LIDY CREEK – SECTION 14
EMERGENCY STREAMBANK STABILIZATION

DRAFT REPORT
ENVIRONMENTAL ASSESSMENT and
PLANNING AND DESIGN ANALYSIS

Lidy Creek, Luzerne County, Pennsylvania

July 2008
US Army Corps of Engineers
Baltimore District

US Army Corps
of Engineers
Baltimore District

FINDING OF NO SIGNIFICANT IMPACT
SECTION 14 EMERGENCY STREAMBANK STABILIZATION
LIDY CREEK, LUZERNE COUNTY, PENNSYLVANIA

In compliance with the National Environmental Policy Act of 1969, as amended, the U.S. Army Corps of Engineers (USACE), Baltimore District, has prepared this Environmental Assessment (EA) to evaluate and document the potential environmental effects associated with the proposed stabilization of approximately 220 linear feet of stream, of which 90 linear feet has severely eroded stream bank. The project will consist of the stream bank stabilization measures for the length of approximately 220 linear feet of Lidy Creek. The purpose of the project is to stabilize Lidy Creek immediately adjacent to Center Street, near the intersection of Main Street.

Erosion within the creek is threatening the road, which provides access to 28 properties, both commercial businesses and residences. The sewer line, which is located within the roadbed, is also being exposed due to the erosion within the creek. If failure to the road should occur, access for these homeowners and businesses will be cut off. In addition, the sewer line will become more exposed and there is the opportunity for the sewer line to become damaged and a sewage overflow could occur within the creek. If the sewer line were to be damaged, service to approximately 400 to 500 residences and commercial businesses would be interrupted. As such, stabilization of the Lidy Creek along Center Street is needed.

Potential impacts from the proposed action were assessed with regard to aesthetics, wetlands, fish and wildlife resources, cultural resources, land use, water and air quality, hazardous, toxic, and radioactive substances, threatened and endangered species, environmental justice, and the general needs and welfare of the public. This EA documents the overall effects of the proposed action and finds that impacts will be minor and temporary in nature. Short-term impacts include stone placement, dust and noise from earthmoving and construction activities. These minor impacts are expected to be associated with the construction of the 200 linear foot project and not with its operation. There will be a permanent impact to the stream and riparian habitat where the restoration work will be located. Approximately 90 linear feet of streambank and riparian area will be impacted with the placement of stone for the riprap along the north bank where the sewer line is exposed. Approximately 16 linear feet of streambank on the south bank at the end of the existing culvert wing wall will be stabilized by the placement of native rock/boulders from within the streambed. Placement of these rocks for another 110 feet downstream of the riprap will be conducted to reconfigure the channel alignment. All of these impacts are considered minimal as the existing stream bank is currently being eroded away and is unstable and any loss of the natural bottom due to placement of the native stone will be offset by the stabilized, more natural stream than the existing impaired conditions of the stream. No long-term adverse impacts are anticipated to the following resources: air and water quality, internal or external traffic and transportation, socio-economics, low-income and/or minority populations, cultural resources,

fish and wildlife including threatened and endangered species, land use or recreation. The proposed action stabilizes the stream and eliminates erosion and the amount of sediment entering into the waterway as well as eliminating the potential for a sewage overspill and loss of the road by protecting the sewer line and the roadbed.

Upon reviewing the EA, I find that there will be no significant impacts to the natural or human environment considered. Because no significant impacts are expected, an Environmental Impact Statement is not required for the proposed action.

Peter W. Mueller
Colonel, USACE
District Engineer
Date: _____

EXECUTIVE SUMMARY

The US Army Corps of Engineers (USACE), Baltimore District, in partnership with Luzerne County, Pennsylvania, proposes the stabilization of approximately 220 linear feet of stream along Center Street. The streambank is severely eroding and exposing a sanitary sewer line as well as potentially undermining the roadbed of Center Street. The project is located in Lidy Creek, in Dupont Borough, Luzerne County, Pennsylvania. The project will involve placement of riprap and native stone along the eroded banks downstream of the Main Street culvert. The safest access of the project site with the least disturbance is located along the left bank of the creek approximately 220 feet downstream of Main Street. Channel realignment, including grading and placement of native rocks in the stream will be conducted from this point to the severely eroded bank downstream of the existing culvert at Main Street. Riprap and native rock will be placed at the downstream ends of the wing walls of the culvert (approximately 90 linear feet at the left bank and 16 linear feet at the right bank). The proposed action will stabilize the stream, reduce erosion of the stream banks and the amount of sediment entering into the waterway, and improve stream habitat.

The USACE prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act of 1969, as amended, and this Planning and Design Analysis (PDA) report to document the impacts from the proposed actions. The alternatives studied included (1) no action, (2) riprap protection, (3) gabion basket protection, and (4) channel realignment and riprap protection, which is the preferred alternative. The no action alternative involves allowing the existing condition of the stream bank to remain the same. The streambank would continue to erode and will result in the exposure of the sewer line and eventual undermining of Center Street, making unsafe conditions along the road and its shoulder. Three construction alternatives were considered. The alternatives are cost effective and would provide a stable streambank compared to what exists now. However, the riprap and gabion structures alternatives would have no beneficial impact on the aquatic resources using the area. The preferred alternative is the placement of riprap along the severely eroded areas along Lidy Creek with channel realignment from the point of channel access to the Main Street culvert. Channel realignment includes altering channel dimensions and elevation through stabilization of the stream. Large native rocks that have been located in the active channel will be removed and placed to create a more stable stream.

The analysis of environmental conditions incorporates comments received from the Federal, State, and local regulatory and resource agencies during the preparation of the EA. Environmental impacts associated with the components of this project have been identified and are included in the proposed project. Only minor adverse impacts are expected to the environmental resources. Given the small scale of the proposed actions, minimal adverse impacts, and the localized nature of the project effects, it is not expected that the preparation of an Environmental Impact Statement will be necessary and a Finding of No Significant Impact (FONSI) has been prepared. The proposed action is necessary to stabilize the sanitary sewer line and Center Street.

This PDA report was conducted in order to accomplish four tasks: (1) to evaluate the necessity of erosion control, (2) to identify alternative solutions to these problems and opportunities, including their adverse and beneficial impacts, (3) to recommend solutions, if available, that are economically and technically feasible, that minimize impact and maximize benefit to the environment, and (4) to identify a local sponsor to share the costs of implementing a project.

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1.0 INTRODUCTION

In compliance with the National Environmental Policy Act (NEPA) of 1969, as amended, the U.S. Army Corps of Engineers (USACE), Baltimore District has prepared this Environmental Assessment (EA) to evaluate and document the potential environmental and socioeconomic effects associated with the proposed stabilization of Lidy Creek in Luzerne County, Pennsylvania. This report will also act as the Planning and Design Analysis (PDA) report by documenting pre-implementation process of the planning, economics, real estate issues, engineering, and cost estimating for the Section 14 emergency stream bank stabilization project along Lidy Creek.

1.1 Purpose and Need

The purpose of this study is to stabilize the stream bank of Lidy Creek at the location adjacent to Center Street where the erosion is threatening the integrity of the roadbed and the sanitary sewer line that is located within the roadbed. The problem area is located in Luzerne County, Pennsylvania within Lidy Creek along Center Road just below the creek crossing of Main Street.

1.2 Study Authority

Section 14 of the Flood Control Act of 1946, as amended, provides authority for USACE to develop and construct or repair stream bank and shoreline protection projects to protect endangered roadways, bridge approaches, public works facilities such as water and sewer lines, public and private non-profit schools and hospitals, and other public facilities. Each project is limited to a Federal cost of $1,500,000, which includes project implementation costs for developing the plans and specifications and construction. The project will be cost-shared with Dupont Borough, Pennsylvania as the non-Federal sponsor.

