LIDY CREEK – SECTION 14
EMERGENCY STREAMBANK STABILIZATION

DRAFT

PLANNING AND DESIGN ANALYSIS

APPENDIX DOCUMENTS

JULY 2008

US Army Corps of Engineers
Baltimore District

US Army Corps
of Engineers
Baltimore District

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDICES

JULY 2008

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LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX A: PUBLIC COORDINATION OR CORRESPONDENCE

JULY 2008

APPENDIX A: PUBLIC COORDINATION OR CORRESPONDENCE

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LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX A: PUBLIC COORDINATION OR CORRESPONDENCE

JULY 2008

ATTACHMENT 1

SPONSOR LETTER OF INTENT

Stanley Golembiewski - President
Brian Nesgoda - Vice President
Dorothy Rygiel - Treasurer
George Legezdh - Mayor

Dupont Borough

COUNCIL
Joseph Timinski
Edward Kowalczyk
Matthew Szumski
Ann Marie O'Malley

April 30, 2004

District Engineer
U.S. Army Engineer District, Baltimore
P. O. Box 1715
Baltimore, Maryland 21203-1715

Dear Sir:

In accordance with the provisions of Section 14 of the Flood Control Act of 1946, as amended, which authorizes the Federal government to initiate investigations and studies to be made in the interest of emergency streambank and shoreline protection, the Borough of Dupont makes formal application for a study of Lidy's Creek located in Dupont Borough, Luzerne County, Northeastern Pennsylvania.

Lidy's Creek flows through the Northern Section of Dupont beginning somewhere in the mountains north east of Dupont. A medium size creek flows through mountains, underneath the Pennsylvania Turnpike and Interstate 81, continues through populated areas in the Borough of Dupont and joins Mill Creek.

Hurricane Gloria in 1985 and a major storm in 1994 has damaged its bridges and eroded properties along the creek.

We have tried to get assistance to rebuild this creek in several areas over the past two years but were currently unsuccessful.

Lidy Creek is seriously eroding and causing major damage in a section on Center Street off Main Street in Dupont at this time.

If not corrected in the near future the Borough sewer system located in Center Street and the Lower Lackawanna Sanitary Sewer System main truck line located in the Center of this creek will eventually be washed away causing an enormous environmental hazard for the Borough of Dupont and LLVSA.

600 Chestnut Street Dupont, PA. 18641 Phone 570-655-6216 or 570-655-6703 FAX 570-655-6216

EMAIL dupontboro@adelphia.net

Heavy rains continue to wash away the sides of the creek and continually make the problem more serious and closer to the day when Center Street washes away and the newly constructed sewer line and manhole will wash out causing an enormous amount of damage to the Borough along with the inconvenience this problem will cause to our residents.

The Borough of Dupont understands that the problem will be assessed through the conduct of a Planning and Design Analysis (PDA). The Federal government will pay 100 percent of the costs for the PDA up to the Federal funding limit of $40,000. If the cost exceeds $40,000 the Borough of Dupont can provide 35 percent of this amount in excess of $40,000, which will be provided during construction of the project.

In addition, the Borough of Dupont can provide the following local cooperation and participation:

1. Provide without cost to the United States all lands, easements, rights-of-way, relocations including suitable borrow and dredged material placement areas (LERRD), as determined by the federal government to be necessary for the construction of the project. The value of LERRD will be included in the total project costs and credited towards the sponsor's share of project costs, as defined in the local cooperation agreement.

2. Hold and save the United States free from claims for damages that may result from the construction and subsequent maintenance of the project, except damages due to the fault or negligence of the United States or its contractors.

3. Assume full responsibility for all project costs in excess of the Federal cost limitation of $1,000,000.

4. Ensure maintenance and repair of the project during the useful life of the works as required to serve the project's intended purpose, with no additional cost to the Federal government.

5. Provide a cash contribution of 5 percent of the project cost.

6. If the value of the sponsor's contribution above does not exceed 35 percent of the project cost, provide a cash contribution to make the sponsor's total contributions equal to 35 percent.

Edward L. Vogue

Edward L. Vogue
Borough Manager for Dupont Borough Council

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX A: PUBLIC COORDINATION OR CORRESPONDENCE

JULY 2008

ATTACHMENT 2

STUDY INITATION NOTICE

US Army Corps of Engineers
Baltimore District

FEB 04 2008

Planning Division

Study Initiation Notice

Lidy Creek Section 14 Emergency Stabilization Project
Luzerne County, Pennsylvania

The U.S. Army Corps of Engineers, Baltimore District (Corps) is conducting an emergency stream stabilization study under Section 14 of the Flood Control Act of 1946, as amended, and preparing an environmental assessment (EA) for the construction of the stream stabilization project to protect Center Road, near the intersection of Main Street on Lidy Creek, in DuPont, Luzerne County, Pennsylvania (Enclosure). The purpose of this notice is to inform you of the study and our upcoming efforts. The EA will include several alternatives for stream stabilization. The Corps will complete the EA in compliance with the National Environmental Policy Act (NEPA) of 1969, as amended.

Section 14 of the Flood Control Act of 1946, as amended, provides authority for the Corps to develop and construct or repair streambank 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.

The purpose of the study is to investigate methods to stabilize the failing streambank along Center Road. The streambank is severely eroded due to high water events that occur when it rains. A culvert was installed in Lidy Creek when the overpass was constructed. Water flows out of the culvert, is deflected by a concrete guidewall and is forced to the opposite bankline. Center Street runs parallel to Lidy Creek at this location. Approximately 90 linear feet of streambank is severely eroding. The streambank failure has compromised public infrastructure (i.e., road and utilities lines) along the creek.

The Lidy Creek Draft EA will be available for public comment in Spring 2008. When the report has been completed, the Corps will publish a Notice of Availability (NOA) for the document in the local newspaper. It is anticipated that this EA will result in a Finding of No Significant Impact (FONSI).

For Federal and State resource agencies receiving a copy of this letter, we request that you provide information concerning interests within your organization's area of responsibility or expertise within 30 days from the date of this notice to the address below. Specific issues of concern include presence of any threatened or endangered species (Section 7 compliance), jurisdictional wetlands or other critical habitats, wild and scenic rivers, prime and unique farmlands, or highly erodible soils, land use, and infrastructure at or near the proposed project sites. A timely review of the enclosed information and a written response will be greatly appreciated. Some agencies will also receive specific requests for information from our office in the near future. If you have any questions regarding this project, please contact

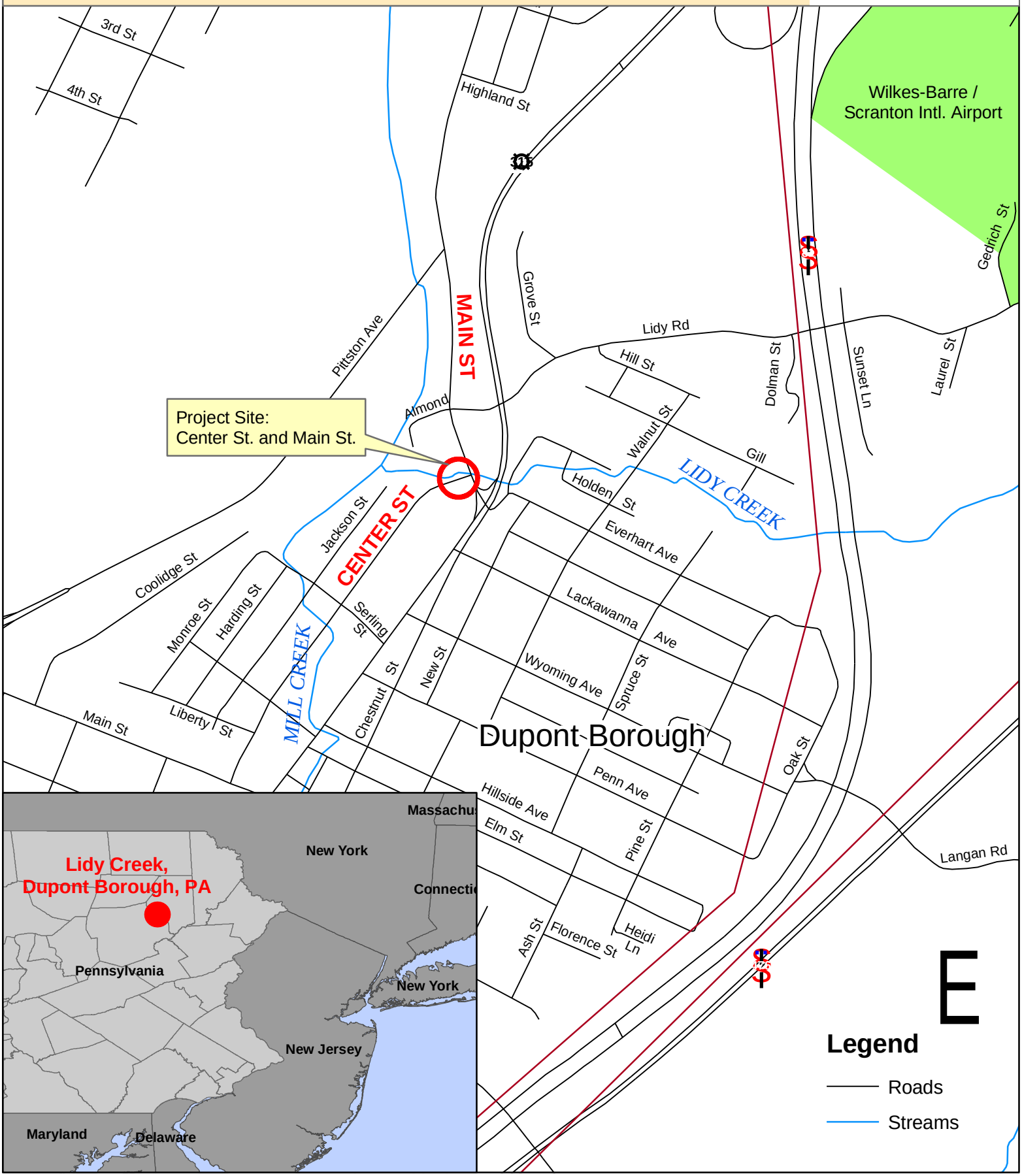
Ms. Michele Gomez of our Civil Project Development Branch at (410) 962-5175 or by e-mail at michele.gomez@usace.army.mil.

U.S. Army Corps of Engineers, Baltimore District
ATTN: CENAB-PL-P (Gomez)
P.O. Box 1715
Baltimore, Maryland 21203-1715

Amy M. Guise
Chief, Civil Project Development Branch

Lidy Creek
Dupont Borough, PA

US Army Corps of Engineers
Baltimore District



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

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX A: PUBLIC COORDINATION OR CORRESPONDENCE

JULY 2008

ATTACHMENT 3

ENDANGERED SPECIES AND FISH AND WILDLIFE COORDINATION ACT

DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, U.S. ARMY CORPS OF ENGINEERS
P. O. BOX 1715
BALTIMORE, MARYLAND 21203-1715

REPLY TO
ATTENTION OF

CENAB-PL-P

JAN 29 2008

Ms. Cindy Tibbott
U.S. Fish and Wildlife Service
State College Field Office
315 S. Allen Street, Suite 322
State College, PA 16801

Dear Ms. Tibbott:

This letter is in reference to the U.S. Army Corps of Engineers, Baltimore District's (USACE) proposal to conduct an emergency stream restoration project to address severe erosion along approximately 90 feet of Lidy Creek. The study area is located along Lidy Creek at Center Road near the intersection of Main Street in DuPont, Luzerne County, Pennsylvania (Enclosure). The proposed work is being conducted under Section 14 of the Flood Control Act of 1948, as amended.

In regards to the project area, the USACE is requesting any information your office may have on the presence of federally protected species of animals and plants listed by Section 7 of the Endangered Species Act. We also request the Service's assistance in fulfilling the requirements of the Fish and Wildlife Coordination Act (FWCA) related to this project.

Please inform the Corps of any Section 7 requirements for the above referenced project within 30 days of the date of this letter and provide us with the point of contact for the FWCA review. We will then begin the coordination process. If you have any questions, please call Ms. Michele Gomez at (410) 962-5175.

Sincerely,

Amy M. Guise
Chief, Civil Project Development Branch

Enclosure

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pennsylvania Field Office
315 South Allen Street, Suite 322
State College, Pennsylvania 16801-4850

February 19, 2008

Amy M. Guise
Chief, Civil Project Development Branch
Baltimore District, U.S. Army Corps of Engineers
P.O. Box 1715
Baltimore, MD 21203-1715

Dear Ms. Guise:

This responds to your January 29, 2008, letter and February 4, 2008, Study Initiation Notice for the proposed Lidy Creek Section 14 Emergency Stabilization Project in Dupont Borough, Luzerne County, Pennsylvania. The Baltimore District is proposing to stabilize 90 feet of Lidy Creek, and is preparing an Environmental Assessment to investigate alternative methods of stabilizing a failing streambank along Center Road. These comments are prepared in accordance with the requirements of the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) and the Fish and Wildlife Coordination Act (FWCA; 16 U.S.C. 661-667e).

Except for occasional transient species, no federally listed or proposed threatened or endangered species under our jurisdiction is known to occur in the project impact area. Therefore, no biological assessment nor further consultation under the Endangered Species Act is required with the Fish and Wildlife Service. This determination is valid for two years from the date of this letter. If the proposed project has not been fully implemented prior to this, an additional review by this office will be necessary. Should project plans change, or if additional information on listed or proposed species becomes available, this determination may be reconsidered.

Thank you for the opportunity to provide FWCA comments so early in your planning process. However, due to ongoing staffing shortages at this office, and the small scale of the proposed project, we must decline to participate in the FWCA coordination process. Please direct any questions regarding this matter to Cindy Tibbott of my staff at 814-234-4090.

Sincerely,

David Densmore
Supervisor

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX A: PUBLIC COORDINATION OR CORRESPONDENCE

JULY 2008

ATTACHMENT 4

PENNSYLVANIA HISTORICAL AND MUSUEM COMMISSION

DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, U.S. ARMY CORPS OF ENGINEERS
P. O. BOX 1715
BALTIMORE, MARYLAND 21203-1715

REPLY TO
ATTENTION OF

March 21, 2008

Planning Division

Ms. Jean Cutler
Pennsylvania Historical and Museum Commission
Keystone Commonwealth Building, 2nd Floor
400 North Street
Harrisburg, Pennsylvania 17108-1026

Dear Ms. Cutler:

This letter is to consult with your office as required by Section 106 of the National Historic Preservation Act regarding the U.S. Army Corps of Engineers, Baltimore District proposed construction of an emergency stream restoration project in Lidy Creek, Dupont Borough, Luzerne County, Pennsylvania. The project is being conducted under Section 14 of the Flood Control Act of 1946. The proposed project consists of conducting stream restoration measures along 200 linear feet of stream bank which has eroded approximately 90 feet of the adjacent road bed (Center Street) and exposed an existing sewer line. The site is located at the intersection of Center Street and Main Street. A location map is attached.

The Baltimore District is partnering with the Dupont Borough to conduct the stream bank stabilization project within Lidy Creek. The project will involve placement of riprap on both sides of the creek along the eroded roadbed, downstream of the existing culvert wing walls, and placement of native stone (currently in the stream) within the stream bed to create a more stable stream system and improve habitat.

The study is currently in Planning and Design Analysis which is a pre-implementation phase. During this time, plan formulation and design will be completed and technical, environmental, and regulatory compliance activities will be conducted to assure approval of the project. An environmental assessment will be developed in compliance with the National Environmental Policy Act.

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.
The Baltimore District has determined that implementation of the stream bank stabilization project at this site will have no effect on historic properties.

If you have any questions, please contact Mr. Scott Watson at (410) 962-9500 or scott.c.watson@usace.army.mil.

Sincerely,

Amy M. Guise
Chief, Civil Project Development Branch

Enclosure

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX A: PUBLIC COORDINATION OR CORRESPONDENCE

JULY 2008

ATTACHMENT 5

MAILING LIST

63519 030 3/12/2008 G
Mr. Bob Hainly
U.S. Geological Survey
Pennsylvania Water Science Center
215 Limekiln Road
New Cumberland, PA 17070-1586

63547 041 1/24/2008 G
Mr. Wayne Spilove
PA Historical and Museum Commission
State Museum Building
300 North Street
Harrisburg, PA 17120-

40313 030 1/24/2008 G
Mr. Ralph Spagnolo
U.S. EPA, Region III
1650 Arch Street
3ES30
Philadelphia, PA 19103-2029

38457 030 1/24/2008 G
Ms. Cindy Tibbott
U.S. Fish & Wildlife Service
PA Field Office
315 S. Allen Street, Suite 322
State College, PA 16801-0800

63520 040 1/24/2008 G
Mr. Ron Killins
State Hazardous Material Officer
PA Emergency Management Agency
2605 Interstate Drive
Harrisburg, PA 17110-9364

12334 040 1/24/2008 G
Mr. Steve Smithonic
PA Game Commission
NE Regional Office
P.O. Box 220
Dallas, PA 18612-

63518 030 1/24/2008 G

U.S. Dept of Agriculture
Natural Resources Conservation Service
Tunkhannock Service Center
1 Hollow Crest Cpmplex
Tunkhannock, PA 18657-6631

63521 030 1/24/2008 G
Ms. Amy Elliott
U.S. Army Corps of Engineers
Regulatory Branch
3947 South Atherton Street, Suite A
State College, PA 16801-

39904 040 1/24/2008 G

Pennsylvania Game Commission
Administrative Office
2001 Elmerton Avenue
Harrisburg, PA 17110-9797

63517 041 1/24/2008 G
Ms. Patricia Mosparran
PA Natural Heritage Program
PA Dept. of Conservation & Natural Resources
Bureau of Waterways
P.O. Box 8460
Harrisburg, PA 17105-8552

15507 040 2/5/2008 G
Ms. Kate Crowley
Water Management Program Manager
Northeast Regional Office
PA Dept of Environmental Protection
2 Public Square
Wilkes-Barre, PA 18711-0790

63522 040 1/24/2008 G
Mr. Andrew L. Sheils
Non Game & Endangered Species MGMT
PA Fish & Game Commission
450 Robinson Lane
Pleasant Gap, PA 16823-1920

63523 030 1/24/2008 G
Mr. William Skwersky
U.S. Dept of Housing & Urban Development
Pennsylvania State Office
100 Penn Square East
Philadelphia, PA 19107-3392

63524 030 1/24/2008 G

District Chief
Pennsylvania District
U.S. Geological Survey
840 Market Street
New Cumberland, PA 17043-1586

63525 041 1/24/2008 G

Policy & Planning
PA Fish and Boat Commission
P.O. Box 67000
Harrisburg, PA 17106-

