

INTERSTATE 80, SECTION 17M - ENVIRONMENTAL FEATURES

NATURAL RESOURCES

The Interstate 80, Section 17M project area lies within the Brodhead Creek watershed, which is part of the Delaware River drainage. The eastern half of the project area drains to McMichael Creek and its tributaries. The western half of the project area drains to Pocono Creek and its tributaries, including Little Pocono Creek and Flagler Run. Pocono Creek is a tributary to McMichael Creek, which is a tributary to Brodhead Creek.

Due to the listed Pennsylvania Fish & Boat Commission (PFBC) wild trout identifications for some streams in the project area and their classification by Pennsylvania Department of Environmental Protection (DEP) as High Quality (HQ), wetlands within those streams' drainage and all their tributaries are considered HQ if located in or along the floodplain.

A review of secondary sources was completed in order to assess the potential for the existence of wetlands and waterways in the project area. This inventory included review of topographic mapping, the Soil Survey of Monroe County, and NWI mapping. Field investigations to identify water resources were conducted between September and October, 2013 and May 2014. A Phase I Bog Turtle survey was conducted between September 2013 and January 2014 and a Phase II Bog Turtle survey was conducted between April 15th and June 15th, 2014.

A Water Resources Delineation Report was drafted in July, 2014 and submitted to both the Pennsylvania Department of Environmental Protection and the United States Army Corps of Engineers on December 24th, 2014. A Phase I Bog Turtle Report and a Phase II Bog Turtle Report were also drafted and both were submitted to the United States Fish and Wildlife Service on April 23rd, 2014 and March 3rd, 2015 respectively. United States Fish and Wildlife Service (letter of April 3, 2015) indicated concurrence on the findings of the report and the conclusion that the proposed project will not affect the bog turtle.

Watercourses

Project area watercourses were preliminarily identified using available mapping. Field investigations were conducted between September and October, 2013 and May 2014 to confirm the presence/absence of project area watercourses. These investigations revealed the presence of 39 watercourses, all tributaries or subtributaries to Brodhead Creek. The jurisdictional limits of the field identified watercourses were delineated based on their observed Ordinary High Water Mark (OHWM). Stream order and classifications under Title 25, Chapter 93 and the Pennsylvania Fish and Boat Commission's (PAFBC's) regulation and the USACE Clean Water Act Jurisdiction Guidance (June 2007) were also identified.

Named surface waters in the project area include Brodhead Creek (a Trout Stocked Fishery) and its four High Quality tributaries: McMichael Creek, Pocono Creek, Little Pocono Creek and Flagler Run.

Investigations of the project area also revealed the presence of 6 ditches, which are identified as conveyances constructed in and draining only uplands, without relatively permanent flow. Ditches were assumed to be regulated by PADEP, but not USACE.

Wetlands

Following the preliminary review, field investigations were conducted to review the entire project area and determine if wetlands were present. In order for an area to be classified as a wetland, it must

possess wetland hydrology, hydrophytic vegetation and hydric soils. The preliminary boundaries of the wetland areas possessing all three criteria were determined in accordance with the USACE *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2)*, January, 2012. These boundaries were determined during field investigations conducted between September and October, 2013 and May 2014 and have been flagged and surveyed.

Field evaluations of the wetlands included a series of soil test pits to identify the presence and extent of hydric soil conditions and wetland hydrology. The test pits consisted of borings dug using a 3-inch soil auger. Soil colors were determined using the *Munsell Soil Color Charts*.

The dominant vegetation and plant community composition was determined by conducting a vegetation inventory at representative sample locations within and near each wetland area. Dominant species were identified for each vegetative stratum and wetland indicator status was noted. Plant wetland indicator status was determined using the USACE *National Wetland Plant List, Northcentral and Northeast Region*, 2013. Identified wetlands were classified according to *A Classification of Wetland and Deepwater Habitats of the United States* (Cowardin et. al., 1979).

The wetlands were also assessed for their functional values based on the principles and techniques of the New England District, United States Army Corps of Engineers in *The Highway Methodology Workbook – Wetland Functions and Values, A Descriptive Approach*. NAEPP-360-1-30a, September 1999.

