Acknowledgements

The Pennsylvania Environmental Council would like to gratefully acknowledge the individuals and organizations who have provided valuable assistance in the development of the Three Rivers Conservation Plan:

Joann Albert – Pittsburgh Voyager
Allegheny County Planning Department
Meg Balsamico – Penn Hills Township
Joan Blaustein – Three Rivers Wet Weather Demonstration Project
Tim Collins – 3 Rivers 2nd Nature
Christine Davis – Christine Davis Consultants
Hannah Ehrlich – City of Pittsburgh
Stephen Farber – University of Pittsburgh
Dave Fawcett – Allegheny County Council
Clark Fisher – Environmental Information Services/Westsylvania Heritage Corporation
J.D. Fogarty – Port of Pittsburgh
Kathy Frankel – Pennsylvania Department of Conservation and Natural Resources
Sarah Miller – Riverlife Task Force
Rob McCombie – Environmental Information Services/Westsylvania Heritage Corporation
Beth O'Toole – Pittsburgh Voyager
Pennsylvania Department of Environmental Protection – Pittsburgh Office
Pennsylvania Department of Environmental Protection, Bureau of Abandoned Mine Reclamation – Cambria, PA
Pennsylvania Fish & Boat Commission
Pittsburgh Voyager
Kelly Rabenstein – Riverlife Task Force
Mary Ellen Ramage – Borough of Etna
Peter Ramage – Borough of Etna
Riverlife Task Force
Tracy Robinson – Pennsylvania Department of Conservation and Natural Resources
Tim Rogers – Shaler Township
John Schombert – Three Rivers Wet Weather Demonstration Project
Lisa Schroeder – Riverlife Task Force
Dan Sentz – City of Pittsburgh, Planning Department
Dan Smaroff – Maguire Group
Southwestern Pennsylvania Commission
John Stephen – Friends of the Riverfront
Dennis Tubbs – Pennsylvania Fish and Boat Commission
US Coast Guard – Pittsburgh Marine Safety Office
Ed Warchol – Borough of Aspinwall
Western Pennsylvania Conservancy

This project was financed in part by a grant from the Keystone Recreation, Park and Conservation Fund under the administration of the Department of Conservation and Natural Resources, Bureau of Recreation and Conservation. Matching funds were provided by the Vira I. Heinz Endowment, Richard King Mellon Foundation, and an Anonymous donor.

ACRONYMS

3R2N – Three Rivers Second Nature
ALCOSAN – Allegheny County Sanitary Authority
AMD – Abandoned Mine Drainage
BDA – Biological Diversity Area
BMP – Best Management Practice
CD – Conservation District
CEP – Central Emsworth Pool
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
CSO – Combined Sewer Overflow
CWA – Clean Water Act
DCED – Pennsylvania Department of Community and Economic Development
DCNR – Pennsylvania Department of Conservation and Natural Resources
DEP – Pennsylvania Department of Environmental Protection
EAC – Environmental Advisory Council
EFACTS – Environmental, Facility, Application, Compliance Tracking System
EIS – Environmental Impact Statement
EMPACT – Environmental Monitoring for Public Access and Community Tracking
EPA – U.S. Environmental Protection Agency
FEMA – Federal Emergency Management Agency
GIS – Geographic Information System
HOV – High Occupancy Vehicle
L&D – Lock and Dam
LEED – Leadership in Energy and Environmental Design
MAGLEV – Magnetic Levitation
Mon. – Monongahela River
MS4s – Municipal Separate Storm Sewer System
NPDES – National Pollutant Discharge Elimination System
NPL – National Priority List
NPS – Non-point source
OHA – Other Heritage Area
ORSANCO – Ohio River Valley Sanitation Commission
PennDOT – Pennsylvania Department of Transportation
PABS – Pennsylvania Biological Survey
PAT – Port Authority Transit
PEC – Pennsylvania Environmental Council
PFBC – Pennsylvania Fish and Boat Commission
PGC – Pennsylvania Game Commission
PGH - Pittsburgh
PH&LF – Pittsburgh History and Landmarks Foundation
PHMC – Pennsylvania Historic and Museum Commission
PNDI – Pennsylvania Natural Diversity Inventory
Point – Confluence of Allegheny and Monongahela Rivers at Point State Park
PRC – Pennsylvania Resources Council
QCP – Quality Community Project
RCRA – Resource Conservation and Recovery Act
SEA – Sports and Exhibition Authority
SPC – Southwestern Pennsylvania Commission
SR – State Route

SWAP – Source Water Assessment and Protection
TEA-3 – Transportation Enhancement Act, 3rd Reauthorization
TMDL – Total Maximum Daily Load
USACE – U.S. Army Corps of Engineers
USCG – U.S. Coast Guard
USFWS – U.S. Fish and Wildlife Service
USGS – U.S. Geologic Survey
WPC – Western Pennsylvania Conservancy

Railroads — while an important form of commercial transportation, they block access to the rivers

The Three Rivers

Chapter One

Project Area Characteristics

Mass Transportation — light rail

Emsworth Lock and Dam

Major Riverside Development — PNC Park and the North Shore Water Steps

A. Location and Size

The Three Rivers Conservation Plan encompasses 29-miles of river corridor along the Allegheny, Monongahela, and Ohio Rivers in the City of Pittsburgh and surrounding communities. The study area is a pivotal location as it contains the confluence of the Allegheny and Monongahela Rivers, which forms the Ohio River – the largest contributor, by volume, of the Mississippi River. In fact, the watersheds of the Three Rivers form the headwaters of the Mississippi River. The Allegheny River is 325 miles in length, draining a watershed of 11,770 square miles. The Monongahela River is much smaller at 127 miles in length and a 7,375 square mile watershed. The Ohio River is 981 miles from Pittsburgh, Pennsylvania to Cairo, Illinois, and its entire watershed is 204,000 square miles.

The study area focuses on 29 miles of river within a corridor of approximately one mile on either side, translating to nearly 60 miles of riverfront. Municipalities within the Plan include: the City of Pittsburgh, Baldwin Borough, Reserve Township, Millvale Borough, Shaler Township, Etna Borough, Sharpsburg Borough, Aspinwall Borough, Fox Chapel Borough, O'Hara Township, Blawnox Borough, Harmar Township, Plum Borough, Oakmont Borough, Verona Borough, Penn Hills Township, Kennedy Township, McKees Rocks Borough, Stowe Township, Kilbuck Township, Bellevue Borough, Avalon Borough, Ben Avon Borough, Ben Avon Heights, Ross Township, and Neville Township. The entire study area is within Allegheny County.
See Map 1.

The corridor stretches on the Ohio River from the Emsworth Lock and Dam at river mile 6.2 to the Point at Pittsburgh (river mile 0.0); on the Allegheny River from the Point to Lock and Dam #3 at river mile 14.5; and on the Monongahela River from the Point to the Glenwood Bridge at river mile 6.0. The 1998 Rivers of Steel Monongahela River Conservation Plan covers the Monongahela River between the Glenwood Bridge and the Pennsylvania – West Virginia state line.

B. Municipal Profiles

1. Locations and Descriptions

Because this plan includes more than two dozen municipalities, a general description of each follows. To add to the location descriptions given to each municipality by the County, field notes were taken during site surveys of the riverfronts along the corridor. These general observations reflect the current status of the riverfronts and help develop action plans for municipalities.

Table 1-1
Locations and Descriptions of Riverfront Municipalities

Municipality	Location*	Field Notes**
Aspinwall Borough	10 mi. NE of Pgh; 0.50 sq. mi.; flat; few wooded areas; floodplains	The riverfront is mainly bordered by railroads, a small business district, and Aspinwall Marina.
Avalon Borough	6 miles N of Pgh; 0.60 sq. mi.; hilly; floodplains to Ohio River	Steep bluffs overlook the river, and there is no road access to the riverfront or public access to the bluffs. Rail lines run along the river.
Baldwin Borough	7 mi. S of Pgh; 5.44 sq. mi.; some hills and woods; floodplains on Mon River and Streets Run	The small riverfront portion along the Mon consists of the wooded slope area with Rt. 837 and railroads.
Bellevue Borough	8 m. NNW of Pgh; 0.98 sq. mi.; hilly and steep down to Ohio River; floodplains on Ohio River	Steep bluffs overlook the river, and there is no road access to the riverfront or public access to the bluffs. Rail lines run along the river.
Ben Avon Borough	7 mi. NNW of Pgh; 1 sq. mi.; flat; steep cliff to Ohio River; floodplain on Ohio River and Lowries Run	Steep bluffs overlook the river, and there is no road access to the riverfront or public access to the bluffs. Rail lines run along the river.
Ben Avon Heights Borough	8 mi. NNW of Pgh; 0.18 sq. mi.; relatively flat and wooded; no floodplains	This community has no riverfront property.
Blawnox Borough	12 mi. NE of Pgh; 0.39 sq. mi.; relatively flat with some hills; no floodplains	Riverfront property consists of homes and old industry, an emergency boat ramp to the Allegheny, and a new townhouse complex – The Cove at St. Charles.
Etna Borough	5 mi. NE of Pgh; 0.81 sq. mi.; relatively flat; few wooded areas; floodplains	The riverfront is crowded with industry and railroads.
Fox Chapel Borough	12 mi. NE of Pgh; 8.5 sq. mi.; small hills and wooded floodplains on Allegheny River and Squaw Run	The riverfront consists of homes, small businesses, and an industrial park.
Harmar Township	13 mi. NE of Pgh; 5.86 sq. mi.; very hilly and wooded; floodplains on Allegheny River, Deer Creek, and Guys Run Creek	The riverfront is lined with private homes, two private marinas, one public boat ramp, some light industry, and railroads.
Kennedy Township	8 mi. NW of Pgh; 5.29 sq. mi.; relatively flat; some woods; floodplains on Ohio River and Chartiers Creek	This community does have riverfront property, however, none is included in the project area defined by this plan.
Kilbuck Township	8 mi. NW of Pgh; 2.54 sq. mi.; hills and woods; floodplains on Ohio River, Tom Run, Lowries Run, and Camp Horne Rd.	This community does have riverfront property, however, none is included in the project area defined by this plan.
McKees Rocks Borough	3 mi. NW of Pgh; 1.02 sq. mi.; flat; floodplains on Ohio River and Chartiers Creek	Industry occurs along part of the riverfront, and there is a commercial marina along an easily accessible area of riverfront.
Millvale Borough	4 mi. NE of Pgh; 0.68 sq. mi.; few wooded areas; floodplain on Allegheny River	The predominant riverfront use is Riverfront Park, where railroads used to pass through, and includes an extension of the Three Rivers Heritage Trail, benches,

		gazebo, pavilion, and marina.
Neville Township	8 mi. NW of Pgh; 1.62 sq. mi.; on an island in the Ohio River; flat; floodplain on Ohio River	The section of Neville Island within this study area is the most heavily used industrial area in the corridor. No public road access is available to the river at the upstream end of the island. Along the back channel of the river, the island is less industrial, though there are railroad tracks along its length.
Oakmont Borough	14 NE of Pgh; 1.57 sq. mi.; small hills; wooded; floodplains on the Allegheny River and Plum Creek	Riverfront consists of private homes, park, school, industry, a business district, and railroads.
O'Hara Township	10 mi. NE of Pgh; 7.01 sq. mi.; hilly; wooded; floodplains on Little Pine Creek and Allegheny River	The riverfront property consists of railroads, a private yacht club, houses, and a new townhouse complex – The Cove at St. Charles.
Penn Hills	9 mi. E of Pgh; 19.08 sq. mi.; hilly; floodplains on five streams and the Allegheny River	Sitting on the south shore of the Allegheny opposite Blawnox, Allegheny River Blvd. is bordered by slopes rising from the river. There are some historic turnarounds on the Boulevard. The slope below the road consists of railroads.
City of Pittsburgh	55 sq. mi. Just west and east of Highland Park, Rt. 8 is bordered by slopes from the river to the hilltops. Below the road there are several houses on the slope to the river, as well as railroads. Farther upstream on the Allegheny, the shores become more natural and are lined with small wooded areas, industry, and railroads. The south shore of the Monongahela downtown consists of houses, industry, Station Square, boat launches, riverfront park, and railroads. Along Carson St., the area to the river is wooded and has railroads. Above the street are steep wooded hills. Some of the shoreline on both shores is natural, with a few hard edges left from old industries. The southside works, a brownfields redevelopment, contains housing, office complexes, and athletic fields, as well as trail that extends from downtown. There are several fishing areas along these shorelines. At the confluence, the shorelines have hard edges bordered by parks and trails. There are fishing areas and many mooring spaces for boaters.	
Plum Borough	15 mi. E of Pgh; 28.88 sq. mi.; small hills and very wooded; floodplains on Allegheny River and four streams	Steep forested slopes leading to river.
Reserve Township	4 mi. N of Pgh; 1.98 sq. mi.; hilly and very wooded; floodplains – Spring Garden, Hoffman, Walters, and Otto Roads	There is no riverfront property in this community.
Ross Township	7 mi. N of Pgh; 14.5 sq.mi.; wooded; floodplains on four streams	There is no riverfront property in this community.
Shaler Township	9 mi. N of Pgh; 10.74 sq. mi.; hilly and wooded; floodplains on Allegheny River and two streams	Steep slopes and railroad tracks border the river.
Sharpsburg Borough	6 mi NE of Pgh; 0.75 sq. mi.; relatively flat with no woods; floodplains	The riverfront is mainly industrial, with the Silkies Marina. The short riverfront area abruptly stops at the bluff above Rt. 28.
Stowe Township	6 mi NW of Pgh; 1.98 sq. mi.; hilly; floodplains on Ohio River	Heavy industry occurs along the river and there is no public road access. Along the back channel of the Allegheny River, there are steep, wooded slopes.

Verona Borough	12 mi. NE of Pgh; 0.53 sq. mi.; hilly and wooded areas; floodplains on the Allegheny River and Plum Creek	Numerous private marinas along waterfront. Park along river allows access via a stairwell, a suitable fishing location.

Source: *Allegheny County Economic Development
** Field notes taken in 2002 by Pennsylvania Environmental Council staff

2. Population

The population in southwestern Pennsylvania (nine-county region) peaked in 1960 at about 2,800,000. Today, it is the same as it was in 1940 – about 2,500,000. Within Allegheny County, nearly 74 percent of the municipalities – mostly near the urban core – lost population between 1990 and 2000.[1] As Table 1-2 shows, only three municipalities in the project area have seen any increase in population since 1970; however, six have seen minor increases between 1990 and 2000. See Map 2.

While the population has decreased, the amount of land used for development has increased – a pattern of development called urban sprawl.[2] The environmental and economic costs of this shift are great: open space is lost; habitat is lost or degraded; stormwater runoff increases due to increased paved and impervious surfaces, thus increasing the contribution of non-point sources of pollution (see Chapter 3-B-1 for definition) to local waterways; incidence of flooding increases because new homes are often built in the floodplains of streams and rivers or upland in the watershed; and air pollution increases from more commuter traffic.

At the same time as urban sprawl increases, there is a growing national and regional focus on developing strong, sustainable communities. The emphasis is on multi-stakeholder processes that provide for a good economy while protecting the environment and considering issues of social equity.[3] Many of the communities in the project area that have lost population are working toward growth and revitalization.[4]

[1] Puentes, Rob and Myron Orfield. 2002. Valuing America's First Suburbs: A Policy Agenda for Older Suburbs in the Midwest. The Brookings Institution Center on Urban and Metropolitan Policy. www.brookings.edu.
[2] Fulton, William et al. 2001. Who Sprawls the Most? The Brookings Institution Center on Urban and Metropolitan Policy. www.brookings.edu
[3] Report of the Pennsylvania 21st Century Environment Commission. September 1998.
[4] DeAngelis Smart Growth Presentation for the Smart Growth Conference, 2001.

Table 1-2
Change in Municipal Populations since 1970

Municipality	1970 Pop'n	1980	1990	2000	Change (%) from 1970-2000
Aspinwall	3,541	3,284	2,880	2,960	-16.4
Avalon	7,065	6,239	5,784	5,294	-25.1
Baldwin	26,729	24,598	21,923	20,000	-25.2
Bellevue	11,586	10,128	9,126	8,770	-24.3
Ben Avon	2,713	2,316	2,096	1,917	-29.3
Ben Avon Heights	443	397	373	392	-11.5
Blawnox	1,907	1,653	1,626	1,550	-18.7
Etna	5,819	4,534	4,200	3,924	-32.6
Fox Chapel	4,684	5,049	5,319	5,436	+16.1
Harmar	3,899	3,461	3,144	3,242	-16.9
Kennedy	6,858	7,159	7,265	7,504	+9.4
Kilbuck	1,720	1,219	890	723	-58.0
McKees Rocks	11,901	8,742	7,691	6,622	-44.4
Millvale	5,815	4,772	4,341	4,028	-30.7
Neville	2,017	1,416	1,273	1,232	-38.9
Oakmont	7,550	7,039	6,961	6,911	-8.5
O'Hara	9,209	9,233	9,096	8,856	-3.8
Penn Hills	62,886	57,632	51,494	46,809	-25.6
Plum	21,932	25,390	25,609	26,940	+22.8
Reserve	4,151	4,306	3,866	3,856	-7.1
Ross	32,892	35,102	33,482	32,551	-1.0
Shaler	33,369	33,694	30,533	29,757	-10.8
Sharpsburg	5,499	4,531	3,781	3,594	-34.6
Stowe	10,119	9,202	7,681	6,706	-33.7
Verona	3,737	3,179	3,260	3,124	-16.4
City of Pittsburgh	520,117	426,938	369,879	334,563	-35.7
Allegheny County	1,599,031	1,445,336	1,336,449	1,281,666	-19.8

Source: Allegheny County Economic Development and US Census Bureau and www.census.gov/census2000/states/pa.html

3. Largest Employers

The largest Allegheny County employers according to the Allegheny County Department of Economic Development[5] are:

Employer	**Number of Employees**
1. UPMC Health System	27,400
2. U.S. Government	19,700
3. Commonwealth of Pennsylvania	15,900
4. University of Pittsburgh	9,184
5. West Penn Allegheny Health System	9,150
6. US Airways Group Inc.	9,062
7. US Steel Corp.	7,400
8. Mellon Financial Corp.	6,950
9. PNC Financial Services Group Inc.	6,900
10. Allegheny County	6,763

The Pittsburgh Post Gazette Benchmarks reported the change in total employment in metropolitan areas over an 11-year period from 1990 – 2001. Pittsburgh had a 0.95% total change.[6]

None of these employers has a direct impact on the waterways. Those located in or near the corridor afford their employees the opportunity to enjoy the amenities that the corridor has to offer. For example, employees may bike to work on one of the trails or walk on the trails during their lunch break. PNC Financial Services, which is located within the corridor, is in a "green building" – an environmentally responsible building (Chapter 6-E-1).

4. Planning and Zoning

A Comprehensive Plan is an important land use development tool as it "serves as a policy guide to decision making about physical development in the community. It is an explicit statement of future goals for the community and serves as a formal vision for the planning commission, elected officials, and other public agencies, private organizations, and individuals. A community's comprehensive plan provides context and direction for a community's land use ordinances and regulations and should be updated and modified continuously in response to changes in the community."[7] Along with the Comprehensive Plan, zoning is another important land management tool. Zoning controls the location, use, and intensity of different land uses.

To help municipalities address environmental issues, like land use, the Pennsylvania General Assembly, in 1973, passed Act 148, which authorizes municipalities to establish environmental advisory councils (EACs). EACs "can advise a municipality's governing body, commissions,

[5] Numbers were updated January 7, 2003, at www.pittsburghchamber.com
[6] Pittsburgh Post-Gazette. August 4, 2002. Benchmarks.
[7] An Inventory of Planning in Pennsylvania. 2001. Penn State University, College of Agricultural Sciences, Agricultural Research and Cooperative Extension.

and boards on matters concerning the protection, conservation, management, and use of the municipalities natural resources."[8]

For this Rivers Conservation Plan, municipalities within the project area were surveyed in 2002 about land use planning and zoning. A sample survey is included in Appendix A. Results of several of the categories appear in Table 1-3. (Other zoning categories and results from the survey can be found in Chapters 2-E and 3-B-1.) See Map 3. It is important to note that at the time of this report, Allegheny County was beginning its Comprehensive Plan.

*A source of information on planning and zoning is Improving Local Development Regulations: A Handbook for Municipal Officials, published by the Allegheny Co. Planning Dept. in 1993.

Table 1-3
General Zoning and Planning for Municipalities*

Municipality	Comprehensive Plan	Last Update of Comprehensive Plan	Zoning Ordinances	Environmental Advisory Council
Aspinwall	Yes	2001	Yes – includes riverfront zoning	No
Avalon**	Yes		Yes	
Baldwin	Yes	1960	Yes	No
Bellevue**	Yes	1999	Yes – Light industrial along river	No
Ben Avon**	Yes		Yes	
Ben Avon Heights	No		Yes	
Blawnox	Yes		Yes	
Etna	Yes		Yes – industrial along river	No
Fox Chapel	Yes	1992	Yes – residential or institutional open space along river	Yes
Harmar	Yes		Yes	
Kennedy	No		Yes	
Kilbuck	Yes	2000	Yes – riverfront zoned as open space	No
McKees Rocks	Underway		Yes	No
Millvale	Yes		Yes	No
Neville	Yes	2000	Yes	No

[8] The EAC Handbook: A Guide for Pennsylvania's Municipal Environmental Advisory Councils. 1996. The Pennsylvania Environmental Council.

Oakmont	Discussion underway with adjoining communities		Yes	No
O'Hara	Yes	1993	Yes- riverfront zoned suburban manufacturing, conservation district, riverfront planned units	No
Penn Hills	Yes	1991	Yes – riverfront zoned mostly conservation, some general industrial	No
Pittsburgh	No		Yes	No
Plum	Yes		Yes	
Reserve	No		Yes	No
Ross	Yes	1996	Yes	
Shaler	Yes	1985	Yes – no development permitted along river	No
Sharpsburg	No		Yes	
Stowe	No		Yes	
Verona	Yes	1981	Yes	No
Allegheny County	Underway			

*Surveys were mailed to all 26 municipalities within the project area. This table represents responses from municipalities that returned the survey and from data taken from the Allegheny County Planning & Project Development Division of Allegheny County Economic Development. Questions that were not answered or that are unknown appear as blanks.
**Environmental Planning & Design (EPD), a local consulting firm, is preparing a joint comprehensive plan for Avalon, Bellevue, and Ben Avon.

5. Regional Planning

Allegheny County and the City of Pittsburgh have put together conservation plans and riverfront policy plans over the years. While these plans are comprehensive in scope and thoughtfully produced, they have never been fully implemented. Summaries of these plans appear in Appendix A.

Both Allegheny County and the City of Pittsburgh are members of the Southwestern Pennsylvania Commission (SPC), which is designated as the metropolitan planning organization for the nine counties of southwestern Pennsylvania. Much of SPC's focus is on transportation planning.

C. Ownership

1. Major Riverfront Landowners

Major landowners along the rivers are noted on the U.S. Army Corps of Engineers (USACE) Navigation Charts found in Appendix A. It is important to note that a significant part of the riverfront property is owned by the railroads. This creates a challenge for communities as they try to provide riverfront access to their residents. More information about rail lines is found later in this chapter (Chapter 1-D-3).

Some property owners who have, or currently are exploring, recreational amenities along the riverfront include: Carnegie Science Center, Alcoa, Pittsburgh Cultural Trust, Forest City Enterprises, the Stadium Authority, and the municipalities of Penn Hills and Millvale. Descriptions of these projects and others are found throughout the document.

2. Islands

The project area is unique in that there are many islands within the Allegheny and Ohio Rivers. See Table 1-4. The Allegheny and Ohio Rivers have islands because of the high sediment loads that have settled out over millions of years.

Table 1-4
Ownership of River Islands

Island	River	Municipality	Ownership	Comments
Neville	Ohio	Neville	Many private owners	Residential, commercial, industrial uses
Davis	Ohio	Stowe	West View Water Company	
Brunot	Ohio	City of Pgh	Reliant Energy	
Herrs	Allegheny	City of Pgh	Many private owners, some public areas	Residential, commercial, some public lands. Also known as Washington's Landing
Sixmile Island	Allegheny	O'Hara	Nancy Warner Park; also leased to a private club – Lazy Day Islanders Club	Donated to O'Hara Twp 30 years ago.
Sycamore	Allegheny	Blawnox	Privately owned by developer	
Ninemile	Allegheny	Penn Hills	Golden Triangle Ski Club	Owned by the Golden Triangle Waterski Club. WPC (Western PA Conservancy) holds a conservation easement. The island is open for public use. Open to non-motorized boats. Back channel is used as water ski course and non-motorized navigation is discouraged.

Twelvemile Island	Allegheny	Harmar	Homeowners Association for tenants of island (Maple Island Campers Assoc.)	
Fourteenmile Island	Allegheny		Commonwealth of Pennsylvania	Under the Department of General Services – public can tie up and walk on the island. Heavily overgrown with Japanese knotweed, which makes it difficult to get around. There also is a picnic pavilion.
Upper part of Fourteenmile Island	Allegheny		Commonwealth of Pennsylvania	Originally part of Fourteenmile Island, split because of dam

Source: Interviews with John Stephen, Friends of the Riverfront and Ann Sand, Western PA Conservancy, 2002 and 2003 respectively.

D. Navigation and Transportation

1. Working Rivers[9]

The study area falls within the Port of Pittsburgh, an eleven-county area that contains 200 miles of commercially navigable waterways in southwestern Pennsylvania. There are 200 river terminals (see Appendix A for the terminals in the study area) that connect the barge industry with the railroads and highways.

In 2001, the Port shipped and received 53 million tons of cargo[10] (more than 40 million was coal), making it the second busiest inland port in the nation and the fourteenth busiest of any kind in the nation. The Allegheny River only transports 2.9 million tons of that total port tonnage (5.6% of the total), and the Monongahela River transports 38 tons (71.7% of the total).

The Port of Pittsburgh is served by a commission, established by the legislature in 1992, with the mission: "*To promote the commercial use and development of the inland waterway transportation system into the economic, recreational, environmental, and intermodal future of southwestern Pennsylvania*."

The Port of Pittsburgh is part of the larger inland waterway system, which is approximately 10,000 miles of navigable waterways. Transport via the inland waterway system is considered to be one of the least costly modes of transportation.

Locks & Dams

The Pittsburgh district of USACE is in charge of navigation and the locks and dams on the Three Rivers. For navigation, they must keep the channels at least 9 ft. deep. Their website provides

[9] www.port.pittsburgh.pa.us
[10] U.S. Army Corps of Engineers Navigation Data Center, http://www.iwr.usace.army.mil/ndc/

daily updates on stage and flow data, reservoir pool and release information, and project information (see Appendix A).

Table 1-5
Lock and Dam Information for the Ohio and Allegheny Rivers

River	Name	Mile (from the Point)	Pool Elevation (ft above mean sea level)	Open Date	Pool Length (miles)	Traffic (million tons/yr)
Allegheny	Lock & Dam 2	6.7	721	1934	7.8	4.2
Allegheny	Lock & Dam 3	14.5	734.5	1934	9.7	3.7
Ohio	Emsworth L&D	6.2	710	1921	24	17

Source: www.lrp.usace.army.mil

Allegheny River locks and dams (L&D) 2 and 3 are one-lock chambers with fixed crest dams that provide no flood protection, but do provide pools that are sources of public drinking water and sources of recreation. The locks on the Allegheny River average ten daily commercial lockages and 400-800 recreational lockages per month during the summer. While many commodities are shipped via the Allegheny River, coal is the most common.

The Emsworth L&D consists of two gated dams and provides no flood control. There are approximately 550 commercial lockages per month and almost 400 pleasure boat lockages per month during the summer. From 1981-1986, the Emsworth L&D underwent a $30 million rehabilitation that included replacement of electrical systems and operating machinery and buildings, as well as the resurfacing of the lock walls. In 2001, the USACE completed the Emsworth Locks and Dams Rehabilitation Report, which assessed the engineering condition and reliability of the dam system. The study was an economic impact assessment that proposed costs and feasibility of the alternatives for fixing any structural and/or functional problems with the locks and dams. The Report found several major problems with the L&D:

- Gate truss corrosion
- Mechanical and operating problems with the gates
- Damage to the scour protection

The Report recommended:

- Replacing 13 gates (one is currently being replaced)
- Replacing electrical systems
- Repairing concrete piers and docks
- Replacing scour protection

Safety on the Rivers

The government entities responsible for various safety and regulatory issues on the rivers are:

- The United States Coast Guard (USCG), which oversees maritime safety, mobility, security, national defense, and protection of natural resources. Visit www.uscg.mil for complete information.
- The Pennsylvania Fish and Boat Commission (PFBC), which regulates boating and fishing, and issues safety rules and guidelines for those activities, as well as other activities such as paddling, jet-skiing, and water-skiing. Visit www.fish.state.pa.us for complete information.
- City of Pittsburgh's River Rescue, which responds to water borne emergencies in the City of Pittsburgh including law enforcement and emergency medical care. Visit www.city.pittsburgh.pa.us/ems/htmlriver_rescue_unit.html for complete information.

The primary safety issue on the Three Rivers is that they are multiple use waterways with commercial and recreational traffic vying for space. As a result, a current safety issue involves the lighting of barges at night. Accidents may occur when recreational boaters do not see, or cannot get out of the way in time, as dark barges move along the rivers at night. There are proposals to the PFBC and the USCG to increase lighting on barges. More information on river safety and recreation can be found in Chapter 5-D-1.

Waterway Transportation

While the rivers are used significantly for the transportation of commodities, they have limited use in the transport of the public, except for recreational purposes. In Spring 2002, the Port Authority of Allegheny County and the Southwestern Pennsylvania Commission released a draft report on the use of the rivers as a means of transporting the public via water taxis, excursion vessels, and commuter ferries.[11] While the region has supported successful excursion and boat tour industries, as well as successful water taxi services during special events, the report concluded that there is not a great demand for commuter transportation via water. Commuter travel time on water is greater than that of highway travel and there would be tremendous cost in redesigning the dams to allow easy and quicker passage of the boats. As investment in riverfront development increases, there will be greater demand and greater potential for all waterway transportation. The report identified locations throughout the Pittsburgh Pool (the section of the rivers bordered by the Emsworth, Braddock, and Allegheny #2 Locks and Dams) that can serve as landings for potential water transportation services. A partial list includes:

- Washington's Landing
- Convention Center
- Millvale
- Heinz Field / PNC Park
- Lawrenceville
- McKees Rocks
- West End / Duquesne Incline
- Gateway Clipper Landing
- Chateau
- Monongahela Wharf
- Carnegie Science Center
- Station Square

[11] Pittsburgh Regional Waterways Study - Draft, Spring 2002, Prepared by BRW DMJM+Harris Team for the Port Authority of Allegheny County and the Southwestern Pennsylvania Commission.

- First Avenue
- Fort Duquesne Bridge
- Clemente, 7th, 9th Street Bridges
- Southside
- Tenth Street
- Sixteenth Street

2. Transportation Projects

The following list of proposed or planned projects is meant to highlight what changes are being planned for the future of the region's land-based transportation routes. While much of the rehabilitation of roads is welcomed due to easier access to the cities, the construction of new roads may be controversial as they may detract from the aesthetic beauty of the region. The destruction of wooded hillsides and riparian lands for highways may eventually bring roadside advertising in the form of billboards. Billboards are also a controversial issue, as some believe they litter the landscape and take away from views of natural areas.

Pennsylvania Turnpike Commission – Mon/Fayette Expressway

Currently the most controversial project in the region, the Pennsylvania Turnpike Commission's Mon/Fayette Expressway will extend 65 miles from Pittsburgh to Interstate 68 near Morgantown, West Virginia. Approximately 35 miles of the roadway have been built. The alignment of the final connection to Pittsburgh has not been decided, but part of the highway will follow either the north or south bank of the Monongahela River according to the Draft Environmental Impact Study. The Pennsylvania Turnpike Commission, Pennsylvania Department of Transportation (PennDOT), and the Federal Highway Administration will prepare a final study for public review and comment before a segment is selected. Proponents state that the new road will be an easy way to get through the Mon Valley and into the city and that it will spur economic development in the Mon Valley. Opponents state that the project will segregate small communities, destroy land (especially along the river), and allow people to pass more quickly through the Mon Valley instead of bringing them into it. See map in Appendix A.

Pennsylvania Department of Transportation (PennDOT)[12]

Current major construction projects in the study corridor include the West End Improvements and the Fort Pitt Tunnel and Bridge.

Future construction projects include:

1. State Route (SR) 28 - East Ohio St. from Chestnut St. to Millvale Interchange - reconstruction with new interchanges at 31st and 40th Street Bridges - planned for 2007-2010
2. SR 28 - Etna Interchange Phase 3 from 62nd St. Bridge to Butler St. - reconstruction of southbound ramp to SR 28 S. - planned for 2003-2004
3. SR 8 - Mae West Bend from Kittanning Rd. to Saxonburg Boulevard - traffic signals and bridge replacement - planned for 2003-2004

[12] See www.dot.state.pa.us for more detail

4. SR 19 - West End Improvements Phase 2 - numerous improvements - planned for 2004-2005
5. SR 65 - Ohio River Boulevard from Dillworth Run Bridge to Prospect St. in Avalon - turning lanes and traffic signals - planned for 2004
6. SR 2122 - 31st St. Bridge - rehabilitation - planned for 2004-2006

PennDOT also has available on their website maps of traffic volume for Allegheny County. The map shows the major transportation routes and gives the average daily number of cars on those roads. See www.dot.state.pa.us for the maps.

Port Authority Projects [13]

The Allegheny County Port Authority Transit (PAT), which is the transit provider for Allegheny County, is involved with several new projects and studies.

Proposed new Monongahela Bridge – would span the Monongahela River from downtown to West Carson St. between the Fort Pitt and Liberty Bridges. It would be a "multi-lane, mixed-use bridge that includes two high occupancy vehicle (HOV) lanes that will connect with the Wabash Tunnel."

MAGLEV - PAT is also involved with PennDOT and the Federal Railroad Administration in the development of the Environmental Impact Statement (EIS) for the proposed MAGLEV project. MAGLEV, short for magnetic levitation, is a high-speed elevated train that would extend from the Pittsburgh International Airport to Greensburg with stops in Monroeville and Pittsburgh. A one-way trip the entire distance (50 miles), with stops, would be 30 minutes. This is a proposed project as Pittsburgh is in competition with Washington D.C. and Baltimore for federal funding for a MAGLEV. No decisions have been made as of June 2003.

Park and Ride Lots - these are parking areas outside the city where commuters can pick up a bus or light-rail ride into the city. Parking lots within the study area are located at:
Millvale Loop at Grant Ave. - 42 parking spaces
Manchester at Beaver Ave. - 400 spaces
Neville Island at Grand Ave. - 239 spaces
Sheraden at Chartiers Ave. - 153 spaces

North Shore Connector – PAT completed a Draft Environmental Impact Statement in 2000 for the extension of the light rail system to the north shore. The route would extend from the Gateway Center T-stop, continue under the Allegheny river to a station at PNC Park, then cross the north shore parking lot and come above ground just before Heinz Field to a final station. There also will be an extension of the subway from Steel Center Plaza to the Convention Center and possibly Liberty Center and the Greyhound and Amtrak stations. A final decision for the project has not been made as of June 2003.

3. Railroads

There are many railroads in the corridor running primarily along the rivers. Although they are still an important mode of mass commercial transportation, their alignments made more sense for

[13] See www.portauthority.org for more detail

the region fifty years ago (easy access to the rivers, gentle grade, and riverside industry). Today the riverbanks are changing to areas with parks, trails, boat access, and riverfront office and light industrial use. In many instances, it is difficult to move forward with those public amenities because of extensive private railroad property, which can cut off communities from the rivers. Some groups and municipalities, though, are working with the railroad companies to use abandoned rail beds or the space along active rail beds for trails and other recreational uses (see Chapter 5-A-1).

Table 1-6
Active Rail Lines In and Around Study Corridor

Railroad Name	Line Runs From…	Line Runs To…	Line Name
BLE	Butler Co.	N. Bessemer	Main Line
CR	Westmoreland Co.	Nadine	Valley Ind Tk
CR	Nadine	62nd St Bridge	Coleman Ind Tk
CR	62nd St Bridge	15th St	Valley Ind Tk
CSXT	Rankin	Laughlin Junction	Western Sub-division
CSXT	Laughlin Junction	Butler Co.	P & W Sub-division
CSXT	Laughlin Junction	Butler Co.	P & W Sub-division
CSXT	Hazlewood	Glenwood	Glenwood Yd
CR	Butler Co.	Penn	Conemaugh Line
CR	Pittsburgh Station	Beaver Co.	Ft Wayne Line
CSXT(TRRY)	Port Vue	Pittsburgh	Main Line
CSXT(TRRY)	Pittsburgh	Beaver Co.	Main Line
WLE	Rook	West End Junction	Main Line
CR	Duff Junction	Bellevue	Weirton Secondary
WLE	West End Junction	West End	West Side Belt
POV	On Neville Island		Pittsburgh & Ohio Valley
PCY	Neville Island	Back Channel Bridge	Pittsburgh
PCY	Back Channel Bridge		Pittsburgh
PCY	McKees Rocks	Carnegie	Pittsburgh
CR	Verona	End	Allegheny Ind. Tk.
CR	Home	Nadine	Valley Ind Tk
CR	Pittsburgh Station	Westmoreland Co.	Pittsburgh Line
PAT	Gateway Center	Station Square	T Line
PAT	Steel Plaza	Penn Station	T Line
PAT	Station Square	S.Hills Village	T Line
PAT	S. Side	S. Hills Junction	Warrington Line

PAT	S. Hills Junction	Castle Shannon	Overbrook Line
CR	Bell	Washington Co.	Mon Line
MCRR	Hazlewood	Birmingham Br	Monongahela Connecting
MCRR	Hazlewood	South Side	Monongahela Connecting
MCRR	Hot Metal Bridge	30th St Yard	Monongahela Connecting
CSXT	Millvale	Heinz Plant	Old Allegheny Main
CSXT	Manchester	Woods Run	Lower Allegheny Line
CSXT	Allegheny River Bridge	20th St	River Line
CR	Oakmont	Plum Boro	Allegheny Ind Tk
CSXT	In Pittsburgh		Connector

Source: Environmental Information Services, Allegheny County GIS Data 199- (exact date unknown)

Table 1-7
Inactive Rail Lines In and Around Study Corridor

Railroad Name	Line Runs From…	Line Runs To…	Line Name	Year Abandoned
CR	15th St	Federal St	Ft Wayne Br/Valley Ind	1984
CR	In Pittsburgh		Smallman St Br	1984
CR	Wagner (Carnegie)	Elliot	Columbus Main Line	1983
PC	Verona	Unity Junction	Plum Creek Br.	1971
CR	Brilliant	Aspinwall	Brilliant Br	1985
CR	North Side	Herrs Island	Herrs Island Ind Tk	1984
CSXT	Laughlin Junction	Grant Street Station	Pgh Junction Br	1992
CR	Hays	W. Homestead	White Hall Ind Tk.	1981

Source: Environmental Information Services, Allegheny County GIS Data 199- (exact date unknown)

Three Rivers Conservation Plan Corridor Project Area

Map#__1__

Ben Avon Heights
Kilbuck
Ross
Shaler
Fox Chapel
Harmar
Plum
Oakmont
Verona
Neville
Ben Avon
Avalon
Bellevue
Emsworth Lock and Dam
Neville Island
Davis Island
Kennedy
Stowe
McKees Rocks
Reserve
Millvale
Etna
Sharpsburg
Aspinwall
O'Hara
Blawnox
Allegheny River Lock and Dam 3
Twelvemile Island
Fourteenmile Island
Allegheny River Lock and Dam 2
Stowmile Island
Sycamore Island
Ninemile Island
Penn Hills
Washington's Landing
Brunot Island
Ohio River
Allegheny River
Monongahela River
Pittsburgh
Baldwin

Dams
Allegheny County
Islands
City of Pittsburgh
Boroughs
Townships

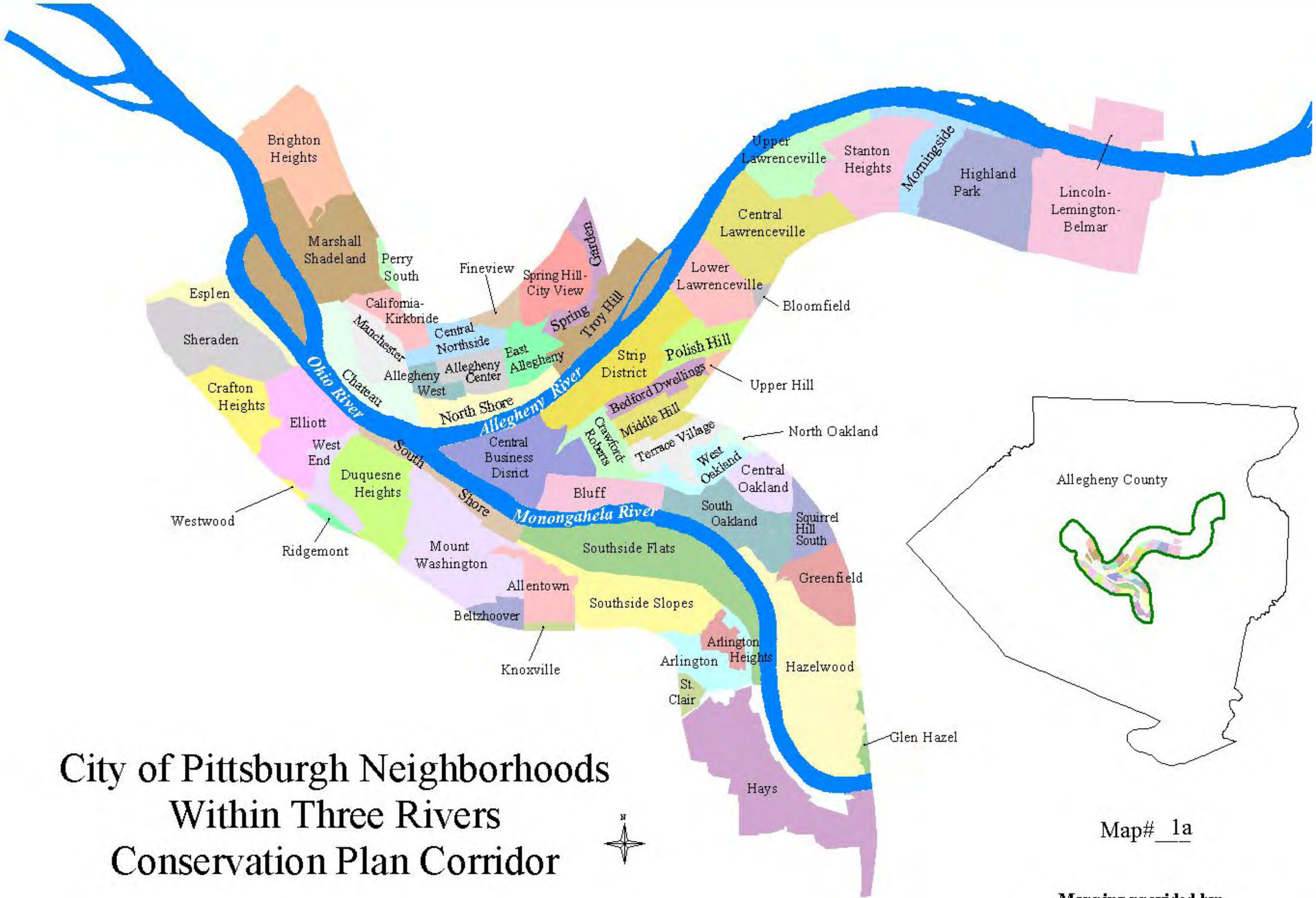
Darker shades represent areas contained within the corridor.

N

0 1 Miles

Scale 1:90,000
Accuracy: 5 ft.

Mapping provided by:
Westsylvania Heritage Corporation



City of Pittsburgh Neighborhoods Within Three Rivers Conservation Plan Corridor

Map# 1a

Mapping provided by:
Westsylvania Heritage Corporation

Three Rivers Conservation Plan Corridor Population by Census Tract

Map# 2

Population by Census Tract (2000)

- 0 - 500
- 501 - 1500
- 1501 - 2500
- 2501 - 3500
- 3501 - 5000
- 5001 - 5500
- 5501 - 7000
- 7001 - 8500

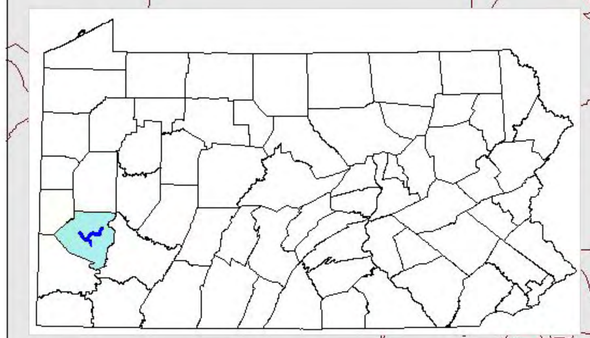
Allegheny County Total
2000 Population = 1,281,666

- Municipal Boundaries
- Three Rivers Conservation Plan Study Area

1 0 1 Miles

N

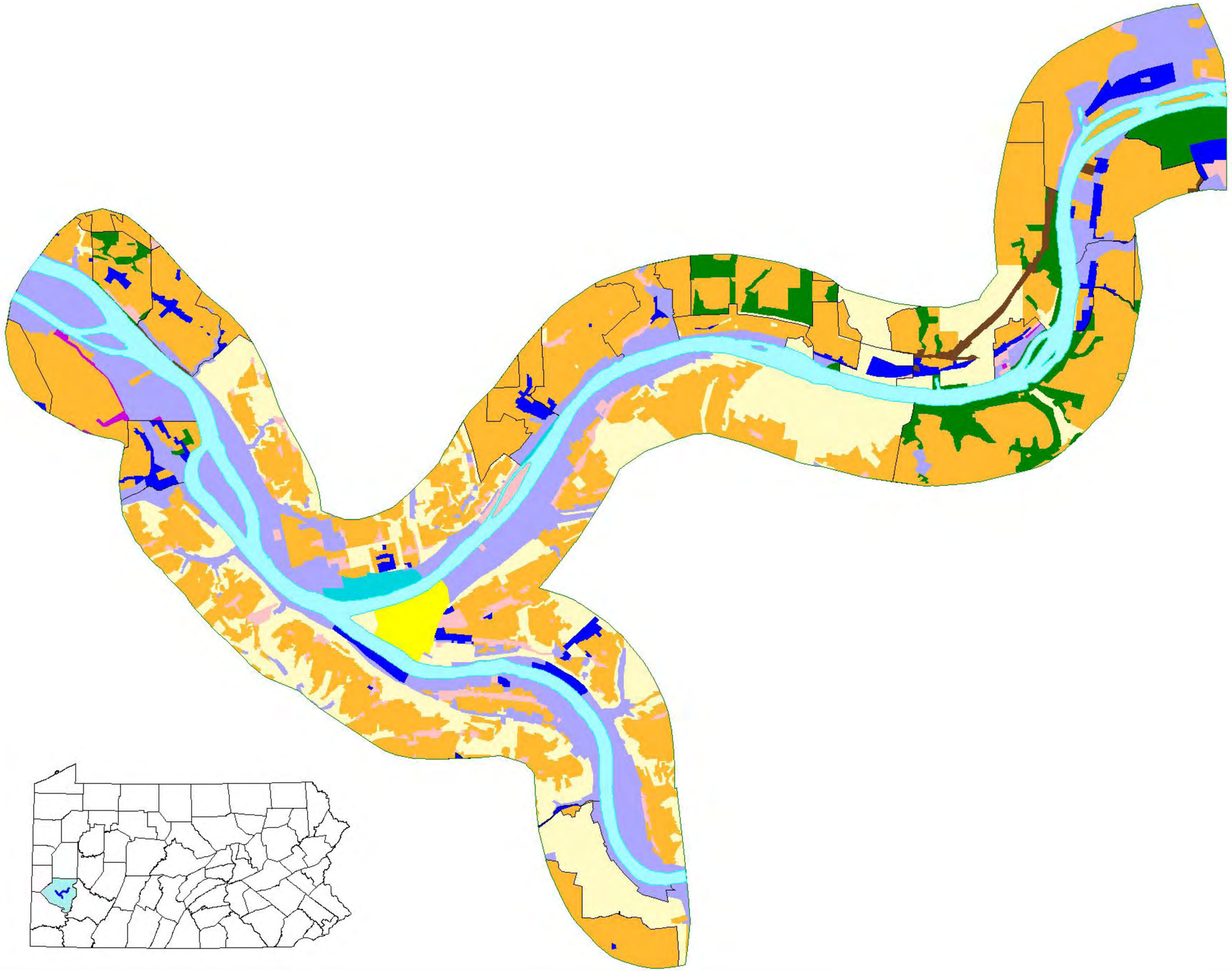
Scale 1:175,000
Accuracy: 5 ft.



Mapping provided by:
Westsylvania Heritage Corporation

Three Rivers Conservation Plan Corridor Zoning

Map# 3



Zoning

- Industrial
- Commercial / Industrial
- Commercial
- Commercial / Residential
- Residential
- Golden Triangle District
- Riverfront District
- Conservation District
- Unzoned
- Other

- Municipal Boundary
- Three Rivers Conservation Plan Study Area

0 1 Miles

N

Scale 1:130,000
Accuracy: 5 ft.

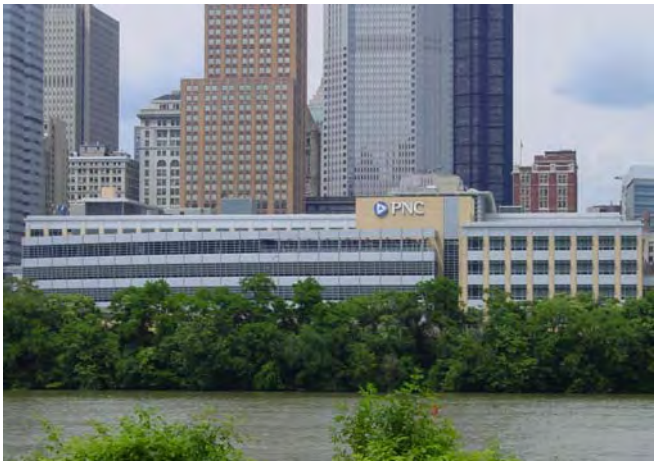
Mapping provided by:
Westsylvania Heritage Corporation

Natural Shorelines — forested riparian areas can be found on all Three Rivers

Hard Edges — retaining walls are remnants of the heavy industry that once existed along the rivers

Chapter Two

Land Resources



Land Recycling — PNC Firstside Center was built on the abandoned Baltimore and Ohio Railway terminal site

Landslide Prone Bluff — rock outcroppings, such as these 'Red Beds' are common in the study area

A. Topography and Geology [1]

Allegheny County sits within the Appalachian Plateau physiographic province (landform). Specifically, it is part of the Pittsburgh Low Plateau Section, characterized by a smooth, uneven surface with numerous narrow, relatively shallow valleys, and some high level terraces. It has moderate to low relief and a dendritic stream pattern.

Dendritic
A pattern for a stream or river that is treelike, with trunk and branches at acute angles.

Porosity
The percent of pore space in a soil or formation, which illustrates its ability to store water.

Permeability
The ease at which water moves freely through the formation.

Bituminous
Soft coal that is used as a fuel – has high heat content and high sulfur content and is found in relatively large supply

The most abundant geologic formations in this area include: Allegheny Group, Glenshaw Group, and the Pottsville Formation. The Allegheny Group is highly heterogeneous with sequences of sandstone, shale, siltstone, claystone, limestone, coal, and underclay. It has moderate to low permeability and its porosity is low. The Glenshaw Group is heterogeneous with layers of shale, sandstone, siltstone, limestone, claystone, and coal. Its porosity is moderate. The Pottsville Formation is a conglomerate sandstone with some shale, siltstone, limestone, coal, and underclay. It exhibits high to low porosity and the permeability is low to moderate.

1. Formation of the River Valley[2]

About 300 million years ago, western Pennsylvania was the coast of a western inland sea. Two great rivers flowed west across the state, the southernmost one draining at what is now Pittsburgh. Here, a delta formed with deposits of mud, sand, and vegetation, all of which later became shale, sandstone, and coal, respectively. The result is that Allegheny County now rests on the Main Bituminous coal field. All significant coal beds in Pennsylvania are Pennsylvanian or Permian.

Eventually, millions of years later, the earth's plates began shifting, and the Allegheny Mountains began to form, severing the rivers and forcing new river and stream systems to flow downhill and erode the mountains. Over the centuries, the eroded material was deposited and formed the hills of our landscape that we see today.[3] (See Figure 2-1)

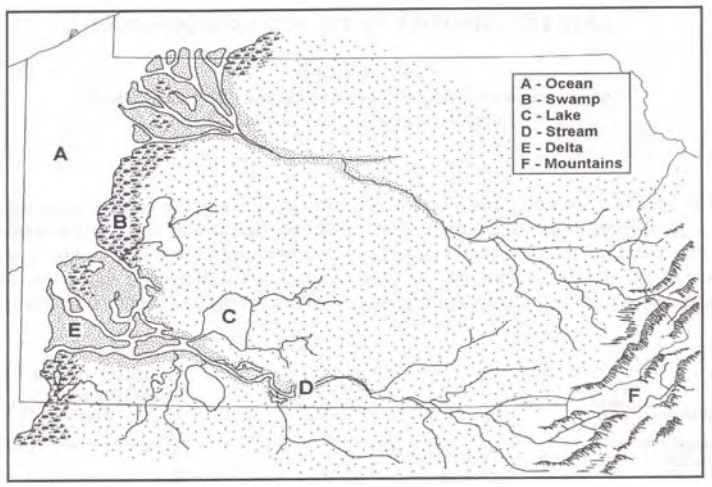


Figure 2-1. Pennsylvania's geography during the Pennsylvanian Period. Taken from John Harper's Geologic History of the Pittsburgh Area, Department of Conservation and Natural Resources (DCNR).

[1] www.dcnr.state.pa.us/topogeo

[2] Harper, John. The Formation of the Allegheny River. Network Notes, December 1996. Volume 1, Issue 1. and April 1997, Volume 1, Issue 2.

[3] Kidney, Walter C. 1982. The Three Rivers. Pittsburgh History and Landmarks Foundation.

Approximately one million years ago, the drainage system of western Pennsylvania was vastly different. At that time, the rivers flowed north to Canada. The Monongahela River was the dominant river in the system; it flowed along its present day channel, more or less, to Pittsburgh, then along the present channel of the Ohio River to the Beaver River. At that point, the Monongahela River flowed northward along the present day Beaver River, eventually draining into an 'ancestral Erie basin.' The Ohio River was a tributary of the Monongahela, entering it just south of New Castle, Pennsylvania. The Allegheny River was three separate, unrelated rivers with the lower Allegheny River as a tributary of the Monongahela, and the middle and upper Alleghenies flowing directly into the Ancestral Erie Basin. The lower Allegheny River followed the present channel of the Clarion River and flowed south, joining the Monongahela River at Pittsburgh. (See Figure 2-2)

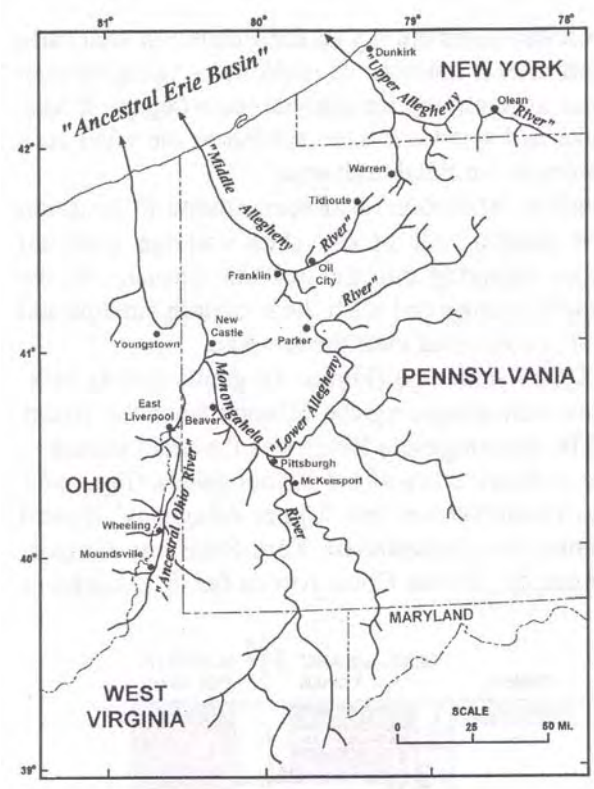


Figure 2-2. The rivers of western Pennsylvania once flowed north to an ancestral Erie Basin. **Taken from John Harper's Geologic History of the Pittsburgh Area, DCNR.**

During the latter part of the Ice Age, about a half million years ago, the Illinoian glacier moved into northwestern Pennsylvania and blocked the flow of water of the northern flowing rivers. Water flowed over the ridges between the systems and carved out new valleys, took over existing channels, and reversed the flow of the rivers. As a result, the Monongahela River flowed northwest to Pittsburgh where it joined the Allegheny River – now one large river instead of three separate ones. These rivers became tributaries of the Ohio River, which now drained into the Mississippi River. (See Figure 2-3)

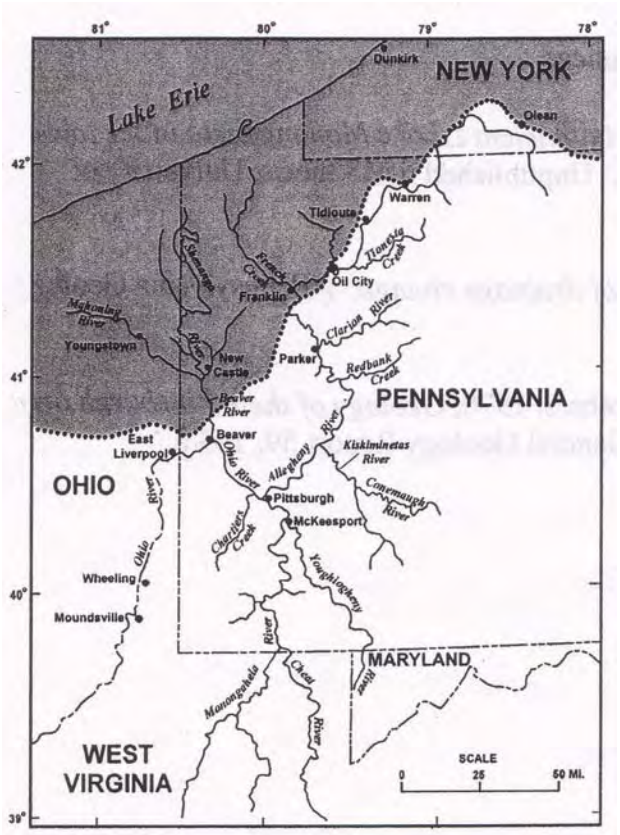


Figure 2-3. The formation of today's rivers by the southward flow of the glaciers (represented by the shaded area). **Taken from John Harper's Geologic History of the Pittsburgh Area, DCNR.**

The retreat of the glaciers provided the river systems with additional water and energy to transport silt, sand, and gravel that had been brought to Pennsylvania by the glacier. This glacial sand and gravel would be extracted many years later as industry along these rivers developed. The land in western Pennsylvania, which had been depressed by the weight of the glaciers, rose after their retreat. Rivers were forced to cut new channels as old river valley floors were now high above the streams. The remnants of the old river valley floors, called terraces, are found within the project corridor. Some examples include Harmarville, Bellevue, and the City of Pittsburgh communities of Oakland and Troy Hill. Essentially, most of Pittsburgh was a wide river valley with terraces 200 feet above the river level.

The next major glaciation, the Wisconsinian, advanced into Pennsylvania 75,000 years ago. This glacial event added silt, sand, and gravel to the Allegheny and Ohio River valleys and caused the Monongahela River and its tributaries to build up their channels with sediments. By the time the Ice Age ended 10,000 years ago, the volume of water and the sediments in the rivers had declined. The rivers cut new, shallow channels in the sand and gravel, ultimately creating the modern river system. (See Figure 2-4)

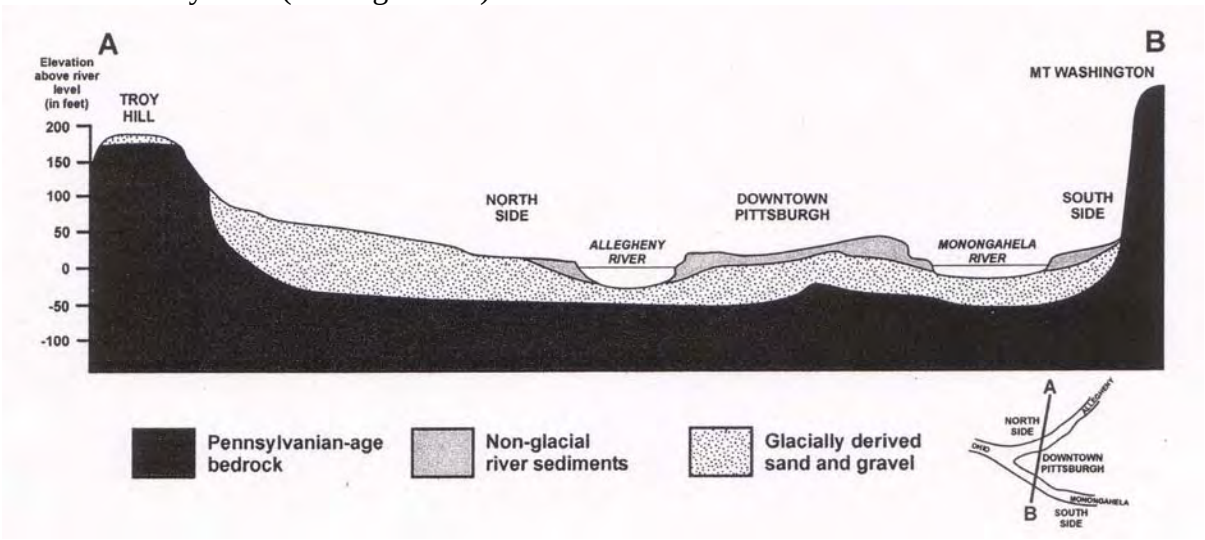


Figure 2-4. Cross section of Pittsburgh, showing the composition of the current river system. **Taken from John Harper's Geologic History of the Pittsburgh Area, DCNR.**

2. The Myth of the "4th River"

There exists an urban legend in our region that there is actually a "Fourth River" that lies below the Three Rivers. This is not an underground river; rather, it is an aquifer left over from the Wisconsinian Glacial Flow. The water resides in the porous sand and gravel valley, surrounded by rock, silt, and clay in an aquifer that is one half of a mile, to one mile wide and 15-35 feet deep.[4]

Aquifer
Water-bearing porous soil or rock strata that yields significant amounts of water to wells.

B. Soils [5]

The soil in the corridor is comprised of 32 different associations. More than half of the area (53.43 percent) can be classified as an Urban soil. Urban soil has been altered by earthmoving, the placement of fill, and the building of structures to the extent that the original soils cannot be identified. The Urban land types (of varying slopes) and percent of their total area that fall within this classification include: Urban land (15.46); Urban land – culleoka complex (14.99); Urban land – guernsey complex (2.91); Urban land – rainsboro complex (19.15); and Urban land – Wharton complex (9.2).

The Urban land type in the study area is nearly level and occurs on floodplains. It is mainly fill material, which can consist of rubbish, cinders, industrial waste, old brick, and other building materials. The area is often covered by structures.

The other prominent Urban soil is the Urban - rainsboro complex, which is deep and moderately well-drained and underlain by stratified terrace material.

Aside from the Urban soils, the next largest soil type by area is the Gilpen-upshur complex (15.02 percent of total area). This soil is on slopes of 25 to 80 percent and generally occurs on valley sides parallel to streams. Runoff is rapid and springs and groundwater seepage are common, leading to landslides. This soil is suited to woodland and wildlife habitat.

Additional information about soils within the project corridor can be found in the *Soil Survey of Allegheny County, Pennsylvania*, produced by the U.S. Department of Agriculture Soil Conservation Service.

C. Riverbanks [6]

Gabion
Boxy wire cages holding crushed limestone used to stabilize steep banks and create retaining walls.

During an evaluation of riverbank conditions conducted by Three Rivers 2nd Nature (3R2N) in 2000, almost 50 miles of riverbanks and islands were assessed. Results showed that within the Pittsburgh Pool (the area around Pittsburgh bounded by the Emsworth, Highland Park, and Braddock dams), seven different materials made up the rivers' edges: stone block, concrete, wood, steel, fill/rubble, gabion, and soil. Much of the material was used in retaining walls. Most of the concrete was found near Pittsburgh's Point, while the majority of

[4] Carnegie Library of Pittsburgh, www.clpgh.org
[5] United States Department of Agriculture Soil Conservation Service. Soil Survey of Allegheny County Pennsylvania. 1981.
[6] 3R2N, Riverbank Conditions Report 2000, Phase I. The STUDIO for Creative Inquiry. Carnegie Mellon University.

the soil was found along the Allegheny River, right bank descending. Researchers noted stable banks within this area, due to the fairly constant water level through the lock and dam system. (A discussion on the effects of hard edges on safety is found in Chapter 5-D-1.)

In 2002, 3R2N conducted riverbank assessments[7] on the Allegheny River pools 1-4. Results showed that many of the high banks along the rivers are not natural – rather, they were formed as the result of fill placement for railroads and industry. The low banks and berms (narrow beaches) are more natural features of the Allegheny as they are subject to natural sediment deposition and flooding. The study, which included an area slightly larger than this Plan, concluded that the Allegheny riverbanks are 45% natural and 55% man-made, whereas the Monongahela riverbanks are 27% natural and 73% man-made. The difference is due to the greater amount of industry along the Monongahela River. Because the Pittsburgh coal seam was predominant in the Monongahela River valley, appropriate industries were built there, as opposed to the Allegheny.

The 2002 3R2N report also assessed the riverbank accessibility to various watercraft. This data is detailed and mapped in that report.[8]

D. Land Cover

An analysis of land cover shows that most of the land within the corridor is residential. The second most common type of land cover is forested, due in part to the forested steep slopes of the region. It is important to note that while there is significant amount of wooded area in this corridor, it may not be protected under municipal zoning codes. In order to protect these natural areas, municipalities must enforce strict conservation zoning, such as found in Fox Chapel and O'Hara (see 2E). Table 2-1 shows the breakdown of various land use covers. Map 4 shows the distribution of these categories over the corridor. Map 4 was obtained with satellite imagery. This involves using satellite pictures of the land and comparing how much light is reflected on the image to known reflectivities of certain land covers (e.g. grassland vs. forests vs. buildings). Therefore, it is sometimes inaccurate. For example, parts of Brunot Island are listed as residential (none of the island is residential). Most likely, there are some smaller buildings with grassy areas that show up as residential on the satellite imagery.

[7] 3R2N, Allegheny River Terrestrial Report 2003, Phase III. The STUDIO for Creative Inquiry. Carnegie Mellon University.
[8] 3R2N, Allegheny River Terrestrial Report 2003, Phase III. The STUDIO for Creative Inquiry. Carnegie Mellon University.

Table 2-1
Land Cover

Category	Total Area (square miles)	Percent of Total Area
Forest	13.31	26.75
Low Density Residential	9.1	17.79
High Density Residential	6.3	11.71
Medium Density Residential	4.7	8.92
Water	5.66	11.07
Commercial	3.31	5.68
Grassland / Open Space	2.31	5.0
Industrial	3.62	7.0
Non-vegetative	2.73	5.0
Agricultural / Pasture	0.28	0.61
Strip Mine	0.15	0.4
Total		99.98*

Source: Southwestern Pennsylvania Commission, 1992
*Due to the method used to digitize the land use data, there is a quarter square mile area missing.

E. Zoning/Land Use

Historically, the land adjacent to the rivers in the Pittsburgh area was natural and forested before it was used for industry. While only limited industry still exists along the corridor, part of the industrial heritage is reflected today in the type of zoning that exists (see Map 3). Along the Ohio, Monongahela, and lower Allegheny, the predominant zoning category is industrial. This type of land use may limit public access to the rivers for safety and aesthetic reasons. The rest of the corridor is dominated by residential and "other" uses, which include, among other things, various dwelling types, educational/medical institution districts, hillside districts, suburban light industrial properties, and parks and open space. Only a few areas designate riverfront properties as riverfront districts, creating the opportunity for river-based development or riverfront parks and open space, allowing for public access to the resource.

