

U.S. Army Corps
of Engineers

Baltimore District
PN 17-35

Public Notice

In Reply to Application Number
CENAB-OPR-P-2017-00447-P02 (LRG Statewide Umbrella Mitigation
Banking Instrument)

Comment Period: July 28, 2017 to August 28, 2017

THE PURPOSE OF THIS PUBLIC NOTICE IS TO SOLICIT COMMENTS FROM THE PUBLIC CONCERNING THE PROPOSED DEVELOPMENT OF A PRIVATE COMMERCIAL STATEWIDE UMBRELLA MITIGATION BANKING INSTRUMENT, THE PROPOSED TUNNEL ROAD MITIGATION BANK, THE PROPOSED MITIGATION BANK PROSPECTUS, AND THE POTENTIAL OF THE PROPOSED MITIGATION BANK TO PROVIDE APPROPRIATE COMPENSATORY MITIGATION FOR ACTIVITIES AUTHORIZED BY DEPARTMENT OF THE ARMY PERMITS.

At this time, no decision has been made as to whether or not a permit will be issued, or whether the proposed Land Reclamation Group (LRG) “LRG Statewide Umbrella Mitigation Banking Instrument”, including the Tunnel Road Mitigation Bank, will be approved. The Tunnel Road Mitigation Bank is proposed as the initial mitigation bank site under the LRG Statewide Umbrella Mitigation Banking Instrument. We are requesting comments to determine if approval should be granted for the establishment of a statewide Umbrella Mitigation Banking Instrument (UMBI), the proposed location of the Tunnel Road Mitigation Bank as a commercial mitigation bank site, and the conceptual mitigation plan, for the purpose of providing compensatory mitigation for unavoidable aquatic resource impacts, including wetlands and streams, authorized by Department of the Army (DA) permits.

At this time, a complete application for work in waters of the United States to construct the proposed Tunnel Road Mitigation Bank has not been received. A review of the proposal indicates that the work described below is proposed to occur in areas identified as waters and/or wetlands and therefore may require Department of the Army authorization. A preliminary review indicates that the proposed work may qualify for U.S. Army Corps of Engineers (Corps) authorization under the Pennsylvania State Programmatic General Permit-5 (PASPGP-5) or by Nationwide Permit (NWP) #27 (Aquatic Habitat Restoration, Establishment, and Enhancement Activities). Both the PASPGP-5 and NWP #27 have undergone a full public interest review as required by Corps regulations (33 CFR 320.4(a)), and NEPA documentation has been prepared that addresses environmental considerations.

A copy of the proposed LRG Statewide Umbrella Mitigation Banking Instrument prospectus is available on-line in association with this public notice posted on the Baltimore District Regulatory Homepage, at <http://www.nab.usace.army.mil/Missions/Regulatory/Public-Notices/>. A hard copy of the full prospectus is available to the public for review upon request. This prospectus provides a summary of the information regarding the proposed statewide UMBI and Tunnel Road Mitigation Bank in accordance with the Department of Defense/Environmental Protection Agency Final Rule on Compensatory Mitigation for Losses of Aquatic Resources (33 CFR Parts 325 and 332 and 40 CFR Part 230).

Oversight of this Mitigation Bank will be undertaken by the Pennsylvania Interagency Review Team (IRT), which is comprised of Federal and State regulatory and resource agencies. The Baltimore District, U.S. Army Corps of Engineers serves as chair of the IRT, and the Pennsylvania Department of Environmental Protection serves as co-chair the IRT.

APPLICANT/BANK SPONSOR: Land Reclamation Group
Attn: Michael Barrick
632 Hunt Valley Circle
New Kensington, Pennsylvania 15068

WATERWAY AND LOCATION OF THE PROPOSED WORK: The proposed Tunnel Road Mitigation Bank is located in Allegheny Township, Somerset County, Pennsylvania (39.969672, -78.793430). The physical mitigation bank site address is 449 Tunnel Road, New Baltimore, Pennsylvania, 15553. The bank sponsor proposes to use approximately 7 acres for the establishment of the mitigation bank.