Field investigations of the project area revealed the presence of 24 wetland systems. Several of these include multiple components of an overall hydrologically connected system.

Floodways and Floodplains

Brodhead, McMichael, and Pocono creeks all have defined FEMA floodways and FEMA 100 year floodplains while Little Pocono Creek has only a defined FEMA 100 year floodplain. All these areas make up a large percentage of the project area and will be of concern during project development. The largest floodway/floodplain areas are located around the Stroudsburg High School towards Exit 304, the confluence of Pocono and McMichael Creeks and the confluence of McMichael and Brodhead Creeks. McMichael Creek and Brodhead Creek have been subject to past flood control projects by the US Army Corps of Engineers.

Soils and Geology

Within the project area prime, unique and farmland soils of statewide importance are identified; however, all project area soils are within transportation use or an urban setting with little potential for active agricultural production.

The Natural Resources Conservation Service, Web Soil Survey of 2014 identifies the existence of five (5) soil types that are considered hydric or are known to contain hydric soil components within the project area including Chippewa and Norwich extremely stony soils (CnB), Holly silt loam (Hy), Rexford gravelly silt loam (ReA), Rexford gravelly silt loam (ReB), and Sheffield silt loam (Sh). Impacts to these soils are included in the assessments of wetlands.

Vegetation

The vegetation existing in the I-80 right-of-way varies throughout the project area, but consists of mature trees, grasses and shrubs. The trees consist of Maples, Oaks and Walnuts as well as various

evergreens. Shrub cover consists of wild rose, flowering dogwoods, and raspberry.

Numerous vines such as wild grape and poison ivy are also found in the project area. Invasive species are prevalent, with Japanese knotweed of particular concern along stream banks and floodplains. No protected vegetation occurs within the project area.

Geologic Resources

The review of available data indicates that most of the project area is potentially underlain by the Marcellus Formation or its stratigraphic equivalent. It is also located in potentially significant acid-producing sulfide minerals. These structures include the top of Palmerton Sandstone through the base of the Marcellus Formation. Also included is the Buttermilk Falls Limestone through Esopus Formation, undivided.

Potential acid producing sulfide materials occur within the project area as acid-bearing rock. Slopes of 15% or greater are also present.

Groundwater

Search of available databases showed no wells within the project area, but numerous seeps were identified during the wetland and waterway delineation. These seeps were flagged and surveyed.

Within the project area, the only public water supply authority is the Brodhead Creek Regional Authority (BCRA), which serves water over 5,400 billing accounts representing a population of approximately 21,000 people in residential, commercial, public and industrial settings. BCRA derives its supply from portions of the Brodhead Creek Watershed and recommends sustainable stormwater management practices for all projects within its supply area.

Wildlife and Habitat

The numerous cover types in the project area allow for a large variety of habitats for wildlife. The large number of important trout streams and large wetlands provide prime habitat for many aquatic and terrestrial species.

Coordination with the Pennsylvania Game Commission, Pennsylvania Fish and Boat Commission, PA Department of Conservation and Natural Resources and United States Fish and Wildlife Service resulted in the following:

- Pennsylvania Game Commission. No known occurrences of a state listed threatened or endangered bird or mammal species is associated with this project. A conservation measure is suggested for a seasonal timber restriction to avoid impacting the Northern Long-eared Bat (*Myotis septentrionalis*). All trees or dead snags greater than 5 inches in diameter at breast height that need to be harvested shall be cut between November 1 and March 31.
- Pennsylvania Fish and Boat Commission. No adverse impacts expected from the proposed project although there is an element of occurrence of a rare, candidate, threatened, or endangered species under their jurisdiction in the vicinity of the project area.
- PA Department of Conservation and Natural Resources. No Impact Anticipated but a voluntary conservation measure to be mindful of the potential presence of *Letha eurydice* (eyed brown).
- United States Fish and Wildlife Service. The proposed project is within the known range of the bog turtle (*Clemmys muhlenbergii*). As a result, Phase I and II Bog Turtle surveys were conducted.

