry sites as public boat launch areas and possible ferry landing sites. (Refer to above sites)

20. Search for and begin to purchase abandoned ferry boats for use as interpretive centers and river tours. Another option may be to rebuild and build new replica ferries.

History

21. Promote eligible historic structures to become listed on the National Register of Historic Places.

Recreation

22. Conduct deed research and purchase abandoned railroad properties at Dunlap Creek and Redstone Creek for future bike/pedestrian trail development. These linear parks can become direct links connecting the community to the river. They may involve public park facilities as well as privately run services such as concessions, restaurants, rentals, etc.

Management/Planning

23. Develop partnerships between the Steel Industry Heritage Corporation, the National Road Heritage Park, local historic associations, the Regional Trail Corporation and county planning departments to implement this plan, promote the rich heritage of the river corridor, and continue to plan for the areas future.

Recreation

24. Foster partnerships and agreements with private marinas, the California Boat Club and the Knights of Columbus at West Brownsville, to provide public access.

25. Acquire properties and build new boat launches at East Millsboro and Isabella.

26. Continue to plan and develop the proposed wharf at Brownsville. The wharf would include a landing site for entertainment barges and the Rivers of Steel Journey river based tourism trips. It would include road access to Brownsville via the existing railroad underpass at Banks Street and a public gathering space for both the National Road Heritage Park and locally sponsored events.

27. Continue to plan and develop the proposed marina at Brownsville. The marina would be located downstream of the Wharf and include private docking facilities for recreational watercraft.

28. Acquire properties, plan and develop riverfront parks, including picnic facilities, walking trails, concession stands or restaurants, boat storage, telephones, toilets, and parking areas. These facilities could include both recreational and educational opportunities as well as provide additional public river access. Park locations should include Newell, California University, (The California Borough-Rotary Club-Walkway Park including Pike Run), Coal Center, Centerville (across from Hillman Barge), the Vesta #6 area, East Millsboro, and East Fredericktown.

Biological Resources

29. Encourage California Borough to incorporate regulations in their zoning ordinance to restrict ATV's and off-road motorcycles in the Blainsburg Floodplain so as to encourage the regrowth of this area.

30. Coordinate with the Western Pennsylvania Conservancy or another land trust for the acquisition and preservation of the biologically diverse Blainsburg Floodplain area.

31. Encourage West Brownsville to adopt protection procedures for the Blainsburg Floodplain.

Hazardous Areas/Water Quality

32. Implement a survey of abandoned mines within the study corridor in order to develop a reclamation strategy.

Flooding

33. Schedule flood awareness seminars through the National Weather Service.

Land Use/Planning

34. Develop a plan to identify community in-fill sites for redevelopment and reuse (such as the Flatiron building in Brownsville) to attract new commercial businesses and increase tourism within the existing community.

35. Participate with other interests in considering potential uses for development (Hillman Barge site and the remaining Canestrale Contracting sites).

36. If reuse activities have not been implemented at the above sites, encourage municipalities to apply for environmental assessment money under Act 2 and Act 4 to begin the industrial reuse process.

37. Encourage Coal Center and West Brownsville to adopt zoning as part of their land planning strategy.

**Phase Two** **2002-2004**

Management/Marketing

38. As part of marketing, support projects in the area that aim to improve water quality, land use, sewage, recreational needs and the general economics of the valley. Participate in publishing an annual report with completed or ongoing projects as mentioned; hold an annual symposium for those involved in projects or interested in the river.

Land Use

39. Review the existing ordinances of participating municipalities to ensure compatibility with future river development and conservation plans.

40. Participate in the ongoing efforts with the Port of Pittsburgh, the Waterways Association, county planning agencies, redevelopment authorities and economic development associations to identify and market existing sites with the greatest potential for development.

Biological Resources/Water Quality

41. Conduct annual sampling of channel catfish and common carp to establish concentration trends in polychlorinated biphenyls (PCB's), chlordane and heavy metals within the Maxwell Lock and Dam area.

42. Promote implementation for and enforcement of existing erosion and sedimentation plans for all municipalities through citizen awareness programs.

43. Promote implementation for and enforcement of existing storm water management ordinances for all municipalities through citizen awareness programs.

44. Monitor the expanding range of zebra mussels. Coordinate efforts with local municipalities and private industries to ensure that intake or outflow pipe capacities are not decreased.

Management

45. Review the DCNR study to categorize the Monongahela River as a Modified Recreational River for the Scenic Rivers Inventory.

46. Participate in the promotion of the Monongahela as an American Heritage River.

Erosion Control/Safety

47. Encourage population centers along narrow river bends (Newell, Coal Center and California) to incorporate a 5 mile per hour speed restriction for commercial traffic into their ordinances to prevent damage to river front facilities and control the deterioration of the river banks.

48. Encourage California, Coal Center, Newell and West Brownsville to plant native tree and shrub species, along with native rock installations to limit the erosion of earth banks.

**Phase Three** **2005-2007**

History

49. Evaluate the potential for abandoned coal tipples, conveyors, former locks and launching areas to become historic interpretive sites.

Hazardous Areas

50. Develop an action plan for the future use and/or removal of abandoned coal tipples, conveyors, former locks and launching areas. These may present safety hazards to recreational users.

Recreation

51. Investigate the possibilities for scenic railroad excursions along either Redstone Creek or the eastern side of the Mon. River on the CSX railroad line.

Biological Resources

52. Conserve riparian habitat through education and best management practices. Encourage partnership agencies to promote citizen awareness programs at local events and community gatherings.

53. Investigate the potential of the California Overlook and the Blainsburg Floodplain to be utilized as educational classrooms or natural interpretive areas.

54. Develop a nature center to educate the public about the past and present conditions of the river and promote the values of a clean water supply.

Recreation/History

55. Acquire properties, plan and develop river related parks to accent historical, educational, and recreational activities. Possibilities exist along Redstone Creek, Dunlap Creek and along the proposed river front park developments mentioned above.

56. Acquire properties, plan and develop recreation and interpretive trail connections to the National Road at Brownsville and to the Youghiogheny River Trail (via the connection of Redstone Creek and Dunbar Creek). These two watersheds can be linked to continue the network of rail-trail connections combining land and water-based recreation.

57. Plan and integrate the use of the proposed wharf and marina developments at Brownsville with the culture and heritage activities of the Steel Industry Corporation's Rivers of Steel Programs, the National Road Heritage Festival and local historical interpretive tours.

58. Investigate the possibility of renovating the "old" Lock #5 for recreation/tourism reuse.

59. Investigate the reuse of barges as floating docks to support shops, restaurants and recreation (eg. swimming pool) and tourism attractions.

**Phase Four** **2008-2012**

Management

60. Continue with the planning, implementation and funding process for the above projects including: sewage update projects, river access, park construction, abandoned mine reclamation, water quality testing and remediation efforts.

61. Build a replica of the original steamboat first built in West Brownsville and Brownsville. Locate the craft in the West Brownsville-Brownsville area as an attraction.

62. Implement a study to sign the river for use by recreational users; signing may include town names, significant historic sites, parks/other recreational opportunities, public facilities and emergency services.