63527 040 1/24/2008 G
Mr. Kerry Wilson
Chief, Community Planning & Mitigation Divisi
Dept of Community & Economic Development
400 North Street, 4th Floor
Commonwealth Keystone Building
Harrisburg, PA 17120-0225

63516 030 1/24/2008 G
Mr. Dan Alters
PA Department of Environmental Protection
Northeast Regional Office
2 Public Square
Wilkes-Barre, PA 18711-0790

17675 040 1/24/2008 G

Chief
PA Dept of Environmental Protection
P.O. Box 8460, Rm 114
Executive House
Harrisburg, PA 17105-1467

18479 050 1/24/2008 G
Mr. David W. Heicher
Chief
Watershed Assessment & Protection
Susquehanna River Basin Commission
1721 North Front Street
Harrisburg, PA 17102-

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX A: PUBLIC COORDINATION OR CORRESPONDENCE

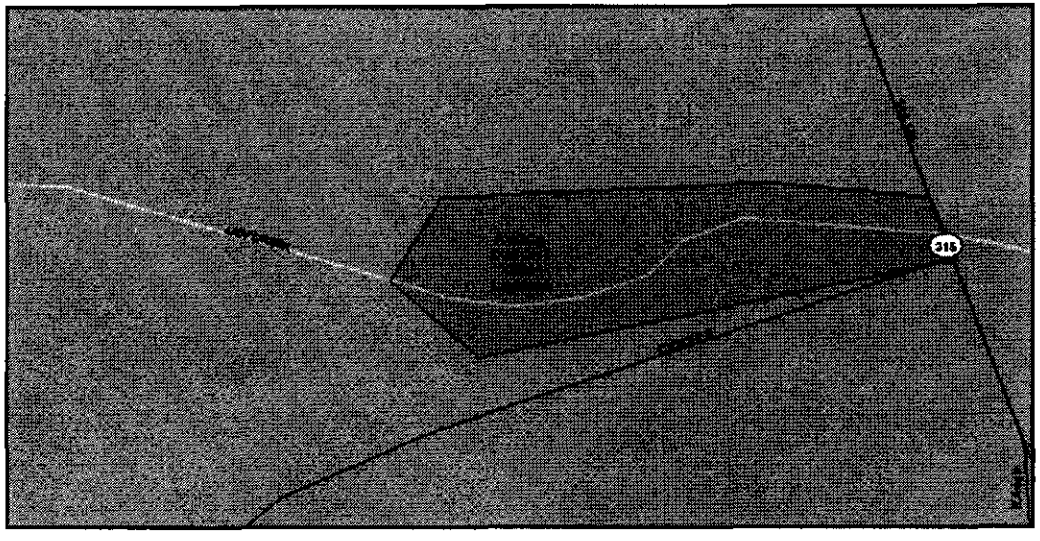
JULY 2008

ATTACHMENT 6

PENNSYLVANIA NATURAL DIVERSITY INVENTORY (PNDI)

PNDI Project Environmental Review Receipt
Project Search ID: 20080324133640
Project Name: USACE Sec 14 Lidy Creek
Date: 3/24/2008 5:28:34 PM

Project Location



Project Name: USACE Sec 14 Lidy Creek
On Behalf Of: Federal Agency
Project Search ID: 20080324133640
Date: 3/24/2008 5:28:27 PM
# of Potential Impacts: 0
Jurisdictional Agency:
Project Category: In-stream / Riverine Activities and Projects,Other
Project Location
Decimal Degrees: 41.32573 N, -75.74509 W
Degrees Minutes Seconds: 41° 19' 32.6" N, 75° 44' 42.4" W
Lambert: 619172.37275717, 855283.53784734 ft
ZIP Code: 18641
County: Luzerne
Township/Municipality: DUPONT
USGS 7.5 Minute Quadrangle ID: 440
Quadrangle Name: AVOCA
Project Area: 0.2 acres

Location Accuracy

Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Receipt is solely responsible for the project location and thus the correctness of the Project Review Receipt content.

0 Known Impacts

Under the Following Agencies' Jurisdiction:
None

 APPLICANT INITIALS: MLS

Pennsylvania Natural Diversity Inventory (PNDI) records do **NOT** indicate any known impacts on special concern species and resources within the project area. DEP requires a signed copy of this receipt with permit applications being submitted as indication that an environmental review has been conducted and completed. See DEP PNDI policy at www.naturalheritage.state.pa.us for more information.

Based on the information you provided, no further coordination is required by the Pennsylvania Game Commission, the Pennsylvania Fish and Boat Commission, or the Pennsylvania Department of Conservation and Natural Resources with regard to special concern species, natural communities, or outstanding geologic features. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

Based on the project-specific information you provided, no impacts to federally listed, proposed, or candidate species are anticipated. Therefore, no further consultation under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.* is required with the U.S. Fish and Wildlife Service. Because no take of federally listed species is anticipated, none is authorized. For a list of species that could occur in your project area (but have not been documented in PNDI), please see the county lists of threatened, endangered, and candidate species. A field visit or survey may reveal previously undocumented populations of one or more threatened or endangered species with a project area. If it is determined that any federally listed species occur in your project area, the U.S. Fish and Wildlife Service requires that you initiate consultation to identify and resolve any conflicts. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

These determinations were based on the project-specific information you provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the information you provided does not accurately reflect this project, or if project plans change, DEP and the jurisdictional agencies require that another PNDI review be conducted.

This response represents the most up-to-date summary of the PNDI data files and is <u>good for one(1) year</u> from the date of this PNDI Project Environmental Review Receipt.

DISCLAIMER

The PNDI environmental review website is a preliminary environmental screening tool. It is <u>not</u> a substitute for information obtained from a field survey of the project area conducted by a biologist. Such surveys may reveal previously undocumented populations of species of special concern. In addition, the PNDI only contains information about species occurrences that have actually been <u>reported</u> to the Pennsylvania Natural Heritage Program.

TERMS OF USE

Upon signing into the PNDI environmental review website, and as a condition of using it, you agreed to certain terms of use. These are as follows:

The web site is intended solely for the purpose of screening projects for potential impacts on resources of special concern in accordance with the instructions provided on the web site. Use of the web site for any other purpose or in any other way is prohibited and subject to criminal prosecution under federal and state law, including but not limited to the following: Computer Fraud and Abuse Act of 1986, as amended, 18 U.S.C. Â§ 1030; Pennsylvania Crimes Code, Â§ 4911 (tampering with public records or information), Â§ 7611 (unlawful use of computer and other computer crimes), Â§ 7612 (disruption of service), Â§ 7613 (computer theft), Â§ 7614 (unlawful duplication), and Â§ 7615 (computer trespass).

 APPLICANT INITIALS: MKG

PNDI Project Environmental Review Receipt

Project Search ID: 20080324133640
Project Name: USACE Sec 14 Lidy Creek
Date: 3/24/2008 5:28:34 PM

The PNHP reserves the right at any time and without notice to modify or suspend the web site and to terminate or restrict access to it.

The terms of use may be revised from time to time. By continuing to use the web site after changes to the terms have been posted, the user has agreed to accept such changes.

This review is based on the project information that was entered. The jurisdictional agencies and DEP require that the review be redone if the project area, location, or the type of project changes. If additional information on species of special concern becomes available, this review may be reconsidered by the jurisdictional agency.

PRIVACY and SECURITY

This web site operates on a Commonwealth of Pennsylvania computer system. It maintains a record of each environmental review search result as well as contact information for the project applicant. These records are maintained for internal tracking purposes. Information collected in this application will be made available only to the jurisdictional agencies and to the Department of Environmental Protection, except if required for law enforcement purposesâ€"see paragraph below.

This system is monitored to ensure proper operation, to verify the functioning of applicable security features, and for other like purposes. Anyone using this system consents to such monitoring and is advised that if such monitoring reveals evidence of possible criminal activity, system personnel may provide the evidence to law enforcement officials. See Terms of Use.

Print this Project Review Receipt using your Internet browser's print function and keep it as a record of your search.

Signature: Michele L Gomez

Date: 3/24/08

Project applicant on whose behalf this search was conducted:

APPLICANT

Contact Name: U.S. Army Corps of Engineers / Michele Gomez

Address: P.O. Box 1715

City, State, Zip: Baltimore MD 21203

Phone: 410-962-5175

Email: michele.gomez@usace.army.mil

PERSON CONDUCTING SEARCH (if not applicant)

Contact Name: _____

Address: _____

City, State, Zip: _____

Phone: _____

Email: _____

The following contact information is for the agencies involved in this Pennsylvania Natural Diversity Inventory environmental review process. Please read this entire receipt carefully as it contains instructions for how to contact these agencies for further review of this particular project.

 APPLICANT INITIALS: MLG

 APPLICANT INITIALS: _____

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX B: ENVIIRONMENTAL COMPLIANCE

JULY 2008

APPENDIX B: ENVIIRONMENTAL COMPLIANCE

Attachment 1: Clean Water Act Section 404(b) (1) Evaluation
Attachment 2: Natural Resources Conservation Service – Web Soil Survey 2.0
Attachment 3: Natural Resources Conservation Service – Hydric Soils
Attachment 4: Natural Resources Conservation Service – Prime and Unique Farmland
Attachment 5: Hazardous, Toxic and Radioactive Substances Mapping
Attachment 6: Superfund (CERCLIS)
Attachment 7: Resource Conservation and Recovery Act Information System (RCRAInfo)
Attachment 8: Toxic Release Information System (TRIS)
Attachment 9: National Wetlands Inventory - Map

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX B: ENVIIRONMENTAL COMPLIANCE

JULY 2008

ATTACHMENT 1

CLEAN WATER ACT SECTION 404(b) (1) EVALUATION

CLEAN WATER ACT SECTION 404(b) (1) EVALUATION

SECTION 14 EMERGENCY STREAMBANK STABILIZATION
LIDY CREEK, DUPONT BOROUGH, LUZERNE COUNTY, PENNSYLVANIA

1. PROJECT DECRIPTION

A. LOCATION

The project area is approximately 200 linear feet of Lidy Creek in Dupont Borough, Luzerne County, Pennsylvania. The project area is immediately downstream of the culvert under main Street crossing of Lidy Creek and adjacent to Center Street. In addition to stabilizing the stream, the project proposes to protect Center Street and its roadbed as well as a sanitary sewer line that is currently exposed within the roadbed and is in danger of failing and leaching pollutants into the waterway.

B.GENERAL DESCRRIPTION

The project is the stabilization of Lidy Creek downstream of the Main Street crossing immediately adjacent to Center Street. The proposed project involves stabilizing 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 200 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.

C. PURPOSE

The purpose of the project is to investigate methods to stabilize the failing streambanks on both sides of Lidy Creek downstream of Main Street crossing. The stream bank erosion is threatening an existing road bed of Center Street and the exposed sanitary sewer that now lies adjacent to the streambed. Failure to stabilize the erosion could lead to serious environmental, public health and aquatic resources consequences if a rupture where to occur. As such, stabilization of Lidy Creek, Center Street, and the sanitary sewer line is warranted.

D. GENERAL DESCRIPTION OF THE DISCHARGE MATERIAL

(1) Characteristics of Fill Material - The fill material will consist of on-site material for the channel work, which is a mix of mainly gravel, coarse sand and cobble. Larger rocks will be used from the channel and brought on-site (small benches, R-6 riprap (24") and AASHTO #57 stone). In addition, heavy equipment will be working in the stream channel.

(2) Fill Material Quantities - Approximately 100 cubic yards of riprap and 25 cubic yards of ASSHTO #57 stone will be used in the project area.

(3) Source of Material-- Stone and any erosion control materials to stabilize the streambank and streambed will be obtained from a clean commercial source and will be free of contaminates. Large native stone found in the stream will also be used.

E. DESCRIPTION OF THE PROPOSED DISCHARGE SITE

The proposed discharge site is located along Lidy Creek along both banks downstream of the Main Street crossing. Approximately 90 linear feet of the left bank and 16 linear feet of the right bank will be stabilized with riprap. Lidy Creek is a perennial creek and the creek averages less than a foot in water depth.

F. DESCRIPTION OF DREDGING AND PLACMENT METHOD

Placement involves in stream and bank work by using a front-end loader that will travel along the dewatered streambed. Heavy machinery may also work from the top of either bank. Excavation of materials could also involve use of a front-end loaders, backhoes and trackhoes.

2. FACTUAL DETERMINATIONS

A.PHYSICAL AND SUBSTRATE DETERMINATIONS

(1) Substrate elevation and slope - The riprap will be placed at a 2:1 slope up to the 100-year flood level elevation.
(2) Sediment type- Typical sediment types include silts, sands, gravel and cobble native to this part of Pennsylvania.
(3) Dredged/Fill Material Movement- There will be temporary adverse impacts such as increased erosion and soil excavation and compaction during construction activities at all the sites. No movement of fill materials is expected at any of the sites following project completion.
(4) Other Effects– If heavy machinery travels in steam this will have a temporary adverse impact on the streambed. Streambed is expected to recover within 1-2 years following construction.
(5) Actions taken to Minimize Impacts– Stabilization design alternatives were evaluated for minimizing encroachment into the stream without compromising the stability of the design. A sediment erosion and control plan will be prepared with best management practices implemented to minimize the suspension of sediment during construction activities. Of all the alternatives considered the rirap is the least impact to the streambed

B. WATER CIRCULATION, FLUCTUATION, AND SALINITY DETERMINATIONS

(1) Water Quality
    (a) Salinity- Fresh Water, no change expected

(b) Chemistry– minor and temporary mobilization of nutrients (nitrogen and phosphorus) due to in stream work.
(c) Clarity– Marginal and temporary reduction in clarity is expected because of turbidity created during soil excavation and stone placement. No long-term impacts are expected.
(d) Color –Marginal and temporary change expected during construction due to increases in turbidity. No long-term impact expected.
(e) Odor- No change expected.
(f) Taste-Not applicable
(g) Dissolved Oxygen Levels-- No long-term change expected.
(h) Nutrients- minor and temporary mobilization of nutrients (nitrogen and phosphorus) due to in stream work.
(i) Eutrophication- Not expected to occur.
(j) Temperature- No change expected.

(2) Current Patterns and Circulation
(a) Current Patterns and Flow – Normal currents are small and scattered across the creek bottom. There is no defined thalweg or channel where majority of water is found. The dewatering along the banks for construction may affect the near bank currents but this will be minor and temporary.
(b) Velocity - Temporary coffer dams/sand bags may be needed during construction; however, following construction, no significant changes are expected.

(c) Stratification - None expected.

(d) Hydrologic Regime - Temporary coffer dams/sand bags may be needed during construction; however, following construction, no significant changes are expected.

(3) *Normal Water Level Fluctuations* – No change expected.

(4) *Salinity Gradients* – Fresh water-no change expected.

(5) *Actions That Will Be Taken to Minimize Impacts* – Project will be constructed during low flow times of the year, probably in the summer. Also dewatering of the stream by piping the flow around the construction area will be done. Project construction will not alter cross sectional area of channel.

c. Suspended Particulate/Turbidity Determinations

(1) *Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Placement Site* - There will be a local increase in turbidity within the limit of disturbance of the project during construction. No long-term impacts are expected.

(2) *Effects (degree and duration) on Chemical and Physical Properties of the Water Column*

(a) Light Penetration – No significant changes expected.

(b) Dissolved Oxygen – No change expected.

(c) Toxic Metals and Organics – No change expected.

(d) Pathogens – No change expected

(e) Aesthetics - A temporary and minor reduction in aesthetic value is expected to occur during construction. No change expected after construction.

(f) Temperature – No change expected.

(3) *Actions Taken to Minimize Impacts* - A sediment erosion and control plan will be prepared with best management practices implemented to minimize the suspension of sediment during construction activities.

d. Contaminant Determinations

A preliminary screening for known HTRW issues was conducted using EPA's Envirofacts database. There is a known hazardous waste handler within 400 feet of the project area. There are no documented contamination sources in the project area that will be impacted by the construction of this project. Therefore, no impacts from the proposed action are anticipated.

e. Aquatic Ecosystem and Organism Determinations

Effects on Plankton - Impacts from turbidity generated during construction are anticipated to be minor and localized to the immediate construction area.

(2) *Effects on Benthos* – Permanent impacts will occur to any benthos living in the footprint of the riprapped stream. Heavy machinery working in the channel may be necessary. This would impact benthos. Repopulation of the disturbed area to pre-project levels is expected to occur within 1 to 2 years of project construction.

(a) Primary Production, Photosynthesis - Any turbidity generated during construction may reduce photosynthesis within the limit of disturbance area.

(b) Suspension/Filter Feeders – Minor, temporary, and localized impacts due to turbidity may occur during construction.

(c) Sight Feeders - Minor, temporary, and localized impacts due to turbidity may occur during construction.

(3) *Effects on Nekton* - Construction activities will cause temporary and minor disturbances to nektonic organisms during construction.

(4) *Effects on Aquatic Food Web* - No change expected.

(5) *Effects on Special Aquatic Sites*

(a) Sanctuaries and Refuges - No impact to any sanctuaries or refuges will occur.

(b) Wetlands- None

(c) Tidal flats - No impact since tidal flats do not occur in the project area.

(d) Vegetated Shallows - No impact since vegetated flats do not occur in the project area.

(e) Riffle and Pool Complexes – None in direct project area. During construction, riffle/pool complexes that may occur in the project area will be temporary or permanently disturbed. Following construction, the complexes will reestablish as the creek's equilibrium is restored.

(6) *Threatened and Endangered Species* - There are no Federal or State-listed rare, threatened, or endangered species in the project area, so no impacts to this resource will occur.

(7) *Other Wildlife* - Construction will result in noise disruption of some species of wildlife during periods of work. Any urban tolerant species in the area will easily relocate to adjacent areas. However, most animals are less active during the middle portion of the day when the operation is expected to occur. Therefore, the proposed project will minimally impact wildlife.

(8) *Actions to Minimize Impact* - The project will be constructed in the dry. Also, the work will occur during a time of year that has lower flows in the creek.

<u>f. Proposed Disposal Site Determinations</u>

(1) *Mixing Zone Determination* - N/A.

(2) *Determination of Compliance with Applicable Water Quality Standards* - WQC will be requested from PA DEP.

(3) *Potential Effects on Human Use Characteristic*

(a) Municipal and Private Water Supply -NA

(b) Recreational and Commercial Fisheries – There are no known recreational or commercial fisheries in the project area. However, if there are any of these resources, following construction, no long-term impacts are anticipated.

(c) Water Related Recreation – Not applicable.

(d) Aesthetics - Minor, during constriction only.

(e) Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves - The project will not impact these features.

Determination of Cumulative Effects on the Aquatic Ecosystem - Short-term disturbance resulting from construction will occur. This project impacted approximately 200 linear feet of Lidy Creek with only 90 linear feet of riprap on the left bank and 16 linear feet of riprap on the right bank. There are no other known impacts in the immediate area or waterway.