It was confirmed that no public (Game Commission) or private (Nature Conservancy) lands are within or immediately adjacent to the project area.

A Phase I Bog Turtle Habitat Assessment was conducted within the project Action Area between September 2013 and January 2014.

Based upon the data collected four (4) wetlands appeared to have conditions suitable for Bog turtle habitat.

As a result of the Phase I analysis a Phase II Bog Turtle Habitat Assessment was conducted between April 15th and June 15th, 2014 by surveying teams supervised by a qualified bog turtle surveyor.

Following the completion of Phase II surveys pursuant to USFWS protocol, no bog turtles were found to inhabit any of the four wetlands identified to have potential habitat for bog turtles.

Due to the lack of finding any bog turtles or their signs (ie. tracks, forms, tunnels, scat, carcasses, etc.), it is determined that the likelihood of the presence of bog turtles in any of these four wetlands is highly improbable. The habitats at these wetlands are highly degraded and most are artificially constructed due to the adjacent residential areas and interstate highway. cursory review of adjacent properties beyond these wetland limits did not reveal any areas of potential bog turtle habitat. Therefore, it was concluded that proposed Project activities are not likely to adversely affect bog turtles or their habitat.

USFWS (by letter of April 3, 2015) indicated concurrence on the findings of the report and the conclusion that the proposed project will not affect the bog turtle.

SOCIOECONOMIC RESOURCES

General Metrics

The general population for the project area is approximately 9,927 (2010 U.S. Census) persons with a population density of 1,330 persons per square mile. Of this total 28% are listed as being a minority. There are approximately 4,030 households. The per capita income for the area is \$23,167 (Census, 2010, ACS 2006-2010).

Stroudsburg Borough

The total population of Stroudsburg Borough in 2010 according to the U.S. Census is 5,567 persons of which the median age is 34.3 years. The racial makeup of the Borough is 4,302 White persons, 621 black or African American persons, 22 American Indian and Alaska Native persons, and 104 Asian persons. In addition, 795 persons identify themselves as Hispanic or Latino (of any race).

There are 2,385 households in 2,661 housing units of which the average household size is 2.30 persons. Of the total housing units, 2,385 are occupied and 276 are vacant. Of the total occupied units, 880 are owner-occupied and 1,505 are renter-occupied.

Employment metrics according to the U.S. Census shows 4,652 persons 16 years and over of which 2,826 are in the labor force. Of those, 2,462 are employed and 364 are unemployed. The percent unemployed is 12.9%.

The major employment sectors are educational services, and health care and social assistance (26.7%), retail/trade (20.4%), arts, entertainment, and recreation, and accommodation and food service (13.5%)

and manufacturing (13.0%).

The median household income is \$33,061 and the mean household income is \$52,184. Within Stroudsburg Borough, 14.6% of families and people have an income below the poverty level for the last 12 months.

East Stroudsburg Borough

The total population of East Stroudsburg Borough in 2010 according to the U.S. Census is 9,840 persons of which the median age is 25.6 years. The racial makeup of the Borough is 7,793 White persons, 1,092 black or African American persons, 24 American Indian and Alaska Native persons, and 246 Asian persons. In addition, 1,166 persons identify themselves as Hispanic or Latino (of any race).

There are 3,175 households in 3,456 housing units of which the average household size is 2.38 persons. Of the total housing units, 3,175 are occupied and 281 are vacant. Of the total occupied units, 1,476 are owner-occupied and 1,699 are renter-occupied.

Employment metrics according to the U.S. Census shows 8,706 persons 16 years and over of which 4,996 are in the labor force. Of those, 4,325 are employed and 662 are unemployed. The percent unemployed is 13.3%.

The major employment sectors are educational services, and health care and social assistance (28.3%), retail/ trade (19.0%), arts, entertainment, and recreation, and accommodation and food service (13.8%) and professional, scientific, and management, and administrative and waste management services (9.7%).

The median household income is \$46,289 and the mean household income is \$59,862. Within East Stroudsburg Borough, 12.5% of families and people have an income below the poverty level for the last 12 months.