63. Update and revise the River Conservation Plan.

| PHASE AND PLAN CATEGORY | MANAGEMENT OPTIONS AND PRIORITIES | POTENTIAL PARTNERSHIPS and/or RESPONSIBLE PARTIES | POTENTIAL FUNDING SOURCES | SCHEDULE FOR IMPLEMENTATION |
|---|---|---|---|---|
| | | | | |
| | (Refer to the Report, Section VII, for additional information about each management option.) | *Monongahela River Association (MRA) will act as a clearing house for partnerships and funding for each option. | *Department of Conservation and Natural Resources (DCNR) will be matching 50% of the costs. | |
| | | | PA Department of Community and Economic Development (DCED) provides a variety of programs for planning, infrastructure development, and project implementation. | |
| **Phase One** | | | | 1998-2001 |
| Management | | | | |
| | Develop a Monongahela River Association (MRA) to be responsible for managing the plan, reviewing/updating the plan, and acting as a clearing house for funding sources and planning/development partnerships. | MRA | DCNR Circuit Rider for funding a Coordinating/Enforcement Officer | |
| | Develop and begin to solicit funds for an "emergency fund" to protect threatened resources that are important to the River Conservation Plan. | MRA | Private Foundations (Eberly Foundation, J. Hardy) | |
| Sewage | | | | |
| | Investigate alternative funding to update malfunctioning septic systems within the corridor. | Department of Environmental Protection (DEP), local engineering firms, local municipality, county planning (grant writing) | DCED: PA Governors Action Team (PA infrastructure Investment Authority) PENNVEST provides low interest loans for work on wastewater systems within the state, Fayette County Redevelopment Authority (FCRA) | |
| | Acquire funds to review existing conditions, project future demands, assist in the acquisition of additional funding, and implement updates to existing sewage lines and facilities along the corridor. | DEP, local engineering firms, local municipality, county planning (grant writing) | FCRA, DCED: Communities of Opportunity (Comm.OP.), Appalachian Regional Commission (ARC), Community Revitalization (Comm.Rev.) | |
| | Install upgrades to existing sanitary facilities in the Boroughs of California and Brownsville. | DEP, local engineering firms, local municipality, county planning (grant writing) | " ", EPA reauthorization of the Federal Safe Drinking Water Act (EPA) | |
| | Install a sewage treatment facility to serve West Brownsville borough and other surrounding communities, or extend lines from W. Brownsville to the existing system at Brownsville. | DEP, local engineering firms, local municipality, county planning (grant writing) | FCRA, DCED: PA Infrastructure Development Program (IDP), Shared Municipal Services (SMS), Section 108 Loan Guarantees, EPA | |
| | Investigate the possibilities of installing or extending sewage services to the following towns in Centerville Borough and Luzerne Township: Denbeau Heights, Denbo, Vesta #6, Maple Glen, Melrose, Maxwell, Dutch Hill, La Belle, East Fredricktown, etc... | DEP, local engineering firms, local municipality, county planning (grant writing) | " " | |
| River Safety | | | | |
| | Develop partnerships between the Waterways Association, the Port of Pittsburgh, the US Army Corps of Engineers, the Pennsylvania Fish and Boat Commission and the US Coast Guard to ensure safety issues and industry concerns are satisfied... | Waterways Association, the Port of Pittsburgh, the US Army Corps of Engineers, Pennsylvania Fish and Boat Commission (PFBC) and the US Coast Guard | Association: no direct costs involved | |
| | Develop a River Rescue Facility/Operation. The facility would be located in Brownsville and accessed from Bank Street. It would be operated by the local fire, police and ambulance services and be supported by the local hospital. | Southside Fire Company, Brownsville police, ambulance, hospital, municipality, county planning, PFBC, US Coast Guard | DCED: PA Infrastructure Development Program (IDP), Shared Municipal Services (SMS), Washington County Council on Economic Development (WCCED), Fay-Penn Economic Development Corp. (Fay-Penn), private foundations | |
| Water Quality | | | | |
| | Form a water quality monitoring group for the river. Publish the results. Partner with other local water-related groups to monitor tributaries to the river. | PA Department of Environmental Protection (DEP), Environmental Protection Agency-region 3 & 4 (EPA), Army Corps of Engineers, United States Geological Service (USGS), PFBC, PA Cleanways, California University Biology Department (Cal.U, Biology) | DEP (Citizens Volunteer Monitoring Program) | |
| | Implement comprehensive water quality sampling points throughout the study corridor - including chemical analysis, macro invertebrate and fish sampling. | DEP, EPA, Army Corps, PFBC, USGS, PA Cleanways, Cal. U., Biology, Pennsylvania Environmental Council, POWR, Ohio River Sanitary Commission (ORSANCO) | Private Foundations (Heinz (HJ) Endowments, RK Mellon, Fish America, National Fish and Wildlife, Westinghouse, Benedum) | |
| | Monitor water quality on Pike Run, Dunlap Creek and Redstone Creek to pinpoint "wildcat" sewage and abandoned mine drainage sources. | DEP, EPA, Army Corps, PFBC, USGS, PA Cleanways, Cal. U., Biology, POWR, ORSANCO | Private Foundations (Heinz Endowments, RK Mellon , Armco and Benedum Foundations), EPA reauthorization of the Federal Safe Drinking Water Act. | |
| | Conduct population surveys on the benthic and aquatic life within the river, in particular focus on macroinvertebrate and fish species. | DEP, EPA, Army Corps, PFBC, USGS, Cal.U., Biology, local sportsmen's groups | Private Foundations | |
| Management/ Marketing | | | | |

| PHASE AND PLAN CATEGORY | MANAGEMENT OPTIONS AND PRIORITIES | POTENTIAL PARTNERSHIPS and/or RESPONSIBLE PARTIES | POTENTIAL FUNDING SOURCES | SCHEDULE FOR IMPLEMENTATION |
|---|---|---|---|---|
| | Participate in existing marketing efforts by the Rivers of Steel Heritage Area and National Road Heritage Park to promote the areas vast historic, cultural, recreational and environmental opportunities. | Steel Industry Heritage Corporation (SIHC), Pennsylvania Historic Museum Commission (PHMC), local historic societies, Allegheny Conference | Association: no direct costs involved | |
| River Access/ Ferries | | | | |
| | Ensure the continued operation of the Fredericktown Ferry, the last cable drawn operating ferry in the western rivers of the United States, by improving the operation, maintenance and equipment. | Local engineering firms, local municipality, county planning, SIHC, National Road, PHMC, Allegheny Heritage Development Corporation (AHDC) | DCED: Community Development Block Grants (CDBG), National Institute for Conservation of Cultural Property (NIC), National Trust (NT), Washington County Council on Economic Development (WCCED), Fay-Penn Economic Development Corp. (Fay-Penn) | |
| | Improve existing boat launch sites at Union Street in California, the launch in Maxwell and the access point adjacent to the Intercounty Bridge in West Brownsville Borough. | Local engineering firms, local municipality, county planning, Cal.U. Planning | CDBG, NIC, WCCED, Fay-Penn, Comm.Rev., Comm. Op., ARC | |
| | Evaluate the development potential for the East Fredericktown Ferry landing site to become a permanent public boat docking facility. | Local engineering firms, local municipality, county planning, Cal.U. Planning, PFBC | CDBG, NIC, WCCED, Fay-Penn, Comm.Rev., Comm. Op., ARC | |
| | Evaluate the potential for abandoned ferry sites, Newell-Coal Center (Simpson Ferry), Arensburg and East Riverside (Jacob Ferry), to be used as both future ferry launch sites and public boat launches. | Local engineering firms, local municipality, county planning, Cal.U. Planning, PFBC | NIC, WCCED, NT, Fay-Penn, ARC | |
| | Acquire and rebuild abandoned ferry sites as public boat launch areas and possible ferry landing sites. (Refer to above sites) | Local engineering firms, local municipality, county planning, SIHC, National Road, PHMC, AHDC, PFBC | NIC, WCCED, NT, Fay-Penn, AHDC, ARC | |
| | Search for and begin to purchase abandoned ferry boats for use as interpretive centers and river tours. Another option may be to rebuild and build new replica ferries. | Local engineering firms, local municipality, county planning, Cal.U., SIHC, National Road, local historic societies, AHDC | NIC, WCCED, Fay-Penn, AHDC | |
| History | | | | |
| | Promote eligible historic structures to become listed on the National Register of Historic Places. | SIHC, National Road, PHMC, local historic societies, AHDC | no direct costs involved | |
| Recreation | | | | |
| | Conduct deed research and purchase abandoned railroad properties at Dunlap Creek and Redstone Creek for future bike/pedestrian trail development. These linear parks can become direct links connecting the community to the river... | PA Rails to Trails Conservancy, Regional Trail Corporation (RTC),CSX, Consol | ISTEA, NEXTEA, Private Foundations (Heinz (Vira) Endowments, RK Mellon Foundation, Armco Foundation, Westinghouse Foundation) | |
| Management/ Planning | | | | |
| | Develop partnerships between the Steel Industry Heritage Corporation, the National Road Heritage Park, local historic associations, the Regional Trail Corporation and county planning departments to implement, promote and plan for the future. | SIHC, National Road, PA Rails to Trails Conservancy, RTC | Association: no direct costs involved | |
| | | | | |
| Recreation | | | | |
| | Foster partnerships and agreements with private marinas, the California Boat Club and the Knights of Columbus at West Brownsville, to provide public access. | Local engineering firms, local municipality, county planning | Association: no direct costs involved | |
| | Acquire properties and build new boat launches at East Millsboro and Isabella. | Local engineering firms, local municipality, county planning | Private Foundations (Heinz Endowments, RK Mellon Foundation, Armco Foundation, Westinghouse Foundation) | |
| | Continue to plan and develop the proposed wharf at Brownsville. The wharf would include a landing site for entertainment barges and the Rivers of Steel Journey river based tourism trips. | SIHC, Washington County Council on Economic Development (WCCED), Fay-Penn Economic Development Corp. (Fay-Penn), National Road, county planning, local engineering firms, local municipality | Existing Funding Sources, DCED, private foundations | |
| | Continue to plan and develop the proposed marina at Brownsville. The marina would be located downstream of the Wharf and include private docking facilities for recreational watercraft. | Local engineering firms, local municipality, county planning, WCCED, Fay-Penn | Existing Funding Sources, private foundations | |
| | Acquire properties, plan and develop river front parks at Newell, California University, (The California Borough-Rotary Club-Walkway Park), Coal Center, Centerville (across from Hillman Barge), the Vesta #6 area, East Millsboro, and East Fredericktown. | PFBC, US Coast Guard, US Army Corps, Port of Pgh, local municipality, local historical societies, RTC, county planning | Private Foundations, DCED: Industrial Site Reuse Program (ISRP), ARC, Comm.Op, Comm.Rev., Sect.108 | |
| Biological Resources | | | | |
| | Encourage California Borough to incorporate regulations in their zoning ordinance to restrict ATV's and off-road motorcycles in the Blainsburg Floodplain so as to encourage the regrowth of this area. | Local municipality, WPC, Cal.U, Biology, DEP, EPA, PFBC, PNDI | Association: no direct costs involved | |
| | Coordinate with the Western Pennsylvania Conservancy (WPC) or another land trust for the acquisition and preservation of the biologically diverse Blainsburg Floodplain | WPC | Association: no direct costs involved | |
| | Encourage West Brownsville to adopt protection procedures for the Blainsburg Floodplain. | Local municipality, WPC, Cal.U, Biology | Association: no direct costs involved | |
| Hazardous Areas/ Water Quality | | | | |