BANK DESCRIPTION: The proposed Tunnel Road Mitigation Bank would provide compensatory mitigation for unavoidable wetland and stream channel impacts authorized by the Corps. The proposed mitigation bank would involve the re-establishment of 5.14 acres of palustrine emergent, scrub-shrub and forested wetlands, and the enhancement of 2.34 acres of wetlands into palustrine scrub-shrub wetlands. The proposed mitigation bank also involves the enhancement of 3,580 linear feet of two degraded perennial stream channels: Three Lick Run and an unnamed tributary to Three Lick Run. The approximate 7 acre mitigation bank site is proposed to receive long-term protection through a Conservation Easement. The proposed geographic service area for the Tunnel Road Mitigation Bank is the six digit 020503 HUC Lower Susquehanna River watershed, including five subbasins corresponding to the Pennsylvania State Water Plan: the Upper Central Susquehanna River Subbasin (5); Lower Central Susquehanna River Subbasin (6), Lower Susquehanna River Subbasin (7); Upper Juniata River Subbasin (11); and the Lower Juniata River Subbasin (12).

WORK REQUIRING DEPARTMENT OF THE ARMY AUTHORIZATION: A Clean Water Act jurisdictional determination has not been performed for the proposed 7 acre mitigation bank site. The mitigation bank construction may permanently and/or temporarily impact potential jurisdictional waters and wetlands through the discharge of dredged and/or fill material, including grading activities. A preliminary review indicates that the proposed work may qualify for Corps authorization under the Pennsylvania State Programmatic General Permit-5 (PASPGP-5) or Nationwide Permit (NWP) #27 (Aquatic Habitat Restoration, Establishment, and Enhancement Activities). The proposed work must receive approval by the Corps prior to construction activities.

The purpose of the proposed statewide UMBI and Tunnel Road Mitigation Bank is to provide compensatory mitigation for future unavoidable impacts to aquatic resources that result from activities permitted by the Corps under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. The mitigation bank would be used to comply with special conditions for compensatory mitigation requirements of permitted projects by providing compensation for authorized aquatic resource impacts. The mitigation bank may only be used for

future projects after all appropriate and practicable steps to avoid and minimize adverse impacts to aquatic resources, including wetlands and streams, have been demonstrated. Remaining unavoidable aquatic resource impacts must be compensated to the extent appropriate and practicable. The utilization of approved and established mitigation banks with available credits is given preference to other forms of compensatory mitigation in the hierarchy of potential mitigation options as contained in the Final Rule on Compensatory Mitigation for Losses of Aquatic Resources.

The final mitigation banking instrument does not provide ultimate Department of the Army authorization for specific future projects impacting waters of the United States; exclude such future projects from any applicable statutory or regulatory requirements; or preauthorize the use of credits from the bank for any particular project. The Corps provides no guarantee that any particular individual permit or general permit will be granted authorization to use this Mitigation Bank to compensate for unavoidable aquatic resource impacts associated with a proposed permit, even though compensatory mitigation may be available within the defined service area.

The decision whether to approve this mitigation bank and issue a permit for impacts to waters of the United States will be based on an evaluation of the probable impacts, including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit, which reasonable may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors, which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are conservation, economic, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, and consideration of property ownership and in general, the needs and welfare of the people.

A preliminary review of this application indicates that the proposed work will not affect listed species or their critical habitat pursuant to Section 7 of the Endangered Species Act as amended. As the evaluation of this proposal continues, additional information may become available which could modify this preliminary determination. Review of the latest published version of the National Register of Historic Places indicates that no registered properties listed as eligible for inclusion therein are located at the site of the proposed work. Currently unknown archeological, scientific, prehistoric, or historical data may be lost or destroyed by the work to be accomplished under the requested permit for the mitigation bank construction. As the evaluation of this proposal continues, additional information may become available which could modify this preliminary determination.

The Corps of Engineers is soliciting comments from the public; federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to approve the mitigation bank, and issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental

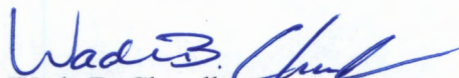
Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments provided will become part of the public record for this action. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity. Written comments concerning the work described above related to the factors listed above or other pertinent factors must be received by the District Engineer, U.S. Army Corps of Engineers, Carlisle Regulatory Field Office, 401 East Louther Street, Suite 205, Carlisle, Pennsylvania, 17013, within the comment period as specified above to receive consideration.

The applicant must obtain any state or local government permits which may be required.

If you have any questions concerning this matter, please contact Mr. Michael Danko, Baltimore District, U.S. Army Corps of Engineers at (717) 249-8730 (mike.danko@usace.army.mil).

It is requested that you communicate the foregoing information concerning the proposed work to any persons known by you to be interested and not being known to this office, who did not receive a copy of this notice.

