
B. Physiography

PHYSIOGRAPHY²

Geology

The primary geologic structure of Rice's Landing is that of the Monongahela Group, which is composed of cyclic sequences of limestone, shale, sandstone, Pocono Sandstone at the bottom, and coal (including thick layers of commercial bituminous coals suited to the manufacture of coke and steel). The base of the structure lies at the bottom of the Pittsburgh coal seam. Bedrock is of the Permian Age. The geologic structure of the area is illustrated on Map # 6.

Topography

Topography, the three-dimensional form of the land surface, is a direct result of the underlying geologic structure and weathering conditions. Hard, resistant bedrock withstands wind and water erosion and results in areas of high elevation and steep slopes. Softer rocks erode to form valleys and gently sloping land.

Rice's Landing, situated in the southwest corner of Pennsylvania, is part of the Appalachian Plateau physiographic region, which is situated west of the Appalachian Front. An area of rolling uplands cut by deep, steep stream valleys, the plateau's surface is underlain by warped sedimentary rocks and is divided by numerous rivers and streams into valleys with knobby hills. The landscape of the Plateau is an irregular one that is dominated by far-branching stream patterns.

Rice's Landing occupies a narrow and level river terrace, a precipitous hillslope, and a level ridge top adjacent to the Monongahela River. Consequently, the topography of Rice's Landing varies considerably within the borough boundaries. Elevations range from 780 feet along the Monongahela River to 1,040 feet near the Borough's eastern boundary. This topography secludes Rice's Landing from the surrounding area.

Slope

Slope determines the areas in which construction can occur and the types of construction that are feasible for particular locations. Slope also has a significant impact on excavation requirements, sewage requirements, and construction cost. Slope is expressed as a percentage; it is the inclination of the surface of the land relative to the horizontal datum. For example, one percent slope is equivalent to a one foot vertical deviation over one hundred feet of horizontal distance. The following table presents the four major slope categories with their associated suitable development types.

² The information presented in this section is based on the following sources: *The Atlas of Pennsylvania*. Philadelphia: Temple University Press, 1989. *Coal Resources of Greene County, PA*, Part 1. Harrisburg: Pennsylvania Geological Survey, 1984. Miller, E. Willard (ed.). FEMA. *Flood Insurance Study for the Borough of Rices Landing, Green County, Pennsylvania*. 1995. *A Geography of Pennsylvania*. University Park, PA: The Pennsylvania State University, 1995. Stone, Ralph W. *Geology and Mineral Resources of Greene County, Pennsylvania*. Harrisburg: Pennsylvania Geological Survey, 1932.