1.3 Scope

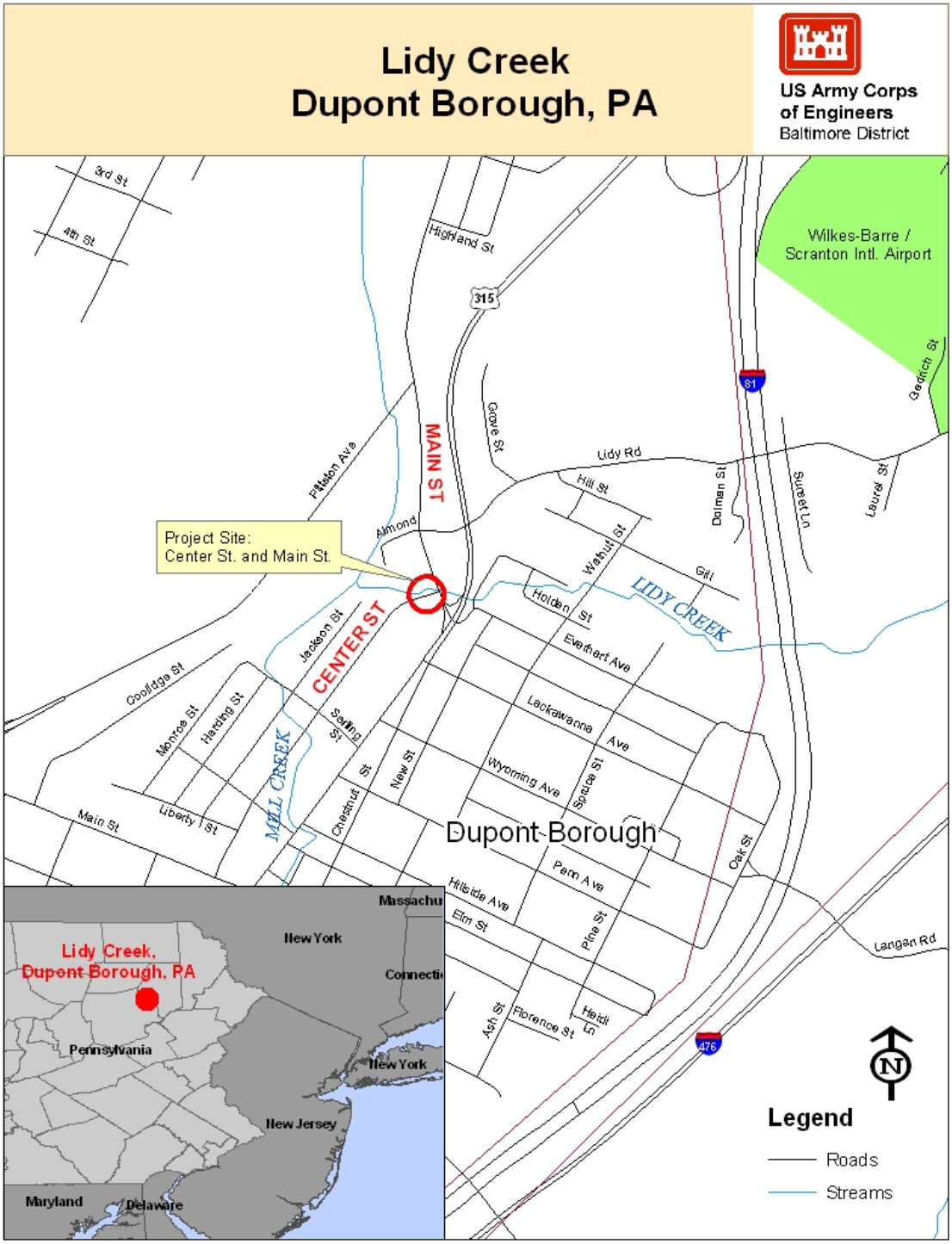
This EA has been prepared in accordance with NEPA, the Council on Environmental Quality's (CEQ) regulations published at 40 CFR Part 1500, Engineer Regulation 200-2-2 Procedures for Implementing NEPA, and Section 404 of the Federal Water Pollution Control Act of 1972 (Clean Water Act), as amended. The EA will include descriptions of the purpose and need of the proposed action, details of the proposed action and design, stabilization design alternatives; existing site conditions, and an assessment of the potential effects to the human and natural environment from the stream stabilization activities described in Section 2.0, "Proposed Action."

1.4 Public Involvement

A Study Initiation Notice was sent on February 4, 2008 to Federal, State, and local agencies, requesting written comments concerning interests within each agency's area of responsibility. A formal agency coordination letter was sent to the United States Fish and Wildlife Service (USFWS) regarding Section 7 Endangered Species and Fish and Wildlife Coordination Act and to the Pennsylvania Historical and Museum Commission regarding Section 106 of the National

Historic preservation Act. Copies of coordination letters and responses are provided in Appendix A.

1.5 Study Location Maps



Lidy Creek Project Area
Main St
Lidy Rd
Almond St
315
White St
Mill Creek
Project Area
Lidy Creek
Main St
Holden Ave
Jackson St
Center St
HoldenSt
N
315
New St
100 50 0 100 Feet
1 inch equals 100 feet

2.0 DESCRIPTION OF THE PROPOSED ACTION

The proposed action includes stream bank stabilization of approximately 220 linear feet of Lidy Creek. The proposed design includes realigning the channel away from the left bank, altering channel dimensions and elevation, and re-grading and stabilizing portions of the stream bank with native stone and riprap. Type R-6 riprap is proposed to be placed along 90 linear feet where the sewer line is exposed on the left bank. Native rock (rock or boulders already in the streambed) is proposed to be placed along 16 linear feet of the right bank just downstream of the existing wing wall of the culvert under Main Street. Existing riprap and concrete that was placed on the left bank of Lidy Creek in 2005 will be removed before the grading begins and new riprap is placed. This existing riprap was placed as an emergency measure and not designed as a long term solution. Placement of the native rock and stone will be conducted within the stream for 220 linear feet to remove the rock from the active stream channel. This new stream alignment will more efficiently convey the flow and provide stability along with the enhancement of the environmental features of the stream system.

3.0 ALTERNATIVES CONSIDERED/ALTERNATIVES ANALYSIS

This section discusses the plan formulation, alternatives considered, alternative analysis and evaluation, and preferred alternative selection for the emergency stream bank stabilization project.

3.1 No Action Alternative

The no action alternative involves allowing the existing condition of the Lidy Creek system at the intersection of Main and Center Street to remain the same. The existing culvert and its wing walls will remain. The stream will continue to move through the culvert and along the wing walls with no impediment. The stream bank along the south side will continue to erode and continue exposing the sanitary sewer line as well as undermine the road bed for Center Street. Continued exposure of the sewer line will have a potentially hazardous impact on the integrity of the line as it will expose it to debris washing down the stream and undermine its support. The manhole, if left exposed, may be struck by passing debris and open, resulting in a potential sewage overflow. If the sewer line is compromised, approximately 400 to 500 businesses and residences, including the Grimes Industrial Park, and properties along Everhart, Holden, Gill, Walnut and Spruce could be affected by the interrupted service. If the sewer line fails it would spill over directly into the stream and compromise the stream system and the aquatic resources using the area.

The road bed of Center Street will also be compromised if the stream bank continues to erode. Center Street could eventually become unsafe to use and result in it closing. Approximately 28 residential and commercial properties use Center Street for their primary access. Closure of Center Street would result in a hardship to these property owners.

3.2 Riprap Protection

This alternative would involve placing riprap protection along approximately 90 linear feet at the severely eroded area of the left bank where the sewer line is exposed. No grading of the stream banks would be conducted. No stream channel realignment would be conducted.

3.3 Gabion Basket Protection

This proposed design involves the installation of gabion baskets along the left and right banks of Lidy Creek. On the right bank approximately 40 linear feet of gabion baskets will be placed immediately downstream of the wing wall of the Main Street culvert. Approximately 90 linear feet of the left bank would be stabilized with gabion baskets. The gabion baskets would be stacked to a height a little above the 100 year flood level. A geotextile liner would be placed under the baskets with a layer of stone beneath it. The gabion baskets would be backfilled and the banks would be graded down to the baskets at a 3:1 slope.