FOR THE DISTRICT ENGINEER


Wade B. Chandler
Acting Chief, Regulatory Branch

LRG Aquatic Resource Mitigation Umbrella Instrument

June 2017



Land Reclamation Group
632 Hunt Valley Circle
New Kensington, PA 15068

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SECTION 1: LRG AQUATIC RESOURCES MITIGATION UMBRELLA INSTRUMENT

I. INTRODUCTION

A. PURPOSE

The Land Reclamation Group (LRG) Umbrella Mitigation Banking Instrument (UMBI) will provide a federal mechanism for the early identification of wetland mitigation projects statewide and make available early planning to locate, assess, quantify, construct and monitor sites before projects needing compensatory mitigation are built. The primary goal of the LRG-UMBI is to restore, enhance, create and/or preserve riparian systems, streams, and contiguous wetland and upland buffer corridors and their functions and values to compensate for unavoidable direct, indirect/secondary, and temporary wetland and stream impacts for proposed developer-related projects. These activities shall be in accordance with Sections 404/401 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, PA DEP Chapter 105: Dam Safety and Waterway management, and the use of LRG-UMBI-generated credits used in circumstances deemed appropriate by the Corps after consultation, through the permit review process, with resource agencies. The LRG-UMBI should also help streamline the regulatory wetland mitigation protocols by providing agency pre-approved sites with specific service areas for credit withdrawal. Ultimately, the LRG-UMBI will provide superior replacement of wetland functions and values on watershed based wetland resource compensation compared to conventional permittee responsible mitigation. This will be accomplished by in-depth watershed evaluation, mitigation site feasibility studies, early planning for large mitigation projects, careful financial analysis and cost benefit comparisons.

The LRG-UMBI sets forth guidelines and responsibilities for the establishment, use, operation, maintenance, “close-out” and transition of ownership of the Sponsor’s Banking Instrument and future Bank Sites added to the instrument through amendments. The LRG-UMBI shall be used for compensatory mitigation banking to provide mitigation for unavoidable direct, indirect/secondary, and temporary impacts to wetlands, streams, and riparian corridors throughout the Commonwealth of Pennsylvania. The Sponsor will provide a service to permittees whose impacts to the waters of the United States authorized under Sections 404/401 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, DEP Chapter 105, provided such use has met all applicable requirements and is authorized by the appropriate authority may be mitigated with credits from the LRG-UMBI.

B. USE OF CREDITS

Use of credits from the LRG Umbrella Mitigation Bank are used to offset direct, indirect, secondary, and temporary wetland and stream impacts authorized by Clean Water Act permits must be in compliance with the Clean Water Act and implementing regulations, including, but not limited to the 404(b)(1) Guidelines, the National Environmental Policy Act (NEPA), PA DEP Chapter 105, and all other applicable federal and State legislation, rules, and regulations. This agreement has been drafted following the guidelines set forth in the U. S Army Corps of Engineers (Corps)(33 CFR Part 332) and Environmental Protection Agency’s (EPA)(40 CFR Part 230) Compensatory Mitigation for Losses of Aquatic Resources (hereafter “the Rule”). This agreement

shall incorporate and follow guidelines to be set out in future amendments to these documents as appropriate.

C. IRT REVIEW TEAM

Coordination with the Army Corps of Engineers (ACOE) is required to establish a water resources mitigation bank. The ACOE will coordinate with the IRT and shall be chaired by a representative of the U.S. Army Corps of Engineers. The IRT shall monitor the accounting ledger for the Umbrella Mitigation Bank. The IRT may consist of the following but may be modified in coordination with the IRT Chair:

1. USACE, Baltimore District, Chair;
2. USACE, Pittsburgh District, Chair;
3. USACE, Philadelphia District, Chair;
4. PADEP, Chair;
5. EPA;
6. USFWS;
7. NRCS;
8. PGC;
9. PFBC;
10. NOAA-NMFS;
11. PADCNR;
12. PHMC

The IRT is responsible for reviewing Site Specific Prospectus, Site Specific Mitigation Plans and any LRG-UMBI Amendments that may be required. The IRT shall also review monitoring and accounting reports for individual Bank Sites as described below. In addition, the IRT shall review proposals for remedial actions proposed by the Sponsor or any of the agencies represented on the IRT. The roles and responsibilities of the IRT are more fully set forth in the Rule, and are incorporated herein by reference. The Chair shall attempt to reach consensus on items submitted by the sponsor for review.