| PHASE AND PLAN CATEGORY | MANAGEMENT OPTIONS AND PRIORITIES | POTENTIAL PARTNERSHIPS and/or RESPONSIBLE PARTIES | POTENTIAL FUNDING SOURCES | SCHEDULE FOR IMPLEMENTATION |
|---|---|---|---|---|
| | Implement a survey of abandoned mines within the study corridor in order to develop a reclamation strategy. | Western Pennsylvania Coalition for Abandoned Mine Reclamation (WPCAMR), Fayette Forward Strategic Plan (Fayette County), Allegheny Heritage Foundation, National Research Center for Coal and Energy, Surface Mine Control & Reclamation (SMCRA) | Statewide Nonpoint Source Pollution Program (Federal Clean Water Act-Section 319, Rural Abandoned Mine Program (RAMP) and the Landowner Reclamation Program (LRP) through WPCAMR; DEP, Bureau of Abandoned Mine Reclamation, SMCRA | |
| Flooding | | | | |
| | Schedule flood awareness seminars through the National Weather Service. | National Weather Service | Association: no direct costs involved | |
| Land Use/ Planning | | | | |
| | Develop a plan to identify community in-fill sites for redevelopment and reuse (such as the Flatiron building in Brownsville) to attract new commercial businesses and increase tourism within the existing community. | Local municipality, county planning, Cal.U. Planning | DCED: Small Communities Planning Assistance Program (SCPAP), State Planning Assistance Program (SPAG), ISRP, CDBG, Enterprise Zone Program (EZP), ARC, Comm.Op., Comm. Rev., Sect.108 | |
| | Participate with other interests in considering potential uses for development (Hillman Barge site and the remaining Canestrale Contracting sites). | Land owners, Waterways Association, the Port of Pittsburgh, the US Army Corps of Engineers, CSX, CONSOL, local engineering firms, local municipality, county planning, Cal.U.Planning | Association: no direct costs involved | |
| | If reuse activities have not been implemented at the above sites, encourage municipalities to apply for environmental assessment money under Act 2 and Act 4 to begin the industrial reuse process. | " " | ISRP, IDP | |
| | Encourage Coal Center and West Brownsville to adopt zoning as part of their land planning strategy. | PA Strategic Planning and Program Operation (PASPPO), PA Municipal Planning Code, local municipalities, county planning | SCPAP, SPAG | |
| Management | Update and revise the River Conservation Plan. | MRA | Private Foundations | |
| **Phase Two** | | | | 2002-2004 |
| Management/ Marketing | | | | |
| | As part of marketing, support projects in the area that aim to improve water quality, land use, sewage, recreational needs and the general economics of the valley. Participate in publishing an annual report and hold annual symposium. | MRA | Association: no direct costs involved | |
| Land Use | | | | |
| | Review the existing ordinances of participating municipalities to ensure compatibility with future river development and conservation plans. | PA Strategic Planning and Program Operations (PASPPO) | SCPAP, SPAG | |
| | Participate in the ongoing efforts with the Port of Pittsburgh, the Waterways Association, county planning agencies, redevelopment authorities and economic development associations to identify and market existing sites with potential for development. | PASPPO, PA Municipal Planning Code, local municipalities, county planning | Association: no direct costs involved | |
| Bio. Resources/ Water Quality | | | | |
| | Conduct annual sampling of channel catfish and common carp to establish concentration trends in polychlorinated biphenyls (PCB's), chlordane and heavy metals within the Maxwell Lock and Dam area. | DEP, EPA, Army Corps, PFBC, USGS, Cal.U., Biology, local sportsmen's groups | Private Foundations (Heinz (HJ) Endowments, Richard King Mellon Foundation, Fish America Foundation, National Fish and Wildlife Foundation, and the Armco, Westinghouse Foundations) | |
| | Promote implementation for and enforcement of existing erosion and sedimentation plans for all municipalities through citizen awareness programs. | Conservation District, local municipality, county planning | Private Foundations | |
| | Promote implementation for and enforcement of existing storm water management ordinances for all municipalities through citizen awareness programs. | Local engineering firms, local municipality, county planning, | Private Foundations | |
| | Monitor the expanding range of zebra mussels. Coordinate efforts with local municipalities and private industries to ensure that intake or outflow pipe capacities are not decreased. | DEP, EPA, Army Corps, PFBC, USGS, Cal. U. Biology, local sportsmen's groups | Private Foundations | |
| Management | | | | |
| | Review the DCNR study to categorize the Monongahela River as a Modified Recreational River for the Scenic Rivers Inventory. | MRA/DCNR | Association: no direct costs involved | |
| | Participate in the promotion of the Monongahela as an American Heritage River. | U.S. Department of the Interior, National Park Service, SIHC, National Road | Association: no direct costs involved | |
| Erosion Control/ Safety | | | | |
| | Encourage population centers along narrow river bends (Newell, Coal Center and California) to incorporate a 5 mile per hour speed restriction for commercial traffic into their ordinances to prevent damage to facilities & control erosion of river banks... | Local municipality, Army Corps, US Coast Guard, Waterways Association, Port of Pgh, Conservation District | Association: no direct costs involved | |
| | Encourage California, Coal Center, Newell and West Brownsville to plant native tree and shrub species, along with native rock installations to limit the erosion of earth banks. | Local municipality, Army Corps, US Coast Guard, Waterways Association, Port of Pgh, Conservation District, DEP | DEP Bureau of Watershed Conservation, local Conservation District | |
| Management | Update and revise the River Conservation Plan. | MRA | Private Foundations | |

| PHASE AND PLAN CATEGORY | MANAGEMENT OPTIONS AND PRIORITIES | POTENTIAL PARTNERSHIPS and/or RESPONSIBLE PARTIES | POTENTIAL FUNDING SOURCES | SCHEDULE FOR IMPLEMENTATION |
|---|---|---|---|---|
| **Phase Three** | | | | 2005-2007 |
| History | | | | |
| | Evaluate the potential for abandoned coal tipples, conveyors, former locks and launching areas to become historic interpretive sites. | SIHC, PHMC, Port of Pgh, local municipality, county planning, CONSOL, CSX | CDBG, NIC, National Trust (NT) | |
| Hazardous Areas | | | | |
| | Develop an action plan for the future use and/or removal of abandoned coal tipples, conveyors, former locks and launching areas. These may present safety hazards to recreational users. | SIHC, PHMC, Port of Pgh, local municipality, county planning, CONSOL, CSX | CDBG, NIC, NT | |
| Recreation | | | | |
| | Investigate the possibilities for scenic railroad excursions along either Redstone Creek or the eastern side of the Mon. River on the CSX railroad line. | CSX, CONSOL, local engineering firms, local municipality, county planning, Cal.U. Planning | Private Foundations | |
| Biological Resources | | | | |
| | Conserve riparian habitat through education and best management practices. Encourage partnership agencies to promote citizen awareness programs at local events and community gatherings. | DEP, EPA, Army Corps, Cal.U. Biology | Private Foundations, DEP Bureau of Watershed Conservation, local Conservation District | |
| | Investigate the potential of the California Overlook and the Blainsburg Floodplain to be utilized as educational classrooms or natural interpretive areas. | DEP, EPA, Army Corps, Cal.U. Biology | Private Foundations | |
| | Develop a nature center to educate the public about the past and present conditions of the river and promote the values of a clean water supply. | DEP, EPA, Army Corps, Cal.U. Biology | Private Foundations | |
| Recreation/ History | | | | |
| | Acquire properties, plan and develop river related parks to accent historical, educational, and recreational activities. Possibilities exist along Redstone Creek, Dunlap Creek and along the proposed river front park developments mentioned above. | SIHC, Regional Trail Commission (RTC), local municipality, county planning | NT, CDBG, NIC, WCCED, Fay-Penn, Private Foundations, ISTEA, NEXTEA | |
| | Acquire properties, plan and develop recreation and interpretive trail connections to the National Road at Brownsville and to the Youghiogheny River Trail (via the connection of Redstone Creek and Dunbar Creek). | SIHC, PA Rails to Trails Conservancy, RTC, local municipality, county planning | NT, CDBG, NIC, WCCED, Fay-Penn. Private Foundations, ISTEA, NEXTEA | |
| | Plan and integrate the use of the proposed wharf and marina developments at Brownsville with the culture and heritage activities of the Steel Industry Corporation's Rivers of Steel Program and the National Road Heritage Festival. | SIHC, National Road, local historic societies | NT, CDBG, NIC, WCCED, Fay-Penn. Private Foundations | |
| | Investigate the possibility of renovating the "old" Lock #5 for recreation/tourism reuse. | US Coast Guard, US Army Corps, PFBC, SIHC, local historical society | NT, CDBG, NIC, WCCED, Fay-Penn. Private Foundations | |
| | Investigate the reuse of barges as floating docks to support shops, restaurants and recreation (eg. swimming pool) and tourism attractions. | US Coast Guard, US Army Corps, PFBC, local economic development agency | CDBG, NIC, WCCED, Fay-Penn | |
| Management | Update and revise the River Conservation Plan. | MRA | Private Foundations | |
| **Phase Four** | | | | 2008-2012 |
| Management | Continue with the planning, implementation and funding process for the above projects including: sewage update projects, river access, park construction, abandoned mine reclamation, water quality testing and remediation efforts. | MRA | | |
| Tourism | Build a replica of the original steamboat first built in West Brownsville and Brownsville. Locate the craft in the West Brownsville-Brownsville area as an attraction. | SIHC, National Road, local historic societies, US Coast Guard, US Army Corps, PFBC, local economic development agency | Private Foundations | |
| Tourism/ Recreation | Implement a study to sign the river for use by recreational users; signing may include town names, significant historic sites, parks/other recreational opportunities, public facilities and emergency services. | SIHC, National Road, local historic societies, US Coast Guard, US Army Corps, PFBC, local economic development agency, municipality, county planning | NT, CDBG, NIC, WCCED, Fay-Penn, Private Foundations | |
| Management | Update and revise the River Conservation Plan. | MRA | Private Foundations | |