Since zoning can control the location, use, and intensity or density of a particular use, it can be used to protect critical features.[9] Several municipalities have special conservation zoning, as

[9] An Inventory of Planning in Pennsylvania. 2001. Penn State University College of Agricultural Sciences, Agricultural Research and Cooperative Extension.

indicated in Table 2-2. Those boroughs and townships with special conservation zoning are described below.

Fox Chapel

This borough has an I-O zoning district (institutional open space parkland). They also have a trailways map. Their Environmental Advisory Council oversees the Natural Resources Assessment and Protection Ordinance. Under this ordinance, citizens must submit notices of Environmental Land Disturbances, which include, for example, tree removal and activities that affect storm water runoff. In addition, Fox Chapel has a Land Conservation Trust that was "founded in 1979 to ensure that lands with significant natural features in the area's watersheds remain as an inheritance for all the people in the area. The Trust is dedicated to preserving these lands in their unaltered state."[10]

O'Hara

O'Hara Township has CD-1 and CD-2 Conservation District zoning "to protect environmentally sensitive areas of land, but on which minimal impact development can occur." CD-1 zoned areas are lands with steep slopes and mature tree stands. CD-2 zoned areas are lands close to natural waterways. Under CD-2 zoning, there are riverfront unit developments "to utilize and enhance the amenities of the river and maintain, preserve, and make these natural assets accessible to the general public."[11]

Pittsburgh

The City of Pittsburgh has adopted the Riverlife Task Force design guidelines (see Appendix B) and also has several zoning overlays, including:

- Riverfront
- Floodplain
- Landslide-Prone
- Undermined Area
- View Protection
- Stormwater Management

These overlays are in place generally to reduce hazards and protect structures, protect riverfronts and natural areas from unsound construction practices, and increase public access and enjoyment of riverfronts and natural features.

[10] www.fox-chapel.pa.us
[11] www.ohara.pa.us

Zoning Overlay
A district established by ordinance to prescribe special regulations to be applied to a site in combination with the underlying or base district.
Where the standards of the overlay and base zoning district are different, the more restrictive standards shall apply.

Source: *A Glossary of Zoning, Development, and Planning Terms* Edited by Michael Davidson and Fay Dolnick - American Planning Association, Planning Advisory Service Report Number 491/492

Subdivision and Land Development Ordinance
While zoning dictates where a certain type of development can occur, subdivision and land development ordinances dictate how the land can be divided and developed. Subdivisions allow for creating or changing property lines. Land Development involves the physical construction and the structures on the land.

Along with zoning, subdivision and land development ordinances are keys to successful land use and land use planning and for implementation of a comprehensive plan.

Source: Clearfield County Planning Department

*An excellent resource for municipalities is Improving Local Development Regulations: A Handbook for Municipal Officials, published by the Allegheny County Planning Department in 1993. "The primary purpose of the book is to provide municipal officials with a better understanding of their authority and assist them in making the most of their powers to manage and control the use of land and other resources. It illustrates the types of zoning and land development regulations that could be adopted under the Municipalities Planning Code. The book also describes where special regulations have been used and analyzes their potential usefulness to municipalities in Allegheny County."

Table 2-2
Zoning Related to Land Issues

Municipality	Zoning for Riverfront Districts	Special Zoning Overlays	Own or County Subdivision and Land Development Ordinances	Protection of Natural Areas	Conservation Zoning
Aspinwall	Yes	No	Own	Yes	No
Avalon			County		
Baldwin	No	No		Yes	No
Bellevue	Light Industrial	No	County	No	No
Ben Avon			County		
Ben Avon Heights			County		
Blawnox			Own		
Etna	Industrial	No	County		
Fox Chapel	No- Residential or institutional open space	No	Own	Yes	Yes
Harmar			Own		
Kennedy			Own	Yes	
Kilbuck	No – Zoned as park or open space	No	Yes	Yes	Own
McKees Rocks			County		
Millvale	Yes		County		No
Neville		No	County		
Oakmont	No – Zoned in accordance with neighborhood	No	Own	No	No
O'Hara	Zoned as suburban manufacturing and conservation district with riverfront planned units	Public access to river is provided	Own	Yes	Encouraged

Penn Hills	Mostly conservation, small portion is general industrial	Stricter setback requirements, flood prone areas zoned	Own	Yes – woodlands, steep slopes, etc. for major subdivisions	Yes
Pittsburgh	Yes	Yes	Own		Yes
Plum			Own		
Reserve	N/A	N/A	Own	Yes	Yes
Ross	No	Yes	Own	Yes	No
Shaler	No development permitted		Own	Steep slopes, buffers	Yes
Sharpsburg			Own		
Stowe			County		
Verona	No	No	County		No

*Some of this information came from municipal websites, some from the surveys (see Appendix A), and some from the Planning & Project Development Division of Allegheny County Economic Development. Other information may be missing if the municipality did not choose to participate in the survey or if the data is unknown.

F. Landfills / Waste Sites

1. Landfills

Table 2-3 lists all the abandoned landfills that were documented in the Pennsylvania Department of Environmental Protection's (DEP) abandoned landfill inventory. These are landfills (mainly municipal) that have been closed. The DEP conducted the survey in order to spatially identify where these landfills exist in the landscape.

Table 2-3
Abandoned Landfill Inventory for Allegheny County

Facility	Location	Municipality
Bellevue Dump	Bellevue	Bellevue
Ben Construction Co.	Route 910	Harmar Township
National Disposal Sanitary Landfill	261 McCoy Rd., McKees Rocks	Kennedy Township
Phillips Landfill & Slag Co., Inc.		Kennedy Township
Allegheny Contracting Industries, Inc.		Kennedy Township
Edgewater Steel Co.		Oakmont Boro
Plum Boro Dump		Plum Boro
Marine Rigging Limited, Inc. – Reserve Park	Hoffman Road	Reserve Township

American Typlax Systems, Inc.	Pittsburgh	Pittsburgh
Heth's Run Dump	Pittsburgh	Pittsburgh
Scully Yard	Pittsburgh	Pittsburgh
Southern Alleghenies Disposal Services	Pittsburgh	Pittsburgh
Standard Electrotype Co.	Pittsburgh	Pittsburgh
Source: PA Department of Environmental Protection, Pittsburgh Regional Office, 2002		

There are no active landfills in the corridor.

2. Illegal Dump Sites

There are numerous locations in the study area that have become informal, and illegal, dumping areas for refuse. The following organizations are addressing this problem.

- Pennsylvania Cleanways of Allegheny County, a non-profit environmental organization dedicated to eliminating illegal dumping and littering, conducted an Illegal Dump Survey in the City of Pittsburgh in 2002. "The purpose was to identify, assess, and document every illegal dumpsite in the city. The information is used to increase public awareness, gain support for cleanup efforts, and increase local involvement in a cleaner community."[12] They also have a DEP Growing Greener grant to conduct illegal dump surveys and watershed dump assessments for several waterways throughout Allegheny County. Several dumps are cleaned up each year, utilizing volunteers in the effort. PA Cleanways also tries to establish local tire clean-ups and helps communities to establish or improve recycling programs. Municipalities may form volunteer groups or individuals can give their time to help clean up the corridor, or they may also report illegal dumps by visiting www.pacleanways.org/alleghenysurvey.html.

- Three Rivers Riverkeeper, a joint program of Friends of the Riverfront and Three Rivers Rowing Association, enlists volunteers to collect information, including photographs, of dumpsites along the riverbanks. They sponsor a hotline: (1-866-3KEEPER) where people can report sites or other river-related information. www.friendsoftheriverfront.org/riverkeeper.htm.

- PA DEP sponsors an annual River Sweep to clean up debris along rivers and streams in nine southwestern Pennsylvania counties. In 2002, hundreds of volunteers collected 2,000 tires and 2,000 bags of trash, much of it coming from illegal dumpsites, such as Streets Run Road in Baldwin and Jack's Run under Ohio River Boulevard at the McKees Rocks Bridge.

- In 2003, the "Tireless Project" began as an effort to clean up tires and other garbage from the Three Rivers. A pontoon boat named the "Anna Hubbard" will use volunteers and work daily to clean up trash in the Pittsburgh Pool. More information can be found at www.threeriversrowing.org.

[12] Pennsylvania Cleanways informational material, www.pacleanways.org

3. Hazardous Waste

Hazardous waste sites and landfills near rivers and tributaries have the potential to contaminate surface and underground water supplies via runoff and leaching through the soil into the water table or aquifer. Aside from these potential threats to surface and ground water, landfills are also a possible danger to those who live, work, or play nearby. Therefore, the U.S. Environmental Protection Agency (EPA) has promulgated the following laws to deal with hazardous waste problems.

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (also known as Superfund) is a national program administered by the EPA to clean up hazardous waste sites that were contaminated before 1980. These sites are commonly abandoned industrial lands or landfills where disposal of hazardous material occurred prior to existing laws that regulated industrial activities and disposals. The National Priority List (NPL) contains those sites that are being remediated first due to the severity of their status. While Table 2-4 only lists 12 sites within the study corridor, it should be noted that there are sites outside of the corridor that may affect water quality.

Table 2-4
CERCLA Sites

Site Name	Location	EPA ID #	NPL
Island Ave. Abandoned Drum / Calgon Corp.	1300 Island Ave., McKees Rocks, 15136	PAN 000305606	no
Malitovsky Drum Co.	3600 Smallman St., Pgh, 15201	PAD 980831408	no
Mazzaro Landfill	McKees Rocks Rd., McKees Rocks, 15136	PAD 000607515	no
Neville Chemical Co.	Grand Ave. & 2800 Neville Rd., Pgh., 15225	PAD 004334157	no
Ohio River Park	Grand Ave., Neville Island, Pgh., 15225	PAD 980508816	yes
PA Railroad Transformers Site	Crosstown Blvd., Pgh., 15222	PASFN 0305566	no
Phillips Landfill	Rt. 151 Robinson Blvd., McKees Rocks, 15136	PAD 980706964	no
Pittsburgh Energy Technology Center	P.O. Box 10940, Pgh., 15236	PA 8890031869	no
Shalercrest Housing Development	272 Mt. Vernon Dr., Pgh, 15213	PASFN 0305458	no
Shenango Inc. Coke & Iron	200 Neville Rd., Neville Island, Pgh., 15225	PAD 004337465	no
Vermiculite Vic	Vermiculite Ind. Corp., Pgh., 15228	PAN 000305594	no
Zonolite Co. / WR Grace / Vermiculite WRG 3	Sharpsburg, 16150	PAN 000305591	no

Source: EPA Envirofacts Warehouse www.epa.gov, 2002

The Commonwealth of Pennsylvania, under its Land Recycling and Environmental Remediation Standards Act, and the Hazardous Sites Cleanup Act, has the authority to order clean-ups of hazardous sites that are not normally included under CERCLA. The sites in Table 2-5 have been completed at a cost of less than $2 million and are referred to as *Interim Responses*.

Table 2-5
Hazardous Sites: Interim Response Completed

Site Name	Location	Date that Action was Taken
Armstrong Fixtures	Sharpsburg	1993
Cristos	Baldwin	1992
Industrial Recycling	Stowe	2000
Reiter Shaft	Penn Hills	1995
Smalis Penn Ave.	Pittsburgh	2001

Source: PA DEP Waste Management
http://www.dep.state.pa.us/dep/deputate/airwaste/wm/Hscp/hscahome.htm

The Federal Resource Conservation and Recovery Act (RCRA) requires the permitting of all hazardous waste handlers, including generators, transporters, treaters, storers, and disposers. States may administer their own RCRA permitting as does Pennsylvania, but still must report to EPA. Only the hazardous waste landfills and waste piles are listed here.

Table 2-6
RCRA Hazardous Waste Landfills

Name	Location	ID #
Edgewater Steel Co.	300 College Ave., Oakmont	PAD074966789

Source: EPA Envirofacts Warehouse www.epa.gov, 2002

Table 2-7
RCRA Hazardous Waste Piles

Name	Location	ID #
AMG Resources Corp.	4100 Grand Ave., Pgh	PAD004497624
Pittsburgh Pacific Processing Co.	3000 Grand Ave., Pgh	PAD042506378
Railway Maintenance Products Division	900 Freeport Rd., Aspinwall	PAD004336814

Source: EPA Envirofacts Warehouse www.epa.gov, 2002

4. Act 2 and the Land Recycling Program

Act 2, or the Land Recycling and Environmental Remediation Standards Act, was signed into law by Governor Tom Ridge in 1995. This act established the Land Recycling Program, which

encourages the voluntary reuse of contaminated industrial lands. Act 2 offers incentives for adaptive reuse of contaminated sites – they are:

- Uniform cleanup standards
- Liability relief
- Standardized reviews
- Financial assistance

Encouraging the development of these lands, commonly referred to as brownfields, offers many benefits, including:

- Cost-efficient development due to the existing infrastructure on the land.
- Preservation of farmland, forested areas, and open space from development.

Table 2-8 lists Act 2 sites.

Other prominent sites that are redeveloped brownfields are: The Point, Station Square, Pittsburgh Technology Center, Washington's Landing, Southside Works, PNC Firstside, Pittsburgh Flatroll (31st Street), and Neville Island.

Table 2-8
Act 2 Clean-up Sites

*** Indicates a site has been completed**

Municipality	Name
BALDWIN BOROUGH	BP AMOCO - PITTSBURGH *
ETNA BOROUGH	ETNA INDUSTRIAL PARK*
NEVILLE TWP.	AMG RESOURCES NEVILLE*
NEVILLE TWP.	SHENANGO INC*
OHARA TWP.	CHAPEL HARBOR SITE
OHARA TWP.	PORTEC INC RMP DIVISION*
OHARA TWP.	PAPERCRAFT CORPORATION*
PITTSBURGH	GIL PARTNERSHIP*
PITTSBURGH	CSX GRANT STREET STATION*
PITTSBURGH	KEN SABOLOVIC AUTO*
PITTSBURGH	HAYS ARMY AMMUNITION*
PITTSBURGH	LTV COKE PLANT*
PITTSBURGH	CONSTANTIN PONTIAC*
PITTSBURGH	XEROX PITTSBURGH*
PITTSBURGH	JOHNNY JONES BUILDING*
PITTSBURGH	LTV STEEL - SOUTHSIDE PGH*
PITTSBURGH	NORTH SHORE PROPERTY*
PITTSBURGH	THE BUNCHER COMPANY*
VERONA BOROUGH	BEAZER EAST INC*
VERONA BOROUGH	WOODINGS-VERONA TOOL*

Source: PA DEP Land Recycling Program
http://www.dep.state.pa.us/wm_apps/lrpdata/

5. Industrial Sites for Sale

Pittsburgh and local communities are looking more to re-developing old industrial or abandoned waterfront property. As of June 2003, the city is considering the sale or lease of its auto pound, garbage truck storage area, and 911 center (a total of 20 acres) around 31st Street in the Strip District for "productive development," as well as the asphalt plant at Butler St. and Washington Boulevard. The Port of Pittsburgh (see description in Chapter 1-D-1) also lists available industrial sites on its website. Those sites are: the Port of Harmar on the Allegheny River (the back-channel of Twelvemile Island); McKees Rocks Industrial Enterprises on the Ohio River; and the Davis Island Parcel on the Ohio River. The Port of Pittsburgh website provides details about each property. www.port.pittsburgh.pa.us

6. Mining Facilities

All mining operations must be permitted by the DEP. Those operations include surface and underground coal mining and mineral mining. Table 2-9 lists the current mining permits that have been issued in and near the corridor.

Table 2-9
Permits Issued Through DEP Bureau of Mining

Facility	Location	Operation	Status	Permit #
Harmar Mine & Washer (Harmar Coal Co.)	Harmar	Surface mining	Reclaimed	02891701
Harmarville Mine	Harmar	Large surface industrial mineral mining		3476SM22T
Harmar Mine & Washer (Harmar Coal Co.)	Harmar	Post mining treatment	Active	02891701
Harmar Site	Harmar	Coal mining / refuse reprocessing	Active	02860201
Redland Brick, Inc.	Harmar	Large surface industrial mineral mining		02010301
Gascola Plant	Penn Hills	Large surface industrial mineral mining	Active	3473SM15
Logan's Ferry Mine	Plum	Surface coal mining	Stage 2 Approved	02910101
Renton Deep Mine	Plum	Underground coal mining	Reclamation Complete	02841305
Renton Pile	Plum	Surface coal mining	Proposed	02020201
Moon Run 2 Mine	Kennedy	Surface coal mining	Active	02880102
Brantner Special Reclamation Project	Reserve	Incidental coal extraction	Stage 2 Approved	SRP687
Rogers	Pittsburgh	Coal mining / GFCC	Proposed	02-02-02
Renton Deep Mine	Plum	Refuse disposal	Reclaimed / Chemical Treatment	02733702
Newfield Deep Mine		Underground coal mining	Reclamation Complete	
Diamond Wire Spring Company	Pittsburgh / Shaler	Surface coal mining	Bond Forfeited	SRP 582

Source: Pennsylvania Department of Environmental Protection eFACTS Online Database, www.dep.state.pa.us

G. Critical Areas

1. Landslides

This region of Pennsylvania is highly susceptible to landslides. A combination of a humid temperate climate, locally steep and rugged topography, weak rock strata, springs, and a great diversity in the weathering and erosion characteristics of near surface sedimentary rocks makes this project area one of the most slide-prone areas in the state. In addition, landslides can be triggered by:

- Surface and subsurface excavations (including coal removal),
- Addition of fill, which increases the stress on underlying materials,
- Changes in quantity or the direction of water flow, and
- 'Red Beds'- bedrock in hillsides composed of claystones and shales that are 40-60 feet deep. This bedrock weathers easily, especially when wet, and causes unstable slopes. The bluffs along Route 28 are an example of where the rock had to be cut back an additional 50 feet to avoid the Red Beds and eventual landslides.[13] Stabilization and repair can cost thousands to millions of dollars.

See Map 5.

2. Abandoned Mines / Problem Areas

Southwestern Pennsylvania's long history of coal mining and other mineral extraction has left a legacy of abandoned mines, which are now considered to be problem areas by DEP's Bureau of Abandoned Mine Reclamation. The Bureau's main focus is to identify and remediate any problem areas, such as subsidence, underground fires, and abandoned mine entry holes. Table 2-10 lists and Map 6 shows the problem areas and the reclamation projects, if any, that were conducted at the sites.

[13] Landslides in Western PA. Pittsburgh Geological Society. www.pittsburghgeologicalsociety.org.

Table 2-10
Abandoned Mine Problem Areas and Reclamation Projects

Map ID # See Map 6	Description of Problem Area	Reclamation Project	Start / End Date of Reclamation Project
1	Mine fire in Pittsburgh seam along Bigelow Blvd. - extinguished in 1953 by excavation and limestone flushing by city and US Bureau of Mines (BM) - last mined in 1930	Backfilling cave hole Reopen clean mine drainage ditch	8/13/93 - 8/13/93 5/3/01 - 5/3/01
2	Mine fire was at present location of Towervue Golf Course next to Agnew Rd. - extinguished in 1955 by a surface seal by BM - Pgh. seam of Becks Run Mine - subsidence problems	Reclamation Subsidence - Backfilling sink hole Mine Drainage - Install French drain Subsidence - Backfill cave hole	 7/17/90 - 7/17/90 10/29/90 - 10/31/90 9/5/90 - 9/5/90
3	Underground mine fire reported in 1972 - surface sealed by BM in 70's - seal replaced in 1998 due to more burning - still venting in some areas - area last mined in 1920	Backfilling mine fire vent hole	10/1/98 - 10/1/98
4	Underground mine fire at present location of Loretto Cemetery, St. Clair - trenched and surface sealed by BM and city in 1963 – last mined in 1927		
5	Acid mine drainage seep, pH 4.0, controlled by pipes and diverted to storm sewer except during heavy rain - seep also caused road deterioration, currently controlled by PennDOT - area last mined in 1915	Backfilling cave hole Remedial work on ditch line	11/18/91 - 11/18/91 8/25/95 - 8/25/95
6	Subsidence hole filled in by property owner	Backfilling abandoned air shaft	12/1/92 - 3/31/93
7	Three mine entries reclaimed (backfilled) by state in 1984		
8	Mine void under McArdle Road - monitoring required for future subsidence - area last mined in 1910	Backfilling cave hole	10/4/96 - 10/4/96
9	Refuse fire adjacent to abandoned strip mine - extinguished by local fire co. - surface mine last in use in 1965	Backfilling cave hole Backfilling cave hole	4/15/96 - 4/15/96 10/17/96 - 10/17/96
10	Subsidence area on Sylvan Terrace filled in twice, subsidence still occurring - mine drainage on Ilion St. seeping into back yards and basements from caved drift mine - mine pool impounded in hill behind homes - areas last mined in 1920 and 1930	Install French drain	5/8/90 - 5/25/90
11	Underground mine fires daylighted in 1957 - burning reported again in 2000 - area last mined in 1930		
12	Subsidence located on property on Burham St. – filled in 1981	Backfilling cave hole	8/12/94 - 8/12/94
13	Underground fire in 8 acres under Park View area - extinguished		

Source: PA DEP's Cambria Office – Bureau of Abandoned Mine Reclamation, 2002

3. Flood Prone Areas

Many of the communities in the corridor have riverfront property, which by nature often lies in floodplains of one of the Three Rivers or many tributaries. Building in floodplains is common, but often leads to heavier flooding due to 1) the loss of riparian vegetation, which normally helps to absorb excess waters, and 2) the cumulative effect of runoff from impervious surfaces, such as houses, streets, driveways, and parking lots throughout the watershed. While the dam system throughout the watershed has aided in reducing flood effects over the decades, many areas are still susceptible to water damage.

Floodplain
Low lying land along a stream that is most prone to flooding. Formed by erosion and deposition associated with natural migration of streams, including flood events.

Riparian vegetation
The vegetation that grows along a body of water. These important areas filter sediments and utilize nutrients from runoff, maintain and stabilize streambanks, and provide habitat for aquatic species.

The Pittsburgh area has seen several floods throughout its history. The most significant ones occurred in 1907 and 1936 when ice thaws and heavy rains caused flash floods. In response to those severe floods, the US Army Corps of Engineers (USACE) built dams on the rivers' tributaries to control the flow of water. This may have helped to prevent more severe damage from the floods of Hurricane Agnes in 1972 and the 1996 flood.

Nonetheless, flooding still occurs today along streams and rivers in the region; therefore, flood protection projects are in place to control the waters. In addition, the National Flood Insurance Program provides coverage for flood victims; however, insurance is only provided if local communities enact and enforce land-use controls in flood-prone areas.[14]

The Pennsylvania Flood Plain Management Act (Act 166) requires municipalities in identified flood plain areas to adopt floodplain management ordinances, codes, or regulations. Table 2-11 shows the municipalities in the corridor that have these ordinances.

FEMA
The Federal Emergency Management Agency is an independent agency reporting to the President and tasked with responding to, planning for, recovering from, and mitigating against disasters, including flooding. More information can be found at: www.fema.gov

[14] Flooding in Western PA. Pittsburgh Geological Society. www.pittsburghgeologicalsociety.org.

Table 2-11
Municipal Flood Control Initiatives

Municipality	Floodplain Zoning	Act 166	FEMA Insurance Available
Aspinwall	Yes	Yes	Yes
Baldwin	Yes	Yes	Yes
Bellevue	No	No	No
Etna		Yes	Yes
Fox Chapel	Yes – Per national regulations	Yes	Yes
Harmar	Yes	Yes	Yes
Kennedy	Yes	Yes	Yes
Kilbuck		Yes	Yes
Millvale	Yes	Yes	Yes
Neville	No	No	Yes
Oakmont	Yes	Yes	Yes
O'Hara	National Flood Insurance Program minimum standards	Yes	Yes
Penn Hills	Yes	Yes	Yes
Pittsburgh	Yes	Yes	Yes
Reserve	No	Yes	
Ross	Yes	Yes	Yes
Shaler	Yes	Yes	Yes
Verona	No	Yes	Yes

This information is from the municipalities that returned the surveys – (see Appendix A), or from the Planning & Project Division of Allegheny County Economic Development.

Saw Mill Run Local Flood Protection Project

Because of fairly common occurrences of flooding that damaged homes and business along Saw Mill Run in 2001, the USACE hired Carmen Paliotta Contracting, Inc. to make improvements to 4,700 ft. of channel on the lower portion of the stream (see stream on Map 6). This project "would provide protection against a 20-year frequency flood event and would contain 90% of all expected floods." The project is authorized by the Water Resources Development Act and is sponsored by the City of Pittsburgh.

Baldwin Flood Protection Project

A tributary to Lick Run is undergoing a reinforced concrete channel project for 100-year flood protection.

Pine Creek and West Little Pine Creek Flood Control Project

Conducted from 1986-1988 in Shaler Township. Phase 1 of the project consisted of the removal of a warehouse to allow for construction of the project. Phase 2 of the project consisted primarily of the construction of a flood diversion channel and levee on the west side of PA Route 8 through land originally occupied by the Pittsburgh Distributors Warehouse.

4. Steep Slopes > 25%

Because steep slopes are more susceptible to landslides, they are often not developed; therefore, they are generally suited for woodland and wildlife habitats. See Map 5 for areas of slope >25%. However, modern engineering makes it possible to build on these steep slopes, such as Mount Washington. Currently, the City of Pittsburgh is wrestling with how best to address zoning and development of hillsides.

5. Natural Heritage Areas

These are areas that are important due to the presence of high biological diversity, a rare or exemplary natural community, a species of special concern, or for a particular use, such as nature study or instruction. More information about these areas can be found in Chapter 4-E-3.

6. Viewscapes

Following a trip through the Fort Pitt Tunnel, Paul Goldberger, then architecture critic for the New York Times, described Pittsburgh as the only city with a "front door." This spectacular view and so many others in the corridor are used as promotional opportunities for the region and, like Mount Washington and the turnouts at Allegheny River Boulevard, as tourist attractions. Local groups, such as the Riverlife Task Force, work towards preserving these unique vistas. Furthermore, Allegheny River Boulevard and Grandview Avenue (along with portions of East Carson St., East Sycamore St., and McArdle Roadway) are being considered by the Pennsylvania Department of Transportation (PennDOT) for state Scenic Byway designation (the Grandview Ave. byway will be called the Coal Hill Scenic Byway).

H. Three Rivers Park

The Riverlife Task Force, created in 2000 by Pittsburgh Mayor Tom Murphy, is a group of property owners, and philanthropic, civic, and business leaders brought together to develop a vision for the downtown riverfronts. The result of their efforts is Three Rivers Park – a unified community-oriented riverfront park that would protect and sustain natural ecosystems and provide "a memorable, complex, and bustling river-centered environment."

The Task Force has developed a comprehensive vision for the park (which extends from the West End Bridge on the Ohio, to the 10th St. Bridge on the Monongahela, to the Sixteenth St.

Bridge on the Allegheny) that includes recommendations for future developers and activities. A proposed addition to the Carnegie Science Center at North Shore Park will include a park area with a focus on the river as well as an extension of the light rail system. The Mon Wharf will evolve into a pedestrian path with marinas, landings, and commercial and entertainment uses, while the Allegheny River south shore in the cultural district will include a walkway along the river.

The Task Force also has developed 'Guiding Principles' for the city to modify zoning and manage construction. Based on these principles, the following are some of their major recommendations for the park:[15]

- Create a riverfront overlay zoning district and develop design guidelines
- Develop pedestrian connections to the rivers
- Develop more public water transit stops and routes
- Expand public open space and water opportunities
- Create inlets, islands, and bays to increase interaction with water
- Daylight tributaries (see definition in Chapter 3-C-3)
- Require minimum standards for river access from all developers seeking design approval for riverfront development.
- Create coves for public marinas
- Create new connections from the inclines to the rivers
- Connect housing units to convenient water transportation (e.g. water taxis at various neighborhoods)
- Extend light rail through Strip and stadiums, and down the Ohio
- Increase mooring edges
- Establish river centers to provide information about rivers, the environment, and safety
- Light the bridges and increase pedestrian access along them by building staircases and viewing overlooks

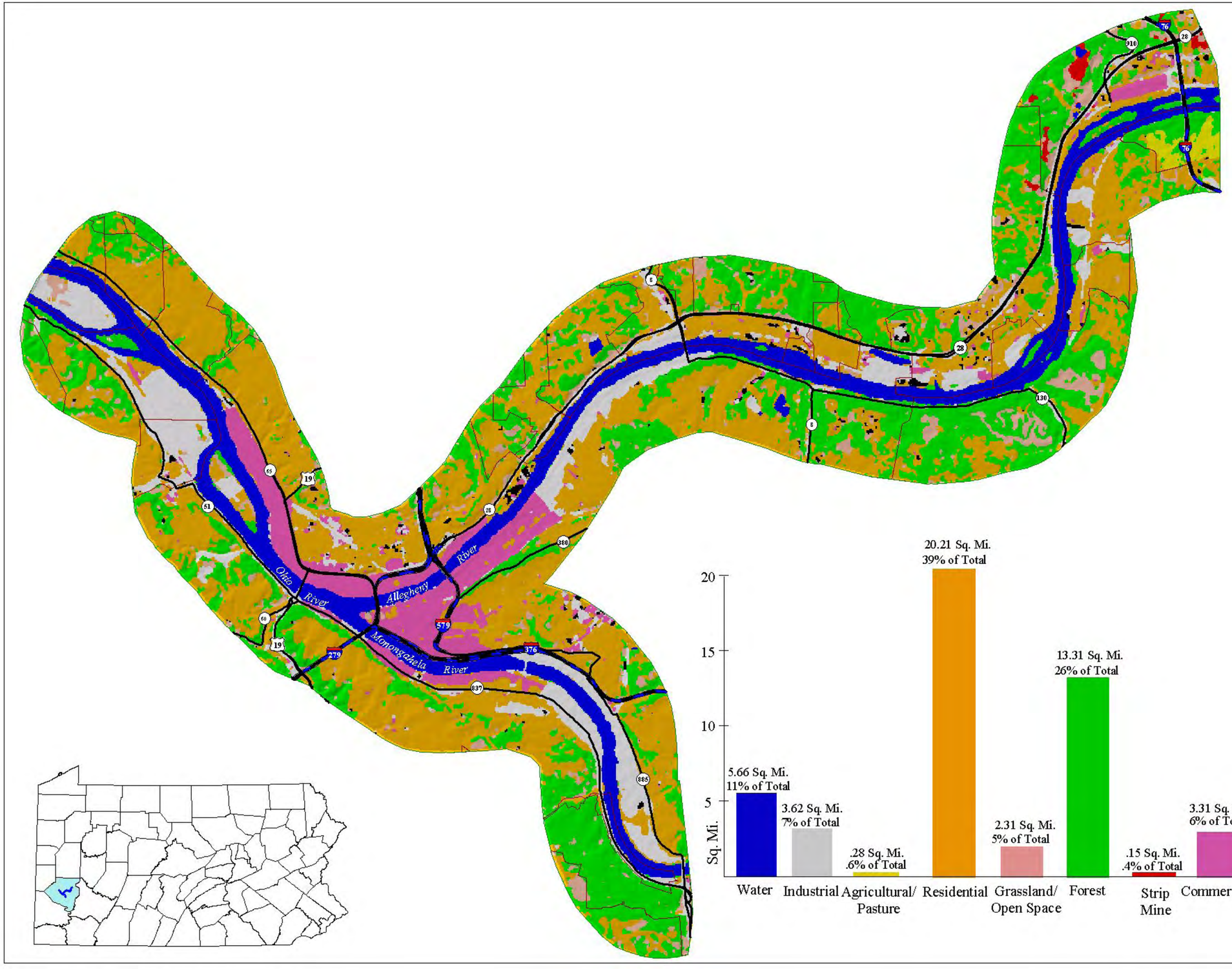
A complete description of the design guidelines can be found in Appendix B.

[15] www.riverlifetaskforce.org

Three Rivers Conservation Plan Corridor Land Cover

Map# 4

Municipal Boundary
Three Rivers Conservation Plan Study Area



0 1 Miles

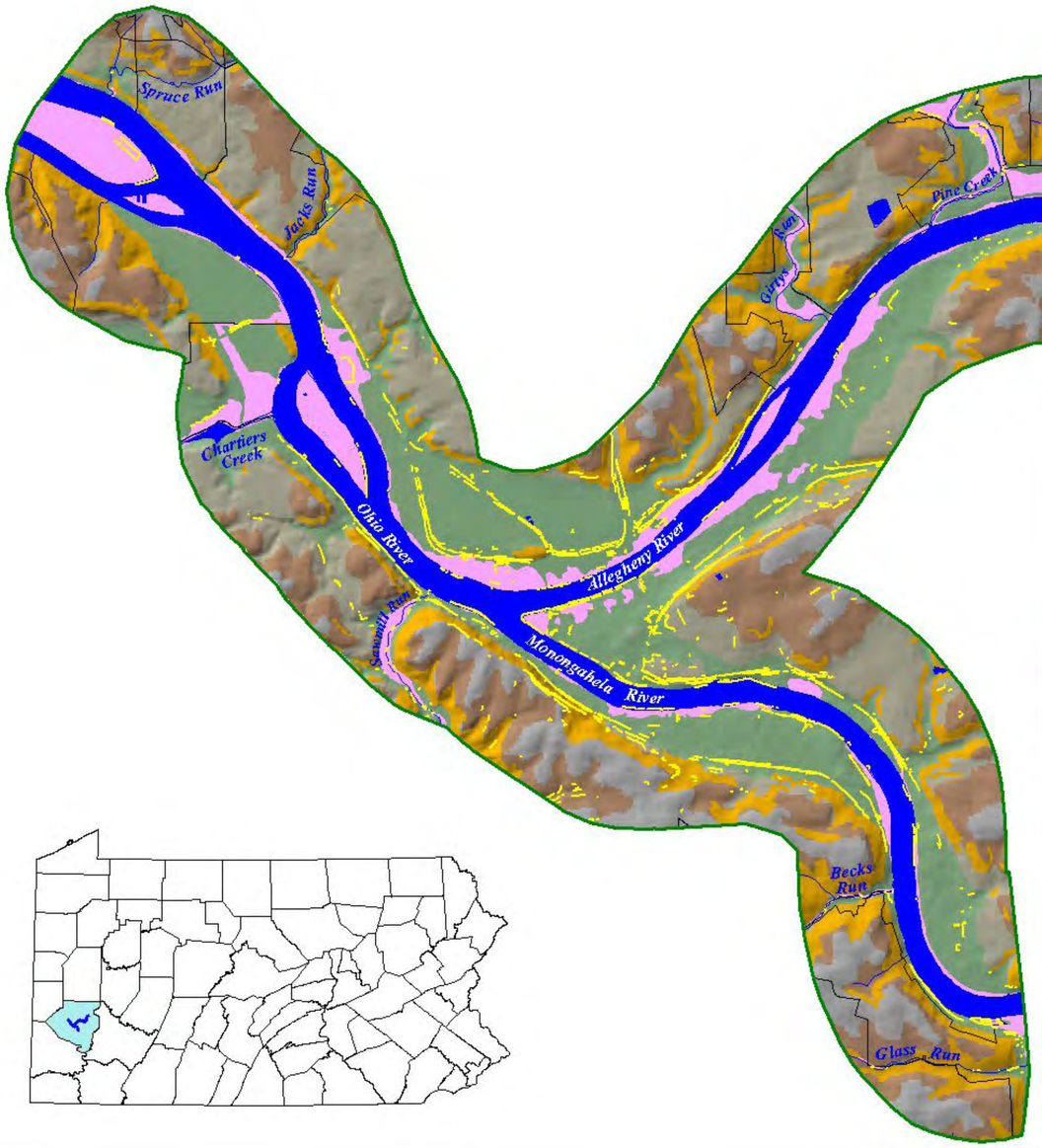
N

Scale 1:130,000
Accuracy: 5 ft.

Mapping provided by:
Westsylvania Heritage Corporation

Three Rivers Conservation Plan Critical Areas

Map# 5



Elevation (feet)
- 700 - 830
- 831 - 960
- 961 - 1100
- 1101 - 1300

- Retaining Walls
- Floodplain
- Slopes 25+
- Water
- Municipal Boundary
- Three Rivers Conservation Plan Study Area

0 1 Miles

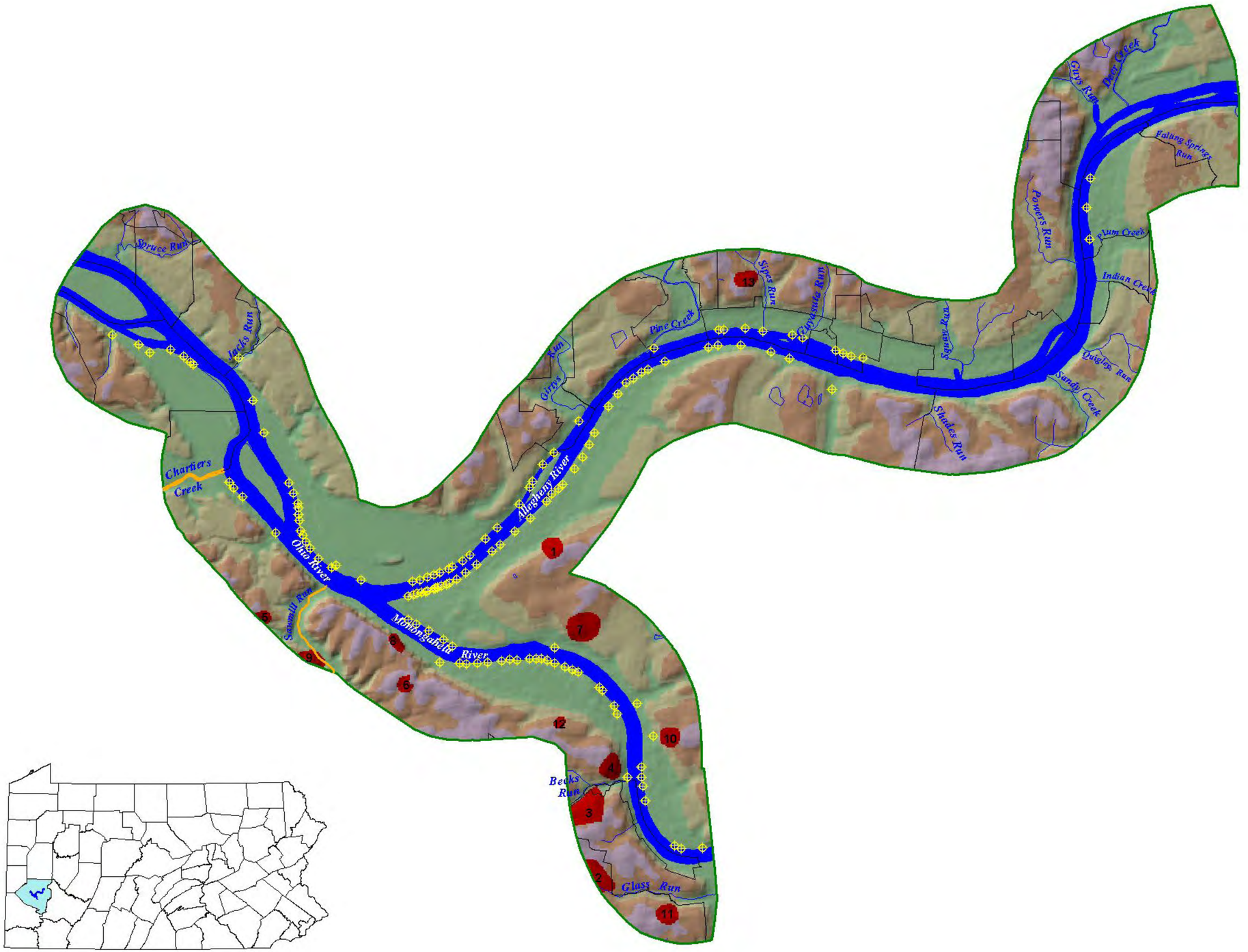
N

Scale 1:130,000
Accuracy: 25 ft.

Mapping provided by:
Westsylvania Heritage Corporation

Three Rivers Conservation Plan Areas of Concern

Map#_6_



Elevation (feet)
- 700 - 830
- 831 - 960
- 961 - 1100
- 1101 - 1300

- Combined Sewer Overflows
- AMD Affected Streams
- # Abandoned Mine Land Problem Areas (Id Number Relates To Table 2-10)
- Municipal Boundary
- Three Rivers Conservation Plan Study Area

0 1 Miles

N

Scale 1:140,000
Accuracy: 25 ft.

Mapping provided by:
Westsylvania Heritage Corporation

Combined Sewer Overflow— this point source of water pollution is a major issue in the region

Chapter Three

Water Resources

Pine Creek — one of the many tributaries of the Allegheny

Non-Point Source Pollution — one possible source is runoff from riverbank activity

Riparian Buffer—forested or vegetated river-banks help to improve water quality

A. Water Bodies

Historic stream maps for the Pittsburgh area show that many tributaries existed in the corridor prior to European settlement.[1] However, during the development of the region, some of these streams disappeared as they were culverted or blocked and discharged into the rivers from pipes (see Figures 1 and 2 in Appendix C). Remaining tributaries, including some that have been channelized and culverted, appear in Table 3-2 along with the water bodies that they drain into, drainage basin sizes, and classifications. A discussion of restoration options for culverted streams appears in Chapter 3-C-3. While Blacks Run, Streets Run, and Lowries Run actually drain into the rivers outside of the study area, they are included in this list because parts of their watersheds occur within the study boundary.

Water bodies and the Clean Water Act

The Federal Clean Water Act (CWA), which is carried out by the PA Department of Environmental Protection (DEP) under the Clean Streams Law, provides regulations that strive to "restore and maintain the chemical, physical, and biological integrity of the nation's waters."[2] Regulations dealing with water quality standards of the rivers and streams in this study corridor are found in The Pennsylvania Code Title 25, Chapter 93.

Each stream or stream segment is given a designated use to describe current or desired uses of that water body (Tables 3-1 and 3-2). The designated uses must include specific uses for aquatic life, water supply, and recreation (In other words, they set goals for all streams to be "fishable, drinkable, and swimmable."). Pennsylvania has set forth a 'baseline' of designated uses for all water bodies in the state (Table 3-1). In addition to those uses, PA may designate other uses or in some cases remove a 'baseline' use from the list. To achieve these designations, water bodies must meet water quality criteria for chemical, physical, and biological parameters (such as lead, temperature, or number and type of macroinvertebrate species).

Table 3-1
Statewide Designated Water Uses

Designated Use Category	Designated Uses – These are the baseline uses (the goals) that all surface waters are supposed to meet (though they may not currently meet those uses)
Aquatic Life ("fishable")	Warm water fishes
Water Supply ("drinkable")	Potable water supply, industrial water supply, livestock water supply, wildlife water supply, irrigation
Recreation ("swimmable")	Boating, fishing, water contact sports, aesthetics

Source: PA Code Title 25, Chapter 93.4 Table 2

[1] 3R2N Stream Restoration and Daylighting Report 2001, Phase II. The STUDIO for Creative Inquiry, Carnegie Mellon University.
[2] Section 101 (a)(2) Clean Water Act

In Table 3-2, it is assumed that all waterbodies have been assigned the designated uses described in Table 3-1. However, Pennsylvania chooses to specify that warm water fishery (WWF) is the designated use for aquatic life, unless otherwise noted. Where "delete PWS" is listed, the designated use of potable water supply does not apply to that waterbody.

Table 3-2
Tributaries, Drainage Basin Sizes, and Chapter 93 Water Quality Designations

Tributaries can be found on Maps 5 and 6 (see Chapter 2).
WWF = warm water fishery HQ= high quality PWS= potable water supply TSF= trout stocking fishery
N= navigation

Tributary Name	Receiving Waterbody	Drainage Basin Size (sq. mi.)	Chapter 93 Classification
Blacks Run	Allegheny River	0.6	WWF
Falling Springs Run	Allegheny River	0.1	WWF
Guys Run	Allegheny River	2.0	WWF Delete PWS
Deer Creek	Allegheny River	29.9	WWF
Plum Creek	Allegheny River	9.8	WWF
Powers Run	Allegheny River	0.9	WWF Delete PWS
Indian Creek	Allegheny River	0.2	WWF Delete PWS
Quigley Creek	Allegheny River	1.1	WWF Delete PWS
Sandy Creek	Allegheny River	3.5	WWF Delete PWS
Squaw Run	Allegheny River	6.0	HQ-WWF Delete PWS
Shades Run	Allegheny River	0.6	WWF Delete PWS
Guyasuta Run	Allegheny River	0.8	WWF Delete PWS
Pine Creek	Allegheny River	48.5	TSF
Girtys Run	Allegheny River	6.5	WWF Delete PWS
Becks Run	Monongahela River		WWF Delete PWS
Streets Run	Monongahela River	4.6	WWF Delete PWS
Sawmill Run	Ohio River	11.4	WWF
Chartiers Creek	Ohio River	277.0	WWF
Jacks Run	Ohio River	0.8	WWF
Spruce Run	Ohio River	2.0	WWF
Lowries Run	Ohio River	17.0	TSF
Total Tributaries 21	Total of the Tributaries Watershed Size 424.8 sq. mi.		
Ohio River			WWF
Allegheny River			WWF, add N
Monongahela River			WWF, add N

Source: http://www.pasda.psu.edu/access/watershed.shtml

B. Water Quality

1. Sources and Types of Water Pollution

Pollution entering our waterways is typically assigned to one of two categories: point or non-point source pollution. Point source pollution comes from a defined point, such as a pipe, along

a waterway. Permitted point source discharges from industrial, commercial, and municipal facilities are described below. Conversely, non-point source pollution comes from non-specific areas such as agricultural runoff and parking lots and is therefore more difficult to control and regulate. The following sections describe both pollution sources in more depth.

Point Sources

In order to control and regulate the amount and types of pollution entering our waterways, and to help achieve designated uses and prevent water quality degradation, point sources of pollution must have proper permits to discharge wastes into the nation's waters. The National Pollutant Discharge Elimination System (NPDES) is a permitting system that targets point source dischargers, such as industrial facilities and wastewater treatment plants. Permitted facilities must meet stringent effluent limits and are responsible for monitoring (water quality testing) and reporting to the DEP. These permits are referred to as "individual" permits. For other point dischargers, such as stormwater pollution or construction site runoff, a general permit is issued. General permits usually apply to smaller operations and are less stringent in the monitoring and reporting requirements.

The DEP eFACTS (environment, facility, application, compliance tracking system) database provides information on all NPDES-permitted facilities in the state and allows the public to search for facilities by name, county, or municipality (www.dep.state.pa.us/efacts/).

Some types of facilities and activities with NPDES permits under the DEP Bureau of Water Pollution Control include:

- Discharge of stormwater associated with industrial activities
- Discharge from gasoline-contaminated ground water remediation systems
- Discharge from industry
- Single residence sewage treatment plant
- Stormwater runoff from construction (greater than one acre disturbance)
- Erosion and Sediment Control facilities
- Publicly owned sewage treatment works
- Active mining operations
- Discharge of stormwater from municipal separate storm sewer systems (MS4s)

MS4
Sewer system in which sanitary and storm water are managed through separate collection systems

A comprehensive list of NPDES permitted facilities affecting local water supplies are included in the DEP's Source Water Assessment reports (see Chapter 3-B-2).

Facilities not permitted, but that affect water quality are: Sanitary Sewer Overflows and illegal sanitary sewer tie-ins to storm drains.

Non-Point Sources

Although non-point source pollution is much more difficult to control than point source pollution, there are still efforts throughout the Commonwealth and the nation to prevent and control it. The DEP Water Quality Bureau has set up a "Non-Point Source (NPS) Management Program," which consists of action plans that address this type of pollution across the state. Some of the common sources of NPS pollution in Pennsylvania are:

- Abandoned mine drainage (AMD)
- Agriculture
- Silviculture (soil erosion and sediment loading from forestry operations)
- Habitat modification
- Hydrologic modification
- Construction (sites less than one acre)
- Dirt and gravel road grading
- Land disposal (landfills, illegal dumpsites)
- Urban runoff
- Leaking sewers

Abandoned Mine Drainage
Drainage from, or caused by, deep mining, surface mining, or coal refuse piles. It may be acidic or alkaline with elevated levels of dissolved metals.
Acid Drainage Equation:
Pyrite+oxygen+water=iron hydroxide (rust)+ sulfuric acid

The main non-point source pollution sources affecting the rivers in this corridor are habitat and hydrologic modifications, construction, illegal dumps, and urban runoff, especially stormwater and sewage. At the local level, municipal zoning, land use policies, and stormwater management are examples of how communities can help prevent or reduce non-point source pollution.

Stormwater Management

Stormwater can be characterized as both point and non-point source pollution. Natural stormwater runoff from the land or from small construction sites under one acre are considered to be non-point source pollution because there is no discreet conveyance of the water – it runs over the land and into streams and rivers without controls.

Conversely, stormwater from construction sites larger than one acre or from municipal separate storm sewer systems (MS4s) are considered to be point source pollution, which must be controlled and permitted.

ACT 167
The Storm Water Management Act (Act 167) requires each county, in consultation with the municipalities involved, to prepare and adopt a storm water management plan for each watershed in its boundary. Plans must be reviewed every five years and include an inventory of both existing and potential characteristics and problems of the area, such as run-off characteristics, soil impacts, and significant obstructions.
Best Management Practices
Actions put into place voluntarily or to comply with the requirements of a regulation, such as Act 167. e.g., pervious pavement to increase stormwater recharge.

Pennsylvania's Stormwater Management Program came out of the Stormwater Management Act (Act 167) of 1978. Under the Program, counties develop stormwater management plans for watersheds within the county boundaries. Municipalities then develop ordinances that meet the specifications of the county plans. When construction or other land disturbances take place, the developers must follow the guidelines set forth for stormwater management. Table 3-3 lists municipalities with these stormwater policies. See Appendix C for a list of watersheds (and the municipalities within them) and which ones have ACT 167 Plans.

The Clean Water Act established two Phases of the federal Stormwater Program:

Phase I (1992) requires NPDES permits for construction activities that disturb five or more acres of land. Permitees must use best management practices (BMPs) and erosion and sediment control plans to control stormwater runoff from sites.

Phase II (adopted in 2002) requires NPDES permits for construction activities that disturb one to five acres of land. This permit also requires the use of BMPs and erosion and sediment control plans. In addition to the construction permits, Phase II also requires NPDES permits for MS4s in urban areas. As part of the permit requirements, the MS4 operators must develop and implement BMPs to manage stormwater and must conduct public outreach. Operators within municipalities that have adopted an Act 167 Plan may already meet some of the requirements of the MS4 NPDES permit if their Act 167 Plan sufficiently addresses water quality issues. Other operators must develop their own stormwater management program or develop an Act 167 Plan to meet permit requirements. These permit requirements must be completed during the five-year permit period (the five year period ends March, 2008).

Visit www.dep.state.pa.us, keyword "stormwater" for more details.

Table 3-3
Stormwater Policies for Municipalities

Municipality	Act 167	For what waters	Best Management Practices
Aspinwall	Yes	Three Rivers Wet Weather Demonstration Project Allegheny Corridor	None
Avalon	No		
Baldwin	Yes	Streets Run, Lick Run, Becks Run, Monongahela River	Yes
Bellevue	No		None
Ben Avon	No		
Ben Avon Heights	No		
Blawnox	Yes	Squaw Run	
Etna	Yes	Pine Creek	
Fox Chapel	Yes	All	None
Harmar	Yes	Squaw Run	
Kennedy	No		
Kilbuck	No		
McKees Rocks	No		
Millvale	Yes	Girtys Run	
Neville	No		
Oakmont	Yes	Plum Creek	None
O'Hara	Yes	Pine Creek, Squaw Run, Allegheny River watershed	Encourages groundwater recharge via grass swales
Penn Hills	Yes	Turtle Creek (Thompson Run, Thompson Run tributary, Duff's Run, Chalfont Run, Plum Creek, Sandy Creek, Shades Run/Nadine Rd., Nine Mile Run)	Stormwater plans are reviewed by municipal engineers and forwarded to county for review.
Pittsburgh	Yes	Monongahela and tributaries	Use traditional methods
Plum	No		

Reserve	Yes	Girtys Run, Spring Garden	No
Ross	Yes	All	None
Shaler	Yes	Pine Creek, Girtys Run	Yes – Extensive vegetation filtration in place, developing new practices
Sharpsburg	No		
Stowe	No		
Verona	No		None
Data from survey (see Appendix A) and Planning & Project Div. of Allegheny Co. Econ. Devel.			

Impaired Streams and Rivers

While NPDES targets point source pollution, another approach to targeting all pollution sources, especially non-point, is through the use of total maximum daily loads (TMDLs). The CWA calls for the development of TMDLs for all waterways that do not meet water quality standards (see Chapter 3-A).

Assessed waterways that do not meet their designated use must be listed by the state every two years in accordance with Section 303(d) of the CWA, which is the list of impaired streams and rivers. Waterways listed within Section 303(d) are priotized for TMDL development based on the severity of impairment. The DEP is incorporating them on a watershed basis where local watershed groups actually implement the TMDL Plan and do testing with DEP's assistance.

More specifically, according to the PA DEP:

> TMDLs set an upper limit on the pollutant loads that can enter a water body so that the water will meet water quality standards. The Clean Water Act requires states to list all waters that don't meet their water quality standards even after required pollution controls are put into place. For these, the state calculates how much of a substance can be put in the stream without violating the standard and then distribute that quantity among all sources of the pollution on that water body. A TMDL plan includes waste load allocations for point sources, load allocations for non-point sources, and a margin of safety. States must submit TMDLs to the Environmental Protection Agency (EPA).

The Clean Water Act also requires a water quality assessment report (305(b)) on all impaired waters every two years along with the 303(d) list. "This report provides summaries of various water quality management programs including water quality standards, point source control, and non-point source control. It also includes descriptions of programs to protect lakes, wetlands, and groundwater quality."[3] Furthermore, the 305(b) report describes the extent to which waterways are supporting their designated uses. For example, if in a particular waterway all designated uses are achieved, the waterway is listed as “fully supporting.”

The waterways described in Table 3-4 have been listed as "impaired" on the year 2002 303(d) list. They are grouped into three categories based on designated uses that the waterway did not support. Those that have been targeted for TMDLs are so noted. While the streams and rivers

[3] PA DEP www.dep.state.pa.us

are assessed by small segments along their length, the summaries below indicate the general causes of pollution along stretches in and near the study corridor.

Table 3-4
Impaired Streams and Rivers on the 2002 303(d) List

Category	Waterway	Year Listed as Impaired	Pollution Source	TMDL Target Date
Degraded Aquatic Life	Girtys Run	2002	Nutrient loading from habitat alterations, vegetation removal, urban runoff	
	Deer Creek	1998	Salinity, metals, siltation, and turbidity caused by AMD and construction	
	Pine Creek	2002	Nutrient loading from urban runoff	
	Plum Creek	2002	Siltation and nutrients from urban runoff	
	Sandy Creek	2002	Nutrient loading from urban runoff	
	Squaw Run	2002	Siltation, nutrients, and pesticides from urban runoff and golf courses	
	Streets Run	1996	AMD	
	Chartiers Creek	1998	AMD, agriculture, urban runoff, habitat modification	2003
	Sawmill Run	1996	Organic enrichment, low dissolved oxygen, waterflow variability from urban runoff, AMD, combined sewer overflows	2003
Impacts to Human Health	Allegheny River	1998	PCB (see Table 3-7) contamination from unknown source	Date unknown
	Ohio River	1998	Dioxin from unknown source	Date unknown
Recreational Use Impairments	Allegheny River	2002	Pathogens from unknown source	
	Monongahela River	2002	Pathogens from unknown source	
	Ohio River	2002	Pathogens from unknown source	

Source: DEP 2002 303(d) list – www.dep.state.pa.us

Degraded Aquatic Life Use - Problems associated with impacts to aquatic life use are identified primarily through stream biological community assessments. There are a total of 7,730 miles of streams and 23,264 acres of lakes in Pennsylvania listed as having aquatic life use impairments.

Impacts to Human Health – Fish Consumption Advisories -The DEP identified impacts to human health for the 2002 303(d) list using fish tissue analyses. There are a total of 1,085 miles of streams in Pennsylvania listed as having human health-related problems and 511,033 acres of lakes not attaining human health standards.

Recreational Use Impairments - Recreational use impairments for the 2002 303(d) list were identified when pathogens were listed as the cause of impairment. There are approximately 41 miles of streams and 1150 acres of lakes listed as being impaired by pathogen sources in Pennsylvania.

The Three Rivers 2nd Nature (3R2N) 2001 report on stream restoration and daylighting studied watersheds and streams for ecological integrity. Using several criteria, they established lists of tributaries based on their overall ecological quality. They evaluated the watersheds to gain a sense of all the effects on the waterways. Table 3-5 categorizes tributaries by integrity.

Table 3-5
3R2N Watershed and Stream Assessment

Highest Integrity (slightly impaired)	Moderate Integrity (moderately impaired)	Low Integrity (greatly impaired)	Extremely Altered (heavily impaired)
Guyasuta Run	West Run	Streets Run	Spring Garden
Pine Creek	Sipes Run	Saw Mill Run	Allegheny Cemetery
Chartiers Creek	Becks Run	Nine Mile Run	Heths Run
	Girtys Run	Tassey Hollow	Corliss Street
	Homestead Run	Woods Run	32nd St. Culvert
	Jacks Run	Four Mile Run	
	Spruce Run		

Source: 3R2N, Stream Restoration and Daylighting Report 2001, Phase I. The STUDIO for Creative Inquiry, Carnegie Mellon University.

2. Water Supply

Due to the abundance of surface and ground water in this study area, a potable water supply is readily available to the people of the region. Table 3-6 lists the intakes in the study area. However, because of national security issues, specific locations and details about these water suppliers are no longer available.

Table 3-6
Water Supply Intakes

Source	River	Name	Ownership
Surface	Allegheny	Oakmont	Public
Surface	Allegheny	Penn Hills	Public
Surface	Allegheny	Pittsburgh	Public
Surface	Monongahela	PA American Water Co.	Investor owned utility
Surface/Well	Ohio	West View	Public
Well	Allegheny	Harmar	Public
Well	Allegheny	Sharpsburg	Public
Well	Allegheny	Shaler/Etna	Public
Well	Allegheny	Heinz Plant	Private
Well	Allegheny	Aspinwall	Public

Source: Conversation with DEP Bureau of Water Management, 2002

Pennsylvania Source Water Assessment Program

In August of 1996, Congress amended the Safe Drinking Water Act to include provisions for drinking water supply assessments. One year later, the EPA issued a guidance document for states to begin their Source Water Assessment and Protection (SWAP) program, the main goals of which are the prevention of drinking water contamination and citizen involvement in the clean-up and pollution prevention process.

The DEP, along with the consulting firm Spotts, Stevens, and McCoy, have assessed all the drinking water sources in the state. The assessments include one square mile surrounding all groundwater systems serving a population of 3,300 or more, small surface water systems with small, forested watersheds, and large surface water systems. Most of southwestern Pennsylvania is served by large surface water systems. The studies looked at the prime contributors to water pollution and how they affect the water quality of the drinking water source. Each of the assessments will be used to determine what preventative steps are required (by municipalities, water suppliers, and the government) to protect drinking water systems. The reports are available from the DEP.

The assessments summarized the greatest potential threats to water quality. While these threats (e.g. potentially polluting facilities) may not be present within the boundaries of the study corridor, they still affect water quality as an upstream source. They are listed in Table 3-7. The consulting group completed inventories of potential sources of contamination for treatment plants. The sources include CERCLA and RCRA sites (see Chapter 2-F-3), businesses and industries, mines, NPDES-permitted facilities (see Chapter 3-B-1), oil and gas wells, underground storage tanks, combined sewer outfalls (see Chapter 3-B-4), and many other potential pollution sources identified by the public and the consultants. Other non-specific sources of pollution are accidental spills from barges, roads, railways, and bridges.

Table 3-7
Potential Sources of Water Contamination that Affect Drinking Water Treatment Plants

General Categories of Potential Water Pollution Sources	Examples of Types of Pollutants Discharged from Source*
Auto Repair Shops / Truck and Bus Terminals	Fuels, oil, various automotive fluids, solvents, chemicals associated with gasoline (MTBE and BTEX), paint, metals
Utility Substations	PCBs
Dry Cleaners	Perchloroethylene
Medical Facilities	Chemicals such as xylene, biohazardous wastes
Septic Systems	Untreated wastewater, pathogens
Print Shops	Spent chemicals, heavy metals such as lead and cadmium, inks, xylene
Concrete Plants	Untreated wastewater with hazardous material such as formaldehyde, potash, basic water
Asphalt Plants	BTEX
Electronics Manufacturers	Caustics, solvents, metals, cyanide
Steel Manufacturers	Solvents, abrasives, acid and basic waters
Machine Shops	TCE, BTEX
Mines	Metals, acidic waters
Chemical Research Labs	Chemicals
Quarries	Leaves exposed stream banks that lead to runoff, siltation, and turbidity
Wastewater Treatment Plants	Chlorine, sulfur dioxide

***Description of Contaminants**
MTBE = methyl-tertiary-butyl ether is a fuel oxygenate that leads to taste, odor, respiratory, and neurological problems
BTEX = benzene, toluene, ethylene, and xylene are water-soluble hydrocarbons of gasoline; xylene causes loss of balance, liver and kidney problems, and central nervous system damage
PCB = polychlorinated biphenyls, banned in 1977, are persistent in the environment and lead to anemia, organ damage, and cancer
Perchloroethylene = chemical that is persistent in the environment and causes health problems
Lead and Cadmium = heavy metals that lead to neurological problems, learning disabilities, and kidney damage
TCE = Trichloroethylene is a solvent that can cause nervous system, lung, and heart problems
Siltation and Turbidity = suspended solids provide opportunity for waterborne disease and also block out sunlight, preventing aquatic vegetative growth
Dioxin = an organic chemical byproduct of chemical and plastic manufacturing and burning that is thought to be toxic to humans

Source: Source Water Assessment Draft Reports (of large surface water supplies in the study area), prepared by Spotts, Stevens, and McCoy, Inc. for DEP, May 2002

3. Studies and Monitoring Groups

Government agencies, academic institutions, and volunteer organizations monitor water quality. This section describes several major entities that collect water quality information in the study area.

Three Rivers 2nd Nature

Three Rivers 2nd Nature (3R2N), a project of The Studio for Creative Inquiry at Carnegie Mellon University, conducted the first year of a five year water quality report on the Pittsburgh Pool (and tributaries) during the summer of 2000. Testing on the Allegheny River Pool 2 took place in the summer of 2002[4]. Their background data is intended "to reveal patterns and relationships between water quality, public use, and the functioning ecosystems of rivers."[5] They conducted dry- and wet-weather sampling, determining water quality based on the pathogens fecal coliform and *E. coli*. The tributaries and the following sites were tested at the left bank descending, middle, and right bank descending:

1) Ohio River – mile points 0.7, 1.3, 2.7, 4.8;
2) Allegheny River - mile points 0.18, 2.26, 4.57, 6.10, 7.4, 9.8, 12.8, 14;
3) Monongahela River - mile points 0.23, 2.82, 5.66

The Contact Recreation Standard (the point at which people should not have contact with the water) for fecal coliform mandates that the contaminant shall not exceed 400 CFU/100ml (colony forming units per 100 milliliters) in more than 10% of samples at one site per month; or, it cannot exceed 200 CFU/100ml as a monthly average (at least 5 samples per month). 3R2N references the standard, but sampling over 6-8 weeks, they do not meet the monthly target of 5 samples per month.

During dry weather, 3R2N found that the tributaries were generally more polluted by fecal contamination (i.e. exceeded the standard) than the rivers. In wet weather, both the rivers and tributaries were worse for fecal coliform pollution, especially along the banks of the rivers, which may be due to their location near combined sewer overflows (CSOs) (see Chapter 3-B-4 for definition) (these areas are not recommended for fishing or human contact after wet weather). However, the rivers seem to recover in 15-33 hours after the rain event due to the reduction of CSOs.

The tributaries also are susceptible to fecal contamination because of their shallow depth and low dilution capabilities. This is of concern because the streams are common fishing areas for local people. Following is a

Coliform Bacteria
Total coliform bacteria are a collection of relatively harmless microorganisms that live in large numbers in the intestines of warm- and cold-blooded animals. They aid in the digestion of food. A specific subgroup of this collection is the fecal coliform bacteria, the most common member being *E. coli*. These organisms may be separated from the total coliform group by their ability to grow at elevated temperatures and are associated only with the fecal material of warm-blooded animals. The presence of fecal coliform bacteria in aquatic environments indicates that the water has been contaminated with the fecal material of man or other animals. At the time this occurred, the source water may have been contaminated by pathogens or disease producing bacteria or viruses which can also exist in fecal material. Some waterborne pathogenic diseases include typhoid fever, viral and bacterial gastroenteritis, and hepatitis A. The presence of fecal contamination is an indicator that a potential health risk exists for individuals exposed to this water. Fecal coliform bacteria may occur in ambient water as a result of the overflow of domestic sewage or nonpoint sources of human and animal waste.
Source: http://www.state.ky.us/nrepc/water/wcpfcol.htm

[4] 3R2N, Aquatic Report of the Allegheny River 2002, Phase III. The STUDIO for Creative Inquiry, Carnegie Mellon University.
[5] 3R2N, Water Quality Report 2000, Phase I. The STUDIO for Creative Inquiry. Carnegie Mellon University.

list of the tributaries most impacted by fecal coliform during dry weather:

Allegheny River
Most Impacted: Girty's Run, Pine Creek, Sipes Run, Squaw Run, Indian Creek, Plum Creek
Least Impacted: Guyasuta Run, Shades Run, Guy Run, Fallen Springs Run
Monongahela River
Most Impacted: Becks Run, Streets Run
Ohio River
Most Impacted: Saw Mill Run
Least Impacted: Chartiers Run

The maximum contaminant standard for *E. coli* is 240 CFU/100ml at any point. This contaminant was prominent along each testing transect and was highest during wet weather events (i.e. following heavy rains).

ORSANCO

Other water quality studies are conducted by the Ohio River Valley Sanitation Commission (ORSANCO). ORSANCO's Monitoring Network was developed to detect the causes of pollution in the Ohio River. Their testing sites along the Three Rivers involve monitoring for bacteria, organics, metals, and various physical parameters.

ORSANCO also updates river conditions on their website as part of EPA's EMPACT (Environmental Monitoring for Public Access and Community Tracking) Program. Citizens can access water quality data, current river conditions, and recreational advisories. Visit www.orsanco.org/empact.

United States Geological Survey

The USGS has a water quality database for 2001 and 2002. They monitor water quality at several sites in the study area: on the Allegheny at Oakmont and the 9th St. Bridge; on the Monongahela at mile point 2.3; on the Ohio at mile point 4.0; on Little Pine Creek near Etna; and on Lowries Run at Emsworth. Visit http://pa.water.usgs.gov/pa_hydro.html

Other Sources for River Conditions and Water Quality

- USACE - Pittsburgh District - provides daily updates on river conditions - stage, flow, pH, temperature, etc. Visit www.lrp.usace.army.mil

- River Watchers - volunteer monitoring groups that enter water-quality data into an on-line database. Visit www.orsanco.org

- The National Research Council's Water Science and Technology Board is conducting a study on water quality problems in 11 counties in southwestern Pennsylvania, including Allegheny. "The goal of the study is to develop recommended strategies for prioritizing wastewater and water quality issues and identifying cost-effective approaches to address those issues. One of the primary focuses is the problem of combined sewer overflows."