D. BANK SITES AND MITIGATION PLANS

Sponsor retains legal rights to develop or sponsor aquatic resource mitigation projects throughout the Commonwealth of Pennsylvania to satisfy Sections 404/401, Section 10, and Chapter 105 permitting requirements. Mitigation projects included as part of the LRG-UMBI shall be called Bank Sites. A Bank Site may include one or more parcels of land and one or more forms/types of mitigation (wetlands, streams, restoration, creation, enhancement, preservation, etc.). Each Bank Site shall be subject to the terms of the UMBI as well as a site specific UMBI Amendment, as necessary. The need for supplemental site-specific information shall be addressed on a case-by-case basis through individual Site-Specific Mitigation Plans and MUMBI Amendments submitted to the IRT for each respective Bank Site for approval. These Site Specific Mitigation Plans shall be prepared per the mitigation guidelines specified in the Rule [CFR 332.4(c)(2)-(14)] and include the following:

The Mitigation Site Plan(s) will include the following, at a minimum:

1. Objectives: A description of the resource type(s) and amount(s) that will be provided including acreage and linear footage of the aquatic resource, the method of compensation (restoration,

rehabilitation, establishment, enhancement, or preservation/conservation etc.), and how the anticipated functions of the mitigation project will address watershed needs.

2. Site selection: A description of the factors considered during the site selection process (see 33 CFR 332.3(d)). This should include consideration of watershed needs, onsite alternatives where applicable, and practicability of accomplishing ecologically self-sustaining aquatic resource restoration, rehabilitation, creation, enhancement, and/or preservation at the mitigation project site. The description should include hydrologic characteristics, soil characteristics, whether the site is contiguous or connected to other aquatic areas, consideration of real estate interests in the Mitigation Bank Site, consistency with local requirements, considerations of rare, threatened, or endangered species, water quality needs of the designated impaired waters, removal of barriers to fish passage, and the foreseeable effects of the project.
3. Site protection instrument: A description of the legal arrangements and instrument including site ownership that will be used to ensure the long-term protection of the mitigation project site. The instrument must meet the requirements of 33 CFR 332.7(a), and a must be approved by the District Engineer.
4. Baseline information: A description of the ecological characteristics of the proposed Mitigation Bank Site. This may include descriptions of historic and existing plant communities, historic and existing hydrology, soil conditions, acreage and cover type descriptions, boundary survey, a map showing the locations of the Mitigation Site(s) or the geographic coordinates for those site(s), and other characteristics appropriate to the type of resource proposed as compensation. The baseline information should include a delineation of waters of the United States on the proposed mitigation project site. When considering stream restoration, it should include important information such as a survey of channel cross-section, form, and profile indicative of each stream type, condition, class or order, as determined in the field or reference reach that will be part of the Mitigation Plan.
5. Determination of credits: A description of the number and type of resource credits to be generated as a result of the functional improvements of the project will be provided including a brief explanation of the rationale for this determination.
6. Mitigation Work Plan: Detailed specifications and descriptions for the mitigation project, including: the geographic boundaries of the project; construction methods, timing, and sequence; sources of water, including connections to existing waters of the United States; methods for establishing the desired plant community; plans to control invasive species; proposed grading plan, including elevations and slopes of substrates; soil management; and erosion control measures. For stream mitigation projects, the mitigation work plan may also include other relevant information, such as plan form geometry, channel form (e.g., typical channel cross-sections), watershed size, design discharge, and riparian area plantings.
7. Initial Monitoring Period Budget: A budget and schedule of maintenance and monitoring requirements to ensure the continued viability of the resource once initial construction is completed.
8. Performance standards: Ecologically-based standards that will be used to determine whether the mitigation project is achieving its objectives. Further detail regarding performance standards is included in Exhibit B.
9. Monitoring requirements: Where possible, monitoring requirements for the Mitigation Site Plan will refer to the standard set in the LRG-UMBI, except in unique scenarios where the Sponsor and

IRT determine differently. In the case of the latter, a description of parameters monitored to determine whether the mitigation project is on track to meet performance standards will be added to the Mitigation Site Plan. Further detail regarding monitoring requirements are included in Exhibit D.

10. Long-term Management Plan: A description of how the mitigation project will be managed after performance standards have been achieved to ensure the long-term sustainability of the resource, including long-term financing mechanisms and the party responsible for long-term management.
11. Adaptive Management Plan: A management strategy to address unforeseen changes in site conditions or other components of the mitigation project, including the party or parties responsible for implementing adaptive management measures.
12. Financial Assurances: A financial plan required for contingencies associated with the Mitigation Site Plan based upon the standards set forth in Section 1 Part III- D of this instrument. The standards are to be used except in unique scenarios where the Sponsor and IRT determine differently. In the case of the latter scenario, a description of financial assurances will be added detailing how they are sufficient to ensure a high level of confidence that the mitigation project will be successfully completed in accordance with its performance standards.