3.4 Channel Realignment/Riprap Protection

This alternative would combine stabilizing the stream banks with riprap protection as well as realigning the stream channel to create a more stable stream system. The proposed design involves realigning the channel away from the left bank (where Center Street and the sewer line are being undermined), altering channel dimensions and elevation (along approximately 220 linear feet of stream), and re-grading and stabilizing some portions of the banks with riprap at either side of the downstream end of the wing walls. Construction work will begin at the downstream face of the box culvert and extend downstream 90 ft to the location of the last surveyed cross section. Approximately 90 linear feet of riprap will be placed at the left bank immediately downstream from the wing wall; 16 linear feet of riprap or native stone will be placed at the right bank. The lower banks will contain riprap stabilization and will be graded to a 1.5:1 slope or flatter. To minimize the amount of riprap required and lower project costs, riprap protection will extend only to the 100-year flood level. Size R-6 (24”) riprap will be placed at a thickness of 30 inches with a blanket of American Association of State Highway and Transportation Officials (AASHTO) #57 stone. The riprap with concrete that was dumped on the left bank of Lidy Creek in 2005 will be removed before the bank grading begins.

The proposed stream width, determined by the culvert dimensions, will improve the conveyance of Lidy Creek. Large native rocks that have deposited inside the active channel will be removed and placed to create a new channel alignment to more efficiently convey the flow and provide stability. Reconfiguring the banks will relieve stress and protect the banks on both sides. Upper banks will be graded to a 2:1 slope or flatter (some to be 5:1) and will be vegetated via native seeding that does not require mowing.

This design option provides the best long-term stability and would most likely require the least amount of maintenance, if any.

3.5 Alternative Evaluation / Analysis

3.5.1 No Action

The no action alternative would result in the continued erosion of the stream bank of Lidy Creek at the Main Street crossing, exposure of the sewer line, and undermining of the Center Street roadbed. With the erosion of the stream bank, the sewer line will remain exposed and open to catastrophic events such as debris striking and opening the manhole or vandalism. Should the sewer line become compromised approximately 400 to 500 residential and commercial properties would be without service. The stream would be polluted with untreated sewage. Continued erosion could compromise the integrity of Center Street and cause it to become impassable. This would inconvenience approximately 28 properties along Center Street. It could also have a negative economic effect on businesses in the area. Because these alternatives would adversely impact the stream, sewer line, and the roadbed, as well as negatively affect the homes and businesses in the area, this alternative was considered not feasible, and therefore, not considered further.

3.5.2 Riprap Protection

While placement of riprap only at 90 linear feet of eroding stream bank would be the least costly stabilization measure, it would not provide long term stability. The erosive force of the water exiting the culvert would be slowed down by the riprap located downstream of the wing wall. However, the stream would continue to migrate toward the left bank and Center Street. This migration of the stream channel would eventually cause the failure of the riprap at the bank. As discussed in the no action alternative, Center Street and the sewer line would continue to be threatened. The road bed would continue to erode and the sewer line would continue to be exposed. Compromising the road bed could mean closure of Center Street and exposure of the sewer line could result on its failure and eventual overflow into the stream. Alternatively, continuous maintenance to the riprap area could be done to build up the riprap when it becomes compromised. However, this would be costly due to the continuous and excessive maintenance of the area that would be required.

3.5.3 Gabion Basket Protection

Gabion baskets would provide a stabilized stream channel in the eroding area. However, the alternative to place gabion baskets is the most costly alternative for stabilizing the stream channel for both construction and maintenance of the structures. The structures will have to be routinely visited to ensure the gabion baskets are not compromised. Debris which may flow down stream from storm events can rip the gabion baskets and allow the stone inside to come out. If this happens the baskets would need to be repaired. Areas which haven’t been repaired would allow the baskets to remain vulnerable to ruptures. For these reasons, this alternative is not considered feasible and therefore, not considered further.

3.5.4 Channel Realignment/Riprap Protection

Realignment of the channel with riprap protection along the heavily eroded areas will repair and stabilize the erosional areas as well as address problems that cause the stream to erode them. Placing riprap at both the left and right banks will address the stream bank stabilization and protection of Center Street as well as the sanitary sewer line. Realigning the stream for the length of 220 linear feet downstream of the culvert will also address the stream's tendency to migrate to the left and cause additional erosion of the stream bank. Moving large native rock to outside of the active stream channel and reconfiguring the banks will relieve stress and protect the banks. A more stable stream channel will be created. Riprap protection in this alternative is acceptable because it is being done with channel realignment which will then provide the best long-term stability and would most likely require little to no maintenance of the project.

3.6 Preferred Alternative

The preferred alternative is the stabilization of the stream bank with riprap and native stone in the areas that have excessive erosion downstream of the wing walls (90 linear feet on the left; 16 linear feet on the right) and reconfiguring the stream channel for a length of 220 linear feet to prevent the continued migration of the channel to the left bank. Existing riprap and concrete on the left bank will be removed prior to grading of the bank and installation of the riprap. See Figure 1. Lidy Creek Plan View for details.

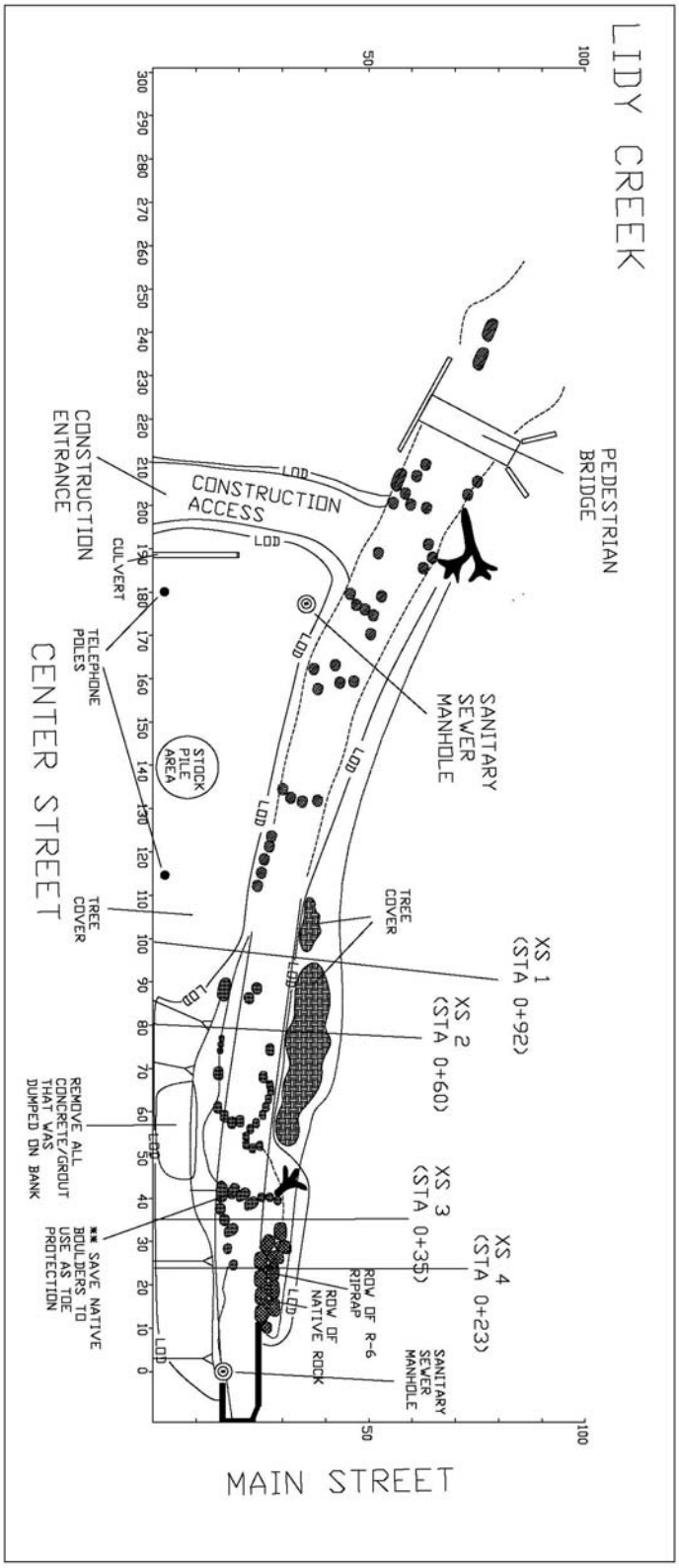
4.0 AFFECTED ENVIRONMENT

This section describes the affected environment and the existing conditions for the natural and socioeconomic resources categories applicable to the area affected by the Lidy Creek Stream bank Stabilization Project. Each environmental, cultural, and social resource category typically considered in an EA was reviewed for it's applicability to the project.