# APPENDIX B

# MAPS

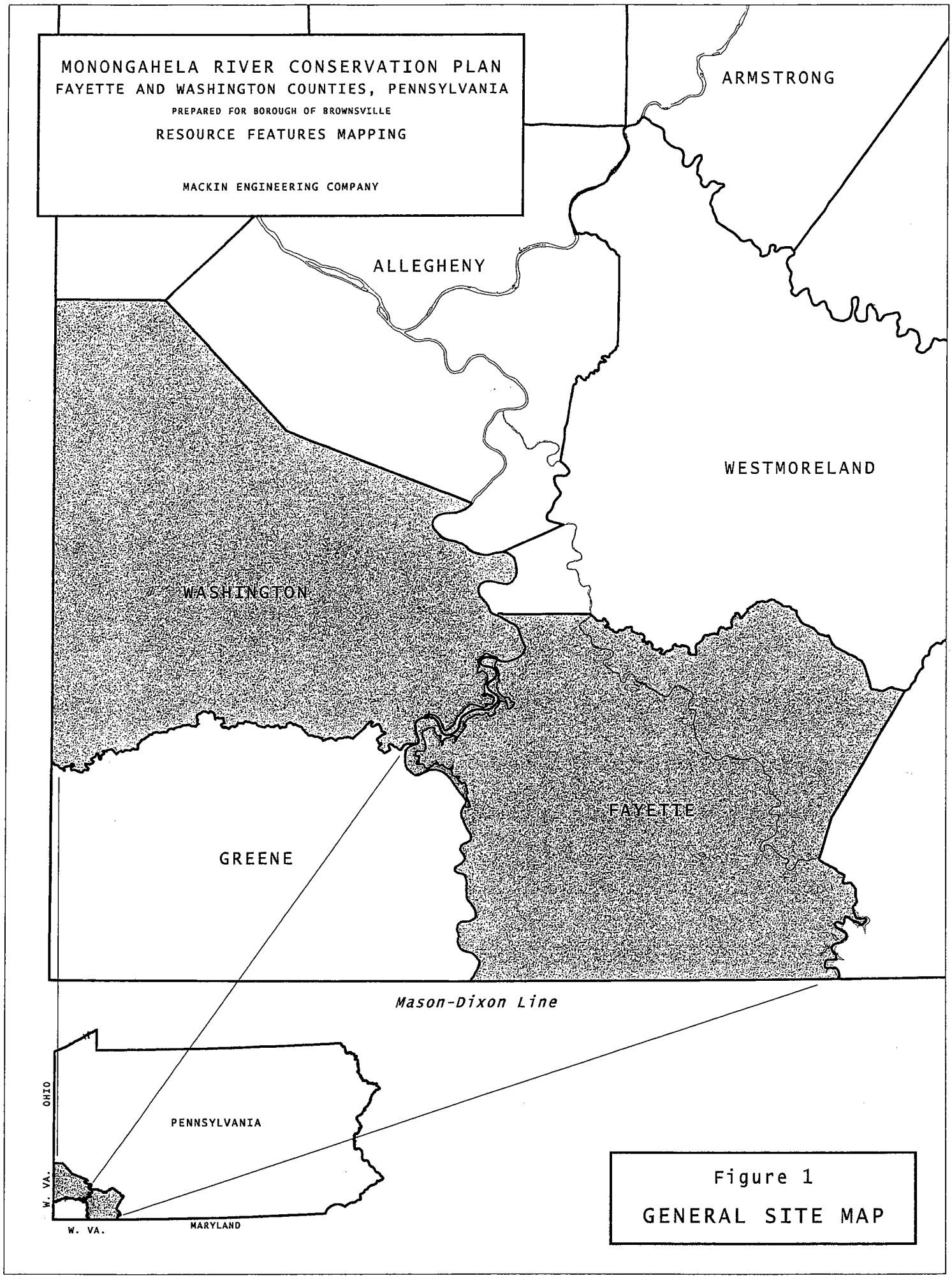
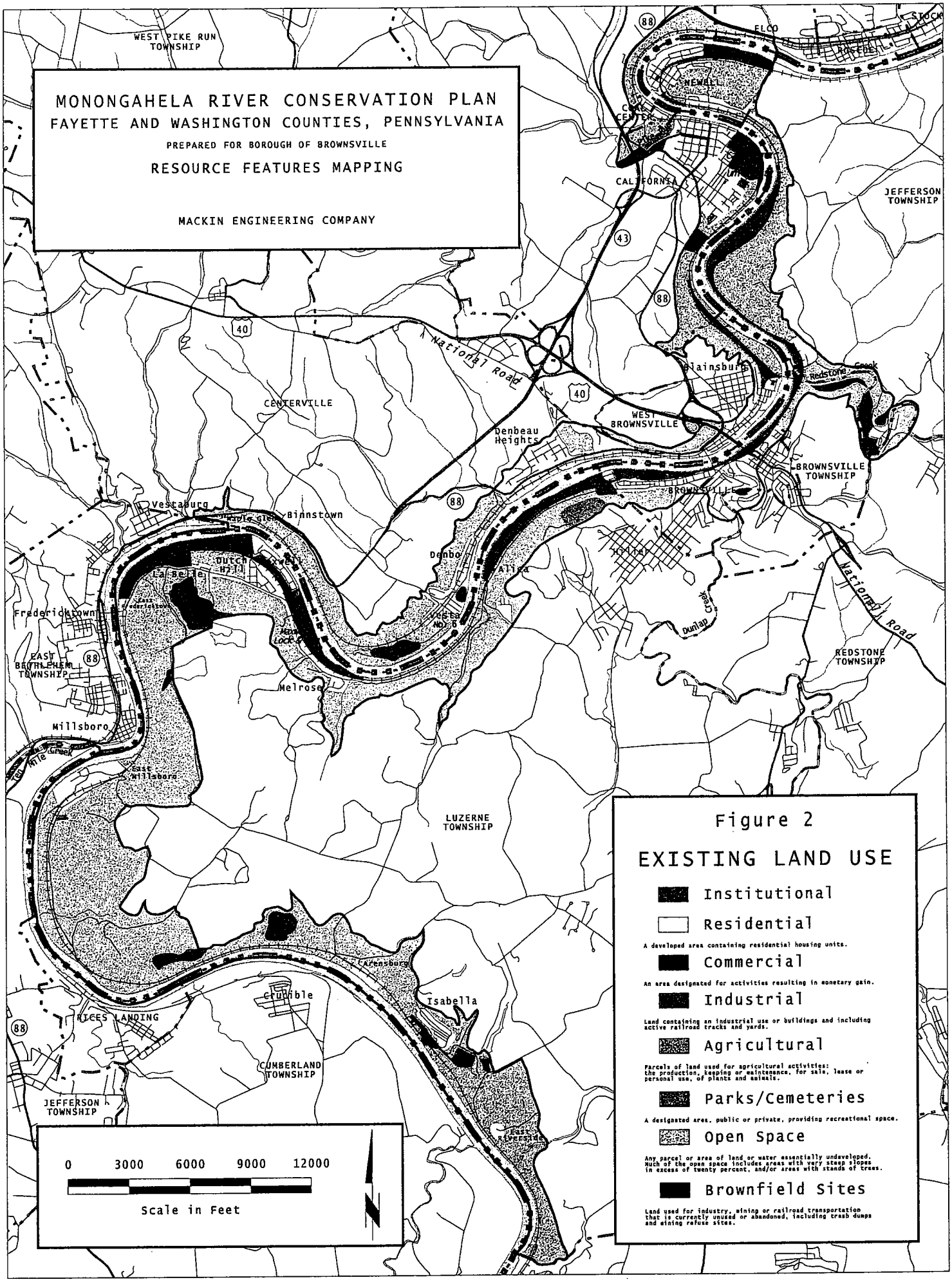
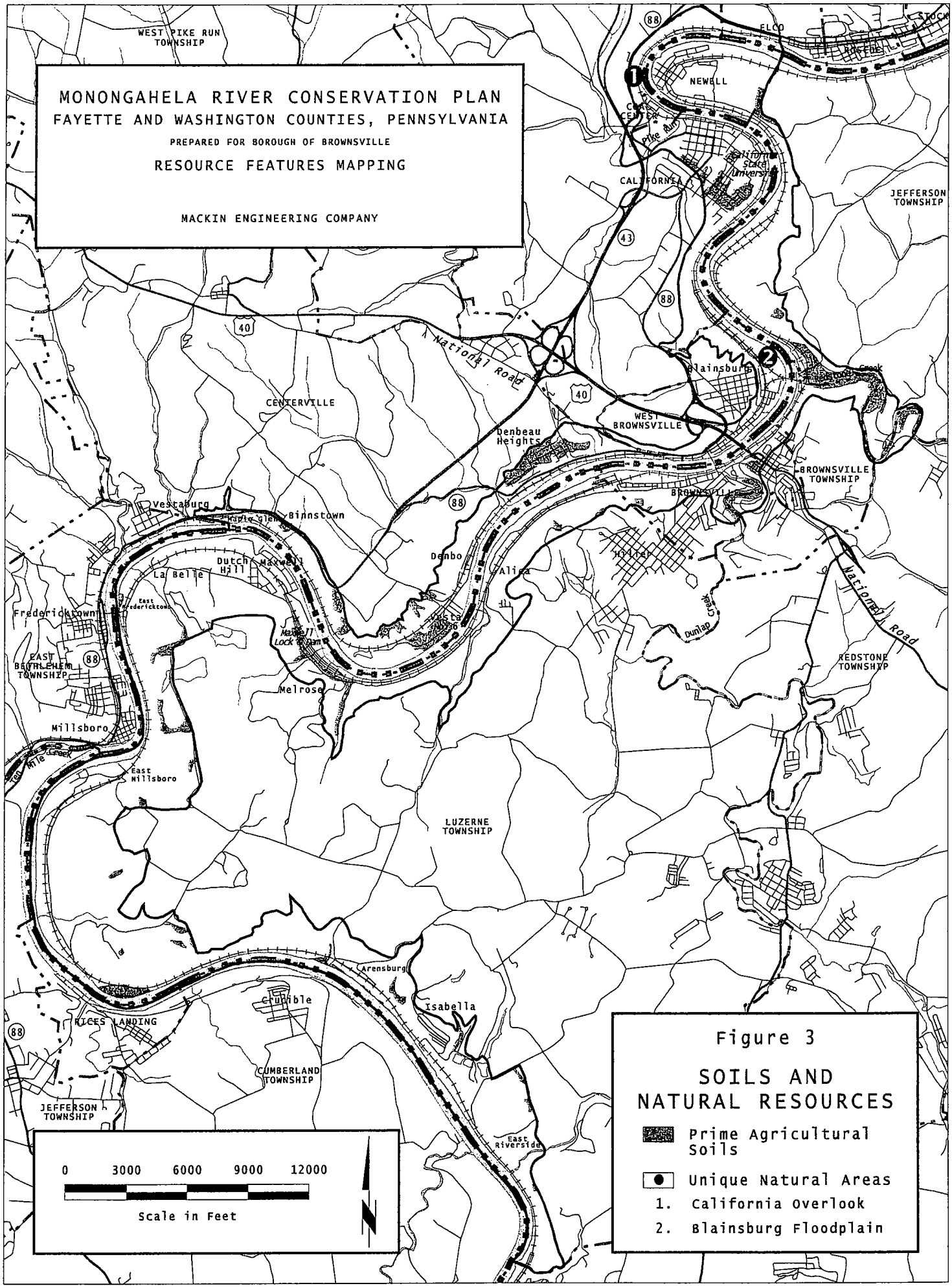