Determinations of Secondary Effects on the Aquatic Ecosystem - Minor temperature increase due to the trees along this creek segment being removed. However, the siltation and the bank collapsing will be minimized or ceased.

III. Finding of Compliance

a. Adaptation of the Section 404(b)(1) Guidelines to This Evaluation - No adaptations of the Guidelines were made relative to this Evaluation.

b.Evaluation of Availability of Practicable Alternatives to the Proposed Discharge Site Which Would Have Less Adverse Impact on the Aquatic Ecosystem. – Stabilization design alternatives were evaluated for minimizing encroachment into the stream without compromising the stability of the design.

Compliance With Applicable State Water Quality Standards. – In full compliance.

d. Compliance With Applicable Toxic Effluent Standard or Prohibition Under Section 307 of the Clean Water Act. – N/A.

e. Compliance With Endangered Species Act of 1973 – In full compliance. No impacts to these resources.

f. Compliance With Specified Protection Measures for Marine Sanctuaries Designated by the Marine Protection, Research, and Sanctuaries Act of 1972 – N/A.

g. Evaluation of Extent of Degradation of Waters of the United States – No adverse impacts permanent or temporary to the aquatic ecosystem diversity, productivity and stability, and recreation, aesthetics and economic values will occur as a result of this project.

h. Appropriate and Practicable Steps Taken to Minimize Potential Adverse Impacts of the Discharge on the Aquatic Ecosystem – Best management practices such as erosion control measures along with keeping the project to the minimum stream length necessary to stabilize the problem area have minimized the adverse effects.

i. On the Basis of the Guidelines, the Proposed Disposal Site(s) for the Discharge of Dredged or Fill Material - On the basis of the guidelines, the proposed discharge sites for the material is specified as complying with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects on the aquatic ecosystem.

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

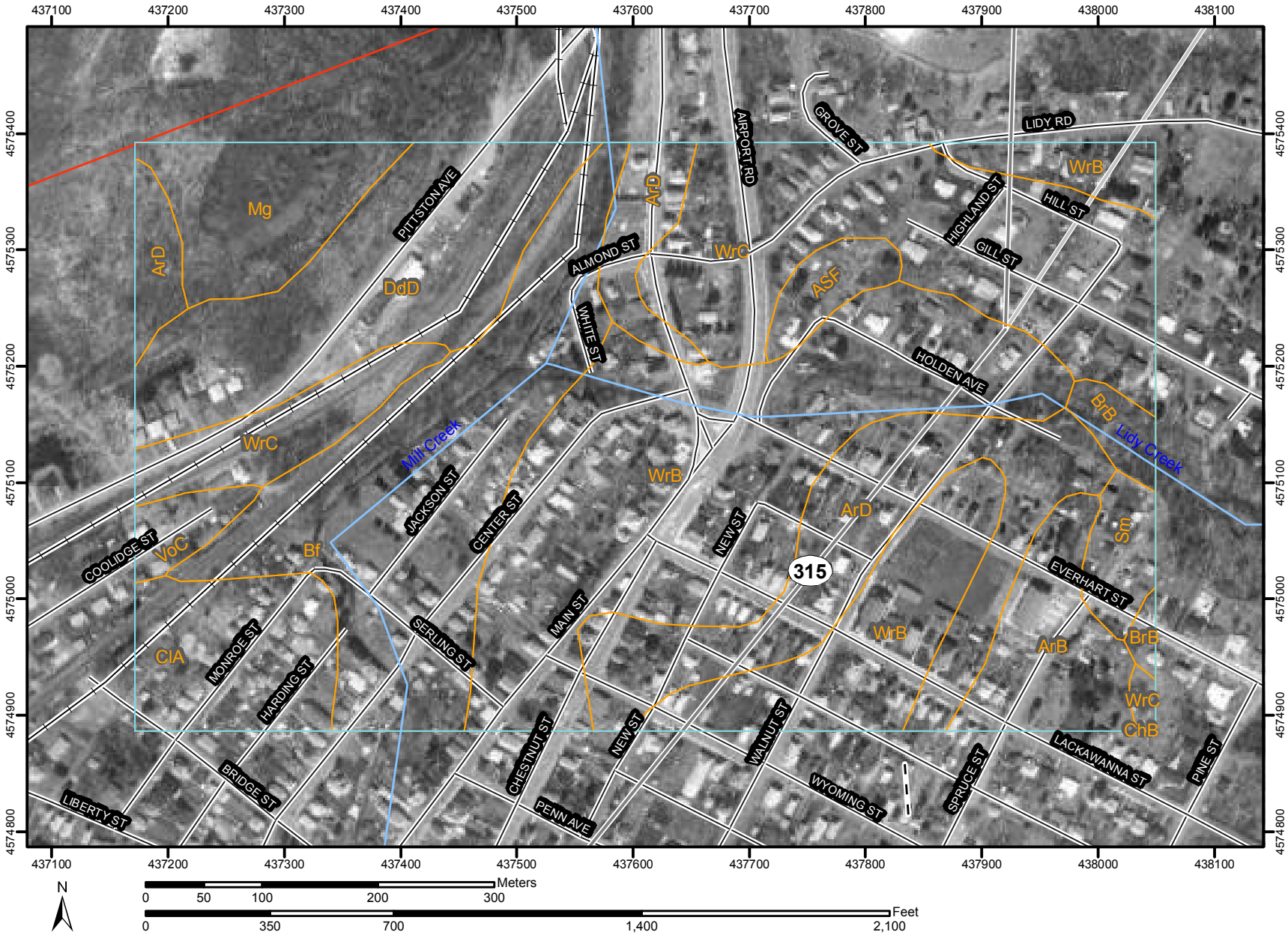
APPENDIX B: ENVIIRONMENTAL COMPLIANCE

JULY 2008

ATTACHMENT 2

NATURAL RESOURCES CONSERVATION SERVICES – WEB SOIL SURVEY 2.0

Soil Map–Luzerne County, Pennsylvania
(Lidy Creek Section 14 Project)



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Units

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Gully

Short Steep Slope

Other

Political Features

Municipalities

Cities

Urban Areas

Water Features

Oceans

Streams and Canals

Transportation

Rails

Roads

Interstate Highways

US Routes

State Highways

Local Roads

Other Roads

MAP INFORMATION

Original soil survey map sheets were prepared at publication scale. Viewing scale and printing scale, however, may vary from the original. Please rely on the bar scale on each map sheet for proper map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 18N

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Luzerne County, Pennsylvania
Survey Area Data: Version 3, Jan 30, 2008

Date(s) aerial images were photographed: 4/13/1999; 4/14/1999

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Luzerne County, Pennsylvania (PA079)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
ArB	Arnot-Rock outcrop complex, 0 to 8 percent slopes	4.5	4.1%
ArD	Arnot-Rock outcrop complex, 8 to 25 percent slopes	14.0	12.7%
ASF	Arnot-Rock outcrop complex, steep	1.5	1.4%
Bf	Basher soils	16.1	14.6%
BrB	Braceville gravelly loam, 3 to 8 percent slopes	1.3	1.2%
ChB	Chenango gravelly loam, 3 to 8 percent slopes	0.0	0.0%
ClA	Chippewa silt loam, 0 to 3 percent slopes	5.6	5.1%
DdD	Dekalb extremely stony sandy loam, 8 to 25 percent slopes	11.3	10.2%
Mg	Mine dump	5.0	4.6%
Sm	Strip mine	1.7	1.5%
VoC	Volusia channery silt loam, 8 to 15 percent slopes	1.2	1.1%
WrB	Wurtsboro channery loam, 3 to 8 percent slopes	29.8	27.2%
WrC	Wurtsboro channery loam, 8 to 15 percent slopes	17.9	16.3%
Totals for Area of Interest (AOI)		109.8	100.0%

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX B: ENVIIRONMENTAL COMPLIANCE

JULY 2008

ATTACHMENT 3

NATURAL RESOURCES CONSERVATION SERVICES – HYDRIC SOILS

Hydric Soils

This table lists the map unit components that are rated as hydric soils in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2B3). Definitions for the codes are as follows:

References:
Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
Federal Register. September 18, 2002. Hydric soils of the United States.
Federal Register. July 13, 1994. Changes in hydric soils of the United States.
Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
National Research Council. 1995. Wetlands: Characteristics and boundaries.
Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.
Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.
Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.
Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

Report—Hydric Soils

Hydric Soils– Luzerne County, Pennsylvania				
Map symbol and map unit name	**Component**	**Percent of map unit**	**Landform**	**Hydric criteria**
Bf—Basher soils				
	Holly	10	Backswamps, depressions on flood plains	2B3
BrB—Braceville gravelly loam, 3 to 8 percent slopes				
	Rexford, poorly drained	5	Depressions	2B3
ClA—Chippewa silt loam, 0 to 3 percent slopes				
	Chippewa	95	Depressions	2B3, 3
VoC—Volusia channery silt loam, 8 to 15 percent slopes				
	Chippewa	12	Depressions	2B3
WrB—Wurtsboro channery loam, 3 to 8 percent slopes				
	Chippewa	5	Depressions	2B3, 3
WrC—Wurtsboro channery loam, 8 to 15 percent slopes				
	Chippewa	3	Depressions	2B3, 3

Data Source Information

Soil Survey Area: Luzerne County, Pennsylvania
Survey Area Data: Version 3, Jan 30, 2008

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX B: ENVIIRONMENTAL COMPLIANCE

JULY 2008

ATTACHMENT 4

NATURAL RESOURCES CONSERVATION SERVICES – PRIME AND UNIQUE FARMLANDS

Prime and other Important Farmlands

This table lists the map units in the survey area that are considered important farmlands. Important farmlands consist of prime farmland, unique farmland, and farmland of statewide or local importance. This list does not constitute a recommendation for a particular land use.

In an effort to identify the extent and location of important farmlands, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation's food supply.

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

For some of the soils identified in the table as prime farmland, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, and other fruits and vegetables. It has the special combination of soil quality, growing season, moisture supply, temperature, humidity, air drainage, elevation, and aspect needed for the soil to economically produce sustainable high yields of these crops when properly managed. The water supply is dependable and of adequate quality. Nearness to markets is an additional consideration. Unique farmland is not based on national criteria. It commonly is in areas where there is a special microclimate, such as the wine country in California.

In some areas, land that does not meet the criteria for prime or unique farmland is considered to be *farmland of statewide importance* for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the appropriate State agencies. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable. Farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

In some areas that are not identified as having national or statewide importance, land is considered to be *farmland of local importance* for the production of food, feed, fiber, forage, and oilseed crops. This farmland is identified by the appropriate local agencies. Farmland of local importance may include tracts of land that have been designated for agriculture by local ordinance.

Report—Prime and other Important Farmlands

Prime and other Important Farmlands– Luzerne County, Pennsylvania		
Map Symbol	**Map Unit Name**	**Farmland Classification**
ArB	Arnot-Rock outcrop complex, 0 to 8 percent slopes	Not prime farmland
ArD	Arnot-Rock outcrop complex, 8 to 25 percent slopes	Not prime farmland
ASF	Arnot-Rock outcrop complex, steep	Not prime farmland
Bf	Basher soils	All areas are prime farmland
BrB	Braceville gravelly loam, 3 to 8 percent slopes	All areas are prime farmland
ChB	Chenango gravelly loam, 3 to 8 percent slopes	All areas are prime farmland
ClA	Chippewa silt loam, 0 to 3 percent slopes	Not prime farmland
DdD	Dekalb extremely stony sandy loam, 8 to 25 percent slopes	Not prime farmland
Mg	Mine dump	Not prime farmland
Sm	Strip mine	Not prime farmland
VoC	Volusia channery silt loam, 8 to 15 percent slopes	Farmland of statewide importance
WrB	Wurtsboro channery loam, 3 to 8 percent slopes	All areas are prime farmland
WrC	Wurtsboro channery loam, 8 to 15 percent slopes	Farmland of statewide importance

Data Source Information

Soil Survey Area: Luzerne County, Pennsylvania
Survey Area Data: Version 3, Jan 30, 2008

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX B: ENVIIRONMENTAL COMPLIANCE

JULY 2008

ATTACHMENT 5

HAZARDOUS, TOXIC AND RADIOACTIVE SUBSTANCES MAPPING

Legend

- Multi-activities
- Superfund
- Toxic releases
- Water dischargers
- Air emissions
- Hazardous waste
- Impaired water bodies
- Impaired streams
- Streams

Highways

- Highways
- Interstates
- Major Streets
- Ramps
- Streets
- Railroads
- Water Bodies

Airports

- Airport Boundaries
- Airport Runways

Landmark Areas

- Military Installations
- Prisons
- Colleges/Universit-ies
- Recreation Areas
- State Capitols
- Professional Golf Courses
- Cemeteries

Parks

- National Parks/Forests
- State Parks/Forests
- Local Parks

- U.S. Counties
- Non-U.S. Land

EnviroMapper For EnviroFacts

Lidy Creek Section 14 Project, Dupont, PA

EPA United States Environmental Protection Agency

EPA does not guarantee the accuracy, completeness, or timeliness of the information shown, and shall not be liable for any loss or injury resulting from reliance upon the information shown.

EnviroMapper For EnviroFacts

Legend

- Multi-activities
- Superfund
- Toxic releases
- Water dischargers
- Air emissions
- Hazardous waste
- Impaired water bodies
- Impaired streams
- Streams

Highways

- Highways
- Interstates
- Major Streets
- Ramps
- Streets
- Railroads
- Water Bodies

Airports

- Airport Boundaries
- Airport Runways

Landmark Areas

- Military Installations
- Prisons
- Colleges/Universities
- Recreation Areas
- State Capitols
- Professional Golf Courses
- Cemeteries

Parks

- National Parks/Forests
- State Parks/Forests
- Local Parks

- U.S. Counties
- Non-U.S. Land

Lidy Creek Section 14 Project, Dupont, PA

EPA United States Environmental Protection Agency

EPA does not guarantee the accuracy, completeness, or timeliness of the information shown, and shall not be liable for any loss or injury resulting from reliance upon the information shown.

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX B: ENVIIRONMENTAL COMPLIANCE

JULY 2008

ATTACHMENT 6

SUPERFUND (CERCLIS)

region_code=&program_search=1&report=1&page_no=1&output_sql_switch=TRUE&database_type=CERCLIS

Last updated on Wednesday, March 19th, 2008.

Superfund (CERCLIS)

You are here: EPA Home Envirofacts CERCLIS Query Results

Query Results

Report an Error

CERCLIS

Consolidated facility information (from multiple EPA systems) was searched to select facilities

ZIP Code: 18641

Results are based on data extracted on MAR-14-2008

Total Number of Facilities Displayed: 0

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX B: ENVIIRONMENTAL COMPLIANCE

JULY 2008

ATTACHMENT 7

RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM (RCRAInfo)

Last updated on Wednesday, March 19th, 2008.

Resource Conservation and Recovery Act (RCRAInfo)

procname=&program_search=1&report=1&page_no=1&output_sql_switch=TRUE&database_type=RCRAINFO

You are here: EPA Home Envirofacts RCRAInfo Query Results

Query Results

Report an Error

RCRAInfo

Data Disclaimer

Consolidated facility information (from multiple EPA systems) was searched to select facilities

ZIP Code: 18641
Location Address: 154-168 MAIN ST
City Name: Dupont
County Name: Luzerne
State Abbreviation: PA

Results are based on data extracted on JUN-08-2006

Total Number of Facilities Displayed: 0

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX B: ENVIIRONMENTAL COMPLIANCE

JULY 2008

ATTACHMENT 8

TOXIC RELEASE INFORMATION SYSTEM (TRIS)

Last updated on Wednesday, March 19th, 2008.

Toxics Release Inventory (TRI)

Health&case_number=&program_search=2&page_no=1&output_sql_switch=TRUE&report=1&database_type=TRIS

You are here: EPA Home Envirofacts TRI Query Results

Query Results

Report an Error

TRI

Only TRI facility information was searched to select facilities

ZIP Code: 18641
Location Address: 154-168 MAIN ST
City Name: Dupont
County Name: Luzerne
State Abbreviation: PA

Results are based on data extracted on FEB-21-2008

Total Number of Facilities Displayed: 0

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

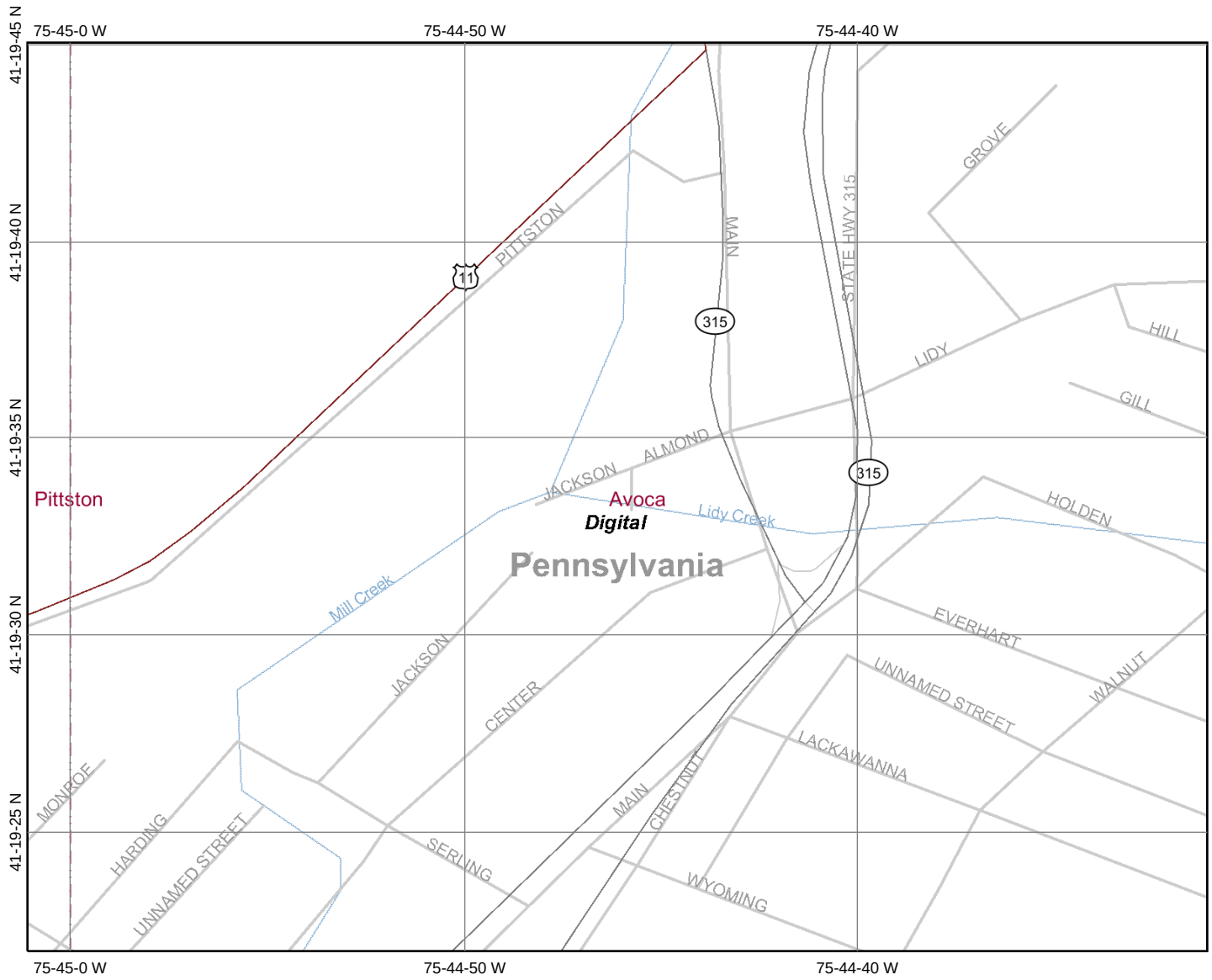
APPENDIX B: ENVIIRONMENTAL COMPLIANCE

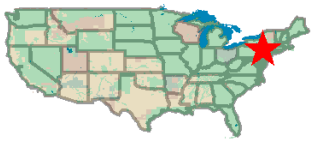
JULY 2008

ATTACHMENT 9

NATIONAL WETLANDS INVENTORY MAP

Lidy Creek Section 14 Project





Legend

CONUS_wet_scan

- 0
- 1
- Out of range

Interstate

Major Roads

- Other Road
- Interstate
- State highway
- US highway

Roads

Cities

USGS Quad Index 24K

Lower 48 Wetland Polygons

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Lower 48 Available Wetland Data