4.1 Land Use

The primary land use in the study area is commercial and residential. The majority of properties found along Lidy Creek are residential. There are some commercial properties intermixed in the residential area. There are areas of upland vegetation, open space within the project boundaries. The northeast end of the project is adjacent to one minor intersection (Center Street and Chestnut Street) and in close proximity to a major intersection (Chestnut Street and Main Street/State Highway 315).

Figure 1: Lidy Creek Plan View



4.2 Geology and Topography

The project area lies within the Appalachian Mountain section of the Ridge and Valley geologic province. The area, known as the Anthracite Coal Region, averages six miles wide and is oriented in a southwest-northeast direction. The rocks are composed of sandstone, siltstone, conglomerate, and anthracite coal. The Lackawanna/Wyoming Valley forms a physiographic boundary dividing the Allegheny and Pocono Plateau provinces. The topography of the Valley and Ridge provinces is a series of northeast-southwest trending mountains and valleys. The rolling to nearly level plateau is crossed by moderately deep valleys. The mountain ranges that form the valley are the Lackawanna Range on the west and the Moosic Mountains on the east.

4.3 Climate

The climate in this part of the Susquehanna River basin is temperate. The average annual temperature is approximately 49 degrees Fahrenheit, and the annual precipitation is approximately 37 inches. Winter is characterized by cold temperatures and cloudy skies with daytime temperatures in the mid to upper 30's. Winter precipitation is light but frequent. Annual snowfall ranges from 15 inches in lower elevations to 70 inches in higher elevations. Spring and fall can have rapidly changing weather patterns. Snow accumulation, spring thaws and runoff, and summer thunderstorms are common. This hydrometeorological pattern causes seasonally high water events as well as summer flooding. Occasional hurricanes or tropical storms may affect the basin and river levels, either directly or indirectly.

4.4 Soils

Based on the soil survey for Luzerne County, soils in the area were generally grouped into the Urban Land classification. This association consists of land used for housing developments, shopping centers, public facilities, roads and railroads. Few areas exist where the natural soil has not been built upon, dug out, or otherwise disturbed (Soil Survey Report, 1971). The web-based Natural Resources Conservation Service (NRCS) mapping program (www.soils.usda.gov) determined the soil type found within the immediate proposed project area (northeast end of Center Street) was determined to be Wurtsboro channery loam (WrB). A larger survey of the area yielded Arnot-Rock outcrop complex, 8 to 25 percent slopes (ArD), Arnot-Rock outcrop complex, steep (ASF), Basher soils (Bf), Chippewa silt loam (CIA), Dekalb extremely stony loam (DdD), Mine Dump (Mg), Oquaga and Lordstown extremely stony silt loam (OpD), and Wurtsboro channery loam (WrC), (Appendix B).

4.4.1 Prime and Unique Farmlands

Prime farmland is defined as land having the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and that is available for these uses per NRCS regulation, 7USC 4201(c)(1)(A). It has the combination of soil properties, growing season, and moisture supply needed to produce sustained, high yields of crops in an economic manner if treated and managed according to acceptable farming methods. Prime farmland is designated independently of current land use, but it cannot be areas of water or urban or built-up land as defined for the national resource inventories. Map units that are complexes or

associations containing components of urban land or miscellaneous areas as part of the map unit name cannot be designated as prime farmland. Soil survey map units that meet the soil requirements for prime farmland are identified, coordinated and listed, and are available to users of soil survey information. Unique farmland is defined as land other than prime farmland that is used for the production of specific high-value food and fiber crops, per NRCS regulation 7USC 4201(c)(1)(B).

The Farmland Protection Policy Act (FPPA), Public Law 97-98, authorizes the United States Department of Agriculture to develop criteria for identifying the effects of Federal programs on the conversion of farmland to nonagricultural uses. Federal agencies are directed to use the developed criteria; to identify and take into account the adverse effects of Federal programs on the preservation of farmland; to consider appropriate alternative actions that could lessen adverse effects; and to ensure that such Federal programs, to the extent practicable, are compatible with state, unit of local government, and private programs and policies to protect farmland. NRCS policy and procedures on prime and unique farmlands are published in the Code of Federal Regulations 7 CFR 657.

For a detailed listing of prime and unique soils in the project area, see Soils Table and Figure in Appendix B. While there are areas where these soils exist in the project area, they are currently developed or disturbed areas and are not currently available for agricultural production. Coordination with the NRCS Plymouth Field Office for Northeast Pennsylvania was initiated on March 18, 2008. At this time no comment has been received from NRCS.

4.5 Air Quality

According to the US EPA Nonattainment Pollutant Report/Map, the project site is located in an attainment area for all criteria pollutants, including ozone. This means that the air pollution levels in the area consistently stay below the National Ambient Air Quality Standards. Ambient air quality is determined by measuring the ambient pollutant concentrations of particulate matter, carbon monoxide, sulfur dioxide, nitrogen dioxide, lead, and ozone. These pollutant concentrations are compared to their corresponding standards, as determined by the EPA. The monitoring station located in Pittston, Pennsylvania indicates attainment for all the listed pollutants for the local area. Pittston is located less 4.5 miles southwest of the Dupont Borough, Pennsylvania.

4.6 Hydrology

4.6.1 Surface Water

Lidy Creek is a tributary to Mill Creek and lies within the Lackawanna River Watershed. It is a small stream with a drainage area of approximately one square mile. Lidy Creek flows from east to west with a portion of the creek being completely enclosed underground. Lidy Creek is daylighted from the crossing of Main Street to its confluence with Mill Creek, flowing parallel to Center Street for approximately 100 feet before bending to the right and eventually joining Mill Creek.

Mill Creek and its tributaries receive drainage from the mining areas located in the watershed. The water quality of these waterways has been degraded due to the influence of this drainage. Major flood events in the watershed result in gravel shifting in the stream beds. After major storm events, gravel beds within streams are routinely removed to prevent blockage and further stream impacts.

The Susquehanna River in the study area is listed as a warm water recreational fishery for a majority of its length. From Ransom in Lackawanna County, through Wilkes-Barre and downstream to Selinsgrove in Snyder County this is the typical setting for a warmwater recreational fishery. The tributaries to this river vary in their quality and size. Some large tributaries, such as the Lackawanna River, have been degraded due to a variety of factors including urbanization, combined sewer overflows and abandoned mine land drainage (acid and metals). There are numerous riffle and pool complexes along this portion of the Susquehanna River.

4.6.2 Wild and Scenic Rivers

The Wild and Scenic Rivers Act, P. L. 90-542, (as amended) (16 U.S.C. 1271-1287) states:

It is hereby declared to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations. The Congress declares that the established national policy of dam and other construction at appropriate sections of the rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such rivers and to fulfill other vital national conservation purposes.

The National Park Services National Wild and Scenic Rivers System Web site lists designated rivers by state. Additional information concerning the rivers entering the Chesapeake Bay is contained on the Chesapeake Bay Foundation's Web site. There are no federally designated wild and scenic river reaches within the watershed.

The American Heritage Rivers initiative, established by USEPA, is an innovative response to help river communities that seek Federal assistance and other resources to meet some tough challenges. Without any new regulations on private property owners, state, local and tribal governments, the American Heritage Rivers initiative is about making more efficient and effective use of existing Federal resources. No American Heritage Rivers are found in the study area.

4.7 Floodplains

Issued in 1977, Executive Order number 11988 requires the Federal government to take into consideration the effects that its actions will have on floodplains. The Commonwealth of

Pennsylvania has established guidelines to encourage planning and development in floodplains that are consistent with sound land use practices.

In accordance with the Federal Emergency Management Agency mapping, the proposed project area is located within the 100-year floodplain. The area is identified as "Zone AO," meaning flood depths average between 1 to 3 feet (usually sheet flow on sloping terrain) (FIRM, 1998).