Figure 1
GENERAL SITE MAP


MONONGAHELA RIVER CONSERVATION PLAN
FAYETTE AND WASHINGTON COUNTIES, PENNSYLVANIA
PREPARED FOR BOROUGH OF BROWNSVILLE
RESOURCE FEATURES MAPPING
MACKIN ENGINEERING COMPANY
WEST PIKE RUN TOWNSHIP
ELCO
NEWELL
CALIFORNIA
JEFFERSON TOWNSHIP
National Road
Blainsburg
Redstone Creek
CENTERVILLE
Denbeau Heights
WEST BROWNSVILLE
BROWNSVILLE TOWNSHIP
BROWNSVILLE
Vestaburg
Binnstown
Dutch Hill
La Belle
Denbo
Alina
Joliet
Dunlap Creek
Frederickstown
East Bethlehem Township
Vesta No. 6
Lock 8
Melrose
REDSTONE TOWNSHIP
Millsboro
Pike Creek
East Millsboro
LUZERNE TOWNSHIP
Carensburg
Crucible
Isabella
RICES LANDING
CUMBERLAND TOWNSHIP
JEFFERSON TOWNSHIP
East Riverside
0 3000 6000 9000 12000
Scale in Feet
Figure 2
EXISTING LAND USE
Institutional
Residential
A developed area containing residential housing units.
Commercial
An area designated for activities resulting in monetary gain.
Industrial
Land containing an industrial use or buildings and including active railroad tracks and yards.
Agricultural
Parcels of land used for agricultural activities: the production, keeping or maintenance, for sale, lease or personal use, of plants and animals.
Parks/Cemeteries
A designated area, public or private, providing recreational space.
Open Space
Any parcel or area of land or water essentially undeveloped. Much of the open space includes areas with very steep slopes in excess of twenty percent, and/or areas with stands of trees.
Brownfield Sites
Land used for industry, mining or railroad transportation that is currently unused or abandoned, including trash dumps and mining refuse sites.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PREPARED FOR BOROUGH OF BROWNSVILLE
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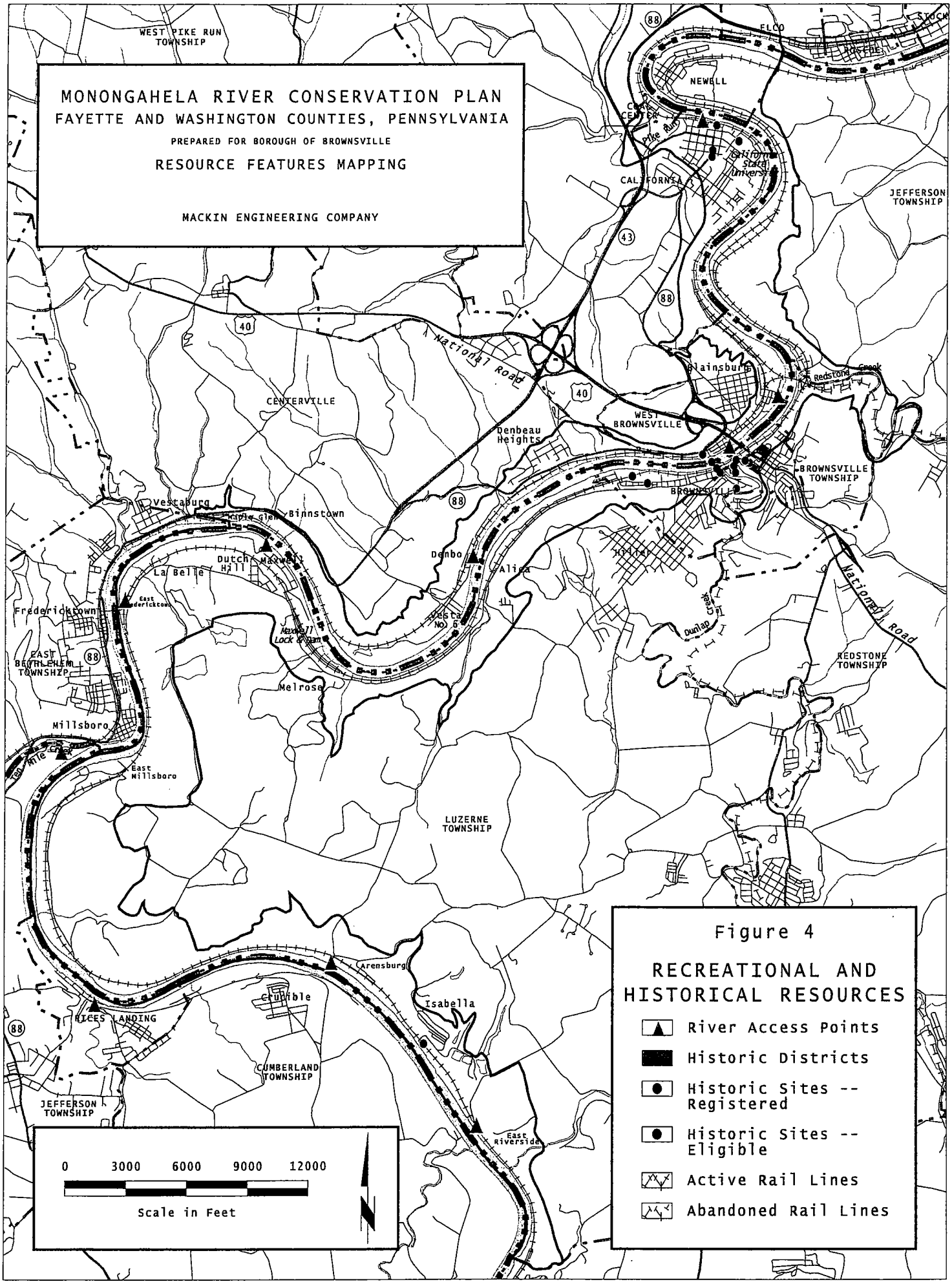
NEWELL
CALIFORNIA
JEFFERSON TOWNSHIP
National Road
CENTERVILLE
Blainsburg
WEST BROWNSVILLE
Denbeau Heights
BROWNSVILLE TOWNSHIP
Vestaburg
Maple Glen
Binnstown
Dutch Hill
Maxwell
La Belle
Denbo
Alica
Hotel
Fredericktown
East Fredericktown
Maxwell Lock & Dam
Dunlap Creek
EAST BETHLEHEM TOWNSHIP
Melrose
REDSTONE TOWNSHIP
Millsboro
East Millsboro
LUZERNE TOWNSHIP
Arensburg
Crucible
Isabella
RICES LANDING
CUMBERLAND TOWNSHIP
JEFFERSON TOWNSHIP
East Riverside
0 3000 6000 9000 12000
Scale in Feet
Figure 3
SOILS AND NATURAL RESOURCES
Prime Agricultural Soils
Unique Natural Areas
1. California Overlook
2. Blainsburg Floodplain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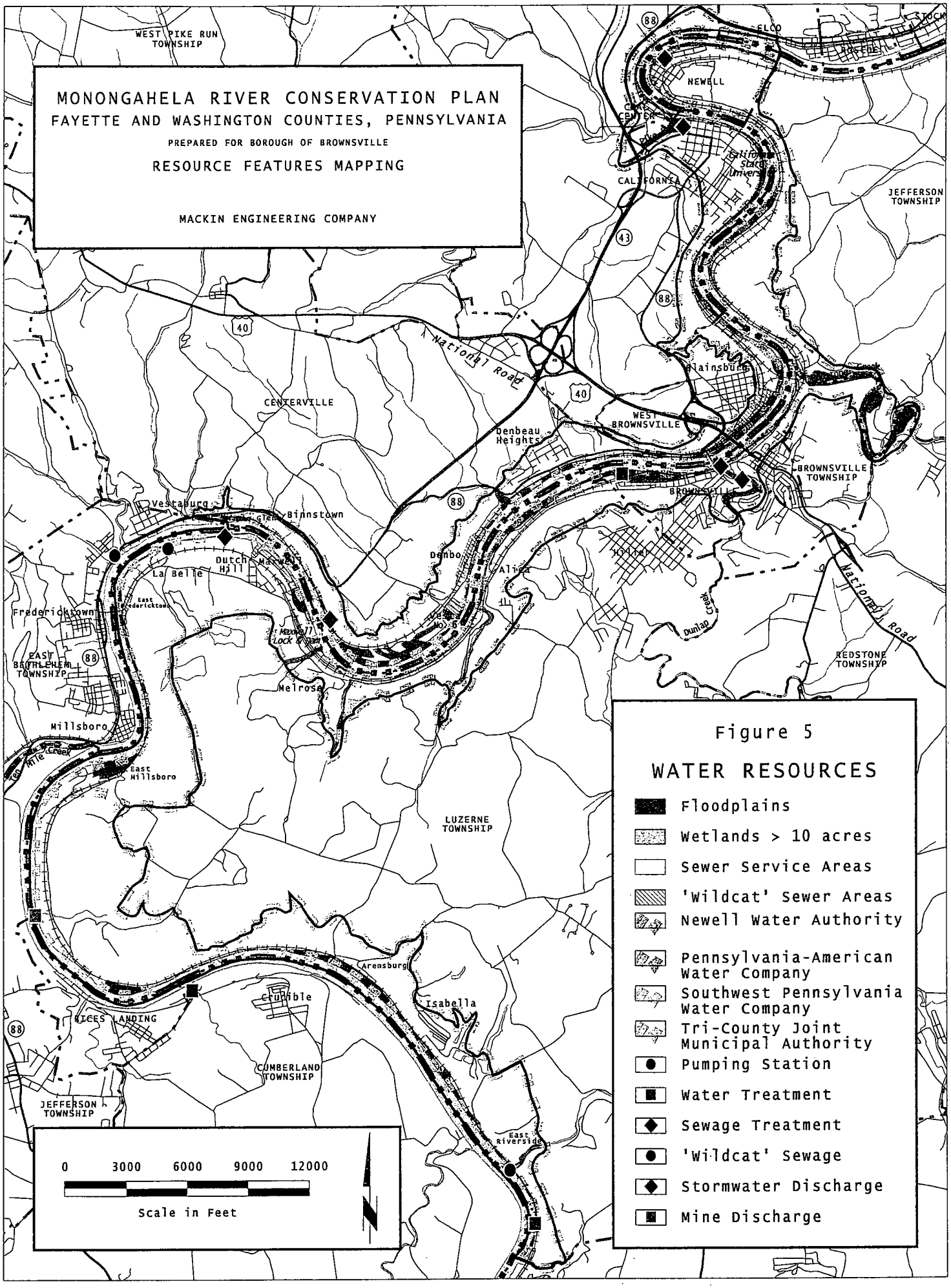