Stroud Township

The total population of Stroud Township in 2010 according to the U.S. Census is 19,213 persons of which the median age is 40.2 years. The racial makeup of the Borough is 13,595 White persons, 3,150 black or African American persons, 57 American Indian and Alaska Native persons, and 686 Asian persons. In addition, 2,920 persons identify themselves as Hispanic or Latino (of any race).

There are 6,829 households in 7,661 housing units of which the average household size is 2.81 persons. Of the total housing units, 6,829 are occupied and 832 are vacant. Of the total occupied units, 5,531 are owner-occupied and 1,298 are renter-occupied.

Employment metrics according to the U.S. Census shows 15,392 persons 16 years and over of which 10,172 are in the labor force. Of those, 9,106 are employed and 1,053 are unemployed. The percent unemployed is 10.4%.

The major employment sectors are educational services, and health care and social assistance (26.7%), professional, scientific, and management, and administrative and waste management services (11.0%), retail/trade (10.7%), manufacturing (9.6%).

The median household income is \$65,524 and the mean household income is \$80,191. Within Stroud

Township, 4.4% of families and people have an income below the poverty level for the last 12 months.

Population Change

Below is a table showing population change between 1980 and 2010 for Stroud Township and Stroudsburg and East Stroudsburg Boroughs.

Total Population			
US Census 1980-2010	East Stroudsburg Borough	Stroud Township	Stroudsburg Borough
Total (2010)	9,840	19,213	5,567
Total (2000)	9,888	13,978	5,756
Total (1990)	8,781	10,600	5,312
Total (1980)	8,039	9,150	5,149
<i>NOTE: For information on confidentiality protection, non-sampling error and definitions, see http://www.census.gov/prod/cen2010/doc/sf1.pdf.</i>			
<i>Source: U.S. Census Bureau, 1980-2010 Census & The Multi-Municipal Comprehensive Plan (2005).</i>			

Educational Facilities

The area is serviced by two school districts: the Stroudsburg Area School District and the East Stroudsburg Area School District.

The Stroudsburg Area School District encompasses 9 schools including 6 elementary schools, 1 middle school, 1 junior high school and 1 high school. These include: Arlington, B.F. Morey, Clearview, Hamilton, W.H. Ramsey Elementary Schools, and Stroudsburg Intermediate Elementary School, Stroudsburg Middle School, Stroudsburg Junior High School and Stroudsburg High School. The total District population is approximately 6,000 students and 900+ administrative, professional and support staff (Stroudsburg Area School District). The School District services the municipalities of the Borough of Stroudsburg, the Borough of Delaware Water Gap, the Township of Hamilton and the Township of Stroud.

The Borough of East Stroudsburg is serviced by the East Stroudsburg Area School District which encompasses 10 schools including six elementary schools, two intermediate schools and two high schools. These include: Bushkill, East Stroudsburg, J.M. Hill, Middle Smithfield, Resica and Smithfield Elementary Schools, Lehman and J.T. Lambert Intermediate Schools and the North and South High Schools. The total District population is approximately 7,000 students and around 900 administrative, professional and support staff (2009). The School District services East Stroudsburg Borough, Smithfield Township, Middle Smithfield Township, and Price Township in Monroe County and Lehman and Porter Townships in Pike County.

Parochial schools in the area include Shawnee Academy-the Beacon School, Stroudsburg Seventh Day Adventist School and Notre Dame Elementary and High Schools.

College-level educational facilities include the 257 acre East Stroudsburg University in East Stroudsburg Borough and the new 72 acre Monroe County campus of Northampton Community College in

Tannersville which opened in 2014 and can accommodate 5,000 students.

Economics

The Pocono Mountains Economic Development Corporation (PMEDC) and the Redevelopment Authority of Monroe County (RAMC) are the two main public agencies tasked with promoting Monroe County to the business community. In addition, the Pocono Mountains Visitors Bureau and the Greater Pocono Chamber of Commerce are private sector organizations who aid in this task as well. The Pennsylvania Welcome Center is located in Delaware Water Gap Borough on the border with New Jersey and is considered the "Gateway to the Poconos."