The Allegheny Conference on Community Development is the contact group for the project.[6]

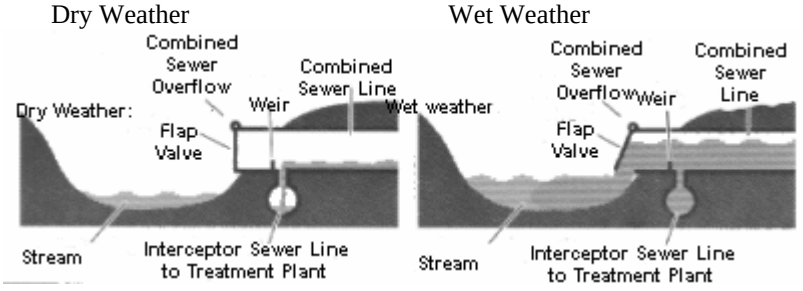
- Also, the Pittsburgh Water and Sewer Authority joined the Partnership for Safe Water, which is a "voluntary effort involving rigorous self-assessment procedures that are specifically geared toward identifying and correcting weaknesses in plant operation, design, and administration. Correcting these weaknesses helps prevent water-borne disease outbreaks from pathogens such as Cryptosporidium and Giardia."[7]

4. Sewer Overflows[8]

Most of the communities in the Plan fall within the Allegheny County Sanitary Authority (ALCOSAN) service area, a network of 83 municipal collection systems flowing to a single treatment plant. There are two types of sewage collection systems in the ALCOSAN service area:

- *Combined sewer systems* are designed to carry wastewater and stormwater. These are more common in communities with collection systems built before the 1940s. Water and waste from a variety of sources come together in one sewer system and are sent to a water treatment facility. However, during wet weather, the treatment plants cannot handle the capacity of sewage and water, so the pipes overflow to waterways.

  When this type of overflow occurs in a combined collection system, it is called a combined sewer overflow (CSO). These were designed with overflow structures to deliberately release excess stormwater and wastewater at capacity. These structures are legal, though they require a permit. Communities will soon be responsible for limiting these overflows from nearly 70 events per year down to 4 or 5.



[6] From DEP Update, July 12, 2002, pg. 42-43.
[7] From DEP Update, July 12, 2002, pg. 43-44.
[8] The Regionalization Report: An initial study on options for regionalizing the management of sewage collection within the ALCOSAN service area, 3 Rivers Wet Weather, Inc., January 2002.

- *Separate sanitary sewer systems* are designed to carry only wastewater. Stormwater is managed through a different collection system. These systems were required for any new system built after the 1940s.

  Sewer pipes are rarely full when wastewater is flowing from homes to the sewage treatment plant. Therefore, groundwater or stormwater can leak into cracked or broken pipes, taking up space that should be used to carry only wastewater. In some instances, stormwater is illegally piped into separate sanitary systems to control the runoff through storm drains in streets, parking lots, and gutters. ALCOSAN also has identified 11 streams that were diverted directly in the sewer system during the construction of roads or homes. During dry weather, the sewage system generally operates effectively, though recent studies by 3R2N indicate that the streams are impacted by sewage even in dry weather. During wet weather, the additional flow exceeds the capacity of the sewers causing the sewage to overflow into creeks, streams, or rivers, creating a large-scale problem.

  When this type of overflow occurs in a separate sanitary system, it is called a sanitary sewer overflow (SSO) and may occur in an overflow structure, a structure that is intentionally designed to discharge flow into nearby streams. Occasionally, the overflow can occur in a street from a manhole or in the basements of homes. The overflow structures and unintentional overflows are illegal according to the Clean Water Act. The types of overflows that occur in streets or basements also are illegal.

For this region, an estimated 16 billion gallons of sewage and stormwater are discharged into streams and rivers each year. This is a tremendous public health risk as the rivers provide drinking water for 90 percent of Allegheny County residents. Furthermore, the county must issue warnings against recreational contact with the rivers and streams. During the 2002 recreational boating season (May 15 – Sept. 30), the Allegheny County Health Department issued warnings on 83 days (up 15 days from 2001). These warnings are dependent on whether there is a dry or wet summer. The overflows also have an impact on future development as well as attracting new businesses to the region.

The estimated cost to rehabilitate the sewage collection system may be $3 billion. While some financial support may be available from the state and federal government, the ratepayers will have to contribute as well. Rehabilitation of the system is necessary to comply with federal regulations.

The municipalities within the ALCOSAN service area negotiated consent agreements with the EPA to reduce the sewer overflows and avoid costly fines (they had until January 31, 2004 to sign the agreement). According to the Allegheny County Health Department, the consent orders will end in 2012, by which time the municipalities must make significant improvements in their sewer systems. Municipalities also participate in regional groups sponsored by the 3 Rivers Wet Weather Demonstration Program, a non-profit organization working to help Allegheny County communities solve the sewer overflow problem. (See Map 6)

With increased activity on the rivers, especially body-contact sports such as tubing and water-skiing, sewer overflows become a problem for everyone in the rivers, especially the young, elderly, immune-compromised, and anyone with open wounds. Cleaning up this problem becomes even more important as this connection with the water intensifies.

5. Fish Consumption Advisories

Due to the presence of pollutants in the streams and rivers, the PA Fish and Boat Commission (PFBC) issues fish consumption advisories each year. They provide recreational fishermen with guidelines of how many fish they should eat in a certain time period based on the severity of the pollution.

Table 3-8
2003 Fish Consumption Advisories for Allegheny County

Water Course	Fish Species	Meal Frequency*	Contaminant
Allegheny River	Carp and Channel Catfish	One meal/month	PCB
Monongahela River	Freshwater Drum	Six meals/year	PCB
	Carp and Channel Catfish	Do not Eat	PCB
Ohio River	Walleye, Sauger, White Bass and Freshwater Drum	One meal/month	PCB
	Carp and Channel Catfish	Do not Eat	PCB
Chartiers Creek	Largemouth Bass	One meal /month	PCB and Chlordane

Source: Pennsylvania Fish & Boat Commission www.fish.state.pa.us
*A meal is defined as one-half pound of recreationally-caught sport fish for a 150-pound person.

C. Critical Areas

1. Dredging

EIS
A study and report of the impacts that an activity has on the environment. It is required of all federal government groups that propose a major project where natural resources will or may be disturbed. It is a main part of NEPA, the National Environmental Policy Act.

While commercial sand and gravel dredging no longer occurs in the study area, it continues upstream on the Allegheny River. The Allegheny and upper Ohio Rivers contain extensive reserves of high quality sand and gravel, which were deposited as glacial till at the end of the Ice Age. These deposits represent a unique, finite natural resource in western Pennsylvania. Commercial dredging of this sand and gravel has taken place for more than 100 years. Aggregates produced from the rivers have played a significant role in the development of the transportation system and infrastructure of western Pennsylvania. Currently, more than 65% of the dredged materials are used in publicly-funded infrastructure projects under rigid quality specifications, and approximately 38% is sold directly to the Pennsylvania Department of Transportation (PennDOT) for use in road paving materials.

For years, environmental organizations have opposed dredging, based on the potential effect on fish and wildlife habitat. Substrate loss, diminution of shallow water area, siltation of clean gravel used for incubation of fish eggs and support of other aquatic organisms, the loss of islands due to slumping of supportive side slopes, and the effect on threatened and endangered species are all alleged impacts on the Allegheny River. In response, a new Environmental Impact Statement (EIS) is under development. In July 2002, the USACE issued a draft EIS on Commercial Sand and Gravel Dredging in the Ohio and Allegheny Rivers, which, when finalized, will replace the EIS completed in 1981. The final draft of this EIS has not been released.

Currently, there is no commercial dredging in the Pittsburgh Pool or Pool #2 on the Allegheny River, and there is no immediate prospect for dredging in those areas.

2. Abandoned Vessels

Abandoned vessels are categorized and administered under Title 46, United States Code, Sections 4701-4705 (46 U.S.C. 4701-4705). The U.S. Coast Guard (USCG), Pittsburgh Marine Safety Office keeps records of the abandoned vessels within the rivers (Table 3-9). If the owners are known and can be found, they must pay for the cleanup or are charged $1100/day. However, the USCG does not typically take on a clean up if the owner is unknown. Most often, these vessels remain where they are due to the high costs of removing them (usually $50,000 to $100,000) and lack of funds. Typically, the USACE will remove vessels only if they impede navigation. According to the USCG and the USACE though, none of the abandoned vessels in this study corridor pose a hazard to navigators or recreators.

Table 3-9
Sunken, Beached, or Stranded Vessels

BC=back channel, LDB=left descending bank, RDB=right descending bank

River	Mile	Bank	Description	Hazard
Ohio	3.0	LBC (back channel)	Work flat and jumbo cut in half behind cell DPC85ABL	No
	4.4	LDB	Small house boat (half submerged)	No
Allegheny	1.0	LDB	Twisted metal	No
	1.5	RDB	Rake of barge - @50 ft.	No
	1.6	RDB	Passenger boat	No
	1.6	RDB	Work flat and 1 Std. Hopper barge	No
	1.6	RDB	1/2 Jumbo barge beached	No
	1.7	RDB	Rake from a std. Hopper #120	No
	7.5	LDB	40'x120' partially buried in riverbank below ice breaker	No
	8.3	RDB	Underwater obstruction 50' off piling wall - 70'-80' long	No
	9.9	RDB	Wooden barge beached	No
	10.5	RDB	Deck work barge	No
Monongahela	4.6	LDB	Abandoned barges	No

Source: U.S. Coast Guard, Pittsburgh Marine Safety Office - Inspection 09-13 September 1999

3. Stream Daylighting

Many streams within the ALCOSAN service area have been diverted into pipes and combined with sewer systems. This water then either flows to a sewage treatment plant in dry weather, or during moderate rains, contributes to overflows into streams and rivers. Many of these otherwise healthy, clean streams are recommended for "daylighting." In other words, they can be separated from the sewer system and returned to their almost natural, surface-flowing state.

The 3R2N first year report[9] on stream daylighting and restoration reports that streams are still being buried, and unfortunately, not all streams can be restored to their natural state – if they can be restored at all. The report defines daylighting (the prime type of restoration in Allegheny County) as "the act of removing streams from underground pipes and culverts, restoring some of the form and function of historic streams. Daylighting is the most profound form of stream restoration, recreating a surface waterway where nothing exists now." There are three types of daylighting:

1) Natural restoration – stream is restored to original or near original conditions with natural stream beds and banks.
2) Architectural restoration – stream is brought to the surface, but flows through a manmade channel.
3) Cultural restoration – where actual daylighting is not possible, the land above where the stream flows is marked with signs and information about the status of the stream.

Several daylighting projects are occurring in the study area.

In Sheraden Park (in the Chartiers Creek Watershed) there is a stream that flows only 300 feet before it is piped into the sewer system. During dry weather, this clean water flows, unnecessarily, through the ALCOSAN treatment plant at 65,000 gallons a day. Furthermore, during wet weather, removing the extra water flow would help to prevent excess sewage overflow into Chartiers Creek. The daylighting project will restore 2,100 feet of the stream to the surface, along with several acres of wetlands and riparian buffers. The stream will then flow freely, and cleanly, into Chartiers Creek.[10]

Other projects being done by ALCOSAN (partnering with Three Rivers Wet Weather Demonstration Project) include Jack's Run and Pine Hollow (a tributary to Chartiers Creek).

[9] 3R2N, Stream Restoration and Daylighting Report 2001, Phase I. The STUDIO for Creative Inquiry. Carnegie Mellon University

[10] Chartiers Nature Conservancy Newsletter. May/June 2002. Sheraden Park Stream Daylighting. Suzy Meyer.

Wooded Hillsides and Riverbanks — these natural areas provide for a variety of tree and plant communities and wildlife habitats

Fishing Access Point — the rivers are again home to many aquatic species

Chapter Four

Biological Resources

Japanese Knotweed—the most problematic invasive plant in the corridor

Tree of Heaven – one of several invasive plants throughout the corridor

A. Wildlife

1. Terrestrial

Habitat

Urban development and transportation infrastructure within the corridor have compromised much of the natural habitat and species diversity of terrestrial and avian vertebrates. The terrestrial species present, for the most part, are capable of adapting to moderate to high levels of human interference. The typical habitat compartments within the corridor consist of undeveloped forested slopes, narrow riparian corridors, and wooded patch networks and tree lines skirting residential, industrial, and commercial areas.

Species Diversity

The common game species existing within the corridor include White-tailed deer *(Odocoileus virginianus)*, Wild turkey *(Meleagris gallopavo)*, Eastern cottontail *(Sylvilagus floridanus)*, Raccoon *(Procyon lotor)*, Opossum *(Didelphis virginaniana)*, Squirrel sp. *(Sciurus sp.)*, American woodcock *(Scolopax minor)*, Canada goose *(Branta Canadensis)*, Mallard *(Anas platrhynchos)*, and American black duck *(Anas rubripes)*.

The common birds of prey that exist within the study corridor include the Great horned owl *(Bubo virginianus)*, Barred owl *(Strix varia)*, Eastern screech owl *(Otus asio)*, Northern harrier *(Circus cyancus)*, Sharp-shinned hawk *(Accipiter striatus)*, Cooper's hawk *(Accipiter cooperii)*, Northern goshawk *(Accipter gentiles)*, Red-tailed hawk *(Buteo jamaicensis)*, and American kestrel *(Falco sparverius)*. Additionally, several species of songbirds and various migratory birds inhabit the river valleys. There are even reports of Bald Eagle and Osprey sightings. The Audubon Society of Western Pennsylvania's 2002 Pittsburgh Christmas Bird Count and the Three Rivers Birding Club's 2002 Migration Count can be found in Appendix D.

The common reptile and amphibian species that occur in Allegheny County are found in Table 4-1.

Table 4-1
Common Reptiles and Amphibians in Allegheny County

Scientific Name	Common Name
Cryptobranchus alleghaniensis alleganiensis	Eastern hellbender
Necturus maculosus maculosus *Ambystoma jeffersonianum*	Mudpuppy Jefferson salamander
Ambystoma maculatum	Spotted Salamander
Notopthalmus viridescens	Red-spotted newt
Desmognathus fuscus fuscus	Northern dusky salamander
Desmognathus monticola	Seal salamander
Desmognathus ochrophaeus	Mountain dusky salamander

Eurycea bislineata	Northern two-lined salamander
Gyrinophilus porphyriticus porphyriticus	Northern spring salamander
Hemidactylium scutatum	Four-toed salamander
Plethodon cinereus	Redback salamander
Plethodon glutinosus	Northern slimy salamander
Plethodon richmondi	Ravine salamander
Pseudotritron rubber ruber	Northern red salamander
Bufo americanus americanus	Eastern american toad
Bufo woodhousii fowleri	Fowler's toad
Acris crepitans crepitans	Northern cricket frog
Hyla versicolor	Gray treefrog
Pseudacris brachyphona	Mountain chorus frog
Pseudacris crucifer crucifer	Northern spring peeper
Rana catesbeiana	Bullfrog
Rana clamitans melanota	Northern green frog
Rana palustris	Pickerel frog
Rana pipiens	Northern leopard frog
Rana sylvatica	Wood frog
Chelydra serpentina serpentina	Common snapping turtle
Chrysemys picta	Painted turtle
Clemmys guttata	Spotted turtle
Clemmys insculpta	Wood turtle
Terrapene carolina carolina	Eastern box turtle
Apalone spinifera spinifera	Eastern spiny softshell
Sceloporus undulatus hyacinthinus	Northern fence lizard
Eumeces fasciatus	Five-lined skink
Coluber constrictor constrictor	Northern black racer
Diadophis punctatus edwardsii	Northern ringneck snake
Elaphe obsoleta obsoleta	Black rat snake
Lampropeltis triangulum triangulum	Eastern milk snake
Nerodia sipedon sipedon	Northern water snake
Opheodrys vernalis	Smooth green snake
Regina septemvittata	Queen snake
Storeria dekayi dekayi	Northern brown snake
Thamnophis sirtalis sirtalis	Eastern garter snake
Agkistrodon contortrix mokasen	Northern copperhead

Source: Pennsylvania Fish & Boat Commission – PA Herpetological Atlas Project, Hulse et al. 2001

While there are many more terrestrial species in the corridor, including invertebrates and arthropods, no comprehensive list exists (not even for the state). However, several groups are taking initiatives to develop a list: Pennsylvania Natural Diversity Inventory (PNDI), Pennsylvania Biodiversity Partnership (PBP), and Pennsylvania Biological Survey (PABS). The Carnegie Museum of Natural History has conducted surveys and begun some database work as of winter 2003.

2. Aquatic

Habitat

In this study area, the rivers are the predominant aquatic habitat. Before navigational improvements and water pollution, the rivers served as excellent aquatic habitats. The clean, shallow waters, with many islands, were an ideal home to many aquatic species.

The first navigational improvements in the Three Rivers began with the removal of rocks and the construction of low stone dams, which were funded by the Commonwealth of Pennsylvania in the 18th century. A system of locks and dams still control the rivers for navigation today. (More information about the Lock and Dam system can be found in Chapter 1-D-1.) The lock and dam network and dredging for maintenance of navigational channels has altered the aquatic habitat and river morphology by increasing the natural depth of the rivers, increasing turbidity and siltation, and reducing water flow.

Other physical impairments observed along the rivers within the corridor include concrete, brick, steel bulk heading, and gabion basket placement along the riverbanks, along with garbage and sunken barges.

Furthermore, although the fisheries have rebounded as a result of water quality improvements, some major sources of pollution still contribute to water quality degradation, which influences aquatic biota and diversity within the rivers (see Table 4-2 for pollution tolerances of fish species). Those sources are: combined sewer overflows, municipal waste water effluent, mine drainage pollution, industrial point source pollution, groundwater contamination, and non-point source run-off. (More information about water quality can be found in Chapter 3-B.)

In addition, aquatic habitats have been identified in the Aquatic Resource Characterization Study of the Three Rivers.[1] This study sectioned the rivers into longitudinal, lateral, and channel-border divisions in order to characterize a pool between a pair of locks and dams. The study utilized side scan sonar in order to map the river bottom habitat according to substrate types, such as vegetated beds, gravel bars, structures, and cover habitats, coupled with depth and flow types. The combinations of longitudinal pool divisions, lateral pool divisions, and channel border divisions were combined to create aquatic areas; thus, 28 aquatic areas were defined within the river channel. Additionally, two off-channel areas called the flooded tributary and embayment are included for a total of 30 aquatic areas within the rivers.

[1] Aquatic Resources Characterization Study, January 1998, prepared by Normadeau Associates, Inc. for the PA Fish and Boat Commission.

Species Diversity

Studies by the Pennsylvania Fish and Boat Commission[2] (PFBC) have indicated that all of the fisheries have rebounded from once being primarily carp and bullheads in the 1950's to becoming a diverse fish community composed of both game and non-game fish species. The improvements made in water quality have allowed the presence of candidate and state threatened and endangered species. Table 4-2 lists a composite of the sampling results for the fish species collected in the rivers during the PFBC studies. Game fish species existing within the Three Rivers include Walleye *(Stizostedion vitreum v.),* Sauger *(Stizostedion canadense),* Tiger muskellunge *(Esox masquinongy),* Muskellunge *(Esox masquinongy)*, White bass *(Morone chrysops),* White bass x striped bass hybrid *(M. chrysops x M. saxatilis)*, Largemouth bass *(Micropterus salmoides),* Smallmouth bass *(Micropterus dolomieui)*, and Spotted bass *(Micropterus punctulatus).* Panfish species identified within the Three Rivers include Rock bass *(Ambloplites rupestris)*, White crappie *(Pomoxis annularis),* Black crappie *(Pomoxis nigromaculatus*), Bluegill *(Lepomis macrochirus)*, Pumpkinseed *(Lepomis gibbosus)*, and Green sunfish *(Lepomis cyanellus).* Anglers that consume fish species within the Three Rivers should be aware of the fish consumption advisories posted by the PFBC (see Table 3-8).

The PFBC maintains supplemental stocking activities for the Monongahela, Allegheny, and Ohio Rivers to create a trophy fishery within the plan area. Table 4-3 presents the stocking activities by river and pool. The PFBC also has undertaken a paddlefish restoration plan for the Three Rivers. The paddlefish stocking rates are included in Table 4-3 as well.

Table 4-2
PFBC Sampling of the Fish Species Composition in the Ohio, Monongahela, and Allegheny Rivers

*Pollution tolerances follow the scientific name: I=pollution intolerant, M=somewhat tolerant, T=pollution tolerant, U=unknown

Common Name	Scientific Name
Longnose Gar	*Lepisosteus osseus – M*
Gizzard shad	*Dorosoma copedianum – M*
Central stoneroller	*Campostoma anomalum – M*
Common carp	*Cyprinus carpio – T*
Northern hog sucker	*Hypentelium nigricans – I*
Smallmouth buffalo	*Ictiobus bubalus – M*
Silver redhorse	*Moxostoma anisurum - M*
River redhorse	*Moxostoma carinatum – I*
Golden redhorse	*Moxostoma erythrurum – M*
Shorthead redhorse	*Moxostoma macrolepidotum – M*

[2] Pennsylvania Fish and Boat Commission's Management Reports of the Monongahela River, Section 04 through 06, 1996, Allegheny River, Sections 19 through 22, 1994 and Ohio River, Sections 01 through 04, 1994

Logpearch	*Percina caprodes – M*
Troutpearch	*Percicopsis omiscomaycus – M*
Skipjack herring	*Pomolobus caeruleum – U*
Freshwater drum	*Aplodinotus grunniens – M*
Channel catfish	*Ictalrus punctatus – M*
Flathead catfish	*Pylodictis olivaris – M*
Largemouth bass	*Micropterus salmoides – M*
Smallmouth bass	*Micropterus dolomieui – M*
Spotted bass	*Micropterus punctulatus – M*
Walleye	*Stizostedion vitreum v. – M*
Sauger	*Stizostedion canadense – M*
Bluegill	*Lepomis macrochirus – M*
Pumpkinseed	*Lepomis gibbosus – M*
Green sunfish	*Lepomis cyanellus – T*
Rock bass	*Ambloplites rupestris – M*
Tiger muskellunge	*Esox masquinongy – U*
Muskellunge	*Esox masquinongy – M*
White crappie	*Pomoxis annularis – M*
Black crappie	*Pomoxis nigromaculatus - M*
White bass	*Morone chrysops – M*
White x striped bass	*M. chrysops x M. saxatilis – M*
Emerald shinner	*Notropis atherinoides – M*
Spotfin shiner	*Notropis spilopterus – U*
Sand shiner	*Notropis stramineus – M*
Mooneye	*Hiodon tergisus – I*
Quillback	*Carpiodes cyprinus – M*
Brook silverside	*Labidesthes sicculus - M*
Source: PFBC www.fish.state.pa.us Pollution tolerances from: www.epa.gov/owow/monitoring/rbp/index.html	

Table 4-3
Pennsylvania Fish and Boat Commission Stocking Activities

River	Pool	Hybrid bass	Walleye	Tiger muskellunge	Muskellunge	Paddlefish
Ohio River	1	8 per acre; 8,250 fingerlings annually	0	0	0	2 per acre; 2050 fingerlings odd years
Monongahela River	1	8 per acre; 9,050 fingerlings annually	1,000 per acre; 1,134,000 fry on odd years 750 per acre, 850,500 fry and 2.5 per acre; 2,850 fingerlings on even years	1 per acre; 1,150 fingerlings on odd years	1 per acre; 1,150 fingerlings on even years	2 per acre; 1,500 fingerlings on even years
Allegheny River	1	8 per acre; 6,000 fingerlings annually	0	0	0	2 per acre; 1,500 fingerlings on even years
Allegheny River	2	0	0	4 per acre; 4,100 fingerlings on even years	4 per acre; 4,000 fingerlings on odd years	2 per acre; 2,050 fingerlings on odd years

Source: PA Fish and Boat Commission, 2002

In addition to the many fish species present in this corridor, there is also a plethora of aquatic macroinvertebrates. Presence of macroinvertebrates is important because they are a food source for other organisms. Near the bottom of the food chain, their abundance indicates a healthy food supply for the rest of the chain. Their presence is also an indicator of water quality (see next paragraph). The Ohio River Sanitation Commission (ORSANCO) has the most scientific list of benthic macroinvertebrates in the Three Rivers (see Appendix D for the complete list). The Pittsburgh Voyager, a non-profit river-based education organization, also has an extensive database of macroinvertebrates.[3] Table 4-4 and Figure 4-1 show the number of sitings, which are the number of "occasions" that the specific species were observed on Voyager outings (not the actual number of species observed). The percentages reflect the occasions that a particular species was observed out of the total number of occasions of observations. (The tables and charts for each river are located in Appendix D.) Students on the Voyager also identified plankton – "minute photosynthetic cells and tiny animals occurring as suspended organisms."[4] Sitings of many organisms, such as spirogyra, water mites, and fragillaria make up various phytoplankton and zooplankton.[5]

[3] Data presented in these databases are student collected observations as a part of an educational field experience. While scientific methods are used, each test is a single trial without the usual controls employed in a laboratory situation. All data should be viewed as a reflection of student work and is not meant for monitoring purposes.
[4] Biology of Plants, 5th Ed.1992. P.H. Raven, R.F. Evert, S.E. Eichhorn. Worth Publishers.
[5] See the Voyager Database at www.pittsburghvoyager.org for the complete list of plankton.

Tables 4-2 and 4-4 also list species pollution tolerances. These tolerances are water quality indicators. When pollution intolerant species are found in the rivers, it is a good sign of healthy waterways. The more pollution tolerant species, though, the more degraded the water quality. While the rivers are host to an abundance of species, many of them are somewhat tolerant of pollution, indicating that water quality is improving.

Phytoplankton
Single-celled photosynthetic plankton that serve as the bottom of the food chain for heterotrophs (organisms that do not make their own food).

Zooplankton
"Heterotrophic plankton that consists mainly of tiny crustaceans, the larvae of many different animals, and many protists and bacteria and serve as a food source for heterotrophic organisms."

Source: See footnote 4.

Table 4-4
Macroinvertebrates Observed in the Three Rivers from 8/2001 through 12/2002

Pollution Tolerances are indicated behind each organism: I=pollution intolerant, M=somewhat tolerant, T=pollution tolerant, U=unknown

Total Sitings*	**1746**	**%***		**Others:**	**44**
Others	44	2.52		Aquatic Earthworm –T	4
Asiatic Clam –M (invasive)	141	7.56		Alderfly Larva –M	1
Caddisfly Larvae –I	15	0.86		Beetle –M	1
Dragonfly Nymph –M	17	0.97		Copopods –U	1
Fingernail Clam –M	215	12.31		Cranefly –M	1
Horsehair Worm -	25	1.43		Crayfish –M	1
Leech –T	9	0.52		Damselfly – M	1
Mayfly Nymph –I	358	20.50		Daphnia	2
Midge Larva –T	366	20.96		Fishing Spider	1
Native Mussels –T	21	1.03		Flatworm	1
Roundworm –T	38	2.18		Freshwater Sponge –U	6
Scud –M	45	2.58		Giant Water Bug	1
Segmented Worm –T	309	17.70		Gilled Snail –I	2
Snail –I	25	1.43		Horsefly Larva	1
Threadworm –T	11	0.63		Midge Pupa –T	2
Tubifex Worm –T	18	1.03		Mayfly Adults –I	2
Water Mite –U	62	3.55		Orb Snail –M	6
Zebra Mussel (invasive)	27	1.55		Predacous Beetle	1
				Right Handed Snail –I	1
				Stonefly Nymph –I	1
				Unknown	2
				Water Penny –I	3
				Water Sniper Larva –M	1
				Water Spider –T	1

Source: Pittsburgh Voyager, 2003
*See page 60 Section A-2 for description of how these numbers were derived.

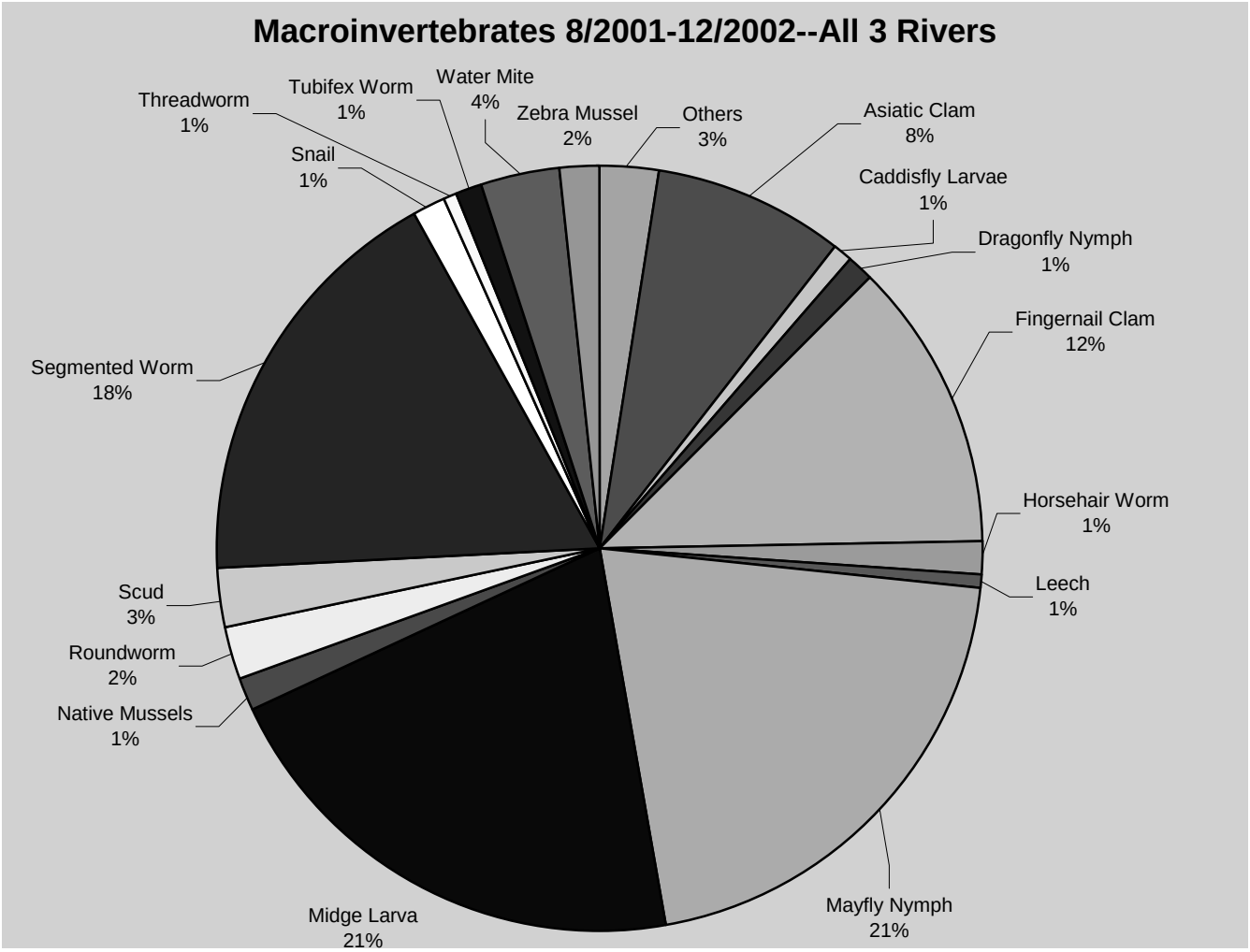


Figure 4-1. Percentages of the occasions that species were observed in relation to the number of total occasions. For example: the Mayfly Nymph was observed on 358 out of the 1746 total number of occasions that students were on the rivers from August 2001 to December 2002 – therefore, it was observed 21% of the time. *The percentages and "sitings" do not reflect the number of each species that were observed. They reflect the number of occasions (Voyager outings) that the species were observed. Pittsburgh Voyager, 2003.

B. Vegetation

1. Native Species

Eastern Deciduous Forest Biome
Deciduous forests are those that have adapted for four changing seasons. Trees lose their leaves each year, typically in autumn.

The Three Rivers Conservation Plan area is situated within the Eastern Deciduous Forest Biome. Although much of the area has been urbanized, there are several native tree species that commonly occur: Red maple *(Acer rubra)*, Silver maple *(Acer saccharinum)*, Sugar maple *(Acer saccharum)*, Box-elder *(Acer negundo)*, American sycamore *(Platanus occidentalis)*, Eastern cottonwood *(Populus deltoids)*, Black cherry *(Prunus serotina)*, White oak *(Quercus alba)*, Red Oak *(Quercus rubra)*, Pin oak *(Quercus palustris)*, Northern hackberry *(Celtis occidentalis)*, Sassafras *(Sassafras albidum)*, Staghorn sumac *(Rhus typhina)*, Shagbark hickory *(Carya ovata)*, Pignut hickory *(Carya galbra)*, Green ash *(Fraxinus pennsylvanica)*, White ash *(Fraxinus americana)*, Black locust *(Robinia pseudoacacia)*, Black walnut *(Jugluns nigra)*, and Black willow *(Salix nigra)*. Native shrub species that commonly occur within the corridor include Flowering dogwood, *(Cornus florida)*, Silky dogwood *(Cornus amomum)*, Hawthorn sp. *(Crataegus sp.)*, Spice bush *(Lindera benzoin)*, American witch-hazel *(Hamamelis virginiana)*, Northern arrow-wood *(Viburnum regognitum)*, and Elderberry *(Sambucus canadensis)*.

Many of these species occur in riparian zones, which refer to the area between the land and water along a stream, river, lake, pond, or wetland. Riparian buffers are zones that are vegetated. In this region of the country, riparian buffers are typically forested and are important to the ecological health of the waterway as they stabilize the stream bank, reduce erosion, decrease nutrient loads from runoff, provide habitat, maintain water temperature, and provide a source of food to aquatic life.

In 2000, Three Rivers 2nd Nature's (3R2N) Botany Team began a large scale, spatially referenced database of vegetation along the riparian zones of the Three Rivers. The database distinguishes between native, introduced, and/or invasive species.

During the 2000 study of the Pittsburgh Pool,[6] scientists determined that sycamore was the most frequent woody plant, followed by two introduced species: Japanese knotweed and Tree of heaven (See Chapter 4-C for discussion on invasive species). More native woody plants were found along the Allegheny River and its islands than the Monongahela or Ohio Rivers. Sixmile Island had the tallest canopy of any river area, though the tallest individual trees were found along the Monongahela River. The shortest woody vegetation was found along the Ohio River and Brunot Island, possibly due to the prevalence of Japanese knotweed, which is known to crowd out native vegetation. Emergent aquatic plants were not common in the study area except along Sixmile Island and the right bank descending of the Allegheny River. This low density of aquatic plants was likely due to the wave action in most of the pool.

The 2001 3R2N study focused primarily on the Monongahela River[7] outside of the Pittsburgh Pool and therefore, out of the study area. Despite the historically heavy use of the riverbanks, some sections had numerous examples of native plant communities. As in the Pittsburgh Pool

[6] 3R2N, Biotic Assessment 2000. The STUDIO for Creative Inquiry. Carnegie Mellon University.
[7] 3R2N, Vegetative Survey of the Monongahela River 2001, Phase II. Draft Report to the Technical Advisory Committee. The STUDIO for Creative Inquiry. Carnegie Mellon University.

study, introduced species were found in the study area, with Japanese knotweed and Tree of heaven being the most common.

The 2002 3R2N[8] study focused on the Allegheny River Pools 1-4 and on comparisons of the Allegheny and Monongahela River vegetation. The report identifies 85 vegetative species on the Three Rivers. The five major native plant communities on the Allegheny and Monongahela Rivers, to which many of these 85 species belong, are:

- Sycamore / Box Elder Floodplain Forest – predominant on the Monongahela
- Silver Maple Floodplain Forest – predominant on the Allegheny
- Black Willow Scrub / Shrub Wetland – found commonly on both the Monongahela and Allegheny
- Alder / Ninebark Wetland – predominant on the Monongahela
- Water Willow / Smartweed Riverbed Community – found commonly on the Monongahela and Allegheny / plants withstand flooding most of the year

Four of the native plant communities are also found on the islands in the Allegheny River:

- Silver Maple Floodplain Forest: Washington's Landing (Herr's), Sixmile, Sycamore, Ninemile, Twelvemile
- Sycamore / Box Elder Forest: Washington's Landing (Herr's)
- Black Willow Scrub / Shrub Wetland: Sixmile, Fourteenmile
- Water Willow / Smartweed Riverbed Community: Twelvemile, Fourteenmile

A more complete list of plants (including flowers and shrubs) found in riparian zones in the Pittsburgh Area can be found in Appendix D.

C. Invasive Species

Invasive species are some of the most precarious and unnoticed forms of environmental decline and are commonly introduced via world trade. Many invasive plant and animal species have hitch-hiked via ship, plane, barge, highway freight, and railroad cars. Furthermore, all of these modes of transport are in or nearby the corridor. Invasive species pose a serious threat to the biodiversity of the native flora and fauna within the Three Rivers area as well as across the United States.

According to the United States Geological Survey (USGS),[9] there are two invasive invertebrates in the corridor, the Asiatic clam *(Corbicula fluminea)* and the Zebra mussel *(Dreissena polymorpha)* have been found in the Three Rivers. While not yet happening in the Three Rivers, some studies of Asiatic clams throughout the

Invasive species
These are species that grow aggressively, spread, and displace other species. They are difficult and expensive to control and can dominate whole areas, thereby threatening native plant and animal species. Most invasive species arrive from overseas; however, any that have been introduced into and thrive in an area where they weren't found before (e.g. from another geographic region) is an invasive species. Other common names for invasives are "exotic," "alien," "introduced," or "non-native."

Adapted from "Invasive Plants in PA," PA DCNR brochure

Benthic
Benthic refers to the bottom of a body of water. The organisms that live there are often called benthos.

[8] 3R2N, Allegheny River Terrestrial Report, 2002, Phase III. The STUDIO for Creative Inquiry. Carnegie Mellon University.
[9] http://nas.er.usgs.gov/amphibians/huc6_us.html

United States have shown that densities can occur by the thousands per square meter, often dominating the benthic community,[10] thereby altering benthic substrate and out-competing native species for limited resources.[11]

Furthermore, although the zebra mussel has been identified in relatively small numbers within the Three Rivers, it has been known to display rapid dispersal throughout the Great Lakes and major river systems. This is accomplished through 'hitch-hiking' on boats navigating these watercourses. Its rapid range expansion into connected and unconnected waterways was probably due to barge traffic and recreational boating where it is theorized that attached mussels were scraped or fell off during routine navigation. While they are not a substantial problem yet, zebra mussels can affect water treatment plants by clogging the water intake valves in the rivers. Additionally, it is noteworthy to mention that under cool, humid conditions, zebra mussels can stay alive for several days out of water; therefore boaters that utilize the Three Rivers and other watercourses should take extra precautions to inspect their watercraft before and after boating, especially when transporting the watercraft to a different body of water.

Invasive plant species are a more prominent problem in this study corridor than invasive animals. Table 4-5 lists invasive plant species. Japanese knotweed (*Polygonum cuspidatum*) and tree of heaven (*Ailanthus altissima*) are the two most common invasives in the study area. These species tend to invade areas that have been disturbed, or stripped of native vegetation, which allows for easy propagation of invasives. The 3R2N Phase III Report indicates that more invasives are found closer to the Point in Pittsburgh and at areas that were once heavily industrialized – the "disturbed" areas. The proportion of introduced species changes significantly with distance from the Point (24% introduced species) to the upper Monongahela River (14% introduced). The study found that Japanese knotweed, while common on all Three Rivers, is most prevalent on the Allegheny River. Also, purple loosestrife (*Lythrum salicaria*) was found predominantly on the Monongahela River.

Some local groups around the region work to control the spread of invasives, while other groups collect native plant seeds, which will help to repopulate the area with its original flora. Invasive plants are difficult to eradicate, but measures can be taken to control their spread. Japanese knotweed spreads by rhizomes, or shallow underground stems. Therefore, knotweed should not be removed by digging. If it is, rhizomes in the soil can wash downstream and will invade other shorelines. Instead, knotweed can be controlled by cutting it four times a year, by planting native trees to shade it (knotweed is shade intolerant), or by spraying the plant with an herbicide that is safe to use near water.

[10] Sickel, J. B. 1986. *Corbicula* population mortalities: factors influencing population control. American Malacological Bulletin, Special Edition 2:89-94.

[11] Devick, W. S. 1991. Patterns of introductions of aquatic organisms to Hawaiian freshwater habitats. Pages 189-213 *in* New Directions in Research, Management and Conservation of Hawaiian Freshwater Stream Ecosystem. Proceedings Freshwater Stream Biology and Fisheries Management Symposium. Department of Land and Natural Resources, Division of Aquatic Resources, Honolulu, HI.

Table 4-5
Invasive Plant Species in Pennsylvania

*** = major invasives in our study corridor**

Common Name	Scientific Name	Life Form
Most Immediate Threat to Native Species		
Amur Honeysuckle*	*Lonicera maackii*	Shrub
Asiatic Bittersweet*	*Celastrus orbiculatus*	Vine
Autumn olive	*Elaeagnus umbellata*	Shrub
Bull thistle	*Cirsium vulgare*	Flower
Canada-thistle	*Cirsium arvense*	Flower
Common reed	*Phragmites australis*	Grass
Garlic Mustard	*Alliaria petiolata*	Flower
Giant hogweed	*Heracleum mantegazzianum*	Flower
Goatsrue	*Galega officinalis*	Flower
Japanese Honeysuckle	*Lonicera japonica*	Vine
Japanese knotweed*	*Polygonum cuspidatum*	Flower
Japanese Stilt Grass	*Microstegium vimineum*	Grass
Jimsonweed	*Datura stramonium*	Flower
Johnson-grass	*Sorghum halepense*	Grass
Kudzu	*Pueraria lobata*	Vine
Mile-a-minute weed	*Polygonum perfoliatum*	Vine
Morrow honeysuckle	*Lonicera morrowii*	Shrub
Multiflora-rose	*Rosa multiflora*	Shrub
Musk thistle	*Carduus nutans*	Flower
Norway maple	*Acer platanoides L.*	Tree
Purple loosestrife*	*Lythrum salicaria*	Flower
Shattercane	*Sorghum bicolor*	Grass
Standish honeysuckle	*Lonicera standishii*	Shrub
Tartarian honeysuckle	*Lonicera tatarica*	Shrub
Tree-of-heaven*	*Ailanthus altissima*	Tree
Known Invaders that Need to be Controlled		
Beefsteak plant	*Perilla frutescens*	Flower
Bell's honeysuckle	*Lonicera morrowii*	Shrub

Border privet	*Ligustrum obtusifolium*	Shrub
Cheatgrass	*Bromus tectorum*	Grass
Common barberry	*Berberis vulgaris L*	Shrub
Common buckthorn	*Rhamnus cathartica*	Shrub
Common privet	*Ligustrum vulgare L.*	Shrub
Dame's rocket	*Hesperis matronalis L.*	Grass
Eurasian water-milfoil	*Myriophyllum spicatum*	Grass
Fiveleaf akebia	*Akebia quinata*	Vine
Goutweed	*Aegopodium podagraria*	Flower
Japanese barberry	*Berberis thunbergii*	Shrub
Lesser celandine	*Ranunculus ficaria*	Flower
Porcelain-berry	*Ampelopsis brevipedunculata*	Vine
Reed canary grass	*Phalaris arundinacea*	Grass
Russian olive	*Elaeagnus angustifolia L.*	Shrub
Siberian elm	*Ulmus pumila*	Tree
Smooth Buck-thorn	*Rhamnus frangula*	Shrub
Star of Bethlehem	*Ornithogallum nutans*	Flower
Wild Parsnip	*Pastinaca sativa*	Flower
Wineberry	*Rubus phoenicolasius*	Shrub
"Situational Invasives" are Problems in Certain Areas		
Crown vetch	*Coronilla varia L.*	
English Ivy	*Hedera heli*	
Orange day-lily	*Hemerocllis fulva*	
Tall fescue	*Festuca elatior*	
Problem in Southeast PA, but Spreading		
Maiden grass	*Miscanthus sinensis*	Grass
Callery pear	*Pyrus calleryana*	Tree
Empress tree	*Paulownia tomentosa*	Tree
Guelder rose	*Viburnum opulus*	Shrub
Japanese spiraea	*Spiraea japonica*	Shrub
Sycamore maple	*Acer pseudoplatanus*	Tree
Water chestnut	*Trapa natans*	Flower
Winged Euonymus	*Euonymus alatus*	Shrub
Source: PA DCNR Invasive Plants in Pennsylvania brochure		

D. Pennsylvania Natural Diversity Inventory (PNDI) Species

A survey of the PNDI database was completed for species of special concern and threatened and endangered terrestrial, aquatic, invertebrate, and plant species that potentially exist within the corridor. The Department of Conservation and Natural Resources (DCNR) retains the jurisdiction over plants. The Pennsylvania Game Commission (PGC) retains the jurisdiction over threatened and endangered birds and mammal species and other game and wildlife species, while the PFBC maintains jurisdiction over the state's fish, reptiles, and amphibians. The United States Fish and Wildlife Service (USFWS) maintains jurisdiction over the federally listed threatened and endangered species.

PNDI - The PNDI is a partnership among the Western Pennsylvania Conservancy, Pennsylvania Bureau of Forestry, and The Nature Conservancy who "conduct inventories and collect data to identify and describe Pennsylvania's rarest and most significant ecological features, which are needed for conservation, development planning, and natural resource management." www.dcnr.state.pa.us

Extant
A species that exists across its entire range in PA.
Threatened
A species that may become endangered within the foreseeable future throughout their range in PA.
Endangered
A species in imminent danger of extinction or extirpation.
Extirpated
A species that has disappeared from PA, but still exists elsewhere in its range.
Extinct
A species that occurred in PA, but no longer exists across its entire range.

A survey of the PNDI database was completed for species of special concern and threatened and endangered terrestrial, aquatic, invertebrate, and plant species that potentially exist within the corridor (See Table 4-2). Red-fruited hawthorn *(Crataegus pennsylvanica)* was determined to have fair viability and was last observed in 1998. Snow trillium *(Trillium nivale)* was identifed to have poor viability and was last observed in the area in 1982. Declined trillium *(Trillium flexipes)* was identified extant and was last observed in 1972. Torrey's rush *(Juncus torreyi)* and Hard-stemmed bulrush *(Schoenoplectus acutus)* were identified as extirpated from the area and were last observed in the area in 1887 and 1940 respectively.

Vertebrate species of special concern and threatened and endangered species within the corridor include one bird, six fish, and two reptile species. Two of the eighteen listed invertebrates are identified as extant, which include Lilliput *(Toxolasma parvum)* and Pink heelsplitter *(Potamilus alatus)*. Both species are freshwater mussels and were observed in the corridor in 1994 and 1995 respectively. Two of the 18 invertebrate species are insects: Southern bog darner *(Gomphaeschna antilope)* and Regal fritillary *(Speyeria idalia)*, both of which are historic recordings. The remaining 14 species are freshwater mussels with historical recordings.

Table 4-6
Pennsylvania Natural Diversity Inventory
* See State and Global Rank codes listed on each page

Plants

Common Name	Scientific Name	Element Occurrence Rank	Last Observed Date	State Rank	Global Rank
AMERICAN GROMWELL	*LITHOSPERMUM LATIFOLIUM*	H	1885-09-17	S3	G4
BALSAM POPLAR	*POPULUS BALSAMIFERA*	H	1929-10-19	S1	G5
BEARD-TONGUE	*PENSTEMON LAEVIGATUS*	H	1902-06-15	S3	G5
BICKNELL'S HOARY ROCKROSE	*HELIANTHEMUM BICKNELLII*	H	1913-07-24	S2	G5
BUFFALO CLOVER	*TRIFOLIUM REFLEXUM*	H	1869-08---	SX	G5
CANADIAN MILKVETCH	*ASTRAGALUS CANADENSIS*	H	1922-07-29	S2	G5
CAROLINA TASSEL-RUE	*TRAUTVETTERIA CAROLINIENSIS*	H	1888-07-04	S3	G5
CAROLINA WILLOW	*SALIX CAROLINIANA*	H	1908-06-18	S1	G5
CATTAIL SEDGE	*CAREX TYPHINA*	H	1925-07-23	S2	G5
CLINTON'S WOOD FERN	*DRYOPTERIS CLINTONIANA*	H	1940-06-14	S2	G5
CREEPING ST. JOHN'S-WORT	*HYPERICUM ADPRESSUM*	H	1921-06-28	SX	G2G3
DECLINED TRILLIUM	*TRILLIUM FLEXIPES*	E	1972-05-06	S2	G5
FORKED RUSH	*JUNCUS DICHOTOMUS*	H	1908-06-16	S1	G5
HARD-STEMMED BULLRUSH	*SCHOENOPLECTUS ACUTUS*	X	1940-08-08	S2	G5
HEARTLEAF MEEHANIA	*MEEHANIA CORDATA*	H	1923-07---	S1	G5
NEW ENGLAND GRAPE	*VITIS NOVAE-ANGLIAE*	H	1912-06-05	S1	G4G5Q
OBLIQUE MILKVINE	*MATELEA OBLIQUA*	H	1896-10-01	S1	G4?
PASSION-FLOWER	*PASSIFLORA LUTEA*	H	1898-07---	S1	G5
PURPLE ROCKET	*IODANTHUS PINNATIFIDUS*	H	1913-10-04	S1	G5
RED-FRUITED HAWTHORN	*CRATAEGUS PENNSYLVANICA*	C	1998-05-06	S1S2	G3Q
ROCK SKULLCAP	*SCUTELLARIA SAXATILIS*	H	1913-10-04	S1	G3
SEDGE	*CAREX SHORTIANA*	H	1922-06-03	S3	G5

Basic Global Rank Codes and Definitions
G2 Imperiled - Imperiled globally because of rarity or because of some factor(s) making it very vulnerable to extinction. Typically 6 to 20 occurrences or few remaining individuals (1,000 to 3,000) or acres (2,000 to 10,000) or stream miles (10 to 50).
G3 Vulnerable - Vulnerable globally either because very rare and local throughout its range, found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extinction. Typically 21 to 100 occurrences or between 3,000 and 10,000 individuals.
G4 Apparently Secure - Uncommon but not rare, and usually widespread. Possibly cause for long-term concern. Typically more than 100 occurrences and more than 10,000 individuals.
G5 Secure - Common, typically widespread and abundant. Typically with considerably more than 100 occurrences and more than 10,000 individuals.
G#G# Range Rank - A numeric range rank (e.g., G2G3) is used to indicate uncertainty about the exact status of a taxon.
G? Unranked - Global rank not yet assessed.

State Rank Codes and Definitions
SX Extirpated - Element is believed to be extirpated from the "state" (or province or other subnational unit).
SH Historical - Element occurred historically in the state (with expectation that it may be rediscovered), perhaps having not been verified in the past 20 years, and suspected to be still extant. Naturally, an Element would become SH without such a 20-year delay if the only known occurrences in a state were destroyed or if it had been extensively and unsuccessfully looked for. Upon verification of an extant occurrence, SH-ranked Elements would typically receive an S1 rank. The SH rank should be reserved for Elements for which some effort has been made to relocate occurrences, rather than simply ranking all Elements not known from verified extant occurrences with this rank.
S1 Critically Imperiled - Critically imperiled in the state because of extreme rarity or because of some factor(s) making it especially vulnerable to extirpation from the state. Typically 5 or fewer occurrences or very few remaining individuals or acres.
S2 Imperiled - Imperiled in the state because of rarity or because of some factor(s) making it very vulnerable to extirpation from the state. Typically 6 to 20 occurrences or few remaining individuals or acres.
S3 Vulnerable - Vulnerable in the state either because rare and uncommon, or found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extirpation. Typically 21 to 100 occurrences.
S4 Apparently Secure - Uncommon but not rare, and usually widespread in the state. Usually more than 100 occurrences.
S? Unranked - State rank is not yet assessed.
SU Unrankable - Currently unrankable due to lack of information or due to substantially conflicting information about status or trends. NOTE: Whenever possible, the most likely rank is assigned and a question mark added (e.g.., S2?) to express uncertainty, or a range rank (e.g.., S2S3) is used to delineate the limits (range) of uncertainty.
S#S# Range Rank - A numeric range rank (e.g., S2S3) is used to indicate the range of uncertainty about the exact status of the Element. Ranges cannot skip more than one rank.

SMALL WOOD SUNFLOWER	*HELIANTHUS MICROCEPHALUS*	H	1905-09-16	S3	G5
SNOW TRILLIUM	*TRILLIUM NIVALE*	D	1985-04-05	S3	G4
SUNFLOWER	*HELIANTHUS HIRSUTUS*	H	1905-09-23	S2	G5
TORREY'S RUSH	*JUNCUS TORREYI*	X	1887-06-02	S2	G5
WILD SENNA	*SENNA MARILANDICA*	H	1899-09-15	S1	G5
WINGED-LOOSESTRIFE	*LYTHRUM ALATUM*	H	1921-08-27	S1	G5

Vertebrates

Common Name	Scientific Name	Element Occurrence Rank	Last Observed Date	State Rank	Global Rank
PEREGRINE FALCON	*FALCO PEREGRINUS*	B	2001-05-25	S1B,S1N	G4
OHIO LAMPREY	*ICHTHYOMYZON BDELLIUM*	H	1968-09-18	S2S3	G3G4
LONGNOSE GAR	*LEPISOSTEUS OSSEUS*	E	1985-08---	S2S3	G5
MOONEYE	*HIODON TERGISUS*	H	1818-PRE	S2?	G5
BULLHEAD MINNOW	*PIMEPHALES VIGILAX*	E	198-------	SU	G5
RIVER REDHORSE	*MOXOSTOMA CARINATUM*	E	1985-08---	S3	G4
CHANNEL DARTER	*PERCINA COPELANDI*	H	NO DATE	S1S2	G4
KIRTLAND'S SNAKE	*CLONOPHIS KIRTLANDII*	H	1965-09-11	SH	G2
EASTERN HOGNOSE SNAKE	*HETERODON PLATIRHINOS*	H	1910-07---	S3S4	G5

Invertebrates

Common Name	Scientific Name	Element Occurrence Rank	Last Observed Date	State Rank	Global Rank
BUTTERFLY MUSSEL	*ELLIPSARIA LINEOLATA*	H	1919-PRE	SX	G4
DEERTOE	*TRUNCILLA TRUNCATA*	H	1919-PRE	SX	G5
EASTERN DANCER	*ARGIA TIBIALIS*	H	1960-06-19	SH	G5
ELEPHANT EAR	*ELLIPTIO CRASSIDENS*	H	1919-PRE	SX	G5
LILLIPUT	*TOXOLASMA PARVUM*	E	1994-09-25	S1S2	G5
LONG-SOLID	*FUSCONAIA SUBROTUNDA*	H	1919-PRE	S1	G3

Basic Global Rank Codes and Definitions

G2 Imperiled - Imperiled globally because of rarity or because of some factor(s) making it very vulnerable to extinction. Typically 6 to 20 occurrences or few remaining individuals (1,000 to 3,000) or acres (2,000 to 10,000) or stream miles (10 to 50).

G3 Vulnerable - Vulnerable globally either because very rare and local throughout its range, found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extinction. Typically 21 to 100 occurrences or between 3,000 and 10,000 individuals.

G4 Apparently Secure - Uncommon but not rare, and usually widespread. Possibly cause for long-term concern. Typically more than 100 occurrences and more than 10,000 individuals.

G5 Secure - Common, typically widespread and abundant. Typically with considerably more than 100 occurrences and more than 10,000 individuals.

G#G# Range Rank - A numeric range rank (e.g., G2G3) is used to indicate uncertainty about the exact status of a taxon.

G? Unranked - Global rank not yet assessed.

State Rank Codes and Definitions

SX Extirpated - Element is believed to be extirpated from the "state" (or province or other subnational unit).

SH Historical - Element occurred historically in the state (with expectation that it may be rediscovered), perhaps having not been verified in the past 20 years, and suspected to be still extant. Naturally, an Element would become SH without such a 20-year delay if the only known occurrences in a state were destroyed or if it had been extensively and unsuccessfully looked for. Upon verification of an extant occurrence, SH-ranked Elements would typically receive an S1 rank. The SH rank should be reserved for Elements for which some effort has been made to relocate occurrences, rather than simply ranking all Elements not known from verified extant occurrences with this rank.

S1 Critically Imperiled - Critically imperiled in the state because of extreme rarity or because of some factor(s) making it especially vulnerable to extirpation from the state. Typically 5 or fewer occurrences or very few remaining individuals or acres.

S2 Imperiled - Imperiled in the state because of rarity or because of some factor(s) making it very vulnerable to extirpation from the state. Typically 6 to 20 occurrences or few remaining individuals or acres.

S3 Vulnerable - Vulnerable in the state either because rare and uncommon, or found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extirpation. Typically 21 to 100 occurrences.

S4 Apparently Secure - Uncommon but not rare, and usually widespread in the state. Usually more than 100 occurrences.

S? Unranked - State rank is not yet assessed.

SU Unrankable - Currently unrankable due to lack of information or due to substantially conflicting information about status or trends. NOTE: Whenever possible, the most likely rank is assigned and a question mark added (e.g.., S2?) to express uncertainty, or a range rank (e.g.., S2S3) is used to delineate the limits (range) of uncertainty.

S#S# Range Rank - A numeric range rank (e.g., S2S3) is used to indicate the range of uncertainty about the exact status of the Element. Ranges cannot skip more than one rank.

MONKEYFACE	*QUADRULA METANEVRA*	H	1919-PRE	SX	G4
OHIO PIGTOE	*PLEUROBEMA CORDATUM*	H	1919-PRE	SX	G3
PIMPLEBACK	*QUADRULA PUSTULOSA*	H	1919-PRE	SX	G5
PINK HEELSPLITTER	*POTAMILUS ALATUS*	E	1995-08-16	S2	G5
PINK MUCKET	*LAMPSILIS ABRUPTA*	H	1919-PRE	SX	G2
PURPLE WARTYBACK	*CYCLONAIAS TUBERCULATA*	H	1919-PRE	SX	G5
PYRAMID PIGTOE	*PLEUROBEMA PYRAMIDATUM*	H	1919-PRE	SX	G2
REGAL FRITILLARY	*SPEYERIA IDALIA*	H	NO DATE	S1	G3
ROUND HICKORYNUT	*OBOVARIA SUBROTUNDA*	H	1919-PRE	S1	G4
SHEEPNOSE MUSSEL	*PLETHOBASUS CYPHYUS*	H	1827-PRE	S1	G3
SNUFFBOX	*EPIOBLASMA TRIQUETRA*	H	1919-PRE	S1	G3
SOUTHERN BOG DARNER	*GOMPHAESCHNA ANTILOPE*	H	1940-06-13	SH	G4
A…excellent estimated viability	B…good estimated viability	C…fair estimated viability	D…poor estimated viability	E…verified extant	H…historical
F…failed to find	X…extirpated				

Source: DCNR www.dcnr.state.pa.us

Basic Global Rank Codes and Definitions

G2 Imperiled - Imperiled globally because of rarity or because of some factor(s) making it very vulnerable to extinction. Typically 6 to 20 occurrences or few remaining individuals (1,000 to 3,000) or acres (2,000 to 10,000) or stream miles (10 to 50).

G3 Vulnerable - Vulnerable globally either because very rare and local throughout its range, found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extinction. Typically 21 to 100 occurrences or between 3,000 and 10,000 individuals.

G4 Apparently Secure - Uncommon but not rare, and usually widespread. Possibly cause for long-term concern. Typically more than 100 occurrences and more than 10,000 individuals.

G5 Secure - Common, typically widespread and abundant. Typically with considerably more than 100 occurrences and more than 10,000 individuals.

G#G# Range Rank - A numeric range rank (e.g., G2G3) is used to indicate uncertainty about the exact status of a taxon.

G? Unranked - Global rank not yet assessed.

State Rank Codes and Definitions

SX Extirpated - Element is believed to be extirpated from the "state" (or province or other subnational unit).

SH Historical - Element occurred historically in the state (with expectation that it may be rediscovered), perhaps having not been verified in the past 20 years, and suspected to be still extant. Naturally, an Element would become SH without such a 20-year delay if the only known occurrences in a state were destroyed or if it had been extensively and unsuccessfully looked for. Upon verification of an extant occurrence, SH-ranked Elements would typically receive an S1 rank. The SH rank should be reserved for Elements for which some effort has been made to relocate occurrences, rather than simply ranking all Elements not known from verified extant occurrences with this rank.

S1 Critically Imperiled - Critically imperiled in the state because of extreme rarity or because of some factor(s) making it especially vulnerable to extirpation from the state. Typically 5 or fewer occurrences or very few remaining individuals or acres.

S2 Imperiled - Imperiled in the state because of rarity or because of some factor(s) making it very vulnerable to extirpation from the state. Typically 6 to 20 occurrences or few remaining individuals or acres.

S3 Vulnerable - Vulnerable in the state either because rare and uncommon, or found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extirpation. Typically 21 to 100 occurrences.

S4 Apparently Secure - Uncommon but not rare, and usually widespread in the state. Usually more than 100 occurrences.

S? Unranked - State rank is not yet assessed.

SU Unrankable - Currently unrankable due to lack of information or due to substantially conflicting information about status or trends. NOTE: Whenever possible, the most likely rank is assigned and a question mark added (e.g.., S2?) to express uncertainty, or a range rank (e.g.., S2S3) is used to delineate the limits (range) of uncertainty.

S#S# Range Rank - A numeric range rank (e.g., S2S3) is used to indicate the range of uncertainty about the exact status of the Element. Ranges cannot skip more than one rank.

Table 4-7
Additional PNDI Species

These species have been added to the PNDI list for vertebrates in 2003.

Scientific Name	Common Name	Global Rank	State Rank	*State Status
Labidesthes sicculus	Brook silverside	G5	S3	PC
Macrhybopsis storeriana	Silver chub	G5	S1	PE
Alosa chrysochloris	Skipjack herring	G5	SH?	PT
Ictiobus bubalus	Smallmouth buffalo	G5	S2	PT
Moxostoma carinatum	River redhorse	G4	S3	PC
Ichthyomyzon bdellium	Ohio lamprey	G3G4	S2S3	PC

Source: PFBC 2003
*PC=state candidate PT=threatened PE=endangered

E. Important Habitats

1. Wetlands

Wetlands, commonly known as marshes, bogs, swamps, or shallow ponds, are areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions.[12] Wetlands are important ecological resources; they filter runoff (and thus help to purify water quality), absorb heavy water flow (which alleviates flooding), provide habitat for many species, and promote recreation and tourism. There are small wetlands in the corridor, for example along Deer Creek, but the small size of these wetlands keeps them from appearing on most remote sensing electronic data. Most wetland location data is obtained from on-the-ground surveys, such as the Natural Heritage Inventory (NHI) for Allegheny County, where the Deer Creek wetlands are described. The NHI has limitations in data gathering as well, so it should not be considered an exhaustive list for wetlands in the county.

2. Riparian Corridors

Riparian zones refer to the area between the land and water along a stream, river, lake, pond, or wetland. Riparian buffers are zones that are vegetated. In this region of the country, riparian buffers are typically forested and are important to the ecological health of the waterways as they stabilize the stream bank, reduce erosion, decrease nutrient loads from runoff, provide habitat, maintain water temperature, and provide a source of food for aquatic life. The riparian corridors were described in section 4–B.

[12] DEP Wetlands Factsheet www.dep.state.pa.us

3. Steep Sloped Areas

Steep forested slopes provide habitat for terrestrial species within the plan area largely due to the fact that these areas are unable to be developed. These areas are typically composed of pole stage and mature tree species, which contain diverse under-stratum habitats.

4. Natural Heritage Areas (NHA)

The Western Pennsylvania Conservancy (WPC) maintains the Natural Heritage Inventory in western Pennsylvania; it is a database of Natural Heritage Areas (NHA), or natural areas, that are significant, unique, or uncommon. This information can be used in planning for the protection of the biological diversity and ecological integrity of Allegheny County. There are two types of NHA that occur in the corridor: Biological Diversity Areas and Other Heritage Areas. The Biological Diversity Areas (BDAs) are so noted because they include habitat that harbors one or more occurrence of plants or animals recognized as state or national species of concern; they possess a high diversity of plant and animal species native to the county; or they support a rare or exemplary natural community. Other Heritage Areas (OHAs) are so noted because they are consistently utilized for scientific monitoring of the environment or other natural science study, or they are lands that are regularly used by educational institutions, local organizations, or the general public for nature study or instruction. There are 14 BDAs and one OHA that exist within the corridor. Descriptions of these Natural Heritage Areas are included in Table 4-8.

Table 4-8
Natural Heritage Areas in the Project Corridor

Site	Type of Natural Heritage Area	Significance Rank	Description
Allegheny River	BDA	High	Recovering River System that provides habitat for a number of state listed animal species. River continues to be altered by human influences including effluent discharges, point source discharges, navigational locks and dams, and dredging of river bed.
Ohio River	BDA	High	Same as above
Deer Creek Valley	BDA	Exceptional	Best example of floodplain forest and robust emergent marsh communities in the county. Mature mesic central forest and dry mesic acidic central forest community. High community and species diversity. Fragmented, disturbed.
Oakmont Floodplain	BDA	Notable	Remnant floodplain of the Allegheny River situated at the mouth of Plum Creek. The floodplain has somewhat survived development and industrialization. Although anthropogenic disturbances are present in the floodplain, sections of natural forest exist similar to those found on Twelvemile and Fourteenmile Islands.

Campbell Run Valley	BDA	High	Relatively large forested stream valley exhibiting a recovering mesic central forest community.
Barking Slopes	BDA	High	Steep river slope; mesic central forest. (Very small section in project area.)
Fourteenmile Islands	BDA	High	Although disturbed by human activity, these islands represent the best example of island habitats and retain the most potential for native bivalve and fish habitat if the river's water quality continues to improve. In the 1950's, lock and dam #3 were constructed bisecting the island.
Plum Creek Valley	BDA	High	Moderate sized forested stream valley and associated tributary with mature mesic central forest, dry mesic acidic central forest and northern hardwood forest community encompasses two managed lands.
Twelvemile Island	BDA	High	Although disturbed by human activity, this island represents the best example of island habitat and retains the most potential for native bivalve and fish habitat if the river's water quality continues to improve.
Lower Allegheny Islands	BDA	High	Represents pre-lock and dam conditions of river with most natural features. Recovering floodplain forest community.
Dark Hollow Woods Park	BDA	High	Managed land within the Plum Creek Valley BDA that enhances the significance of the area. The area contains a meandering stream bordered to the south by moderate to very steep forested slopes, and to the north by an abandoned railroad and steep slopes less extensive than those to the south.
Guyasuta Run Valley	BDA	High	Mature dry-mesic acidic central forest and a northern hardwood forest community.
Peregrine Falcon	BDA	High	Urban habitat for state and federally listed species.
Moon Run Slopes	BDA	Notable	Steep forested slope along Ohio River which serve as habitat for state listed plant species. (Small section in project area.)
Ranking scale: Exceptional – High – Notable			
Source: Western Pennsylvania Conservancy, 2002			

F. State Game Lands

State Game Lands are lands owned by the Commonwealth of Pennsylvania and managed by PGC for recreational hunting, fishing, and trapping. State Game Lands do not exist within the Plan area and therefore are not discussed.

***The website **www.enature.com** allows visitors to enter their zip code and search for common species of mammals, butterflies, birds, reptiles/amphibians, trees, and wildflowers in their region.

PA Fish & Boat Commission
Public Boat Ramp in Harmarville

Millvale's Riverfront Park

Chapter Five

Recreational Resources

Oakmont's Arboretum Trail

The Dock at Southside Riverfront Park

Rowers on the Allegheny

A. Trails and Greenways [1, 2]

1. Land

Greenways

Greenways are defined as dedicated corridors of open space. They vary in terms of size, purpose, and amount or quality of green. Some serve mainly as recreational corridors, as in rail trails, while others may be environmental corridors, like riparian (streamside) buffers. Greenways provide many environmental benefits, including improved air and water quality, habitat for wildlife, and the protection of environmentally sensitive areas like wetlands and steep slopes. Greenways are also economically beneficial; they increase property values, attract local businesses, connect communities, and improve the quality of life. The City of Pittsburgh uses the term greenway to define specifically-designated permanent public, passive open space.

The Pennsylvania Greenways Partnership Commission, a coalition of government and private organizations established by Governor Tom Ridge in 1998, has produced an action plan for developing a statewide greenway network by 2020. Called *PA Greenways: An Action Plan for Creating Connections*, the document calls for connecting "hubs" of public lands with national, state, local, or regional greenways.[3] The Plan also encourages each county to apply greenways as a land use strategy and to map these important areas.

In 1995, the Allegheny County Planning Department developed a Greenway Plan that proposed to network parks, trails, green slopes, riverfronts, and secured agricultural areas. It recognized the environmental and economic benefits of protecting and linking these resources. While some of the report's recommendations were implemented, others were not due to the changing structure and priorities of Allegheny County government. As a result, other entities have worked to protect and network the resources of this region.