- Non-Digital
- Digital
- No Data
- Scan

NHD Streams

Counties 100K

States 100K

South America

North America

N

Scale: 1:5,000

Map center: 41° 19' 33.5" N, 75° 44' 46.0" W

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX C: REAL ESTATE PLAN

JULY 2008

APPENDIX C: REAL ESTATE PLAN

Attachment 1: Real Estate Plan
Exhibit A: Real Estate Maps
Exhibit B: Real Estate Cost Estimate – MCASES Format
Exhibit C: Real Estate Acquisition Capability

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX C: REAL ESTATE PLAN

JULY 2008

ATTACHMENT 1

REAL ESTATE PLAN

REAL ESTATE PLAN
Lidy Creek Emergency Streambank Protection Project
Dupont Borough, Pennsylvania
Planning and Design Analysis, Section 14 CAP
April 2008

1. GENERAL

2. REAL ESTATE REQUIREMENTS

   a. Description of Land, Easements, Rights of Way and Roadway Requirements for Project
   b. Standard Estates
   c. Non-Standard Estates
   d. Current Ownership
   e. Real Estate Mapping

3. EXISTING FEDERAL PROJECTS

4. EXISTING FEDERALLY OWNED LANDS

5. LANDS OWNED BY THE NON-FEDERAL SPONSOR

6. NAVIGATIONAL SERVITUDE

7. INCREASED FLOODING

8. BASELINE COST ESTIMATE FOR REAL ESTATE

9. PUBLIC LAW 91-646 RELOCATIONS

10. MINERAL ACTIVITY

11. TIMBER RIGHTS

12. ASSESSMENT OF NON-FEDERAL SPONSOR ACQUISITION CAPABILITY

13. ZONING

14. ACQUISITION SCHEDULE

15. UTILITY AND FACILITY RELOCATIONS

16. ENVIRONMENTAL CONCERNS

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18. NOTIFICATION TO NON-FEDERAL SPONSOR

19. RISK ANALYSIS

REAL ESTATE PLAN
Lidy Creek Emergency Streambank Protection Project
Dupont Borough, Pennsylvania
Planning and Design Analysis, Section 14 CAP
April 2008

1. GENERAL

This Real Estate Plan is in support of the Planning and Design Analysis (PDA) for the Lidy Creek Emergency Stream bank Protection Project located in Dupont Borough, Luzerne County, Pennsylvania. The project is authorized under Section 14 of the Flood Control Act of 1946. Dupont Borough is the Non-Federal Sponsor (NFS). Dupont Borough is located in Northeastern Pennsylvania, generally between Wilkes-Barre and Scranton. The project site is adjacent to the intersection of Main Street and Center Street, near Pennsylvania State Route 315. Lidy Creek is generally parallel to and immediately North of Center Street in the project area.

The purpose of the project is to protect Center Street and the adjacent sewer lines by stabilizing the stream bank of Lidy Creek. The proposed action involves stream bank stabilization of approximately 200 linear feet of Lidy Creek which has eroded approximately 90 linear feet of stream bank adjacent to the existing sewer line and the road bed of Center Street. Riprap is proposed to be placed along 90 linear feet where the sewer line is exposed on the south bank. Native rock is proposed to be placed along 16 linear feet of the north bank just downstream of the existing wing wall of the culvert under Main Street. Random placement of native rock and stone will be conducted within the stream for 200 linear feet to create a stable stream system and improve habitat.

The Operation and Maintenance (O&M) for this project will be the full responsibility of the NFS.

2. REAL ESTATE REQUIREMENTS

a. Description of Lands, Easements, Rights of Way and Roadway Requirements for Project:

The proposed estate for this project is a standard Perpetual Channel Improvement Easement (Estate No. 8) for the stream bank restoration/construction, operation and maintenance. No Temporary Work Area Easement (No. 15) is needed, since staging will be within the limits of the Perpetual Channel Improvement Easement, and access during and after construction will be from adjacent public streets (Center, Main and White Street rights-of-way).

b. Standard Estate:

CHANNEL IMPROVEMENT EASEMENT (Estate No. 8) A perpetual and assignable right and easement to construct, operate, and maintain channel improvement works on, over and across (the land described in Schedule A) (Tract No. _____) for the purposes as authorized by the Act of Congress approved_____, including the right to clear, cut, fell, remove and dispose of any and all timber, trees, underbrush, buildings, improvements and/or other obstructions therefrom; to excavate, dredge, cut away, and remove any or all of said land and to place thereon dredge or

spoil material; and for such other purposes as may be required in connection with said work of improvement; reserving, however, to the owners, their heirs and assigns, all such rights and privileges as may be used without interfering with or abridging the rights and easement hereby acquired; subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

c. Non-Standard Estates: No non-standard estates will be required for this project.

d. Current Ownership: The NFS owns the street rights-of-way in the project area, which will be used as access for construction, operation and maintenance. A standard Perpetual Channel Improvement Easement is required on one private residential ownership located at 154-168 Main Street, Luzerne County Tax Assessor parcel number 22922, owned by Michael Haddock. Lidy Creek crosses this property between the existing house and Center Street, running generally parallel to Center Street. Acquisition of this easement will not impact the residence located on this parcel. This is the only parcel required that is not owned by the NFS.

e. Real Estate Mapping: Project Map entitled "Lidy Creek Section 14 CAP Project", dated April 2008, is attached as Exhibit A. The map includes the estates and acreages to be acquired.

3. EXISTING FEDERAL PROJECTS

There is no existing Federal project that lies fully or partially within the lands required for the project.

4. EXISTING FEDERALLY OWNED LANDS

There are no federally-owned lands located within the project limits.

5. LANDS OWNED BY THE NON-FEDERAL SPONSOR

The public street rights of way are owned, operated and maintained by the NFS.

6. NAVIGATIONAL SERVITUDE

Navigational Servitude rights will not apply for this project since Lidy Creek is not a navigable waterway.

7. INCREASED FLOODING

No increased flooding due to this proposed project is anticipated.

8. BASELINE COST ESTIMATE FOR REAL ESTATE

The detailed Real Estate Cost Estimate in MCACES format is attached as Exhibit B. The estimated LERR cost for this project, including contingency, is $49,018. Estimates of administrative costs are included in this figure. Acquisition of one privately-owned parcel is required for this project (a perpetual channel improvement easement).

9. PUBLIC LAW 91-646 RELOCATIONS

There are no relocations under Public Law 91-646, as amended, associated with the project.

10. MINERAL ACTIVITY

There is no present or anticipated mineral activity in the vicinity of the project which may affect the operation thereof.

11. TIMBER RIGHTS

There is no present or anticipated timber harvesting activity within the project area.

12. ASSESSMENT OF NON-FEDERAL SPONSOR ACQUISITION CAPABILITY

The Non-Federal Sponsor conducting the real estate acquisition activities for this project is Dupont Borough. An assessment of the Non-Federal Sponsor's acquisition capabilities is attached as Exhibit C.

13. ZONING

No zoning changes are proposed in lieu of or to facilitate real estate acquisition.

14. ACQUISITION SCHEDULE

The NFS will officially initiate real estate acquisition activities after final execution of the Project Partnership Agreement (PPA). The following estimated acquisition schedule indicates the length of time required for real estate acquisition from a scheduled PPA execution date of 30 September 2008.

a. PCA Execution	Start Date-30 Sep. 2008
b. Forward Maps to Sponsor	7 Oct. 2008-Within 1 week of Start Date
c. Survey and Title Work	8 Oct. 2008-8 Dec. 2008 (2 mos.)
d. Appraisal	9 Dec. 2008-9 Feb. 2009 (2 mos.)
e. Review Appraisal	10 Feb. 2009-28 Feb. 2009 (2 wks.)
f. Negotiation	1 Mar. 2009-31 Mar. 2009 (1 mo.)
g. Closing/Possession	15 April 2009
h. Certification of Real Estate	22 April 2009; requires the transmittal of the NFS's Authorization for Entry for Construction and Certificate of Authority

15. UTILITY AND FACILITY RELOCATIONS

There are no relocations of utilities or facilities anticipated for this project at this time.

16. ENVIRONMENTAL CONCERNS

There is no known on-site contamination and the real estate cost estimates contained in the Real Estate Plan do not reflect the presence of contamination.

17. **ATTITUDES OF THE LANDOWNERS**

Due to the fact that the erosion is so severe, no negative reactions are anticipated from the project.

18. **NOTIFICATION TO NON-FEDERAL SPONSOR**

The NFS acquiring the real estate interests for this project will be notified in writing regarding the risks associated with the acquisition of land prior to execution of the PCA.

19. **RISK ANALYSIS**

No other significant risks appear to be associated with this project.

END OF REPORT

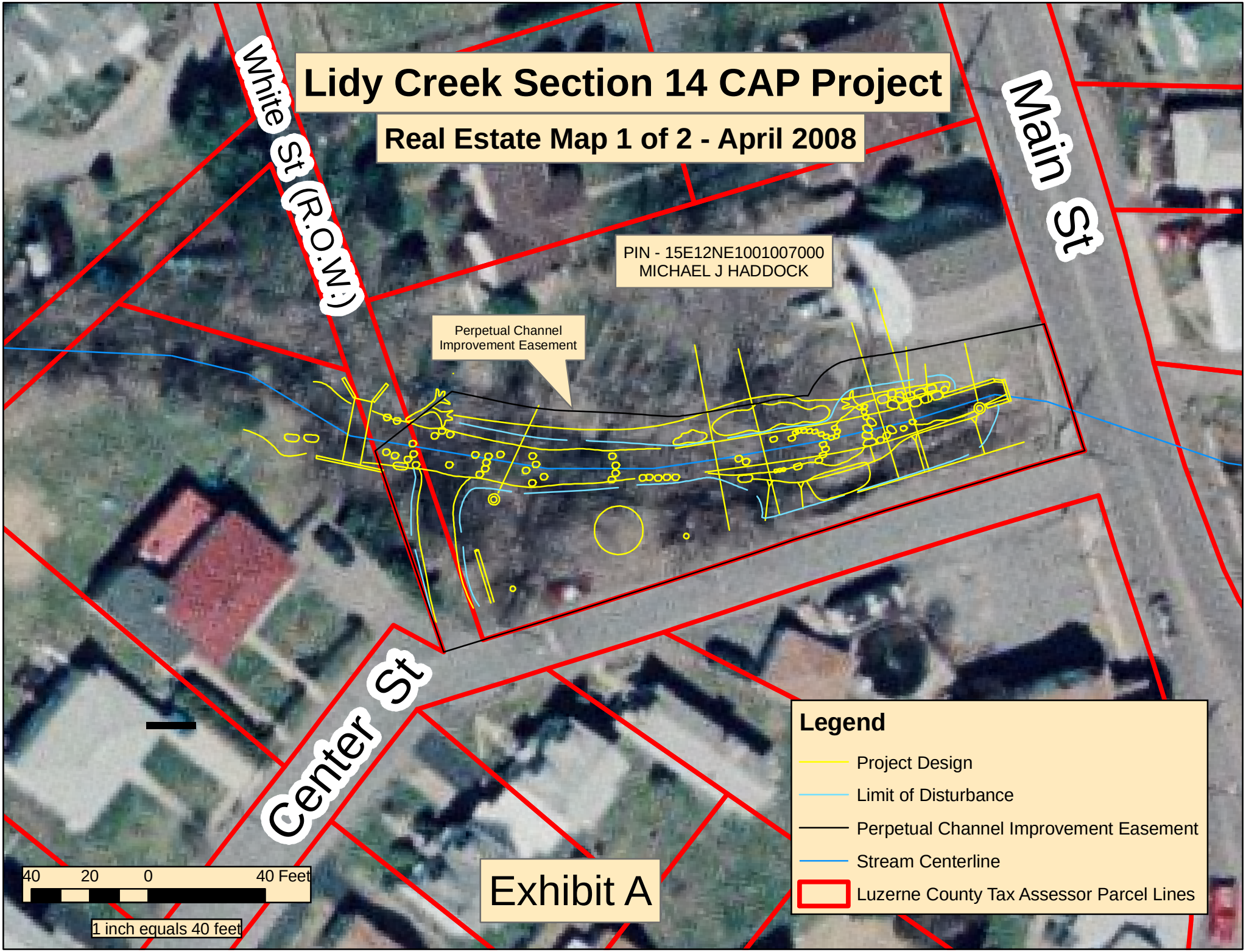
LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX C: REAL ESTATE PLAN

JULY 2008

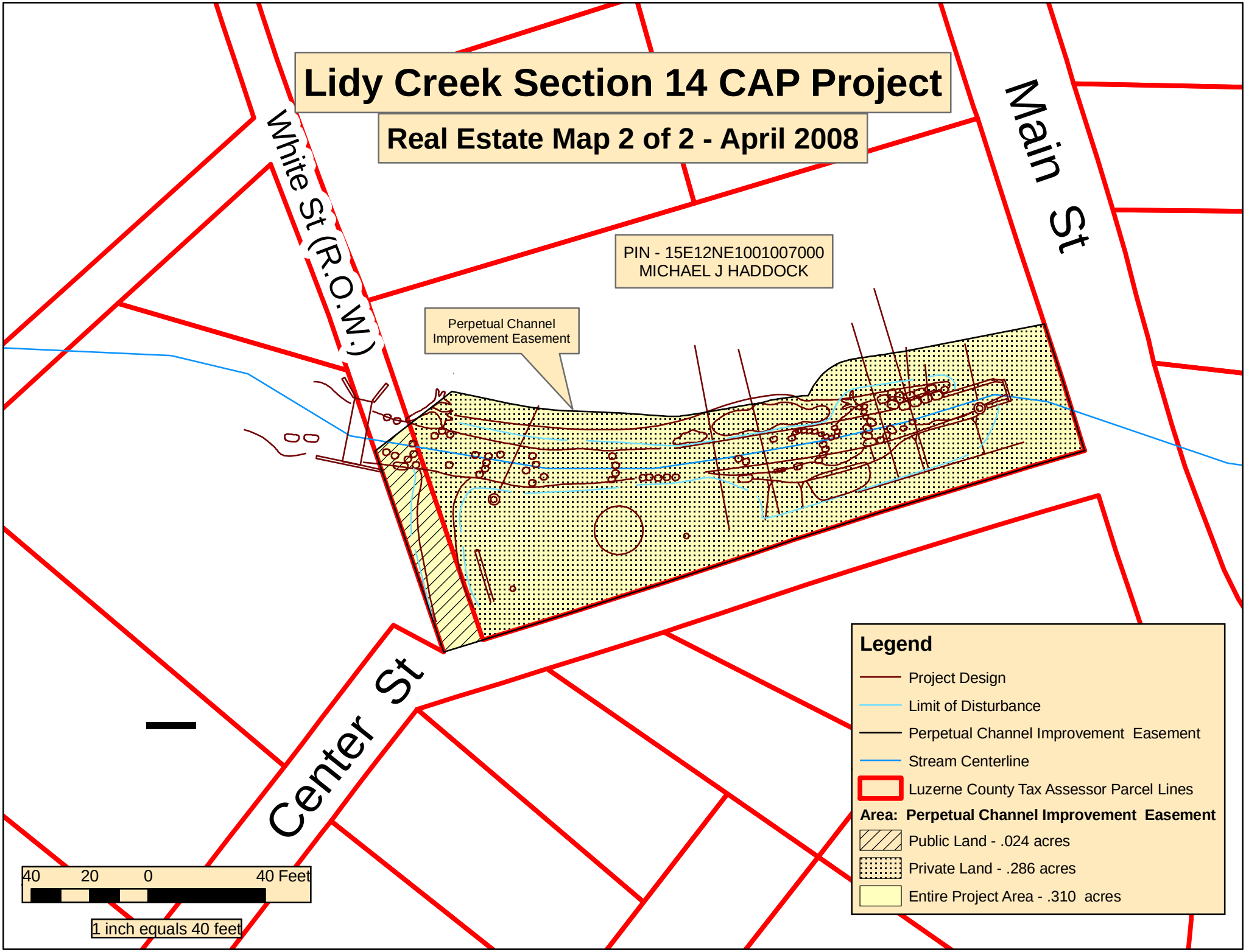
EXHIBIT A

REAL ESTATE MAPS


Lidy Creek Section 14 CAP Project
Real Estate Map 1 of 2 - April 2008
White St (R.O.W.)
Main St
Center St
PIN - 15E12NE1001007000
MICHAEL J HADDOCK
Perpetual Channel
Improvement Easement
Legend
Project Design
Limit of Disturbance
Perpetual Channel Improvement Easement
Stream Centerline
Luzerne County Tax Assessor Parcel Lines
40 20 0 40 Feet
1 inch equals 40 feet
Exhibit A

Lidy Creek Section 14 CAP Project

Real Estate Map 2 of 2 - April 2008



LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX C: REAL ESTATE PLAN

JULY 2008

EXHIBIT B

REAL ESTATE COST ESTIMATE – MCASES FORMAT

Real Estate Plan Cost Estimate-MCACES Format
Real Estate Acquisition Requirements
Lidy Creek, PA Sec. 14, Dupont Boro, PA