4.8 Biological Resources

4.8.1 Terrestrial Resources

According to the Pennsylvania Game Commission, the principal species of game in Luzerne County (Land Management Group 4) are white-tailed deer, turkey, and a variety of small mammals, including squirrel and rabbit. Lidy Creek, in Dupont Borough, offers habitat for a variety of amphibians and birds, such as turtles, frogs, blue herons, hawks, and owls. Species likely to be found in the immediate area are those that have adapted to urban settings such as raccoons, squirrels, sparrows, and crows.

The project area is highly developed. The terrestrial resources present in the project area include plants and animals common to urban/industrialized communities. The vegetation within the area is predominantly grass, shrubs, and weeds. Upland vegetation likely to be found in this area consists of cone-bearing trees and shrubs such as pines, cedars, as well as deciduous trees such as oaks and dogwoods, and perennial plants such as goldenrod, ragweed and pokeweed.

There is a narrow vegetated, upland buffer along both sides of the stream in the project area. Japanese knotweed (*Polygonum cuspidatum*) is the predominate vegetation on the left bank at the site where the riprap will be placed. The right bank is a manicured lawn of the adjacent residence. Farther downstream, near where the construction site will be accessed, there is an area which has a sparse amount of native trees.

4.8.2 Wetlands

Wetlands are defined as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands are transitional areas between open water and dry land and are often found along bays, lakes, rivers, and streams.

Besides performing important water quality functions such as filtration, wetlands provide food and habitat for an abundance and diversity of life unrivaled by most other types of environments. Along with open water, they are breeding, spawning, feeding, cover and nursery areas for fish and are important nesting, migrating, and wintering areas for water fowl and other wildlife.

A review of the soils map, the National Wetland Inventory website (www.nwi.fws.gov), and aerial photograph of the project site, has indicated that there are no wetlands at the site. A

thorough and comprehensive site investigation was conducted at the project area by USACE personnel. Jurisdictional wetlands were not found at the project site.

4.9 Rare, Threatened and Endangered Species

A project map and description was sent to USFWS on January 29, 2008 for their review and comment. In a letter dated February 19, 2008, the USFWS indicated that no federally listed or proposed threatened or endangered species is known to occur within the project impact area and no biological assessment or further consultation under the Endangered Species Act is required. A copy of the USFWS letter is contained in Appendix A.

A search was conducted and filed via the Pennsylvania Natural Diversity Inventory (PNDI) with the Bureau of Forestry. Results of this search do not indicate any known impacts on special concern species and resources within the project area under the jurisdiction of the USFWS, Pennsylvania Game Commission, Pennsylvania Fish and Boat Commission, and Pennsylvania Department of Conservation and Natural resources. The search was conducted on March 24, 2008. A copy of the PNDI environmental review receipt is located in Appendix A.

4.10 Cultural Resources

The USACE is required by Section 106 of the National Historic Preservation Act and Executive Order 11593, to identify all archeological resources and historic properties within a project's area of potential effect which are eligible for listing in the National Register of Historic Places, and to assess the project's effect on those properties, should they exist.

Coordination has been initiated with the Pennsylvania Historical and Museum Commission (PHMC) for the proposed project. The agency was sent a copy of the Study Initiation Notice, dated February, 2008. On March 20, 2008, a coordination letter was sent to the PHMC stating that with the exception of some contouring of the stream bank on the north side of the creek, the project will be constructed within the stream or on previously disturbed areas (Appendix A). Therefore the Baltimore District has determined that implementation of the stream bank stabilization project at this site will have no effect on historic properties. At this time no comment has been received by from the PHMC.

4.11 Hazardous, Toxic, and Radioactive Substances

Based upon a review of the U.S. Environmental Protection Agency (USEPA) records [Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS), Resource Conservation and Recovery Act Information System (RCRAInfo), and Toxic Release Information System (TRIS)] there are no known sources for hazardous, toxic and radioactive wastes (HTRW) in the proposed project area. However, Dave's Auto Repair shop is located approximately 400 feet from the project area and is designated a facility holding hazardous waste. Based upon existing and known land use (residential), the probability of encountering such materials is low though.

4.12 Aesthetics and Recreation

The study area is predominantly residential and/or commercial. There is a sparsely forested area adjacent to the project site on the left side of the creek. The right side of the creek is a private residence with a lawn up to the creek.

There are no parks within the limits of the project boundaries. An elementary school is located at the southern end of the project area.

4.13 Transportation and Traffic

The major road in the study area is Center Street. However the proposed project area is in close proximity to a major intersection (Chestnut Street and Main Street/State Highway 315). The project is located in a predominantly residential area, with some commercial properties near by, and has moderate traffic levels. There are also railroad tracks to the west of Lidy Creek which run alongside Mill Creek. The Wilkes-Barre/Scranton International Airport and the Wilkes-Barre Wyoming Valley Airport are located approximately three miles and eight miles, respectively, from the project area.

4.14 Noise

For purposes of regulation, noise is measured in dBA or A-weighted decibels. This unit uses a logarithmic scale and weights sound frequencies. Individuals with good hearing perceive a change in sound of 3 dB as just noticeable, a change of 5 dB as clearly noticeable and 10 dB is perceived as doubling (or halving) of the sound level. The threshold of human hearing is 0 dBA. Values above 85-90 dBA would be considered very loud (Table 4.1) and have the potential to harm hearing given sufficient exposure time. Noise levels above 140 dBA can cause damage to hearing after a single exposure.

The project area is primarily urban. Noise sources include vehicle traffic, construction, and the railroad. These activities can vary widely in the amount of noise produced, but according to the League for the Hard of Hearing (LHH), background noise levels are about 40 dBA on a quiet residential street. A typical maximum permitted sound level in rural and suburban areas is 55 dBA.

Table 4.1: Typical Noise Levels and Subjective Impressions

Source	Decibel Level (dBA)	Subjective Impression
Normal breathing	10	Threshold of hearing
Soft whisper	30	---
Library	40	Quiet
Normal conversation	60	---
Television audio	70	Moderately loud
Ringing telephone	80	---
Snowmobile	100	Very loud
Shouting in ear	110	---
Thunder	120	Pain threshold

While the background noise level for residents within the vicinity of the project area might typically be 40 dBA, a resident may also hear acute noise sources, particularly in the daytime, associated with suburban neighborhoods such as a power mower, which will generate 65 to 95 dBA at 50 feet or a leaf blower (110 dBA at 50 feet). Freeway traffic is in the range of 70 dBA at 50 feet, although large trucks may typically generate 90 dBA. Heavy equipment generally utilized during construction may generate between 90 to 130 dBA (LHH 2004).

4.15 Public Utilities

The sanitary sewer line that is located in the project area is operated and maintained by Dupont Borough and the Lower Lackawana Valley Sanitary Authority (LLVSA). This sewer line serves over 400 residential and commercial properties in the area.

Pennsylvania American Water (PAW) is the potable water provider to Dupont Borough and Luzerne County. Lake Scranton is the main source of water supply for the Scranton area (this includes Luzerne County). Pennsylvania American Water maintains a treatment facility on the Lake Scranton Reservoir capable of processing a maximum of 33 million gallons of water per day (MGD). Additional surface water sources include Griffin Reservoir and Summit Lake Reservoir, which can supplement the system through PAW's alternate water purification facility, the Chinchilla Plant, on Leggetts Creek (Pennsylvania American Water website). Leggetts Creek and Landsdowne Creek also flow through Clarks Summit. These bodies of water are all part of the Susquehanna River basin watershed.

Other utilities in the area include Comcast Cable, PP&L Electric, UGI Gas and Verizon Telephone.

4.16 Socio-Economic Conditions

According to the 2000 U.S. Census Report, there are 2,719 persons residing in the DuPont Borough, Pennsylvania. The median age was 45.9 years, with 432 persons being under the age of 18 and 719 persons 65 years of age or older. Of the total population 1,279 were males and 1,440 were female residents. Minorities comprise approximately 0.8 percent of the Borough's

population compared with 14.3 percent statewide. The median household income was $32,317 for the Borough of Dupont compared to $36,968 for Luzerne County.

Dupont Borough has a high school graduation rate of 76.8 percent as opposed to Luzerne County with an overall rate of 86.9 percent and the national average of 84.1 percent. Luzerne County has number of colleges and universities within its boundaries including Penn State, Wilkes-Barre and King's College which are easily accessible to the DuPont Borough area. Major industries for Luzerne County include automotive sales and technology, health care sales and public utilities (PPL, Susquehanna, LLC); paper products; plastics; and information technology. Some of the largest employers in the County include Proctor and Gamble Paper Products Company, Blue Cross of Northern Pennsylvania, Wyoming Valley health Care Systems and Keystone Automotive Operations, Incorporated.