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GEOLOGY MAP

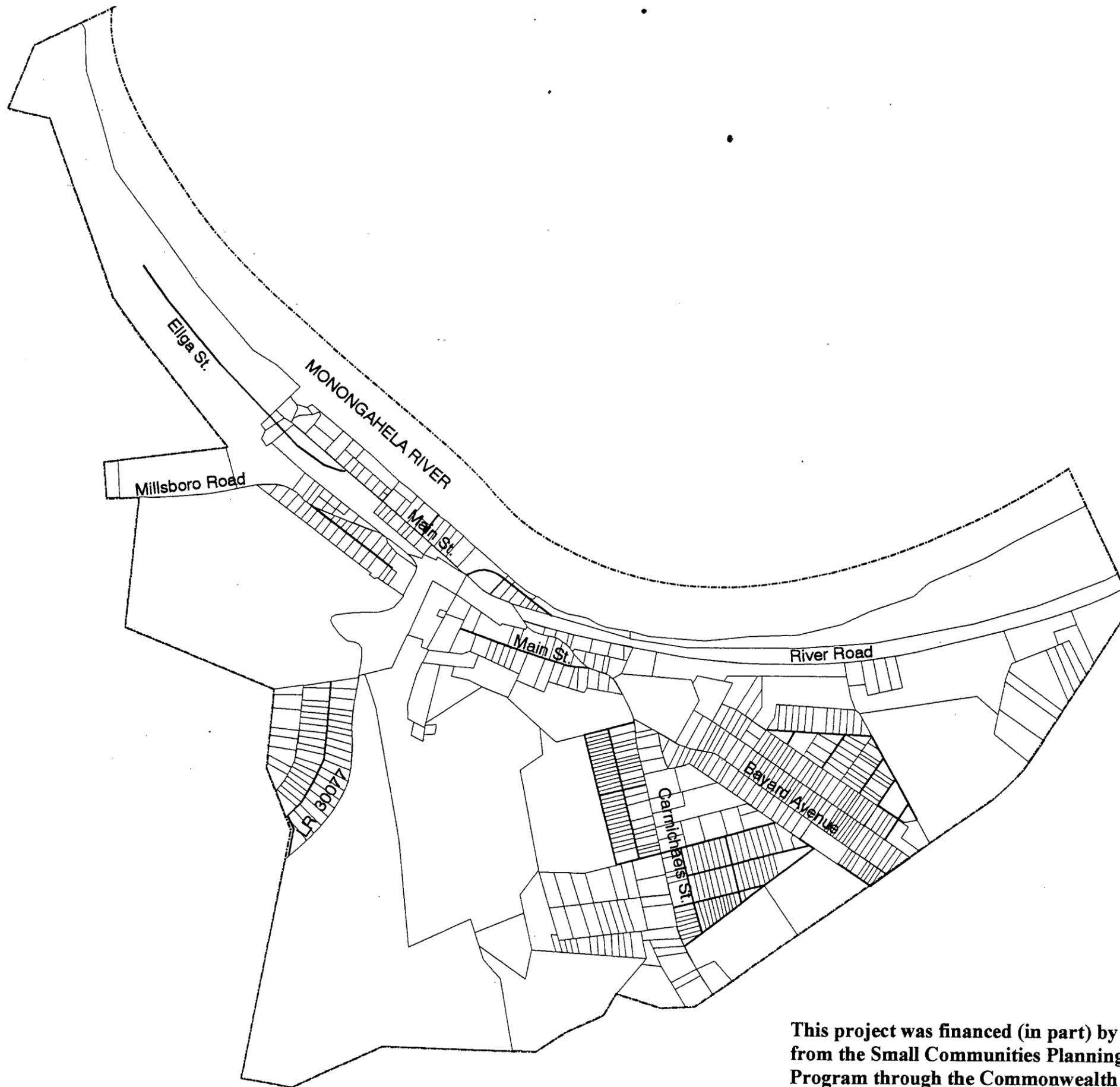
LEGEND

 **MONONGAHELA GROUP**
Cyclic sequences of limestone, shale, sandstone and coal; commercial coals present; base is at bottom of Pittsburgh coal.

 **BOROUGH BOUNDARY**



SCALE 1" = 800'



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TABLE B-1

SLOPE CATEGORIES	
SLOPE	SUITABLE DEVELOPMENT USES
0-8%	Generally economically capable of large scale or intensive land use development, including but not limited to industrial areas, commercial complexes, major public facilities, and high density residential developments
8-15%	Intensive and large scale land uses are less feasible; single family high density development is possible
15-25%	Scattered low density residential development and other less intensive uses; these areas should be utilized only after less steeply sloped areas have been developed
Over 25%	Generally unsuitable for building purposes; best suited to passive recreation and conservation areas

In Rices Landing, slopes of 0 to 8 percent are located primarily in the southeastern section of the Borough. Slopes of 8 to 15 percent are located primarily in the southern section of the borough. Additional areas of this moderate slope are located in the western part of the borough around Millsboro Road, and at the eastern end of the Borough. Slopes of 15 to 25 percent are interspersed with steeper slopes on the south side of the Monongahela and along Pumpkin Run in the western part of the Borough. These areas of steep slope include portions of Elija Street, the western end of Main Street, River Road, a significant portion of Millsboro Road, and LR 3007. These steeper slopes prevent extensive development of the northern and western sections of the Borough. The slopes of the Borough are identified on Map # 7.

Drainage/Flood Plains

Drainage is the natural process of the downhill flow of all water from the land to the seas and the means by which the water is carried. The land areas that contribute water ditches, sewers, channels, streams, and rivers are called drainage basins. Drainage basins are directly determined by the topography of the land.

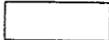
Rices Landing is located within the Ohio River Basin Drainage System. The immediate area is drained chiefly by the Monongahela River, which forms the northern boundary of the Borough. Pumpkin Run empties into the Monongahela in the west-central part of the Borough and winds southward through the Borough, bisecting it. Smaller streams run westward and southward from Pumpkin Run.