		Private			Commercial			Public			Requirement		
		#	$ each	req	#	$ each	req	#	$ each	req	Base	Contingency	Total
	ACQUISITIONS												
0102-------	By Government												
010201---	By Non-Federal Sponsor (NFS)												
010202---	Survey and Legal Descriptions	1	750	750							750	113	863
01020201	Title Evidence	1	750	750							750	113	863
01020102	Negotiations	1	2,000	2,000							2,000	300	2,300
01020203	By Government on Behalf of NFS												
010203---	Review of NFS												
010204---	Survey and Legal Descriptions	1	150	150							150	23	173
01020401	Title Evidence	1	150	150							150	23	173
01020402	Negotiations	1	300	300							300	45	345
01020403													
	SUBTOTAL										4,100	615	4,715
	CONDEMNATIONS												
0103-------	By Government												
010301---	By Non-Federal Sponsor (NFS)												
010302---	By Government on Behalf of NFS												
010303---	Review of NFS												
010304---													
	SUBTOTAL												
	APPRAISALS												
0105-------	By Government												
010501---	By Non-Federal Sponsor (NFS)	1	750	750							750	113	863
010502---	By Government on Behalf of NFS												
010503---	Review of NFS	1	400	400							400	60	460
010504---													
	SUBTOTAL										1,150	173	1,323
	PL 91-646 ASSISTANCE												
0106-------	By Government												
010601---	By Non-Federal Sponsor (NFS)												
010602---	By Government on Behalf of NFS												
010603---	Review of NFS												
010604---													
	SUBTOTAL												
	TEMPORARY PERMITS/LICENSES/RIGHTS-OF-WAY												
0107-------	By Government												
010701---	By Non-Federal Sponsor (NFS)												
010702---	By Government on Behalf of NFS												
010703---	Review of NFS												
010704---	Other												
010705---	Damage Claims												
010706---													
	SUBTOTAL												
	REAL ESTATE PAYMENTS												
0115-------													
	Land Payments												
011501---	By Government												
01150101	By Non-Federal Sponsor (NFS)			37,374							37,374	5,606	42,981
01150102	By Government on Behalf of NFS												
01150103	Review of NFS												
01150104													
	PL 91-646 Assistance Payments												
011502---	By Government												
01150201	By Non-Federal Sponsor (NFS)												
01150202	By Government on Behalf of NFS												
01150203	Review of NFS												
01150204													
	Damage Payments												
011503---	By Government												
01150301	By Non-Federal Sponsor (NFS)												
01150302	By Government on Behalf of NFS												
01150303	Review of NFS												
01150304													
	SUBTOTAL										37,374	5,606	42,981
Account 02 Facility/Utility Relocations (Construction cost only)													
	REAL ESTATE ACQUISITION TOTAL										**$42,624**	**$6,394**	**$49,018**

EXHIBIT B

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX C: REAL ESTATE PLAN

JULY 2008

EXHIBIT C

REAL ESTATE ACQUISITION CAPABILITY

ASSESSMENT OF NON-FEDERAL SPONSOR'S
REAL ESTATE ACQUISITION CAPABILITY
Lidy Creek CAP Section 14 Project
Dupont Borough, Pennsylvania
Real Estate Plan

I. Legal Authority:

a. Does the sponsor have legal authority to acquire and hold title to real property for project purposes?

Yes, the non-Federal Sponsor (NFS) for this project, Dupont Borough, has the authority to acquire and hold title to real property for project purposes.

b. Does the sponsor have the power of eminent domain for this project?

Yes.

c. Does the sponsor have "quick-take" authority for this project?

After filing a Declaration of Taking and depositing the estimated just compensation with the court, possession is granted by the court within a period of 72 hours to 45 days, depending on whether preliminary objection resolution is required.

d. Are any of the lands/interests in land required for the project located outside the sponsor's political boundary?

No.

e. Are any of the lands/interests in land required for the project owned by an entity whose property the sponsor cannot condemn?

No.

II. Human Resource Requirements:

a. Will the sponsor's in-house staff require training to become familiar with the real estate requirements of Federal projects including P.L. 91-646, as amended?

No. The Borough Solicitor will coordinate acquisition of the necessary real estate interests (acquisition of one parcel) and is familiar with the real estate requirements of P.L. 91-646. The Corps of Engineers will also provide ongoing general support regarding P.L. 91-646 compliance.

Exhibit C

b. If the answer to II.a. is "yes", has a reasonable plan been developed to provide such training?

N/A.

c. Does the sponsor's in-house staff have sufficient real estate acquisition experience to meet its responsibilities for the project?

Yes.

d. Is the sponsor's projected in-house staffing level sufficient considering its other work load, if any, and the project schedule?

Yes. Dupont Borough has sufficient staff for legal functions and negotiations, and can contract as needed for appraisal and survey functions to meet the project schedule.

e. Can the sponsor obtain contractor support, if required, in a timely fashion?

Yes. Dupont Borough has existing contracting capability to obtain contractor support in approximately two to three weeks.

f. Will the sponsor likely request USACE assistance in acquiring real estate?

No.

III. Other Project Variables:

a. Will the sponsor's staff be located within reasonable proximity to the project site?

Yes.

b. Has the sponsor approved the project/real estate schedule/milestones?

Yes.

IV. Overall Assessment:

a. Has the sponsor performed satisfactorily on other USACE projects?

N/A.

b. With regard to this project, the sponsor is anticipated to be:

Fully capable.

Fully capable.

V. Coordination:

a. Has this assessment been coordinated with the sponsor?

Yes.

b. Does the sponsor concur with this assessment?

Yes.

Prepared by:

Adam Oestreich
Realty Specialist

Reviewed and approved by:

Craig Homesley
Chief, Civil Projects Support Branch
Real Estate Division

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX D: ENGINEERING AND COST ESTIMATING

JULY 2008

APPENDIX D: ENGINEERING AND COST ESTIMATING

Attachment 1: Water Resources Summary
Attachment 2: Lidy Creek Cross Section 1
Attachment 3: Lidy Creek Cross Section 2
Attachment 4: Lidy Creek Cross Section 3
Attachment 5: Lidy Creek Cross Section 4
Attachment 6: Lidy Creek Plan View
Attachment 7: Lidy Creek Profile
Attachment 8: Lidy Creek HEC-RAS Results Summary
Attachment 9: Lidy Creek Quantity Estimate
Attachment 10: MCASES
Attachment 11: PennDOT Embankment Drawings

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX D: ENGINEERING AND COST ESTIMATING

JULY 2008

ATTACHMENT 1

WATER RESOURCES SUMMARY

Project: Lidy Creek, Section 14

Water Resources Summary **Revised**: May 2008

PROJECT LOCATION AND DESCRIPTION

Lidy Creek is a small stream with a drainage area of about 1 mi^2 located in Dupont, PA. The stream flows from east to west with a portion completely enclosed underground. Lidy Creek is exposed from Main Street to its confluence with Mill Creek, flowing parallel to Center Street for about 100 feet before bending to the right (facing downstream) and eventually joining Mill Creek.

Facing downstream, Japanese knotweed (*Polygonum cuspidatum*) is the predominant vegetation found on the left bank just downstream of the Main Street culvert. The Borough of Dupont has been actively taking means (spraying and cutting) to control the growth of the invasive species. A wingwall is found immediately downstream of the culvert on the right bank. Further downstream, both streambanks contain a variety of tree and understory species, both native and non-native/invasive.

The Section 14 project includes Lidy Creek from the downstream edge of the Main Street culvert to the end of the unstable embankment along Center Street, approximately 90 feet downstream. The safest construction access is from the left bank (facing downstream) about 150 to 200 feet downstream of Main Street. Therefore, minimal construction activity (i.e., clearing rock from the channel and seeding disturbance areas) will extend this far downstream.

PROBLEM DISCUSSION – DECEMBER 2004

Lidy Creek is severely eroding along a portion of its left bank and is migrating toward and threatening the stability of Center Street. Just upstream of the erosion problem, Lidy Creek flows under Main Street through a long, concrete box culvert. Upon exiting the culvert, the high-velocity storm flows expand, water velocity decreases, and sediment drops out of suspension. The largest particles drop first, with sequentially smaller particles dropping as the flow moves downstream. Large rocks are found just downstream of the Main Street culvert. They were most likely originally placed in the stream to protect the sanitary sewer line (Figures 1 and 2). Over time the finer sediment has washed from around the large rocks as the stream actively incised.

Figure 1. Looking downstream from Main Street at the large rocks deposited in Lidy Creek.

Figure 2. Looking upstream (toward the Main Street Culvert) at the rocks deposited in Lidy Creek.

The large rocks that have been placed/exposed/moved into the center of the channel obstruct the flow. During storm events, the stream flow is diverted around the rocks and is attacking the weaker (left) bank. The stream has shifted

laterally toward the softer, weaker bank to pick up additional material. The right bank is very stable, as it contains a high amount of herbaceous and woody vegetation downstream of the wingwall. The left bank was disturbed during a prior sewer line installation and is composed of softer, back fill material that was not compacted. Flow diverted toward the left bank has caused erosion and is threatening the road (Figure 3).

Figure 3. Erosion along the left bank of Lidy Creek. Center Street is located about 5 feet to the left of the top of the bank.

PROBLEM DISCUSSION – AUGUST 2007

The project team visited the site several years later and observed that the problems have gotten worse on both left and right streambanks. Since the end of 2004, Lidy Creek has experienced additional erosion behind the wingwall and along the right bank (Figure 4). Erosion has also continued along the left bank and road loss has progressed. As a temporary fix, Dupont Borough dumped riprap along a portion of the left bank and poured a concrete on top in 2005 (Figure 5). A guardrail was also installed along Center Street (Figure 6).

Figure 4. Erosion near wingwall on right bank, facing downstream.

Figure 5. Facing upstream, riprap and concrete dumped from Center Street onto the left bank of Lidy Creek.

Figure 6. Center Street guardrail and loss of pavement along the left bank of Lidy creek.

FIELD ASSESSMENT

A site inspection and survey were conducted by Jim Snyder (Geotech), Ben Soleimani (Water Resources), and Carey Nagoda (Water Resources) on November 11-12, 2004. The assessment focused on the stream reach from the Main Street culvert opening to a small pedestrian bridge, about 230 ft downstream. Ben S. produced a sketch of the stream, documenting important features and measurements. The longitudinal profile and four cross sections were surveyed.

The surveyed cross sections are located at the following river stations: 0+23, 0+35, 0+60, and 0+90. The center of the manhole, just downstream of Main Street, corresponds to River Station 0+00. Detailed cross section drawings are available from Carey N. The upstream portion (approximately 40 ft) of the stream has a flat slope and a slope of about 3.4% along the remaining 160 ft studied.

Structures affecting stream hydraulics were also inspected and surveyed. Some erosion is occurring behind the wingwall, located just downstream of Main Street along the right bank, and it has rotated slightly (Figure 7).

Figure7. Looking downstream from Main Street at wingwall on right bank.

Surveyed points at the top and tow of the wall are available from Carey N. or Ben S. An incased sewer line is contained along the lower left portion of the box culvert. The resulting hydraulic opening of the culvert is shown in Figure 8.

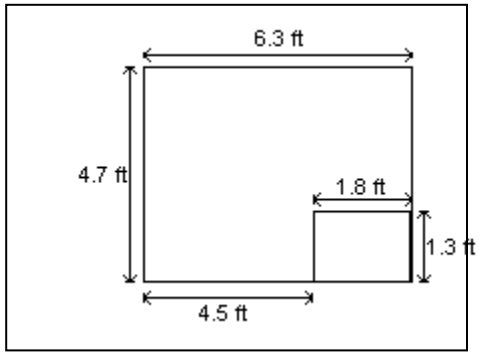


Figure 8. Hydraulic opening of the downstream end of the box culvert and incased sewer line under Main Street.

PROPOSED DESIGN ALTERNATIVES

Three design alternatives were explored to fix the erosion problem of Lidy Creek near the intersection of Main Street and Center Street. They are as follows:

1. Channel realignment and riprap protection
2. Riprap protection only
3. Gabion baskets
4. No action

An alternative involving a complete geomorphic approach (e.g., creating full floodplain benches and proper pattern) was not developed, as the area available for possible stream work is confined on the left side by Center Street and on the right by private property.

Option 1 (preferred): Channel Realignment/Riprap Protection – The proposed 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 PennDOT 2A material. 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. Drawings of the proposed design are found in the Appendix of this report.

Option 2: Riprap protection only – The team considered using riprap protection only (without any other channel alterations or bank grading). It would be less costly than Option 1, but dumping riprap on the banks would not provide long-term stability. Although the erosive processes may be slowed some, the stream would continue migrating laterally toward Center Street, eventually causing the riprap to fail. Center Street would continue being threatened by the stream movement and resulting loss of embankment, and the sewer line could eventually become exposed and fail.

Option 3: Gabion Basket Protection – The proposed design includes installing gabion baskets along the left and right banks of Lidy Creek. On the right bank, approximately 40 feet gabions will be placed from behind the wingwall to river station 0+45 and tie back into the bank approximately 5 feet. Approximately 90 feet of gabion baskets will be installed along and tied into the left bank. The gabion baskets will be stacked to a height a little above the 100-year flood level. A geotextile liner will be placed behind the gabion baskets with a layer of 57 stone underneath. Backfill will be used behind the gabions, and the banks will be graded down to the baskets on a 3:1 slope and seeded. This design alternative is too costly and will not be further analyzed.

Option 4: No Action – The proposed design involves no action. Left alone, Lidy Creek will continue eroding along the left bank and migrating toward Center Street. Eventually the sewer line will be exposed, which will cause it to fail.

CALCULATIONS/ANALYSES

Hydrology was determined using the USGS regression equations for Region A of Pennsylvania (Stuckey and Reed, 2000). A probability plot was constructed to estimate/extrapolate the 2- and 1.5-yr flows. The estimated flood flows appear in Table 1. Please note that Table 1 provides a conservative estimate, as the control point (culvert under Main Street) of flow to Lidy Creek was not considered in the hydrology calculations. Therefore, the actual 100-year flow to Lidy Creek is likely to be much lower.

Table 1. Estimated flood flows for Lidy Creek

Event	Flow (cfs)
1.5-year	165
2-year	210
10-year	460
25-year	620
50-year	760
100-year	920
500-year	1355

HEC-RAS models were developed for the existing and the proposed conditions of Lidy Creek using the Option 1 alternative. The surveyed cross sections were input into the model, with additional sections interpolated every 10 feet. According to the models, the 100-year flood flows stay within the stream banks under both existing and proposed conditions. Flooding will not be induced by the project, and the FEMA 100-year flood boundary will not change. Output data generated by the models appears in the Appendix.

REFERENCE

Stuckey, M.H. and L.A. Reed. *Techniques for Estimating Magnitude and Frequency of Peak Flows for Pennsylvania Streams*; Water-Resources Investigations Report 00-4189; U.S. Geological Survey: Lemoyne, PA, 2000.

APPENDIX CONTENTS

Attachments include:

1.) Plan view - existing conditions and proposed design
2.) Longitudinal profile - existing conditions and proposed design
3.) Cross sections - existing conditions and proposed design
4.) HEC-RAS model output
5.) Quantity estimate for Option 1 (preferred plan)

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

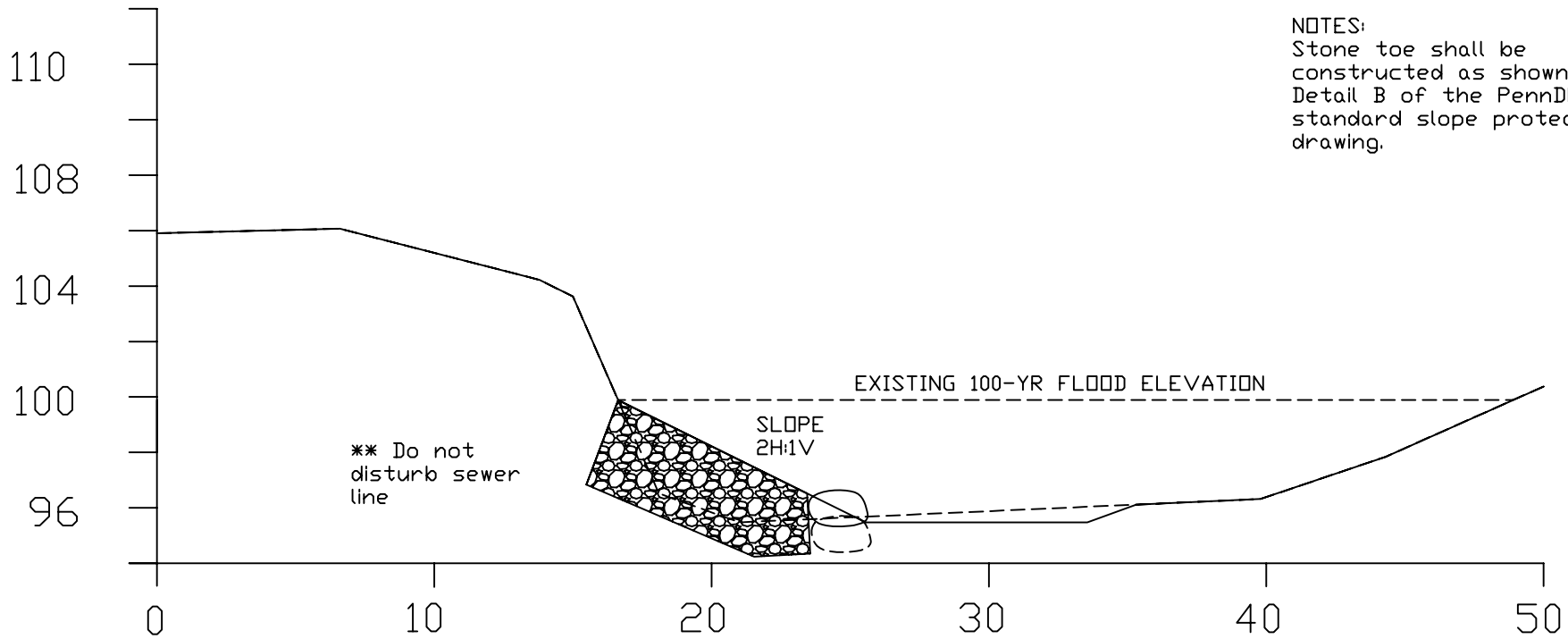
APPENDIX D: ENGINEERING AND COST ESTIMATING

JULY 2008

ATTACHMENT 2

LIDY CREEK CROSS SECTION 1

LIDY CREEK XS STA 0+92



NOTES:
Stone toe shall be constructed as shown in Detail B of the PennDOT standard slope protection drawing.