Pittsburgh to Harrisburg Mainline Canal Greenway

The Pittsburgh-Harrisburg Mainline Canal Greenway traces the historic path of the Pennsylvania Mainline Canal System in a corridor along the Allegheny, Kiski-Conemaugh, Juniata, and Susquehanna Rivers, along with all of the communities in between.[4] This project, also known as the Millennium Legacy Trail, is a network of individual projects managed by project partners. Components of the trail include the development of bike trails, water trails, historic towns, and more.

Trails

Examples of recreational greenways are rail trails. Abandoned rail beds provide an ideal starting point for cycling or walking trails: they are free from traffic, have a gentle grade, are close to many communities, and provide closer access to the rivers.

[1] Reaves, Raymond L. and Roy Kraynyk. 1995. *Allegheny County Greenways*. A report to the Allegheny County Board of Commissioners.
[2] Trail Cost Analysis and Implementation Strategy for an Allegheny Regional Asset District. November 2001. Allegheny Land Trust
[3] www.dcnr.state.pa.us/pagreenways/index.htm
[4] www.alleghenyridge.org

Examples of trails in the corridor include:

1.) Three Rivers Heritage Trail System – see description below
2.) Oakmont Arboretum Trail – The Garden Club of Oakmont developed this one-mile trail that runs along the railroad tracks below Allegheny River Boulevard.
3.) Great Allegheny Passage – A project of the Allegheny Trail Alliance, this trail is a 150-mile, non-motorized rail trail system connecting Cumberland, Maryland, to the Forks of the Ohio River in Pittsburgh, with a 52-mile branch to the Pittsburgh International Airport. When completed, the Passage will connect to the terminus of C&O Canal Towpath to Washington, DC. This trail includes 7.5 miles of the Three Rivers Heritage Trail in Pittsburgh.

Additional trails are being planned for Penn Hills as a project of the Quality Community Project (QCP). The trail would run along the railroad tracks adjacent to Allegheny River Boulevard and the Allegheny River. The township is working with Friends of the Riverfront on the project, and with Allegheny Valley Railroad who owns the property surrounding its tracks and may be willing to sell it for $175,000 per mile. Penn Hills is now in the process of securing grants for their trail project.

During the public comment period for this Conservation Plan, some suggested expanding the trail system so that it could be used as a true means of transportation to and from the City of Pittsburgh and not just as a recreational resource. This concept is not new; organizations have tried to develop this system since the early 1990s. In 1992, the Allegheny County Planning Department proposed a commuter bikeway system to alleviate some of the traffic problems around the city as commuters traveled to work by bike rather than car. To implement this plan, the Pennsylvania Environmental Council and the Pittsburgh Area Cycling Coalition created the Downtown Cycling Coalition in 1994. However, the Coalition disbanded due to difficulties in establishing bikeways; for example, the topography and variable weather of the region, plus challenges connecting the trails to the neighborhoods make it difficult to establish viable commuter routes.

An integration of the aforementioned ideas occurred in a November 2001 report submitted by the Allegheny Land Trust to the Allegheny Regional Asset Division for an Allegheny County Riverfront Discovery Trail. This trail would link existing trails, provide a continuous route of travel on or near the banks of major rivers, connect with trails that move away from the rivers into the neighborhoods, and integrate new and existing riverfront development. The report noted that the total public and private funds allocated for trail development in Allegheny County since 1991 has exceeded 18 million dollars. To complete the vision of the Riverfront Discovery Trail, more than 10 million dollars is needed for land acquisition; additional money would be needed for trail construction and signage.

In the meantime, the Southwestern Pennsylvania Commission (SPC) has devised a Bicycle/Pedestrian Plan, which works to integrate the interests of groups with new transportation (mainly highway) initiatives. As SPC's Transportation Improvement Project progresses, the concerns of bikers and walkers must be addressed at the same time; the goal is to provide cooperation and opportunities for everyone. The SPC also awards Transportation Enhancement grants, one of which has been awarded for renovation of the Hot Metal Bridge. SPC is also considering a "bikeability assessment," which involves producing detailed maps that show bikers typical road and traffic conditions so that they can decide which roads best suit them for biking.

City Trail-Development Program: The Three Rivers Heritage Trail System [5]

The trails in and around downtown are all part of the City of Pittsburgh's Trail Development Program, coordinated by the Department of City Planning. The entire trail system is known as the Three Rivers Heritage Trail System and is divided into several segments, based on location. The following list includes the different sections of the trail, their status, and descriptions. (*Note: the headings are the general locations of the trail segments, not the names of the trails.)

Washington's Landing
- Located along the Allegheny River North Shore and Washington's Landing (Herr's Island) (complete).
- A pedestrian bridge is located at the south end of the island (complete).
- Working with CSX to secure a second connection to the Island from Millvale for trail use (pending).

North Shore
- Located along the Allegheny River North Shore and North Shore Park (nearly complete).
- Located along the Ohio River North Shore to the downstream point of Brunot's Island (complete). Two segments are still under development.

Allegheny Riverfront Park
- Located along Allegheny River South Shore. Complete from the Point to the new Convention Center.
- The portion from 9th – 11th streets will be finished when Convention Center construction is complete. Note that bikes are not permitted in Point State Park.

Strip District
- Located along the Allegheny River South Shore, the segment from 11th-21st Streets is complete.
- The remaining Strip District Trail will go to the CSX Bridge at 36th Street, and should be completed by 2005.

Lawrenceville
- Located along the Allegheny River South Shore, it is completed between 36th and 43rd Streets.
- The trail is being planned through Lawrenceville and along the Allegheny South Shore past Highland Park.

Monongahela Wharf
- Located along the Monongahela North Shore, construction is expected in 2004.
- The trail development includes the incorporation of a park and a connection to the Smithfield Street Bridge.

Eliza Furnace
- This trail is completed from Smithfield St. to Schenley Park.

Hot Metal Bridge
- Spanning across the Monongahela River, it is the proposed link from Eliza Furnace to the South Side. Funding for engineering is in place.

Upper Monongahela
- This trail is complete along the Monongahela North Shore from the Glenwood Bridge to Duck Hollow.
- Trails are being planned connecting this trail to the Eliza Furnace Trail and across the Glenwood Bridge connecting to the trail on the Monongahela South Shore.

Station Square
- Located along the Monongahela South Shore between 1st Street and the Gateway View Plaza.

South Side
- Located along the Monongahela South Shore, the trail is complete from 9th St. to the Glenwood Bridge.

[5] Pittsburgh Department of City Planning Trail Guide Map and Trail Program updates - courtesy of Mayor's office.

Trails Currently Being Planned

- Along the Ohio River South Shore from Gateway View Plaza to Brunot's Island and then along the city line through Chartiers Creek.
- From the south end of the West End Bridge, south through Mt. Washington and the South Hills.

1st Avenue Bike & Blade Station

- Located on the Monongahela North Shore, there is funding in place for the design and construction of this facility. Amenities may include:
  - Bike racks / bike and skate lockers / valet bike parking
  - Shaded benches / water fountain / restrooms / vending machines
  - Information kiosks
  - Snack bar
  - Bike / skate rental / repair service / accessory sales

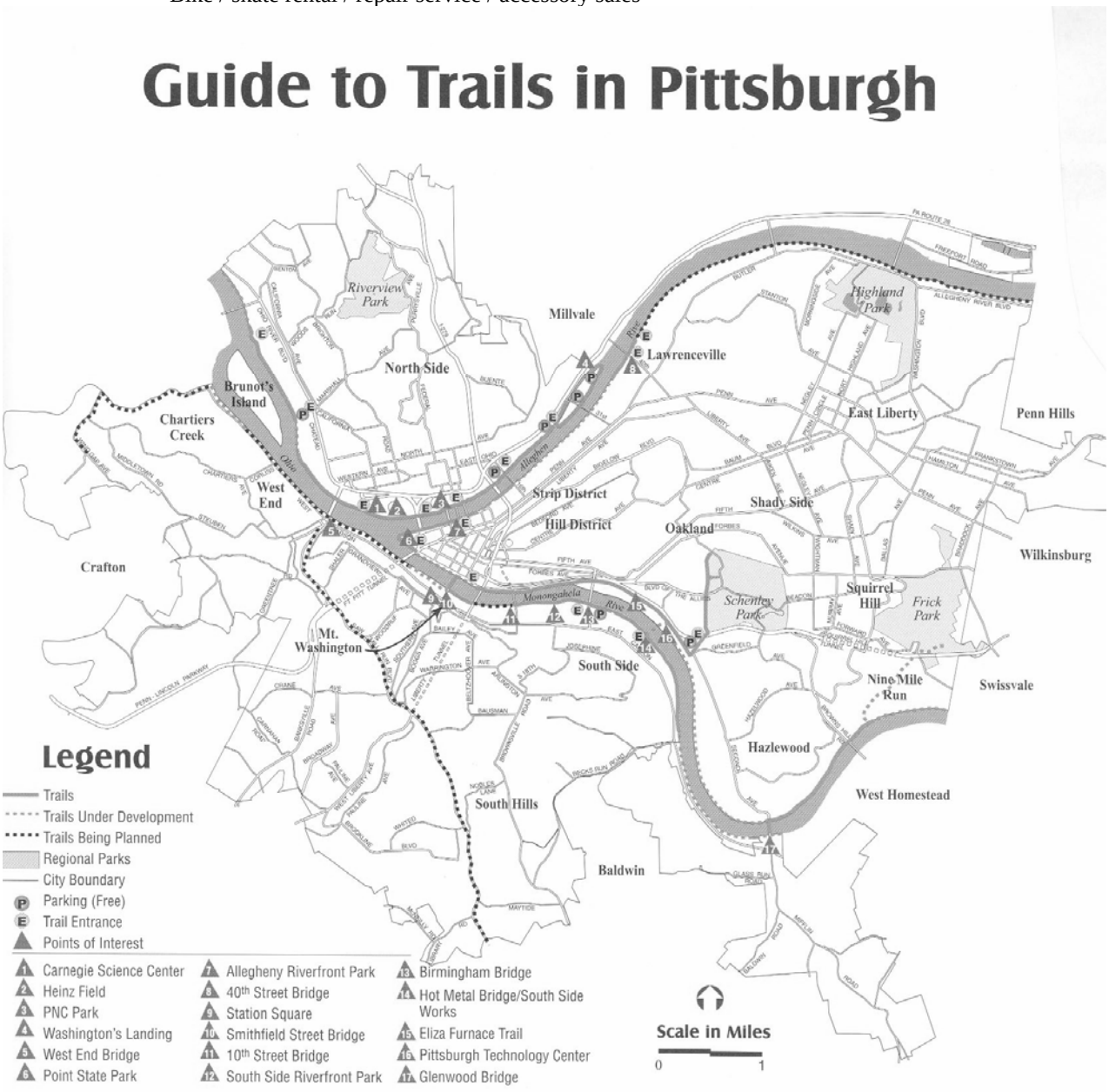


Figure 5-1. Pittsburgh Trail Guide. **Taken from Department of City Planning and CH2MHILL brochure, 2002.**

Biking

The City of Pittsburgh Planning Department has developed a Citywide Bicycle Plan. This plan outlines a strategy for improving bicycling conditions in Pittsburgh, while raising the profile of bicycling as a mode of transportation. Through strategic capital improvements, programming, and better internal coordination of bicycling projects, bicycling will become safer, more convenient, and more accessible to Pittsburghers in all reaches of the City. [6]

Sustainable Pittsburgh (a non-profit organization devoted to affecting decision-making in the Pittsburgh region so that it integrates economic prosperity, social equity, and environmental quality) also has an Urban Cycling Committee that works to promote more and safer bike trails in the region. In the summer of 2003, the Pittsburgh Mayor's office announced to the Urban Cycling Committee that they will be hiring a consultant to develop a bike lane policy that addresses the planning and implementation of bike lanes. Currently, safety and logistical obstacles are the issues affecting implementation. Visit www.bike-pgh.org/ for information on Bike Pittsburgh.

2. Water

Other recreational trails include water trails. These are waterways that can be navigated using motor-powered and/or human-powered boats and have many access/rest points along the route. Users are guided by general maps and information kiosks at various points.

The Allegheny River Water Trail is the first leg of the Three Rivers Water Trail System being developed by the Friends of the Riverfront, a non-profit organization. The trail follows the Allegheny River from the Kiskiminetas River to Pittsburgh and is accessible to non-motorized and motorized boats. The trail will eventually include water routes on the Monongahela and Ohio Rivers. The Chartiers Creek Water Trail also is proposed; it will include four canoe access points, with primary access in Esplen.

The concept of water trails brings forth another issue: potential conflict between motorized and non-motorized water craft, particularly as their numbers increase. The Pennsylvania Fish & Boat Commission (PFBC) reports that there have not been major incidents thus far.[7] When boating accidents do occur, it is recommended that they be reported to the Commission, but it is only mandatory if the damage exceeds $500.

B. Parks

1. City of Pittsburgh Regional Parks Master Plan [8]

The City of Pittsburgh, in partnership with the Pittsburgh Parks Conservancy, has developed a Regional Parks Master Plan, the purpose of which is "to provide a foundation for a new way of thinking about the precious landscapes, rooted in an ethic of stewardship which focuses on the necessary resources needed to preserve, restore, and enhance Frick, Highland, Schenley, and Riverview Parks." The Plan involves renewal, management, and maintenance of amenities such

[6] See Pittsburgh's website - www.city.pittsburgh.pa.us
[7] Personal interview with Dennis Tubbs, Aquatic Resources Specialist - PA Fish & Boat Commission, 2002.
[8] Pittsburgh's Regional Parks Master Plan, Spring 2001, CD Rom - also on www.city.pittsburgh.pa.us

as visitor centers, landscapes, and ecology. The Plan also aims to connect the Regional Parks via a trail system throughout the city, thus creating a "Green Web" that connects neighborhoods and establishes a stronger sense of community.

The two Regional Parks that are included in the project area are Schenley and Highland.

Schenley Park

Typically viewed as a civic, vehicular, diverse, and even overused and overcrowded park, Schenley is often considered Pittsburgh's Central Park. Established in 1889 when Mary Schenley donated 300 acres to the city, the park land originally had drainage and erosion problems due to its "steep sideslope terrain," and scattered rock outcrops. The problems of landslides have been amended over time with horticultural planning and retaining walls. As part of the Monongahela River Watershed, the Park contains ephemeral, intermittent, and perennial channels, a pond, groundwater seeps, and wetlands. It also contains four subwatersheds; more specifically, "Phipps Run and Pather Hollow Tributary come together and drain into Panther Hollow Lake, which drains through Junction Hollow to the Monongahela River." The Park's forested areas provide some wildlife habitat.

The plans for restoring Schenley Park include:

- Restoring and expanding major park destinations,
- Rehabilitating Panther Hollow and the Lake,
- Reducing parking,
- Constructing new trails to link neighborhoods,
- Making Schenley Plaza the major entry to the park, and
- Restoring the horticulture

Highland Park

Most often considered a fragmented park, the main goal for renewing Highland Park is to connect the fragments and make it a more welcoming, cohesive place. Unlike Schenley, Highland Park was not obtained as one large parcel of land. It became a park as the reservoirs and the surrounding open space became popular hot spots for citizens in the 1870's. By 1889, the land was considered a park, although its parts had been obtained piecemeal, which may account for its disjointedness today. The park is 388 acres with many slopes greater than 40%, which makes the area prone to landslides. Also, as part of the Allegheny River Watershed, it has both ephemeral and intermittent channels and subwatersheds, the water from which flows through pipes to the river. The park also offers some wildlife habitat.

Highland Park is home to the Pittsburgh Zoo, which opened in 1898 (and now includes the PPG Aquarium). Also during the late 19th century, the entrance Plaza at the end of Highland Ave. was a symbol of the "City Beautiful" movement. Bronze Horse Tamer statues, built in 1900, adorn the second entrance at Stanton Ave. The Rhododendron Shelter was built in 1902-1903, and there were even greenhouses on the property. Lake Carnegie (an interim reservoir) was a popular boating and swimming area in 1893. Washington Boulevard once ran to the river, and the park offered a scenic view of the Allegheny. But the Highland Park Bridge and Allegheny River Boulevard took away from the scenic vistas.

Renewal projects for Highland Park include:

- New entry gardens,
- Pool and pool house renovations,
- Bigelow Overlook restoration,
- New zoo entrance,
- Improved zoo perimeter, and
- Lake Carnegie restoration.

Allegheny Commons Park

While not part of the regional parks plan, there are plans to restore Allegheny Commons, located in the Pittsburgh's North Side. The historic park has a playground and green spaces and is also the site of the National Aviary.

2. O'Hara Township Comprehensive Parks, Recreation, and open Space Plan – 2002 and Beyond

O'Hara Township's Parks and Recreation Plan is a report on the current status of parks and open space and a plan for the future of parks in the community. The plan offers detailed information and maps on parks and their facilities, a summary of the public participation component, and recommendations for the parks system. Some of the goals of the plan are to: enhance the trail system, develop the new riverfront park, protect natural areas, maintain quality sports fields, boost park usage, and coordinate and cooperate with surrounding communities.

3. Riverfront Parks

In this section, only riverfront parks are listed. A complete list of parks and playgrounds for each municipality can be found in Appendix E.

Pittsburgh

South Side Riverfront Park, South Side includes a trail with scattered benches and views of the city, as well as a public boat launch.

Point State Park is used mainly as a gathering area for many of the city's events, such as holiday celebrations, concerts, and annual gatherings like the Three Rivers Regatta. There are plans, however, to change the focus of Point State Park from a gathering area to a historical area and relieve it from the stresses of having millions of visitors each year. The Point State Park Planning Committee has been formed as a "revitalization project of the Allegheny Conference on Community Development and the Riverlife Task Force, along with stakeholders and community members." There are two parts to the Point State Park Master Plan: 1) develop a comprehensive plan for programming and management of the Park, 2) develop an overall landscape design.

North Shore Park extends from the West End Bridge to the Fort Wayne Railroad Bridge. It encompasses PNC Park, Heinz Field, the Science Center, and all the land in between. The portion of the park between the Fort Duquesne Bridge and PNC Park is considered the Esplanade East, which includes the Korean War Memorial, the Water Steps, and the stadium. The portion

of the park between Fort Duquesne Bridge and the Science Center is considered to be the Esplanade West, which includes Heinz Field, the new pier, the Vietnam Veterans Memorial, the grand staircase, and the Great Lawn (one acre of open space east of Heinz Field). Fundraising for the Steelers West/Science Center Riverfront Area Development has begun and may include the construction of an amphitheater.

Both Esplanades include the Riverwalk, the brick-paved promenade above the Riverwalk, extensive landscaping, cleats and ballards for recreational boating, and open space. The Pirates and Steelers have hired Continental Development Company to undertake the development of the parking lots of North Shore Park. This area will include apartment complexes, office buildings, and riverfront shops and restaurants. There is also a memorial between the 6th and 7th Street Bridges to police officers killed in the line of duty, and a World War II memorial is in the design phase.

Allegheny Riverfront Park was constructed with an upper and lower level. The lower level stretches from the Fort Duquesne Bridge to 9th Street. It consists of a walking trail with native flood plain trees and ground cover, plus clusters of large boulders that offer visitors a place to sit. The upper level stretches from Stanwix Street to 9th Street. It is a riverside promenade offering shade trees. The Park was developed by the Pittsburgh Cultural Trust.

Lawrence Riverfront Park is a proposed linear park that will extend from 9th Street to the Fort Wayne Railroad Bridge. It will contain ramps and stairs from the convention center to the river as well as a new landing for recreational boats and commercial water shuttles. The Sports and Exhibition Authority is in the process of raising the funds to develop this park.

Washington's Landing Park, located at the north end of the island, boasts tennis courts, trails, and open space. These recreational improvements were made possible by the Urban Redevelopment Authority, which transformed the island's uses from stockyards and rendering plant to a mix of housing, offices, marina, and public park.

Millvale

Millvale Riverfront Park was completed in July 2002. It includes a trail, boathouse, pavilion, gazebo, and skate park. It is located on 13 acres under the 40th Street Bridge.

Oakmont

Riverside Park, located behind Riverview High School, is a municipal park that includes athletic fields, a track, and open space.

Verona

Riverbank Park includes a basketball court, hockey area, a playground, and benches that overlook the Allegheny River; a stairwell provides access to the water. The park, located along Arch Street, had new equipment installed in 2000. It is closed in the winter.

C. River Access

Access to the rivers can be defined several ways: touching the water, standing, fishing, or walking along the banks, or launching boats. Throughout the public meetings, citizens expressed that they would like to see more "access" in the form of boat launches along the rivers. While there are many private marinas within the study area, there are few actual public boat ramps (for motorized or non-motorized craft). In addition, parking is an added constraint for boat access sites, as cars with trailers require significant space. In Harmar, for example, the PFBC public boat launch has a large parking lot and ample area for put-in and take-out of both motorized and non-motorized craft. Table 5-1 is a list of small boat harbors, ramps, and landings in the project area (See Map 7). Several canoe/kayak launches are underway: one in Lawrenceville at the 40th St. Bridge, one adjacent to River Ave. just downriver from Washington's Landing, and one at the Birmingham Bridge at South Side Riverfront Park. There is also a launch under the 6th Street Bridge on the Allegheny North Shore. An additional site is planned for the Mon Wharf (after construction of the Wharf is complete). These sites also will include canoe and kayak racks for paddlers who want to come on shore. Penn Hills has plans for developing a riverfront park with canoe and kayak access areas. This park would be located at the delta area where Sandy Creek Road meets Allegheny River Boulevard.

Although lack of public boat access to the rivers is a hindrance to many, those boaters that do make it into the rivers but do not belong to a private marina struggle with finding places to obtain fuel, food, and restrooms. There is limited access for temporary tie-ups for boaters to reach attractions on the shore and no pump-out station in the Pittsburgh Pool. This may lead to unwise choices by boaters who may choose to tie up illegally and dump their waste into the rivers.

Other types of access, such as trails or scenic vistas, are limited by certain developments that build to the river's edge. Set-back requirements and other zoning regulations can be modified to allow for significant greenspace between the rivers and buildings. Scenic vistas, or simply visual access points, are another type of access that can be maintained or created along the rivers. (Currently, the City of Pittsburgh has a 50 ft. riverfront set-back.)

Overall, lack of access to our waterways can be traced, in part, to the changing infrastructure along the waterways. Streets that used to lead people to the rivers were taken over for industrial uses, effectively blocking the routes to the rivers. According to a Three Rivers 2nd Nature (3R2N) study, 163 streets were "lost" this way between 1872 and 1996.[9] In addition, the railroads use and ownership of riverfront property has limited the public's access to the river's edge.

[9] 3R2N, Social Project Reports 2001, Phase II. The STUDIO for Creative Inquiry. Carnegie Mellon University.

Table 5-1
Small Boat Ramps, Harbors, and Landings

River Mile / Bank (looking downstream)	Facility	Phone No.	Fuel	Restaurant	Groceries	Overnight Mooring	Lodging	Remarks
Ohio								
1.1 R	Newport Marina Foot of W. North Ave. Pittsburgh, PA 15233	412.322.9151	No	No	No	No	No	Private Motorized access only Ramp
1.4 R	Peggy's Harbor Liverpool St. Pgh., PA 15233	412.321.2805	Yes	No	No	No	No	Private Motorized access only Ramp, Ice
2.0 R	Branchport Boat Club Foot of Branchport St. Pgh., PA 15223	412.231.3718	No	No	No	Yes	No	Private Club Motorized access only
2.1 R	Island Boat Club Foot of Island Ave. Pgh., PA 15233	412.322.0889	No	No	No	Yes	No	Private Motorized access only Ramp
2.9 L	McKees Rocks Boat Docks River Ave. McKees Rock, PA 15136	412.331.5438	Yes	Yes	No	Yes	No	Private Motorized access only Ramp
Monongahela								
0.2 R	Monongahela Wharf (under construction)		No	No	No	No	No	Restricted public mooring.
0.2 L	Gateway Clipper Inc. Station Square Dock Pgh., PA 15219	412.355.7980	No	No	No	No	No	Private Boat Excursions
2.2 L	City of Pittsburgh		No	No	No	No	No	2 public ramps Motorized, canoe access
Allegheny								
0.0 L / R	Allegheny Wharf (The Point area)		No	No	No	No	No	Restricted public mooring.
0.0 R	Allegheny North Shore							2 public ramps canoe access
0.5 R	City of Pgh. River Rescue	911	No	No	No	No	No	Restricted, fire and rescue
0.6 R	6th St. Bridge							Public canoe access

1-2 L	Restaurant Landings							Restaurants in the Strip District allow customers to dock.
1.8 L	South Shore Marina 23 & RR St. Pgh., PA 15222	412.471.6995	Yes	No	No	Yes	No	Private Motorized access only
2.5	Washington's Landing, Herrs Is 100 Waterfront Dr. Pgh., PA 15222	412.321.3600	Yes	Yes	No	Yes	No	Private Motorized access only Diesel Fuel
2.6 BC	Three Rivers Rowing Assoc. Waterfront Dr. Pgh., PA 15222	412.231.8772	No	No	No	No	No	Private club, rowing hulls
3.0 R	Millvale Boathouse							Public canoe access
3.3 R	Millvale Marina 114 Logan St. Pgh., PA 15209	412.231.2167	No	No	No	Yes	No	Private club Motorized access only
3.4 R	40th St. Bridge							Public canoe access
5.4 L	Allegheny Marina, Inc. 1 62nd St. Pgh., PA 15201	412.782.3113	No	No	No	Yes	No	Private Motorized access only
5.9 R	Sharpsburg Boat Docks 13th & River Rd. Sharpsburg, PA 15215	412.782.7344	No	No	No	No	No	Private Motorized access only
6.35 R	Silkies Crows Nest Marina 19th St. & River Rd. Sharpsburg, PA 15215	412.782.3707	No	Yes	No	Yes	No	Private Motorized access only Travel lift to 60'
7.25 R	Aspinwall Boat Club 285 River Ave. Pgh., PA 15215	412.781.2340	Yes	No	No	Yes	No	Private Motorized access only Showers, Telephone
7.3 L	Brilliant Boat Club Foot of Washington Blvd. Pgh., PA 15206	412.661.2891	No	No	No	Yes	No	Private Motorized access only Repairs, Rest Rooms
9.0 R	Fox Chapel Sea Ray Marina 1366 Old Freeport Rd. Pgh., PA 15238	412.967.1500	Yes	No	No	Yes	No	Private Motorized access only Services, Showers
10.55 L	Sylvan Canoe Club 132 Arch St. Verona, PA 15147	412.828.9897	No	No	No	No	No	Private canoe access

10.6 R	Bell Harbor 1 River Rd. Blawnox - Pgh., PA 15238	412.828.3477	Yes	No	No	Yes	No	Private Motorized access only
10.6 L	Duquesne Canoe Club 152 Arch St. Verona, PA 15147	412.828.4970	No	No	No	No	No	Private canoe access
10.65 L	Algonquin Canoe Club 216 Arch St. Verona, PA 15147	412.828.9886	No	No	No	No	No	Private canoe access
10.7 L	Outboard Haven 228 Arch St. Verona, PA 15147	412.828.4944	Yes	No	No	Yes	No	Private, motorized access Rest rooms, shower, picnic facilities, service
10.9 L	Allegheny River Marina Club 314 Arch St. Verona, PA 15147	412.828.7775	No	Yes	No	Yes	No	Private Motorized access only Rest rooms, restaurant
11.1 R	O'Hara Landing Boat Club 14th River Rd. Pgh., PA 15238	412.828.9151	No	No	No	Yes	No	Private Motorized access only
11.95 L	Riverside Landing 10 Washington Ave. Oakmont, PA 15139	412.828.4144	No	Yes	No	Yes	No	Private Motorized access only
12.0 L	Oakmont Yacht Club 11 Washington Ave. Oakmont, PA 15139	412.828.9847	No	Yes	No	No	No	Private Motorized access only Annual Regatta
13.1 R	Rodak Boat Sales Harmar Marina 2526 Wenzel Dr. Harmarville, PA 15238	412.828.9684	Yes	No	No	No	No	Sales / Service
13.19 R	PA Fish Commission		No	No	No	No	No	Public Ramp motorized, canoe access

Source: Pittsburgh District Army Corps of Engineers – Navigation Charts, 2000

D. Boating and Fishing

1. Fish & Boat Commission

The PFBC tracks and regulates all boat and fishing registrations and related activities.

Boating

Boat traffic on the Three Rivers may include commercial traffic (towboats and barges) and recreational traffic that is either motorized (pleasure boats or personal watercraft – see definition below) or non-motorized (canoes, kayaks, or sculls). While conflicts do occur over this public space, the PFBC has established regulations and educational courses to deal with the conflicts.

Boat registrations in Allegheny County in 2002……28,476

Boating regulations:

- On the Allegheny from mile point 12.8 to 14.5, and in the back channels of Twelvemile and Fourteenmile Islands = slow, minimum height swell speed.
- On the Allegheny from mile point 10 to 10.4 (behind Ninemile Island) = designated ski zone.
- At the Point (from West End Bridge to Fort Pitt Bridge to Fort Wayne Bridge) =slow, minimum height swell speed on weekends from May 1-October 1.

A complete guide to boating regulations can be found at www.fish.state.pa.us.

Safety for Boats and Personal Watercraft

The primary safety issue on the Three Rivers is that they are multiple use waterways with commercial and recreational traffic vying for space. As a result, a current safety issue involves the lighting of barges at night. Accidents may occur when recreational boaters do not see, or cannot get out of the way in time, as dark barges move along the rivers at night. There are proposals to the PFBC and the USCG to increase lighting on barges. More information on river safety and recreation can be found in Chapter 1-D-1.

Other problems arise when pleasure boaters are not educated about the rules of the river or when alcohol is involved. To help alleviate this problem, mandatory boating safety education for operators of motor boats became effective in February 2003. The regulation requires people born after January 1, 1982, to complete a boating education course and obtain a certificate to operate an internal combustion motor greater than 25 horsepower or to operate a personal watercraft. The certification lasts for a lifetime, and there are exemptions for the owners of private ponds. More information is available from the Pennsylvania Fish and Boat Commission.

"Personal watercraft are often referred to by their trade names such as jet skis or skidoos, etc. PFBC regulations define "personal watercraft" as a boat less than 16 feet in length that uses an internal combustion motor powering a water jet pump as its primary means of propulsion and is operated by a person sitting, standing, or kneeling on the craft. Under proposed regulations, it is an unacceptable boating practice to:

- Cause a boat to become airborne while crossing the wake of another boat within 100 feet of the boat causing the wake.
- Weave through congested traffic.

- Follow too closely to another boat at other than slow, minimum height swell speed. For purposes of this regulation a boat is deemed to follow too close if within 100 feet of the rear of the boat or within 50 feet of the side of another boat (except in a narrow channel.)"[10]

Another issue for water recreators are the riverbanks surrounding the Point, which are mainly comprised of concrete walls. When these walls occupy opposing shorelines, it exacerbates the effects of wakes, making boating and other river-related activities potentially dangerous. Natural shorelines are ideal (and highly recommended) to absorb the force of the wakes; however, reverting to natural shorelines is not necessarily feasible or affordable. To minimize the impacts of wakes, plastic, honeycombed-structured devices can be placed along the concrete walls; however, these are known to be extremely expensive and difficult to maintain.[11]

Fishing

See Table 4-3 for information on fish stocking and Table 3-8 for fish consumption advisories.

PA fishing license sales for Allegheny County in 2002 (resident)……..63,971
All other fishing license categories……...4,405

Informal fishing access points abound within the study corridor (see Table 5-2). Unfortunately, there are obstacles that hinder anglers from enjoying fishing in local streams and rivers; many good fishing spots are located on private property – either railroads or private landowners who do not allow fishing from their land (for reasons such as liability and littering problems). This problem is being alleviated by Friends of the Riverfront, which in 2002 purchased two miles of riverfront from CSX railroad along the Monongahela between the Hot Metal Bridge and Glenwood Bridge, allowing anglers to access fishing spots there and enjoy the new section of the Three Rivers Heritage Trail. The group is also working on access points under the 40th St. Bridge on the Allegheny and waterfront areas in Fox Chapel and O'Hara.

2. Fishing Tournaments

During the summer months there are many fishing tournaments in the region. Most are small club tournaments with no prizes or fees and are limited to a small number of boats. Larger tournaments within the corridor, all located on the South Side, include the Pennsylvania BASS tournaments (occurring in June and September with a limit of 60 boats), the Keystone Bass Buddy Circuit (occurring in September and limited to 100 boats), and the Keystone Bass Buddy Classic (also held in September and limited to 40 boats).

While all tournaments are required to get a permit from the PFBC, a single list of the tournaments for the region does not exist. Anglers need to watch for notices in the newspaper and search the Internet for tournament notices. The PFBC is exploring ways to create a comprehensive list.[12]

[10] www.fish.state.pa.us
[11] Personal interview with Michael Lambert, Pittsburgh Three Rivers Rowing Association
[12] Personal interview with Dennis Tubbs, PA Fish and Boat Commission

3. The Ashland Oil Spill Recreation Study [13]

After the Ashland Oil Spill of 1988, the PA Department of Environmental Resources (now the DEP), the PFBC, and ORSANCO (Ohio River Sanitary Commission) were tasked with completing a recreational survey of portions of the Three Rivers (the study area included the entire scope of our project area and beyond). The information on recreation areas and opportunities that existed at the time of the oil spill was outdated, so part of the damage assessment moneys from the spill settlement were used for this new recreation survey.

"The purpose of the study was to characterize and quantify the various recreational uses of the rivers in the study area and to determine the economic value of each type of use. The information will be useful for any future damage assessments and for planning and managing the future recreational development of the rivers."

The first part of the study involved an inventory of all recreation sites along the rivers. This included marinas, boat ramps, fishing access, and parks, which were then mapped. The second part of the study involved site-interview surveys for which specific sampling designs and guidelines were set.

The following table lists the fishing access areas; marinas and boat ramps were not included, as they can be found in the Army Corps list found in Table 5-1.

[13] Recreational Use Survey and Valuation of Recreational Use Types for Portions of the Allegheny, Monongahela, and Ohio Rivers. 1996. Terrestrial Environmental Specialists, Inc., Research Triangle Institute, Aquatic Systems Corporation.

Table 5-2
Fishing Access Points

River	River Mile (from Point) / Bank (looking downstream)	Site Name
Ohio	2.7L	Chartiers Creek
	4.7R	Unnamed
	2.9R	Unnamed
	2.7R	Unnamed
Allegheny	1.5R	Unnamed
	2.0R	Unnamed
	2.4R	Herrs Island Backchannel
	2.8R	Unnamed
	3.6R	Girtys Run
	4.6R	Pine Creek
	6.6R	Guyasuta Run / Abutment Lock 2
	6.5L	Below Lock 2
	4.2L	Unnamed
	3.4L	Unnamed
	1.1L	Unnamed
	4.9L	Unnamed
	11.3L	Plum Creek
	10.2L	Quigley Creek
	8.3L	Shades Run
	8.6R	Squaw Run
	11.3R	Powers Run
	11.8R	Unnamed
	13R	Harmar Coal
	13.4R	PFBC Deer Creek
	14.2R	RR & PTC Bridges
	14.5R	Allegheny Dam 3 Abutment
	10	Sycamore Island Backchannel
	6.7L	Highland Park Bridge
Monongahela	0.3R	Mon Wharf
	2.6R	Unnamed
	5.9R	Glenwood Bridge
	6.0L	Streets Run
	4.5L	Becks Run

Source: see footnote 13

The site-interview survey involved trained interviewers who approached recreators as they exited the water or used the waterfront facilities (see the full survey for details on the interview guidelines and process). The collected information included:

- user days (see definition in Table 5-3) for anglers, boaters, and park-goers
- angler information, such as fishing time, species caught, number of fish kept
- boater information, such as size and type of boat, number of days on water, type of activity
- park user activities, such as running, sunbathing

Table 5-3

Average user-days for fishing, boating, and park use in the Central Emsworth Pool (CEP - from Emsworth lock and dam to Allegheny lock and dam 2, to Monongahela lock and dam 2) and the Allegheny River pool 2 (A2 - from lock and dam 2 to lock and dam 3). User-days are defined as "a measure of recreational activity: it combines the number of people engaging in a particular activity each day with the number of days they engage in the activity." Most of the activity occurred during June, July, and August.

	User Days	
Activity	**CEP**	**A2**
Shore Fishing	19,685	11,670
Boat Fishing	2,791	2,554
Boating	63,132	24,345
Park Use	202,005	34,985

Source: see footnote 13

Table 5-4
Various Fishing and Boating Statistics - Based on On-Site Interviews

Category	CEP	A2	Explanations
Average Fishing Time (hours)	3.8	3.0	
Top 3 Species Caught	White Bass, Striped Bass, Sauger	Walleye, Sauger, Channel Catfish	Based on interviewees answers
Average Number of Fish Caught	7	15.8	
Average Number of Fish Kept (not released)	0.13	0.52	Main reasons for releasing were: just fish for fun, fish too small
Overall Fishing Experience	Fair, Poor	Good, Fair, Poor	These were the most common responses
Percentage of Boaters who were: -Waterskiing	8.8	13.2	Based on % of interviewees who were boating
-Sightseeing	9.2	--	
-Swimming	3.4	3.2	
-Sunbathing	2.5	5.6	
-Tubing	--	4.8	
-Pleasure Boating	65.8	66.7	

Source: see footnote 13

Table 5-5 represents the opinions of anglers (fishermen), boaters, and park users on selected issues. While the interviewees came from the entire area of the recreation study (the Ohio to the state border, the Monongahela to lock and dam 3, and the Allegheny to lock and dam 3), their answers are nonetheless important in understanding recreators' points of view on the region's waterways.

Table 5-5
Opinions of Anglers, Boaters, and Park Users on Selected Issues*

Government Spending on Outdoor Recreation	Anglers	Boaters	Park Users
About Right	18	16.8	53.6
Not Enough	73.6	83.2	45
Too Much	8.4	0	1.4
River Problems Affect Enjoyment of Fishing			
Yes	80.8	88.4	27.3
No	19.2	11.6	72.7
Specific River Problems Mentioned			
Overuse/Overcrowded Conditions	6.9	9.5	1.1
Lack of Public Access Areas	14.6	17.4	4.5
Debris in River or Shore	40.6	42.9	10.9
Safety Problems	6.9	19.9	3.2
Inadequate Facilities	9.7	13.6	3.6
Can't Eat Fish	10.2	5.8	1.8
Dirty or Unclear Water	15	16.1	11
Pollution	33.3	18.2	5.6
Importance of: (percentages are for those who responded Very Important)			
Good Weather	32.8	63.3	60
Scenic Beauty	16.2	30.4	64.5
Absence of Debris	81.6	90.9	57.2
Easy Access	57.1	69.5	73.3
Unpolluted Water	93.8	93	63.4

* Numbers are percentages of the people interviewed.

Source: see footnote 13

Three Rivers Conservation Plan Recreation Opportunities

Map#_7_

- Carnegie Science Center
- National Aviary
- Pittsburgh Zoo & PPG Aquarium
- Dams
- Public Boat Access (Non Motor)
- Public Boat Access (Motor and Non Motor)
- Private Boat Access (Motor)
- Private Boat Access (Non Motor)
- Proposed Rail Trails
- Rail Trails
- Swimming Pools
- Parks / Playgrounds
- Golf Courses
- Islands
- City of Pittsburgh
- Boroughs
- Townships
- Allegheny County

Darker shades represent areas contained within the corridor.

0 1 Miles

N

Scale 1:90,000
Accuracy: 5 ft.

Mapping provided by:
Westsylvania Heritage Corporation

Ben Avon Heights
Kilbuck
Ross
Shaler
Fox Chapel
O'Hara
Harmar
Oakmont
Plum
Verona
Penn Hills
Neville
Ben Avon
Avalon
Bellevue
Stowe
Kennedy
McKees Rocks
Sheraden Park
Reserve
Etna
Millvale
Sharpsburg
Aspinwall
Blawnox
Highland Park
Allegheny Commons Park
Washingtons Landing
Point State Park
Grandview Park
Southside Park
Schenley Park
Baldwin
Pittsburgh
Emsworth Lock and Dam
Allegheny River Lock and Dam 2
Allegheny River Lock and Dam 3
Neville Island
Davis Island
Brunot Island
Stoneycreek Island
Twelvemile Island
Sycamore Island
Ninemile Island
Fourteenmile Island
Ohio River
Allegheny River
Monongahela River
79
279
376
579
76
28
8
51
65
19
60
910
130
380
837
885
30

Green Buildings—Alcoa is one of many green buildings in the study area

Historical Markers—common throughout the study area and the state of PA

Chapter Six

Cultural Resources

Historic Landmark—the Pittsburgh & Lake Erie Terminal is a Pittsburgh landmark and is on the National Register of Historic Places

Coal and Steel Heritage—a blowing engine from a blast furnace

16th St. Bridge—one of many historic bridges in the corridor

A. A Brief Look at the Region's History

1. Settlement [1, 2]

The history of this geographic region began 17,000 years ago with the first entrance of man into western Pennsylvania. Native Americans continually occupied this land until the late 18th century. Archaeologists refer to the last group of Native Americans who lived in this area before the first European traders arrived as the Monongahela culture. The Monongahela people built small villages and grew corn, beans, and squash on the wide floodplains along the Three Rivers. As European traders and explorers moved into the region, the Monongahela people vanished. By the late 1600's, the Shawnee and Delaware Tribes inhabited the area and were then confronted with the European settlers in the 18th century. The Ohio River, known as the Belle-Riviere by the French, remained Indian territory.

The first European to trade in western Pennsylvania was Arnout Viele, a Dutchman who traveled via the Allegheny and Ohio rivers in 1692. But it was not until 1753 that George Washington sketched the first good map of the area showing the confluence of the rivers. By the time of Washington's visit to Pennsylvania, the Three Rivers had become more strategic as the French and British clashed in their quests to secure land and obtain the all-water route, via the Ohio River, to the west. Washington helped build the first fort at the Point, Fort Prince George, in 1754. Within months and without a shot, the French took over the fort and built Fort Duquesne to establish their presence in the west.

In 1758, the French were forced to abandon and burn their Fort, after which the British General John Forbes named the town Pittsburgh, after England's Prime Minister William Pitt. By 1761, the British Fort Pitt was in full force at the Point. The outlines of the Forts remain today in Point State Park as a symbol of Pittsburgh's rich American history. By the end of the Revolutionary War, the Ohio River marked the beginning of the western frontier.

Of further significance was an early 19th century expedition that began at the request of President Thomas Jefferson; the great cross-country expedition of Lewis & Clark began in 1803 when Meriwether Lewis left Pittsburgh to meet William Clark in Louisville, Kentucky. It was in Pittsburgh that Lewis was able to find the skilled workers that could build a keelboat to withstand a voyage to the Pacific Ocean.

From that point on, Pittsburgh's population and economy grew. Immigrants traveling west via the Ohio River spent time working in Pittsburgh while they waited for favorable navigation conditions on the river. Furthermore, the canal system from Philadelphia entered the city in 1834, and railways to Philadelphia and Chicago were built in 1852 and 1858 respectively – all helping to spur industry and boost population, which by 1850 was up to 47,000 people.

2. The Industrial Revolution

Thus, the next major era in the region was spawned – the Industrial period of the 19th century. While many of us think of Pittsburgh as the steel capital of the world, there were other significant industries as well.

[1] Kidney, Walter C. 1982. The Three Rivers. Pittsburgh History and Landmarks Foundation.
[2] Carlisle, Ronald, and Dr. James Richardson III. 1977. Ohio River Environmental Assessment: Cultural Resources Reconnaissance. A report submitted to the U.S. ACE, Huntington District.

Glass factories were common on the south side along the Monongahela River and on the north shore of the Ohio River. Cotton mills in the city used cotton shipped from the south via the Ohio, and oil refining helped spur the barge-building industry.

The boat-building industry included the construction of flatboats, barges, steamers, sailing vessels, and even naval warships, many built by two major companies: Tarascan Brothers Shipyards (begun in 1802 on the Monongahela), and James Rees & Sons (operating from 1845-1932 on the Allegheny near the confluence).

Transport of coal was also common in the area. Coal transport by towboat was heavy on the Monongahela in the 1780's, and on the Ohio in 1793; by 1830, Pittsburgh coal was being shipped to New Orleans. Around 1900, Monongahela River Consolidated Coal and Coke Co. (known as Combine) owned 80 towboats and 4,000 barges and coalboats.

The Allegheny, while not the major transportation vehicle of the Three Rivers, was used for transport when oil exploration peaked in the 1860's and when oil refining was common in Pittsburgh. Transport of timber (by raft) from the many lumbering companies along the Allegheny was also common.

3. Navigation[3,4,5]

To refine Pittsburgh's role as an active inland port, there were many early attempts at clearing and controlling the rivers.

The colonial exploration period, through 1824, produced the first maps of the rivers and their tributaries. At the same time, the state of Pennsylvania was designating certain rivers as "navigable public highways." This designation gave all citizens a right to public access of the rivers. It also called for the removal of all debris that obstructed the rivers. However, there were no formal improvement projects attempted for this clean-up, and travelers were left with common obstacles such as ice blocks, low water, flow changes, sandbars, and boulders before the dams were built. Between 1824 and 1874, the federal government and the Army Corps of Engineers gained control of inland waters and navigation through Congress's passage of the Inland Waterways Improvement Act. Early efforts to make the waterways of the Pittsburgh area navigable involved removing snags and debris.

Finally, efforts were made to construct locks and dams on the rivers. From 1836 to 1897, the Monongahela Navigation Company controlled toll locks and dams on the Monongahela; but in 1897 the company was then taken over by the federal government, and free navigation was restored to travelers. From 1875 to 1929, the Ohio was canalized to six feet and later deepened to nine feet. The Davis Island Dam, built in 1885, was the longest wicket dam in the world, only to be replaced by the Emsworth Dam in 1921. The Allegheny was not canalized until the 1930's.

The dams were needed to keep the water levels high enough for vessels. Over the years, though, the dams had to be reconstructed and repaired due to old age and newer technologies. The current Allegheny lock and dam (L&D) 2 replaced the L&D at river mile 7, which operated from

[3] See Kidney – footnote 1
[4] See Carlisle – footnote 2
[5] 3R2N, From Rivers to Lakes: Engineering Pittsburgh's Three Rivers, 2001. The STUDIO for Creative Inquiry. Carnegie Mellon University.

1902-1908; L&D 3 replaced the L&D at river mile 17, which operated from 1897-1904. The Emsworth dam was altered in 1938 to allow a pool of 710 ft. above sea level all the way to Highland Park and Braddock. From 1981-1986, the L&D underwent a $30 million rehabilitation (See Chapter 1-D-1).

4. Renaissance

After World War II, Pittsburgh underwent its first Renaissance under the leadership of Mayor David L. Lawrence and philanthropist Richard King Mellon. Air quality, traffic, and sanitation regulations were implemented, improving the environmental quality of the region. New office buildings were built along with a new civic center and Point State Park. The city's business center became known as the "Golden Triangle."

During the 1980s, Pittsburgh's heavy industry declined drastically, unemployment increased, and population decreased. At the same time, the city was undergoing its second Renaissance, this time under the direction of Mayor Richard Caliguiri. This Renaissance produced the restoration of the downtown cultural center, the revival of city neighborhoods, and construction of major office buildings. It continued into the 1990s.

Pittsburgh boasts a tremendous amount of new construction including new stadiums, the North Shore development, convention center, and riverfront revitalization. Some people consider this to be Renaissance III.

B. Local Histories

Each municipality in this corridor has its own distinct history. Their stories are summarized here.[6, 7]

See Map 1 for locations of the municipalities listed below.

Aspinwall Borough

At the time of the Revolutionary War, the land on which Aspinwall now stands was part of the Iroquois Nation and the Seneca Tribe of Chief Guyasuta. After the war, General James O'Hara purchased the land from the government. Later, a portion of the land was sold to James Ross. His nieces, Ann Aspinwall and Mary Delafield, later inherited it. They rented some of the land to tenant farmers, one of whom was young H. J. Heinz, to grow crops such as tomatoes and horseradish. The Aspinwall Land Company was formed in 1890 and it was purchased for home sites. Aspinwall was incorporated as a Borough on December 28, 1892. Phase #1 land was developed in 1892 from Western Avenue to Eastern Avenue; Phase #2 began in 1899; and Phase #3 from Brilliant Avenue to Delafield Avenue began in 1905.

Avalon Borough

Avalon was originally a farming community whose produce went to Pittsburgh. At that time, the Ohio River's water level was lower, which allowed for beaches and a connecting road for easy transport of goods. Later, the first moveable, and second navigational dam in the U.S. was built from Davis Island to Avalon in 1885, only to be replaced by the Emsworth dam in 1921. Further development of the community occurred when the railroad arrived in 1851, causing people to move toward the river to Orchard Ave. and Ohio River Blvd. In 1926, Ohio River Blvd. became a "high-speed boulevard" which connected the western part of the county to Pittsburgh. Ten bridges were

[6] Pittsburgh History & Landmarks Foundation Allegheny County Survey, 1980.
[7] Various municipal web sites (see Appendix A, Table A for web addresses)

constructed for access to the new road. And, in 1930, Avalon Park opened with a bathhouse and swimming pool (the bathhouse was made of bricks from Ohio River Blvd.).

Baldwin Borough

Baldwin Borough was incorporated in 1950 after separating from Baldwin Township. Of historical significance is the Railroad & Water Co. Buildings on E. Carson St., which now serve as the filter station for Western PA Water Co.

Bellevue Borough

Bellevue was part of the depreciation lands, which in 1783 were set aside for soldiers of the Revolutionary War as a "payment for their military service." In 1784, the land was bought from the Native Americans. Eventually, the Pittsburgh to Chicago Railroad was completed and passed through the community (1856). A decade later, Bellevue was officially established and named by a French linguist for its beautiful view.

Ben Avon Borough

When Native Americans occupied the area now know as Ben Avon, the “road parallel to Ohio River Boulevard was the most important Native American trail from the sea to the northwest, and was known as the Golat Path, which later became know as the McIntosh Trail that connected Pittsburgh to Beaver County.” Then, in 1851, the railroads moved into Ben Avon, and helped to establish it as a community. It was officially founded in 1892 by J.C. Lewis.

Ben Avon Heights Borough

Ben Avon Heights was annexed from Kilbuck Township in 1913.

Blawnox Borough

Like other communities in the area, the PA canal came through Blawnox in 1826, and in 1857 the PA railroad bought the right-of-way. In 1917, the Blaw Steel Co. acquired the Knox Welded and Pressed Steel Co. and became known as the Blaw-Knox Steel Construction Co. The management of the company asked for the town name to be changed to Blawnox, and it was officially incorporated in 1925.

Etna Borough

Founded in 1868, this area is of significance because it was one of the first places (even possibly the first in the world) to use natural gas in southwestern PA. The Sprang Co. of Etna made the iron pipes which transported the gas.

Fox Chapel Borough

Until the latter part of the 18th century, Native American tribes hunted and fished in this general area. The first settler in the Fox Chapel area was James Powers, who arrived around 1790. Among the early landowners in the area was James O'Hara, a Revolutionary Army general and prominent Pittsburgh businessman. During the depression of 1818, O'Hara was saved from financial ruin by the counsel of James Ross, a noted lawyer and former Senator. As an expression of gratitude, he gave Ross 1,700 acres of land which is now part of Fox Chapel and comprises the Delafield Estates section of the Borough, as well as the development along Buckingham Road known as the "Ross Meadows Plan of Lots." Fox Chapel was originally part of O'Hara and Indiana Townships. In 1928, approximately forty property owners assembled at the Shady Side Academy and voted to incorporate the Fox Chapel District Association. Despite vigorous opposition by both Townships, on August 3, 1934, the Court ordered the incorporation of Fox Chapel Borough from 6.8 square miles of O'Hara Township and 0.4 square miles of Indiana Township. Over the years, the Borough's government has been so efficient and satisfactory that other residents adjacent to the Borough have petitioned Council for annexation, increasing the area of the Borough to its present size of approximately 8.5 square miles. Fox Chapel constantly strives to defend and maintain its special ambience. One of the most important tasks of the borough is to preserve this position. Not only is it desirable for Fox Chapel, it is desirable for the entire Pittsburgh area. The wooded hills and uncrowded residential developments are a valuable regional asset. Fox Chapel is a classic example of what can be done to preserve openness and spaciousness in the very midst of urbanization and industrialization.

Harmar Township

Harmar Township, like other Allegheny River communities, was along the PA canal route, and was settled at the mouth of Deer Creek. It also includes Twelvemile Island (originally Barton's Island).

Kennedy Township

In 1787 James Speer received a patent for land from William Penn, and built the first brick home in Kenmawr. Notable pioneers were the Clever family from Carlisle who came by covered wagon in 1825. Oil was drilled there in 1889, and coal mining began in the 1920s. In 1947, the original municipal building was dedicated at its present location.

Kilbuck Township

Originally part of the Depreciation Lands set aside for Revolutionary War Veterans, Kilbuck was annexed from Ohio Township in 1869. It was named after the kind Delaware Native American Chief, Kilbuck, who is thought to be buried somewhere in town. This township actually once included within its borders the now-named communities of Avalon, Glenfield, Ben Avon, Ben Avon Heights, and Emsworth.

McKees Rocks Borough

Founded in 1769 and incorporated as a borough in 1892, McKees Rocks grew as a result of the Pittsburgh & Lake Erie Railroad (P&LERR).

Millvale Borough

Founded in 1868, the borough's origins can be traced to Captain James Sample who received the land as part of the Depreciation Lands Settlement. He settled there in 1789 and built a grist mill. H.B. Lyons coined the name Millvale for the mills in the vale.

Neville Township

Founded in 1901, and once known as Montour's Island, Neville is named after General John Neville who was active in military service during the Revolutionary War. Historically, the island consisted of a farming community due to the fertile soil of the land (known as the "gem of the Ohio"). In 1880, there were 40 farms on the island, each with its own wharf. These farmers were able to travel into the city to sell their produce. It was in 1900 that the railroad bridge brought the first P & LE train to the island and helped to transform it into a steel and chemical area. In 1918, the government gained control of the island and made it the largest ammunitions dump in the world.

Oakmont Borough

Oakmont Borough's settlements in the 19th century were in part aided by the Allegheny Valley Railroad, which brought industry to the area. However, because the river was shallow and could not handle the amount of travel that the Monongahela did, development came much slower along the riverbanks. In 1964, an Adena (Native American) burial mound was found, dating from 1000 B.C. to 600 A.D.

O'Hara Township

O'Hara Township was once a site along the statewide canal system, which came through the Pittsburgh area in 1829. However, it was soon replaced by the PA railroad, which purchased the right-of-way in 1857. Sixmile Island (also known as Guyasuta Island, after the old Seneca Chief) is also administered by O'Hara and was once the site of the Pittsburgh Gravel Company.

Penn Hills Township

Penn Hills was a large coal-producing area by 1900 and lime manufacturing was also once a thriving industry. Portland Cement Manufacturing occurred in one of the largest plants in the country - Universal Atlas Cement Co. Currently, the historic turnouts on Allegheny River Boulevard are being restored by the Township. As part of the

Transportation Enhancement Project (TEP) they have received money to restore the stone walls and complete landscaping for the entire Boulevard within Penn Hills. They are even considered keeping the restored turnouts open during the day for visiting. Allegheny River Boulevard is also being considered for designation as a 'scenic byway.'

Plum Borough

A town of rolling hills, Plum is named after Plum Creek, which was bordered by many of the fruit trees. Originally founded as Plum Township in 1788, Plum was one of Allegheny County's first seven townships. It was reorganized as a Borough in 1956. The historic development of Plum Borough was closely tied to the industries that developed there including coal mining, aluminum powder manufacturing, and gas and oil production.

Reserve Township

Reserve Township was founded in 1835 and its name was derived from its origin as part of the Depreciation Lands settlement. It was part of the 3,000 acres north of the Allegheny and Ohio rivers that Pennsylvania set aside or "reserved" for settlement by Revolutionary War veterans. In December, 1834, citizens of the part of Ross Township known as the "reserved lands" petitioned the court to be allowed to form a separate township. Thomas Temple, James Anderson, and William Lecky were appointed commissioners to draw up the plan. Since 1835, the original borders of Reserve Township have changed. Because the city encroached on its boundaries from the south, the township made changes in its northern line to compensate.

Ross Township

Although only a very small southwestern portion of Ross Township is included in the project area, it was once part of the depreciation lands, and became a large township in 1809 that included many of the areas that are now the surrounding municipalities.

Shaler Township

In 1788, the Court of Quarter Sessions of Allegheny County established the township of Pitt, which included the land north of the Allegheny and Ohio Rivers. The township split, eventually forming Shaler. Shaler Township was once known for its coal mining industry, led by the Shaw family, and it was officially founded in 1847 and named in honor of Judge Charles Shaler.

Sharpsburg Borough

Incorporated in 1842 and named for founder James Sharp, Sharpsburg was initially developed as a town along the state canal system in 1829; however, the West Penn Railroad came in 1864 and the canal closed.

Stowe Township

Davis Island, part of Stowe, was owned by the Federal Government in 1981, when it was vacant. In the early part of the century (1922), though, the island was home to the Herron Hill Gun Club and the American Steel and Wire Company.

Verona Borough

Founded in 1871 and formed from parts of Plum, Penn, and Oakmont, Verona was originally called Mechanicsburg and had four railroad stations (Iona, Verona, Edgewater, Hulton). It is interesting to note that Verona's recreational areas along the river developed as a result of the railroad route, and not the river - although the riverfront was home to frame cottages and canoe clubs. That riverfront area was once known as Sylvan, or the "boathouse row" of the area.

C. Archaeology

Beneath the city's streets and buildings, urban archaeologists have found many significant remains of Pittsburgh's past including everything from fragile Native American artifacts to a

buried canal lock to brick wells and privies. The first archaeological excavation in the area was conducted by Carnegie Museum at a large prehistoric mound at McKees Rocks in 1896. Other important archaeological discoveries were made during construction of PNC Park when artifacts from General William Robinson's mansion on Federal Street were found. Hundreds of ceramic, glass, and other artifacts were recovered including a complete oak door and Native American Indian artifacts. During construction of I-279, Lock #4 of the Pennsylvania Main Line Canal was discovered, including over 200 huge cut stones, a wooden gate, ironwork, wood planking, and foundation timbers. There are at least over 490 recorded archaeological sites in Allegheny County, the majority located on the main rivers and streams.

D. The Bridges[8]

This region is home to the country's most bridges – and is only second in the world, falling short of Venice, Italy. But before the bridges were built, communication among people on all shores of the rivers occurred via canoe and skiff. Then, in 1813, Jone's Ferry opened near the Point, and in 1840, horse-powered ferries were used. A few years later, a steam ferry opened. During the early parts of the 19th century, though, bridge building began. Table 6-1 lists all of the current standing bridges in the study area, while Table 6-2 lists the historic bridges.

Table 6-1
Standing Bridges

***Locations can be found on the Navigation Charts found in Appendix A**

Name of Bridge	Date Erected	Comments
Allegheny River (moving upstream from Point)		
Fort Duquesne	1958-1963	Once called the "bridge to nowhere" because the highway system was not complete on the north shore – opened to traffic in 1969
6th St. (Roberto Clemente)	1925-1928	
7th St.	1925-1926	
9th St.	1925-1928	
Fort Wayne Railroad (RR)	1901-1904	Conrail uses the upper deck
Veteran's	1986-1987	
16th St.	1923	Replaced the last covered wooden bridge in the county
30th St. Backchannel	1986	Connects 31st St. Br. And River Ave. to Island
Herr's Island RR	1903	Now used for 3 Rivers Heritage Trail
31st St.	1927-1928	
33rd St. RR	1920-1921	B&O Main Line (CSX)
40th St. (Washington's Crossing)	1919-1924	

[8] www.pghbridges.com

Highland Park		
Brilliant Branch RR	1904	Not in use
62nd St. (Sen. Robert Fleming)	1962	
PA Turnpike	1949-1951	
Bessemer & Lake Erie RR	1918	
Hulton (Oakmont Hwy.)	1908	Named after the landowner who ran a ferry before the bridge was built
Monongahela River (moving upstream from Point)		
Fort Pitt	1956-1959	
Smithfield	1881-1883	
Monongahela River Bridge (Panhandle)	1903	Once a rail line of the Pittsburgh and Steubenville RR – ran west to Ohio over the 'panhandle' of W. Virginia
Liberty	1926-1928	Gave south hill residents direct connection to the city (the tunnels were completed four years prior)
S. 10th St.	1931	
Birmingham	1976	Originally built for plans of an inner city belt highway that never materialized
J&L Hot Metal, and Monongahela ConnectingRR	1887	Has undergone many alterations – was the former location of Jones & Laughlin Steel and Eliza Furnace)
Glenwood	1966	Underwent major rehabilitation in 2000
Ohio River (moving downstream from Point)		
West End	1930-1932	
Ohio Connecting RR	1915	Built for through-traffic to avoid heavy train traffic downtown
McKees Rocks Highway	1931	
Fleming Park	1955	
Source: www.pghbridges.com		

Table 6-2
Historic Bridges

Name of Bridge	Lifetime	Comments
Allegheny River (moving upstream from Point)		
Union	1875-1907	From the Point to North Shore – demolished because it was too low for navigating boats and had too many piers
Manchester	1915-1970	Replaced by Fort Duquesne because of the formation of Point State Park – one pier still stands at Heinz Field
St. Clair St. (6th St. or Allegheny River Bridge)	1819-1857	First bridge to cross the Allegheny
St. Clair St. (6th St. or Allegheny River Bridge)	1857-1892	Replaced first St. Clair Bridge
6th St.	1892-1927	Replaced second St. Clair Br.
7th St.	1885-1925	
Hand St. (9th St. Covered Bridge)	1839-1890	
9th St.	1890-1925	
Ft. Wayne RR	1857-1868	PA RR – at river mile 1.0
Ft. Wayne RR	1868-1904	
PA Canal (Allegheny Aqueduct)	1829-1845	Preceded the Ft. Wayne Bridge
PA Canal	1845-1857	
Mechanic St. (16th St.)	1838-1923	Originally a covered wooden bridge – burned and rebuilt in 1851 – burned in 1919 and replaced in 1923
Herr's Island (30th St.)	1882-1887	First bridge to cross Island
Herr's Island	1887-1921	Destroyed by fire in 1921
Herr's Island	1921-1927	Temporary bridge existed until current 31st St. Bridge was done
Herr's Island Backchannel	1939-1986	
33rd St. RR	1884	
43rd St. (Ewalt St.)	1870-1924	
Sharpsburg	1856	
Sharpsburg	1900	
Highland Park (Aspinwall or Sharpsburg Bridge)	1902-1938	
Bessemer & Lake Erie RR	1897-1918	Crossed 14 Mile Island

Monongahela River (moving upstream from Point)		
Point Bridge 1	1877-1927	From Point to south shore of Mon near Duquesne Incline
Point Bridge 2	1927-1970	Demolished because of plans for a Point State Park – Fort Pitt
Wabash RR	1902-1948	Piers still remain at Station Square and the Mon Wharf
Monongahela Bridge (Smithfield St.)	1818-1845	Burned
Monongahela Suspension Bridge (Smithfield St.)	1846-1881	
Panhandle (Monongahela River Bridge)	1865-1903	At river mile 1.0 – built for PA RR "panhandle" division
Pgh. Birmingham (10th St.)	1861-1875	Wooden covered bridge
10th St. (Birmingham)	1904-1931	Replaced 1st 10th St. Bridge
S. 22nd St. (Brady St.)	1895- 1977?	
Glenwood	1894-1966	
Ohio River (moving downstream from Point)		
Ohio Connecting RR	1890	
Fleming Park (Neville Island)	1894-1955	On back channel at river mile 5.3
Source: www.pghbridges.com		

New initiatives are in place to light the bridges to make them visible and more appealing at nighttime. The Roberto Clemente Bridge and the Smithfield St. Bridge are lighted at night.

E. Unique Cultural Features

1. Green Buildings

According to the U.S. Green Building Council[9], "green buildings are environmentally responsible, profitable, and healthy places to live." They are the new trend in environmentally-sensitive construction that involves building or remodeling while taking into consideration water and energy efficiency, use of recycled and locally produced materials, use of renewable energy, proper waste management, and standards for indoor air quality. Characteristics also include location on brownfields, use of alternative transportation to reach the site, and specific landscape design. With this in mind, it would be beneficial for municipalities and businesses to consider green buildings for the future. Remodeling old buildings encourages re-development of blighted areas, and landscaping adds aesthetic charm to neighborhoods. Pennsylvania is leading the nation in green buildings, and there are many of them in this region.

The Pittsburgh Green Building Alliance lists regional green buildings on their website (www.gbapgh.org). They are listed in table 6-3.

[9] U.S. Green Building Council www.usgbc.org

Table 6-3
Regional Green Buildings

LEED™ Certified (Leadership in Energy and Environmental Design)	GREENING OUR REGION Numerous projects in Western Pennsylvania were designed with green objectives and built before LEED was available. These innovative projects are the early adopter that have set the pace for the remarkable green building trend in the region.	PROJECTS TO WATCH Because many factors can interfere throughout the building process, a project cannot be considered green until its construction is complete and its performance is confirmed. These are projects that are actively engaged in implementing specific green goals.
Greater Pgh. Community Food Bank KSBA Architects PNC Firstside Center David L. Lawrence Convention Center	**Office/Commercial Buildings** Alcoa Corporate Headquarters Burke Building CCI Center E-House Heinz Family Office & Heinz Family Foundation Mascaro Headquarters McGowan Institute Millvale Boathouse and Training Center Oncology Nursing Society Penn Center West Technology Center Pittsburgh Glass Center Siemens Westinghouse Power Corporation, Fuel Cell Facility TechWorks@PNC **Education & Institutional Buildings** Audubon At Beechwood Education Center Center for Conservation Education Intelligent Workplace Macoskey Center **Residential and Mixed-use** New Birmingham	Bear Run Children's Hospital Carnegie Libraries - City of Pittsburgh Cast Con Stone, Inc. - Cast Con Stone, Inc. Children's Museum Computer Information Center – Carnegie Mellon University David L. Lawrence Convention Center - Sports and Exhibition Authority Department of Environmental Protection California Office Building - MBC Dick Corporation Corporate Headquarters - Dick Corporation Environmental Education Center – Upper St. Clair Township Gaudium Et Spes Center – Diocese of Greensburg Henderson Hall - Carnegie Mellon University Felician Sisters Convent and School - Felician Sisters of PA Moorewood Residence Hall – Carnegie Mellon University Penn Hills Library – Municipality of Penn Hills Phipps Conservatory & Botanical Gardens Carnegie Science Center – Carnegie Institute Posner Center - Carnegie Mellon University Three River's Rowing Association Station No. 7 - Kimbrough & Associates

Source: Pittsburgh Green Building Alliance www.gbapgh.org

2. Historic Neighborhoods

The Historic Review Commission of Pittsburgh, part of the Pittsburgh Department of City Planning, "administers the historic districts and structures designated by the Pittsburgh City Council." The department has put together five self-guided tours of historic districts and areas of the city. The maps and descriptions can be obtained on the city of Pittsburgh's website[10] under the Planning Department.

The three historic districts currently included in the walking tours are:
1) Mexican War Streets (Central North Side)
2) Manchester (West of Allegheny Center on East Shore of Ohio River)
3) Allegheny West (North Side)

Also included are:
1) The City Legacy Tour (Downtown)
2) The Historic Interiors Tour (Downtown)

3. Pittsburgh History and Landmarks Foundation Historic Plaque Program[11]

In 1968, the Pittsburgh History & Landmarks Foundation began a Historic Landmark Plaque program to identify architecturally significant structures and designed landscapes throughout Allegheny County. Since 1968, Landmarks has awarded close to 400 Historic Landmark Plaques. A Historic Landmark plaque identifies the site as a significant part of our local heritage; it will not protect a building from alternation or demolition. Buildings, structures, districts, and landscapes may be approved for an Historic Landmark plaque if all of the following conditions are met:

- they are remarkable pieces of architecture, engineering, construction, landscape design, or planning, or impart a rich sense of history;
- alterations, additions, or deterioration have not substantially lessened their value in the above respects;
- they are at least 50 years old;
- they qualify for Landmarks' inventory of significant structures and landscapes;
- they are located in Allegheny County

A list of Historic Plaques can be found in Appendix F.