The vicinity of Rices Landing is characterized by moderate flooding concentrated between the months of December and March, and caused primarily by heavy rain and snow melt. The principal problem is overbank flooding of the Monongahela. Consequently, the 100 year flood plain in Rices Landing is located along the Monongahela River, stretching the full length of the Borough. The flood plain also extends along the lower portion of Pumpkin Run, where it crosses Main Street. The

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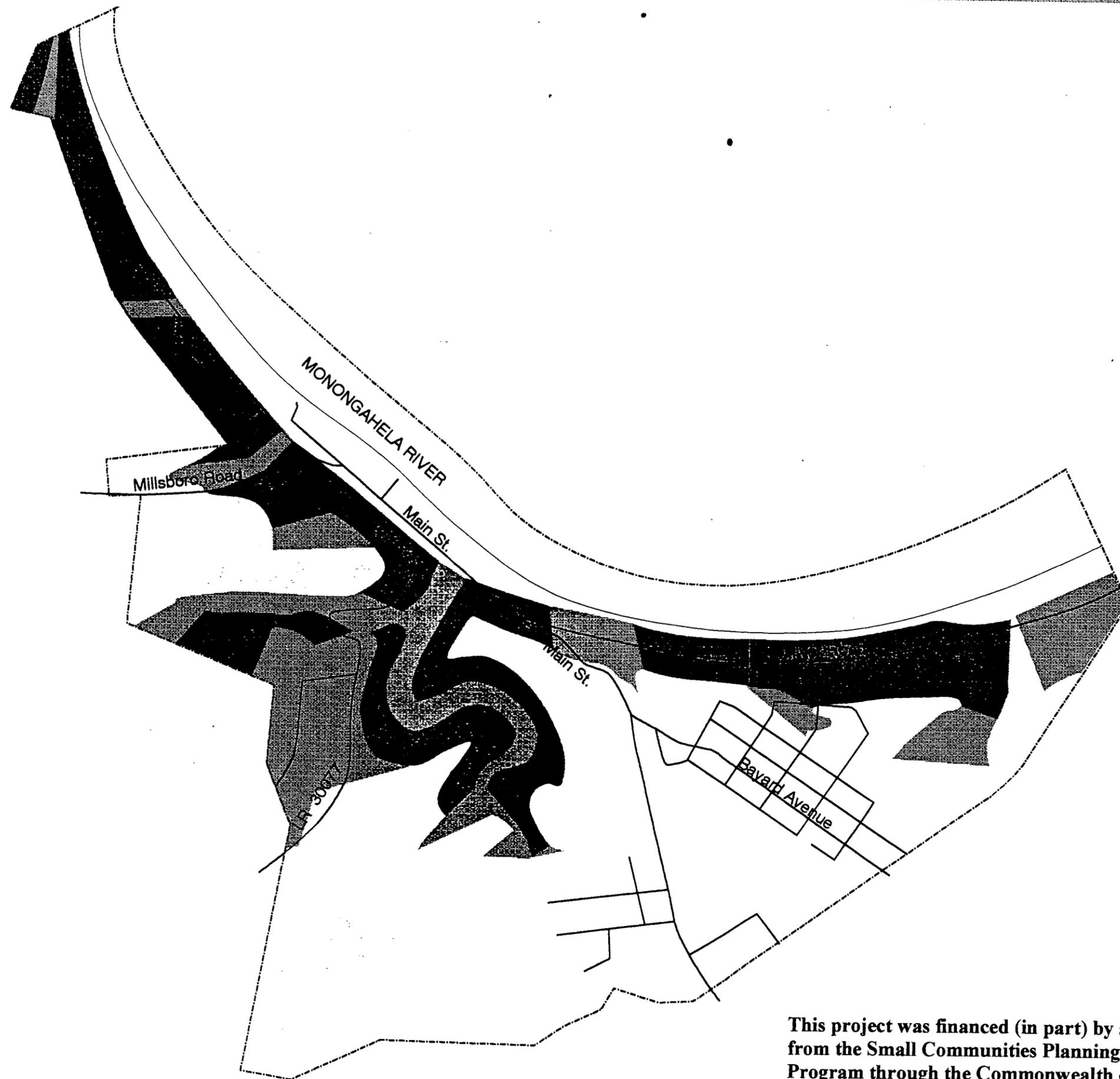
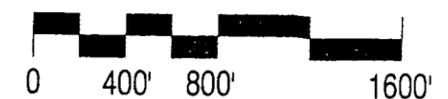
SLOPE MAP