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

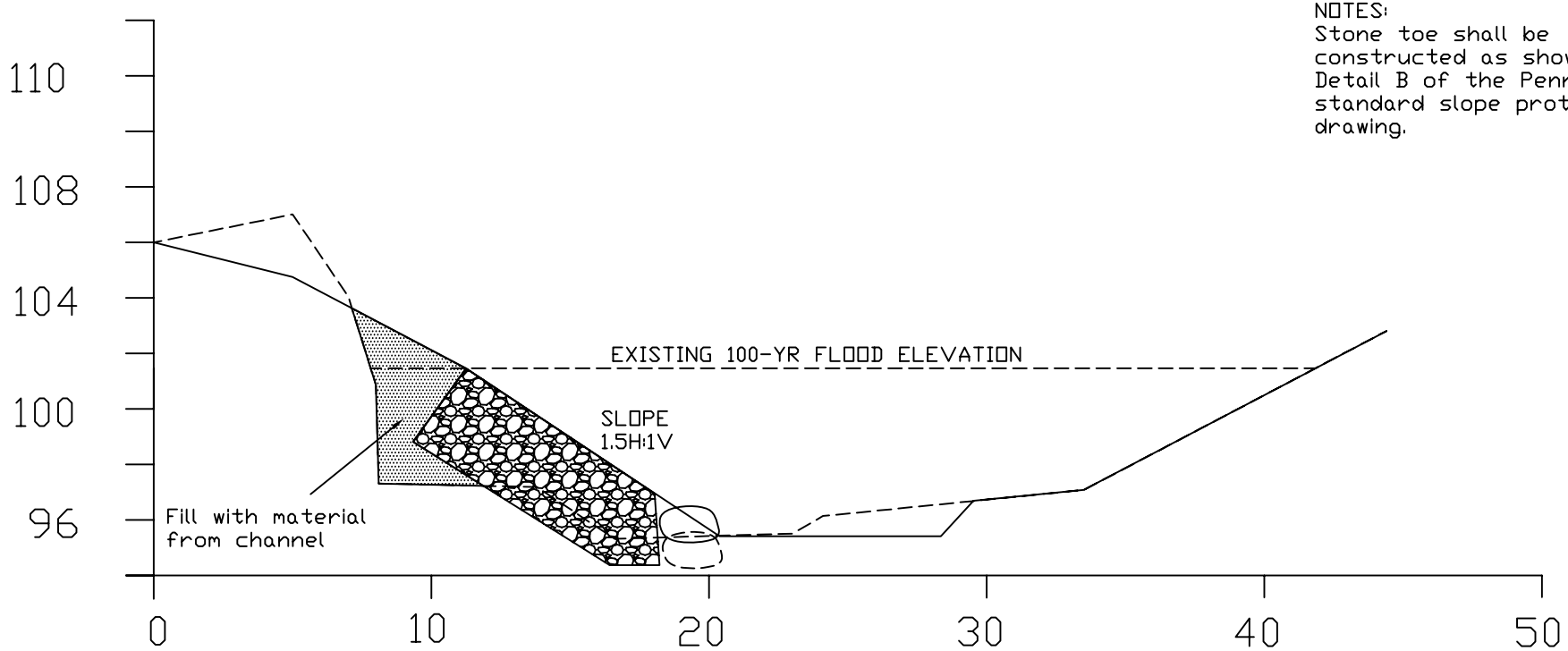
APPENDIX D: ENGINEERING AND COST ESTIMATING

JULY 2008

ATTACHMENT 3

LIDY CREEK CROSS SECTION 2

LIDY CREEK XS STA 0+60



NOTES:
Stone toe shall be constructed as shown in Detail B of the PennDOT standard slope protection drawing.

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

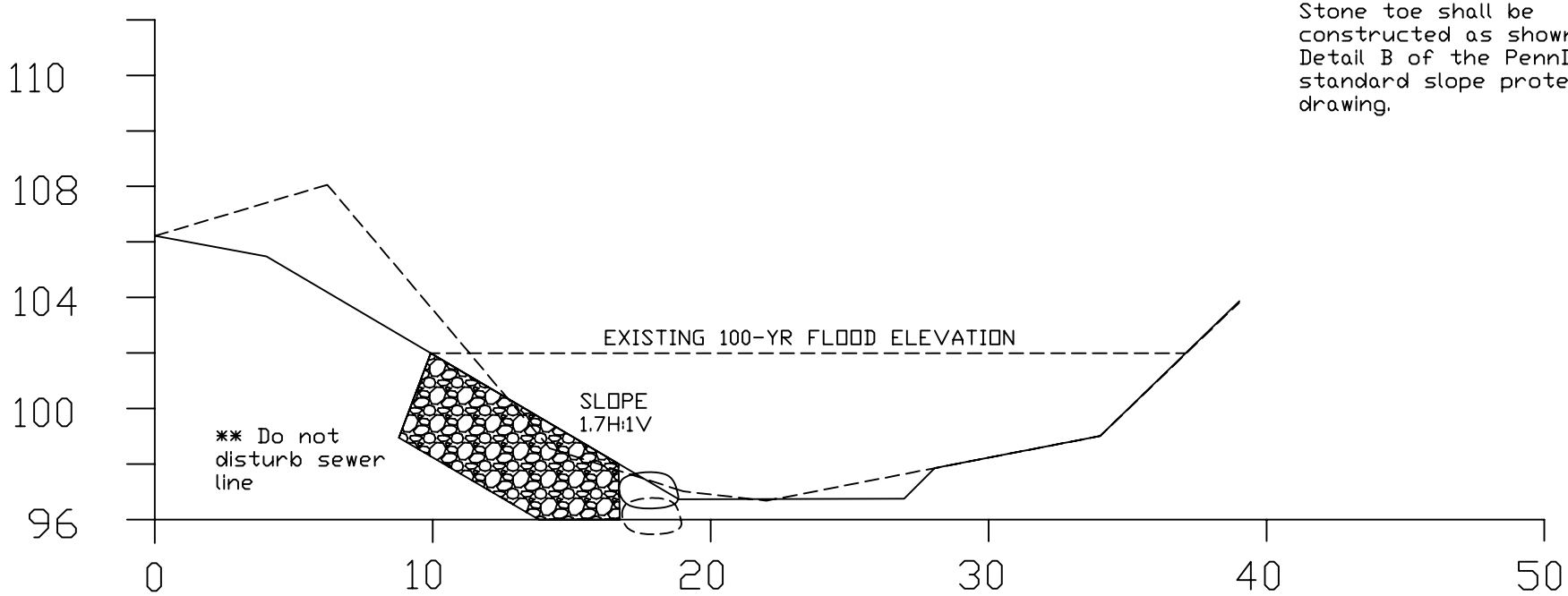
APPENDIX D: ENGINEERING AND COST ESTIMATING

JULY 2008

ATTACHMENT 4

LIDY CREEK CROSS SECTION 3

LIDY CREEK XS STA 0+35



NOTES:
Stone toe shall be constructed as shown in Detail B of the PennDOT standard slope protection drawing.

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

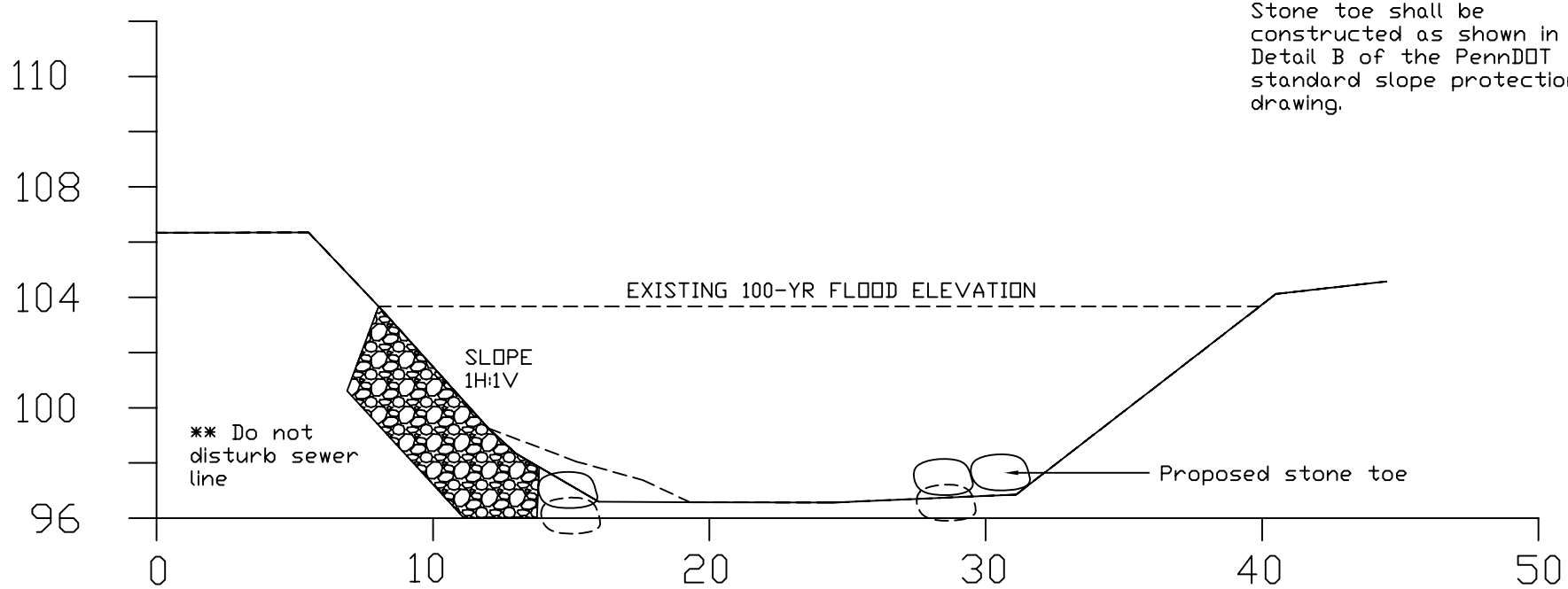
APPENDIX D: ENGINEERING AND COST ESTIMATING

JULY 2008

ATTACHMENT 5

LIDY CREEK CROSS SECTION 4

LIDY CREEK XS STA 0+23



NOTES:
Stone toe shall be constructed as shown in Detail B of the PennDOT standard slope protection drawing.

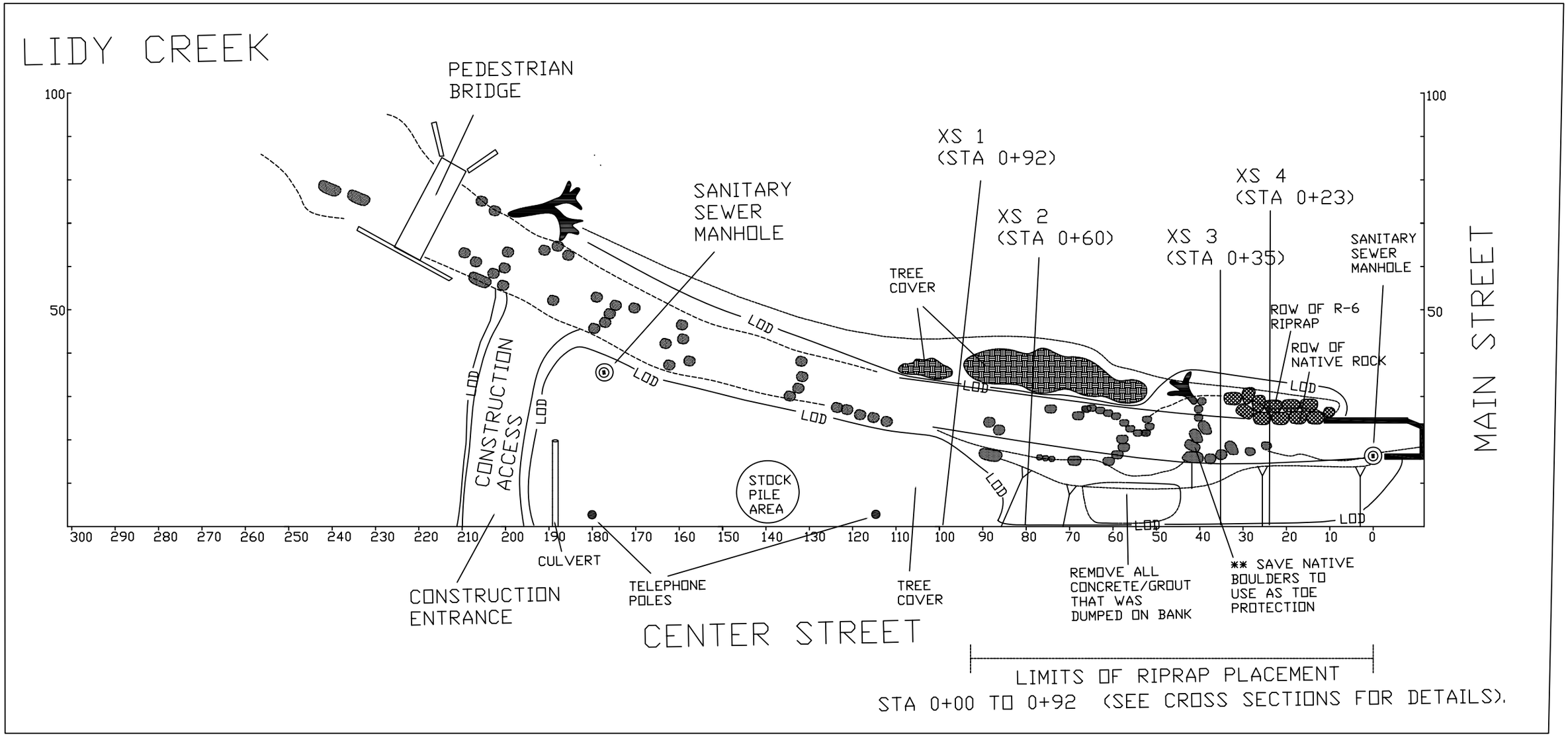
LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX D: ENGINEERING AND COST ESTIMATING

JULY 2008

ATTACHMENT 6

LIDY CREEK PLAN VIEW


LIDY CREEK
PEDESTRIAN BRIDGE
SANITARY SEWER MANHOLE
XS 1 (STA 0+92)
XS 2 (STA 0+60)
XS 3 (STA 0+35)
XS 4 (STA 0+23)
SANITARY SEWER MANHOLE
TREE COVER
ROW OF R-6 RIPRAP
ROW OF NATIVE ROCK
MAIN STREET
LOD
CONSTRUCTION ACCESS
STOCK PILE AREA
CULVERT
CONSTRUCTION ENTRANCE
TELEPHONE POLES
TREE COVER
REMOVE ALL CONCRETE/GROUT THAT WAS DUMPED ON BANK
** SAVE NATIVE BOULDERS TO USE AS TOE PROTECTION
CENTER STREET
LIMITS OF RIPRAP PLACEMENT
STA 0+00 TO 0+92 (SEE CROSS SECTIONS FOR DETAILS).
100
50
300 290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

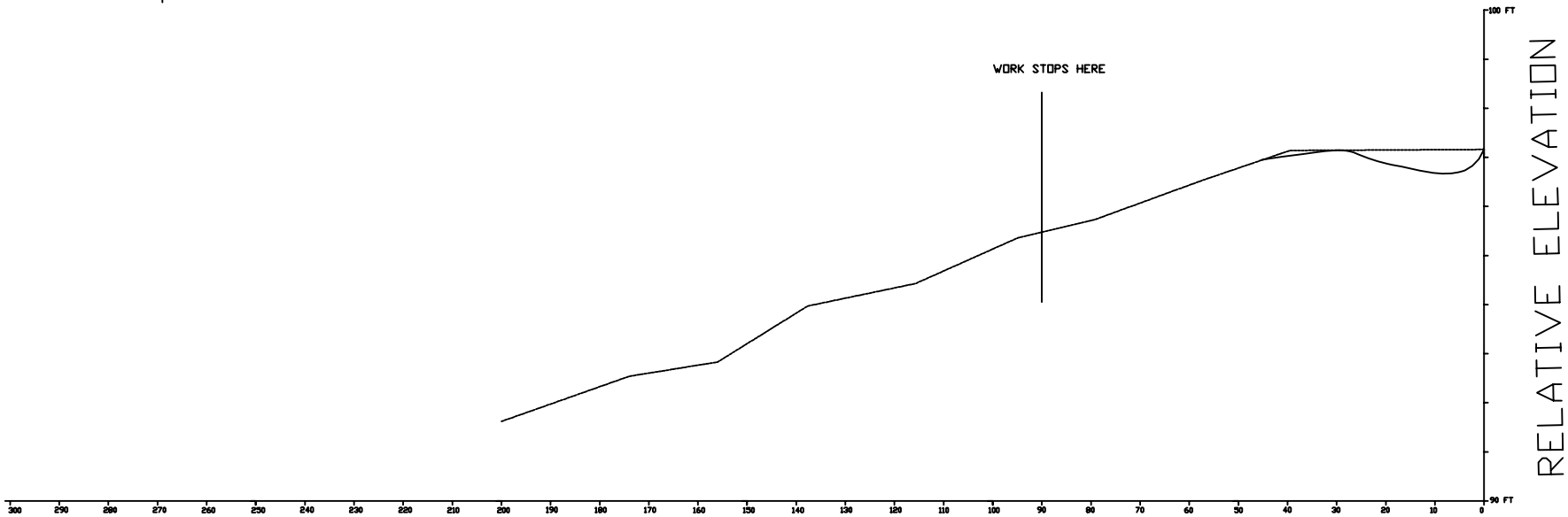
APPENDIX D: ENGINEERING AND COST ESTIMATING

JULY 2008

ATTACHMENT 7

LIDY CREEK PROFILE

LIDY CREEK
longitudinal profile



STA (runs along the thalweg of the stream)

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX D: ENGINEERING AND COST ESTIMATING