NEWELL
CALIFORNIA
JEFFERSON TOWNSHIP
National Road
CENTERVILLE
Denbeau Heights
WEST BROWNSVILLE
Blainsburg
Redstone Creek
BROWNSVILLE TOWNSHIP
BROWNSVILLE
Vestaburg
Binnstown
Maple Glen
Dutch Hill
Maxwell
La Belle
Denbo
Alica
Hatfield
Fredericktown
East Fredericktown
Vesta No. 6
Maxwell Lock & Dam
Dunlap Creek
REDSTONE TOWNSHIP
EAST BETHLEHEM TOWNSHIP
Melrose
Millsboro
Ten Mile Creek
East Millsboro
LUZERNE TOWNSHIP
Arensburg
Crucible
Isabella
RICES LANDING
CUMBERLAND TOWNSHIP
JEFFERSON TOWNSHIP
East Riverside
0 3000 6000 9000 12000
Scale in Feet
Figure 4
RECREATIONAL AND HISTORICAL RESOURCES
River Access Points
Historic Districts
Historic Sites -- Registered
Historic Sites -- Eligible
Active Rail Lines
Abandoned Rail Lines


MONONGAHELA RIVER CONSERVATION PLAN
FAYETTE AND WASHINGTON COUNTIES, PENNSYLVANIA
PREPARED FOR BOROUGH OF BROWNSVILLE
RESOURCE FEATURES MAPPING
MACKIN ENGINEERING COMPANY
WEST PIKE RUN TOWNSHIP
NEWELL
CALIFORNIA
JEFFERSON TOWNSHIP
National Road
CENTERVILLE
WEST BROWNSVILLE
Denbeau Heights
BROWNSVILLE TOWNSHIP
BROWNSVILLE
Vestaburg
Binnstown
Dutch Hill
La Belle
Denbo
Alida
Hotel
Dunlap Creek
REDSTONE TOWNSHIP
Fredericktown
EAST BETHLEHEM TOWNSHIP
Lock & Dam
Melrose
Millsboro
East Millsboro
LUZERNE TOWNSHIP
Arensburg
Crucible
Isabella
NICES LANDING
CUMBERLAND TOWNSHIP
JEFFERSON TOWNSHIP
East Riverside
0 3000 6000 9000 12000
Scale in Feet
Figure 5
WATER RESOURCES
Floodplains
Wetlands > 10 acres
Sewer Service Areas
'Wildcat' Sewer Areas
Newell Water Authority
Pennsylvania-American Water Company
Southwest Pennsylvania Water Company
Tri-County Joint Municipal Authority
Pumping Station
Water Treatment
Sewage Treatment
'Wildcat' Sewage
Stormwater Discharge
Mine Discharge

# APPENDIX C

# DCED AND DCNR FUNDING SOURCE DIRECTORIES

Pennsylvania Department
of Community and
Economic Development

# Funding Source Directory

Commonwealth of Pennsylvania
Tom Ridge, Governor

June 1997

# Funding Source Directory

The Funding Source Directory is designed to supplement the Department of Community and Economic Development's Single Application for Assistance. With the Single Application, you can apply for financial assistance from the Department's various funding sources. This new approach reduces duplicate paperwork, facilitates the coordination of Department resources and allows our customers and Department staff to devote resources to what is important -- creating jobs and building strong communities.