LEGEND

-  0% - 8% SLOPE
-  8% - 15% SLOPE
-  15% - 25% SLOPE
-  25+% SLOPE
-  BOROUGH BOUNDARY



SCALE 1" = 800'



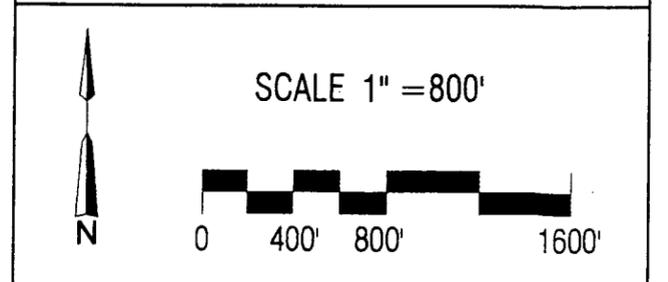
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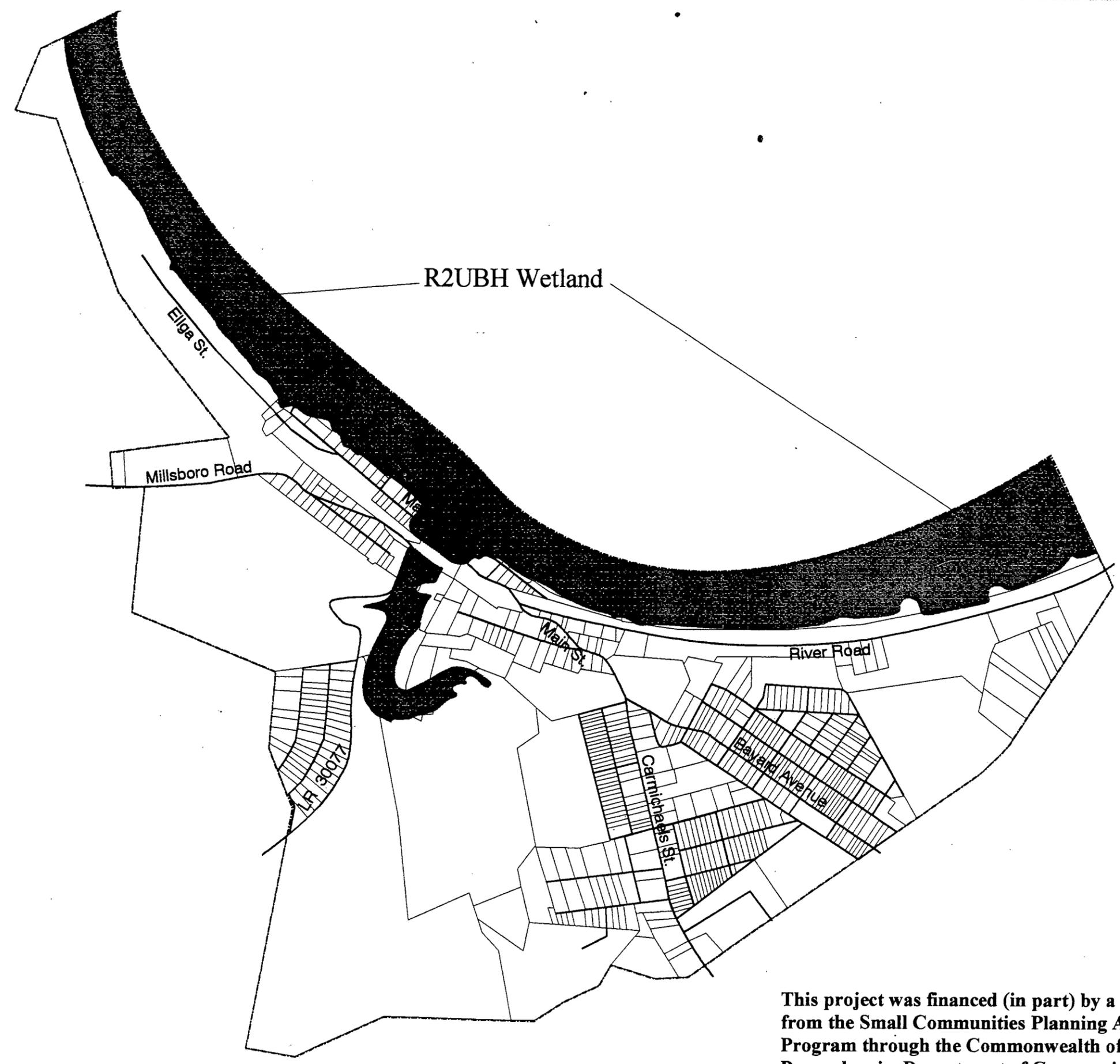
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FLOODPLAIN AND WETLANDS MAP