JULY 2008

ATTACHMENT 8

LIDY CREEK HEC-RAS RESULTS SUMMARY

Lidy Creek HEC-RAS results

River Sta	Profile	Q Total (cfs)	Min Ch El (ft)		W.S. Elev (ft)			Crit W.S. (ft)		E.G. Elev (ft)		E.G. Slope (ft/ft)	
			Existing	**Proposed**	**Existing**	**Proposed**	**Δ**	**Existing**	**Proposed**	**Existing**	**Proposed**	**Existing**	**Proposed**
4	2-yr	210	96.57	96.6	100	99.67	-0.33	100	99.1	100.24	100.33	0.003	0.017
4	10-yr	460	96.57	96.6	101.47	101.48	0.01	100.01		101.94	102.09	0.004	0.009
4	100-yr	913	96.57	96.6	103.67	103.46	-0.21	101.4		104.4	104.24	0.004	0.007
3.5*	2-yr	210	96.6	96.9	99.69	99.51	-0.18			100.08	100.22	0.006	0.019
3.5*	10-yr	460	96.6	96.9	101.24	100.63	-0.61		100.63	101.9	101.94	0.006	0.021
3.5*	100-yr	913	96.6	96.9	103.39	102.19	-1.2		102.19	104.35	104.07	0.006	0.019
3	2-yr	210	96.62	97.2	99.07	99.31	0.24	99.07	99.31	99.97	100.09	0.021	0.027
3	10-yr	460	96.62	97.2	100.32	100.4	0.08	100.32	100.4	101.76	101.64	0.020	0.021
3	100-yr	913	96.62	97.2	102.03	101.87	-0.16	102.03	101.87	104.18	103.73	0.019	0.018
2.66666*	2-yr	210	96.18	96.6	98.65	98.87	0.22	98.65	98.87	99.52	99.67	0.021	0.027
2.66666*	10-yr	460	96.18	96.6	99.86	99.98	0.12	99.86	99.98	101.2	101.25	0.020	0.021
2.66666*	100-yr	913	96.18	96.6	101.44	101.51	0.07	101.44	101.51	103.43	103.36	0.019	0.018
2.33333*	2-yr	210	95.75	96	98.25	98.44	0.19	98.25	98.44	99.07	99.26	0.021	0.027
2.33333*	10-yr	460	95.75	96	99.45	99.58	0.13	99.4	99.58	100.64	100.87	0.019	0.021
2.33333*	100-yr	913	95.75	96	101.15	101.14	-0.01	100.84	101.14	102.79	102.99	0.016	0.017
2	2-yr	210	95.31	95.4	98.3	98.38	0.08			98.74	98.94	0.010	0.015
2	10-yr	460	95.31	95.4	99.7	99.63	-0.07			100.37	100.55	0.009	0.013
2	100-yr	913	95.31	95.4	101.46	101.19	-0.27			102.51	102.65	0.010	0.012
1.75*	2-yr	210	95.33	95.43	98.01	98.15	0.14			98.63	98.81	0.016	0.017
1.75*	10-yr	460	95.33	95.43	99.17	99.12	-0.05		99.12	100.24	100.4	0.016	0.020
1.75*	100-yr	913	95.33	95.43	101.21	100.66	-0.55		100.66	102.41	102.49	0.011	0.017
1.5*	2-yr	210	95.35	95.45	97.85	98.05	0.2		97.82	98.5	98.61	0.018	0.025
1.5*	10-yr	460	95.35	95.45	98.82	98.89	0.07	98.79	98.88	100.08	100.05	0.022	0.030
1.5*	100-yr	913	95.35	95.45	100.31	100.27	-0.04	100.31	100.27	102.22	101.98	0.021	0.026
1.25*	2-yr	210	95.38	95.47	97.71	97.65	-0.06		97.65	98.35	98.39	0.019	0.027
1.25*	10-yr	460	95.38	95.47	98.63	98.68	0.05	98.63	98.68	99.89	99.85	0.023	0.021
1.25*	100-yr	913	95.38	95.47	100.13	100.06	-0.07	100.13	100.06	102	101.77	0.021	0.018
1	2-yr	210	95.4	95.5	97.38	97.43	0.05	97.38	97.43	98.15	98.12	0.027	0.033
1	10-yr	460	95.4	95.5	98.45	98.39	-0.06	98.45	98.39	99.68	99.49	0.024	0.029
1	100-yr	913	95.4	95.5	99.89	99.68	-0.21	99.89	99.68	101.74	101.31	0.022	0.024

Lidy Creek HEC-RAS results (con't.)

River Sta	Profile	Vel Chnl (ft/s)		Flow Area (sq ft)		Top Width (ft)		Froude # Chl	
		Existing	**Proposed**	**Existing**	**Proposed**	**Existing**	**Proposed**	**Existing**	**Proposed**
4	2-yr	4.15	6.53	61.05	32.93	23.84	23.07	0.4	0.7
4	10-yr	5.96	6.71	98.53	78.17	27.1	27.08	0.48	0.56
4	100-yr	7.61	7.72	163.49	136.29	31.96	31.49	0.51	0.53
3.5*	2-yr	5.4	6.78	49.2	31.5	21.89	17.08	0.55	0.82
3.5*	10-yr	7.22	9.34	86.29	54.67	25.76	23.93	0.6	0.92
3.5*	100-yr	9.04	11.56	146.78	95.03	31.05	27.83	0.62	0.93
3	2-yr	8.44	7.08	34.83	29.76	20.39	20	0.96	1
3	10-yr	11.04	8.99	61.92	53.14	22.76	22.99	1.02	0.98
3	100-yr	13.92	11.12	103.47	90.13	25.97	27.07	1.06	0.97
2.66666*	2-yr	8.19	7.18	35.66	29.46	22.17	19.49	0.95	1
2.66666*	10-yr	10.63	9.12	64.26	52.93	25.21	22.81	1	0.98
2.66666*	100-yr	13.42	11.17	106.65	91.29	28.13	27.39	1.05	0.96
2.33333*	2-yr	7.94	7.27	36.62	29.28	24.25	19.12	0.93	1
2.33333*	10-yr	10.03	9.22	68.21	53.01	27.63	22.76	0.95	0.98
2.33333*	100-yr	12.2	11.24	117.57	92.5	30.44	27.77	0.95	0.95
2	2-yr	5.97	6.02	50.57	36.02	27.77	20.12	0.65	0.76
2	10-yr	7.66	7.86	91.4	63.71	30.48	24.35	0.67	0.77
2	100-yr	9.9	10.06	147.79	105.82	34.03	29.64	0.73	0.81
1.75*	2-yr	6.95	6.57	41.08	33.83	23.87	20.01	0.81	0.83
1.75*	10-yr	9.37	9.3	71.71	55.31	30.35	24.1	0.89	0.96
1.75*	100-yr	10.45	11.43	139.1	96.01	35.19	28.83	0.79	0.95
1.5*	2-yr	7.1	6.02	40.35	34.94	24.05	21.58	0.86	0.82
1.5*	10-yr	10.16	8.68	64.96	54.46	27.03	25.07	1.02	0.97
1.5*	100-yr	12.85	10.72	108.29	92.16	31.23	29.3	1.06	0.96
1.25*	2-yr	7.13	6.91	40.35	30.62	24.77	21.7	0.88	1
1.25*	10-yr	10.21	8.74	64.56	55.55	27.55	26.44	1.05	0.97
1.25*	100-yr	12.71	10.79	108.9	94.99	31.58	30.59	1.06	0.96
1	2-yr	7.84	6.68	36.54	31.42	25.15	22.89	1.04	1
1	10-yr	10.11	8.43	65.29	55.63	28.36	27.28	1.06	0.99
1	100-yr	12.66	10.37	108.97	93.95	32.23	31.56	1.08	0.97

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX D: ENGINEERING AND COST ESTIMATING

JULY 2008

ATTACHMENT 9

LIDY CREEK QUANTITY ESTIMATE

Section 14, Lidy Creek
Quantities for cost estimate
Prepared by Water Resources Section

Assumption: Area of cut/fill determined using AutoCAD XS.
Rough estimate of total volume was calculated by multiplying area with length between surveyed XS.
For conservative estimate, did not account for voids in riprap!

Option 1 - Channel Realignment/Riprap Protection

Cut Quantities

XS Station	Cut Area Below Ordinary High Water (ft^2)	Cut Area Above Ordinary High Water (ft^2)	Length (ft)	Total Cut Volume Below Ordinary High Water (ft^3)	Total Cut Volume Below Ordinary High Water (yd^3)	Total Cut Volume Above Ordinary High Water (ft^3)	Total Cut Volume Above Ordinary High Water (yd^3)
0+23	5.1	0.0	23	117.3	4.3	0.0	0.0
0+35	3.3	22.8	12	39.6	1.5	273.6	10.1
0+60	5.1	8.3	25	127.5	4.7	207.5	7.7
0+92	3.6	0.0	32	115.2	4.3	0.0	0.0
Totals:					***14.8***		***17.8***

Grand Total Cut Volume (yd^3)
32.6

Fill Quantities

Overall Total

XS Station	Fill Area ASSHTO #57 (ft^2)	Fill Area R-6 Riprap (ft^2)	Fill Area Native Channel Material (ft^2)	Length (ft)	Total Fill Volume ASSHTO #57 (ft^3)	Total Fill Volume ASSHTO #57 (yd^3)	Total Fill Volume R-6 Riprap (ft^3)	Total Fill Volume R-6 Riprap (yd^3)	Total Fill Volume Native Channel Material (ft^3)	Total Fill Volume Native Channel Material (yd^3)
0+23	5.4	18.0	0.0	23	124.2	4.6	414.0	15.3	0.0	0.0
0+35	5.7	19.0	0.0	12	68.4	2.5	228.0	8.4	0.0	0.0
0+60	6.5	21.8	13.6	25	162.5	6.0	545.0	20.2	340.0	12.6
0+92	5.5	18.3	0.0	32	176.0	6.5	585.6	21.7	0.0	0.0
Totals:						***19.7***		***65.7***		***12.6***
+ fill behind wingwall								**3**		
								68.7		

Grand Total ASSHTO #57 Volume (yd^3)	Grand Total R-6 Riprap Volume (yd^3)
20.0	**70**

Fill Quantities for 404 (b) (1):

Fill of Environmental Consequence (Below Ordinary High Water)

XS Station	R-6 Fill Area Below Ordinary High Water (ft^2)	Length (ft)	Total R-6 Riprap Fill Volume Below Ordinary High Water (ft^3)	Total R-6 Riprap Fill Volume Below Ordinary High Water (yd^3)
0+23	6.5	18.0	117.0	4.3
0+35	6.5	19.0	123.5	4.6
0+60	10.6	21.8	231.1	8.6
0+92	9.3	18.3	170.2	6.3
Total:				***23.8***

Seeding:

XS Station	Height of seeding (ft)	Length to carry seeding (ft)	Total Seeding Area (ft^2)	Total Seeding Area (yd^2)
0+23	9.5	23	218.5	24.3
0+35	11	12	132.0	14.7
0+60	11.5	25	287.5	31.9
0+92	17.2	32	550.4	61.2

Grand Total Seeding (ft^2)	Grand Total Seeding (yd^2)
1188.4	132.0

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX D: ENGINEERING AND COST ESTIMATING

JULY 2008

ATTACHMENT 10

MCASES

Estimated by	Baltimore District
Designed by	U.S. Army Corps of Engineers
Prepared by	CENAB-EN-DT Luan Ngo
Preparation Date	5/8/2008
Effective Date of Pricing	5/8/2008
Estimated Construction Time	Days

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Date	Author	Note
10/4/2007	ltn	This estimate is updated with 2006 Cost Book, Labor, and Equipment Libraries, and escalation to FY2008.
		This estimate is also set up the same way with the Williamsport PL84-99 TOC contract where General Condition and Design and Permit costs were itemized in the estimate itself
		Tthe entire Prime contract markups was kept the same at 34%. The agreed markup percentage for Williamsport was between 33% and 34%.
		25% Contingency is not shown separately but is now rather built in the direct costs.
		Contractor markups is revised under an assumption that the Prime Contractor will not perform all of the work but rather a small portion of the job.

Description	Quantity	UOM	ContractCost	ProjectCost
Project Cost			198,194.96	198,194.96
01 Lands and Damages	1.0000	EA	49,018.15	49,018.15
0120 Project Design Memorandum (PDM)	1.0000	EA	49,018.15	49,018.15
16 Bank Stabilization	1.0000	EA	105,526.80	105,526.80
1601 General Condition	1.0000	EA	10,994.66	10,994.66
1602 Mobilization, Demobilization and Preparatory Work	1.0000	EA	10,205.19	10,205.19
1631 Earthwork	1.0000	EA	13,621.32	13,621.32
1681 Riprap Slope Treatment	1.0000	EA	62,661.81	62,661.81
1698 Associated General Items	1.0000	EA	2,974.11	2,974.11
1699 Design and Permits	1.0000	EA	5,069.71	5,069.71
30 Planning, Engineering, and Design (PED)	1.0000	EA	28,650.00	28,650.00
31 Construction Management	1.0000	EA	15,000.00	15,000.00

Description	Quantity	UOM	DirectCost	JOOH	HOOH	Profit	Bond	ContractCost
Cost To Owner			156,788	7,588	3,358	10,078	260	198,195
01 Lands and Damages	1.0000	EA	49,018	0	0	0	0	49,018
0120 Project Design Memorandum (PDM)	1.0000	EA	49,018	0	0	0	0	49,018
012003 Real Estate Analysis Documents	1.0000	EA	49,018	0	0	0	0	49,018
16 Bank Stabilization	1.0000	EA	64,119	7,588	3,358	10,078	260	105,527
1601 General Condition	1.0000	EA	8,203	1,312	381	990	109	10,995
1602 Mobilization, Demobilization and Preparatory Work	1.0000	EA	7,614	1,218	353	919	101	10,205
1631 Earthwork	1.0000	EA	7,651	765	421	1,326	0	13,621
163102 Site Work	1.0000	EA	7,651	765	421	1,326	0	13,621
1681 Riprap Slope Treatment	1.0000	EA	35,198	3,520	1,936	6,098	0	62,662
168102 Site Work	1.0000	EA	35,198	3,520	1,936	6,098	0	62,662
1698 Associated General Items	1.0000	EA	1,671	167	92	289	0	2,974
1699 Design and Permits	1.0000	EA	3,782	605	176	456	50	5,070
30 Planning, Engineering, and Design (PED)	1.0000	EA	28,650	0	0	0	0	28,650
31 Construction Management	1.0000	EA	15,000	0	0	0	0	15,000

Description	Quantity	UOM	LaborCost	DirectLaborMU	EQCost	MatlCost	TaxAdj	DirectCost
Details			**24,024**	**14,753**	**10,708**	**3,859**	**232**	**156,788**
			0.0000	*0.0000*	*0.0000*	*0.0000*		*49,018.1520*
01 Lands and Damages	**1.0000**	**EA**	**0**	**0**	**0**	**0**	**0**	**49,018**
			0.0000	*0.0000*	*0.0000*	*0.0000*		*49,018.1520*
0120 Project Design Memorandum (PDM)	**1.0000**	**EA**	**0**	**0**	**0**	**0**	**0**	**49,018**
			0.0000	*0.0000*	*0.0000*	*0.0000*		*49,018.1520*
012003 Real Estate Analysis Documents	**1.0000**	**EA**	**0**	**0**	**0**	**0**	**0**	**49,018**
			0.0000	*0.0000*	*0.0000*	*0.0000*		*49,018.1520*
01200307 All Other Real Estate Analy/Docs	**1.0000**	**EA**	**0**	**0**	**0**	**0**	**0**	**49,018**
			0.0000	*0.0000*	*0.0000*	*0.0000*	*0.0000%*	*4,715.0000*
USR Real Estate Acquisitions	1.0000	EA	0	0	0	0	0	4,715
			0.0000	*0.0000*	*0.0000*	*0.0000*	*0.0000%*	*1,322.5000*
USR Real Estate Appraisals	1.0000	EA	0	0	0	0	0	1,323
			0.0000	*0.0000*	*0.0000*	*0.0000*	*0.0000%*	*42,980.6520*
USR Real Estate Land Payments	1.0000	EA	0	0	0	0	0	42,981
			24,023.5338	*14,753.3149*	*10,708.0299*	*3,858.6000*		*64,119.4650*
16 Bank Stabilization	**1.0000**	**EA**	**24,024**	**14,753**	**10,708**	**3,859**	**232**	**64,119**
			3,008.7638	*916.0562*	*1,651.0074*	*196.2000*		*8,203.0721*
1601 General Condition	**1.0000**	**EA**	**3,009**	**916**	**1,651**	**196**	**12**	**8,203**
			5,396.5517	*1,631.3863*	*0.0000*	*0.0000*	*0.0000%*	*7,027.9379*
MIL 010360300 Field personnel, general superintendent	0.5000	MO	2,698	816	0	0	0	3,514
			0.0000	*0.0000*	*0.0000*	*0.0000*	*0.0000%*	*480.8250*
RSM 013202000300 Scheduling, computer-update, micro,no plots, minimum	1.0000	EA	0	0	0	0	0	481
			0.0000	*0.0000*	*0.0000*	*16.3500*	*11.7720%*	*18.5182*
HNC 015807000010 Project Signs, sign, Hi-intensity reflectorized, buy, excl. posts	12.0000	SF	0	0	0	196	12	222
			0.0000	*0.0000*	*13.4369*	*0.0000*	*0.0000%*	*0.0000*
MAP T50FO004 TRK,HWY, 8,800GVW,4X4, 3/4T-PKUP	0.0000	HR	0	0	0	0	0	0
			310.4880	*100.3631*	*39.3702*	*0.0000*	*0.0000%*	*452.9181*
HNC 017405000300 Cleaning Up, site debris clean up and removal	1.0000	ACR	310	100	39	0	0	453
			0.0000	*0.0000*	*18.5246*	*0.0000*	*0.0000%*	*19.7935*
EP T50GM005 TRK,HWY, 8,600GVW,4X4, SUBURBAN	87.0000	HR	0	0	1,612	0	0	1,722
			0.0000	*0.0000*	*0.0000*	*0.0000*	*0.0000%*	*120.7405*
HTW 021055506141 personnel travel, per diem	15.0000	DAY	0	0	0	0	0	1,811
			2,981.6000	*1,959.7353*	*2,001.0943*	*0.0000*		*7,614.0469*
1602 Mobilization, Demobilization and Preparatory Work	**1.0000**	**EA**	**2,982**	**1,960**	**2,001**	**0**	**0**	**7,614**
			148.0300	*97.5348*	*53.8916*	*0.0000*	*0.0000%*	*317.5438*
RSM CODEB12F 1 eqoprcrn + 1 hydr excavator, crawler, 1 CY	16.0000	HR	2,368	1,561	862	0	0	5,081
			0.0000	*0.0000*	*65.2526*	*0.0000*	*0.0000%*	*87.1530*
EP T50XX031 TRUCK, HIGHWAY, 75,000 LBS GVW, 2 AXLE, 6X4 (CHASSIS ONLY-ADD OPTIONS)	16.0000	HR	0	0	1,044	0	0	1,394