4. Pittsburgh's Inclines[12]

Pittsburgh has two inclines, also known as funiculars, which transport people between the river valleys and the bluffs overlooking the city. The incline cars, connected to opposite ends of a single cable, are pulled up and down an inclined track by an engine in an upper station. Because they are connected to a single cable, the cars operate in pairs with one going uphill and the other downhill simultaneously. Though Pittsburgh had as many as 15 inclines at one time, only two remain. The Monongahela Incline was constructed in 1870 and is currently operated by the Port

[10] www.city.pittsburgh.pa.us/wt/
[11] http://www.phlf.org/plaques/plaque.html
[12] web.presby.edu/~jtbell/transit/Pittsburgh/Inclines

Authority of Allegheny County. The Duquesne Incline was built in 1877 and is operated by a non-profit preservation society.

F. The National Register of Historic Places[13]

The PA Historical and Museum Commission (PHMC) manages the National Register of Historic Places for Pennsylvania. The program was established by the National Historic preservation Act of 1966. Properties listed in the Register include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. National Register properties are distinguished by having been documented and evaluated according to uniform standards. These criteria recognize the accomplishments of all people who have contributed to the history and heritage of the United States and are designed to help state and local governments, federal agencies, and others identify significant historic and archeological properties worthy of preservation and of consideration in planning and development decisions. Listing in the National Register, however, does not interfere with a private property owner's right to alter, manage, or dispose of property. It often changes the way communities perceive their historic resources and gives credibility to efforts to preserve these resources as irreplaceable parts of the communities.

Listing in the National Register contributes to preserving historic properties in a number of ways:

- Recognition that a property is of significance to the nation, the state, or the community.
- Consideration in the planning for federal or federally assisted projects.
- Eligibility for federal tax benefits.
- Qualification for federal assistance for historic preservation, when funds are available.

See Table F-1 in Appendix F for the list of historic places in and near the corridor.

G. The Historical Marker Program[14]

The historical marker program, established in 1946, is one of PHMC's oldest and most popular programs. The blue and gold markers located throughout the state highlight people, places, and events significant in state and national history. Presently, nearly 1,800 markers recognize Pennsylvania's history - from William Penn's country home, to the bloody Homestead Strike of 1892, to the Pennsylvania Turnpike, the nation's first long-distance superhighway.

See Appendix F for the list of historical markers in the corridor.

H. National Historic Landmarks[15]

Landmarks are nationally significant historic places designated by the Secretary of the Interior because they possess exceptional value or quality in illustrating or interpreting the heritage of

[13] Supported and published by the Pennsylvania Historical and Museum Commission (PHMC) www.phmc.state.pa.us Summary taken from PHMC.
[14] Summary taken from PHMC
[15] Summary taken from PHMC

the United States. Today, fewer than 2,500 historic places bear this national distinction. Working with citizens throughout the nation, the National Historic Landmarks Program draws upon the expertise of National Park Service staff who work to nominate new landmarks and provide assistance to existing landmarks. The National Historic Landmark Stewards Association also works to preserve, protect, and promote National Historic Landmarks.

The Secretary of the Interior has designated the following Allegheny County sites as Historic Landmarks.

1) *Allegheny County Courthouse and Jail* – Designed by the famous architect Henry Richardson, this magnificent architectural structure was built from 1883-1888. Located on Grant Street in downtown Pittsburgh, it is an excellent example of Richardson's Romanesque-style buildings. With its towers and powerful walls, it is perhaps one of the city's most famous buildings.

2) *Forks of the Ohio* – The confluence of the rivers has been a significant area in American history, from Native American inhabitation, to the Forts of the French & Indian war, to Point State Park today.

3) *Smithfield St. Bridge* – In 1881, the bridge builder Gustav Lindenthal proposed a design for the new, and still-standing Smithfield St. Bridge. Being a model for other bridge designs in the country and having the distinct 'lentricular truss,' this bridge is also listed as a National Historic Civil Engineering Landmark.

Public participation is an integral component to the formation of a River Conservation Plan. It provides ideas for action and prioritizes potential projects, creating a community-driven plan. For this report, a variety of methods were used to gather information: public meetings, website updates, interviews, and municipal surveys.

A. Initial Public Meetings

Four initial informational public meetings were held in early 2002 (notes of comments taken at the meetings and from email and phone calls appear in Appendix G). Participants at the public meetings noted an improved river corridor – cleaner water, more wildlife, more trails, increased development. However, participants noted again and again the need for more public access to the river. A few sites were suggested, and it was noted that working with the railroads is necessary to gain access to the waterway. As sites are established, it is important to include amenities such as restrooms and food and fuel establishments. Attendees noted that some recreational improvements have occurred along the riverfront. With regional cooperation and planning, these types of improvements could increase along the river.

Participants preferred a mix of land use types in the corridor (business, recreation, residential). Participants were concerned that riverfront development may be at the expense of some of the natural areas and encouraged the protection of ravines and tributaries. They believed that the area should be managed jointly or regionally, and questioned whether the scope of the River Conservation Plan was too narrow since the issues surrounding the corridor are regional.

Transportation was cited as a big issue within the corridor, exacerbated by the topography. Mass transit alternatives are necessary, and participants suggested that bike trails could alleviate some of the problem, particularly if they were integrated into the neighborhoods.

Participants recognized the problem of sewer overflows in the region and noted the garbage problem in the river and along the riverbanks.

Comments received by email or expressed through phone calls mirrored those from the public meetings. Recreational boaters need boat ramps near adequate parking and places to get gas, as well as dock facilities that will allow boaters to access food, service, and entertainment venues from the water. Pittsburgh should become bicycle friendly and integrate the bike trails into the neighborhoods, using them as a means of transportation, not just recreation.

Individuals suggested looking at the amenities created in other cities, including Providence, San Antonio, Louisville, and Chicago, but suggested that guidelines for development are needed to avoid poorly thought-out developments. Other suggestions included making a video of the rivers from a boat and use it for marketing the region to tourists, and adding more fountains to the Point.

B. Key Person Interviews, Surveys, Presentations

Municipal managers were interviewed by phone in fall 2001 and mailed written surveys in June 2002. Examples of the interview questions and surveys appear in Appendices A and G. These individuals noted that the corridor has great potential for recreational opportunities like fishing, boating, and biking, hiking, and walking along trails. However, they were less likely to support an activity like swimming in our rivers. Most municipal officials indicated that water quality,

streambank erosion, and combined sewer overflows were a concern as well as a lack of access to the waterways. Several communities are actively working on recreational improvements within their borders. *Their projects are mentioned elsewhere in the report.*

Additional meetings were held with members of the Riverlife Task Force, Allegheny County Planning Department, and major riverfront landowners. Project briefings were also conducted before the North Hills and Char West Councils of Governments.

C. Public Prioritization of Recommendations

Over 50 recommendations were developed during this process. They were sorted into 10 categories: river access, amenities, biology, culture, education, litter, planning, recreation, transportation, and water. The potential recommendations were circulated among several key individuals - including municipal managers, representatives from non-profit organizations, academia, business, developers, and government - to refine them and eliminate those that were impossible or beyond the scope of the study. These individuals then were asked to rank the recommendations according to when each item should be initiated: 1) first year after completion of document, 2) two to four years after the completion of the document, or 3) five years and beyond the completion of the document. Where appropriate, they also offered a project cost estimate of low, medium, or high.

During the spring of 2003, five public meetings were held to prioritize and refine the recommendations. Participants were asked to rank their most important recommendation in each category and their overall five most important recommendations, with the option of distributing those five votes however they wanted (e.g., the same or different from the original picks, as well as multiple votes for a particular recommendation.). The five overall votes were weighted in the final calculation of votes for each recommendation.

These exercises provide an action plan and timeline for the study area. The results appear in Chapter 8 along with a more thorough discussion of potential projects for the Three Rivers area.

The public meeting dates and locations were:

Round 1 – 2002
Avalon – March 25
Oakmont – April 9
Millvale – April 11
South Side – April 16

Round 2 – 2003
Avalon – March 31
Oakmont – April 3
South Side – April 7
Millvale – April 10
Downtown Pittsburgh – April 14

As a major component of this Plan, the recommendations (or management options) reflect public opinion regarding how the riverfronts and the river corridor should be used, conserved, and enhanced. The recommendations have been assigned to categories along with lists of potential responsible partners, potential funders, and priorities for implementation. The goal of this Conservation Plan is for these recommendations to be implemented. Those entities listed as potential partners (those who may implement the recommendations) are able to apply to DCNR for funding (see the list of grants available on page vii and viii of the Executive Summary).

Over 50 recommendations were developed during the public process. For organizational purposes, they were sorted into 11 categories: river access, amenities, biology, culture, education, land use, litter, planning, recreation, transportation, and water. The potential recommendations were circulated among several key individuals - including municipal managers, representatives from non-profit organizations, academia, business, developers, and government - to refine them and eliminate those that were impossible or beyond the scope of the study. These individuals then were asked to rank the recommendations according to when each item should be initiated: 1) first year after completion of document, 2) two to four years after the completion of the document, or 3) five years and beyond the completion of the document. Where appropriate, they also offered a project cost estimate of low, medium, or high.

During the spring of 2003, five public meetings were held to prioritize and refine the recommendations. Participants were asked to rank their most important recommendation in each category and their overall five most important recommendations, with the option of distributing those five votes however they wanted (e.g., the same or different from the original picks, as well as multiple votes for a particular recommendation.). The five overall votes were weighted in the final calculation of votes for each recommendation.

The following table lists each recommendation by category; they are then listed in order of popularity according to public votes (last column). The priority column is the timeframe that the action should be implemented (see description in the second paragraph above). The cost estimates range from low to medium to high. These have been assigned arbitrary dollar amounts: low = less than $100,000; medium = $100,000 to $500,000; high = greater than $500,000. (Recommendations without public votes (e.g. a blank box) were added to the Plan after the public meetings.) The lists of potential partners and funding sources are based on past involvement of these organizations and agencies and should not be considered an exhaustive list.

Following many of the action items is a reference to a chapter where that particular topic is discussed, and helps to clarify how the recommendation was derived. For example, 1-D-3 refers to Chapter 1, Section D, number 3.

Based on the rankings, the top recommendations illustrate the public's desire to have access to the amenities that the region has to offer (e.g., the rivers, the trails). Although the City of Pittsburgh and surrounding communities are developing an extensive trail network, there is a desire to see an expansion of those trails to the neighborhoods, thus eliminating the need to drive to the trails for recreation and possibly using the trails as a means for commuting into the City. However, making the City of Pittsburgh bike-friendly does have many obstacles including topography and climate. For recreational purposes though, the region may be able to connect land-based trails, and along with water trails, develop a major attraction for the region. The top recommendation overall focused on establishing tourism-based businesses along these trails:

bike rentals, boat rentals, restaurants, etc., thus combining environmental enhancement with economic development.

Another strong public opinion focused on the litter problem that affects the region. While organizations and government agencies are working in the region to promote litter awareness and river clean up days, the problem of littering – and in some cases dumping large quantities of refuse – along our waterways, trails, highways, and ravines, negatively affects the public's enjoyment of the amenities and natural resources of the region. The public expressed a desire for more frequent clean ups and a more aggressive campaign against littering.

In addition to public comment, many of the major riverfront landowners and developers commented on what their visions were for the corridor. Their major recommendation focused on the possibilities of expanding the borders of the Riverlife Task Force.

The Riverlife Task Force has been working for several years to develop guidelines for Pittsburgh's Three Rivers Park. These guidelines appear in the Three Rivers Design Handbook, published in October 2002, and found in Appendix B. The Handbook "does not replace existing zoning, district plans, or ordinances, but is intended to establish optimal planning goals and to enhance and coordinate the requirements set forth in the land use tools already in place …". Many of these guidelines are applicable for the entire river corridor and should be considered by municipalities to enhance their riverfronts.

How to get Started on Implementing Projects

If, after reading through the recommendations, you are interested in implementing a project, there are several things you can do (note: you need not be listed as a potential partner to implement a project):

1. Gather thorough ideas of how you might implement the project, what the need is for the project, and how it will benefit the river/riverfront and the communities affected.
2. Contact the other potential partners, including local municipal officials, to find out if there is a way to collaborate on the project. Also, make sure that no one else is working on the same, or a similar project.
3. Seek potential funding sources, some of which are listed in the recommendations matrix. If you choose to apply to DCNR or DEP, follow these guidelines:
4. DCNR provides grants for *technical assistance, implementation, development,* and *acquisition* (see pg. x). DEP, through its Growing Greener program, offers grants that address non-point source pollution. Visit these websites to familiarize yourself with the grant programs: www.dcnr.state.pa.us, www.dep.state.pa.us. (Take note of grant application timelines.)
5. Contact the local agency representatives for DCNR and DEP to discuss the potential for your project. DCNR: 412-880-0486 DEP: 412-442-4184.
6. Secure grant applications online or from the local contacts (see #4, #5).
7. Call the Pennsylvania Environmental Council for assistance in putting together your ideas and contacting potential partners.

Appendix A *(Chapter 1: Project Area Characteristics)*

Municipal Questionnaire
Regional Plans Summary
Navigation Charts
River Terminals
Mon-Fayette Expressway Map
Municipal Websites

Three Rivers Corridor Conservation Plan
Municipal Questionnaire
July 2002

Municipality _____
Name, title, and phone number of person filling out questionnaire _____

---

1. The Conservation Plan will contain a list of recommendations for projects that will protect, enhance, or restore the river corridor. Which of these benefits, uses, and actions would you like to see emphasized in the Three Rivers Corridor Conservation Plan? Please check any that apply, either to your individual municipality or the entire length of the corridor.

In your municipality	For the Entire Corridor	Benefit/Use/Action for Plan
☐	☐	Fishing
☐	☐	Swimming
☐	☐	Boating (motor)
☐	☐	Boating (human powered)
☐	☐	Personal water craft (Jet skis)
☐	☐	River access
☐	☐	Stream access
☐	☐	Bicycling Trails
☐	☐	Hiking/Walking Trails
☐	☐	Water trails (for boating)
☐	☐	Viewing nature (birdwatching, etc.)
☐	☐	Protection of land habitat
☐	☐	Protection of aquatic habitat
☐	☐	Protection of desirable species (biodiversity)
☐	☐	Stream bank erosion
☐	☐	Natural stream channels
☐	☐	Improved water quality
☐	☐	Water quality suitable for human contact (swimming, etc.)
☐	☐	Protected open space
☐	☐	Wetland protection
☐	☐	Preservation of rivers and streams
☐	☐	Restoration of rivers and streams
☐	☐	Scenic beauty
☐	☐	Ecotourism opportunities
☐	☐	Historic preservation
☐	☐	Architectural preservation
☐	☐	Alternative transportation

□	□	Environmental education
□	□	Monitoring of water quality
□	□	Other _____
□	□	Other _____
□	□	Other _____

2. Does your municipality have the capacity to promote any of these benefits, for example, through facilities, trails, political support, etc.? Do you already have active programs such as the ones listed above to include in the plan? Please describe.

_____
_____
_____
_____

3. Since the Three Rivers Conservation Plan is focused on the local level, we want to create a document that will best reflect these local communities. Please comment on the following methods of land/water protection **in your municipality**.

   a. Does your municipality have a comprehensive land use plan? _____
      - If so, when was it last updated? _____

   b. Does you municipality have zoning ordinances? _____
      - Does zoning include a riverfront district? _____
      - If not, how is the riverfront land zoned? _____
      - Are there special zoning overlays, such as reduced density and increased setbacks along streams? _____
      - Is there enhanced floodplain zoning that restricts development? _____

   c. Does your municipality have its own subdivision ordinances and land development ordinances or does it use the county subdivision ordinance? _____
      - Is there required protection of woodlands, steep slopes, riparian buffers, and other natural features during subdivision? _____
      - Is there Conservation zoning (ex. Permitting smaller lot sizes and requiring common open space)? _____

   d. Does your municipality have an Environmental Advisory Council? _____

   e. Are storm water management regulations in your municipality governed by an Act 167 (Stormwater Management) Plan?_____
      - If so, for which watershed(s)? _____

f. Does your municipality use innovative storm water practices as described in the Pennsylvania Handbook of Best Management Practices for Developing Areas, for example permeable pavement or vegetative filter strips? If so, please explain.
_____
_____
_____

g. Do you believe that existing regulations (storm water quantity and quality management, and erosion and sediment control) are sufficient to maintain the integrity of the waterway? Why or why not?
_____
_____
_____

h. Is there adequate review and inspection of erosion and sediment control plans? _____

i. Are there ordinances within your jurisdiction to regulate development in flood plains in accordance with Act 166, the Flood Plain Management Act? _____

j. Is Federal Emergency Management Agency flood insurance available?
_____

4. What are the three most critical river and/or stream related needs or challenges in **your municipality**?
   a. _____
   b. _____
   c. _____

5. How are these needs being addressed, or how do you propose to address them?
   a. _____
   b. _____
   c. _____

6. What are the 3 to 5 most critical river corridor related projects that your municipality will undertake within the next 10 years? In addition, if you have an estimate of the costs of these projects, please indicate in the space provided.

Projects	Approximate Cost
_____	_____
_____	_____

_____ _____
_____ _____
_____ _____

7. Successful implementation of the Plan's recommendations may lead to situations where inter-municipal cooperation will be important. Please indicate your preference for facilitation of this cooperation. You may indicate more than one 'yes'.

	Yes	No
No Management Necessary (skip to question #8)	☐	☐
Individual municipalities with informal cooperation	☐	☐
Joint municipal body, such as a commission or authority	☐	☐
Inter-municipal Environmental Advisory Council	☐	☐
County level agency (If so, which one?) _____	☐	☐
New non-profit organization	☐	☐
Existing non-profit (If so, which one?) _____	☐	☐
Other (Be specific) _____	☐	☐

8. Lack of public access to the river has been identified as a major issue in the area. Does your municipality see public access as a concern? If so, are you undertaking any plans to improve the current situation?

   _____
   _____
   _____

9. Dumping along the rivers also has been mentioned as a problem. Are you aware of any dumpsites or other problem areas (ex. Collections of debris from previous floods) along the corridor? Please identify the locations as specifically as possible, noting whether or not it is private or public lands.

   _____
   _____

10. The DCNR Community Conservation Partnership Program can provide communities and non profits with technical assistance and grant funding to undertake recreation and conservation projects including playgrounds, nature centers, athletic fields, etc. Do you have these types of facilities within the corridor and/or do you plan to include them in the future? Please be specific about the locations.

    _____
    _____

11. What would be the most important recommendation(s) to include in a Plan for the Three Rivers Corridor?

    _____
    _____
    _____
    _____

12. What other thoughts or comments do you have about the Plan? Attach any information that you think is appropriate.

    _____
    _____
    _____
    _____

Please return the questionnaire by **July 29, 2002**, to:

Jen Novak, Project Director
PA Environmental Council
64 South 14th St.
Pittsburgh, PA 15203
(412) 481-9400 fax (412) 481-9400
jmnovak@stargate.net

For your convenience, we have enclosed a self addressed stamped envelope. Thank you for your time and valuable input.

SUMMARIES OF EXISTING REGIONAL PLANS

1. Allegheny County 2001 Plan – published in 1992

This plan initiated by the County Commissioners "is a broad consensus among the people about the steps to take to enhance human development and strengthen economic security" in Allegheny County.

Several Panel Reports were completed on various topics concerning countywide issues. Of relevance to the Conservation Plan are the following reports:

Land Use: The panel envisioned policies that would encourage conservation of open or wooded space, re-development of blighted areas, and reduction of segregation. They realized this would be very difficult to achieve because of economic, political, and social obstacles. Nonetheless, they provided several action plans to spur revitalization and smart growth.

Several recommendations are worth noting:

1) "Allegheny County should be included in the PA Municipalities Planning Code, which requires that all municipal land use ordinances and all proposed land development be submitted to the county for review and comment." (Note: The County accomplished this in 1993.)
2) "The County should define a network of conservation areas."
3) "The County should complete an inventory of environmental features that need protection."

The report also involved a survey of about 811 people. Almost 80% agreed that riverbanks should be re-developed for housing and recreation and that new roads should be built to relieve congestion, not to simply open new areas for development, while 90% agreed that communities should allow people to walk instead of drive for daily needs.

Environmental Quality: The panel presented goals, problems, and strategies for six environmental topic areas.

1) Pollution Prevention (P2) – promote P2 education and recruit and maintain environmentally friendly businesses and industries.
2) Land Use and Development – covered under previous section
3) Air Quality – substantial plans to improve air quality
4) Water Quality – goals for cleaning up waterways and strengthening regulations
5) Solid Waste Management – expand recycling to all communities, promote education about waste reduction, establish collection systems for household hazardous waste, promote safe handling of hazardous waste
6) Environmental Education – establish a task force to guide environmental education in schools

Conservation and Recreation: Almost 80% of the survey group said that land should be protected from development to save for future generations.

Several recommendations are also worth mentioning:

1) Allegheny County should develop an Environmental Advisory Council (EAC).
2) County planning department should establish a countywide system of trails, open space, and public access to the waterfront.
3) County should work with municipalities on billboard ordinances.

4) County should educate municipal officials on growth management.

2. Allegheny County Riverfront Policies Plan – published in 1992

This plan called for the comprehensive management of county riverfronts and serves only as a framework for municipalities and developers.

It is broken down into four sections:

1) County Riverfront Policy consists of protecting natural resources, promoting development, coordinating public facilities, and providing river access
2) Classifications of conservation development areas
3) Potential river access points
4) Action plan for implementation of these ideas

3. Allegheny County Conservation Corridors Plan – published in 1993

This report is a plan to protect the corridors – the open or natural space along streams – in the county. They are important areas because they link habitats, parks, and other natural areas. It was recommended that municipalities work together to conserve them. The plan described many benefits to protecting the corridors and developed criteria for defining the areas, e.g., they must have sensitive natural areas, linkages, and significant scale. It identified, described, and prioritized 29 major corridors in the county.

4. Riverfront Development Plan for the City of Pittsburgh – published in 1998

This plan is "a comprehensive strategy for the evolution of our riverfront land." The city was broken down into four districts – central, community, industry, and green. Each of these districts were then analyzed for specific design, land use policies, access and recreation goals, and priority projects. The main priorities throughout the plan were:

1) Balanced land use
2) Respect for limited resources
3) Improved public access
4) Safeguards for environmental quality

The plan for recreation, access, and tourism along the rivers called for municipalities to work together, to establish the riverfronts as one entity (not separate parcels), to spark tourism, and to implement proper zoning.

It stressed the importance of a Riverfront Overlay District, which is "to maintain an open space area with the potential for public access along the banks and to impose additional requirements on structures or uses within the district."

The city also expressed that it has a plan for acquiring all of the 35 miles of riverfront property in the city.

U.S. Army Corps of Engineers
Navigation Charts

1) Legend

2) Ohio River – from the Point to Emsworth Lock & Dam (downstream) – Charts 207, 206, 205

3) Allegheny River – from the Point to Lock & Dam 3 (upstream) – Charts 1 – 5

4) Monongahela River – from the Point to the Glenwood Bridge (upstream) – Charts 1, 2

Mon/Fayette Transportation Project Maps

Maps show the possible routes of the highway through the Monongahela Valley.

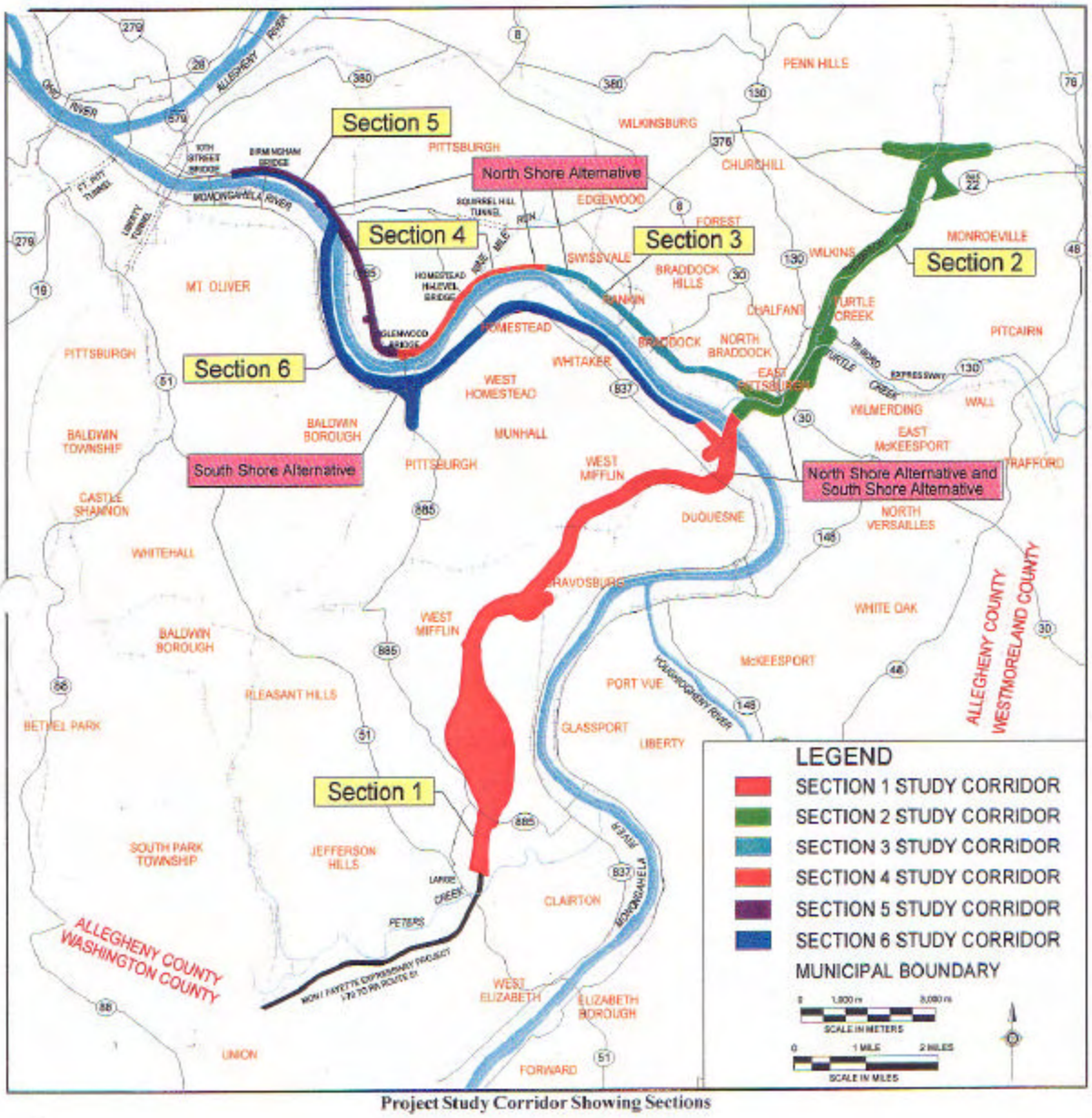
Table A-1.
Website Addresses for Municipalities in the Plan

***Not all have their own site. Many towns have major information summarized on local websites such as Pittsburgh Live.**

Municipality	Web Address
Aspinwall	http://www.boroughofaspinwall.com/
Avalon	
Baldwin	http://www.pittsburghlive.com/x/tribune-review/communityguides/southwest/s_77082.html
Bellevue	www.borough.bellevue.pa.us
Ben Avon	www.pittsburghlive.com/x/tribune-review/communityguides/north/s_81775.html
Ben Avon Heights	www.pittsburghlive.com/x/tribune-review/communityguides/north/s_81775.html
Blawnox	www.pittsburghlive.com/x/tribune-review/communityguides/north/s_80879.html
Etna	www.pittsburghlive.com/x/tribune-review/communityguides/north/s_80902.html
Fox Chapel	www.fox-chapel.pa.us
Harmar	
Kennedy	www.pittsburghlive.com/x/tribune-review/communityguides/southwest/s_78300.html
Kilbuck	www.pittsburghlive.com/x/tribune-review/communityguides/north/s_81772.html
McKees Rocks	www.pittsburghlive.com/x/tribune-review/communityguides/southwest/s_78303.html
Millvale	www.pittsburghlive.com/x/tribune-review/communityguides/north/s_81632.html
Neville	www.pittsburghlive.com/x/tribune-review/communityguides/southwest/s_78308.html
Oakmont	www.oakmont-pa.com/index.cfm
O'Hara	www.ohara.pa.us
Penn Hills	www.pennhills.org
Pittsburgh	www.city.pittsburgh.pa.us
Plum	www.plumboro.com/directory.html
Reserve	trfn.clpgh.org/reserve/
Ross	www.ross.pa.us
Shaler	www.pittsburghlive.com/x/tribune-

	review/communityguides/north/s_81664.html
Sharpsburg	www.pittsburghlive.com/x/tribune-review/communityguides/north/s_81667.html
Stowe	www.pittsburghlive.com/x/tribune-review/communityguides/southwest/s_78517.html
Verona	www.pittsburghlive.com/x/tribune-review/communityguides/east/s_49131.html
Source: These websites found by doing a search on Yahoo.	

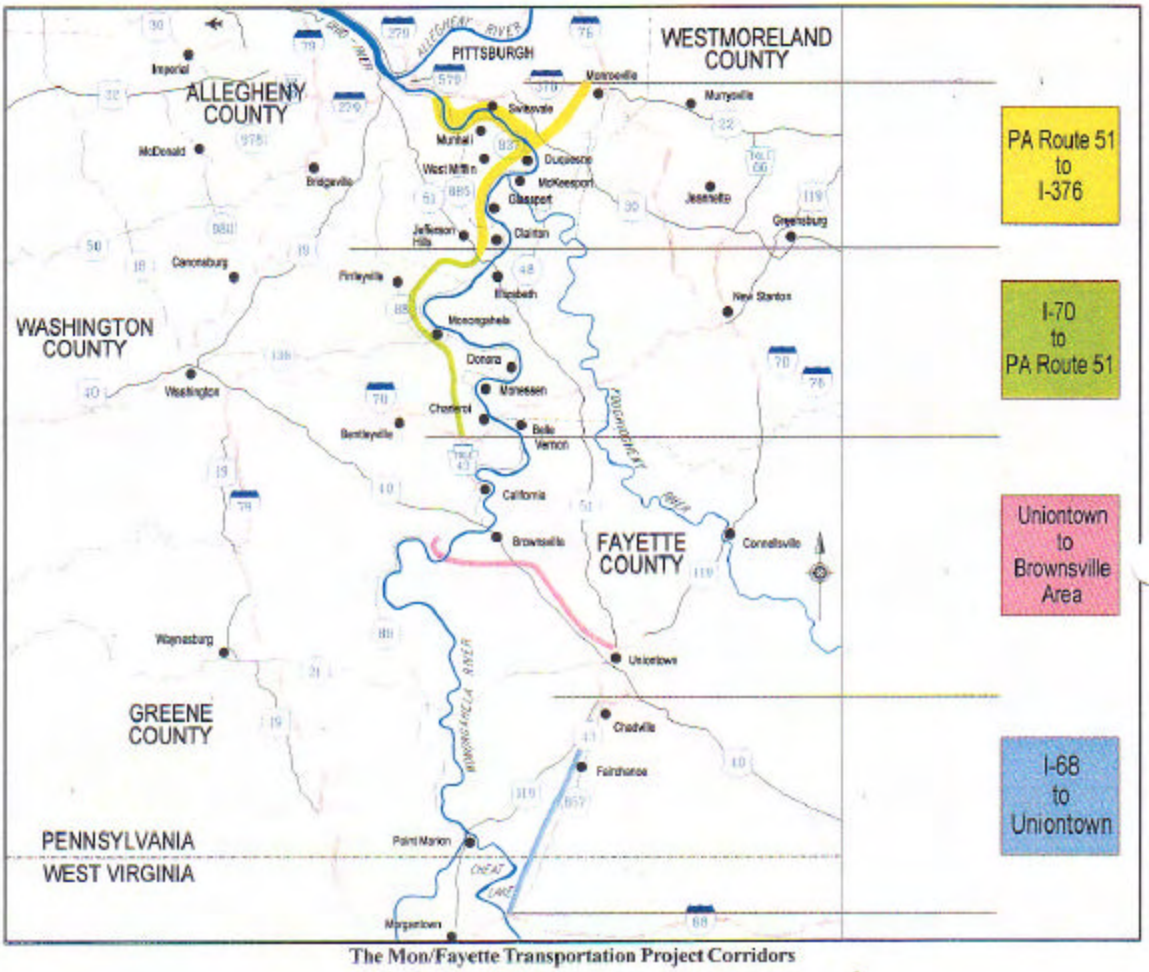
To see a county map and view information on each municipality, go to www.allegheny.county.pa.us/ECONOMIC/munis/index.asp.



Project Study Corridor Showing Sections

Figure 2

Rt.51 to I-376



The Mon/Fayette Transportation Project Corridors

Figure 1

LEGEND

Anchorage Area
Anchoring Prohibited
Arrival Area
Square Beacon
Triangle Beacon
Buoys:
Can (green)
Can (green lighted)
Nun (red)
Nun (red lighted)
Junction buoy
Conflonary buoy
Federal Mooring Buoy
Campground
Mooring cell
Cemetery
Coast Guard Station
Church
Cliff
COE Gauge
Crane
Dock
Diff. Outfall Pipe
Dolphin
Federal Flood Sign
Ferry Crossing
Fleeting Area
Flow Arrow

GEOGRAPHY INFORMATION:

Land above project pool.
Water with less than 9 feet depth of poolstage.
Water with a depth of nine feet or more of poolstage.

Ice Piers
Intake

Interstate Highway Sign
Levee
U. S. Navigation Lights:
Light & Beacon Right Descending Bank (Green)
Light & Beacon Left Descending Bank (Red)
Cautionary Light (Amber)
Marina
National Weather Station
Pipeline Submerged
Accurate Position
Power Crossing
Launching Ramp
Restricted Areas, above and below dam, and other designated areas.
Rocky Bottom
Sailing Line
School
Stony Shore
Submarine Cable
Swamp
Tank
Towers
Tree
Wharf (Paved Landing)
Well On Shore
Well Underwater
Wrecks:
Sunken Wreck
Sunken Wreck (Depth Unknown)
Sunken Wreck (Visible)

AIDS TO NAVIGATION

REGULATORY MARKERS

SWIM EXCLUSION AREA

EXPLANATION MAY BE PLACED OUTSIDE THE CROSSED DIAMOND SHAPE SUCH AS CAN, BUOYS, SWIM AREA, ETC.

DANGER

THE NATURE OF DANGER MAY BE INDICATED INSIDE THE DIAMOND SHAPE SUCH AS ROCK, WRECK, SHOAL, DAM, ETC.

CONTROLLED AREA

TYPE OF CONTROL IS INDICATED IN THE CIRCLE SUCH AS SLOW, NO WAKE, ANCHORING, ETC.

123.5

MILE BOARD

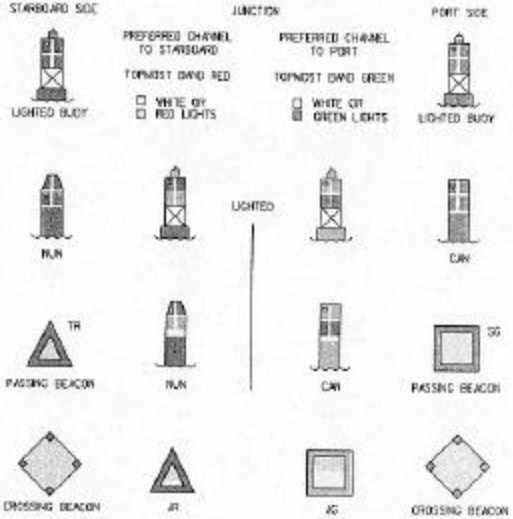
BUOY USED TO DISPLAY REGULATORY MARKERS

MAY SHOW WHITE LIGHT
MAY BE LETTERED

MOORING BUOYS

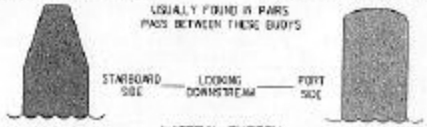
MAY SHOW BLUE BAND
MAY SHOW WHITE REFLECTOR OR LIGHT

LOOKING DOWNSTREAM



SOLID RED AND SOLID GREEN BUOYS

MAY SHOW RED REFLECTOR OR LIGHT
MAY SHOW GREEN REFLECTOR OR LIGHT



LATERAL SYSTEM

AIDS TO NAVIGATION AND LEGEND
NAVIGATION CHARTS

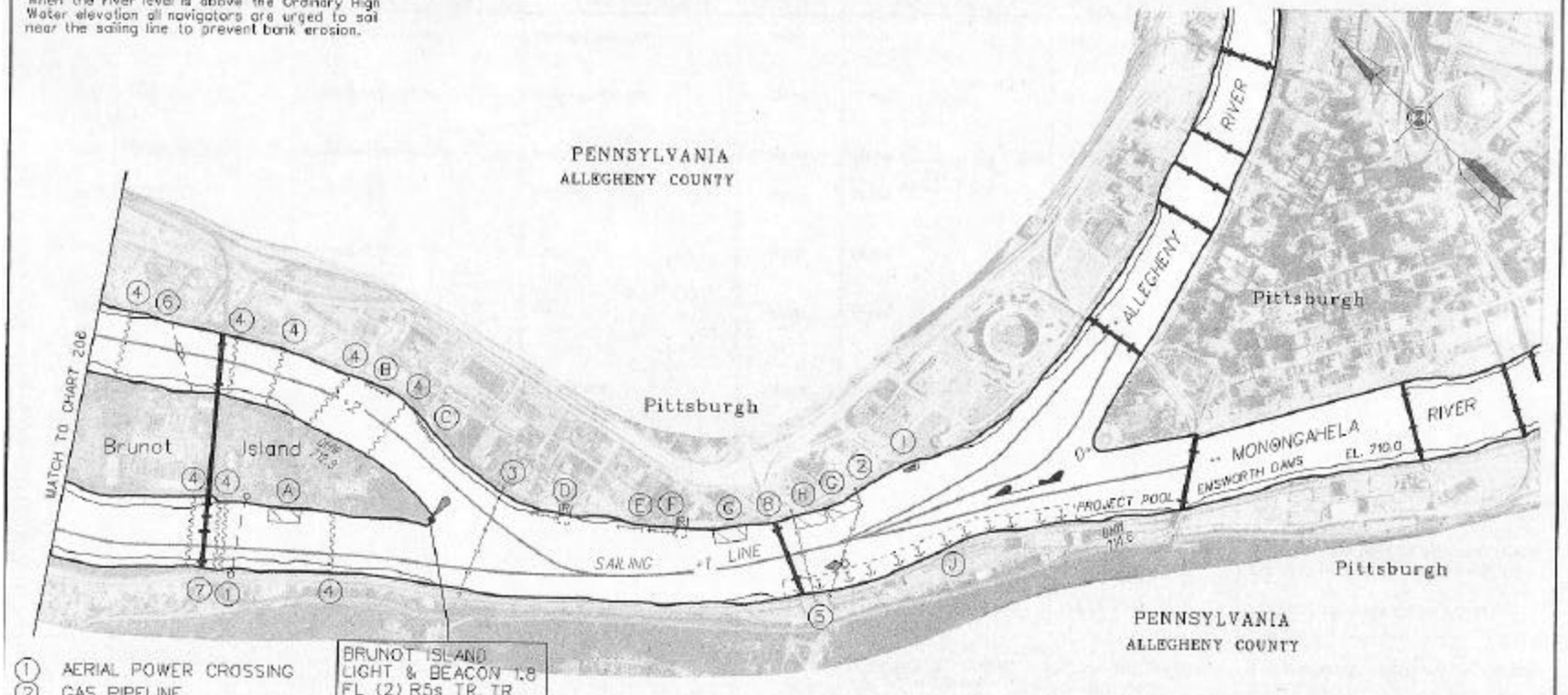
OHIO RIVER

PITTSBURGH DISTRICT

SHEET J

NOTE

When the river level is above the Ordinary High Water elevation all navigators are urged to sail near the sailing line to prevent bank erosion.



(1) AERIAL POWER CROSSING
(2) GAS PIPELINE
(3) WATER PIPELINE
(4) SUBMARINE CROSSING
(5) SEWER CROSSING
(6) DUQUESNE LIGHT CO. FERRY CROSSING (INACTIVE)
(7) OHIO CONN. RAILROAD BRIDGE
(8) WEST END-NORTH SIDE HIGHWAY BRIDGE

(A) DUQUESNE LIGHT CO.
(B) ISLAND BOAT CLUB
(C) BRANCHPORT BOAT CLUB
(D) PEGGYS HARBOR
(E) POINT COVE MARINA
(F) NEWPORT MARINA CO.
(G) CAMPBELL BARGE LINE CO.
(H) DRAVO BASIC MATERIALS CO. INC.
(I) CARNEGIE SICENCE CENTER (SUBMARINE)
(J) LANDINGS (SEVERAL USER'S)

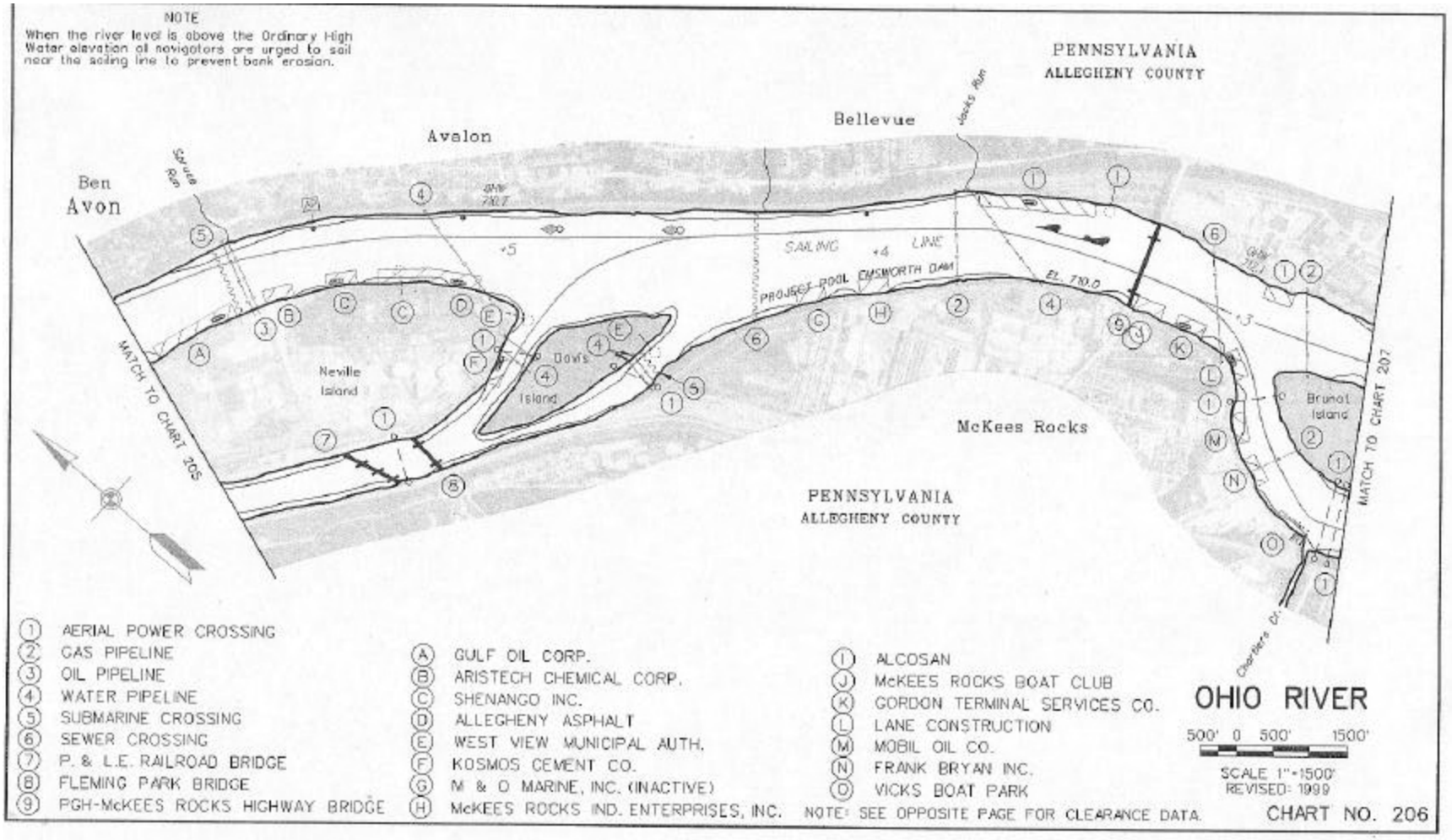
NOTE: SEE OPPOSITE PAGE FOR CLEARANCE DATA.

OHIO RIVER

500' 0 500' 1500'

SCALE 1"=1500'
REVISED: 1999

CHART NO. 207

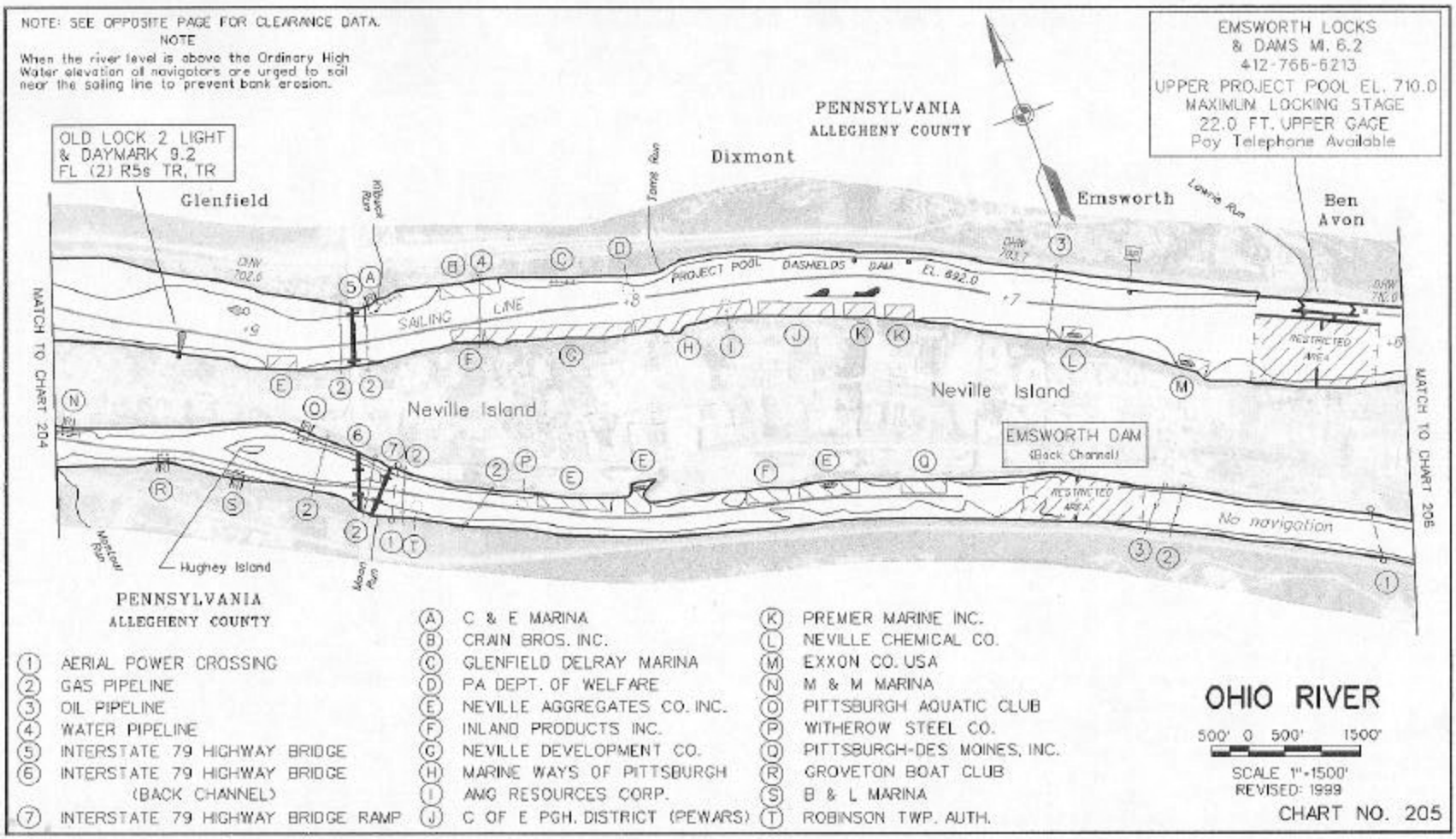


1. AERIAL POWER CROSSING
2. GAS PIPELINE
3. OIL PIPELINE
4. WATER PIPELINE
5. SUBMARINE CROSSING
6. SEWER CROSSING
7. P. & L.E. RAILROAD BRIDGE
8. FLEMING PARK BRIDGE
9. PGH-McKEES ROCKS HIGHWAY BRIDGE

A. GULF OIL CORP.
B. ARISTECH CHEMICAL CORP.
C. SHENANGO INC.
D. ALLEGHENY ASPHALT
E. WEST VIEW MUNICIPAL AUTH.
F. KOSMOS CEMENT CO.
G. M & O MARINE, INC. (INACTIVE)
H. McKEES ROCKS IND. ENTERPRISES, INC.

I. ALCOSAN
J. McKEES ROCKS BOAT CLUB
K. GORDON TERMINAL SERVICES CO.
L. LANE CONSTRUCTION
M. MOBIL OIL CO.
N. FRANK BRYAN INC.
O. VICKS BOAT PARK

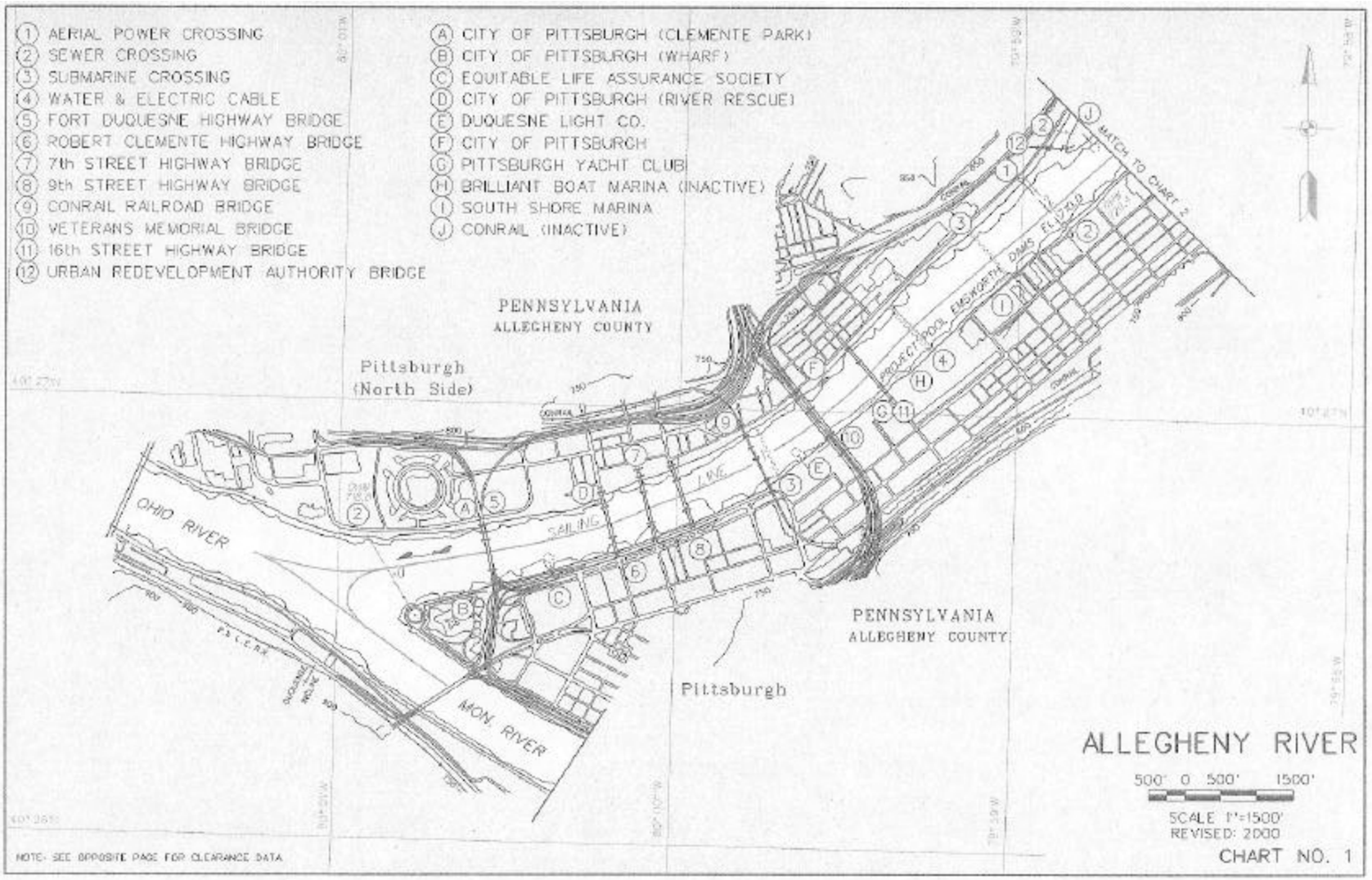
NOTE: SEE OPPOSITE PAGE FOR CLEARANCE DATA.

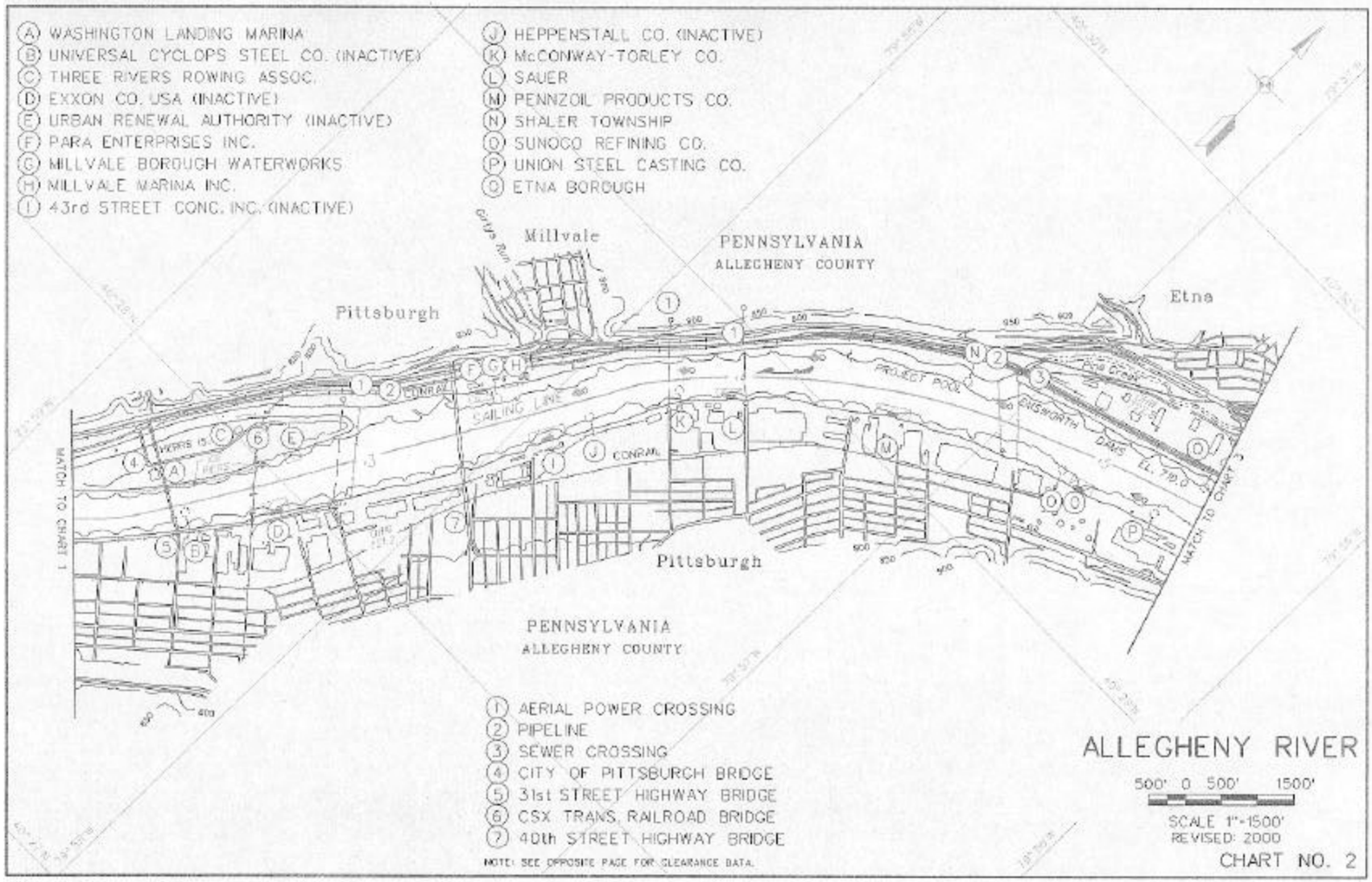


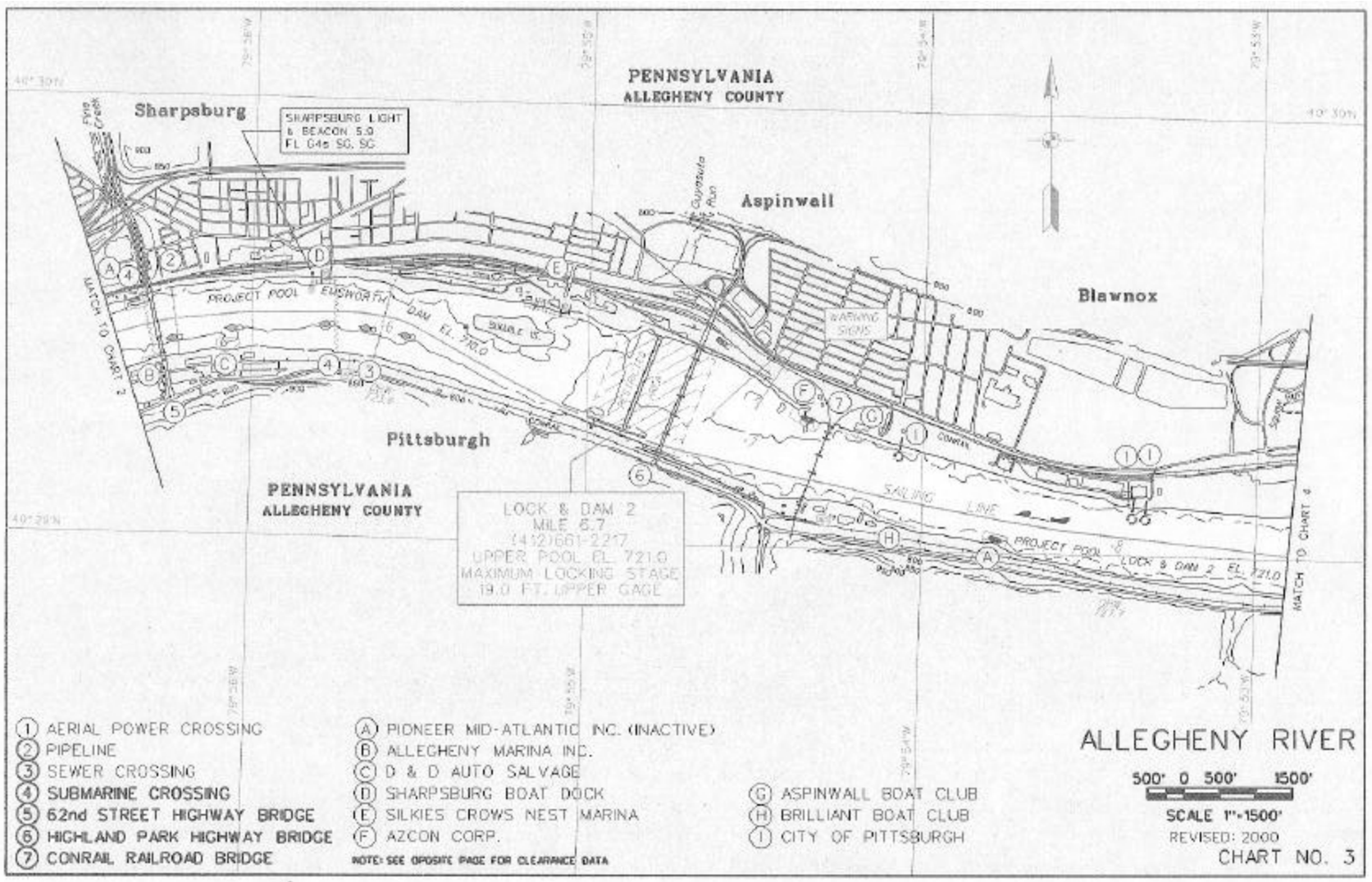
(1) AERIAL POWER CROSSING
(2) GAS PIPELINE
(3) OIL PIPELINE
(4) WATER PIPELINE
(5) INTERSTATE 79 HIGHWAY BRIDGE
(6) INTERSTATE 79 HIGHWAY BRIDGE (BACK CHANNEL)
(7) INTERSTATE 79 HIGHWAY BRIDGE RAMP

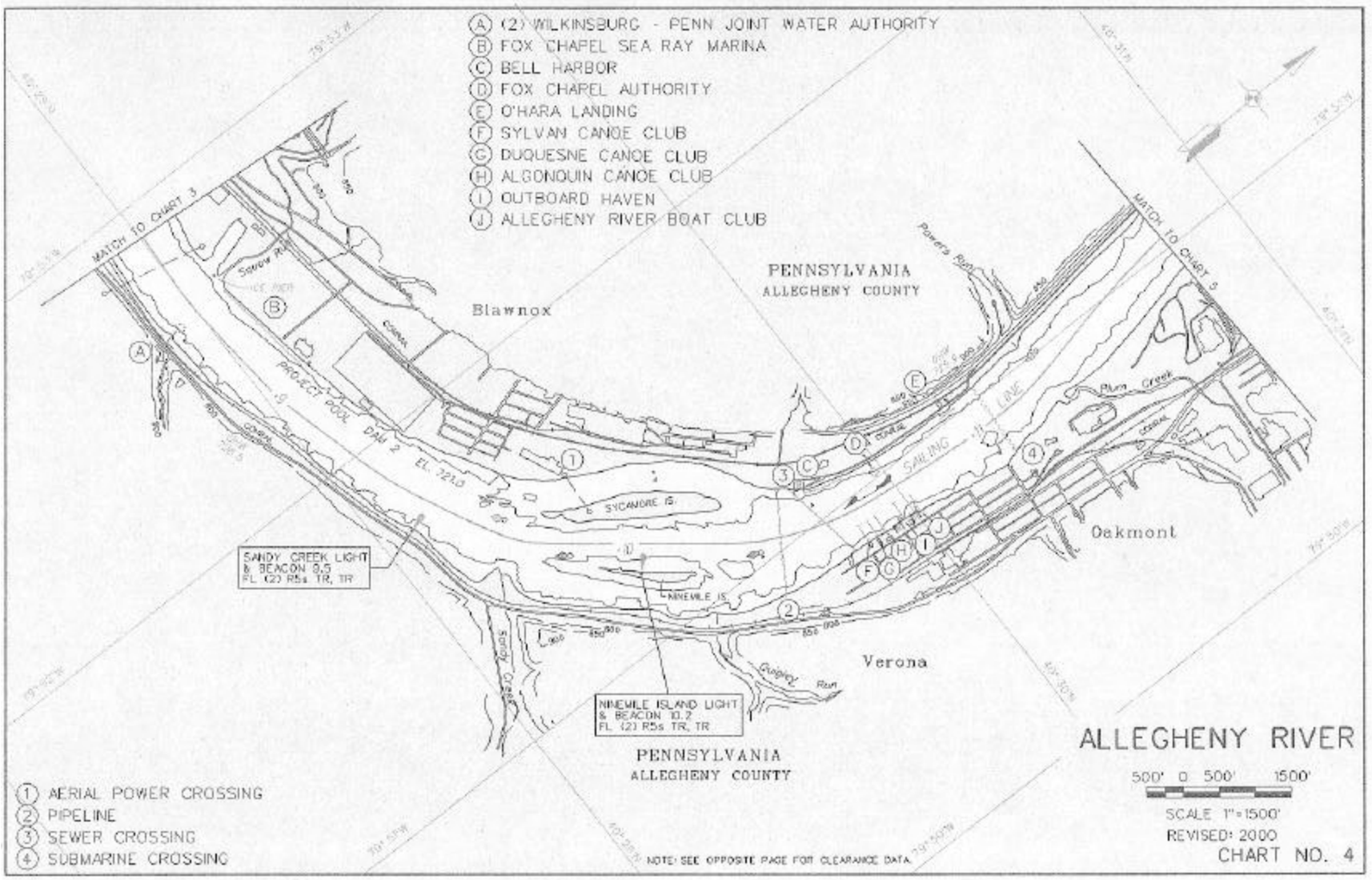
(A) C & E MARINA
(B) CRAIN BROS. INC.
(C) GLENFIELD DELRAY MARINA
(D) PA DEPT. OF WELFARE
(E) NEVILLE AGGREGATES CO. INC.
(F) INLAND PRODUCTS INC.
(G) NEVILLE DEVELOPMENT CO.
(H) MARINE WAYS OF PITTSBURGH
(I) AMG RESOURCES CORP.
(J) C OF E PGH. DISTRICT (PEWARS)

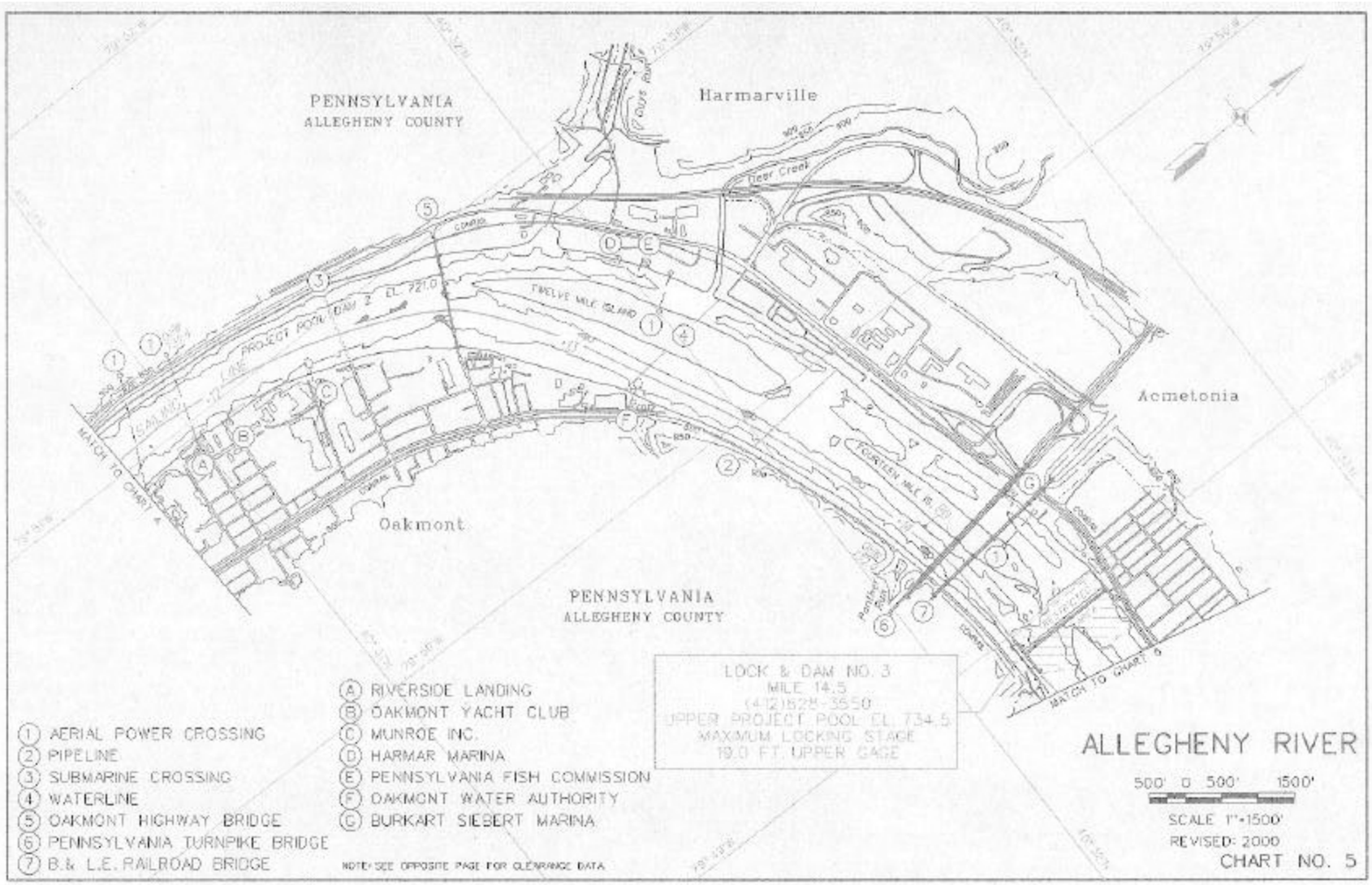
(K) PREMIER MARINE INC.
(L) NEVILLE CHEMICAL CO.
(M) EXXON CO. USA
(N) M & M MARINA
(O) PITTSBURGH AQUATIC CLUB
(P) WITHEROW STEEL CO.
(Q) PITTSBURGH-DES MOINES, INC.
(R) GROVETON BOAT CLUB
(S) B & L MARINA
(T) ROBINSON TWP. AUTH.