- LEGEND**
-  100 YEAR FLOODPLAN
 -  BOROUGH BOUNDARY



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Soils

The types of soils present within a given location have a direct relationship to agricultural pursuits, construction, and development. Soil type determines agricultural productivity, natural drainage characteristics, building foundation requirements, and sewage disposal requirements.

Soils found in this region are classified under the order of Alfisols, which originated on stable landscape and are found today on limestone and dolomite areas of the Appalachian Plateau. These soils are characterized by a yellowish brown surface soil, which indicates that considerable leaching has occurred. The surface texture of these soils is that of loam to silt-loam. These productive soils typically have a depth of 20-40" to bedrock and have good to moderately good drainage.

The primary soil association of the Borough is the Monongahela-Philo-Melvin association. These soils are deep, moderately-well-to poorly-drained soils of medium texture that lie nearly level or on gentle slopes on stream terraces and floodplains. These soils, which were derived from the underlying rock formations and deposits of former and present-day streams, include gravels, sands, and silts. The soil distribution of Rice's Landing is indicated on Map # 9

Wetlands

Wetlands are transitional lands between terrestrial and aquatic systems in which the water table is at or near the surface, or in which the land is covered by shallow water. The water is present in sufficient amounts to support vegetation that is typically adapted for life in saturated soil conditions, as in swamps, marshes, bogs, and similar areas. Due to the steeply sloping terrain within the Borough there are no significant wetlands in the vicinity.

Natural Resources

Mineral Resources Mineral resources in Rice's Landing are limited to coal. Although gas fields exist in Greene County, none are present within the Borough's boundaries. Rice's Landing is located within the bituminous coal fields of Pennsylvania, which lie at the northernmost extension of the Appalachian coal basin that extends into Ohio, West Virginia, and Maryland. These coal beds were formed in great swamps between the Pennsylvanian and Early Permian Ages. The geological structure of the coal fields is characterized by nearly horizontal to gently undulating broad northeast-to-southwest trending folds. The beds have been, and continue to be, mined locally where seam thickness and quality enable profitable operations.

Rice's Landing is situated within the Pittsburgh coal seam, which is considered the most productive, persistent, and valuable of coal beds in this region. This coal was the source for the industrial power that emerged in this region in the late nineteenth and early twentieth centuries, and was responsible for the later development period of Rice's Landing in the early twentieth century.

The Pittsburgh seam beds in the vicinity of Rice's Landing are typically over 28 inches thick and are mined from large, deep, underground mines. Of all the counties in Pennsylvania, Greene County has the most recoverable reserves of deep coal; the coal resources are not conducive to strip mining.