4.17 Environmental Justice

On 11 February 1994, President Clinton issued E.O. 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." The E.O. requires Federal agencies to identify and address any disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.

As defined by the "Environmental Justice: Guidance Under the NEPA" (CEQ, 1997), "minority" includes persons who identify themselves as Asian or Pacific Islander, Native American or Alaskan Native, black (not of Hispanic origin) or Hispanic. A minority population exists where the percentage of minorities in an affected area either exceeds 50 percent or is meaningfully greater than in the general population. Low-income populations are identified using the Census Bureau's statistical poverty threshold, which is based on income and family size. The Census Bureau defines a "poverty area" as a Census tract with 20 percent or more of its residents below the poverty threshold and an "extreme poverty area" as one with 40 percent or more below the poverty level (Census Bureau, 1995).

According to the 2000 U.S. Census, minorities comprise approximately 0.8 percent of the total population of Dupont Borough, compared with roughly 14.3 percent of Pennsylvania's population. Therefore, a minority population does not exist within the Borough. U.S. Census data for 2000 indicates persons below poverty equate to 6.2 percent in Dupont Borough, compared to 11.2 percent statewide. Therefore, Dupont Borough is not considered a "minority" or "poverty area" as defined above.

4.18 Children's Health and Safety

In recognition of mounting scientific information demonstrating that America's children suffer disproportionately from environmental health and safety risks, President Clinton issued Executive Order number 13045 on April 21, 1997. Under this Executive Order, each Federal Agency "shall (a) make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and (b) shall ensure that its policies, programs, activities and standards address disproportionate risks to children that result from environmental health risks or safety risks."

Based on year 2000 data from the U.S. Census Bureau, 3.6 percent of persons living in Dupont Borough are under 5 years old and 12.3 percent of the total population is under the age of 18. These percentages are slightly lower then those for the entire state of Pennsylvania (5.8 and 22.7 percent respectively).

5.0 ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION

5.1 Land Use

The proposed action will be located within and adjacent to Lidy Creek downstream on Main Street and adjacent to Center Street. As such, no potential impacts to current or future land use or land use designations are expected. The proposed action is to stabilize Lidy Creek and thereby maintaining the adjacent road, Center Street, and the existing sewer line, which will continue to serve the residential and commercial area. The land use in the area is expected to remain the same.

5.2 Geology and Topography

Construction of the stream bank stabilization project will have little to no impact to the underlying geologic formations in both the long and short term. The project will stabilize the area and prevent continued erosion of the Lidy Creek and the adjacent roadbed. The stream bank stabilization project will not adversely affect the topography of the area.

5.3 Climate

No impacts will occur to the climate of the region due to the construction of the stream bank stabilization project.

5.4 Soils

There will be direct and minor adverse impacts to soils such as increased erosion potential and soil movement during construction activity in the stream or along the banks. These temporary adverse impacts will be reduced through implementation of Luzerne County's erosion control standards during construction. A sediment and erosion control plan will be developed to reduce the potential indirect impacts to aquatic resources downstream by reducing sediment loss from the construction site.

There will be long-term, beneficial impacts to the soil stability along the stream reach to be restored. The existing erosion will be prevented or minimized to a level that is naturally acceptable for this area of the stream, considering land development and stream flows.

5.4.1 Prime and Unique Farmlands

The majority of the proposed project occurs along previously disturbed areas. Approximately 0.5 acre of designated prime and unique soils occurs within the land parcel that contains the

construction footprint of the eroding stream bank and channel. Most of construction impact is located with in the stream itself. Direct and long-term impacts to prime and unique farmlands or soils of statewide importance are anticipated. However, these soils occur in areas that have been previously impacted by construction of roads and buildings or converted to nonagricultural use and are therefore not currently available for agricultural production.

The NRCS was contacted regarding this proposed impact on March 18, 2008. As of this date, NRCS has had no comment. However, as the project area is located within a stream and adjacent land is not currently agricultural in nature nor is it likely to become agricultural, the proposed project will not have an adverse impact on prime and unique farmlands.

5.5 Air Quality

Ambient air quality monitoring demonstrates that Luzerne County meets the acceptable standard concentrations for air quality pollutants. Because the project area is located in an attainment area for all six principle pollutants for air quality, a conformity review does not need to be conducted. The Federal action complies with the requirements of the applicable State Implementation Plan (SIP) and does not cause or contribute to a new violation of the National Ambient Air Quality Standards in non-attainment or maintenance areas.

Emissions from the operation of construction equipment would be negligible. Minor and temporary emissions from construction equipment would enter the atmosphere. However, these de minimus emissions do not pose an immediate or near-immediate threat to the local or regional air quality. Fugitive dust would be minimized along access routes and at the construction site by use of best management practices, as appropriate. Proposed activities will comply with Federal, State, and local regulation regarding air quality practices. No long-term or significant impacts are anticipated.

5.6 Hydrology

5.6.1 Surface Waters

The area of Lidy Creek will be beneficially affected by the proposed construction activities. Construction will take place from within the creek. Approximately 220 linear feet of stream will be impacted. Approximately 90 linear feet of the streambank will be permanently filled by the installation of the riprap protection on the left bank. Approximately 16 linear feet of streambank will be permanently impacted by the placement of the rip rap of native stone on the right bank. During construction, the creek will be diverted through a pipe. Construction will be done in the dry streambed. For approximately 220 linear feet native stone will be removed and placed to create a more stable stream. Upon completion of construction, the flow will be restored to the channel. The stream will be more stable due to the project’s addressing the erosion problem along the stream banks and the realignment of the channel to prevent the migration of the channel toward the left bank.

5.6.2 Wild and Scenic Rivers

This project is not located in a Wild or Scenic River or an American Heritage River. Therefore, there will be no impact to these resources.

5.7 Floodplains

The project is located within the 100-year floodplain as defined by Federal Emergency Management Agency. The project will not result in a substantially different cross section to the creek that it currently has. Coordination of the plans with the appropriate FEMA office will verify that there will be no change to the 100-year floodplain elevation.

There will be no adverse impact to the floodplain.

5.8 Biological Resources

5.8.1 Terrestrial Resources

The area adjacent to the stream approximately 220 linear feet downstream from the Main Street culvert will be temporarily impacted to access the project site. A small area adjacent to the stream, which is currently vegetated with immature trees and shrubs, will be disturbed to move equipment into the stream. All areas which are disturbed will be seeded or re-vegetated upon completion of the work. Therefore this impact will be a temporary one.

5.8.2 Wetlands

As there are no wetlands at the project site, there will be no impact to this resource.

5.9 Rare, Threatened and Endangered Species

As the USFWS (letter dated February 19, 2008) and the PNDI (receipt dated March 24, 2008) has indicated there are no species of concern in the project area except for the occasional transient, it is unlikely that any Federal or State listed or proposed threatened or endangered species will be impacted by the proposed action. All correspondence is located in Appendix A.

5.10 Cultural Resources

In a letter to the PHMC, dated March 21, 2008, the USACE Baltimore District has determined that implementation of the stream bank stabilization project at this site will have no effect on historic properties. A copy of this letter is located in Appendix A.

The PHMC sent a letter on April 7, 2008 (Appendix A) stating that there is a high probability that prehistoric and historical archaeological resources are located in the project area. However, the PHMC stated that it is their opinion that the proposed activity will have no effect on these resources. If the scope of the project changes to include additional land disturbance, a Phase I Archaeological Survey may be necessary to locate potentially significant archeological resources. The PHMC also stated that no evaluation of historic structures will be necessary in the project area.

5.11 Hazardous, Toxic, and Radioactive Substances

Using USEPA's Envirofacts Database, a preliminary search for documented contamination was conducted. There are no documented HTRW issues at the proposed project area. Therefore, no impacts from the proposed action are expected. If contamination is discovered, work at the site of the contamination would cease until coordination with PADEP and USACE could occur. Appropriate remediation and worker safety measures would be implemented.