Description	Quantity	UOM	LaborCost	DirectLaborMU	EQCost	MatlCost	TaxAdj	DirectCost
EP T45XX012 TRUCK TRAILER, LOWBOY, 30 TON, 2 AXLE (ADD TOWING TRUCK)	16.0000	HR	*0.0000* 0	*0.0000* 0	*5.9242* 95	*0.0000* 0	*0.0000%* 0	*7.9125* 127
MIL B-TRKDVRHV Truck Drivers, Heavy	16.0000	HR	*38.3200* 613	*24.9487* 399	*0.0000* 0	*0.0000* 0	*0.0000%* 0	*63.2687* 1,012
1631 Earthwork	**1.0000**	**EA**	*3,378.4625* **3,378**	*2,225.4950* **2,225**	*1,246.6558* **1,247**	*270.0000* **270**	**16**	*7,651.2779* **7,651**
163102 Site Work	**1.0000**	**EA**	*3,378.4625* **3,378**	*2,225.4950* **2,225**	*1,246.6558* **1,247**	*270.0000* **270**	**16**	*7,651.2779* **7,651**
USR 023154260100 Excavate and stockpile, bank measure, rock, 3/4 C.Y. bucket, hydraulic excavator	35.0000	BCY	*37.0075* 1,295	*24.3837* 853	*13.4729* 472	*0.0000* 0	*0.0000%* 0	*79.3859* 2,779
USR 023151205510 Backfill, 6" lifts, backfill slope, with hydraulic excavator (Note: assume 1.2 bulk factor)	18.0000	LCY	*74.0150* 1,332	*48.7674* 878	*26.9458* 485	*15.0000* 270	*16.2000%* 16	*180.0083* 3,240
RSM 023151100300 Compaction in layers, hand tamp	18.0000	ECY	*16.7550* 302	*11.0771* 199	*0.0000* 0	*0.0000* 0	*0.0000%* 0	*27.8321* 501
MIL 023154260100 Excavate and load, bank measure, medium material, 3/4 C.Y. bucket, hydraulic excavator (Note: assume 1.2 bulk factor)	24.0000	BCY	*12.3358* 296	*8.1279* 195	*4.4910* 108	*0.0000* 0	*0.0000%* 0	*26.4620* 635
AF 023154904000 Hauling, 12 C.Y. truck, 5 mile haul	24.0000	LCY	*6.3867* 153	*4.1581* 100	*7.5957* 182	*0.0000* 0	*0.0000%* 0	*20.6897* 497
1681 Riprap Slope Treatment	**1.0000**	**EA**	*13,897.5000* **13,898**	*9,152.3591* **9,152**	*5,533.8570* **5,534**	*3,360.0000* **3,360**	**202**	*35,197.9789* **35,198**
168102 Site Work	**1.0000**	**EA**	*13,897.5000* **13,898**	*9,152.3591* **9,152**	*5,533.8570* **5,534**	*3,360.0000* **3,360**	**202**	*35,197.9789* **35,198**
USR 023704500250 Rip-rap, random pieces, placed with hydraulic excavator, 50 - 1000 pound pieces (Note: use 1.5 ton/cy. $23.20/ton delivered price as quoted by Keyston Quarry 570-343-5782 on May 8, 2008. Use $25/ton x 1.5 ton/cy =~$38/ton)	70.0000	LCY	*148.0300* 10,362	*97.5348* 6,827	*53.8916* 3,772	*38.0000* 2,660	*159.6000%* 160	*371.3428* 25,994
USR 023151102460 Fill, #57 stone bedding , hydraulic excavator (Note: use 1.05 ton/cy. $13.70/ton as quoted by Keyston Quarry 570-343-5782 on May 8, 2008. Use existing cost $35/ton.)	20.0000	LCY	*148.0300* 2,961	*97.5348* 1,951	*53.8916* 1,078	*35.0000* 700	*42.0000%* 42	*367.0955* 7,342
AF 023154904000 Hauling, 12 C.Y. truck, 5 mile haul, includes loading	90.0000	LCY	*6.3867* 575	*4.1581* 374	*7.5957* 684	*0.0000* 0	*0.0000%* 0	*20.6897* 1,862
1698 Associated General Items	**1.0000**	**EA**	*757.2075* **757**	*499.6693* **500**	*275.4154* **275**	*32.4000* **32**	**2**	*1,670.5992* **1,671**
CIV 022301007310 Tree removal, congested area, 6" to 12" diameter, tree removal, cutting and chipping	3.0000	EA	*104.8350* 315	*69.2596* 208	*53.6969* 161	*0.0000* 0	*0.0000%* 0	*245.8135* 737
USR 022301009110 Grub stumps, with hydraulic excavator, to 12" diameter	3.0000	EA	*49.3433* 148	*32.5116* 98	*17.9639* 54	*0.0000* 0	*0.0000%* 0	*105.8479* 318

Description	Quantity	UOM	LaborCost	DirectLaborMU	EQCost	MatlCost	TaxAdj	DirectCost
			83.7750	*55.3857*	*0.0000*	*5.0000*	*0.3600%*	*146.2395*
USR 029105000760 Mulch, 1" deep, hand spread	1.2000	MSF	101	66	0	6	0	175
			83.7750	*55.3857*	*0.0000*	*22.0000*	*1.5840%*	*170.3075*
RSM 029203200020 Seeding, athletic field mix, 8 lb. per M.S.F., push spreader	1.2000	MSF	101	66	0	26	2	204
			12.3358	*8.1279*	*4.4910*	*0.0000*	*0.0000%*	*26.4620*
MIL 023154260100 Excavate and load, bank measure, medium material, 3/4 C.Y. bucket, hydraulic excavator (Note: for any unforseen trash/debris.)	5.0000	BCY	62	41	22	0	0	132
			6.3867	*4.1581*	*7.5957*	*0.0000*	*0.0000%*	*20.6897*
AF 023154904000 Hauling, 12 C.Y. truck, 5 mile haul (Note: for any unforseen trash/debris.)	5.0000	LCY	32	21	38	0	0	103
			0.0000	*0.0000*	*0.0000*	*0.0000*		*3,782.4900*
1699 Design and Permits	**1.0000**	**EA**	**0**	**0**	**0**	**0**	**0**	**3,782**
			0.0000	*0.0000*	*0.0000*	*0.0000*	*0.0000%*	*126.8844*
USR Civil Engineer	16.0000	HR	0	0	0	0	0	2,030
			0.0000	*0.0000*	*0.0000*	*0.0000*	*0.0000%*	*76.1306*
USR CADD drafter	16.0000	HR	0	0	0	0	0	1,218
			0.0000	*0.0000*	*0.0000*	*0.0000*	*0.0000%*	*267.1250*
USR Printing	2.0000	EA	0	0	0	0	0	534
			0.0000	*0.0000*	*0.0000*	*0.0000*		*28,650.0000*
30 Planning, Engineering, and Design (PED)	**1.0000**	**EA**	**0**	**0**	**0**	**0**	**0**	**28,650**
			0.0000	*0.0000*	*0.0000*	*0.0000*	*0.0000%*	*28,650.0000*
USR PED effort	1.0000	EA	0	0	0	0	0	28,650
			0.0000	*0.0000*	*0.0000*	*0.0000*		*15,000.0000*
31 Construction Management	**1.0000**	**EA**	**0**	**0**	**0**	**0**	**0**	**15,000**
			0.0000	*0.0000*	*0.0000*	*0.0000*	*0.0000%*	*15,000.0000*
USR Construction Management	1.0000	EA	0	0	0	0	0	15,000

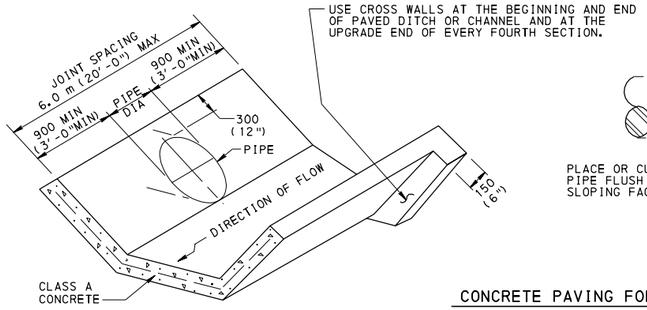
LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

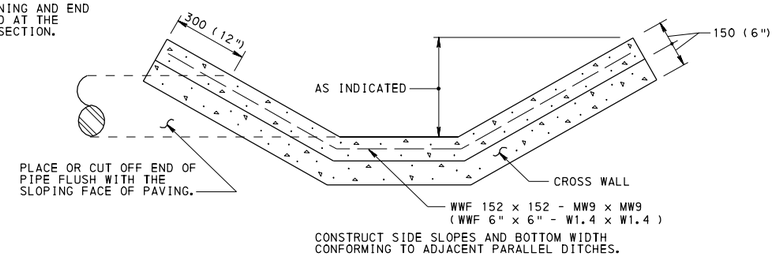
APPENDIX D: ENGINEERING AND COST ESTIMATING

JULY 2008

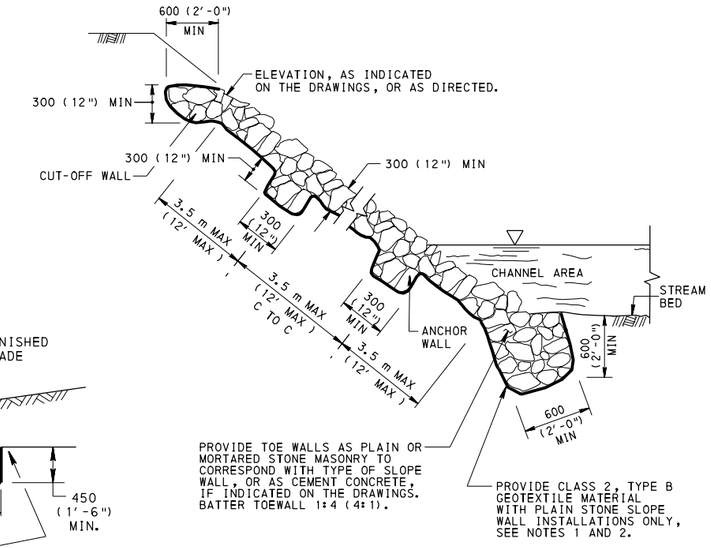
ATTACHMENT 11

PENNDOT EMBANKMENT DRAWINGS

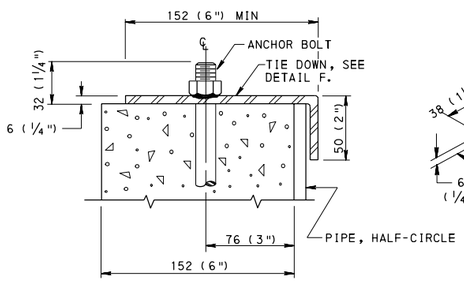




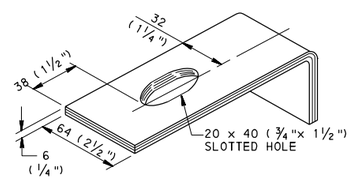
CONCRETE PAVING FOR STREAM BEDS



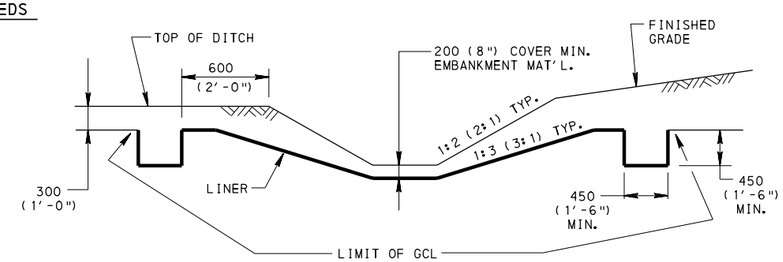
PLAIN AND MORTARED STONE SLOPE WALL



DETAIL E



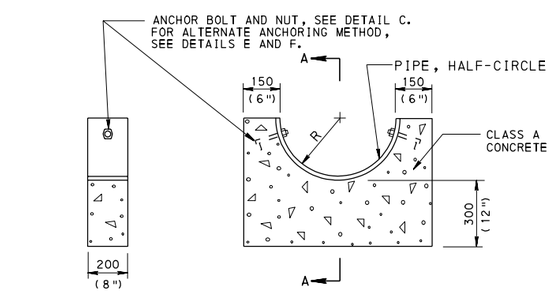
DETAIL F



GEOSYNTHETIC CLAY LINER
SEE NOTE 5

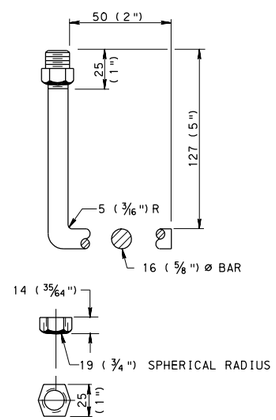
NOTES

1. PROVIDE GEOTEXTILE MATERIAL MEETING THE CONSTRUCTION REQUIREMENTS OF PUBLICATION 408, SECTION 212 AND MATERIAL REQUIREMENTS OF SECTION 735.
2. INSTALL GEOTEXTILE MATERIAL ALONG ALL INTERFACE AREAS WITH GROUND CONTACT.
3. PLACE CONCRETE PIPE ANCHORS AT THE ENDS OF PIPE, UNDER ALL JOINTS AND AT INTERMEDIATE LOCATIONS AS REQUIRED. PROVIDE 3.0 m (10-0") MAXIMUM SPACING BETWEEN ANCHORS.
4. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. U.S. CUSTOMARY UNITS IN () PARENTHESIS.
5. DO NOT LINE ANY DITCHES OR SWALES WHERE GCL HAS BEEN INSTALLED WITH LIMESTONE OR CARBONATE ROCK RIPROCK USED FOR EROSION CONTROL.

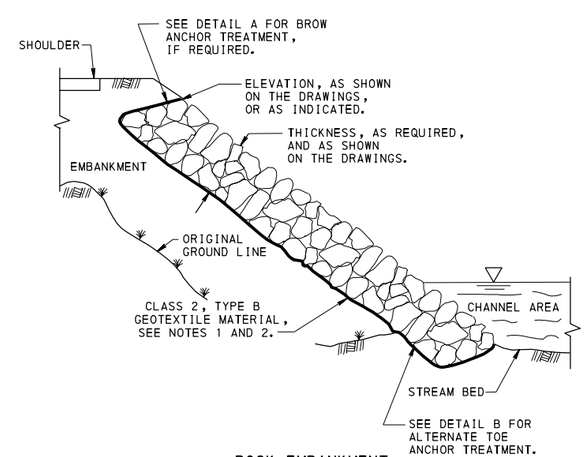


SECTION A-A

CEMENT CONCRETE PIPE ANCHOR
DETAIL D

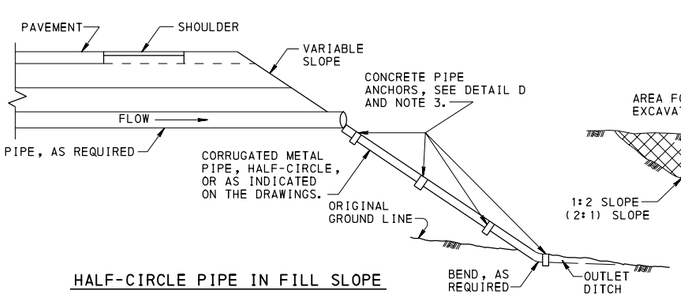


ANCHOR BOLT AND NUT
DETAIL C

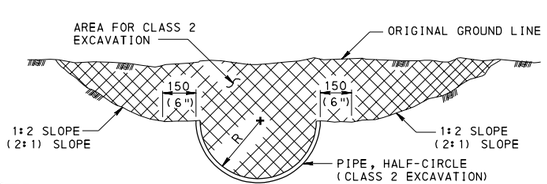


ROCK EMBANKMENT

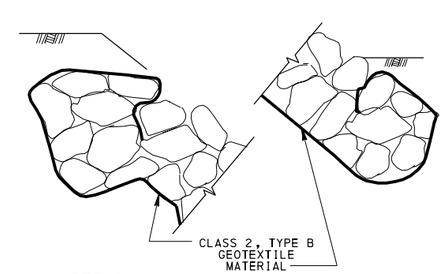
NOTE: EITHER ALL METRIC OR ALL ENGLISH VALUES MUST BE USED ON PLANS. METRIC AND ENGLISH VALUES SHOWN MAY NOT BE MIXED.



HALF-CIRCLE PIPE IN FILL SLOPE



TYPICAL CROSS SECTION



DETAIL A DETAIL B

INSTALLATION DETAILS FOR HALF-CIRCLE PIPE

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
BUREAU OF DESIGN

SLOPE PROTECTION

RECOMMENDED MAR. 30, 2006	RECOMMENDED MAR. 30, 2006	SHT 1 OF 1
DIRECTOR, BUREAU OF DESIGN	CHIEF ENGINEER	RC-40M

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX E: PROJECT FACTSHEET

JULY 2008

APPENDIX E: PROJECT FACTSHEET

Attachment 1: Lidy Creek Section 14 Factsheet

LIDY CREEK – SECTION 14 EMERGENCY STREAMBANK STABILIZATION PLANNING AND DESIGN ANALYSIS

APPENDIX E: PROJECT FACTSHEET

JULY 2008

ATTACHMENT 1

LIDY CREEK SECTION 14 FACTSHEET

Date: July 2008
Division: North Atlantic
District: Baltimore

LIDY CREEK SECTION 14 FACTSHEET

1. Project: Lidy Creek – Dupont Borough Emergency Stream bank and Shoreline Protection
Congressional District: PA – 11

2. Location: The project area runs from the long, concrete box culvert under Main Street southwest 200 linear feet along the Lidy Creek stream channel which runs adjacent with Center Street in Dupont Borough, Luzerne County, Pennsylvania.

3. Description of Proposed Project: The proposed action involves stream bank stabilization of approximately 200 linear feet of Lidy Creek which has eroded approximately 90 linear feet of stream bank adjacent to the existing sewer line and the road bed of Center Street that runs parallel to the creek. Riprap is proposed to be placed along 90 linear feet where the sewer line is exposed on the south bank. Random placement of native rock and stone will be conducted within the stream for 200 linear feet to create a stable stream system and improve habitat.

4. Consistency Statement: N/A

5. Views of Sponsors: The local sponsor (Dupont Borough) is supportive of this project and has agreed to serve as the non-Federal sponsor. In addition, Pennsylvania Department of Environmental Protection (PADEP) supports the project and has agreed to provide Dupont Borough with a portion of the funding for the project.

6. Views of Federal, State, and Regional Agencies: Initial coordination with PADEP has confirmed that this project needs to obtain a 404(b) (1) Water Quality Certification. The U.S. Fish and Wildlife Service have confirmed that no biological assessment or further consultation under the Endangered Species Act is required for this project area.

7. Status of Environmental Compliance: The Environmental Analysis (EA) is in draft form. However, local, state, and federal agencies are being coordinated with so all applicable Federal regulations, Executive Orders, and laws governing impacts will be in compliance.

8. Costs and Benefits: An economic analysis was conducted by a Corps economist. 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.

9. Schedule: Date

PPA Execution:	October, 2008
Construction Award:	January, 2009
Construction Complete:	April, 2009
Close-out:	August, 2009

10. Supplemental Information: N/A

11. Financial Data:

a. (all costs in thousands of dollars)

Project Costs

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

12. Federal Allocations to Date:

Planning, Design and Analysis:	$100,000
Design & Implementation (Construction):	$ 50,000