For applicants unfamiliar with the Department, this directory provides a brief description of the resource, who is eligible to apply, the eligible activities and any additional application requirements. The directory is organized by customer service needs. For example:

- a business needing financial assistance for a building --refer to the Business Assistance section;
- a community organization seeking funds for social services -- refer to the Community Assistance Section; and
- a township seeking assistance in purchasing an additional snow plow -- refer to the Municipal Assistance section.

Some types of DCED assistance must be accessed through an organization designated by the Legislature, such as a Local Development District, an authority or a Licensed Education Agency. The directory notes any limited access and the appropriate applicant. In those cases, the authorized applicant for the Single Application for Assistance would be the organization noted in the directory. The designated organization must submit the application to the Department on behalf of the business.

Applicants familiar with the Department's funding sources only need to follow the various program guidelines when preparing their project narratives for the Single Application for Assistance. Those guidelines are available upon request from the Department. Should you have any questions regarding the Single Application for Assistance, please contact our Customer Service Center at 800-379-7448.

Before preparing your application, please take the time to carefully review the instructions and various sections of the Single Application for Assistance, the respective guidelines and this Funding Source Directory.

# Department of Community and Economic Development

## Funding Source Directory

### Business Assistance

| Description | Eligible Entities | Eligible Activities | Additional Requirements |
|---|---|---|---|
| **Appalachian Regional Commission (ARC).** This program provides grant funding to support development of Appalachia's human and community infrastructure. The Appalachian Region within the Commonwealth consists of fifty-two counties served by seven Local Development Districts (LDD). | Small and medium sized businesses, as well as other economic development providers in Appalachian Regions. *Apply through a Local Development District (LDD).* | Skill and knowledge, physical infrastructure, community capacity building, dynamic local economies, health care. | |
| **Customized Job Training (CJT).** This program provides grant funds to businesses in need of training assistance for new hires, retraining efforts, and upgrading employees. It provides grants for up to 100% of eligible costs for new job creations; up to 70% of the costs for job retention and upgrade training. | Any business, professional service, or other enterprise (excluding point-of-sale retail businesses). *Apply through a Licensed Education Agency (LEA).* | Instructional costs, supplies, consumable materials, contracted services. | Refer to Program Guidelines. |
| **Enterprise Zone Tax Credits -** This program provides tax credits to businesses located in enterprise zones to encourage private investment and promote job growth and economic development in designated zones. | Businesses located in an Enterprise Zone. | Improvements to real property through new construction and or rehabilitation to existing buildings in a designated Enterprise Zone. | |

## Business Assistance

| Description | Eligible Entities | Eligible Activities | Additional Requirements |
|---|---|---|---|
| **Job Creation Tax Credits.** This program provides tax credits to businesses that will create new jobs in the Commonwealth within the next three years. | Businesses that exhibit leadership in the application, development or deployment of leading technologies in their primary business processes. | Creation of 25 new jobs or new jobs equaling at least 20% of the existing work force over the next three years. | Proposals must explain how the business exhibits leadership in application, development or deployment of leading technologies in its primary business processes. |
| **Machinery & Equipment Loan Fund (MELF).** This program provides low-interest loan financing to acquire and install new or used machinery and equipment or to upgrade existing machinery and equipment. | For-profit manufacturing, industrial, agricultural processor, and mining operation businesses. | Machinery or equipment acquisition, machinery or equipment upgrading, engineering and installation costs related to acquisition or upgrade. | Refer to Program Guidelines. |
| **Neighborhood Assistance Program (NAP).** This tax credit program is designed to encourage businesses to donate capital that can be used to provide eligible services to low-income persons or impoverished neighborhoods. Businesses can receive a 50% tax credit for their contribution amount which can offset their PA corporate tax liability. Projects meeting DCED priorities may qualify for a 70% tax credit. | Non-profit organizations and businesses. | A project must serve low-income persons or residents of economically distressed neighborhoods. Projects must fall under one of the following categories: community services, crime prevention, education, job training or neighborhood assistance. | Fund raising plan or pledge commitments. |

## Business Assistance

| Description | Eligible Entities | Eligible Activities | Additional Requirements |
|---|---|---|---|
| **Pennsylvania Industrial Development Authority (PIDA).** This program provides low-interest loan financing to businesses and industrial development corporations for the purpose of job creation or retention. | Manufacturing, industrial, warehouse and terminal, research and development, agricultural processors, or businesses establishing a national or regional headquarters or computer/clerical operation center. | Land and building acquisitions, building construction or renovation, multi-tenant spec building, industrial park development resulting in the creation or retention of jobs. | Consult with your local IDC or refer to the Program Guidelines. |
| **Pennsylvania Minority Business Development Authority (PMBDA).** This program provides low-interest loan financing for businesses owned and operated by minorities. For retail or commercial businesses, 25% private sector match is required. | Minority-owned businesses, including: manufacturing, industrial, high-technology, international trade, franchise, retail, commercial. | Land and building acquisition, building construction and renovation, machinery and equipment acquisition and installation, and working capital. | |

## Community Assistance

| Description | Eligible Entities | Eligible Activities | Additional Requirements |
|---|---|---|---|
| **Appalachian Regional Commission (ARC).** This program provides **grant funding** to support development of Appalachia's human and community infrastructure. The Appalachian Region within the Commonwealth consists of fifty-two counties served by seven Local Development Districts (LDD). | Small and medium sized businesses, as well as other economic development providers in Appalachian Regions. ***Apply through a Local Development District.*** | Skill and knowledge, physical infrastructure, community capacity building, dynamic local economies, health care. | |
| **Community Revitalization.** This program provides grant funds to support local initiatives to promote the stability of communities. The program also assists communities in achieving and maintaining social and economic diversity to ensure a productive tax base and a good quality of life. | Local governments, municipal and redevelopment authorities and agencies, industrial development agencies, non-profit corporations incorporated under the laws of the Commonwealth. | Construction or rehabilitation of infrastructure, building rehabilitation, acquisition and demolition of structures, revitalization or construction of community facilities, purchase or upgrade of machinery and equipment, planning of community assets, public safety, crime prevention, recreation, training, acquisition of land, buildings and right of ways. | |
| **Community Service Block Grant (CSBG).** Federal funds and discretionary grants to decrease the instances of poverty in communities are provided through this program. This is achieved through economic and empowerment opportunities which work to promote self-sufficiency. | Designated Community Action Agencies serving individuals whose income is at 125% of the federal poverty level. | Case management, job training, food and nutrition, transportation, education, housing, drug and alcohol, and economic development. | Breakdown of applicant's Board of Directors by: public officials, private sector and low-income.<br><br>Also, a total agency budget. |

## Municipal Assistance

| Description | Eligible Entities | Eligible Activities | Additional Requirements |
|---|---|---|---|
| **Community Revitalization.** This program provides grant funds to support local initiatives designed to promote the stability of communities and to assist communities in achieving and maintaining social and economic diversity, ensuring a productive tax base and a good quality of life. | Local government, municipal and redevelopment authorities and agencies, industrial development agencies, non-profit corporations incorporated under the laws of the Commonwealth. | Construction or rehabilitation of infrastructure, building rehabilitation, acquisition and demolition of structures, revitalization or construction of community facilities, purchase or upgrade of machinery and equipment, planning of community assets, public safety, crime prevention, recreation, training, acquisition of land, buildings and right of ways. | |
| **Emergency Shelter Grants.** This program provides grants to local governments and non-profit organizations to create or rehabilitate shelter space for the homeless. | Local governments are eligible to apply and may do so on behalf of private, non-profit organizations. | The creation or rehabilitation of shelter space for the homeless, the purchase of machinery, equipment, furniture and appliances for homeless shelters, the provision of new social services, or the development or upgrade of shelter space. | Consult Program Guidelines. |