5.12 Aesthetics and Recreation

There are no parks or recreation areas located within the project area. As Lidy Creek is partially underground it is unlikely that it supports a fisheries population that supports recreational fishing. The stream is disturbed on either side; on the right by a residence and lawn and on the left by the riprapped stream bank and road bed containing a sewer line. The stream bank stabilization will not have an adverse impact on the aesthetics of the area. It is likely to have a beneficial impact on this resource, as the stable stream channel will have a more aesthetic appearance than the poorly placed riprap and concrete that is currently located there.

5.13 Transportation and Traffic

As the project is located directly adjacent to Center Street, construction may have a minor impact on local traffic during construction. This impact is temporary in nature and will cease when the project construction is complete. Center Street will remain open to traffic during the construction of the streambank stabilization measures, i.e., placement of riprap at the eroded area along the road. Center Street and its roadbed will become stabilized once work is complete.

5.14 Noise

There will be no substantial long term adverse noise impacts resulting from the construction of the proposed stabilization project. Short term impacts include noise caused by heavy construction equipment. This may cause minor disturbances to the residences in the neighborhood. However, construction will be limited to normal daylight working hours so as to minimize disturbance to adjacent residences. Construction of the project is estimated to be completed within two weeks.

5.15 Public Utilities

The proposed project will have a beneficial impact as it will stabilize the existing sewer line that is currently being exposed and left vulnerable to passing debris and potential vandalism. In addition other utilities that may be located in the project construction area will be flagged or marked prior to commencement of work to avoid damaging any utilities. Therefore no adverse impacts are expected.

5.16 Socio-Economic Conditions

The proposed work is not expected to alter the population in the project area. Any increase to the local population during the construction period is expected to be limited and temporary as a result of construction employees at the site. Therefore, no impacts to Dupont Borough population or demographics are anticipated.

During construction, the construction contractors may purchase local goods and services that will provide minor and short-term benefits to the local economy. Construction of the proposed action should also benefit the regional economics by preventing damage to Center Street.

5.17 Environmental Justice

The proposed work is expected to benefit all persons that live near or utilize the roadway or sanitary sewer. No disproportionately high or adverse impacts to minority or low-income populations will result from the proposed action.

5.18 Children's Health and Safety

The construction site will be off limits to all unauthorized individuals. Furthermore, removing the failing riprap and concrete on the streambank and replacing it with properly placed and stabilized riprap will prevent the erosion of the streambank and further sediment from entering into the waterway as well as create a safer road shoulder and protect the sewer line. Access to the project site will be restricted during construction, so as to ensure the safety of children and others.

No children will suffer disproportionately from environmental health or safety risks caused by the proposed projects. Access to the construction site will be limited to authorized personnel only.

5.19 Cumulative Impacts

The Council on Environmental Quality's (CEQ) regulations (40 CFR 1500-1508) implementing the procedural provisions of NEPA of 1969, as amended (42 U.S.C. 4321 et seq.), define cumulative effects as,

> [t]he impact on the environment which results from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR 1508.7).

Actions by Federal and non-Federal entities that are (1) in the reasonably foreseeable future or can be reasonably forecasted, (2) planned, or (3) on-going in the Wyoming Valley area are summarized below with a brief description of potential impacts.

- Wyoming Valley Levee Raising Project

In a memorandum dated 8 November 2000, the Assistant Secretary of the Army for Civil Works forwarded a letter to Congressman Paul Kanjorski (PA-11) regarding modifications to the Wyoming Valley Levee Raising Project. The Assistant Secretary of the Army for Civil Works informed Congressman Kanjorski that "all necessary evaluations and modifications to all elements of the existing flood control projects, which include Coal Creek, Toby Creek, Abrahams Creek, and various relief culverts and penetrations through the levee" are within existing USACE authority provided that these features are found to be technically feasible, environmentally acceptable, and economically justified.

- Toby Creek Impounding Basin. This is project is a sub-element of the overall Wyoming Valley Levee Raising Project. The project is the rehabilitation of the Toby Creek Impounding Basin and common remedial seepage measures. The basin needs to have an adequate spillway built as well as the rehabilitation of the earthen berms around the impoundment and the spillway leading to the baseflow outlet point. The action was documented in an EA and includes the proposed rehabilitation of the Toby Creek Impounding Basin (TCIB) in the Kingston/Edwardsville area of the Levee Raising Project.

- A PL 84-99 June 2006 flooding report is presently at USACE headquarters to remove 15,000 cubic yards of storm related debris at the TCIB. The Rehabilitation and Inspection Program (RIP) component of PL 84-99 allows the USACE to inspect the FDR projects annually to ensure that the local sponsors are maintaining the projects. More specifically, the RIP allows the USACE to repair eligible flood damages to FDR projects' pre-flood conditions.

- Susquehanna River Landing/Riverfront Recreational Enhancements. These actions were the subject of the 2005 Wyoming Valley GRR SEIS and the impacts were covered therein.

- Work regulated under Section 404 general permit and Chapter 105 of the PA DEP to clean out gravel beds in Mill Creek after flood events has occurred in the past and is likely to occur in the future.

The proposed project is not expected to have adverse cumulative impacts on the watershed or the above actions proposed. The site is a previously disturbed area. The stream is not pristine and development has occurred adjacent to it. Portions of the stream have been placed within a culvert. The proposed project will have a positive effect on the environment as it will stabilize the streambank, remove the potential for future sedimentation of the stream, and realign the stream channel to create a more stable stream system.

6.0 PROJECT IMPLEMENTATION

6.1 Non-Federal Sponsor Statement

In a letter dated April 30, 2004, Dupont Borough, Pennsylvania requested a formal study of Lidy Creek to initiate investigations and studies to be made in the interest of emergency streambank and shoreline protection. A copy of this letter is located in Appendix A.

6.2 Cost Sharing

The non-federal sponsor is responsible for a minimum of 35 percent of the total project costs during the Design and Implementation phase. All lands, easements, rights of way, relocations, and dredged material placement areas (LERRD) necessary for construction of the project are the responsibility of the non-federal sponsor. The value of the LERRD may be credited towards the sponsor's share of project costs; however, the sponsor must contribute a minimum of 5 percent of the total project costs in cash. Below are the total project costs for the Federal and non-Federal sponsor.

Project Costs
(all costs in thousands of dollars)

	Federal	Non-Federal	Total
Planning and Design Analysis phase	$100	0	$100
Design and Implementation phase	$129	$69	$198
(Construction)			
Total	$229	$69	$298

b. Non-Federal Requirements:

LERRD	$49,018	Work-in-kind	$0
Cash	$19,982	Total OMRR&R	$0

6.3 Real Estate

The project will be located on part of one privately-owned property, 154-168 Main Street, and the existing street right of way. Construction, operation and maintenance of the project will require the non-Federal Sponsor, Dupont Borough, to acquire one standard perpetual channel improvement easement on the privately-owned residential property. Access will be from existing street rights-of-way. The perpetual easement acquisition is projected to take about 8 months to complete. The total real estate cost, including administrative costs and contingency, is estimated to be approximately $49,000. This cost is the responsibility of the non-Federal Sponsor, Dupont Borough, and will also be a sponsor credit for the total project cost. The Real

Estate Plan, including mapping, MCACES-format cost estimate and projected schedule, is attached as Appendix C.

6.4 Economics

The purpose of this economic assessment is to estimate the benefits and determine the economic justification of providing emergency streambank protection to an area along Lidy Creek in Dupont Borough, Pennsylvania. Dupont Borough is located in Luzerne County, a county in northeastern Pennsylvania which includes the city of Wilkes-Barre. In 2000, Dupont had a total population of 2,719, and Luzerne County had a population of 319,250 (US Census).

A section of bank along Lidy Creek in Dupont has been continuously eroding over the last several years. The erosion area is located along Center Street, near the intersection with Main Street. The erosion is so severe that continued erosion threatens Center Street as well as a main trunk sewer line located under the bank between the creek and the road. A sidewalk which had been located on the creek side of Center Street has already been lost to erosion. In addition, a driveway to a five-unit apartment building is in danger of being damaged in the near future, which would affect access for tenants. The primary concerns from erosion are the reduced safety to traffic traveling on Center Street, particularly in the winter months in slippery conditions with the lack of a secure bank between the road and the creek, and the threat to the sewer line. The sewer line which runs through the area is a main interceptor line which follows the creek bed down to the sewage treatment plant.