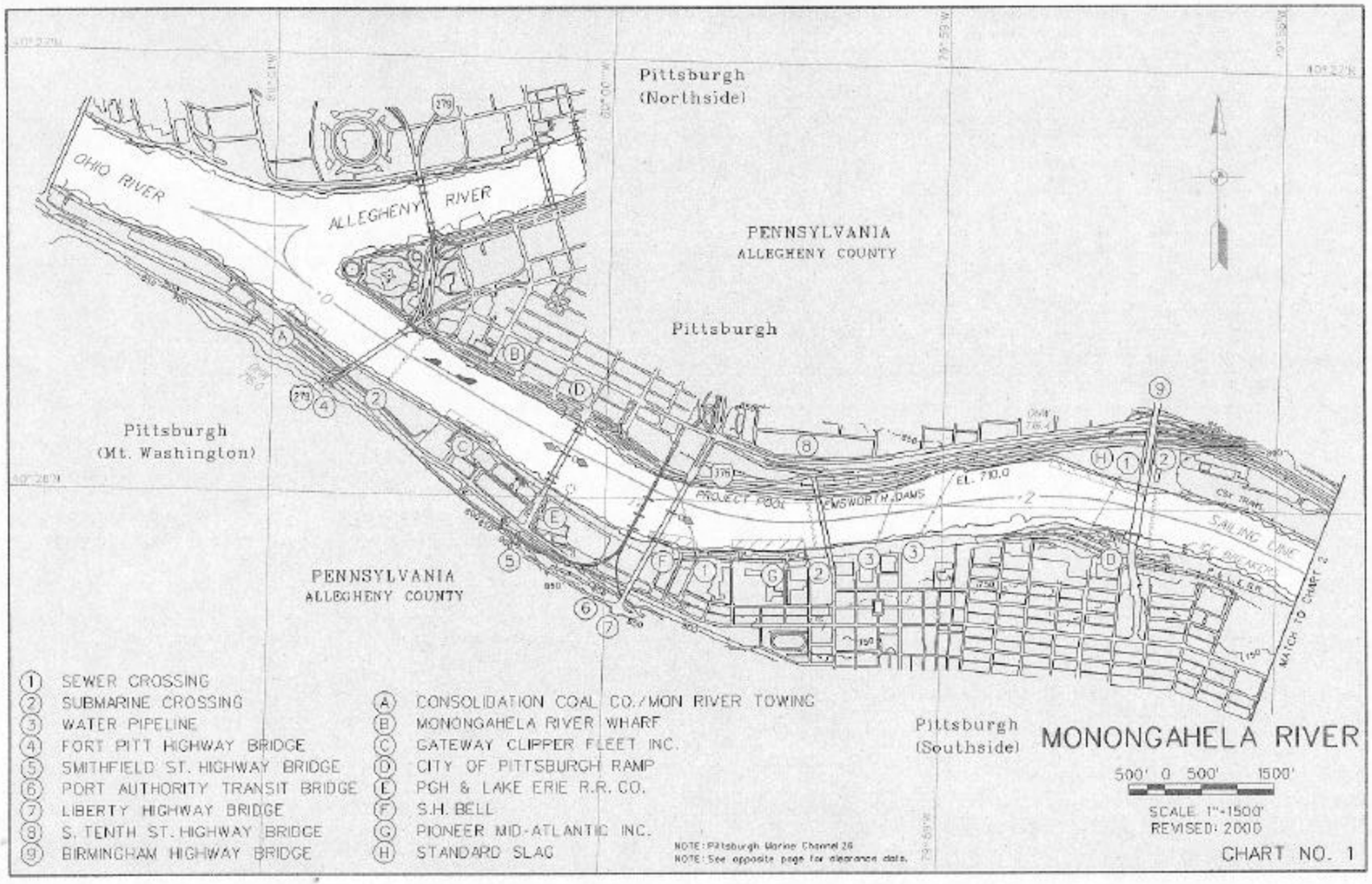

(1) AERIAL POWER CROSSING
(2) SEWER CROSSING
(3) SUBMARINE CROSSING
(4) WATER & ELECTRIC CABLE
(5) FORT DUQUESNE HIGHWAY BRIDGE
(6) ROBERT CLEMENTE HIGHWAY BRIDGE
(7) 7th STREET HIGHWAY BRIDGE
(8) 9th STREET HIGHWAY BRIDGE
(9) CONRAIL RAILROAD BRIDGE
(10) VETERANS MEMORIAL BRIDGE
(11) 16th STREET HIGHWAY BRIDGE
(12) URBAN REDEVELOPMENT AUTHORITY BRIDGE
(A) CITY OF PITTSBURGH (CLEMENTE PARK)
(B) CITY OF PITTSBURGH (WHARF)
(C) EQUITABLE LIFE ASSURANCE SOCIETY
(D) CITY OF PITTSBURGH (RIVER RESCUE)
(E) DUQUESNE LIGHT CO.
(F) CITY OF PITTSBURGH
(G) PITTSBURGH YACHT CLUB
(H) BRILLIANT BOAT MARINA (INACTIVE)
(I) SOUTH SHORE MARINA
(J) CONRAIL (INACTIVE)
PENNSYLVANIA
ALLEGHENY COUNTY
Pittsburgh
(North Side)
OHIO RIVER
MON. RIVER
PENNSYLVANIA
ALLEGHENY COUNTY
Pittsburgh
MATCH TO CHART 2
PROJECT POOL, EMSWORTH DAMS FLOWAGE
ALLEGHENY RIVER
500' 0 500' 1500'
SCALE 1"=1500'
REVISED: 2000
CHART NO. 1
NOTE- SEE OPPOSITE PAGE FOR CLEARANCE DATA


(A) WASHINGTON LANDING MARINA
(B) UNIVERSAL CYCLOPS STEEL CO. (INACTIVE)
(C) THREE RIVERS ROWING ASSOC.
(D) EXXON CO. USA (INACTIVE)
(E) URBAN RENEWAL AUTHORITY (INACTIVE)
(F) PARA ENTERPRISES INC.
(G) MILLVALE BOROUGH WATERWORKS
(H) MILLVALE MARINA INC.
(I) 43rd STREET CONC. INC. (INACTIVE)
(J) HEPPENSTALL CO. (INACTIVE)
(K) McCONWAY-TORLEY CO.
(L) SAUER
(M) PENNZOIL PRODUCTS CO.
(N) SHALER TOWNSHIP
(O) SUNOCO REFINING CO.
(P) UNION STEEL CASTING CO.
(Q) ETNA BOROUGH
Millvale
PENNSYLVANIA
ALLEGHENY COUNTY
Pittsburgh
Etna
SAILING LINE
PROJECT POOL
EMSWORTH DAMS EL. 710.0
MATCH TO CHART 1
MATCH TO CHART 3
Pittsburgh
PENNSYLVANIA
ALLEGHENY COUNTY
(1) AERIAL POWER CROSSING
(2) PIPELINE
(3) SEWER CROSSING
(4) CITY OF PITTSBURGH BRIDGE
(5) 31st STREET HIGHWAY BRIDGE
(6) CSX TRANS. RAILROAD BRIDGE
(7) 40th STREET HIGHWAY BRIDGE
NOTE: SEE OPPOSITE PAGE FOR CLEARANCE DATA.
ALLEGHENY RIVER
500' 0 500' 1500'
SCALE 1"=1500'
REVISED: 2000
CHART NO. 2


PENNSYLVANIA
ALLEGHENY COUNTY
Sharpsburg
SHARPSBURG LIGHT
& BEACON 5.0
FL G4s SG. SG
Aspinwall
Cuyahoga Run
Blawnox
PROJECT POOL
EMSWORTH DAM EL. 710.0
GAGE
WARNING SIGNS
Pittsburgh
PENNSYLVANIA
ALLEGHENY COUNTY
LOCK & DAM 2
MILE 6.7
(412)661-2217
UPPER POOL EL. 721.0
MAXIMUM LOCKING STAGE
19.0 FT. UPPER GAGE
SAILING LINE
PROJECT POOL
LOCK & DAM 2 EL. 721.0
MATCH TO CHART 2
MATCH TO CHART 4
40° 30'N
40° 29'N
79° 56'W
79° 55'W
79° 54'W
79° 53'W
(1) AERIAL POWER CROSSING
(2) PIPELINE
(3) SEWER CROSSING
(4) SUBMARINE CROSSING
(5) 62nd STREET HIGHWAY BRIDGE
(6) HIGHLAND PARK HIGHWAY BRIDGE
(7) CONRAIL RAILROAD BRIDGE
(A) PIONEER MID-ATLANTIC INC. (INACTIVE)
(B) ALLEGHENY MARINA INC.
(C) D & D AUTO SALVAGE
(D) SHARPSBURG BOAT DOCK
(E) SILKIES CROWS NEST MARINA
(F) AZCON CORP.
(G) ASPINWALL BOAT CLUB
(H) BRILLIANT BOAT CLUB
(I) CITY OF PITTSBURGH
NOTE: SEE OPOSITE PAGE FOR CLEARANCE DATA
ALLEGHENY RIVER
500' 0 500' 1500'
SCALE 1"=1500'
REVISED: 2000
CHART NO. 3


(A) (2) WILKINSBURG - PENN JOINT WATER AUTHORITY
(B) FOX CHAPEL SEA RAY MARINA
(C) BELL HARBOR
(D) FOX CHAPEL AUTHORITY
(E) O'HARA LANDING
(F) SYLVAN CANOE CLUB
(G) DUQUESNE CANOE CLUB
(H) ALGONQUIN CANOE CLUB
(I) OUTBOARD HAVEN
(J) ALLEGHENY RIVER BOAT CLUB
MATCH TO CHART 3
MATCH TO CHART 3
PENNSYLVANIA
ALLEGHENY COUNTY
Blawnox
Power's Run
Plum Creek
PROJECT POOL DAM 2 EL 721.0
SYCAMORE IS.
NINEMILE IS.
SAILING LINE
Oakmont
Verona
Crapley Run
SANDY CREEK LIGHT & BEACON 8.5 FL (2) R5s TR, TR
NINEMILE ISLAND LIGHT & BEACON 10.2 FL (2) R5s TR, TR
PENNSYLVANIA
ALLEGHENY COUNTY
ALLEGHENY RIVER
500' 0 500' 1500'
SCALE 1"=1500'
REVISED: 2000
CHART NO. 4
(1) AERIAL POWER CROSSING
(2) PIPELINE
(3) SEWER CROSSING
(4) SUBMARINE CROSSING
NOTE: SEE OPPOSITE PAGE FOR CLEARANCE DATA.

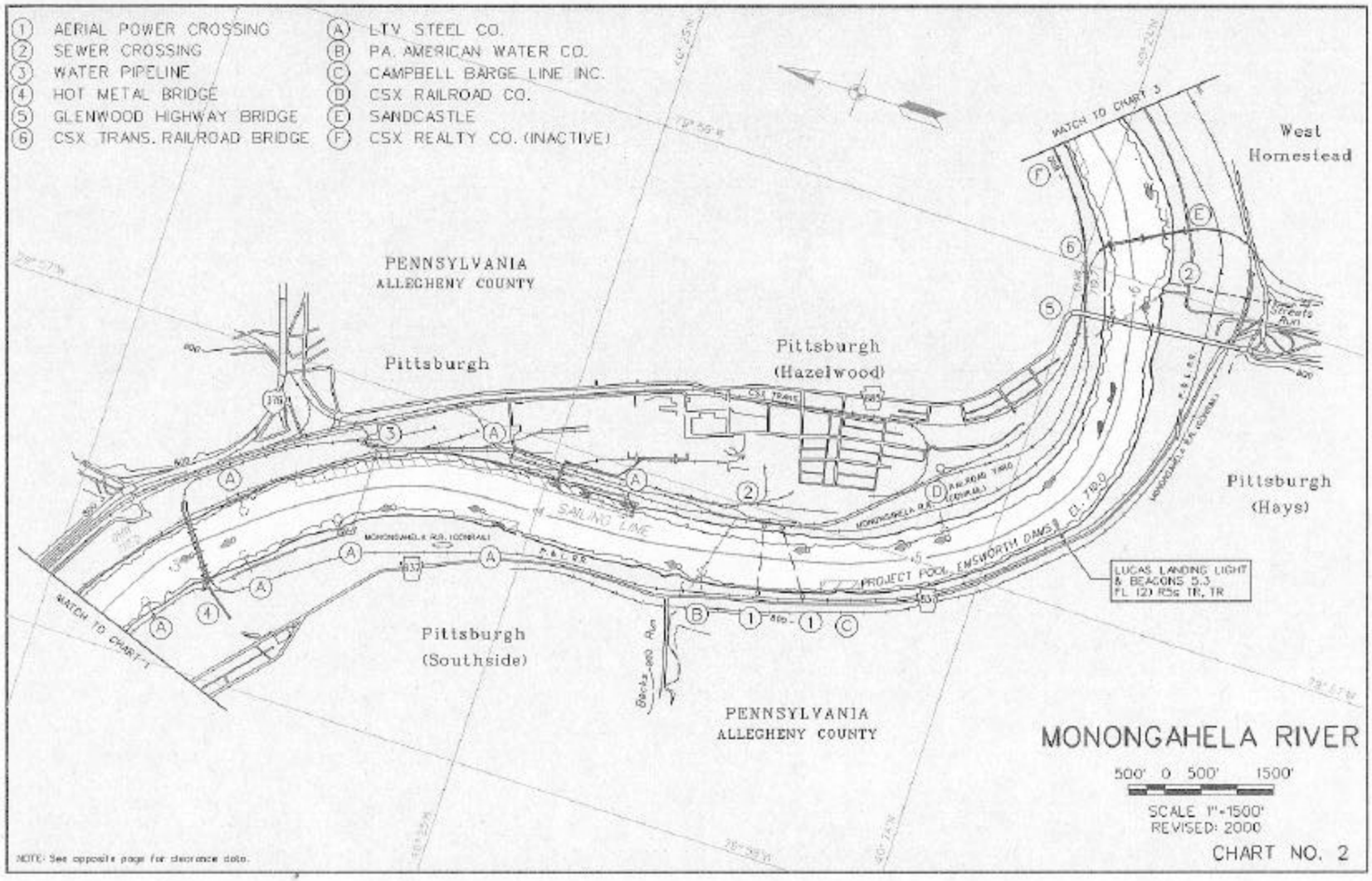

PENNSYLVANIA
ALLEGHENY COUNTY
Harmarville
Bear Creek
TWELVE MILE ISLAND
FOURTEEN MILE ISLAND
Acmetonia
Oakmont
PENNSYLVANIA
ALLEGHENY COUNTY
MATCH TO CHART 4
MATCH TO CHART 6
LOCK & DAM NO. 3
MILE 14.5
(412)828-3550
UPPER PROJECT POOL EL. 734.5
MAXIMUM LOCKING STAGE
19.0 FT. UPPER GAGE
(1) AERIAL POWER CROSSING
(2) PIPELINE
(3) SUBMARINE CROSSING
(4) WATERLINE
(5) OAKMONT HIGHWAY BRIDGE
(6) PENNSYLVANIA TURNPIKE BRIDGE
(7) B.& L.E. RAILROAD BRIDGE
(A) RIVERSIDE LANDING
(B) OAKMONT YACHT CLUB
(C) MUNROE INC.
(D) HARMAR MARINA
(E) PENNSYLVANIA FISH COMMISSION
(F) OAKMONT WATER AUTHORITY
(G) BURKART SIEBERT MARINA
NOTE: SEE OPPOSITE PAGE FOR CLEARANCE DATA
ALLEGHENY RIVER
500' 0 500' 1500'
SCALE 1"=1500'
REVISED: 2000
CHART NO. 5



1. SEWER CROSSING
2. SUBMARINE CROSSING
3. WATER PIPELINE
4. FORT PITT HIGHWAY BRIDGE
5. SMITHFIELD ST. HIGHWAY BRIDGE
6. PORT AUTHORITY TRANSIT BRIDGE
7. LIBERTY HIGHWAY BRIDGE
8. S. TENTH ST. HIGHWAY BRIDGE
9. BIRMINGHAM HIGHWAY BRIDGE

A. CONSOLIDATION COAL CO./MON RIVER TOWING
B. MONONGAHELA RIVER WHARF
C. GATEWAY CLIPPER FLEET INC.
D. CITY OF PITTSBURGH RAMP
E. PGH & LAKE ERIE R.R. CO.
F. S.H. BELL
G. PIONEER MID-ATLANTIC INC.
H. STANDARD SLAG

NOTE: Pittsburgh Marine Channel 26
NOTE: See opposite page for clearance data.


1 AERIAL POWER CROSSING
2 SEWER CROSSING
3 WATER PIPELINE
4 HOT METAL BRIDGE
5 GLENWOOD HIGHWAY BRIDGE
6 CSX TRANS. RAILROAD BRIDGE
A LTV STEEL CO.
B PA. AMERICAN WATER CO.
C CAMPBELL BARGE LINE INC.
D CSX RAILROAD CO.
E SANDCASTLE
F CSX REALTY CO. (INACTIVE)
PENNSYLVANIA
ALLEGHENY COUNTY
Pittsburgh
Pittsburgh
(Hazelwood)
West
Homestead
Pittsburgh
(Hays)
Pittsburgh
(Southside)
PENNSYLVANIA
ALLEGHENY COUNTY
MATCH TO CHART 3
MATCH TO CHART 1
SAILING LINE
PROJECT POOL EMSWORTH DAM 3 EL. 710.0
LUCAS LANDING LIGHT
& BEACONS 5.3
FL 12) R5s TR, TR
MONONGAHELA RIVER
500' 0 500' 1500'
SCALE 1"=1500'
REVISED: 2000
CHART NO. 2
NOTE: See opposite page for clearance data.

ALLEGHENY RIVER
RIVER TERMINALS

MILE	LOCATION	NAME	COMMODITIES	SHELTER	FACILITIES	RAIL	REMARKS
0.5L	Pittsburgh, PA	City of Pittsburgh	General Merchandise	None	None	None	Wharf, Restricted Public Mooring, No Mooring During Events.
1.2R	Pittsburgh, PA	City Of Pittsburgh	None	None	None	None	Landing
2.7L	35th Street, Pittsburgh PA	Exxon Co., Inc.	Gasoline, Oil	None	Pipeline	Conrail, CSX Trans.	Inactive
2.8R	Pittsburgh, PA	Urban Redevelopment Authority	None	None	Pipeline	None	Inactive
3.4R	Pittsburgh, PA	Para Enterprises Inc.	None	None	None	None	Embedded Barge (inactive)
3.5L	43rd Street Pittsburgh, PA	43rd Street Concrete & Supply Inc.	Sand, Gravel	None	Crane	None	Natural bank.
3.9L	51st Street, Pittsburgh, PA	Sauer	Sand, Gravel, Scrap	None	Crane	Conrail	Steel pile wall.
4.4L	54th Street, Pittsburgh, PA	Pennzoil Products Co.	Petroleum products	None	Pipeline	Conrail	2 sheet pile cells.
5.0L	57th Street, Pittsburgh, PA	SUNOCO	Petroleum	None	Pipeline	Conrail	Inactive
5.3R	Etna, PA	Pioneer Mid-Atlantic, Inc.	Sand & Gravel	None	Crane	Conrail	Facilities removed.
5.5L	62nd Street, Pittsburgh, PA	D & D Auto Salvage	Scrap	None	Crane	Conrail	Inactive
7.1R	Aspinwall, PA	AZCON Scrap Corp.	Scrap	None	Crane	Conrail	Barge scraping
7.6L	Pittsburgh Coleman, PA	Pioneer Mid-Atlantic, Inc.	Miscellaneous	None	None	None	Inactive, 3 concrete icebreakers
15.7R	Springdale, PA	Orion Power Mid West	Coal	None	Barge Unloaded	None	Sheet pile cells. Dock 1260 feet
16.2L	Acmetonia, PA	Eastern Marine Services Inc.	None	None	None	Conrail	2 sheet pile cells and ice breakers
16.4R	Cheswick, PA	Chevron Oil Co.	Asphalt products	None	Pipelines	None	3 steel posts.

OHIO RIVER
RIVER TERMINALS

MILE	LOCATION	OWNER OR OPERATOR	TYPE OF FREIGHT	SHELTER	MECHANICAL	RAIL CONNECTIONS	REMARKS
0.1L	Pittsburgh, PA	Consolidation Coal Co.	Mooring service	None	None	None	Landing for holding barges, assembling & breaking up tows
0.2L	Pittsburgh, PA	Ingram, Barge Co.	Mooring service	None	None	None	Landing for holding & breaking up tows
0.6R	Pittsburgh, PA	Campbell Barge Line	Miscellaneous	None	None	None	Office & mooring
0.7R	Pittsburgh, PA	Dravo Corp.	Mooring	None	None	CSX Trans. & Conrail	Ridge Avenue, crib steel sheet pile facing 300' long
0.9R	Pittsburgh, PA	Campbell Barge Line	None	None	None	None	Beaver Avenue, pile dock 320' long & landing, ice breakers
2.0R	Pittsburgh, PA	Duquesne Light	Oil	None	None	None	Back channel Brunots Island channel bulkhead 300' long 600' dock with mooring cells & pile clusters. (inactive)
2.5L&R	Pittsburgh, PA	Duquesne Light	Equipment	None	Ferry	None	Main channel
2.9R	Pittsburgh, PA	ALCOSAN	Mooring	None	None	None	Sewage treatment plant
2.9L	McKees Rocks, PA	Frank Bryan	Receipt of sand, gravel & grain	None	10-ton electric Whirler crane with 1D-cu. yd. clamshell bucket	None	Back channel main land opposite Brunots Island 100' concrete bulkhead
2.9L	McKees Rocks, PA	Mobil Oil Co.	Shipment of gasoline	None	6" pipeline for loading gasoline	Pittsburgh Chartiers & Youghiogheny RR	Tank farm bulk plant for distribution. Dock 125' long. Back channel. (inactive)
3.0L	McKees Rocks, PA	Russell Industries Inc.	Sand & gravel	None	Electric Whirler crane & conveyor	P & LE RR	115' dock with three mooring cells
3.1L	McKees Rocks, PA	Gordon Terminal Service Co.	Receipt of oil	None	6" pipeline, 2D" steam line, 1D" return line	Pittsburgh, Chartiers & Youghiogheny	5 steel mooring posts; one 13'-7" dia. cell & 2 walkways.
3.6R	Pittsburgh, PA	Conrail	Coal	None	Electric belt conveyor, truck & dump hopper, barge shifter & chute.	Conrail	Transfer of coal from RR cars to barge. Rate is RR origin to FOB barges. Steel pile cells spaced at intervals for 1300'.

OHIO RIVER
RIVER TERMINALS

MILE	LOCATION	OWNER OR OPERATOR	TYPE OF FREIGHT	SHELTER	MECHANICAL	RAIL CONNECTIONS	REMARKS
4.0L	McKees Rocks, PA	McKees Rocks Industrial Enterprises	Miscellaneous	Heated & unheated whse 80-1100 fL from dock	Caterpillar crane, capacity 80 tons	Pittsburgh, Chartiers & Youghiogheny	Steel pile dock 56' long in front of existing low wall. Area dredged for 400'.
4.1L	McKees Rocks, PA	M & O Marine Inc.	Contractors equipment	None	Derrick boats	Pittsburgh, Chartiers & Youghiogheny	Landing for contractors equipment.
5.0L	Neville Island, PA	Allegheny Asphalt	Shipment of pig iron, receipt of sulphur & fluorspar.	None	10 ton electric stiffleg derrick with 2 cu. yd. clamshell bucket; electric belt conveyor 2-ton capacity magnet	Pittsburgh & Ohio Valley RR connecting with P.C.& Y. RR	50' concrete bulkhead mooring pile spaced at intervals for 300'.
5.1R	Neville Island, PA	Kosmos Cement Co.	Shipment of cement	None	Electric boom conveyor 4" pipeline & pump	None	Back channel right bank concrete bulkhead dock with mooring.
5.4L	Neville Island, PA	Allegheny Asphalt	Receipt of coal	None	12-ton electric traveling crane; one hopper & belt conveyor.	Pittsburgh & Ohio Valley RR connecting with P.C. & Y. RR	100' concrete bulkhead & pile clusters.
5.5L	Neville Island, PA	Aristech Chemical Corp.	Shipment	None	6" pipe for acid	Pittsburgh & Ohio Valley RR connecting with P.C. & Y. RR	Sheet pile bulkhead
5.8L	Neville Island, PA	Gulf Oil Corp.	Shipment & receipt of gasoline, kerosene fuel oil, & crude oil.	None	1 hand hose derrick; 1 small electric pump. Service pipe-lines for loading & unloading.	Pittsburgh, Chartiers & Youghiogheny RR	50' concrete wall with walkways & steel cell wharf 10.6' long with walkway. 10 mooring cluster spaced at internals for 1300'.
6.5L	Neville Island, PA	Exxon Co. USA	Gasoline & fuel	None	Pipelines	None	Dock 470', 5 cells & steel bridge
6.8L	Neville Island, PA	Neville Chemical Co.	Shipment of solvents & tar; receipt of petroleum distillate & fuel oil.	None	Four 8" & one 4" pumping lines & two 3" steam lines.	Pittsburgh, Chartiers & Youghiogheny RR	1 steel sheet pile mooring post & 3 steel sheet cells 13'7" dia. with walkway. Dock 290' long.
7.0RBC	Neville Island, PA	Pittsburgh-DesMoines Steel Co.	Ship building	Steel building	Launch ways & outfitting dock	None	Launch ways & outfitting dock 100' long. Back channel right bank. Not in operation.

MONONGAHELA RIVER
RIVER TERMINALS

MILE	LOCATION	NAME	COMMODITIES	SHELTER	FACILITIES	RAIL	REMARKS
0.0R	Point, Pittsburgh, PA	City of Pittsburgh Monongahela Wharf	Park	None	None	None	Restricted Public Mooring, No Mooring During Events.
0.0L	Pittsburgh, PA	Consolidation Coal Co./Mon River Towing	Coal	None	None	None	Landing
0.4L	Pittsburgh, PA	Pitmarine Corp.	Landing, (Wabash Piers)	None	None	None	Landing
0.6R	Monongahela River Wharf, Pittsburgh, PA	City of Pittsburgh	None	None	None	None	Parking lot on wharf
1.1L	So. Third Street Pittsburgh, PA	S>H. Bell	Sand & Gravel	None	Crane	None	Concrete bulkhead
1.4L	So. Eighth Street Pittsburgh, PA	Pioneer Mid-Atlantic Inc.	Sand & Gravel	None	Whirley crane	None	Unload sand & gravel
2.2R	Brady Street Yard Pittsburgh, PA	Standard Slag Co.	Sand, Gravel & Coal	None	Crane	None	Concrete bulkhead
2.9L	So. 28th Street Pittsburgh, PA	LTV Steel Co.	Coal	None	Whirley crane	None	Ice Breakers
3.4L	So. 28th Street Pittsburgh, PA	LTV Steel Co.	Miscellaneous	None	50 ton crane	Mon. Conn. RR	Single barge dock, load & unload misc. bulk materials
3.6R	2nd Avenue Pittsburgh, PA	LTV Steel Co.	Coal	None	None	None	Square steel mooring posts
3.8R	2nd Avenue Pittsburgh, PA	LTV Steel Co.	Highway bridge	None	Crane	None	Steel sheet pile bulkhead
4.0L	2nd Avenue Pittsburgh, PA	LTV Steel Co.		None	Pipelines	Mon. Conn. RR to Conrail RR	6" pipeline 2 sheet pile cells
4.0R	2nd Avenue Pittsburgh, PA	LTV Steel Co.	Tar	None	Crane	Mon. Conn. RR to Conrail RR	Steel pile mooring cells
4.1R	Rutherglen Street Pittsburgh, PA	LTV Steel Co.	Coal	None	Barge unloader, chute	Mon. Conn. RR to Conrail RR	Steel pile mooring cells

MONONGAHELA RIVER
RIVER TERMINALS

MILE	LOCATION	NAME	COMMODITIES	SHELTER	FACILITIES	RAIL	REMARKS
4.2R	2nd Avenue Pittsburgh, PA	LTV Steel Co.	Acid & Light Oil	None	Crane	Mon. Conn. RR to Conrail	6" pipeline on ice breaker
4.8L	Becks Run, Pittsburgh, PA	Campbell Barge Line Co., Inc.	Landing	None	None	None	2 embedded barges
6.5R	Glenwood, Pittsburgh, PA	CSX Reality	Coal	None	Conveyor to barge	CSX Trans.	Inactive
7.5R	9-Mile Run,	CSX Reality	None	None	None	None	Inactive
9.4R	Rankin, PA	S. H. Bell	Fuel oil	None	Pipeline-Pump	None	5 Steel pile mooring cells
9.7R	Braddock, PA	Josh Steel Co.	"A" Landing	None	Crane	None	2 embedded barges
9.8L	Central Wharf	S.H. Bell	Steel, scrap	None	Crane	Union, CSX Trans., Conrail	Concrete bulkhead
9.9R	Braddock, PA	S.H. Bell	Sand & Gravel	None	Crane	None	4 square steel mooring posts
10.1R	Braddock, PA	Josh Steel Co.	Steel & scrap	None	Crane	None	Load & unload scrap, Embedded barges
10.2R	7th Street Braddock, PA	Rochez Bros. Sup. Inc	Sand & Gravel	None	Crane	None	Concrete & steel bulkhead
11.7L	Duquesne, PA	Union Railroad Co.	Fuel oil	None	None	None	Inactive
11.8L	Duquesne, PA	Union Railroad Co.	Coal, spar & steel	None	River-rail, crane	Union R.R.	Barge to rail. Steel sheet pile bulkhead.
12.3L	Duquesne, PA	Union Railroad Co.	Coal	None	Barge unloader	Union R.R.	Barge to rail. 12 sheet pile cells.
12.7L	Duquesne, PA	Regional Industrial Development Corp.	Fuel oil	None	Pipelines	None	6 square steel mooring posts & cells
14.0R	Riverton, PA	Frank Bryan, Inc.	Sand & gravel	None	Crane	None	Concrete & steel bulkhead
15.0R	McKeesport, PA	Regional Industrial Development Co.	None	None	Crane	Union R.R., Conrail	Concrete bulkhead
15.6R	Youghiogheny River (see sheet 10)						

Appendix B *(Chapter 2: Land Resources)*

Three Rivers Park Design Handbook

Three Rivers Park
Design Handbook

October 31, 2002
prepared by the Riverlife Task Force

Contents

RIVERLIFE

Introduction

The Three Rivers Park Design Handbook is offered as a complement to the Riverlife Task Force Vision Plan for Pittsburgh's Riverfronts and provides the design framework and design guidelines for Three Rivers Park. The primary purpose of this Handbook is to support and implement the creation of Pittsburgh's Three Rivers Park—an urban river park unique to Pittsburgh. Secondarily, it offers concepts applicable to sites up and down the rivers.

The Handbook provides guidelines for the development of the rivers and land extending from the West End Bridge on the Ohio River to the Sixteenth Street Bridge on the Allegheny River to the Tenth Street Bridge on the Monongahela River. The framework and design guidelines in this Handbook are a resource to be applied to the creation of the Park, and will be used by landowners, developers, public officials and planning staff, the Riverlife Task Force and other organizations involved with revitalization of the riverfronts.

- For landowners and developers, it clarifies the expectations for development along Pittsburgh's riverfronts and especially in and around Three Rivers Park.

- For public officials and planning staff, the guidelines are a tool to evaluate potential projects and direct riverfront development for public, private and public/private joint-venture development.

- For the Park as a whole, the Handbook coordinates the common design elements to create an identifiable environment.

This Handbook does not replace existing zoning, district plans or ordinances, but is intended to establish optimal planning goals and to enhance and coordinate the requirements set forth in the land-use tools already in place:

- Pittsburgh Urban Zoning Code
- The Pittsburgh Downtown Plan
- Riverfront Development Plan
- Vision Plan for Pittsburgh's Riverfronts

The following Design Framework and Guidelines fortify the principles of the accepted Vision Plan for Pittsburgh's Riverfronts by defining preferred development criteria, setting the structure for evaluation and setting the goals for the creation of Three Rivers Park.

Implementation of the Design Framework and Guidelines will occur through:

1. The acceptance of The Three Rivers Design Handbook by the City of Pittsburgh's Planning Commission to:
    a. Guide the development of public and private projects;

b. Be applied as the guidelines by which the Department of City Planning staff makes recommendations to the Planning Commission and Design Review Committee for proposed projects;

2. The application of the principles and standards outlined in this handbook in private development projects; and

3. The integration of these standards for publicly-funded development incentives or subsidies.

Structure of the Three Rivers Park Design Handbook

The Three Rivers Park Design Handbook is comprised of two main sections: The Design Framework for Three Rivers Park and The Design Guidelines for Three Rivers Park.

Each section of the Handbook is structured according to the five Elements of the Design Framework for Three Rivers Park:

- Waterscape
- Landscape
- Districts
- Connections
- Landings

The Design Framework refines the design concepts and goals for Three Rivers Park and sets the structure of the Design Guidelines and related evaluation criteria. The Design Framework elaborates the Elements of Three Rivers Park and defines the key design concepts for the Park.

In the Design Guidelines, specific review criteria are identified. For each of the five Elements, the following are outlined in detail:

1. Characteristics of the Elements describes the envisioned spirit of each Element that comprises Three Rivers Park.

2. Design Guidelines establish the fundamental and specific design standards to achieve the desired qualities and character of Three Rivers Park.

In addition to the guidelines that relate to the Elements of Three Rivers Park and included in this document, guidelines for key overarching issues that apply across all of the Elements will be developed in the coming year and will be appended to the Three Rivers Park Design Handbook. These guidelines include the following:

- Lighting Plan for Three Rivers Park
- Signage Plan for Three Rivers Park
- Landscaping Plan for Three Rivers Park
- Sustainability Plan for Three Rivers Park
- Parking and Loading Standards for Three Rivers Park

Part One:

A Design Framework for Three Rivers Park

RIVERLIFE

Guiding Principals of the Vision Plan for Three Rivers Park

Released in October 2001 by the Riverlife Task Force, the Vision Plan for Pittsburgh's Riverfronts proposes to create an urban river park in the heart of Pittsburgh, known as Three Rivers Park. The Vision Plan is based on the following principles:

Principle 1 Organize riverfront investment based on the understanding that the three rivers are Pittsburgh's premier public domain

Principle 2 Reinforce the power of place by letting Pittsburgh's history and traditions inspire riverfront development

Principle 3 Enhance the shoreline experience by planning for the ranges of uses the public wants for its riverfronts

Principle 4 Increase the connections between existing and new neighborhoods and the rivers

Principle 5 Encourage diverse river uses while addressing potential conflicts

Principle 6 Celebrate the City of Bridges as an important aspect of Three Rivers Park

Principle 7 Improve regional connections between public parks and green space to the rivers' edge

Principle 8 Consolidate transportation and minimize industrial obstacles along the rivers' edge

Principle 9 Embrace sustainable development in Three Rivers Park

The Characteristics of Three Rivers Park

Building from the design ideas embodied in the Vision Plan, Three Rivers Park is intended to create a sense of place with these characteristics:

- A park for people of all ages to experience and enjoy one of Pittsburgh's greatest assets returned to the public domain—its rivers and miles of shoreline;
- A place defined by Pittsburgh's unique landscape—its topography, ecology and habitat of both the natural and built environment;
- A Park connected to the City's neighborhoods with the ability to expand and enhance community connections to the rivers;
- A refreshing green "breath" for the City, expanding its influence into adjacent urban developments, as well as connecting to traditionally green spaces such as parks, streetscapes, wooded hillsides and valleys;
- An environment that is sensitive to and respectful of the ecological fabric of the rivers and land that make up the watersheds of the region;
- A place for both contemplation and activity—relaxation on or near the rivers, fishing, boating, rowing, walking, canoeing, jogging, kayaking or dining;

- A place where unique development and private investment create a special sense of place that is socially, environmentally and economically sustainable;
- A rich sequence of experience and scale, connected by common elements that create a unified place, and a variety of dynamic places within the Park characterized by the juxtaposition of urban and natural environments interwoven with industrial references and authenticity;
- A place that is easily accessible and safe for individuals, families, long-time residents of Pittsburgh and visitors from around the world;
- A park that sets a new standard for design and development of both public and private investment, with a high level of public amenity and inherent quality for generations to come.

The Underlying Design Concepts of Three Rivers Park

1. The Public Realm is the dominant and defining aspect of Three Rivers Park.

   The Public Realm comprises the outdoor areas experienced by the public. Irrespective of ownership, the Public Realm embodies the character and spirit of Pittsburgh's riverfronts. The Public Realm includes the integral elements of streetscapes, riverfront building facades, privately developed open-air plazas and the various land uses of city life, in addition to the shorelines, trails, public open space and the rivers themselves.

   Traditionally, the form of the Public Realm is shaped and defined by buildings and development. Within Three Rivers Park, however, it is the form of the Public Realm that is intended to shape and define the built environment. The Public Realm therefore is the dominant organizing factor of the design guidelines for Three Rivers Park.

2. The Park's center is the Confluence.

   At the center of Pittsburgh, two rivers, the Allegheny and the Monongahela, converge to form a third, the Ohio. This merging of rivers has shaped the City and the region both through its geological and social history. It served as a center for Native American commerce, a site of battles, an industrial hub and a place of gathering and celebration. "The Point" has become Pittsburgh's front yard and a symbol of its progress.

   Three Rivers Park is centered on the Confluence. From the Confluence, the Park radiates out, up and down three rivers, reaching to the City's boundaries and connecting to places beyond.

3. The Park's structure is built upon Pittsburgh's historic patterns of spatial organization.

   The convergence of three rivers and their watersheds gives Pittsburgh its unique landscape. Throughout the City's history, its rivers and topography have shaped the development of neighborhoods, the location of transportation routes and hubs and centers of commerce. The landscape created a city comprised of distinct neighborhoods, connected to each other by land and water, each with its own character.

   Three Rivers Park will build upon these patterns and reinforce the profound sense of place that defines Pittsburgh's unique character. Its shape will enhance the image of the Confluence of the three rivers and the vertical form of the Golden Triangle as the icon of Pittsburgh.

4. The character of places within the Park is drawn from the uniqueness of Pittsburgh's landscape and communities.

   Three Rivers Park is envisioned as a series of interconnected elements, of varying character and scale, which together comprise a unique and ever-changing experience for visitors and users. These elements, comprised of districts and neighborhoods, landings and connections, will draw their character from their individual locales.

Elements of the Design Framework

The successful development of Three Rivers Park will depend upon the interrelationship between five Elements that will shape the overall character of an urban river park.

Waterscape — Water's surface, water's edge and water activities

The Waterscape connects communities across shorelines and up and down the rivers and includes the water's surface, the water's edge and water activities. Boating, rowing, canoeing, kayaking, fishing, water-skiing, commuting, site-seeing or just sitting at the river's edge are all part of the life and energy of the Waterscape. As both a symbolic and dominant regional attraction, the Waterscape is the central Element to the Public Realm of Three Rivers Park.

Landscape — The natural and built forms that help define neighborhoods and districts

With topography that encompasses and helps define neighborhoods—streams, valleys, wooded hillsides and slopes—the Landscape includes both natural and built forms. From riparian zones to landscaped trails and streets to gardens and parks, the Landscape Element has a role in stabilizing riverbanks, providing for wild habitat and creating enhanced open space. The Landscape also forms special places linked to the rivers and the urban network of buildings and streets and provides many of Pittsburgh's defining characteristics. It provides the contrast between the strong forms of the City's building and neighborhoods and the natural character of its setting that are characteristic of Pittsburgh.

Districts — Areas with clear identity where people enjoy living, working or visiting

Containing the major land uses within and along Three Rivers Park, Districts are comprised of both public and private components. The Golden Triangle is recognized as the most dominant of Districts; others include Station Square, the North Shore and the Strip District. At the individual neighborhood scale, Districts are places with the potential for clear identity and with unique characteristics—places where people enjoy living, working or visiting. They are bounded on all sides by natural barriers, such as hills and rivers, and by barriers that are man-made, such as roadways and changes in built form.

Connections — Access to, along, over and down to the rivers

In providing access to, along, over and down to the rivers, Connections include: perpendicular streets and sidewalks leading to the rivers from neighborhoods; the spans and bases of bridges; riverfront esplanades; the inclines; the Light Rail Transit lines; and biking and walking trails. Whether they are routes traveled by car, by bike, by foot, or by watercraft, Connections lead to the rivers, along the rivers and connect the rivers back to the neighborhoods. Connections are not just about moving from one point to another, but also about enjoying the experience of the passage.

Landings — Places where people find distinctive experiences along Pittsburgh's rivers

Landings occur where two or more of the above Elements come together and provide focal points for activity and connection at the water's edge. Landings can be the public places that people are drawn to for special events or activities and serve as destinations and landmarks. They can bring together transit systems and activity centers. They are places where people

find distinctive experiences along the river's edge. Landings provide opportunities for design and physical intervention.

Establishing the Relationships within Three Rivers Park

The Design Framework establishes the criteria for the specific guidelines that will define Three Rivers Park. The Elements of the Framework Plan — Waterscape, Landscape, Districts, Connections and Landings — create a hierarchy for the Park. This hierarchy moves from the broad, shaping forces of the Waterscape and Landscape to the Districts that are formed between these forces—both natural and man-made— to the interventions that are developed as Landings and Connections.

The Design Framework, in conjunction with the guiding principles of the Vision Plan, acknowledges that the Public Realm is the defining aspect of Three Rivers Park—a place that is accessible for all. With the Park radiating from the Confluence of the three rivers, the guidelines in this Handbook relate to the development patterns of Pittsburgh, shaped by water and topography and embodied in neighborhood identity and connections.

Part Two:

Design Guidelines for Three Rivers Park

RIVERLIFE

Waterscape

The Waterscape connects communities across shorelines and up and down the rivers and includes the water's surface, the water's edge and water activities. Boating, rowing, canoeing, kayaking, fishing, water-skiing, commuting, site-seeing or just sitting at the river's edge are all part of the life and energy of the Waterscape. As both a symbolic and dominant regional attraction, the Waterscape is the central Element to the Public Realm of Three Rivers Park.

Characteristics of Waterscape

- The Waterscape will be animated and lively with group and individual activities and an energetic variety of uses that celebrate the dynamic and ever-changing nature of the rivers.
- The Waterscape will include a variety of shared uses and users, from industrial and transport uses to recreation.
- The Waterscape will be accessible at a variety of scales, from large boat landings and marinas to individual access points for fishing and launches for non-motorized watercraft.
- With renewed biological diversity for both plant and wildlife habitat in and along the rivers, the Waterscape will have a green edge that is in contrast to the historical images of Pittsburgh as a smoky industrial city.
- The Waterscape of Three Rivers Park will reclaim the rivers as a safe and healthy destination for Pittsburgh's residents and its visitors, providing a new Public Realm used as commonly as neighborhood parks or city streets.
- As a kinetic piece of the City's infrastructure, the Waterscape runs through Downtown, much like an urban boulevard, and links the shorelines of Pittsburgh. As a new boulevard for the City, the Waterscape will be redefined as part of the Public Realm.
- The Waterscape will provide a nighttime place for personal reflection and the pleasure of the reflective images of Pittsburgh's urban landscape on the water.

Landscape

With topography that encompasses and helps define neighborhoods—streams, valleys, wooded hillsides and slopes—the Landscape includes both natural and built forms. From riparian zones to landscaped trails and streets to gardens and parks, the Landscape Element has a role in stabilizing riverbanks, providing for wild habitat and creating enhanced open space. The Landscape also forms special places linked to the rivers and the urban network of buildings and streets and provides many of Pittsburgh's defining characteristics. It provides the contrast between the strong forms of the City's building and neighborhoods and the natural character of its setting that are characteristic of Pittsburgh.

Characteristics of Landscape

- The new Pittsburgh identity will be highlighted by the extensive richness of green space down to the rivers and opportunities for continuity between Three Rivers Park and regional parks, neighborhood parks and open-space corridors. This Landscape is shaped by the topography that historically defined the urban form of the City and continues to form the experience of Three Rivers Park.

- The Landscape of Three Rivers Park will contribute to a biologically diverse network of open-space corridors to support and enhance the wildlife habitat and plant communities of Western Pennsylvania.

- The Landscape will provide a special and comfortable sense of place at the rivers' edge, bringing further definition to Three Rivers Park and its adjoining Districts.

- The Landscape will be comprised of a juxtaposition of the natural elements and built environment, each made more interesting because of their contrasting features.

- Developed to provide erosion control, riverbank stabilization, storm water management and relief from urban heat islands, the Landscape will further the goals of creating an ecologically sustainable city.

Districts

Containing the major land uses within and along Three Rivers Park, Districts are comprised of both public and private components. The Golden Triangle is recognized as the most dominant of Districts; others include Station Square, the North Shore and the Strip District. At the individual neighborhood scale, Districts are places with the potential for clear identity and with unique characteristics—places where people enjoy living, working or visiting. They are bounded on all sides by natural barriers, such as hills and rivers, and by barriers that are man-made, such as roadways and changes in built form.

Characteristics of Districts

- The Districts of Three Rivers Park will provide opportunities to support and enhance the activities of the Park and create destinations for visitors from across the City and region.

- Three Rivers Park will serve as the front yard for riverfront Districts, much like an urban boulevard comprised of linear green space, pedestrian walkways and parks. When developed at an urban pedestrian scale, the relationship of the Park to its Districts will produce livelier street edges for people of all ages to enjoy and a high level of both real and perceived safety.

- Each riverfront District will be physically and functionally unique in character and sense of place, yet all distinctly Pittsburgh.

- The riverfront Districts will offer the greatest opportunity for private investment to renew and reinforce the quality of places to live, work and play in Pittsburgh because of the added value of being adjacent to Three Rivers Park.

- Districts are comprised of buildings and man-made structures, surrounded and permeated by the Landscape. The relationship of the Landscape to the Districts will promote relationships and connections to the surrounding neighborhoods and reflect the time-honored urban patterns of Pittsburgh.

Design Guidelines for Districts

District Planning and Design

The development of the Districts of Three Rivers Park will include both the construction of individual buildings and the creation of large-scale developments that encompass several blocks.

District Street and Grid Patterns

In many places in the City, streets that once extended to the rivers have been vacated for industrial uses. In other areas, industrial uses located along the rivers before streets were even constructed. Today, it is rare to find streets that extend fully to the rivers' edge. As industrial uses have shifted away from our riverfronts and new patterns of development emerge in the City, there are opportunities to not only re-establish abandoned street grids, but to create new ones that connect landlocked neighborhoods to the rivers.

- Seek to re-establish historic street grid patterns that once extended to the rivers.
- In Districts where streets did not extend to the rivers, establish new Perpendicular Connections to provide such access, with the scale of the grid pattern responding to adjacent neighborhood patterns. New development patterns may also be integrated with the establishment of the grid. In general, extend Perpendiculars to the rivers at regular intervals of 400 ' – 600 ' apart.

- In establishing street grids in Districts, recognize and respond to changing topographic features. Grids should shift where necessary, opening views and changing vantage points for new and existing development and their occupants.
- Perpendicular streets through Districts will serve as Perpendicular Connections. Design these streets according to the standards outlined in the Guidelines for Perpendicular Connections.

Views to and from Districts

The planning and design for Districts and the buildings that comprise them are to take into consideration creating and maintaining views to and from Three Rivers Park. As building configurations are identified and developed, projects will be reviewed within the context of their impacts on view corridors. Foremost are creating and maintaining views of the Golden Triangle and the rivers.

- Maintain views of the distinctive icon of the Golden Triangle from the Park and from other Districts.
- Maintain views to the rivers along public streets.
- Identify and develop new view corridors to the rivers as District plans move forward and new Districts are developed.

- Where possible, maintain views to the rivers from individual buildings. Locate lower buildings along the rivers, with higher buildings located further back from the rivers. The heights of new buildings and their impact on the buildings located further back from the river will be considered during design review.

Transportation Planning

As development is located near Three Rivers Park, there will be many opportunities to take advantage of the extensive trail and road system being developed to connect the City and its rivers. Developers and building owners are encouraged to provide amenities

accommodating occupants who wish to use alternative transportation resources, including cycling, rollerblading and public transit.

- Maximize on-street parking throughout Districts.
- Locate parking adjacent to the Park below-grade.
- Consider future plans for water transportation as opportunities to make connections to the Waterscape, including water-transit landings.
- Develop shared parking facilities with nearby development, located away from the riverfront. Explore vanpool options and locate parking pools on sites to minimize the impact of parking along the rivers.
- Provide secure bicycle storage, personal lockers, changing rooms and showers to accommodate a minimum of 5% of the building's occupants.
- Locate development within walking distance of Light Rail Transit (LRT) stations and public bus service. Provide information about transit service in the form of informational kiosks and maps of adjacent bus lines on-site.

Site Planning

- Locate public entrances to retail and commercial uses along the riverfront facade of the building. Create riverfront addresses, particularly with regard to publicly-oriented uses.

- In order to activate open-space Connections, locate pedestrian-oriented uses on the ground floor of buildings and provide pedestrian amenities.
- Utilize landscaping, rather than walls and fences, to create semi-public/private buffers.
- Do not build surface parking lots adjacent to the riverfront.
- To the maximum extent possible, do not locate vehicular entrances to parking garages and building service along primary Perpendicular Connections. Minimize curb-cuts for vehicular access to development sites along primary Perpendicular Connections. Do not locate curb-cuts within 100 ' of a street corner.
- Maximize the use of pervious materials on the site to reduce storm-water run-off. Explore the use of alternative paving materials, including porous asphalt, unit pavers and grass-paving systems for parking areas. Incorporate design features such as landscape swales in parking islands to promote the absorption of storm water into the ground.

- Reduce on-site heat gains by minimizing dark-colored surface areas, such as black asphalt. Acceptable alternatives include the use of concrete paving, unit paving systems, light-colored asphalt products using limestone aggregates or colored sealants, and increasing areas of landscape and groundcovers.
- Apply sustainable site planning practices, such as: erosion and sedimentation control; development densities with a floor area ratio of 2.0 or greater; Brownfield redevelopment; Best Management Practices for stormwater management; and providing additional landscaping to reduce heat islands; and light pollution reduction.
- Minimize site lighting pollution by using fixtures that conceal the light source and contain the light to within the property and sidewalk boundaries.
- Bury all utilities in development sites.
- Do not locate transformers and other above-grade utility structures along the Park or Perpendicular Connections to the Park.

Open Space Planning and Design

- Design new open spaces in conjunction with the plans for Three Rivers Park. Open-space requirements may be met through the creation of riverfront Promenades, additional Perpendicular Connections to the Park and other spaces that complement Three Rivers Park.
- Design new open spaces to occur mid-block, not at corners, and in locations that are adjacent to the riverfront or Perpendicular Connections to the Park.
- Open-space requirements may be aggregated to create additional publicly-oriented Perpendicular Connections to the riverfront. In such cases, the Connection is required to be a minimum of 32 ' wide, with publicly-oriented uses located on the ground floor and directly accessible from the Connection. Sidewalk cafes and similar uses encouraged. The open space is required to be accessible to the public 24 hours a day.
- Activate open spaces by locating publicly-oriented uses in the ground floors of adjacent buildings. Provide pedestrian amenities, including seating.
- Apply the Urban Design Guidelines for Downtown Pittsburgh to open spaces in Districts of Three Rivers Park.

Building Design in Districts

Buildings located in and along Three Rivers Park establish the edge of the Public Realm. Along the riverfront, they create a “face” to the individual Districts in which they are located. Viewed from the Waterscape and other vantage points, they become landmarks that orient visitors and inhabitants. Added together, the buildings that compose a District are intended to create distinctive forms and landmarks, as represented by the familiar images of the Golden Triangle and the South Side Slopes.

In developing individual buildings as well as master plans for new Districts, address the following building design issues:

- Height of the buildings along the edge of the river
- Building setbacks and build-to lines along District edges
- Overall massing strategy for the District
- Location of parking, both surface and structured
- Identification of primary views from the District to the riverfront and from the riverfront to the District

Further, all building and site development within Three Rivers Park and its Districts will be encouraged to incorporate elements of green-building design. Developers and owners are encouraged to utilize the Leadership in Energy and Environmental Design (LEED) standards as established by the U.S. Green Building Council (USGBC).

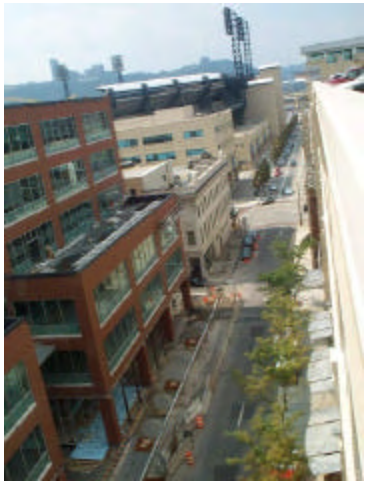
Building Height and Massing

- In new Districts, the individual district master plan will outline the minimum and maximum requirements for building height and massing.
- In general, construct buildings to a minimum of four stories and 60 ' high in Districts adjacent to Downtown, with six to eight stories preferred.
- Locate taller buildings further back from the river, allowing views from upper floors out over the first tier of buildings.
- Design building massing to maintain view of rivers, maximize light and air to open spaces and minimize shadows on adjacent properties and open spaces.

- For individual building projects, identify the height patterns that are present in the District in which they are located. Relate the height of the new development to the height of the surrounding District, and reduce negative impacts on adjacent properties, such as blocking views, casting open spaces into shadow for a significant period of the day, etc. Schematic illustrations of the massing of the surrounding District will be required in order to review the proposal's compatibility with the established District and the overall design goals for Three Rivers Park.
- Due to Pittsburgh's varied topography and changing landscape, roofs of buildings in and adjacent to Three Rivers Park are visible from multiple vantage points. Building tops become important landmarks within individual Districts, such as the Golden Triangle. Pay careful attention to the design of building tops and roofs, with a vertical emphasis to those building tops within the Golden Triangle.

Setbacks and Build-To Lines

- In general, build to the property line for all properties located along both Perpendicular and Parallel Connections, with the intention to develop a consistent and continuous urban fabric within Districts. See also the Design Guidelines for Perpendicular and Parallel Connections.
- "Hold the corner" of buildings at intersections. Do not locate open spaces at intersections.
- Beveled building corners are acceptable in order to open site lines at intersections and encourage pedestrian movement, while maintaining a minimum build-to line of 80% along each street facade. In cases where beveled corners are used, locate primary entrances to the ground floor uses on the corner.
- In new Districts, the individual district master plan will outline the minimum and maximum requirements for building setbacks and build-to lines.
- For individual building projects, identify the setback and build-to patterns that are present in the District in which they are located. The location of structures should work within the established pattern of the District unless this pattern has otherwise been deemed undesirable. Schematic illustrations of the massing of the surrounding District will be required in order to review the proposal's compatibility with the established District and the overall design goals for Three Rivers Park.



- Where setbacks are necessary to create buffers between the public Connections and private development, employ the standards set out by the Landscaping Standards that will be developed as part of the Three Rivers Park Handbook. Further, development is encouraged to provide outdoor terraces and porches within the setback as a means for providing semi-private spaces for building occupants and encouraging use of the Park.

Ground Floor Design

Buildings located in Districts along Three Rivers Park will accommodate a variety of different uses, ranging from public to private. While publicly-oriented uses are generally encouraged along all district edges, there are also many opportunities to create residential communities adjacent to the Park.

- Where appropriate, promote mixed-use Districts by providing a minimum first floor height of 18' to accommodate a wide range of ground floor uses.
- In developing ground floor design for district edges and development along Perpendicular Connections, follow the standards identified for Connections in

Three Rivers Park.

- Where buildings are located adjacent to Riverfront Roads, locate primary entrances and addresses on the Riverfront Road.
- Locate service entrances away from Three Rivers Park and primary Connections to the Park.
- Where residential uses are located on the ground floor of a building, use terraces and elevation changes to provide semi-private entrances and outdoor spaces for residents, without impinging on the public nature of the Park.
- Where privacy is required, create screening through changes in floor height, landscaped setbacks or other devices rather than dark or reflective glazing.

Building Materials

- Compose buildings of materials with an "earth-bound" palette to enhance the quality of Three Rivers Park. These materials include stone, metal, glass, concrete and brick. Other materials may be used for trim but are not encouraged as a primary building material.
- Avoid the use of stucco, EIFS systems, wood and simulated wood products, one-way or mirror glass and spandrel glazing as primary building materials, except when used sparingly or as accent features.
- Encourage the creative uses of materials in order to reflect the overall character of the Park and the District.
- Use transparent glazing with minimal tinting in order to provide views from and into buildings. Make ground floor glazing 100% transparent, allowing clear views into and out of buildings.
- Use green-building products, as defined by the standards of the USGBC and similar rating systems, whenever possible.

Rooftop Design

- Incorporate roof terraces and balconies overlooking Three Rivers Park, for both public and private uses, in buildings located along the riverfront. Where appropriate, provide publicly-oriented uses, such as restaurants and cafes, in these locations.
- Create rooftop gardens to extend the landscape quality across new and unexpected places in the urban fabric.
- Whenever possible, construct landscaped roofs to reduce stormwater run-off, reduce heat island effects and add to the landscape quality of the Districts of Three Rivers Park.
- Incorporate rooftop mechanical equipment into the building design and shield it from view.

Connections

In providing access to, along, over and down to the rivers, Connections include: perpendicular streets and sidewalks leading to the rivers from neighborhoods; the spans and bases of bridges; riverfront esplanades; the inclines; the Light Rail Transit lines; and biking and walking trails. Whether they are routes traveled by car, by bike, by foot, or by watercraft, Connections lead to the rivers, along the rivers and connect the rivers back to the neighborhoods. Connections are not just about moving from one point to another, but also about enjoying the experience of the passage.

Characteristics of Connections

- Connections will return the rivers to the Public Realm through increased accessibility.
- Connections will be publicly accessible spaces even where they run along private development.
- Connections will vary in character, providing both quiet reflective threads linking destinations and lively inhabited promenades and vistas along the edges of Districts and through Landings.
- Public activities and events, such as sidewalk cafes, street fairs and vendors, will enliven the Connections, both as temporary and permanent installations.
- Connections will be occupied year-round on a variety of scales and activity levels. In the summer, they will provide tranquil shade along the riverfronts, while in the winter the sun will penetrate to warm the surface of the trails and promenades for recreational users and pedestrians alike.
- Parallel Connections between Landings, including Trails and River Roads, will provide a soft, green foil to the urban density and activity of these nodes.
- Perpendicular Connections will extend the grid of the City into the Park, providing increased public access to the riverfronts and providing contrast between the careful organization of the urban grid and the natural forms of the Waterscape and Landscape.
- Riverfront Trails will be simple and integrated with the Landscape, set within the boundaries of the Park and defined by the vegetation of the Park.
- Colors and materials are to be from an “earth-bound” palette of stone, metal, glass, concrete and brick.

Design Guidelines for Connections

Parallel Connections Along the Rivers

Parallel Connections will serve many different users and development sites. They provide the linkage of public access and views along the rivers and along private development, re-engaging the rivers as part of the Public Realm. Parallel Connections include Riverfront Trails, Promenades, Roads, and Scenic Roadways, each of which address a key issue of access along our rivers.

Riverfront Trails

Trails are Riverfront Connections that place emphasis on moving along the river for longer distances as a pedestrian, runner, cyclist or rollerblader. Trails place emphasis on Riverfront Connections for recreational uses, and as such should be designed with those users in mind.

- In general, contain the trail within a canopy of deciduous trees, providing shade in the summers and allowing sunlight to penetrate in cooler months.
- Plant dense trees and other tall landscaping materials continuously along the inboard side of the Trail, creating a background of green that engages the Trail within Three Rivers Park. Green slopes with naturalized plantings to create a sense of enclosure within the Park are an acceptable alternative where tree planting is not possible or desired.

The Trail should move in and out of the tree canopy, opening to provide views to the rivers and closing again to provide a sense of intimacy and enclosure.

- On the river side of the Trail, design the tree canopy to open and close, creating new views both to and from the Trail. Create views of the Golden Triangle.
- Avoid planting trees in even rhythms such as those typically used in street tree plantings. Plant them in groups with varying densities.

- Avoid railings along Trails wherever possible. Where they are provided for safety, railings should be designed with colors and finishes that relate to the earth-bound palette of materials identified for Three Rivers Park.
- Locate light fixtures, trashcans, signage and other necessities discretely in the landscape of the Trails. Provide drinking fountains, mileage markers, maps and informational signage, integrating them with the landscape. Locate emergency call-boxes at frequent intervals to provide additional safety and security.
- Wherever possible, provide a dual-surface Trail. Provide a crushed limestone surface for pedestrians and runners and a hard surface for bikes and rollerblades.
- Provide a consistent finished edge along the Trail.
- Design Trails to have light-colored and non-glare surfaces, such as limestone, concrete or white asphalt.
- Creative trail design, such as the development of low-impact boardwalks and walkways, are encouraged in appropriate locations. Recommended applications include locations where such designs will minimize the disturbance of habitats.

- Consider alternatives to asphalt as a surfacing material for Connections in and to Three Rivers Park. Where the use of asphalt is dictated by the construction of temporary Connections or budgetary constraints, use an asphalt material that will provide a light-colored surface, such as through the addition of limestone to the aggregate. Provide a finished edge along the Connection in order to provide a clean, high-quality boundary to the surface.
- Black asphalt is highly discouraged as a trail surface material. Light-colored asphalt surfaces can be achieved through the use of limestone aggregates or colored sealants and hot mixes. Concrete paving is encouraged for hard-surface Trails in the vicinity of Downtown.

Riverfront Promenades

Riverfront Promenades, which open up the views of the rivers and integrate the urban character of the City with the pastoral nature of the Park, can occur where Landings intersect Connections along Three Rivers Park and where urban Districts are adjacent to the riverfront. Promenades are generally more pedestrian in character, rather than recreational. Promenades are places to see and to be seen.

- Use higher quality materials, such as stone paving, for Promenades.
- Where the introduction of surfacing materials along a Promenade may interrupt the established path of Riverfront Trails and discourage rollerbladers and cyclists, consider alternative routes for these users. Alternatives include the provision of a "high" Promenade paved with stone, where pedestrians and shoppers might stroll, in conjunction with a "low" Trail along the river, surfaced with concrete or crushed stone. Other recommendations include providing clear routing along adjacent streets, marking access points that will rejoin the Riverfront Trail.

Promenades occur at the intersection of different riverfront activities. They provide opportunities to experience the river from a different vantage point.

- Promenades along Three Rivers Park are considered to be located within the Park. Plant trees within 15' of the river edge of the Promenade.
- Where required, provide railings along Promenades with colors and finishes that relate to the earth-bound palette of materials identified for Three Rivers Park.
- Plant dense landscaping below the front edge of Promenades in order to frame views and give the user the sense of vantage point that comes from sitting above the trees.
- For buildings located along Promenades, provide ground floor uses that are public in nature, including civic, cultural, retail, entertainment, restaurants and public lobbies.
- Consider the issue of color for Promenade surfaces. Warm-colored paving will seem warmer in the gray winters, while cool colors will seem cooler in the summers. Use light-colored, but non-glare, walking surfaces at Landings or other points of interest where more focus is intended.

Riverfront Roads

Riverfront Roads have the potential to be an exciting and different experience of Three Rivers Park, and to create new opportunities for development adjacent to them. They can create access to areas of the Park that would otherwise be difficult for persons with limited mobility to reach. At the same time, care must be taken in designing and locating Riverfront Roads to ensure that access to the Riverfront is not restricted by the presence of vehicular streets, and with pedestrians as a primary consideration. Riverfront Roads should be perceived as an extension of Three Rivers Park.

- Limit Riverfront Road width to no more than two lanes of traffic and one lane of on-street parking. The maximum width for Riverfront Roads is 34', including two lanes of traffic and one lane of on-street parking on the land side of the Road. The preferred width is 30'.
- The 50' minimum for the riverfront setback and Trail applies along all Riverfront Roads.
- Provide 12' for sidewalk with street trees on the river side of the Riverfront Road. Where space is limited, the Trail may substitute for the river side sidewalk.

Riverfront Roads will provide new addresses along the rivers and ensure public access to the water's edge. They will be low-scale and oriented to the pedestrian.

- Provide 8' minimum to 12' maximum for an inboard sidewalk with street trees on the land side of the Riverfront Road.
- Orient Riverfront Roads to pedestrians and light traffic. Truck and delivery traffic are not appropriate on Riverfront Roads.
- Post maximum speeds of 25 miles per hour on Riverfront Roads, with traffic calming measures integrated in pedestrian districts at intervals no more than 400' – 600'.
- Provide pedestrian crossings not less than 600' apart. Prove a change of street paving at pedestrian crossings that provides a variation in texture and color.
- Plant Riverfront Roads with dense tree canopies and views to the rivers provided below the canopies.
- Locate primary addresses and entrances to buildings on the Riverfront Road.
- Encourage residential uses along Riverfront Roads.

Scenic Roadways

Scenic Roadways are those roads and highways located away from the rivers, which, due to topographical conditions, provide scenic views into Three Rivers Park and the river valleys of Pittsburgh. Many of the premier views of the City and its rivers are seen from roadways and it is important to continue to preserve and enhance these views as part of Three Rivers Park. Scenic Roadways for Three Rivers Park include: Grandview Avenue, Bigelow Boulevard, Boulevard of the Allies, Ohio River Boulevard/ Route 28 and West Carson Street.

- Maintain views from Scenic Roadways into Three Rivers Park and the river valleys through the careful selection of structural elements including barriers, during road design and construction.
- Provide landscaping and street trees for Scenic Roadways in order to enhance the roads as green boulevards through the City.

Scenic Roadways trace the contours of the river valleys, providing exciting views up and along the rivers. They are also highly visible from the rivers.

- Utilize high-quality materials for the reconstruction of Scenic Roadways, including concrete sidewalks.
- Maintain landscaping on and adjacent to Scenic Roadways in accordance with the maintenance for Three Rivers Park.
- Consider the impact of reconstruction on views to and from the Scenic Roadways. Considerations include the use of appropriately-designed barriers, the selection of streetlights, location of billboards and the design of retaining walls and other structural elements.

Perpendicular Connections to the Rivers

Perpendicular Connections are generally pedestrian connections to Three Rivers Park that extend the City to the rivers. They provide the transition from the urban scale of Districts and neighborhoods to the intimate scale of Three Rivers Park. Perpendicular Connections are public streets and easements across development sites.

Major Perpendicular Connections

Major Perpendicular Connections are those that provide connection between the City and Landings. They are public streets, providing both pedestrian and vehicular access to the Park. They provide connections to public transit, major attractions and other publicly-oriented uses. One of the key considerations for buildings located along Major Perpendicular Connections is the perception of the street as a continuous place, from

building face to building face. The design of the building wall and landscaping along the Connection will have a great impact on the character of the street.

- Locate publicly-oriented uses in ground floors along Major Perpendicular Connections, including retail shops and restaurants.
- Maintain established build-to lines along Major Perpendicular Connections. Where retail and restaurant uses will be located, provide for sidewalk café seating and arcaded ground floors where appropriate.

The view down Allegheny Avenue illustrates the potential of the road to be developed as a passageway to Three Rivers Park.