## Municipal Assistance

| Description | Eligible Entities | Eligible Activities | Additional Requirements |
|---|---|---|---|
| **Section 108 Loan Guarantees.** This program provides loan guarantees as security for federal loans. | Local governments which are not designated by HUD as urban counties or entitlement municipalities. | Housing rehabilitation, public services, community facilities, infrastructure improvement, development and planning. 70% of each grant must be used for activities that benefit low- and moderate-income persons. | Refer to Program Guidelines. |
| **Shared Municipal Services.** This program provides grant funds to promote cooperation among municipalities. The program also encourages more efficient and effective delivery of municipal services on a cooperative basis. | Two or more local governments or Councils of Government (COGs). | Combined police records administration, shared personnel activities, joint ownership of equipment, shared data processing operations, joint sign making, COG start-up funding. | |

## Municipal Assistance

| Description | Eligible Entities | Eligible Activities | Additional Requirements |
|---|---|---|---|
| **Appalachian Regional Commission (ARC).** This program provides grant funding to support development of Appalachia's human and community infrastructure. The Appalachian Region within the Commonwealth consists of fifty-two counties served by seven Local Development Districts (LDD). | Small and medium sized businesses as well as other economic development providers in Appalachian Regions. *Apply through an LDD.* | Skill and knowledge, physical infrastructure, community capacity building, dynamic local economies, health care. | |
| **Communities of Opportunity.** This program provides state funded grants for community revitalization and economic development activities to occur on a local level. Specifically, this program assists communities in becoming competitive for business retention, expansion and attraction. It also funds projects that assist with community revitalization in the area of housing and low-income housing. | Local governments, redevelopment authorities, housing authorities. | Community revitalization and economic development and/or the development or rehabilitation of housing. | Consult Program Guidelines. |
| **Community Development Block Grant (CDBG).** This program provides grant assistance and technical assistance to aid communities in their community and economic development efforts. | Local governments which are not designated by HUD as urban counties or entitlement municipalities. | Housing rehabilitation, public services, community facilities, infrastructure improvement, development and planning. 70% of each grant must be used for activities that benefit low- and moderate-income persons. | Consult Program Guidelines. |

# DCNR

*Pennsylvania Department of*
*Conservation and Natural Resources*

*For Information Contact:*
*Department of Natural Resources*
*Bureau of Recreation and Conservation*
*Rachel Carson State Office Building*
*400 Market Street*
*P.O. Box 8475*
*Harrisburg, PA 17105-8475*
*Phone: (717) 783-2656*
*Internet: www.dcnr.state.pa.us*

*SW PA Regional Office*
*PA DCNR 413 State Office Building*
*300 Liberty Avenue*
*Pittsburgh PA 15222*
*Phone (717) 565-7803*

**Recreation**

Note: DCRN grants are eligible to municipal authorities and councils of governments. Applicants limited to a maximum of 4 grant applications per funding cycle. This is a reimbursement program. The recipient will be required to provide the necessary interim financing to complete the funding. All grants require a minimum 50% match except for circuit rider, peer-to-peer, and small communities/small projects grants. Final payments will be made only after successful completion of the project and payment of all project costs by the applicant.

| Program Name | Amount | Description | Eligibility | Contact |
|---|---|---|---|---|
| Community Grant Program | $20,000 max and will provide up to 100% funding of material costs and professional design | Acquisition: For the purchase of land for park, recreation, and conservation.<br>Park Rehab & Dvlpmt: for rehab of existing parks, indoor/outdoor facilities, and devlpmt of new recreation areas.<br>Small Communities/Small projects: For municipalities of 5,00 or less. | Grants for the rehab and development of basic park and recreation facilities. | Dept. of Conservation and Natural Resources: DCNR *Regional Office* |
| Rails-to-Trails Grant Program: | Acquisition Rehab & / Developmt | Grants for the rehabilitation and development of abandoned right-of-ways and support facilities for public recreational trails. | | Dept. of Conservation and Natural Resources: DCNR |
| Rails-to-Trails Grant Program: | Feasibility Studies Master Plans Special Purpose Studies | Grants to 1)determine the feasibility of converting land; 2) develop a design of the proposed development; 3) createa detailed study of conversion impact. | Site control or is required in 2 and 3. | Dept. of Conservation and Natural Resources: DCNR *Regional Office* |
| Rivers Conservation Grant Program: | | Acquisition: Grants for the purchase of land for rivers conservation purposes.<br>Development: Grants for development of river conservation projects. | | Department of Conservation and Natural Resources (DCNR) *Regional Office* |
| Circuit Riders Program: | 3 year grant - 100% year 1, 75% year 2, and 50% year3. | To hire a full-time recreation and /or park director to share services through an intergovernmental cooperation effort by 2 or more municipalities. | | Dept. of Conservation and Natural Resources: DCNR *Regional Office* |
| Comprehensive Recreation, Park and Open Space Plans | | Grants to develop a comprehensive long range planning document that provides strategies for recreation needs. | | Dept. of Conservation and Natural Resources: DCNR *Regional Office* |
| | | | | |

| Program Name | Amount | Description | Eligibility | Contact |
|---|---|---|---|---|
| Feasibility Studies (Swimming Pool/Recreation Facilities). | | Grants to determine feasibility of acquiring, developing or rehab-ing pools, ice rinks, sports complexes, recreation centers, etc. | DCNR usually requires completion of these studies before a municipality is funded. | Dept. of Conservation and Natural Resources: DCNR *Regional Office* |
| Greenways | | Grants to explore establishing, dvlping, and managing linear corridors of open space along streams, shorelines, wetlands, canals, ridge tops, etc. | To be developed for recreational trails, bikeways, park connectors and env protection | Dept. of Conservation and Natural Resources: DCNR *Regional Office* Deadline: |
| Master Site Plans | | Grants to design the proposed development of a neighborhood, or regional park. | Site control (either through ownership of lease is required). | Dept. of Conservation and Natural Resources: DCNR *Regional Office* |
| County Natural Areas Inventory | | Grants to inventory important natural areas: special species, plants etc., or important open space areas, recreation and wildlife habitats. | Inventories done on a county or multi-county area. | Dept. of Conservation and Natural Resources: DCNR *Regional Office* |
| Peer-to- Peer: | up to 90% of eligible costs | Grants to study costs to study problem-specific issues dealing with the administration of park and recreational facilities. | These are short term projects conducted primarily by experienced park professional. | Dept. of Conservation and Natural Resources: DCNR *Regional Office* |

# APPENDIX D

# AGENCY CONTACTS

# MONONGAHELA RIVER CONSERVATION PLAN
# AT BROWNSVILLE

- Army Corps of Engineers - Pittsburgh Division; Maxwell Lock & Dam
- Brownsville Borough
- Brownsville Area Revitalization Corporation
- Brownsville Borough sewage treatment plant
- California Borough
- California Area Historical Society
- California Borough sewage treatment plant
- California University of Pennsylvania
- Centerville Borough
- Centerville Sanitary Authority
- Coal Center Borough
- Fayette County Conservation District
- Fayette County Planning Commission
- Local historical societies
- Local newspapers
- Luzerne Township
- Manor Investments. LTD.
- Mid Atlantic Highlands Coordinating Council
- National Road Heritage Park
- National Water Quality Assessment Program (NAWQUA)
- Newell Borough
- Newell Municipal Authority
- Newell sewage treatment plant
- Pennsylvania American Water Company
- Pennsylvania Bass Federation
- Pennsylvania Department of Environmental Protection Bureau of Abandoned Mines

- Pennsylvania Department of Environmental Protection (PA DEP); Storet; Water quality information; Title 25. Chapter 93. Water Quality Standards, 1994 Water Quality Assessment Report
- Pennsylvania Department of Transportation District 12 office
- Pennsylvania Fish and Boat Commission; Threatened and Endangered Species; Approved Trout Waters
- Pennsylvania Game Commission - Threatened and Endangered Species; Breeding Bird Atlas
- Pennsylvania Historical and Museum Commission
- Pennsylvania Natural Diversity Index
- Pheasants Forever
- Port of Pittsburgh Commission
- Southwest Pennsylvania Water Authority
- Southwestern Pennsylvania Regional Planning Commission
- Steel Industry Heritage Corporation
- Tri-County Water Authority
- United States Census Bureau
- United States Department of Agriculture - Natural Resources Conservation Service
- United States Department of Agriculture-Soil Conservation Service
- United States Geological Survey (USGS) - Water Resources Division
- Washington County Conservation District
- Washington County Landmarks Association
- Washington County Planning Commission
- West Brownsville Borough
- Western Pennsylvania Conservancy - Natural Heritage Inventory
- Two (2) boat tours; 1 tow boat tour and 1 PA Fish and Boat Commission tour