The Pocono Mountains Region's proximity to the New Jersey-New York Metropolitan area, the Philadelphia/Delaware Valley Metropolitan area and the Allentown-Bethlehem-Easton Metropolitan area makes it a prime location for visitors and businesses alike. The Region is known for skiing, camping, hiking, shopping and many other outdoor events all year round. The Monroe County Comprehensive Plan (Update 2013) also lists the Pocono Region as being the fourth ranked area in terms of visitor spending behind areas such as Philadelphia, Dutch Country and Pittsburgh. It also states that the Pocono Mountain Region is coming in 2nd for the highest share of spending on tourism and shopping among Pennsylvania's 11 tourism regions.

Major shopping centers in the area include: the Stroud Mall, Pocono Plaza, Eagle Valley Mall, and the Pocono Commons. There is also the Pocono Vacation Park for RVers and the Kirkwood Camp and Conference Center for camping accommodations.

Major Employers

The largest employers in the Region according to the Pennsylvania Career Link for Monroe County are the Tobyhanna Army Depot, Sanofi Pasteur, the Pocono Mountain School District, Pocono Medical Center, East Stroudsburg School District, Wal-Mart, Stroudsburg Area School District, and the various resorts/casinos (Pleasant Valley, Mt. Airy, Camelback and Shawnee).

Emergency Management

Safety and security for the Region are provided by the Monroe County Office of Emergency Management, the Pennsylvania State Police, the Stroud Area Regional Police and the Monroe County Sheriff's Department. There are also approximately eight fire stations in the general project area and one hospital (Pocono Medical Center). EMS is provided by the Bushkill Emergency Corps and Suburban EMS. Also of importance in the wider area are the Marshalls Creek Fire Company, the Shawnee Fire Company and the Delaware Water Gap Fire Company.

Public Transportation

Public transportation is provided by the Monroe County Transportation Authority (MCTA) running the Pocono Pony bus system. The Pocono Pony runs along six major bus routes (Red, Blue, Orange, Yellow, the DWG Connector and the River Runner Routes) daily, year-round. In addition, MCTA provides Medical Assistance Transportation, a Shared Ride program and a Workers Express program. Other public transportation options include taxi service provided by numerous taxi companies and Martz Trailways for longer distance bus travel.

Environmental Justice

Socioeconomic factors within the project area indicate that extensive populations of minority and low income individuals are present. A compilation of census data shows higher concentrations of disadvantaged populations throughout the project area.

CULTURAL RESOURCES

Borough of Stroudsburg

The Borough of Stroudsburg includes three Historic Districts: The Stroudsburg Historic Preservation District – HDA, The Stroudsburg Commercial Historic District, and The Academy Hill Historic District.

The Stroudsburg Historic Preservation District - HDA is a local historic district which was certified by the Pennsylvania Historical and Museum Commission (PHMC) on November 15, 2006. Although it is recognized by PHMC as a local historic district, giving the borough the ability to control development within its boundaries, it is not a National Register eligible boundary and is not subject to regulation under Section 106 of the National Historic Preservation Act.

The Stroudsburg Commercial Historic District is an associated resource which is National Register (NR) Eligible. It is an example of Early Republic, Mid-19th Century, Late Victorian, and Late 19th and 20th Century Revivals. It is made up of public and private dwellings, businesses and manufacturing. It was determined by the SHPO to be eligible for inclusion in the National Register on March 17, 2000.

The Academy Hill Historic District is located north of Main Street and the Monroe County Court House north of the other two districts and is National Register Listed as of November 30, 1989. It is an example of Queen Anne, Colonial Revival, and Late 19th and 20th Century American Revivals. The District's historic function is domestic dwellings (single and multiple), educational and religious.

Two individual National Register Listed properties are present. One is the Kitson Woolen Mill; Holland Thread Company at 411 Main Street which was constructed in the Italianate style between 1893 and 1904. It is made up of four primary buildings arranged in a "U" shape to allow for natural light to enter the area. It is an example of 19th century construction and of the past textile industry of the area. The Mill was listed on January 12, 1984. The other is the Stroud Mansion located at 900 Main Street and is also National Register Listed. It was built in 1795 in the Federal style by the town's founder, Jacob Stroud.