- Maintain a ground floor height of 18’ minimum along Major Perpendicular Connections, in order to accommodate retail, restaurant and other public uses.
- Minimize curb-cuts along Major Perpendicular Connections. Do not locate service entrances along major Perpendicular Connections.
- At a minimum, meet the City’s standards for street trees, lighting, sidewalks and curbs for Downtown Pittsburgh along Major Perpendicular Connections.
- Major Perpendicular Connections will have sidewalks that are wider than those on secondary streets with the added intent to create opportunities for special spaces.

Perpendicular Connections Along Private Uses

In many cases, Connections to Three Rivers Park will be provided along the edges or through private development that is not generally open to the public, such as residential and private office development. In these cases, it is important to clearly define the Connection as a public space. In addition, it is important to stress that the Connection does not “belong” to the development but is a part of Three Rivers Park.

- Provide a minimum walkway width of 12' for Perpendicular Connections to be maintained as an easement or public right-of-way. Provide a minimum setback for all structures, including fences, of 10' on either side of the Connection. Landscape the setback in accordance with the Three Rivers Park Landscaping Standards (forthcoming).
- Provide a dense tree canopy to define the edges of the passageway, while focusing attention to the view to the rivers. The Three Rivers Park Landscaping standards will provide additional recommendations on tree selection and spacing.
- Fences along private spaces that border Connections should have a maximum opacity of 50% and a maximum height of 48". Additional screening and enclosure is to be achieved through the use of landscaping materials and changes in elevation.
- In general, for private uses located along Connections, elevate the first level of the building several feet above grade through the use of terraces and porches. This will

provide some visual privacy between the private use and the Public Realm, as well as create new opportunities for "semi-public" spaces where the occupants of the building may enjoy living or working adjacent to Three Rivers Park.

- Provide a finished edge to the Connection.
- Design the surface of the Connection to be consistent with the materials of the Trail or Promenade to which it connects. At minimum, provide a crushed limestone surface.
- Provide pedestrian-scaled lights in keeping with the Three Rivers Park lighting standards.
- Provide pedestrian crosswalks where Perpendicular Connections meet a street.

Perpendicular Connections that are located along private uses ensure public access to the riverfront, while providing buffers to private property.

- If provided, locate public amenities, such as seating, maps, etc., at the ends of the Connection, rather than on the Connection. Such amenities can be used to create a focal point, drawing attention to the intersection of the Perpendicular Connection with the Trail. This can encourage users to move along the Connection, rather than occupying the Connection for long periods, which might create conflicts between private owners on sites immediately adjacent to the Connection. Select amenities that are consistent with the earth-bound palette of materials for Three Rivers Park.

Perpendicular Connections Along Public Uses

In places where Perpendicular Connections cross development that includes public uses, such as retail, restaurant and entertainment occupancies, the Connections provide opportunities to enhance the development, create additional public open-space and engage those adjacent uses. Perpendicular Connections along public uses can be designed to serve as public plazas and gateways to the riverfront. They are encouraged to be inhabited spaces, providing amenities to both users and business owners. Ground floor uses should be oriented to the Connection and seek to engage the public.

- Provide storefront glazing, extending from the ground to a minimum height of 12'. Wrap the storefront glazing around the corners of the buildings, providing visual connections to the publicly-oriented uses from all approaches.
- Locate public entrances to ground floor uses along the Perpendicular Connection. Sidewalk cafes are

Perpendicular Connections located along publicly-oriented uses can become public spaces, occupied by sidewalk cafes, seating, and vendors, providing new street life.

encouraged as uses along the Perpendicular Connection.

- Where the Perpendicular Connection intersects a street, maintain wide pedestrian crossings that are on axis with the Connection.
- Provide curb-cuts at these crossings to accommodate people of all levels of mobility, but install removable bollards to control vehicular access.
- Design the pattern of street lights and trees along the road that is intersected by a Perpendicular Connection to relate to the Connection. Maintain views down the Connection towards the rivers from the opposite side of road and keep them uninterrupted by street trees and lights.

Design Guidelines for Perpendicular Connections Across and Down To the Rivers

Connections across and down to the rivers are provided primarily at the bridges that span over and touch the banks of the three rivers. Bridges provide one of the most characteristically "Pittsburgh" experiences of Three Rivers Park and also provide many of the key views of the City and Park. It is critical to the success of Three Rivers Park that easily navigable pedestrian connections be made from the ends of the bridges to the Riverfront Trails, Promenades and Roadways. Such access will be made through the development of Vertical Connections, including stairs, ramps and elevators.

- Preserve the architectural character and details of bridges in renovations.
- New bridges should respect views, site lines and form.
- Light bridges and Vertical Connections according to the standards developed as part of the Lighting Plan for Three Rivers Park.
- Accommodate users of different mobility levels on Vertical Connections, including pedestrians, rollerbladers, cyclists and persons with limited mobility in accordance with ADA requirements.
- Clearly mark access points to Vertical Connections from Trails and Promenades.

Landings

Landings occur where two or more of the above Elements come together and provide focal points for activity and connection at the water's edge. Landings can be the public places that people are drawn to for special events or activities and serve as destinations and landmarks. They can bring together transit systems and activity centers. They are places where people find distinctive experiences along Pittsburgh's rivers. Landings provide opportunities for design and physical intervention.

Characteristics of Landings

- Landings will be transition and connective points between Three Rivers Park and the community, with access to the trails, esplanades, promenades and transit connections.

- Landings will be engaging and lively public places, with individual and unique character. Landings will be well-designed to serve as places of activity and offer contrast to the natural elements of Three Rivers Park.

- Occupied by both groups and individuals, Landings will provide opportunities for gathering and meeting spaces for daily use or special events.

- Landings will be comprised of a series of spaces that vary in size and purpose and serve those who use Three Rivers Park daily or for an occasional or one-time visit.

Appendix C *(Chapter 3: Water Resources)*

Historic / Culverted Streams

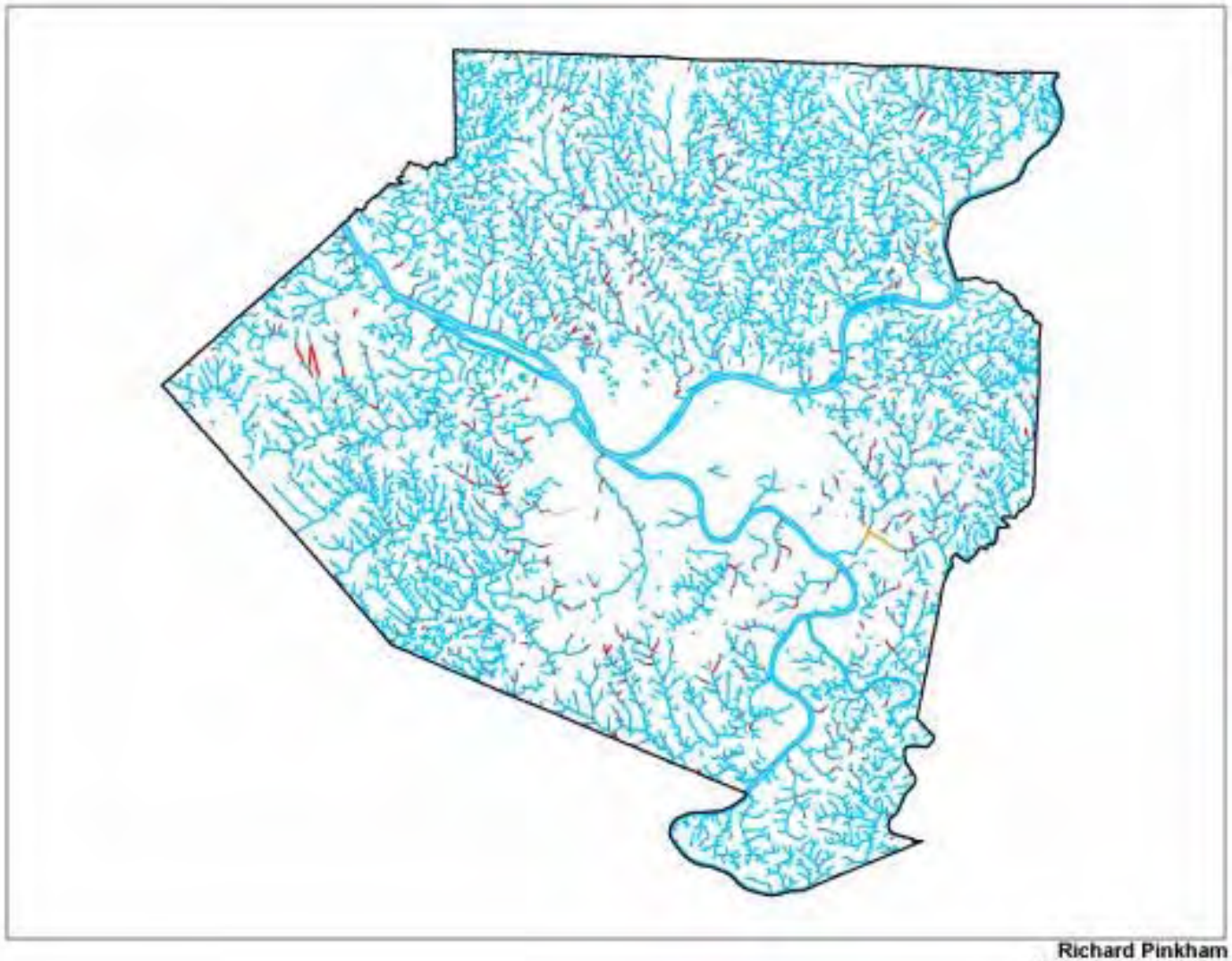


Figure 2
Stream Status 1992/1993
Allegheny County, Pennsylvania

Allegheny County Boundary

Allegheny County GIS Data

Code

Uncoded
Open Stream
Channelized Stream
Culverted Stream

3Rivers 2nd Nature

Richard Pinkham
WaterShed Analysis

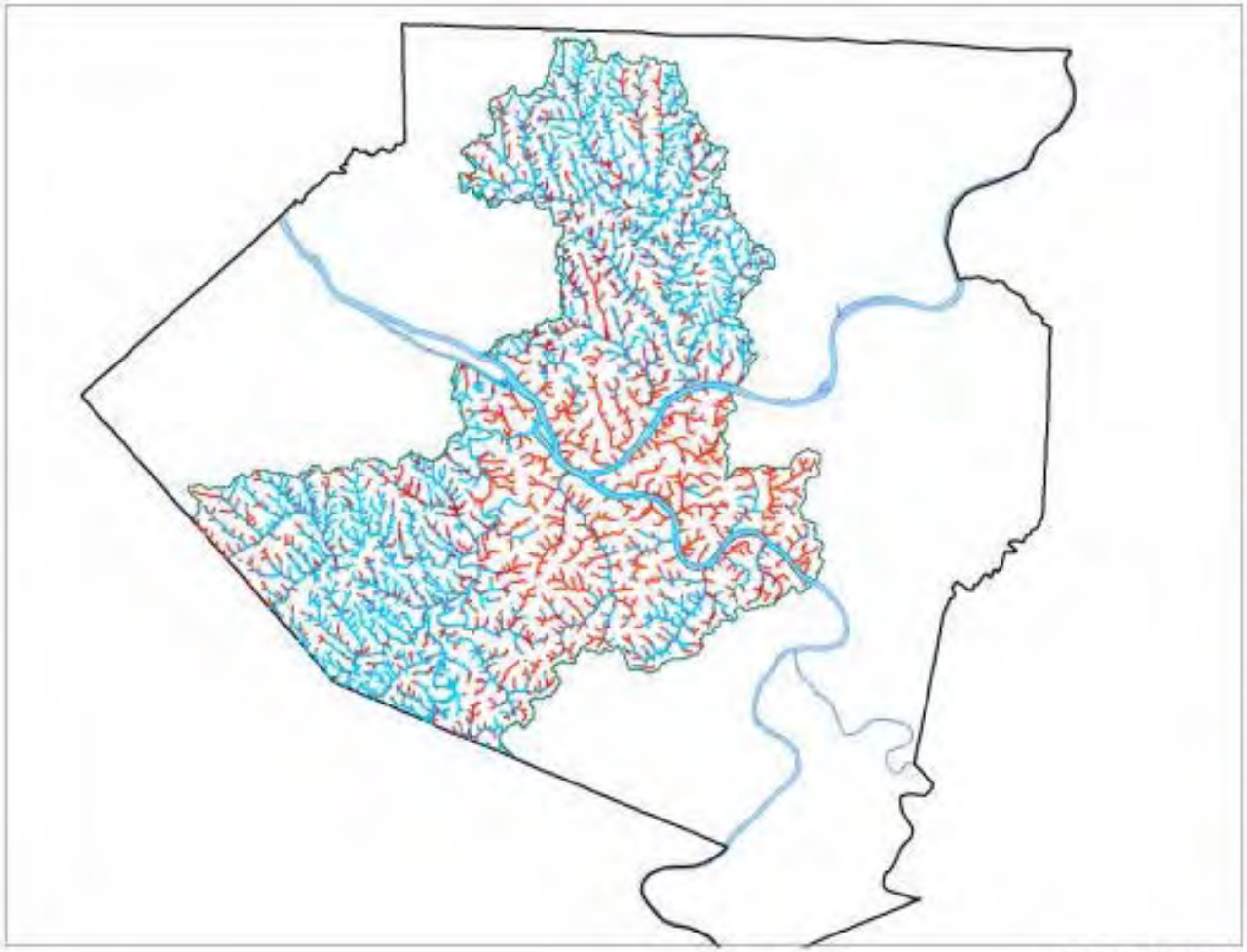


Figure 3
Revised Stream Status 1992/1993
Allegheny County, Pennsylvania

Uncoded
Open Stream
Channelized
Known Culverted Streams per Allegheny County GIS or Likely Culverted Stream per USGS DEM Analysis

3Rivers 2nd Nature

Richard Pinkham
WaterShed Analysis

Carnegie Mellon

ACT 167 Stormwater Management Plans

Pennsylvania's Stormwater Management Program came out of the Stormwater Management Act (Act 167) of 1978. Under the Program, counties develop stormwater management plans for watersheds within the county boundaries. Municipalities then develop ordinances that meet the specifications of the county plans. When construction or other land disturbances take place, the developers must follow the guidelines set forth for stormwater management. See Chapter 3-B-1 for more details.

The following major watersheds of Allegheny County are within the Three Rivers Conservation Plan corridor:

Major Watersheds within the Three Rivers Plan Corridor	Municipalities within the watersheds included in the Three Rivers Plan	Has an ACT 167 Stormwater Management Plan
Squaw Run	Aspinwall, Blawnox, Fox Chapel, Harmar, O'Hara, Pittsburgh	Yes
Allegheny River	Aspinwall, Fox Chapel, O'Hara, Penn Hills, Pittsburgh, Sharpsburg, Verona	No
Pine Creek	Etna, O'Hara, Ross, Shaler	Yes
Girty's Run	Millvale, Pittsburgh, Reserve, Ross, Shaler	Yes
Lowries Run	Avalon, Bellevue, Ben Avon, Ben Avon Heights	No
Ohio River	Kilbuck	No
Chartiers Creek	Kennedy, McKees Rocks, Stowe	No
Sawmill Run	Pittsburgh	No
Monongahela River	Baldwin, Pittsburgh	Yes

Source: Planning & Project Division of Allegheny County Economic Development, PA DEP
http://www.dep.state.pa.us/dep/deputate/watermgt/wc/subjects/stormwatermanagement/default.htm

Appendix D *(Chapter 4: Biological Resources)*

2002 Christmas Bird Count
2002 Migration Count
Voyager Bird Sitings
PA Aquatic Natural Community Classification Project
Voyager Macroinvertebrate Sitings
Riparian Zone Plants in the Pittsburgh Area

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Count Are	Fox Cha	Fr. Park	Hampto	Indiana	Kilbuck	North Pa	Oakmor	O'Hara	Penn Hill	Pittsburg	Ross &	Shaler	Total	Ten Year Avg		Notes
2	Species							Harmar Twp.				McCandless				Species	
3	Pied-billed Grebe										1			1	4	Pied-billed Grebe	
4	D.-cr. Cormorant										4			4	1	D.-cr. Cormorant	
5	Great Blue Heron	1					3		1		7		1	13	19	Great Blue Heron	
6	Canada Goose	28				39	341	30	372		161		14	985	859	Canada Goose	Third highest total.
7	Wood Duck										1			1	1	Wood Duck	
8	Am. Black Duck							1			4		2	7	21	Am. Black Duck	
9	Mallard			292		30	152	42	8	28	400	75	78	1105	1607	Mallard	
10	Bufflehead										3			3	5	Bufflehead	
11	Hooded Merganser										18			18	12	Hooded Merganser	
12	Common Merganser										4			4	1	Common Merganser	Best since 1977.
13	Sharp-shinned Hawk	1		2		1			1		2		1	8	9	Sharp-shinned Hawk	
14	Cooper's Hawk		2	3		4		1	2		5		1	18	13	Cooper's Hawk	Ties record set in 1995.
15	accipiter, sp.				2									2		accipiter, sp.	
16	Red-tailed Hawk	2	4	7	3	8	3	1	4	7	23	13	10	85	66	Red-tailed Hawk	New record (82 in 1996).
17	American Kestrel				1	1					1			3	5	American Kestrel	
18	Merlin										1		1	2	2	Merlin	Sixth year in a row.
19	Peregrine Falcon										1			1	1	Peregrine Falcon	Seen seven of last eight years.
20	Wild Turkey	24	4		1	33	2	2		22	6	14		108	66	Wild Turkey	Second best year.
21	American Coot										5			5	7	American Coot	
22	Ring-billed Gull							8		1	282		1	292	683	Ring-billed Gull	An off year for this species.
23	Herring Gull					2		2			32		1	37	74	Herring Gull	
24	gull sp.					14				1				15		gull sp.	
25	Rock Dove		40	60		76		54	90	40	921	30	117	1388	1651	Rock Dove	
26	Mourning Dove	5	34	14	51	53	17	32	89	156	340	28	164	983	1005	Mourning Dove	
27	E. Screech Owl			2		1	3	1		3	5		1	16	18	E. Screech Owl	
28	Great Horned Owl	2		2		2							2	8	10	Great Horned Owl	
29	Belted Kingfisher	1	1	3			1	1			5		1	13	12	Belted Kingfisher	
30	Red-bellied Woodpecke	10	10	14	22	38	22	6	14	11	50	22	18	237	151	Red-bellied Woodpecker	New record (206 in 2001).
31	Yellow-bellied Sapsucker						1		1		3		1	6	6	Yellow-bellied Sapsucker	
32	Downy Woodpecker	7	12	12	12	13	14	9	12	5	51	13	20	180	249	Downy Woodpecker	
33	Hairy Woodpecker	5		6	3	5		2	4	3	8	2	5	43	54	Hairy Woodpecker	
34	Northern Flicker	1		3	1	5	1	2	4		9	1	4	31	37	Northern Flicker	
35	Pileated Woodpecker			3	2	1	1	1		1	2	2		13	13	Pileated Woodpecker	
36	Blue Jay	17	24	36	62	71	37	19	46	32	118	41	36	539	445	Blue Jay	
37	American Crow	26	16	59	72	126	59	33	336	798	1418	71	103	3117	1112	American Crow	New record (1430 in 2000).
38	Black-capped Chickad	10	2	17	35		52	5	18		5	31	39	214	308	Black-capped Chickadee	
39	Carolina Chickadee	1	3			3		3			73		7	90	153	Carolina Chickadee	
40	chickadee, sp.		7	28	12	113	18	12	5	17	1			213	322	chickadee, sp.	
41	Tufted Titmouse	20	32	71	36	89	47	12	25	18	56	26	35	467	545	Tufted Titmouse	
42	Red-breasted Nuthatch			1	2									3	10	Red-breasted Nuthatch	
43	White-breasted Nuthato	9	10	38	18	16	22	3	9		29	8	18	180	225	White-breasted Nuthatch	
44	Brown Creeper	1	1	1		1	3							7	12	Brown Creeper	
45	Carolina Wren	7	14	20	11	18	18	5	17	19	63	21	22	235	181	Carolina Wren	Highest total since 1991.
46	Winter Wren		1								1			2	3	Winter Wren	
47	Golden-crowned Kinglet			5	2		5			2		1	6	21	21	Golden-crowned Kinglet	
48	Ruby-crowned Kinglet							1						1	1	Ruby-crowned Kinglet	
49	Eastern Bluebird		10		11									21	15	Eastern Bluebird	Second best year.
50	American Robin	23		1	15	47	12	1	13	15	91	8	36	262	797	American Robin	
51	Northern Mockingbird		2		3	1	2		2	1	13	2	2	28	16	Northern Mockingbird	New record (22 in 2001).

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
52	Cedar Waxwing	3	15		5						14			**37**	80	Cedar Waxwing	
53	European Starling	3	113	15	1	206	6	251	358	126	856	41	149	**2125** ✓	2703	European Starling	
54	Yellow-rumped Warbler							1	1					**2**	5	Yellow-rumped Warbler	
55	Northern Cardinal	23	24	61	69	97	67	31	65	38	144	51	85	**755** ✓	769	Northern Cardinal	
56	Eastern Towhee					2						1		**3**	3	Eastern Towhee	
57	American Tree Sparrow		1	3	1		11	1		6				**23**	25	American Tree Sparrow	
58	Field Sparrow				16			1						**17**	6	Field Sparrow	Highest total since 1991.
59	Song Sparrow	4	16	38	6	19	50	21	12	14	70	19	28	**297** ✓	280	Song Sparrow	
60	Lincoln's Sparrow						1							**1**	0	Lincoln's Sparrow	
61	Swamp Sparrow						1							**1**	1	Swamp Sparrow	
62	White-throated Sparrow	15	10		6	12	13	5	15	31	114	14	28	**263**	203	White-throated Sparrow	
63	Dark-eyed (s.c.) Junco	9	31	78	71	77	93	38	69	33	159	19	56	**733**	681	Dark-eyed (s.c.) Junco	
64	Purple Finch					1								**1**	2	Purple Finch	
65	House Finch	8	21	6		40	4	10	52	45	119	69	56	**430**	985	House Finch	Lowest since 1979.
66	American Goldfinch	3	30	73	30	21	5	10	30	22	75	3	53	**355**	348	American Goldfinch	
67	House Sparrow	7	13	30	29	113	24	110	81	138	418	112	149	**1224**	1428	House Sparrow	
68																	
69																	
70	Total Species	31	29	28	30	37	34	37	30	28	49	28	38	**62**	67	Total Species	Worst since 1965.
71	Total Individuals	276	503	1004	611	1399	1111	768	1716	1633	6192	738	1351	**17302**	18421	Total Individuals	

Here Are Species Tallies for 2002 Migration Count

Using sharp eyes and ears in Allegheny County, 48 observers found 132 species of birds May 11, 2002, on the North American Migration Count. As noted in last month's issue, this was the county's second highest total of species in eight years of conducting the count on the second Saturday in May. Following are the numbers of each species tallied, which will be reported with other counties' totals statewide in the journal Pennsylvania Birds.

Double-crested Cormorant 11
Great Blue Heron 30
Green Heron 6
Turkey Vulture 23
Canada Goose 260
Wood Duck 12
Mallard 126
Hooded Merganser 2
Northern Harrier 1
Sharp-shinned Hawk 6
Cooper's Hawk 3
Red-shouldered Hawk 1
Broad-winged Hawk 2
Red-tailed Hawk 38
American Kestrel 3
Peregrine Falcon 2
Wild Turkey 17
Killdeer 19
Solitary Sandpiper 4
Spotted Sandpiper 13
Least Sandpiper 4
Ring-billed Gull 2
Herring Gull 24
Rock Dove 52
Mourning Dove 116
Black-billed Cuckoo 7
Yellow-billed Cuckoo 8
Eastern Screech-Owl 1
Great Horned Owl 1
Common Nighthawk 2
Chimney Swift 72
Ruby-throated Hummingbird 16
Belted Kingfisher 7
Red-bellied Woodpecker 87
Downy Woodpecker 31
Hairy Woodpecker 10
Northern Flicker 67
Pileated Woodpecker 20
Eastern Wood-Pewee 5
Acadian Flycatcher 12
Willow Flycatcher 1
Least Flycatcher 6
flycatcher (species?) 5
Eastern Phoebe 25
Gr. Crested Flycatcher 4
Eastern Kingbird 4
White-eyed Vireo 7
Yellow-throated Vireo 9
Blue-headed Vireo 2
Warbling Vireo 14
Philadelphia Vireo 10
Red-eyed Vireo 173
Blue Jay 176
American Crow 191
Horned Lark 1
Tree Swallow 36
N. Rough-winged Swallow 66
Barn Swallow 64
Carolina Chickadee 55
Black-capped Chickadee 23
chickadee (species?) 10
Tufted Titmouse 144
Red-breasted Nuthatch 5
White-breasted Nuthatch 31
Carolina Wren 100
House Wren 47
Ruby-crowned Kinglet 18
Blue-gray Gnatcatcher 27
Eastern Bluebird 41
Veery 10
Swainson's Thrush 12
Hermit Thrush 2
Wood Thrush 88
American Robin 588
Gray Catbird 226
Northern Mockingbird 15
Brown Thrasher 3
European Starling 255
Cedar Waxwing 6
Blue-winged Warbler 14
Tennessee Warbler 28
Nashville Warbler 24
Northern Parula 8
Yellow Warbler 113
Chestnut-sided Warbler 50
Magnolia Warbler 73
Cape May Warbler 4
Black-throated Blue Warbler 18
Yellow-rumped Warbler 81
Black-throated Green Warbler 49
Blackburnian Warbler 15
Yellow-throated Warbler 2
Prairie Warbler 6
Palm Warbler 1
Bay-breasted Warbler 26
Blackpoll Warbler 2
Cerulean Warbler 7
Black-and-white Warbler 8
American Redstart 63
Worm-eating Warbler 2
Ovenbird 14
Louisiana Waterthrush 4
Kentucky Warbler 12
Common Yellowthroat 43
Hooded Warbler 25
Wilson's Warbler 5
Canada Warbler 6
Yellow-breasted Chat 3
Scarlet Tanager 91
Eastern Towhee 144
Chipping Sparrow 112
Field Sparrow 54
Vesper Sparrow 3
Savannah Sparrow 3
Grasshopper Sparrow 15
Henslow's Sparrow 1
Song Sparrow 173
Swamp Sparrow 2
White-throated Sparrow 15
White-crowned Sparrow 4
Northern Cardinal 289
Rose-breasted Grosbeak 56
Indigo Bunting 116
Bobolink 1
Red-winged Blackbird 207
Eastern Meadowlark 24
Common Grackle 296
Brown-headed Cowbird 73
Orchard Oriole 16
Baltimore Oriole 170
Purple Finch 7
House Finch 58
American Goldfinch 257
House Sparrow 140

Pittsburgh Voyager **April 1995 to December 2002**	**Bird Sitings**
American Black Duck	16
American Coot	50
American Crow	324
American Gold Finch	16
American Kestrel	3
American Robin	33
American Wigeon Duck	1
Bald Eagle	6
Bank Swallow	90
Barn Swallow	6
Belted Kingfisher	176
Black Capped Chickadee	1
Black-crowned Night Heron	4
Black duck	3
Black Legged Kittiwake	1
Black Scoter	3
Blue Jay	45
Bonaparte's Gull	1
Broad-winged Hawk	1
Bufflehead	111
Canada Goose	968
Cardinal	12
Chickadee	1
Cliff Swallow	1
Common Goldeneye	1
Common Grackle	15
Common Loon	9
Common Merganser	6
Cooper's Hawk	1
Coot	2
Crow	130
Domestic Duck	142
Domestic Goose	32
Double-crested Cormorant	260
eastern bluebird	1
European Starling	25
Falcon	2
Goldfinch	4
Goose	11
Grackel	11
Great Blue Heron	728
Great Egret	1
Great Horned Owl	28
Grebe	3
Green Heron	6
Gull	287
Hawk	26
Herring Gull	330
Hooded Merganser	18
Horned Grebe	3
House Sparrow	29
Hummingbird	1
Killdeer	16
Kingfisher	48
Lesser Scaup	17
Loon	5
Mallard	1234
Merlin	1
Mourning Dove	16
Mute Swan	161
Northern Cardinal	25
Northern Rough Winged Swallow	131
Osprey	105
Peregrine Falcon	11
Pied-billed Grebe	13
Pigeon	208
Pintail	2
Plover	1
Purple Martin	5
Red-breasted Merganser	6
Red-tailed Hawk	235
Red-winged Blackbird	12
Ring-billed Gull	355
Ring-necked Duck	2
Ring-necked Pheasant	1
Robin	20
Rock Dove	525
Ruddy Duck	9
Ruffed-Winged Swallow	15
Sand Piper	3
Snow Goose	4
Sparrow	73
Spotted Sandpiper	2
Starling	12
Swallow	58
Swan	2
Swift	8
Tern	3
Tree Swallow	33
Tundra Swan	2
Turkey	8
Turkey Vulture	68
Whisling Swan	7
Wild Turkey	5
Wood Duck	28
Wren	2
Yellow-Bellied Chickedee	1
Yellow Shafted Flicker	1

Sitings refer to the number of occasions or Voyager trips that a particular bird was observed. Sitings do not refer to the number of that species observed. For example, over the time period of 1995 - 2002, Grebes were observed on three occasions, although there may have been several Grebes observed on those occasions.

PA Aquatic Natural Community Classification Project

Benthic Macroinvertebrates in the Ohio, Monongahela, and Allegheny Rivers (information provided by ORSANCO)

River	Order	Family	Genus	Species
MONONGAHELA	AMPHIPODA	GAMMARIDAE	GAMMARUS	FASCIATUS
MONONGAHELA	BASOMMATOPHORA	PHYSIDAE	PHYSA	SP.
MONONGAHELA	BASOMMATOPHORA	PLANORBIDAE	MENETUS	DILATATUS
MONONGAHELA	CLADOCERA	SIDIDAE	SIDA	CRYSTALLINA
MONONGAHELA	COLEOPTERA	ELMIDAE	DUBIRAPHIA	SP.
MONONGAHELA	COLEOPTERA	ELMIDAE	MACRONYCHUS	GLABRATUS
MONONGAHELA	DIPTERA	CHAOBORIDAE	CHAOBORUS	PUNCTIPENNIS
MONONGAHELA	DIPTERA	CHIRONOMIDAE	ABLABESMYIA	MALLOCHI
MONONGAHELA	DIPTERA	CHIRONOMIDAE	ABLABESMYIA	PARAJANTA
MONONGAHELA	DIPTERA	CHIRONOMIDAE	CONCHAPELOPIA	SP.
MONONGAHELA	DIPTERA	CHIRONOMIDAE	CRICOTOPUS	BICINCTUS
MONONGAHELA	DIPTERA	CHIRONOMIDAE	CRICOTOPUS	SYLVESTRIS
MONONGAHELA	DIPTERA	CHIRONOMIDAE	CRICOTOPUS	TREMULUS
MONONGAHELA	DIPTERA	CHIRONOMIDAE	CRICOTOPUS	TRIFASCIA
MONONGAHELA	DIPTERA	CHIRONOMIDAE	CRICOTOPUS	VIERRIENSIS
MONONGAHELA	DIPTERA	CHIRONOMIDAE	DICROTENDIPES	NEOMODESTUS
MONONGAHELA	DIPTERA	CHIRONOMIDAE	DICROTENDIPES	NERVOSUS
MONONGAHELA	DIPTERA	CHIRONOMIDAE	DICROTENDIPES	SP.
MONONGAHELA	DIPTERA	CHIRONOMIDAE	GLYPTOTENDIPES	SP.
MONONGAHELA	DIPTERA	CHIRONOMIDAE	NANOCLADIUS	DISTINCTUS
MONONGAHELA	DIPTERA	CHIRONOMIDAE	PARAKIEFFERIELLA	BATHOPHILA
MONONGAHELA	DIPTERA	CHIRONOMIDAE	PARAMETRIOCNEMUS	LUNDBECKI
MONONGAHELA	DIPTERA	CHIRONOMIDAE	PHAENOPSECTRA	SP.
MONONGAHELA	DIPTERA	CHIRONOMIDAE	POLYPEDILUM	HALTERALE
MONONGAHELA	DIPTERA	CHIRONOMIDAE	POLYPEDILUM	ILLINOENSE
MONONGAHELA	DIPTERA	CHIRONOMIDAE	POLYPEDILUM	SCALAENUM
MONONGAHELA	DIPTERA	CHIRONOMIDAE	PSEUDOCHIRONOMUS	SP.
MONONGAHELA	DIPTERA	CHIRONOMIDAE	THIENEMANNIMYIA	SP.

MONONGAHELA	DIPTERA	CHIRONOMIDAE	TRIBELOS	FUSCICORNE
MONONGAHELA	DIPTERA	CHIRONOMIDAE	TANYTARSUS	SP.
MONONGAHELA	EPHEMEROPTERA	CAENIDAE	CAENIS	AMICA
MONONGAHELA	EPHEMEROPTERA	HEPTAGENIIDAE	STENACRON	GILDERSLEEVEI
MONONGAHELA	EPHEMEROPTERA	HEPTAGENIIDAE	STENACRON	INTERPUNCTATUM
MONONGAHELA	EPHEMEROPTERA	TRICORYTHIDAE	TRICORYTHODES	SP.
MONONGAHELA	HAPLOTAXIDA	NAIDIDAE		SP.
MONONGAHELA	HAPLOTAXIDA	NAIDIDAE	DERO	SP.
MONONGAHELA	HAPLOTAXIDA	NAIDIDAE	NAIS	COMMUNIS
MONONGAHELA	HAPLOTAXIDA	NAIDIDAE	NAIS	SP.
MONONGAHELA	HYDROIDA	HYDRIDAE	HYDRA	SP.
MONONGAHELA	MESOGASTROPODA	HYDROBIIDAE	SOMATOGYRUS	SP.
MONONGAHELA	NEMATODA			SP.
MONONGAHELA	ODONATA	COENAGRIONIDAE	ENALLAGMA	SP.
MONONGAHELA	OSTRACODA (CLASS)			SP.
MONONGAHELA	TRICHOPTERA	HYDROPSYCHIDAE	CHEUMATOPSYCHE	SP.
MONONGAHELA	TRICHOPTERA	HYDROPTILIDAE	HYDROPTILA	SP.
MONONGAHELA	TRICHOPTERA	POLYCENTROPODIDAE	CYRNELLUS	FRATERNUS
MONONGAHELA	TRICHOPTERA	POLYCENTROPODIDAE	CYRNELLUS	SP.
MONONGAHELA	TRICLADIDA			SP.
MONONGAHELA	TRICLADIDA	PLANARIIDAE	CURA	FOREMANII
MONONGAHELA	TRICLADIDA	PLANARIIDAE	DUGESIA	TIGRINA
OHIO	AMPHIPODA	GAMMARIDAE	GAMMARUS	FASCIATUS
OHIO	AMPHIPODA	GAMMARIDAE	GAMMARUS	SP.
OHIO	BASOMMATOPHORA	ANCYLIDAE		SP.
OHIO	BASOMMATOPHORA	ANCYLIDAE	FERRISSIA	RIVULARIS
OHIO	BASOMMATOPHORA	PHYSIDAE	PHYSA	SP.
OHIO	BASOMMATOPHORA	PHYSIDAE	PHYSELLA	SP.
OHIO	BASOMMATOPHORA	PLANORBIDAE	GYRAULUS	PARVUS
OHIO	BASOMMATOPHORA	PLANORBIDAE	MENETUS	DILATATUS
OHIO	BIVALVIA	CORBICULIDAE	CORBICULA	FLUMINEA
OHIO	BIVALVIA	DREISSENIDAE	DREISSENA	POLYMORPHA
OHIO	BIVALVIA	SPHAERIIDAE	PISIDIUM	SP.

OHIO	CLADOCERA			SP.
OHIO	CLADOCERA	CHYDORIDAE	CHYDORUS	SP.
OHIO	CLADOCERA	SIDIDAE	SIDA	CRYSTALLINA
OHIO	COLEOPTERA	ELMIDAE	STENELMIS	CRENATA
OHIO	CYCLOPOIDA			SP.
OHIO	DIPTERA	CHIRONOMIDAE		SP.
OHIO	DIPTERA	CHIRONOMIDAE	ABLABESMYIA	JANTA
OHIO	DIPTERA	CHIRONOMIDAE	ABLABESMYIA	MALLOCHI
OHIO	DIPTERA	CHIRONOMIDAE	ABLABESMYIA	PARAJANTA
OHIO	DIPTERA	CHIRONOMIDAE	ABLABESMYIA	RHAMPHE
OHIO	DIPTERA	CHIRONOMIDAE	CARDIOCLADIUS	OBSCURUS
OHIO	DIPTERA	CHIRONOMIDAE	CHIRONOMUS	SP.
OHIO	DIPTERA	CHIRONOMIDAE	COELOTANYPUS	SP.
OHIO	DIPTERA	CHIRONOMIDAE	CONCHAPELOPIA	SP.
OHIO	DIPTERA	CHIRONOMIDAE	CRICOTOPUS	BICINCTUS
OHIO	DIPTERA	CHIRONOMIDAE	CRICOTOPUS	SP.
OHIO	DIPTERA	CHIRONOMIDAE	CRICOTOPUS	SYLVESTRIS
OHIO	DIPTERA	CHIRONOMIDAE	CRICOTOPUS	TREMULUS
OHIO	DIPTERA	CHIRONOMIDAE	CRICOTOPUS	TRIFASCIA
OHIO	DIPTERA	CHIRONOMIDAE	CRICOTOPUS	VIERRIENSIS
OHIO	DIPTERA	CHIRONOMIDAE	CRYPTOCHIRONOMUS	FULVUS
OHIO	DIPTERA	CHIRONOMIDAE	DICROTENDIPES	LUCIFER
OHIO	DIPTERA	CHIRONOMIDAE	DICROTENDIPES	MODESTUS
OHIO	DIPTERA	CHIRONOMIDAE	DICROTENDIPES	NEOMODESTUS
OHIO	DIPTERA	CHIRONOMIDAE	DICROTENDIPES	NERVOSUS
OHIO	DIPTERA	CHIRONOMIDAE	DICROTENDIPES	SIMPSONI
OHIO	DIPTERA	CHIRONOMIDAE	DICROTENDIPES	SP.
OHIO	DIPTERA	CHIRONOMIDAE	GLYPTOTENDIPES	SP.
OHIO	DIPTERA	CHIRONOMIDAE	MICROTENDIPES	SP.
OHIO	DIPTERA	CHIRONOMIDAE	NANOCLADIUS	DISTINCTUS
OHIO	DIPTERA	CHIRONOMIDAE	NANOCLADIUS	SP.
OHIO	DIPTERA	CHIRONOMIDAE	ORTHOCLADIUS	SP.
OHIO	DIPTERA	CHIRONOMIDAE	PARACHIRONOMUS	SP.

OHIO	DIPTERA	CHIRONOMIDAE	PHAENOPSECTRA	SP.
OHIO	DIPTERA	CHIRONOMIDAE	POLYPEDILUM	FLAVUM
OHIO	DIPTERA	CHIRONOMIDAE	POLYPEDILUM	HALTERALE
OHIO	DIPTERA	CHIRONOMIDAE	POLYPEDILUM	ILLINOENSE
OHIO	DIPTERA	CHIRONOMIDAE	POLYPEDILUM	SCALAENUM
OHIO	DIPTERA	CHIRONOMIDAE	PSEUDOCHIRONOMUS	SP.
OHIO	DIPTERA	CHIRONOMIDAE	STENOCHIRONOMUS	SP.
OHIO	DIPTERA	CHIRONOMIDAE	SYNORTHOCLADIUS	SEMIVIRENS
OHIO	DIPTERA	CHIRONOMIDAE	THIENEMANNIMYIA	SP.
OHIO	DIPTERA	CHIRONOMIDAE	TRIBELOS	FUSCICORNE
OHIO	DIPTERA	CHIRONOMIDAE	RHEOTANYTARSUS	SP.
OHIO	DIPTERA	CHIRONOMIDAE	TANYTARSUS	SP.
OHIO	DIPTERA	EMPIDIDAE	HEMERODROMIA	SP.
OHIO	DIPTERA	PSYCHODIDAE		SP.
OHIO	DIPTERA	TIPULIDAE	ANTOCHA	SP.
OHIO	DIPTERA	TIPULIDAE	LIMONIA	SP.
OHIO	EPHEMEROPTERA	CAENIDAE	CAENIS	PUNCTATA
OHIO	EPHEMEROPTERA	CAENIDAE	CAENIS	SP.
OHIO	EPHEMEROPTERA	HEPTAGENIIDAE		SP.
OHIO	EPHEMEROPTERA	HEPTAGENIIDAE	STENACRON	GILDERSLEEVEI
OHIO	EPHEMEROPTERA	HEPTAGENIIDAE	STENACRON	INTERPUNCTATUM
OHIO	EPHEMEROPTERA	HEPTAGENIIDAE	STENONEMA	INTEGRUM
OHIO	EPHEMEROPTERA	HEPTAGENIIDAE	STENONEMA	SP.
OHIO	EPHEMEROPTERA	HEPTAGENIIDAE	STENONEMA	TERMINATUM
OHIO	EPHEMEROPTERA	TRICORYTHIDAE	TRICORYTHODES	SP.
OHIO	HAPLOTAXIDA	NAIDIDAE		SP.
OHIO	HAPLOTAXIDA	NAIDIDAE	CHAETOGASTER	SP.
OHIO	HAPLOTAXIDA	NAIDIDAE	DERO	OBTUSA
OHIO	HAPLOTAXIDA	NAIDIDAE	DERO	SP.
OHIO	HAPLOTAXIDA	NAIDIDAE	NAIS	BRETSCHERI
OHIO	HAPLOTAXIDA	NAIDIDAE	NAIS	COMMUNIS
OHIO	HAPLOTAXIDA	NAIDIDAE	NAIS	SIMPLEX
OHIO	HAPLOTAXIDA	NAIDIDAE	NAIS	SP.

OHIO	HAPLOTAXIDA	NAIDIDAE	PRISTINA	LEIDYI
OHIO	HAPLOTAXIDA	NAIDIDAE	PRISTINA	SP.
OHIO	HAPLOTAXIDA	NAIDIDAE	RIPISTES	PARASITA
OHIO	HAPLOTAXIDA	NAIDIDAE	SLAVINA	APPENDICULATA
OHIO	HAPLOTAXIDA	TUBIFICIDAE		SP.
OHIO	HAPLOTAXIDA	TUBIFICIDAE	BRANCHIURA	SOWERBYI
OHIO	HAPLOTAXIDA	TUBIFICIDAE	LIMNODRILUS	HOFFMEISTERI
OHIO	HAPLOTAXIDA	TUBIFICIDAE W.O.H.C.		SP.
OHIO	HIRUDINEA (NOT AN ORDER)			SP.
OHIO	HYDROIDA	HYDRIDAE	HYDRA	AMERICANA
OHIO	HYDROIDA	HYDRIDAE	HYDRA	SP.
OHIO	ISOPODA	ASELLIDAE	ASELLUS	SP.
OHIO	ISOPODA	ASELLIDAE	CAECIDOTEA	SP.
OHIO	ISOPODA	ASELLIDAE	LIRCEUS	SP.
OHIO	MESOGASTROPODA	HYDROBIIDAE	SOMATOGYRUS	SP.
OHIO	NEMATODA			SP.
OHIO	ODONATA	COENAGRIONIDAE	ARGIA	APICALIS
OHIO	ODONATA	COENAGRIONIDAE	ARGIA	SP.
OHIO	ODONATA	MACROMIIDAE	MACROMIA	SP.
OHIO	OSTRACODA (CLASS)			SP.
OHIO	PHARYNGOBDELLIDA	ERPOBDELLIDAE	ERPOBDELLA	PUNCTATA
OHIO	TRICHOPTERA	HYDROPSYCHIDAE	CHEUMATOPSYCHE	SP.
OHIO	TRICHOPTERA	HYDROPSYCHIDAE	HYDROPSYCHE	BIDENS
OHIO	TRICHOPTERA	HYDROPSYCHIDAE	HYDROPSYCHE	INCOMMODA
OHIO	TRICHOPTERA	HYDROPSYCHIDAE	HYDROPSYCHE	SP.
OHIO	TRICHOPTERA	HYDROPSYCHIDAE	POTAMYIA	FLAVA
OHIO	TRICHOPTERA	HYDROPTILIDAE		SP.
OHIO	TRICHOPTERA	HYDROPTILIDAE	HYDROPTILA	SP.
OHIO	TRICHOPTERA	LEPTOCERIDAE	NECTOPSYCHE	SP.
OHIO	TRICHOPTERA	POLYCENTROPODIDAE	CYRNELLUS	FRATERNUS
OHIO	TRICHOPTERA	POLYCENTROPODIDAE	CYRNELLUS	SP.
OHIO	TRICHOPTERA	POLYCENTROPODIDAE	NEURECLIPSIS	SP.
OHIO	TRICLADIDA			SP.

OHIO	TRICLADIDA	PLANARIIDAE	CURA	FOREMANII
OHIO	TRICLADIDA	PLANARIIDAE	DUGESIA	TIGRINA

Allegheny	AMPHIPODA	GAMMARIDAE	GAMMARUS	FASCIATUS
Allegheny	DIPTERA	CHAOBORIDAE	CHAOBORUS	PUNCTIPENNIS
Allegheny	DIPTERA	CHIRONOMIDAE	CRICOTOPUS	TREMULUS
Allegheny	DIPTERA	CHIRONOMIDAE	DICROTENDIPES	NERVOSUS
Allegheny	DIPTERA	CHIRONOMIDAE	GLYPTOTENDIPES	SP.
Allegheny	EPHEMEROPTERA	HEPTAGENIIDAE	STENACRON	INTERPUNCTATUM
Allegheny	NEMATODA			SP.
Allegheny	TRICHOPTERA	HYDROPTILIDAE	HYDROPTILA	SP.
Allegheny	TRICLADIDA	PLANARIIDAE	DUGESIA	TIGRINA
Allegheny	AMPHIPODA	GAMMARIDAE	GAMMARUS	FASCIATUS
Allegheny	BASOMMATOPHORA	PLANORBIDAE	MENETUS	DILATATUS
Allegheny	CLADOCERA	SIDIDAE	SIDA	CRYSTALLINA
Allegheny	DIPTERA	CHIRONOMIDAE		SP.
Allegheny	DIPTERA	CHIRONOMIDAE	CRICOTOPUS	BICINCTUS
Allegheny	DIPTERA	CHIRONOMIDAE	CRICOTOPUS	TRIFASCIA
Allegheny	DIPTERA	CHIRONOMIDAE	DICROTENDIPES	NEOMODESTUS
Allegheny	DIPTERA	CHIRONOMIDAE	DICROTENDIPES	NERVOSUS
Allegheny	DIPTERA	CHIRONOMIDAE	NANOCLADIUS	DISTINCTUS
Allegheny	DIPTERA	CHIRONOMIDAE	PSEUDOCHIRONOMUS	SP.
Allegheny	DIPTERA	CHIRONOMIDAE	TANYTARSUS	SP.
Allegheny	EPHEMEROPTERA	HEPTAGENIIDAE	STENACRON	INTERPUNCTATUM
Allegheny	EPHEMEROPTERA	TRICORYTHIDAE	TRICORYTHODES	SP.
Allegheny	HAPLOTAXIDA	NAIDIDAE		SP.
Allegheny	HAPLOTAXIDA	NAIDIDAE	DERO	SP.
Allegheny	HAPLOTAXIDA	NAIDIDAE	NAIS	COMMUNIS
Allegheny	OSTRACODA (CLASS)			SP.
Allegheny	TRICHOPTERA	HYDROPTILIDAE	HYDROPTILA	SP.
Allegheny	TRICHOPTERA	LEPTOCERIDAE	OECETIS	SP.
Allegheny	TRICHOPTERA	POLYCENTROPODIDAE	CYRNELLUS	FRATERNUS

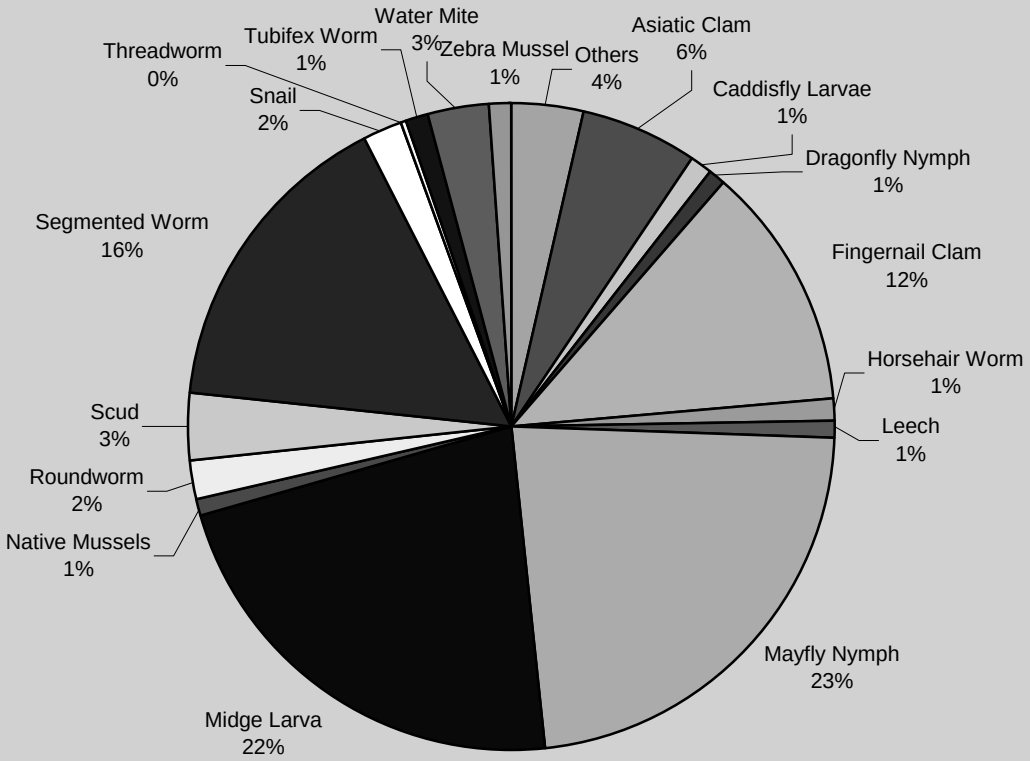
Allegheny	TRICLADIDA	PLANARIIDAE		SP.
Allegheny	DIPTERA	CHIRONOMIDAE	ABLABESMYIA	PARAJANTA
Allegheny	DIPTERA	CHIRONOMIDAE	CRICOTOPUS	VIERRIENSIS
Allegheny	DIPTERA	CHIRONOMIDAE	DICROTENDIPES	NEOMODESTUS
Allegheny	DIPTERA	CHIRONOMIDAE	DICROTENDIPES	NERVOSUS
Allegheny	DIPTERA	CHIRONOMIDAE	PARACHIRONOMUS	ABORTIVUS
Allegheny	DIPTERA	CHIRONOMIDAE	POLYPEDILUM	ILLINOENSE
Allegheny	HAPLOTAXIDA	NAIDIDAE		SP.
Allegheny	TRICHOPTERA	POLYCENTROPODIDAE	CYRNELLUS	SP.
Allegheny	TRICLADIDA			SP.
Allegheny	DIPTERA	CHIRONOMIDAE	ABLABESMYIA	MALLOCHI
Allegheny	DIPTERA	CHIRONOMIDAE	ABLABESMYIA	PARAJANTA
Allegheny	DIPTERA	CHIRONOMIDAE	CRICOTOPUS	VIERRIENSIS
Allegheny	DIPTERA	CHIRONOMIDAE	DICROTENDIPES	NEOMODESTUS
Allegheny	DIPTERA	CHIRONOMIDAE	DICROTENDIPES	NERVOSUS
Allegheny	DIPTERA	CHIRONOMIDAE	POLYPEDILUM	ILLINOENSE
Allegheny	DIPTERA	CHIRONOMIDAE	TANYTARSUS	SP.
Allegheny	EPHEMEROPTERA	HEPTAGENIIDAE	STENACRON	GILDERSLEEVEI
Allegheny	EPHEMEROPTERA	TRICORYTHIDAE	TRICORYTHODES	SP.
Allegheny	HYDROIDA	HYDRIDAE	HYDRA	SP.
Allegheny	ODONATA	COENAGRIONIDAE	ARGIA	SP.
Allegheny	TRICHOPTERA	POLYCENTROPODIDAE	CYRNELLUS	SP.
Allegheny	TRICLADIDA			SP.

Macroinvertebrate Sitings – Monongahela, Allegheny, and Ohio Rivers

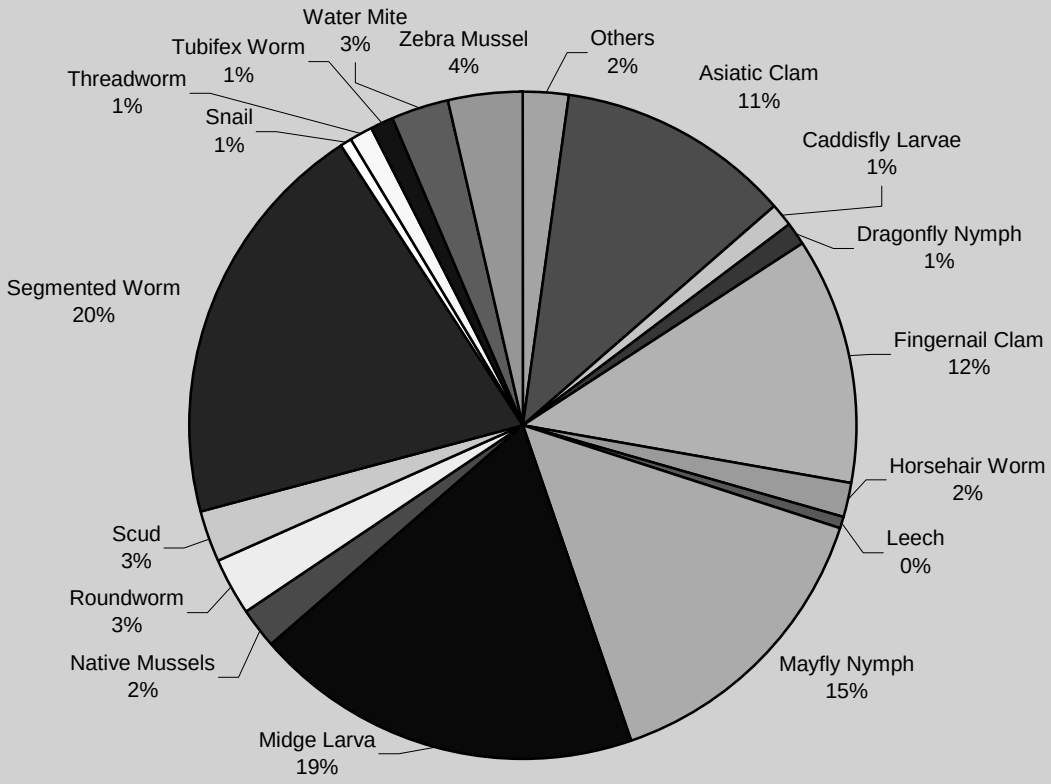
The following tables and figures show the number of sitings and percentages of the occasions that species were observed in relation to the number of total occasions. For example: Asiatic Clams were observed on 26 out of the 709 total number of occasions that students were on the Ohio River from August 2001 to December 2002 – it was observed 3.67% of the time. *The percentages and "sitings" do not reflect the number of each species that were observed. They reflect the number of occasions (or Voyager outings) that the species were observed. **Pittsburgh Voyager, 2003.** See Table 4-4 for pollution tolerances.

Macroinvertebrates in the Ohio River – 8/2001 through 12/2002					
Total Sitings	709				
Others	26	3.67%		Others:	26
Asiatic Clam	40	5.64%		Aquatic Earthworm	2
Caddisfly Larvae	8	1.13%		Alderfly Larva	1
Dragonfly Nymph	7	0.99%		Beetle	1
Fingernail Clam	86	12.13%		Copopods	0
Horsehair Worm	9	1.27%		Cranefly	1
Leech	5	0.71%		Crayfish	0
Mayfly Nymph	161	22.71%		Damselfly	0
Midge Larva	159	22.43%		Daphnia	1
Native Mussels	5	0.71%		Fishing Spider	1
Roundworm	14	1.97%		Flatworm	1
Scud	23	3.24%		Freshwater Sponge	5
Segmented Worm	113	15.94%		Giant Water Bug	1
Snail	13	1.83%		Gilled Snail	1
Threadworm	3	0.42%		Horsefly Larva	1
Tubifex Worm	7	0.99%		Midge Pupa	2
Water Mite	23	3.24%		Mayfly Adults	0
Zebra Mussel	7	0.99%		Orb Snail	3
				Predacous Beetle	1
				Right Handed Snail	0
				Stonefly Nymph	1
				Unknown	1
				Water Penny	1
				Water Sniper Larva	0
				Water Spider	1

Macroinvertebrates 8/2001-12/2002--Ohio River



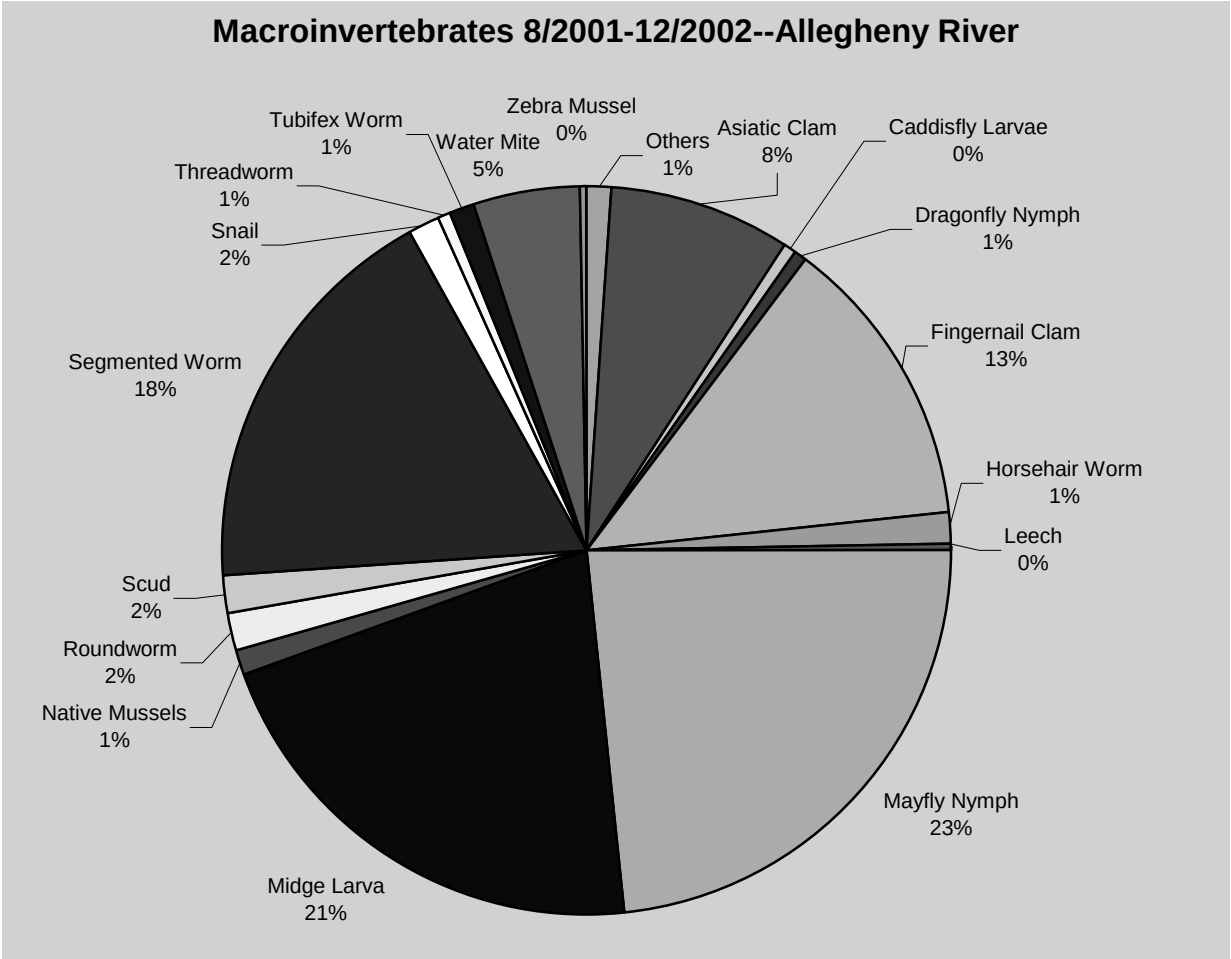
Macroinvertebrates 8/2001-12/2002--Mon River



Macroinvertebrates in the Monongahela River 8/2001 through 12/2002

Total Sitings	518			Others:	12
Others	12	2.32%		Aquatic Earthworm	0
Asiatic Clam	59	11.39%		Alderfly Larva	0
Caddisfly Larvae	5	0.97%		Beetle	0
Dragonfly Nymph	6	1.16%		Copopods	1
Fingernail Clam	62	11.97%		Cranefly	0
Horsehair Worm	9	1.74%		Crayfish	1
Leech	2	0.39%		Damselfly	1
Mayfly Nymph	76	14.67%		Daphnia	1
Midge Larva	98	18.92%		Fishing Spider	0
Native Mussels	10	1.93%		Flatworm	0
Roundworm	15	2.90%		Freshwater Sponge	1
Scud	13	2.51%		Giant Water Bug	0
Segmented Worm	103	19.88%		Gilled Snail	0
Snail	4	0.77%		Horsefly Larva	0
Threadworm	5	0.97%		Midge Pupa	0
Tubifex Worm	6	1.16%		Mayfly Adults	1
Water Mite	14	2.70%		Orb Snail	3
Zebra Mussel	19	3.67%		Predacous Beetle	0
				Right Handed Snail	1
				Stonefly Nymph	0
				Unknown	1
				Water Penny	1
				Water Sniper Larva	0
				Water Spider	0

Source: Pittsburgh Voyager, 2003


Macroinvertebrates 8/2001-12/2002--Allegheny River
Zebra Mussel 0%
Tubifex Worm 1%
Water Mite 5%
Others 1%
Asiatic Clam 8%
Caddisfly Larvae 0%
Threadworm 1%
Dragonfly Nymph 1%
Snail 2%
Fingernail Clam 13%
Segmented Worm 18%
Horsehair Worm 1%
Leech 0%
Scud 2%
Roundworm 2%
Native Mussels 1%
Mayfly Nymph 23%
Midge Larva 21%

Macroinvertebrates in the Allegheny River 8/2001 through 12/2002					
Total Sitings	519			Others:	6
Others	6	1.16%		Aquatic Earthworm	2
Asiatic Clam	42	8.09%		Alderfly Larva	0
Caddisfly Larvae	2	0.39%		Beetle	0
Dragonfly Nymph	4	0.77%		Copopods	0
Fingernail Clam	67	12.91%		Cranefly	0
Horsehair Worm	7	1.35%		Crayfish	0
Leech	2	0.39%		Damselfly	0
Mayfly Nymph	121	23.31%		Daphnia	0
Midge Larva	109	21.00%		Fishing Spider	0
Native Mussels	6	1.16%		Flatworm	0
Roundworm	9	1.73%		Freshwater Sponge	0
Scud	9	1.73%		Giant Water Bug	0
Segmented Worm	93	17.92%		Gilled Snail	1
Snail	8	1.54%		Horsefly Larva	0
Threadworm	3	0.58%		Midge Pupa	0
Tubifex Worm	5	0.96%		Mayfly Adults	1
Water Mite	25	4.82%		Orb Snail	0
Zebra Mussel	1	0.19%		Predacous Beetle	0
				Right Handed Snail	0
				Stonefly Nymph	0
				Unknown	0
				Water Penny	1
				Water Sniper Larva	1
				Water Spider	0
Source: Pittsburgh Voyager, 2003					

Riparian Zone Plants Collected in the Pittsburgh Area

from the Pennsylvania Flora Database
Morris Arboretum of the University Of Pennsylvania
100 Northwestern Ave., Philadelphia, PA

Scientific name	Common name	Growth habit
Herbaceous annuals		
Agalinis tenuifolia	Slender false-foxglove	Herbaceous annual
Atriplex patula	Spreading orach	Herbaceous annual
Bidens cernua	Bur-marigold	Herbaceous annual
Bidens comosa	Beggar-ticks	Herbaceous annual
Bidens frondosa	Beggar-ticks	Herbaceous annual
Calitriche terrestris	Water-starwort	Herbaceous annual
Cyperus bipartitus	Umbrella sedge	Herbaceous annual
Cyperus erythrorhizos	Redroot flatsedge	Herbaceous annual
Cyperus tenuifolius	Thin-leaved flatsedge	Herbaceous annual
Eclipta prostata	Yerba-de-tajo	Herbaceous annual
Eleocharis obtusa	Wright's spike-rush	Herbaceous annual
Eragrostis frankii	Lovegrass	Herbaceous annual
Eragrostis hypnoides	Creeping lovegrass	Herbaceous annual
Eragrostis pectinacea	Carolina lovegrass	Herbaceous annual
Floerkea proserpinacoides	False-mermaid	Herbaceous annual
Gratiola neglecta	Hedge hyssop	Herbaceous annual
Impatiens capensis	Jewelweed	Herbaceous annual
Impatiens pallida	Pale jewelweed	Herbaceous annual
Panicum dichotomiflorum	Smooth panic grass	Herbaceous annual
Panicum gattingeri	Witchgrass	Herbaceous annual
Pilea pumila	Clearweed	Herbaceous annual
Polygonum arifolium	Halberd-leaf tearthumb	Herbaceous annual
Polygonum pensylvanicum	Smartweed	Herbaceous annual
Polygonum punctatum	Dotted smartweed	Herbaceous annual
Polygonum sagittatum	Tearthumb	Herbaceous annual
Ranunculus allegheniensis	Allegheny crowfoot	Herbaceous annual
Rorippa palustris	Marsh watercress	Herbaceous annual
Herbaceous perennials		
Agrimonia parviflora	Southern agrimony	Herbaceous perennial
Alisma subcordatum	Broad-leaved water-plantain	Herbaceous perennial
Arisaema dracontium	Green-dragon	Herbaceous perennial
Arisaema triphyllum	Jack-in-the-pulpit	Herbaceous perennial
Asclepias incarnata	Swamp milkweed	Herbaceous perennial
Aster puniceus	Purple-stemmed aster	Herbaceous perennial
Astragalus canadensis	Milk-vetch	Herbaceous perennial
Athyrium filix-femina	Lady fern	Herbaceous perennial
Boehmeria cylindrica	False nettle	Herbaceous perennial
Caltha palustris	Marsh-marigold	Herbaceous perennial
Cardamine bulbosa	Bittercress	Herbaceous perennial
Cardamine pensylvanica	Pennsylvania bittercress	Herbaceous perennial
Cardamine rotundifolia	Mountain watercress	Herbaceous perennial
Carex frankii	Sedge	Herbaceous perennial
Carex granularis	Sedge	Herbaceous perennial
Carex hystericina	Sedge	Herbaceous perennial
Carex laevivaginata	Sedge	Herbaceous perennial
Carex leptonervia	Sedge	Herbaceous perennial
Carex lurida	Sedge	Herbaceous perennial
Carex squarrosa	Sedge	Herbaceous perennial
Carex tribuloides	Sedge	Herbaceous perennial

Carex vulpinoidea	Sedge	Herbaceous perennial
Chelone glabra	Turtlehead	Herbaceous perennial
Cicuta maculata	Beaver-poison	Herbaceous perennial
Cyperus esculentus	Yellow nutsedge	Herbaceous perennial
Cyperus strigosus	False nutsedge	Herbaceous perennial
Cystopteris bulbifera	Bulblet bladder fern	Herbaceous perennial
Deparia acrostichoides	Silvery glade fern	Herbaceous perennial
Desmodium canadense	Showy tick-trefoil	Herbaceous perennial
Diplazium pycnocarpon	Narrow-leaved glade fern	Herbaceous perennial
Eleocharis palustris	Creeping spike-rush	Herbaceous perennial
Elymus virginicus	Virginia wild-rye	Herbaceous perennial
Epilobium angustifolium	Fireweed	Herbaceous perennial
Epilobium coloratum	Purple-leaved willow-herb	Herbaceous perennial
Equisetum fluviatile	Water horsetail	Herbaceous perennial
Equisetum hyemale	Scouring-rush	Herbaceous perennial
Eupatorium fistulosum	Joe-pye-weed	Herbaceous perennial
Eupatorium perfoliatum	Boneset	Herbaceous perennial
Euthamia graminifolia	Grass-leaved goldenrod	Herbaceous perennial
Galium obtusum	Cleavers	Herbaceous perennial
Galium tinctorium	Bedstraw	Herbaceous perennial
Gentiana andrewsii	Bottle gentian	Herbaceous perennial
Glyceria canadensis	Rattlesnake mannagrass	Herbaceous perennial
Glyceria grandis	American mannagrass	Herbaceous perennial
Glyceria striata	Fowl mannagrass	Herbaceous perennial
Helianthus giganteus	Swamp sunflower	Herbaceous perennial
Hydrocotyle americana	Marsh pennywort	Herbaceous perennial
Hydrophyllum virginianum	Virginia waterleaf	Herbaceous perennial
Hypericum ellipticum	Pale St. John's-wort	Herbaceous perennial
Hypericum mutilum	Dwarf St. John's-wort	Herbaceous perennial
Hypericum pyramidatum	Great St. John's-wort	Herbaceous perennial
Juncus effusus	Soft rush	Herbaceous perennial
Laportea canadensis	Wood-nettle	Herbaceous perennial
Leersia virginica	Cutgrass	Herbaceous perennial
Lobelia cardinalis	Cardinal-flower	Herbaceous perennial
Lobelia siphilitica	Great blue lobelia	Herbaceous perennial
Ludwigia alternifolia	False loosestrife	Herbaceous perennial
Ludwigia palustris	Marsh-purslane	Herbaceous perennial
Lycopus americanus	Water-horehound	Herbaceous perennial
Lycopus virginicus	Bugleweed	Herbaceous perennial
Lysimachia ciliata	Fringed loosestrife	Herbaceous perennial
Mentha arvensis	Field mint	Herbaceous perennial
Mertensia virginica	Virginia bluebell	Herbaceous perennial
Mimulus ringens	Allegheny monkey-flower	Herbaceous perennial
Muhlenbergia frondosa	Wirestem muhly	Herbaceous perennial
Muhlenbergia schreberi	Dropseed	Herbaceous perennial
Myosotis laxa	Wild forget-me-not	Herbaceous perennial
Oenothera fruticosa	Sundrops	Herbaceous perennial
Onoclea sensibilis	Sensitive fern	Herbaceous perennial
Osmunda cinnamomea	Cinnamon fern	Herbaceous perennial
Osmunda claytoniana	Interrupted fern	Herbaceous perennial
Osmunda regalis	Royal fern	Herbaceous perennial
Panicum virgatum	Switchgrass	Herbaceous perennial
Penstemon digitalis	Tall white beard-tongue	Herbaceous perennial
Penthorum sedoides	Ditch stonecrop	Herbaceous perennial
Phlox maculata	Wild sweet-william	Herbaceous perennial
Poa sylvestris	Woodland bluegrass	Herbaceous perennial
Polygonum amphibium		

var. emersum	Water smartweed	Herbaceous perennial
Ranunculus caricetorum	Marsh buttercup	Herbaceous perennial
Rudbeckia laciniata	Cutleaf coneflower	Herbaceous perennial
Rumex altissimus	Tall dock	Herbaceous perennial
Sagittaria latifolia	Wapato	Herbaceous perennial
Saururus cernuus	Lizard's-tail	Herbaceous perennial
Saxifraga pensylvanica	Swamp saxifrage	Herbaceous perennial
Schoenoplectus tabernaemontani	Great bulrush	Herbaceous perennial
Scirpus atrovirens	Black bulrush	Herbaceous perennial
Scirpus pendulus	Bulrush	Herbaceous perennial
Scirpus polyphyllus	Bulrush	Herbaceous perennial
Scutellaria galericulata	Common skullcap	Herbaceous perennial
Scutellaria lateriflora	Mad-dog skullcap	Herbaceous perennial
Scutellaria nervosa	Skullcap	Herbaceous perennial
Senecio aureus	Golden ragwort	Herbaceous perennial
Senna hebecarpa	Northern wild senna	Herbaceous perennial
Sisyrinchium angustifolium	Blue-eyed-grass	Herbaceous perennial
Spartina pectinata	Freshwater cordgrass	Herbaceous perennial
Stachys cenuifolia	Creeping hedge-nettle	Herbaceous perennial
Stellaria longifolia	Long-leaved stitchwort	Herbaceous perennial
Symplocarpus foetidus	Skunk cabbage	Herbaceous perennial
Teucrium canadense	Wild germander	Herbaceous perennial
Thalictrum pubescens	Tall meadow-rue	Herbaceous perennial
Thelypteris noveboracensis	New York fern	Herbaceous perennial
Valeriana pauciflora	Valerian	Herbaceous perennial
Veratrum viride	False hellebore	Herbaceous perennial
Verbena hastata	Blue vervain	Herbaceous perennial
Verbesina alternifolia	Wingstem	Herbaceous perennial
Vernonia gigantea	Ironweed	Herbaceous perennial
Veronica americana	American brooklime	Herbaceous perennial
Viola cucullata	Blue marsh violet	Herbaceous perennial
Viola lanceolata	Lance-leaved violet	Herbaceous perennial
Viola macloskeyi ssp. pallens	Sweet white violet	Herbaceous perennial
Viola striata	Striped violet	Herbaceous perennial
Zizia aptera	Golden-alexander	Herbaceous perennial
Zizia aurea	Golden-alexander	Herbaceous perennial
Shrubs		
Alnus serrulata	Smooth alder	Deciduous shrub
Aronia prunifolia	Purple chokeberry	Deciduous shrub
Cephalanthus occidentalis	Buttonbush	Deciduous shrub
Cornus amomum	Kinnikinik	Deciduous shrub
Cornus sericea	Red-osier dogwood	Deciduous shrub
Dirca palustris	Leatherwood	Deciduous shrub
Ilex verticillata	Winterberry	Deciduous shrub
Lindera benzoin	Spicebush	Deciduous shrub
Physocarpus opulifolius	Ninebark	Deciduous shrub
Salix discolor	Pussy willow	Deciduous shrub
Salix eriocephala	Diamond willow	Deciduous shrub
Salix exigua	Sandbar willow	Deciduous shrub
Sambucus canadensis	American elder	Deciduous shrub
Spiraea tomentosa	Hardhack	Deciduous shrub
Staphylea trifolia	Bladdernut	Deciduous shrub
Viburnum lentago	Nannyberry	Deciduous shrub
Trees		
Acer rubrum	Red maple	Deciduous tree

Acer saccharinum	Silver maple	Deciduous tree
Carpinus caroliniana	Hornbeam	Deciduous tree
Fraxinus nigra	Black ash	Deciduous tree
Fraxinus pennsylvanica	Red ash	Deciduous tree
Nyssa sylvatica	Sourgum	Deciduous tree
Platanus occidentalis	Sycamore	Deciduous tree
Quercus bicolor	Swamp white oak	Deciduous tree
Quercus palustris	Pin oak	Deciduous tree
Salix nigra	Black willow	Deciduous tree
Ulmus americana	American elm	Deciduous tree
Vines		
Echinocystis lobata	Prickly cucumber	Annual vine
Amphicarpaea bracteata	Hog peanut	Perennial vine
Apios americana	Ground-nut	Perennial vine
Clematis virginiana	Virgin's-bower	Perennial vine
Vitis riparia	Frost grape	Woody vine
Vitis vulpina	Frost grape	Woody vine

Appendix E *(Chapter 5: Recreational Resources)*

Municipal Parks
Description of Shaler Parks

Table E-1
Municipal Parks and Playgrounds

*These parks may not fall within the corridor of this Plan. See Chapter 5-B-3 for the list of riverfront parks in the corridor.