In the recent past, Dupont Borough has taken multiple steps to stem the erosion and repair damages. The city had to install guardrails in 2005 due to the erosion, and has placed large stone rip rap and poured concrete in attempts to protect the bank. In total, Dupont Borough has spent $36,000 in labor and materials for these temporary measures, but the erosion is ongoing and a permanent solution is urgently needed. The sewer line is in particular danger, particularly if a severe high-flow event were to occur. The sewer line is a critical resource to the borough of Dupont, as it is a main line which connects directly to the treatment plant downstream.

The total project cost to protect the erosion area is estimated at $198,000, as developed by Baltimore District cost estimators. Using the FY08 Federal interest rate for water resources projects of 4 7/8 percent, and a period of analysis of 25 years, standard for Section 14 projects, the annual cost of protection equals $14,175.

The economic benefit of protecting the erosion area is derived from the value of the resource being protected. In this case, the resources being protected are the road (Center Street) and the sewer line. If the road is lost to erosion, traffic would need to be rerouted around the area and access to nearby residences would be affected. Since there are nearby alternate routes, detour costs would not be high, but the resulting congestion on nearby roads and access problems in the area would cause significant difficulties for area residents and drivers. The largest economic cost of ongoing erosion would occur if the sewer line were damaged by the erosion or needed to be relocated because of the erosion. Dupont Borough officials estimate that it would cost well into the millions of dollars to relocate the line. If the line had to be relocated, existing sewer

connections would also need to be relocated, and a pumping station would likely need to be added, since the existing line is gravity-dependent.

In order to estimate the benefits of preventing further erosion in the study area, an estimate of $2 million is used as the estimated cost to relocate the sewer line. Dupont Borough officials indicated that it would likely cost at least $2 million. If further erosion is prevented by the Section 14 project, then the sewer line will be protected and relocation of the sewer line will be unnecessary. The estimated relocation cost is thus used as the estimate for the economic benefits of the project. With a relocation cost of $2 million, an interest rate of 4 7/8 percent, and a period of analysis of 25 years, the annual benefit to protecting the streambank is estimated at $143,000.

A project is considered economically justified if the annual benefits of the project exceed the annual costs. With annual benefits of $143,000, and annual costs of $14,175, the project has a benefit to cost ratio of 10 and net annual benefits of $128,825.

6.5 Engineering and Cost Estimate

The recommended plan/design involves realigning the channel away from the left bank, altering channel dimensions and elevation, and re-grading and stabilizing some portions of the banks with riprap. Construction work will begin at the downstream face of the box culvert and extend downstream approximately 90 ft to the location of the last surveyed cross section. The proposed stream width, determined by the culvert dimensions, will improve the conveyance of Lidy Creek. Replacing the large rocks that have deposited inside the active channel and reconfiguring the banks will relieve stress and protect the banks on both sides. Upper banks will be graded to a 2:1 slope or flatter (some to be 5:1) and will be vegetated via native seeding that does not require mowing. The lower banks will contain riprap stabilization and will be graded to a 1.5:1 slope or flatter. To minimize the amount of riprap required and lower project costs, riprap protection will extend only to the 100-year flood level. Size R-6 (24”) riprap will be placed at a thickness of 30 inches with a blanket of AASHTO #57 stone. The riprap with concrete that was dumped on the left bank of Lidy Creek in 2005 will be removed before the bank grading begins. This design option provides the best long-term stability and would most likely require the least amount of maintenance, if any. A complete Water Resources Summary and drawings of the proposed design are found in Appendix D of this report.

The preliminary project costs for the streambank stabilization activity at Lidy Creek and Center Street is approximately $198,000. A copy of the MCACES is also located in Appendix D.

7.0 CONCLUSION

This EA and PDA report evaluates the potential environmental effects associated with the proposed stream bank stabilization of Lidy Creek, Dupont Borough, Luzerne County, Pennsylvania. The purpose of the project is to stabilize the stream banks of Lidy Creek adjacent to Center Street, a major thoroughfare in Dupont Borough, as well as protect the sanitary sewer line that is located within the roadbed. Approximately 220 linear feet of the stream will be realigned to create a more stable stream channel. The severely eroded left bank will be stabilized

with stone riprap. The right bank will be stabilized with a native stone. The proposed action will also reduce the amount of sediment entering the waterway from the eroding stream banks.

This report documents the overall effects of the proposed action and finds that any impacts will be minor in nature. Most impacts will be temporary. Short term impacts include stone placement, dust and noise from construction activities in and adjacent to the stream. These activities are minor and expected to occur only during the construction of the project and not its operation. The permanent impact of placing 90 linear feet of riprap on the left bank and 16 linear feet of riprap on the right bank is considered minimal as the area has already been disturbed by construction and the structures that will be placed will address the current streambank erosion problem. No long term adverse impacts are anticipated for the following resources: air and water quality, internal or external traffic and transportation, solid waste, socio-economics, low-income and/or minority populations, cultural resources, fish and wildlife including threatened and endangered species, land use or recreation. Positive impacts associated with the project include the stabilization of Center Street and the sanitary sewer line from further erosion. Given the relatively small scale of the proposed actions, minimal adverse impacts, and the localized nature of the project effects, it is not expected that the preparation of an Environmental Impact Statement for the proposed actions being considered will be necessary. As such, a FONSI has been prepared.

7.1 Agencies and Persons Consulted

The following Federal resource agencies were contacted over the course of this process: Natural Resource Conservation Service, U. S. Fish and Wildlife Service, U. S. Environmental Protection Agency, U.S. Geological Service, National Park Service and the Federal Emergency Management Agency. State agencies contacted included: Pennsylvania Department of Environmental Protection, Pennsylvania Historic and Museum Commission.

Appendix A contains the names of other State and local agencies contacted and copies of the coordination correspondence.

The Pennsylvania Department of Environmental Protection has been contacted to determine the need for a waterway permit. A Section 401 Water Quality Certification is being sought for the proposed action.

As stated in Section 1.4, copies of the notice of availability for this EA will be sent to nearby residents as well as Federal, State, and local resource agencies. In addition, copies of the EA will be sent to the public library in Dupont Borough as well as appropriate Federal, State, and local resource agencies for public review and comment.

7.2 Compliance of the Proposed Action with Environmental Protection Statutes and Other Environmental Requirements

Federal Statutes	Level of Compliance[1]
Anadromous Fish Conservation Act	N/A
Archeological and Historic Preservation Act	Partial
Clean Air Act	Full
Clean Water Act	Partial
Coastal Barrier Resources Act	N/A
Coastal Zone Management Act	N/A
Comprehensive Environmental Response, Compensation and Liability Act	Full
Endangered Species Act	Full
Estuary Protection Act	N/A
Federal Water Project Recreation Act	Full
Fish and Wildlife Coordination Act	Full
Land and Water Conservation Fund Act	Full
Marine Mammal Protection Act	N/A
National Historic Preservation Act	Full
National Environmental Policy Act	Partial
Resource Conservation and Recovery Act	Full
Rivers and Harbors Act	N/A
Watershed Protection and Flood Prevention Act	Full
Wild and Scenic Rivers Act	Full
Executive Orders, Memoranda, etc.	
Protection and Enhancement of Cultural Environment (E.O. 11593)	Full
Floodplain Management (E.O. 11988)	Full
Protection of Wetlands (E.O. 11990)	Full
Prime and Unique Farmlands (CEQ Memorandum, 11 Aug. 80)	Full
Environmental Justice in Minority and Low-Income Populations (E.O. 12898)	Full
Protection of Children from Health Risks & Safety Risks (E. O. 13045)	Full

[1] Level of Compliance:

Full Compliance (Full): Having met all requirements of the statute, E.O. or other environmental requirements for the current stage of planning.

Partial Compliance (Partial): Not having met some of the requirements that normally are met in the current stage of planning.

Non-Compliance (NC): Violation of a requirement of the statute, E.O. or other environmental requirement.

Not Applicable (N/A): No requirements for the statute, E.O. or other environmental requirement for the current stage of planning.

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