RICES LANDING BOROUGH

Comprehensive Plan Greene County

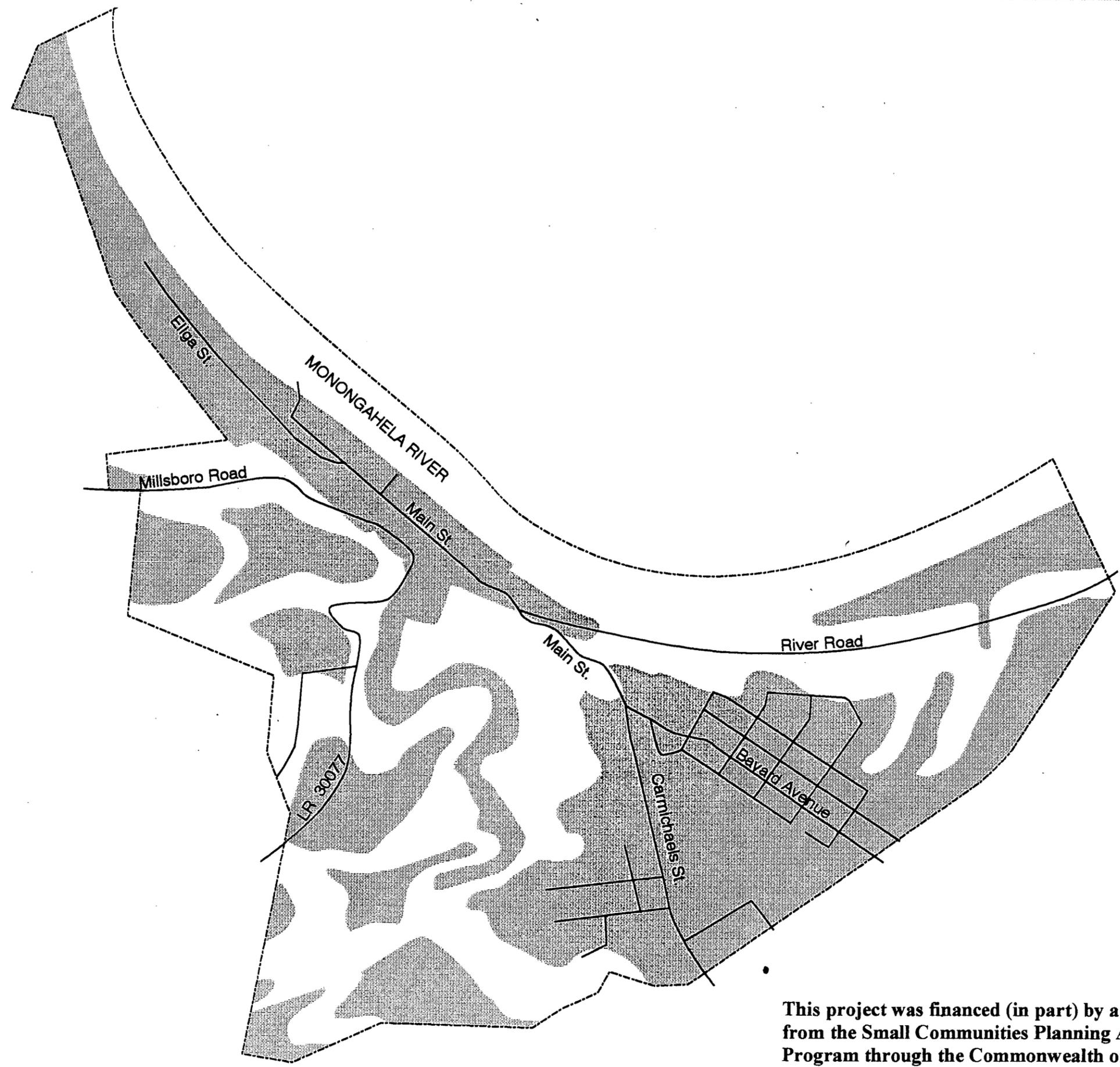
HYDRIC SOILS MAP

LEGEND

-  Hydric Soil
-  Borough Boundary



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Water Resources The Monongahela River and Pumpkin Run are the two main water resources in Rice's Landing. The Monongahela was responsible for the early development of the town, and today provides a major source of recreation.

Forest Lands Approximately 57 percent of the Borough's land is forested. Rice's Landing is situated within the Appalachian Oak Forest section of the Eastern deciduous forest province of Pennsylvania. In this tall, broadleaf deciduous forest, white oak and northern red oak predominate. Other species include sugar maple, sweet birch, bitternut hickory, beech, tulip poplar, white pine, scarlet oak, scrub oak, chestnut oak, and black oak. Much of this forest is second- and third-growth forest, due to clear cutting for fuel, construction, and development. There are no designated state or national forests within the Borough or in the immediately surrounding areas.

Game Lands There are no designated game lands in Rice's Landing. The nearest state game lands are situated south of S.R. 21 in southern Greene County.

Park Lands A large portion of Rice's Landing Borough is occupied by Pumpkin Run County Park, which is situated along Pumpkin Run River. Riverfront Park, a community park, is situated along the Monongahela. There are no state parks in the Borough. Ryerson Station State Park is located in western Greene County, near the West Virginia border. The Catawba Trail, a hiking trail that runs south to other connecting trails, runs just east of Rice's Landing.