Municipality	Park Name	Facilities
Aspinwall	Field Ave. 9th St.	Playgrounds Playgrounds
Avalon	California Ave. Park Birmingham Ave. Park Semple Ave. Park Avalon Park Avalon Athletic Complex	
Baldwin	Elm Leaf Park	
Bellevue	Memorial Park Bayne Park	Swimming pool, shelters Open space
Ben Avon	Avonworth Community Park	
Blawnox	Blawnox Community Park	
Etna	Hafner Field Veterans Field Playground (unnamed)	
Fox Chapel	McCahill Park Fay Park Salamander Park	Athletic fields Trails Trails
Harmar	Acme Park Terrace Dr. Huigbery Park at Chapel Downs	Field, pavilion, playground
Kennedy	Fairhaven Park	
McKees Rocks	Rangers Park	Fields, picnic area
Millvale	Riverfront Park	Gazebo, shelter, skate park
Neville	Memorial Park Cottage Ave. Park	Athletic fields, playground Athletic fields, playground
Oakmont	Park Hollow Woods Riverside Park	Woods and trails Athletic fields and track
O'Hara	Meadow Park Woodland Park Squaw Valley Kensington Park Guyasuta Park/Camp Kerrwood Park	Tennis courts, fields Playground, shelter, fields Basketball, tennis, fields Playground, fields, basketball
Penn Hills	Penn Hills Community Park Turner Friendship Park	Trails, picnic shelter Athletic fields, playground

	Universal Park Duff Park North Bessemer Penn View Pat Seneca Ross Street Bon Aire Meadow Ave. Lee Drive Lincoln Park Multi Purpose	Playground, picnic, fields Picnic area, playground Open space Fields
Pittsburgh		
Reserve	Spring Garden Montjoy	Athletic fields Athletic fields
Ross		
Shaler	Denny Park Judge Miller Fall Run Park Farrell Park Feid Field Friday Street Park Glenshaw Field Ellen Hughes Park Kiwanis Park Newland Field Richter Field Shalercrest Housing Association Stoneridge Park Vienna Woods Parklet Baseball Fields	*See descriptions in Appendix -
Sharpsburg	16th St. Playground Kennedy Park Heinz Field	Open space
Stowe	Davis Park Island Park Norwood Park	
Verona	Cribbs Field Riverbank Park	Athletic fields, playground Basketball, playground

Source: Municipal interviews and municipal websites
*Those municipalities that are not listed do not have significant land area in the study corridor.

PARKS AND RECREATION

DENNY PARK

This 9 acre park is located off of Anderson Road. The park contains a playground, a ballfield, two soccer fields, a picnic shelter, a basketball court, and a tennis court.

JUDGE D. M. MILLER FALL RUN PARK

Fall Run Park's 93.65 acres makes this park Shaler's largest. This park has a mile long nature trail which leads you to one of this park's major attractions -- the waterfall. This beautifully landscaped park has a playground, a soccer field, and a basketball court.

FARRELL PARK

This 9.8 acre park is located off of Sharpshill Road in the Sharpshill section of the township. This park contains a playground, a ballfield, a tennis court, a basketball court, and a picnic shelter.

FEID FIELD

This field is located behind Shaler Highlands apartments, off of Middle Road. It has both a soccer field and a baseball field.

FRIDAY STREET PARK

This park is located off of Friday Road in the Cherry City section of the township. This 7.6 acre park contains 2 tennis courts, a playground, and a basketball court.

GLENSHAW FIELD

This field is located on Butler Plank Road next to the Glenshaw Library and is owned and scheduled by the Glenshaw Valley Presbyterian Church. Shaler Township takes care of all of the maintenance.

ELLEN HUGHES PARK

This park is located off of Greenfield Road. The park contains 2 tennis courts, a playground, a baseball field and a basketball court.

KIWANIS PARK

Although this park is not the largest in acreage, 30.6 acres, it does offer the most facilities to the community. This centrally located park contains Shaler's only swimming pool, a senior citizens area, 2 playgrounds, 3 tennis courts, 2 ballfields, 1 picnic shelter, 2 basketball courts, and a street hockey court.

NEWLAND FIELD

Located off of Friday Road behind the City of Pittsburgh reservoir, this park contains four of the best baseball fields in the township, and a playground. The park is leased to the Bauerstown Baseball Association from the City of Pittsburgh. The Bauerstown Baseball Association takes care of all the maintenance of the fields and also schedules the fields.

RICHTER FIELD

This park, located off of Kenneth Drive, contains a playground, 2 ballfields, a basketball court and 2 tennis courts.

SHALERCREST HOUSING ASSOCIATION

All of the property on which this park is located, is owned by the Shalercrest Housing Association. The property on which the tennis courts are located is leased to the township on a long-term lease. All of the facilities in this park are maintained by Shaler Township. The park contains a basketball court, 2 tennis courts, a playground, and a baseball field which is scheduled by the Shalercrest Housing Association.

STONERIDGE PARK

This 5 1/2 acre park is located off of Dressel Road in the Burchfield Section of the township. The park includes 1 ballfield, 2 tennis courts, a street hockey court, a sand volleyball court, and a playground.

VIENNA WOODS PARKLET

This "mini" park is located off of Danube Drive, and contains a basketball court and a playground.

BASEBALL FIELDS

The following fields are scheduled by Shaler Township. Requests for fields must be filed no later than February and must be accompanied by a team roster (players names and addresses) and a copy of your schedule of games and practice sessions. If you find that you will not be using the field assigned your team, please call us immediately so it may be reassigned to another team. Failure to use the field as assigned three consecutive times for any reason other than inclement weather will result in withdrawal of the permit.

DeHaven Field
Denny Field
Fall Run Field
Farrell Field
Kiwanis Upper Field
Kiwanis Lower Field
Richter Field
Fisher Field at Stoneridge Park

Appendix F *(Chapter 6: Cultural Resources)*

National Register of Historic Places
PHLF Historic Plaques Program
Historical Markers

Table F-1
National Register of Historic Places

Resource Name	City	Listed
Sauer Buildings Historic District	Aspinwall	9/11/1985
Davis Island Lock and Dam Site	Avalon	8/29/1980
McKees Rocks Bridge	Bellevue	11/14/1988
St. Nicholas Croatian Church	Millvale	5/6/1980
Oakmont Country Club Historic District	Oakmont	8/17/1984
Alpha Terrace Historic District	Pittsburgh	7/18/1985
Byrnes & Kiefer Building	Pittsburgh	3/7/1985
William Penn Hotel	Pittsburgh	3/7/1985
109--115 Wood Street	Pittsburgh	4/4/1996
Allegheny Cemetery	Pittsburgh	12/10/1980
Allegheny County Courthouse and Jail	Pittsburgh	3/7/1973
Allegheny High School	Pittsburgh	9/30/1986
Allegheny Observatory	Pittsburgh	6/22/1979
Allegheny Post Office	Pittsburgh	7/27/1971
Allegheny River Lock and Dam No. 2	Pittsburgh	4/21/2000
Allegheny West Historic District	Pittsburgh	11/2/1978
Allerdice, Taylor, High School	Pittsburgh	9/30/1986
Armstrong Tunnel	Pittsburgh	1/7/1986
Arsenal Junior High School	Pittsburgh	9/30/1986
Baxter High School	Pittsburgh	9/30/1986
Bayard School	Pittsburgh	9/30/1986
Bedford School	Pittsburgh	9/30/1986
Beechwood Elementary School	Pittsburgh	9/30/1986
Beltzhoover Elementary School	Pittsburgh	9/30/1986
Bindley Hardware Company Building	Pittsburgh	8/8/1985
Birmingham Public School	Pittsburgh	9/30/1986
Boggs Avenue Elementary School	Pittsburgh	2/3/1987
Buhl Building	Pittsburgh	1/3/1980
Burke Building	Pittsburgh	9/18/1978
Butler Street Gatehouse	Pittsburgh	7/30/1974
Byers-Lyons House	Pittsburgh	11/19/1974

Carnegie Free Library of Allegheny	Pittsburgh	11/1/1974
Carnegie Institute and Library	Pittsburgh	3/30/1979
Cathedral of Learning	Pittsburgh	11/3/1975
Chatham Village Historic District	Pittsburgh	11/25/1998
Colfax Elementary School	Pittsburgh	9/30/1986
Connelly, Clifford B., Trade School	Pittsburgh	9/30/1986
Conroy Junior High School	Pittsburgh	9/30/1986
Consolidated Ice Company Factory No. 2	Pittsburgh	11/8/2000
Deutschtown Historic District	Pittsburgh	11/25/1983
Dilworth Elementary School	Pittsburgh	9/30/1986
Dollar Savings Bank	Pittsburgh	7/14/1976
Duquesne Incline	Pittsburgh	3/4/1975
East Carson Street Historic District	Pittsburgh	11/17/1983
East Liberty Market	Pittsburgh	12/12/1977
Eberhardt and Ober Brewery	Pittsburgh	11/5/1987
Emmanuel Episcopal Church	Pittsburgh	5/3/1974
Evergreen Hamlet	Pittsburgh	9/17/1974
Ewart Building	Pittsburgh	8/9/1979
Fifth Avenue High School	Pittsburgh	10/23/1986
Firstside Historic District	Pittsburgh	7/28/1988
Forks of the Ohio	Pittsburgh	10/15/1966
Fort Pitt Elementary School	Pittsburgh	9/30/1986
Fortieth Street Bridge	Pittsburgh	6/22/1988
Foster School	Pittsburgh	9/30/1986
Fourth Avenue Historic District	Pittsburgh	9/5/1985
Frew, John, House	Pittsburgh	5/30/2001
Frick Building and Annex	Pittsburgh	5/22/1978
Frick, Henry Clay, Training School for Teachers	Pittsburgh	9/30/1986
Fulton Elementary School	Pittsburgh	9/30/1986
Fulton Log House	Pittsburgh	12/6/1975
Gardner-Bailey House	Pittsburgh	10/1/1974
Greenfield Elementary School	Pittsburgh	9/30/1986
Hartley-Rose Belting Company Building	Pittsburgh	8/25/1983
Heathside Cottage	Pittsburgh	12/30/1974

Henderson-Metz House	Pittsburgh	8/22/1979
Highland Building	Pittsburgh	9/6/1991
Highland Towers Apartments	Pittsburgh	9/28/1976
Hoene-Werle House	Pittsburgh	11/15/1984
Homestead High-Level Bridge	Pittsburgh	1/7/1986
Homestead Historic District	Pittsburgh	5/10/1990
House at 200 West North Avenue	Pittsburgh	2/27/1986
Houses at 2501-2531 Charles Street	Pittsburgh	3/15/1984
Houses at 838-862 Brightridge Street	Pittsburgh	3/1/1984
Hunt Armory	Pittsburgh	11/14/1991
Kaufmann's Department Store Warehouse	Pittsburgh	5/30/1997
Knoxville Junior High School	Pittsburgh	2/3/1987
Langley High School	Pittsburgh	9/30/1986
Larimer School	Pittsburgh	9/30/1986
Latimer School	Pittsburgh	9/30/1986
Lawrence Public School	Pittsburgh	9/30/1986
Lemington Elementary School	Pittsburgh	9/30/1986
Letsche Elementary School	Pittsburgh	9/30/1986
Liberty Bridge	Pittsburgh	6/22/1988
Liberty School No. 4, Friendship Building	Pittsburgh	9/30/1986
Lincoln Elementary School	Pittsburgh	9/30/1986
Linden Avenue School	Pittsburgh	9/30/1986
Longfellow School	Pittsburgh	6/28/1984
Madison Elementary School	Pittsburgh	9/30/1986
Main Building, U.S. Bureau of Mines	Pittsburgh	5/24/1974
Manchester Historic District	Pittsburgh	9/18/1975
McCleary Elementary School	Pittsburgh	9/30/1986
Mexican War Streets Historic District	Pittsburgh	5/28/1975
Mifflin Elementary School	Pittsburgh	9/30/1986
Monongahela Incline	Pittsburgh	6/25/1974
Moreland-Hoffstot House	Pittsburgh	2/23/1978
Morrow, John, Elementary School	Pittsburgh	9/30/1986
Morse, Samuel F. B., School	Pittsburgh	9/30/1986
Ninth Street Bridge	Pittsburgh	1/7/1986
Oakland Public School	Pittsburgh	2/3/1987

Old Allegheny Rows Historic District	Pittsburgh	11/1/1984
Old Heidelberg Apartments	Pittsburgh	5/4/1976
Oliver, David P., High School	Pittsburgh	2/3/1987
Osterling, Frederick J., Office and Studio	Pittsburgh	9/5/1985
Park Place School	Pittsburgh	9/30/1986
Penn-Liberty Historic District	Pittsburgh	11/18/1987
Pennsylvania Railroad Bridge	Pittsburgh	8/13/1979
Pennsylvania Railroad Station	Pittsburgh	4/22/1976
Perry High School	Pittsburgh	9/30/1986
Phipps Conservatory	Pittsburgh	11/13/1976
Phipps--McElveen Building	Pittsburgh	5/5/2000
Pittsburgh & Lake Erie Railroad Station	Pittsburgh	1/11/1974
Pittsburgh and Lake Erie Railroad Complex	Pittsburgh	12/31/1979
Pittsburgh Athletic Association Building	Pittsburgh	12/15/1978
Pittsburgh Central Downtown Historic District	Pittsburgh	12/17/1985
Prospect Junior High and Elementary School	Pittsburgh	9/30/1986
Reymer Brothers Candy Factory	Pittsburgh	5/30/1997
Rodef Shalom Temple	Pittsburgh	11/15/1979
Rotunda of the Pennsylvania Railroad Station	Pittsburgh	4/11/1973
Schenley Farms Historic District	Pittsburgh	7/22/1983
Schenley High School	Pittsburgh	9/30/1986
Schenley Park	Pittsburgh	11/13/1985
Schiller Elementary School	Pittsburgh	9/30/1986
Scott, James, House	Pittsburgh	5/30/1997
Sellers House	Pittsburgh	9/7/1979
Seventh Street Bridge	Pittsburgh	1/7/1986
Shadyside Presbyterian Church	Pittsburgh	4/3/1975
Singer, John F., House	Pittsburgh	11/13/1974
Sixteenth Street Bridge	Pittsburgh	8/13/1979
Sixth Street Bridge	Pittsburgh	1/7/1986
Smithfield Street Bridge	Pittsburgh	3/21/1974
Snyder, William Penn, House	Pittsburgh	5/3/1976
Soldiers and Sailors Memorial Hall	Pittsburgh	12/30/1974
South Side High School	Pittsburgh	9/30/1986
South Side Market Building	Pittsburgh	10/14/1976

South Tenth Street Bridge	Pittsburgh	1/7/1986
Springfield Public School	Pittsburgh	9/30/1986
St. Boniface Roman Catholic Church	Pittsburgh	11/17/1981
St. John the Baptist Ukranian Catholic Church	Pittsburgh	10/29/1974
St. Stanislaus Kostka Roman Catholic Church	Pittsburgh	9/14/1972
Stanley Theater and Clark Building	Pittsburgh	2/27/1986
Sterrett Sub-District School	Pittsburgh	9/30/1986
Tuberculosis Hospital of Pittsburgh	Pittsburgh	2/25/1993
Union Trust Building	Pittsburgh	1/21/1974
US Post Office and Courthouse--Pittsburgh	Pittsburgh	2/2/1995
Washington Vocational School	Pittsburgh	9/30/1986
Way, Nicholas, House	Pittsburgh	9/13/1978
West End-North Side Bridge	Pittsburgh	8/24/1979
Westinghouse High School	Pittsburgh	9/30/1986
Whitehill-- Gleason Motors	Pittsburgh	7/22/1999
Wightman School	Pittsburgh	9/30/1986
Woods, John, House	Pittsburgh	4/29/1993
Woolslair Elementary School	Pittsburgh	9/30/1986
Logans Ferry Powder Works Historic District	Plum Borough	5/7/1998
Lehner Grain-and-Cider Mill and House	Verona	10/24/1996
Source: www.phmc.state.pa.us		

To view the Pittsburgh History and Landmarks Foundation's Historic Plaques, please visit http://www.phlf.org/plaques/plaque.html.

Pennsylvania Historic Marker Program

Marker Name: Allegheny Arsenal
Date Dedicated: 12/58
Location: opposite 257 40th St., Lawrenceville
Marker Text:

Designed by Benjamin H. Latrobe and constructed in 1814. The Arsenal was used as a military garrison, in the manufacture and storing of supplies during the Civil War, Indian Wars, and Spanish American War.

Marker Name: Charles Martin Hall
County: Allegheny
DateDedicated:
Marker Type: City
Location: 3200 Smallman St., Pittsburgh
Category: Business & Industry
Marker Text:

Here, Hall's invention of electrolytic manufacture of aluminum was first applied to commercial production in 1888 by the Pittsburgh Reduction Company, which later became Alcoa. His process made the commercial use of aluminum possible.

Marker Name: Allegheny County
Date Dedicated: 12/30/82
Location: County Courthouse, Grant St. between 5th & Forbes Aves., Pittsburgh
Category: Government & Politics
Marker Text:

Formed September 24, 1788 out of Westmoreland and Washington counties. Named for the Allegheny River. County seat of Pittsburgh was laid out 1764; became a city in 1816. A center of the iron, steel and other industries and "Workshop of the World."

Marker Name: Charles Taze Russell
County: Allegheny
DateDedicated: 5/8/00
Marker Type: City
Location: West Commons of Allegheny Center
Category: Religious
Marker Text:

Pastor Russell formed a Bible study group in Allegheny City in the 1870's; developed it into the Watch Tower Bible & Tract Society. It became the legal corporation for Jehovah's Witnesses. He lived in the Bible House nearby, 1894-1909; spoke here at Carnegie Hall.

Marker Name: Andrew Carnegie
Date Dedicated: 4/18/96
Location: Carnegie Library, 4400 Forbes Ave.
Category: Professions & Vocations, Business & Industry, Ethnic & Immigration
Marker Text:

A poor Scottish immigrant, Carnegie became a millionaire steel magnate and proponent of the "Gospel of Wealth." Seeking to benefit society with his fortune, he built over 2,500 libraries and endowed institutions advancing education and peace.

Marker Name: Clinton Iron Furnace
County: Allegheny
DateDedicated: 5/11/55
Marker Type: Roadside
Location: Point Park, Pittsburgh
Category:
Marker Text:

In January, 1860, this furnace was the first in the region to use Connellsville coke in smelting iron. This fuel later gave Pittsburgh world leadership in pig iron. The furnace was directly across the river from here.

Marker Name: Bethel A.M.E. Church
DateDedicated: 9/24/95
Location: 1st Ave. at Smithfield St.
Category: Underground Railroad,African American, Religious,Education
Marker Text:

Founded 1808 & known as the African Church. Chartered in 1818. Located nearby in early years, church was site of area's first school for colored children, 1831, & statewide civil rights convention, 1841. Congregation moved to Wylie Avenue, 1872; to Webster Avenue, 1959

Marker Name: Daisy E. Lampkin
County: Allegheny
DateDedicated: 8/9/83
Marker Type: City
Location: 2519 Webster Ave., Pittsburgh
Category: Women, African American, Government, & Politics
Marker Text:

Outstanding as an NAACP organizer, Mrs. Lampkin was its National Field Secretary, 1935-47. President, Lucy Stone Civic League, 1915-65. A charter member, National Council of Negro Women, and Vice President, The Pittsburgh Courier. She lived here until her death in 1965.

Marker Name: Billy Eckstein
DateDedicated: 7/31/94
Location: 5913 Bryant St., Highland Park
Category: African American, AWP
Marker Text:

African American jazz balladeer and bandleader whose innovative style and sponsorship of new talent helped revolutionize jazz in the 1940s. One of the nation's most popular vocalists, he had 11 gold records. He grew up in this house.

Marker Name: David L. Lawrence
County: Allegheny
DateDedicated: 2/28/85
Marker Type: City
Location: Point State Park, Pittsburgh
Category: Government & Politics
Marker Text:

Pennsylvania's Governor, 1959-1963, was born in this area June 18, 1889. As a pioneer in urban renewal, he advocated the creation of Point Park as part of the redevelopment of the Golden Triangle.

Marker Name: Carnegie Hero Fund
DateDedicated: 1995
Marker Text:

Established April 15, 1904, by Andrew Carnegie. The Pittsburgh-based foundation awards the Carnegie Medal in the U.S. and Canada to persons who risk their lives to save others. Heroic acts that followed the January 25, 1904, explosion in the nearby Harwick Mine inspired Carnegie, who also founded ten similar funds in Europe. Many of the explosion's 181 victims are buried in St. Mark's Cemetery just south of here.

Marker Name: Fort Duquesne
County: Allegheny
DateDedicated: 5/8/59
Marker Type: City
Location: Point State Park
Category: Military
Marker Text:

Begun here April, 1754, by French after taking Virginia's fort. Key French position on the Ohio and base for raids on frontier after 1755. Burned by French before Forbes' army occupied it, November, 1758.

Marker Name: Ferris Wheel Inventor
County: Allegheny
DateDedicated: 1967
Marker Type: City
Location: West Commons (between Ridge Ave. & South Commons), North Side
Category: Professions & Vocations, Sports
Marker Text:

Civil Engineer, George Washington Gale Ferris (1859-1896), lived at 204 Arch Street. He designed and constructed the world's first Ferris Wheel for the Columbian Exposition in 1892.

Marker Name: Fort Lafayette
County: Allegheny
DateDedicated: 12/58
Marker Type: City
Location: 9th St. just N of Penn Ave.
Category: Military, Native American
Marker Text:

Stood on this site. It was completed in 1792. Built to protect Pittsburgh against Indian attacks and to serve as a chief supply base for Gen. Wayne's army, 1792-94. Reactivated during the War of 1812. Site sold in 1813.

Marker Name: First Drive-In Filling Station
County: Allegheny
DateDedicated: 7/11/00
Marker Type: City
Location: Baum & St. Clair Sts., Pittsburgh
Category: Business & Industry, Transportation
Marker Text:

At this site in Dec. 1913, Gulf Refining Co. opened the first drive-in facility designed and built to provide gasoline, oils, & lubricants to the motoring public. Its success led to construction of thousands of gas stations by different oil companies across the nation.

Marker Name: Fort Pitt
County: Allegheny
DateDedicated: 5/8/59
Marker Type: City
Location: Point State Park
Category: Military
Marker Text:

Built by the English, 1759-61, to replace Mercer's Fort of 1758-59. Named for Prime Minister William Pitt of Great Britain. British stronghold in Ohio Valley and center for settlement.

Marker Name: First Mining of Pittsburgh Coal
County: Allegheny
DateDedicated: 4/18/85
Marker Type: City
Location: Grandview Ave. between Ulysses & Bertha Sts., Pittsburgh
Category: Business & Industry
Marker Text:

This State's bituminous coal industry was born about 1760 on Coal Hill, now Mt. Washington. Here the Pittsburgh coal bed was mined to supply Fort Pitt. This was eventually to be judged the most valuable individual mineral deposit in the U.S.

Marker Name: Fort Pitt Blockhouse
County: Allegheny
DateDedicated: 5/8/59
Marker Type: City
Location: Point State Park
Category: Military
Marker Text:

One of Fort Pitt's outworks, this blockhouse or redoubt stood near the western bastions and is the only surviving structure of that fort. Built in 1764 by Col. Henry Bouquet.

Marker Name: First Professional Football Game
County: Allegheny
DateDedicated: 11/3/92
Marker Type: Roadside
Location: Three Rivers Stadium, Pittsburgh
Category: Sports
Marker Text:

On November 12, 1892, at Recreation Park a few blocks NW of here, the Allegheny Athletic Association defeated the Pittsburgh Athletic Club, 4-0. The winning touchdown was scored by William ("Pudge") Heffelfinger, who received $500 for playing. He was the first football player known to have been paid outright, and pro football traces its origin from this game.

Marker Name: Fort Prince George
County: Allegheny
DateDedicated: 5/8/59
Marker Type: City
Location: Point State Park
Category: Military
Marker Text:

Name intended for fort begun here by Virginia force early in 1754 on site noted by Washington as "well situated for a Fort." Captured by the French, April 17, 1754, before its completion.

Marker Name: Founding Convention of the CIO
County: Allegheny
DateDedicated: 9/23/97
Marker Type: City
Location: North Commons Drive, above Allegheny Center, Pittsburgh
Category: Labor
Marker Text:

Near here on Nov. 14, 1938, the first convention of the Congress of Industrial Organizations was held. 34 international unions were represented. Pittsburgh's Philip Murray was president from 1940 to 1952.

Marker Name: Founding Convention of the AFL
County: Allegheny
DateDedicated: 9/24/97
Marker Type: City
Location: NW corner of Mellon Park, opposite the William Penn Hotel, Pgh.
Marker Text:

On Nov. 15, 1881, in nearby Turner Hall, a convention was held to form the organization which became the American Federation of Labor. Soon it was the nation's largest labor federation. It became part of the merged AFL-CIO in 1955.

Marker Name: Founding Convention of the CIO
County: Allegheny
DateDedicated: 9/23/97
Marker Type: City
Location: North Commons Drive, above Allegheny Center, Pittsburgh
Category: Labor
Marker Text:

Near here on Nov. 14, 1938, the first convention of the Congress of Industrial Organizations was held. 34 international unions were represented. Pittsburgh's Philip Murray was president from 1940 to 1952.

Marker Name: John A. Roebling
County: Allegheny
DateDedicated: 1992
Marker Type: City
Location: Corner of Smithfield St. Bridge and West Carson Street
Category: Transportation
Marker Text:

Here in 1846, Roebling built the first wire rope suspension bridge to carry a highway over the Monongahela River. He also designed a bridge across the Allegheny River, a railroad bridge at Niagara Falls, & the Brooklyn Bridge.

Marker Name: John Scull
County: Allegheny
DateDedicated: 12/58
Marker Type: City
Location: Blvd. of the Allies, just W of Market St.
Category:
Marker Text:

His home and printing shop were in this block. The Pittsburgh Gazette was printed here in 1786, first newspaper west of the Alleghenies; also the first book in 1793. The first Post Office of Pittsburgh was here.

Marker Name: Josh Gibson
County: Allegheny
DateDedicated: 9/23/96
Marker Type: City
Location: 2217 Bedford Ave., Pittsburgh
Category: African American, Sports
Marker Text:

Hailed as Negro leagues' greatest slugger, he hit some 800 home runs in a baseball career that began here at Ammons Field in 1929. Played for Homestead Grays and Pittsburgh Crawfords, 1930-46. Elected to the Baseball Hall of Fame, ' 72.

Marker Name: Henry Clay Frick
County: Allegheny
DateDedicated: 12/10/46
Marker Type: City
Location: 437 Grant St., Frick Bldg.
Category: Business & Industry
Marker Text:

Pittsburgh industrialist and philanthropist, Frick was instrumental in the organization of the coke and steel industries. His controversial management style while chairman of Carnegie Steel led to the bloody Homestead Strike, 1892

Marker Name: Kier Refinery
County: Allegheny
DateDedicated: 3/16/59
Marker Type: City
Location: Small park near Bigelow Sq.
Category:Business & Industry
Marker Text:

Using a five-barrel still, Samuel M. Kier erected on this site about 1854 the first commercial refinery to produce illuminating oil from petroleum. He used crude oil from salt wells at Tarentum.

Marker Name: Henry J. Heinz
County: Allegheny
DateDedicated: 9/14/94
Marker Type: City
Location: 16th St. Bridge, North Side
Category: Business & Industry
Marker Text:

From a start in 1869 selling bottled horseradish, Heinz built an international firm by 1886. He pioneered innovative advertising, quality control, and benevolent employee policies and transformed modern diets.

Marker Name: Martin R. Delany
County: Allegheny
DateDedicated: 5/11/91
Marker Type: City
Location: 5 PPG Place, 3rd Ave. & Market St.
Category: African American, Professions & Vocations
Marker Text:

A promoter of African-American nationalism, Delany published a Black newspaper, The Mystery, at an office near here. He attended Harvard Medical School, practiced medicine in Pittsburgh, and was commissioned as a major in the Civil War.

Marker Name: McClurg Iron Foundry
County: Allegheny
DateDedicated: 5/11/55
Marker Type: City
Location: Boulevard of the Allies, just W of Market St.
Category:
Marker Text:

Established in 1804, it was the first air foundry in Pittsburgh. During War of 1812, it supplied cannon, shells, and balls. In 1835, the first locomotive steam engine made west of the Alleghenies was built on this site.

Marker Name: Pittsburgh Grease Plant
County: Allegheny
DateDedicated: 9/18/00
Marker Type: City
Location: 33rd St. & Smallman St.
Category: Business & Industry, Military
Marker Text:

Long a major producer of lubricating grease for industry, transportation, and the military. In WWII, supplied 5,000,000 pounds of "Eisenhower grease," vital to the war effort. Founded here, 1885, by Grant McCargo. After 1929, part of Standard Oil (NJ); operated until 1999

Marker Name: Mercy Hospital
County: Allegheny
DateDedicated: 5/27/94
Marker Type: City
Location: 1400 Locust St., Pittsburgh
Category: Women, Religious, Education, Professions, & Vocations
Marker Text:

Founded in 1847 by the Sisters of Mercy as Pittsburgh's first hospital. Medical internships began in 1848, and the nursing school in 1893. This was the first Mercy hospital worldwide, caring for all patients, especially the community's poor.

Marker Name: Pittsburgh Plate Glass Company
County: Allegheny
DateDedicated: 10/19/83
Marker Type: City
Location: Plaza of PPG Place, between 4th Ave. & Market Sq., Pittsburgh
Category: Business & Industry
Marker Text:

First commercially successful U.S. plate glass maker, founded 1883 by John Ford, John Pitcairn and others. First plant was at Creighton; office was half a block east of here on Fourth Avenue. The company became PPG Industries in 1968.

Marker Name: Pennsylvania Canal
County: Allegheny
DateDedicated: 12/58
Marker Type: City
Location: Liberty Ave. & Grant St. at railroad station
Category: Transportation
Marker Text:

The loading basin and western terminus of the State-built railroad, canal, and Portage over the Alleghenies uniting eastern and western Pennsylvania was here. Built in 1826-34. In 1857 sold to the Pennsylvania R.R.

Marker Name: Polish Army
County: Allegheny
DateDedicated: 4/3/60
Marker Type: City
Location: 97 S. 18th St., South Side
Category: Ethnic & Immigration, Military
Marker Text:

At hall on this site on April 3, 1917, a speech by I. J. Paderewski to delegates at convention of the Polish Falcons began the movement to recruit a Polish army in U.S. to fight in Europe with Allies for creating an independent Poland.

Marker Name: Pittsburgh
County: Allegheny
DateDedicated: 12/21/46
Marker Type: Roadside
Location: US 19 (Perryville Rd.), near St. Benedict'sAcademy, N of city line

Location:PA 65 at north city line

Location:US 19 north of city line

Location:PA 51 at S city line, near Stewart Ave.

Location:Pa 60 at Thornburg

Location:PA 65 (Ohio River Blvd.), N city line

Location:US 30 westbound, at W end of Forest Hills

Location:Pa 8 & PA 28, Millvale

Marker Text:

Gateway to the West and steel center of the world. Named for William Pitt by Gen. Forbes after the fall of French Fort Duquesne in 1758. Laid out as a town by John Campbell in 1764. Incorporated as a city, 1816.

Marker Name: Radio Station KDKA
County: Allegheny
DateDedicated: 11/30/90
Marker Type: City
Location: KDKA Headquarters, 1 Gateway Center
Category: Business & Industry
Marker Text:

World's first commercial station began operating November 2, 1920, when KDKA reported Harding-Cox election returns from a makeshift studio at the East Pittsburgh Works of Westinghouse. Music, sports, talks, and special events were soon being regularly aired.

Marker Name: Robert Lee Vann
County: Allegheny
DateDedicated: 7/13/97
Marker Type: City
Location: Corner of Center Ave. & Frances St.
Category: African American, Professions & Vocations, Government & Politics
Marker Text:

Publisher & editor of the Pittsburgh Courier, 1910-40. He built it into a preeminent Black weekly, a strong voice for civil rights & economic empowerment. It had its headquarters here. Vann was special assistant to the U.S. Attorney General, 1933-35.

Marker Name: Pittsburgh Glass Works
County: Allegheny
DateDedicated: 10/2/97
Marker Type: City
Location: Foot of Duquesne Incline, West Carson St.
Category: Business & Industry
Marker Text:

First glass factory in Pittsburgh was established on this site by James O'Hara and Isaac Craig in 1797. It manufactured bottles and window glass until the 1880s. A precursor of Pittsburgh's rise as the nation's largest glass producer.

Marker Name: The Great Steel Strike of 1919
County: Allegheny
DateDedicated: 9/23/94
Marker Type: City
Location: United Steelworkers Hall on Braddock Ave.
Category: Labor
Marker Text:

In the largest work stoppage to that date, over 350,000 U.S. workers went off the job. Rev. Adalbert Kazincy, pastor of St. Michael's here, championed the strikers and provided the church as a meeting place. The strike failed after 15 weeks.

Marker Name: Sisters of Mercy
County: Allegheny
DateDedicated: 12/21/93
Marker Type: City
Location: 800 Penn Ave., Pittsburgh
Category: Women, Religious, Ethnic & Immigration
Marker Text:

Frances Ward and six companions from Carlow, Ireland, opened the first Mercy convent in the U.S. here. Founding date was December 21, 1843, and at once the sisters began to serve the city's poor, sick, and uneducated. From here, Mercy convents spread across the U.S.

Marker Name: United Steelworkers of America
County: Allegheny
DateDedicated: 6/17/86
Marker Type: City
Location: Grant St. between 3rd & 4th Aves.
Category: Labor
Marker Text:

In the Grant Building here on June 17, 1936, the Steel Workers Organizing Committee was founded. Renamed in 1942, the USWA became one of the world's largest unions, embracing over a million workers. Philip Murray was its first president.

Marker Name: Station WQED
County: Allegheny
DateDedicated: 8/20/64
Marker Type: City
Location: 4802 5th Ave., Oakland
Category: Business & Industry
Marker Text:

Television station, located here, opened April 1954, as first community-sponsored educational television station in America. In 1955 it was the first to telecast classes to elementary schools.

Marker Name: University of Pittsburgh
County: Allegheny
DateDedicated: 11/2/79
Marker Type: City
Location: SE corner, 5th Ave. & Bigelow Blvd., Oakland
Category: Education
Marker Text:

First institution of higher education west of the Alleghenies and north of the Ohio River. Founded in 1787 as the Pittsburgh Academy, it became the Western University of Pennsylvania in 1819. Present name was adopted in 1908.

Marker Name: Stephen C. Foster Memorial
County: Allegheny
DateDedicated: 12/58
Marker Type: City
Location: Forbes Ave. just E of Bigelow Blvd., Oakland
Category: AWP
Marker Text:

Tribute to Pittsburgh's beloved writer of songs and ballads, including "Oh Suzanna," "Old Folks at Home" and "My Old Kentucky Home." Born in 1826 and died in 1864.

Marker Name: V.F.W.
County: Allegheny
DateDedicated: 9/16/67
Marker Type: City
Location: 5th Ave. & Bigelow Blvd., Oakland
Category: Military
Marker Text:

The Veterans of Foreign Wars organized September 14-17, 1914, at the former Schenley Hotel near here. Veterans who had served in Cuba, Puerto Rico, the Philippines and China were among its founders.

Marker Name: The Great Railroad Strike of 1877
County: Allegheny
DateDedicated: 9/23/97
Marker Type: City
Location: 28th St. Crossing off Liberty Ave.
Category: Transportation, Labor
Marker Text:

In July, unrest hit U.S. rail lines. Pennsylvania Railroad workers struck to resist wage and job cuts. Here, on July 21, militia fatally shot some 26 people. A battle followed; rail property was burned. The strike was finally broken by U.S. troops.

Marker Name: Victor Herbert
County: Allegheny
DateDedicated: 6/28/96
Marker Type: City
Location: 4400 Forbes Ave.
Category: AWP, Ethnic & Immigration
Marker Text:

Irish-born, educated in Europe as a cellist, Herbert conducted the Pittsburgh Orchestra here, 1898-1904. His compositions ranged from classical orchestral works to popular operettas including "Babes in Toyland" and "Naughty Marietta."

Marker Name: Bouquet Camp
County: Allegheny
DateDedicated: 12/21/46
Marker Type: Roadside
Location: PA 380 (Saltsburg & Frankstown Rds), Petermans Corner, Penn Hills Twp.
Category: Military
Marker Text:

Bouquet Camp, a base of supply in the Forbes campaign in 1758 forcing the French to abandon Fort Duquesne, was about three miles east. Named in honor of Col. Bouquet, second in command and builder of the Forbes Road.

Marker Name: Davis Island Lock & Dam
County: Allegheny
DateDedicated: 7/4/87
Marker Type: Roadside
Location: PA 65 at E borough line, Avalon
Category: Environment
Marker Text:

Below this bridge was the first lock and dam built (1878-1885) on the Ohio River. This was the world's largest movable dam yet constructed, and included the world's first rolling lock gate and widest lock chamber. Built and operated by the U.S. Army Corps of Engineers; replaced by the nearby Emsworth Locks and Dams in 1922.

Marker Name: Ethelbert Nevin
County: Allegheny
DateDedicated: 5/7/48
Marker Type: Roadside
Location: PA 65 northbound at Edgeworth
Category:
Marker Text:

Composer of "Narcissus," "The Rosary," and other well-known musical works, was born Nov. 25, 1862, at Vineacre, a property adjoining the far end of this street. Died Feb. 17, 1901, at New Haven, Conn.

Marker Name: Avery College
DateDedicated: 1/68
Location: 619 Ohio St., North Side, Pittsburgh
Category: African American, Education
Marker Text:

To the south, at Nash and Avery Streets, stood Avery College. Founded in 1849 by Charles Avery (1784-1858), Methodist lay preacher, philanthropist, abolitionist, to provide a classical education for Negroes.

Marker Name: Michael A. Musmanno
County: Allegheny
DateDedicated: 10/11/93
Marker Type: Roadside
Location: 1321 Island Ave., McKees Rocks (PA 51)
Category: Government & Politics, AWP
Marker Text:

The noted jurist lived here. Pennsylvania Supreme Court Justice, 1952-68. A presiding judge, War Crimes Tribunal, Nuremberg, 1947-48. State legislator, 1929-31. Veteran of two World Wars. Author, 16 books. Buried, Arlington National Cemetery.

Marker Name: Duquesne University
County: Allegheny
DateDedicated: 10/5/78
Marker Type: City
Location: Bluff St. at Administration Bldg.
Category: Education, Religious, Ethnic & Immigration
Marker Text:

Founded by Holy Ghost Fathers from Germany in 1878. Incorporated 1882 as Pittsburgh Catholic College. Named Duquesne University in 1911, this Catholic institution has served students of many faiths in liberal arts and professional studies.

Marker Name: Neville House
County: Allegheny
DateDedicated: 8/12/47
Marker Type: Roadside
Location: PA 50 just S of Woodville
Category: Military
Marker Text:

Known as Woodville. Built 1785 by Gen. John Neville; later occupied by his son, Col. Presley Neville. Refuge of Gen. Neville's family when some Whiskey Rebels burned his home at Bower Hill, July 17, 1994.

Marker Name: First World Series
County: Allegheny
DateDedicated: 9/18/98
Marker Type: Roadside
Location: Three Rivers Stadium
Category: Sports
Marker Text:

At Exposition Park on this site, Games 4 through 7 of major league baseball's first modern World Series were played in October, 1903. The National League's Pittsburgh Pirates faced the American League's Boston Pilgrims (renamed "Red Sox" in 1907). Boston won the best-of-9 series, 5 games to 3; prominent players included Pittsburgh's Honus Wagner and Boston's Cy Young. Exposition Park was home to the Pirates from 1891 to 1909.

Marker Name: Dravo Corporation
County: Allegheny
DateDedicated: 8/19/95
Marker Type: Roadside
Location: Neville Island Blvd. And Grand Ave. just W of Pittsburgh
Category: Business & Industry
Marker Text:

During World War II, Dravo's shipyard here was a leader in the manufacture of Landing Ship Tanks--LSTs--for the U.S. Navy. Dravo's over 16,000 workers produced a total of 145 LSTs. This and four other inland yards, all using techniques pioneered by Dravo, contributed two-thirds of the Navy's fleet of over 1,000 LSTs. These amphibious craft proved vital to the success of Allied landings on enemy shores, 1943-45.

Marker Name: Mary Lou Williams
County: Allegheny
DateDedicated: 11/30/96
Marker Type: City
Location: 328 Lincoln Ave., Lincoln Elementary School
Category: Women, African American, AWP
Marker Text:

Famed jazz composer & pianist. A child prodigy, she grew up in this city; went to Lincoln School here, 1919-23. Played for Andy Kirk in 1930s; then arranged music for Duke Ellington and others. Major works include "Zodiac Suite" and "Mary Lou's Mass."

Marker Name: Shadyside Iron Furnace
County: Allegheny
DateDedicated: 12/58
Marker Type: City
Location: SE corner, Bayard St. & Amberson Av
Category: Business & Industry
Marker Text:

Built on lowlands here in 1792. Birth of the iron industry in the Pittsburgh region. It made stove and grate castings. Closed about a year later due to lack of ore and wood.

Marker Name: Stephen C. Foster
County: Allegheny
DateDedicated: 7/4/76
Marker Type: Roadside
Location: 3600 Penn Ave., Lawrenceville
Category: AWP
Marker Text:

America's beloved composer of folk songs and ballads was born nearby on July 4, 1826, and lived in the Pittsburgh area most of his life. After achieving fame in writing songs for Christy's Minstrels, he gradually declined in health and died in New York City on January 13, 1864.

Marker Name: Shannopin Town
County: Allegheny
DateDedicated: 12/58
Marker Type: City
Location: 40th St. at bridge, Lawrenceville
Category: Native American
Marker Text:

Name of a Delaware Indian village that covered this site from about 1731 to the French occupation, 1754. It was the Allegheny River terminus of the Raystown Indian and Traders Path from Carlisle to the west.

Marker Name: Gen. Matthew B. Ridgway
County: Allegheny
DateDedicated: 11/6/99
Marker Type: Roadside
Location: 611 Field Club Road
Category: Military
Marker Text:

U.S. Army officer; he rose to the rank of general, 1951. In World War II, commanded 82nd Airborne Division (famed for its invasion of Sicily), 1942-44; and 18th Airborne Corps, 1944-45. Supreme commander, United Nations forces in Korea, 1951-52, and Allied Powers in Europe, 1952-53. Chief of Staff, U.S. Army, 1953-55; opposed massive retaliation. Chairman, Mellon Institute, 1955-60. In 1989, Ridgeway International Peace Shrine was dedicated here.

Marker Name: Westinghouse Electric Corporation
County: Allegheny
DateDedicated: 10/86
Marker Type: City
Location: Westinghouse Plaza, 6 Gateway Center
Category: Business & Industry
Marker Text:

Pioneer in development of alternating current, permitting transmission of electricity over long distances. Founded 1886 by George Westinghouse, it first made AC motors, generators, transformers in a plant at Garrison Place and Penn Avenue.

Marker Name: 1909 McKee's Rocks Strike
County: Allegheny
Date Dedicated: 10/14/00
Marker Type: Roadside
Location: 812 Island Ave. McKees Rocks Bridge, Stowe Twp.
Category: Labor
Marker Text:

On July 14, unskilled immigrant workers led a strike against the Pressed Steel Car Company. Strain among the strikers, replacement laborers, and state police erupted into a riot on August 22. Eleven men were killed near this footbridge. Strikers were aided by the Industrial Workers of the World.

Marker Name: James Hay Reed
County: Allegheny
DateDedicated: 12/58
Marker Type: City
Location: Carnegie Science Center North Side
Category: Professions & Vocations, Business, & Industry
Marker Text:

Born Sept. 10, 1853, in a house standing in this square. Distinguished as a lawyer. Counselor to a majority of the leaders of business who built the corporations which made Pittsburgh leader in American industry.

Appendix G *(Chapter 7: Public Participation)*

Interview and Public Participation Questions
Public Participation Summaries

Public Participation Survey

What changes have you seen in the river corridor in the past 10 years?

What do you think it will look like in 10 years?

What are the biggest river-related issues along the corridor?

Are there any additions or changes that you feel could improve recreation opportunities along the corridor?

Do you have any preference regarding how you would like the corridor to be managed and used in the future?

What will it take to successfully implement your recommendations?

What might prevent these recommendations from being implemented?

Do you have any other comments or ideas?

Four public meetings were held in the corridor. Attendees were asked a series of questions about the Three Rivers Corridor as well as to identify threats, opportunities, important places, and natural areas on a map of the project area. Their comments are listed below followed by lists of areas identified on the map. Locations of these areas are identified as specifically as possible.

Public Meeting
March 25, 2002 – Avalon

How have the rivers changed in the past 10 years?

- They are cleaner. Water quality has improved.
- New development – away from industry, more residential, more offices, more recreation.
- More commercial and recreational river traffic.
- Less recreational river traffic since 1996 flood. Boats were destroyed and fewer places to go.
- Increase in non-motorized traffic.
- More trails
- Education and awareness of environmental effects is very high.
- More Canada geese. More water dependent birds.
- Warm water, cold water fisheries are better.

What will the rivers look like in 10 years?

- More restoration of water edge into natural state.
- With EPA mandates about CSO's the water will be cleaner.
- More marinas
- More parks like Riverfront Park on south side like a floodplain.
- Completed land trails (trail to DC)
- Railroads provide basis for a trail. Enough space, but need to work with railroads about the crossings.
- Possible floating docks.
- Feasibility studies for trails.
- Redevelopment of access roads to the river.

What are the biggest river related issues along the corridor?

- Drinking water issues - bigger than the plan's corridor
- Pollution sources from industry on Neville Island
- Need major improvement to public boating access. Excellent access in McKees Rocks. Potential access at West Penn site when it closes. Also potential small boat access in Sharpsburg near 13th St.
- Need to work with railroads and utility right of way along the corridor
- More small parks and fishing access
- The use of boats and petroleum products spilling from boats.
- No wake areas, pollution, riverbanks, erosion are a problem.

Do you have any preferences regarding how you would like the corridor to be managed and used in the future?

- Need to zone and plan a mix of land use types in the corridor. Make the trails throughout the corridor.

What will it take to successfully implement your recommendations?

- Funding
- 90% of funding from federal and sate for rails to trails.
- Need to get feedback from people who use the trails.
- Use the input of current communities and key in on what changes are being made to abandoned sites so land use change could be more closely looked at.
- Bring the universities into the plan. Provide access to water sport activities.
- Need public "river consciousness" educate people about the rivers.
- Identify the history of the rivers to the public.
- Use educational research into the scientific database for the rivers
- Promote the organizations that are studying the rivers and incorporate them into one central location and meeting organization.
- Involve sportsmen's groups
- The plan should be more regional

Attendees identified the following items during the mapping exercise.

THREATS

- Industrial site on Neville Island
- Sewer overflow
- Lost flood plains
- Trash/pollution from boats
- Bilge oil from barges
- Kilbuck Walmart; alien species (carp, zebra mussels)
- Streams and tributaries going into Alcosan sewer system
- Hillside erosion
- Sprawl
- Railroad
- Styrofoam litter from marinas
- Cars near access (31st St. Bridge in particular)
- Sociological – riverboat gambling and other money oriented exploitation
- Mindless big box development

OPPORTUNITIES

- Improve public access to the rivers. Need more boat launches and parks.
- Bicycle transportation (as opposed to just recreation)
- Bicycle paths (e.g. rails to trails) for recreation
- Transportation to town
- Recreation / fishing
- River access / transportation
- History (remains of old Indian Mound)
- Education / Outreach

- Restoration of the island's natural areas

IMPORTANT PLACES
- Back Channel serenity
- Emsworth Lock and Dam observatory
- Brunot Island and channel between the island and Wood's Run – an important bird sanctuary
- Farragert St. to the River (Bellevue) along river
- Bellvue behind McDonalds to the River
- Western Penitentiary (possible fish and boat access if closed)
- McKees Rocks (for boat access)
- Sharpsburg 13th St. (Possible boat access)
- Historical places
- Rivers as history

NATURAL PLACES
- Hatchery on Brunot's Island
- Cormorant migratory path
- Beaver sites
- Heron feeding (Rookery on Big Sewickly Creek
- Waterfowl habitat
- Mussels
- Cool water/ warm water fisheries
- Heron feeding and rookery

Public Meeting
April 9, 2002 – Oakmont

How have the rivers changed in the past 10 years?

- Dredging of glacial till in Pool 6 above Freeport to depths of 68 feet. Why did the Corps of Engineers allow this? Lead to loss of islands.
- More residential development, especially in Fox Chapel
- Water quality has improved: Industrial pollution has decreased, but residential runoff increased.
- Washington's Landing – created more trails which are connected to downtown.
- More cycling, hiking, crew, kayaking
- Not saving open space or conserving areas.
- Not enough limitations on development (businesses, etc.)
- New trail in Millvale
- Millvale to North Side – Penn Dot Rt. 29 projects will remove hillside

What will the rivers look like in 10 years?

- More public access (parking, boat access, launches)
- No floating casinos
- Three Rivers Wet Weather won't need to exist.
- Maybe more malls or office buildings (could be good or bad – more tax revenues, but loss of space)

- What path will landowners take regarding zoning?
- People will be more removed from natural resources (have less concern)
- There will be mass transportation on rivers.

What are the biggest river related issues?

- Rivers are garbage dumps for some people, including riverfront property owners
- CSO and SSO problem
- Not enough public access (only one in Pgh Pool)
- Water quality not good enough
- Fishing may be down
- Flooding
- Will the dams last?
- Oakmont has no plans for the rivers
- Penn Hills has a plan
- Communities need to plan regionally
- Maglev, land uses around it
- Joint planning – will riverfront communities participate? How do rivers become a priority? How do they become interested?
- Shared tax base
- Capitalize on Point State Park and other scenic areas
- Acquisition of greenspace (e.g. Plum Creek)
- Recreation -Extend recreation beyond bluffs
- What roles do DCNR, WPC, USACE, Allegheny County Conservation District play?

What are the threats in the corridor?

- Dirtbikes, ATVs, personal water craft
- Abuse of bike trails (e.g. by ATV's)
- Preservation of ravines, tributaries from being backfilled

Do you have any preferences regarding how you would like the corridor to be managed and used in the future?

- Rivers should be managed as rivers and as a cultural resource; not for transportation and economic development
- As a scenic river
- Managed regionally, not just locally
- Multi-use; multi-purpose

Questions/Comments

- Is scope of plan too narrow?
- How is the water treated in the Harmar Mine?
- Collaboration of local groups, not just municipalities

OPPORTUNITIES

- Canoe and kayak launches
- Public park and river-based development on the LTV site (and a new bridge)

- Conserve space in LTV site adjacent to river
- More bike and walking trails (left, descending Allegheny)
- Tie in with and support bicycle trails (Plum Borough)
- Rachel Carson Homestead
- Instead of parking, public space and street fairs under the parkway
- Move the jail trail to along the river and convert that back to light rail/commuter rail
- coordinate programs with Science Center
- AVRR (mass transportation and rails to trails)
- Find something useful to do visually (Brunot Island)
- Zoo train from new Convention Center to Zoo (commuters can utilize zoo parking lots during the week and moving escalator to railroad tracks)
- Pgh Steelworkers Museum along river
- Edgewater
- Great access to Washington's Landing and downtown via trails, but need parking
- Make ARBA Parkway similar to the George Washington Parkway in D.C.
- Bike trail extension from Oakmont to Pittsburgh

NATURAL RESOURCES

- Glass Valley should be conservation district/preserve
- Keep upper end of 12 mile island natural
- Valley near Sandy Creek Rd. 17 acre site along Allegheny River Blvd..
- Great inner city waterway (Chartiers)
- AVRR
- Washington Blvd. Greenway
- Small tributaries
- Preserve wooded hillside along Allegheny River Blvd.

IMPORTANT PLACES

- Economic Distressed
- Preserve 12 and 14 mile islands
- Save 9 mile island
- AVRR
- Plum Borough (part of study area)
- Extend bike trail to Sharpsburg and beyond
- Potential access area (near Ohio River Blvd.)

THREATS

- More suburban development (e.g. Seagate) style development in the Strip District
- Storm water overflow in sewage pipes
- Rt. 28 project
- Riverboat gambling
- Edgewater
- Personal watercraft and off road vehicles
-
- Kinzua Dam releasing too much water
- Old hulls of boat and log in river
- Closing of properties due to the perceived threat of liability of someone should be injured
- Dredging
- AVRR

- Deer Creek disaster mall
- Plum Creek watershed
- Maglev
- I feel unsafe jogging alone on riverfront trail
- Harmar mine AMD/Campbells Run

Public Meeting
April 11, 2002 – Millvale

How have the rivers changed in the past 10 years?

- People are using jogging, biking trails
- Increase in recreational activities
- Quality of the water has improved
- Better fishing
- More houses along the river
- Access has not changed (one public site)
- People looking at the river as a natural resource
- Property values increased

What will the rivers look like in 10 years?

- Depends upon what the neighbors will do.
- Trail from Millvale to Etna
- More regional thinking
- Trail congestion
- Industry will be a mix (heavy and light)
- More housing
- A bigger Rt. 28
- Continuous access or not depending on how communities work together
- Rail transportation
- MAGLEV
- Water taxis
- Hillsides cleaner thanks to cleanup groups
- More canoeing, more rowers
- Boathouse in Millvale
- New connection between Washington's Landing and North Shore
- Water cleaner

What are the biggest river related issues?

- Water quality
- Plans of ALCOSAN, may disrupt park
- Cooperation among government agencies and all parties (in our lifetime)
- Coordinated planning (in our lifetime)
- Money to implement projects
- Money gained by municipalities
- Money for private businesses
- An increase in property values and increase in taxes
- Eminent domain

- Access
- Transportation – between a wall and a river
- Mass transit alternatives
- Municipal independence
- Getting elected officials together
- Get other municipalities to take the same interest in riverfronts
- Rivers as tourist attractions

How do you improve recreation along the rivers?

- Not a boater friendly area – no where to tie up boats and few places to camp or pull of or connect with community
- Need amenities (restaurants)
- Signs

What are the threats in the corridor?

Do you have any preferences regarding how you would like the corridor to be managed and used in the future?

- An authority made of governing bodies (riverfront compact)
- Upper level support
- Abandoned barges – map them, determine ownership, and remove them
- Marketing the area – brochures for small towns

THREATS
- Abandoned Barges
- High Maintenance
- Raw Sewage/Floating Debris
- Alcosan plans for Millvale

IMPORTANT PLACES
- Riverfront Park
- Riverfront
- Land next to river

OPPORTUNITIES
- Boat Launch
- Bike trails and jogging trail
- Canoeing
- Fishing
- All of the above

NATURAL RESOURCES
- Use of land – use of land – terrain protection
- Accessibility of above water – land – air
- Girty's Run

Public Meeting
April 16, 2002 – South Side

Attendees noted a lack of access to the rivers, not only for boaters, but for residents of the communities as well. There is a need for amenities for river users, especially boaters. Attendees see a mix of development for the riverfronts, but are concerned about protecting natural areas too.

Attendees saw a regional effort toward managing this area.

How have the rivers changed in the past 10 years?

- Industry gone – potential for river access
- Rivers have value beyond industry
- More wildlife- water is cleaner (still have sewer problems, brownfields, not so much industry)
- More recreational boating, marinas, pleasure boats, trails
- More awareness of rivers, not a lot of access
- Residential development – mixed use development (not as many houseboats)
- Use, ownership of all islands

What will the rivers look like in 10 years?

- If Homestead development is successful we will see more like it; more mixed use development
- Roads/highways on Mon from Glenwood to Oakland
- Maybe a parkway on Mon
- Ohio will stay the same because of railroads and industry
- McKees Rocks – want to see parks to increase river access on all 3 rivers
- Ohio could become a scenic area
- Local, state, and federal government programs for riverfront development
- Scientific projects on West Penn site
- Rivers will be better overall

What are the biggest river related issues?

- Cutbacks in Corps funding and its affect on upkeep of locks and dams, especially for pleasure boaters, river traffic
- Sewage
- Access – ability to touch the water, water to shore, marinas and public boat parking, pump out stations, no pleasure boats at regatta, no public launches, jogging trails need to be connected, need access from neighborhoods to rivers, riverbanks are too high from the water
- Surface parking is a dominant economic use
- Habitat fragmentation
- Dredging
- Need a regional perspective – balance among developments and tax base
- Life cycle analysis for development
- There could be too much development – need to keep natural areas

What are the threats in the corridor?

Any additions or changes for recreation?

- Need outfitters in the Pittsburgh Pool
- Management issues – sharing rivers with barges
- Signs – people need to know where the rivers are
- Facilities – restaurant, gas stations
- More trails

Do you have any preferences regarding how you would like the corridor to be managed and used in the future?

- Managed by the city?
- Create a special zone – govern this specific area as one
- Work with overlapping jurisdiction
- PA River Basin Commission
- Use county boundaries
- Work in steps, develop small areas at a time.

Other comments?

- Connect communities via the rivers
- Create a National Museum of Rivers located in Pittsburgh

OPPORTUNITIES

- National Museum of the River (American Rivers Museum)
- LTV site: riverfront development possibilities; economic and recreation
- boat input areas, marina?, expanding from South Side Park towards Becks Run
- Region-wide Riverside greenways (walk/bike/etc.)
- expand marina and boat access below Highland Park Bridge where marina is now
- Connection of Eliza Trail to Glenwood Bridge
- Expand Bike trail through "the run" connecting to Squirrel Hill (Beechwood, Murray, Shady)
- region-wide water transport system servicing suburbs and downtown
- existing rail corridors = passenger/commuter transportation
- downtown residential development
- Access from river to restaurants, facilities, etc.
- develop access from rivers/ Station Square to Mt. Washington; tourism node at Mon Incline/ 1 Grandview
- "Soften" riverbanks to make better rowing/canoe/kayak water: enforce No Wake Zones
- Extend recreational trails upstream on the Mon River
- Extend recreational trails upstream on the Allegheny and connect to downtown Pittsburgh
- Paddlefish reintroduction
- Restoration of Streams feeding into the rivers (9 mile run)

THREATS

- Mon Fayette Expressway (Glenwood Bridge to Oakland)
- Industrial Issues/ Impact
- Invasive Plants – especially bad in this section of Ohio, but problem throughout
- rail right of way along river
- Sewage overflow issues
- archaic vehicle-centric transportation planning/policy/funding in PA region
- short-sighted planning
- unrecognized/undervalued view of rivers as anything other than industrial asset
- Lack of pedestrian access at vehicle bridge crossings (Hot Metal, et al)
- Expansion of Rt. 28 will make riverside a concrete trough
- Allegheny – Mall development on wetlands
- Lack of water quality –improving green buffers along rivers
- Deferred urban tree planting and lack of hardwood planting
- Expressway: barrier to river access
- General loss/reduction of trees and native vegetation along banks
- Cutbacks in Corps funding
- Dredging

NATURAL AREAS

- Good floodplain forest – beaver activity
- mouth of NMR and along cliffs (hop tree, passion flower)
- rock climbing at Mount Washington; climbing parklets = promotion = revenue
- South side park – improve and expand
- Hillside above 2nd Ave.
- Connect Highland park to river
- Schenley Park preservation and traffic calming
- Good riparian forest (silver maple, sycamore)

IMPORTANT AREAS

- Station Square, et al
- Point State Park
- LTV Site Hazelwood
- Historical Industrial Archaeology
- old prison
- Junction Hollow: connection to Schenley Park
- Neville Island Planning opportunity
- Mt. Washington/Grandview Ave./ Grandview Park/ “Emerald Ring”

Public Comments by phone or email

- Recreational boaters need boat ramps and places to get gas, as well as dock facilities that will allow boaters to access food, service, park and entertainment venues from the water.

- Need to deal with polluters.

- Pittsburgh should make a video of the rivers from a boat and use it for marketing the region to tourists.

- The region needs a network of bike trails that can be used for transportation – not just for recreation. The network can be integrated with the public transportation system, and roads within this network could be marked as such, increasing driver awareness of bike traffic. Small businesses catering to the users of the bike trail could be established along the trail.

- Providence, Rhode Island may be a good model for the region. They developed gondolas, parks, and trees along the river.

- Pittsburgh is not bicycle friendly, but it could be and should be.

- Guidelines for development are needed, especially regarding development near dams, sewer outlets, in floodplains, etc. Taxpayers resent paying over and over again for poorly thought out developments.

- More public boat ramps with parking are needed.

- Many cities (San Antonio, Louisville, Chicago) have excellent amenities along their waterfronts, which have augmented other attractions and have become magnets and economic engines.

- The Point could be enhanced with many tall water fountains in the form of a triangle that constantly change color.