National Register Eligible properties include the:

- Wallace Hardware Building located at 435 Main Street which was built between 1857 and 1902 in the Italianate style.
- Little Bethel African Methodist Church on 113 North 3rd Street, built in 1868 and an example of the Vernacular style.
- Stroudsburg U.S. Post Office located at 701 Ann Street, which is an example of the Classical Revival style and was constructed between 1934 and 1966.
- George Tillotson House located at 905 Main Street, constructed in 1880 in the Second Empire style and also within the boundaries of the Stroudsburg Historic Preservation District.

Borough of East Stroudsburg

The East Stroudsburg Armory located at 271 Washington Street was built in 1928 in the Tudor Revival style. It is also known as the Captain George M. Kemp Memorial Armory. It was placed on the National Register on March 3, 1991. The Armory's main function was the storage of arms and was part of the Pennsylvania National Guard Armories with a period of significance between 1928 and 1939.

National Register Eligible properties include the:

- The Gilbert, William & Company, Ryle, John C. & Company; Stroudsburg Dyeing & Finishing, Inc. building is an example of Gothic Classical Revival built between 1886 and 1950.
- The Delaware, Lackawanna & Western Railroad Line (Scranton to Slateford Junction) runs along the southern border of the Borough until around the Lincoln Avenue/I-80 bridge. Here, it turns northward and proceeds along until shifting towards the northwest around Burson Street.

In addition to previously identified resources, there are numerous potential resources throughout the project area. These will be identified as studies progress. Archaeological resources, both historic and pre-contact, may also be present. An archaeological model is being developed to evaluate potential throughout the project area, to better focus possible field excavations.

Municipal, Industrial and Hazardous Waste Facilities

A Phase I Environmental Site Assessment (ESA) was performed to identify existing and potential releases of hazardous substances, inquire into the previous ownership and uses, and identify other environmental concerns on the properties that may be affected by the project. The Phase I ESA was conducted in conformance with the scope and limitations of PennDOT Publication 281, *The Transportation Project Development Process, Waste Site Evaluation Procedures Handbook* (2012).

Based on the conceptual planned construction, the sources reviewed and contacted for this Phase I ESA, and observations made during the site visit, 30 sites of potential concern were identified for the project. Two of the sites (Biobuffer Solutions, Inc. and Pocono Foundry) are found in the same location.

Based on the available information reviewed for this study, no further evaluation of the following sites is recommended: Alumitek/Beaufab Mills, the Brodhead Creek NPL Site, Cottman Transmission, Dumitru Residence, Fabricated Components, Inc., Former Stroudsburg Dyeing and Finishing, Former Gas Station, Former Gas Station/Oil Storage Facility, Former Total Auto Service, Gray Chevrolet, Gray Chrysler Dodge, JPM Unlimited, KOST Tire & Muffler, Mark Gray's Automotive, Perkins Restaurant, Pocono Record, Pump and Pantry #19, Shell Service Station, Shoppes at Stroud, Sunoco Service Station, Ted's Used Cars, and WS Peeney.

Further recommendations were made for the following sites (See Figure 2.2): APS Recycling, the Former Research Laboratory/Chemical Plant, Klingel Cleaners, Main Street Stop & Go, Biobuffer Solutions, Inc. and Pocono Foundry, Pocono Gas Station and Rinehart EM, Inc.

For all proposed construction, a Waste Management Plan (WMP) and Health and Safety Plan (HASP) are recommended. The WMP and HASP should be developed based on known or suspected contaminants that may be associated with the identified sites of potential concern as well as contaminants that may be present beneath I-80 from a former railroad corridor. If the current project plans change, the need for further assessment of these sites should be re-evaluated. Also, surveys for asbestos containing materials (ACM) and lead based paint (LBP) should be performed on any bridges or other structures that will be impacted by the project.