The Sponsor shall provide sufficient Financial Assurances to ensure that aquatic functions will be restored, established, and/or maintained at each Mitigation Bank Site. The amount and form of Financial Assurances for each mitigation site must be approved by the IRT as part of the Mitigation Site Plan review. Documentation of the estimated amount may be required, and the final amount requires approval by the IRT. Release of funds pursuant to this instrument will be approved by the IRT, acting through the Chair(s), after review and approval of a Monitoring Report. Complete satisfaction and release of the Financial Assurances may only occur if the submitted report demonstrates, to the satisfaction of the IRT, that specific Performance Standards (as stated herein) have been met.

13. Service Area: A description, basis for justification, and map of the proposed Service Area of each Mitigation Bank Site conforming with the terms herein.
14. Credit Release Schedule: A credit release schedule which is tied to achievement of specific milestones conforming with the terms set forth within Exhibit C.

Other information: The IRT may require additional information as necessary to determine the appropriateness, feasibility, and practicability of the mitigation project. Additionally, individual modification or exceptions may be required to suit the local requirements of an individual watershed and will be considered on an as-needed basis in the addendum.

E. LOCATION AND OWNERSHIP

Under the LRG-UMBI, the sponsor shall present project locations to the IRT prior to an amendment of the LRG-UMBI. The site may be owned by a third party under the LRG-UMBI but the Sponsor shall be responsible for the restoration, enhancement, creation and/or preservation of aquatic resources and associated uplands in Pennsylvania. The Sponsor will be responsible for the provisions of this UMBI, and the protection of these systems in perpetuity. The Sponsor shall ensure each Bank Site reaches its intended condition based on the approved success criteria before the Corps deems the project successful and releases any remaining credits. At a minimum, Sponsor shall record a conservation easement for each Bank Site and manage the site in perpetuity. In the

event the Sponsor makes an agreement with a conservancy for a Bank Site, the easement shall include provisions that allow the Bank Site to be transferred to a conservancy for protection in perpetuity, upon fulfillment of project objectives.

F. BASELINE CONDITIONS

Each Bank Site (containing appropriate buffers) proposed for inclusion in the LRG-UMBI shall be submitted as an amendment to this document (Site Specific Mitigation Plan/ UMBI Amendment). A detailed description of the baseline conditions (pre-mitigation) for each Bank Site shall be contained in the Site-Specific Mitigation Plans, also referred to as UMBI Amendments to this document, to be provided to the IRT for approval of Bank Sites. The total existing acreage and/or linear footage for each aquatic resource shall be included in the Site-Specific Mitigation Plan along with a description of any adjacent buffers. This information shall include a detailed discussion of areas within the proposed Bank Site that are amenable to restoration, enhancement, creation, or preservation based upon the ecological suitability of a site for achieving the purpose of the LRG-UMBI.

II. AUTHORITIES

A. AUTHORIZATION PROVIDED

The establishment, use, operation and maintenance of the LRG-UMBI are carried out in accordance with the following authorities:

1. Clean Water Act (33 USC 1251 et seq.);
2. Rivers and Harbors Act (33 USC 403);
3. Fish and Wildlife Coordination Act (16 USC 661 et seq.);
4. Regulatory Programs of the Corps of Engineers, Final Rule (33 CFR Parts 320-332);
5. Guidelines for Specification of Disposal Sites for Dredged and Fill Material(40 CFR Part 230);
6. Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army concerning the Determination of Mitigation Under Clean Water Act, Section 404 (b)(1) Guidelines (February 6, 1990);
7. Regulatory Guidance Letter No. 05-01. U.S. Army Corps of Engineers, February 14, 2005;
8. Compensatory Mitigation for Losses of Aquatic Resources; Final Rule. 33 CFR Parts 325 and 332, Department of the Army, Corps of Engineers and 40 CFR Part 230, Environmental Protection Agency, April 10, 2008;
9. Regulatory Guidance Letter No. 08-03. U.S. Army Corps of Engineers, October 10, 2008;
10. Pennsylvania Department of Environmental Protection, Chapters 102, 105, and 106 regulatory programs;
11. Pennsylvania State Programmatic General Permits (PASPGP) and the requirements of Title 25 PA Code 105 rules and regulations.

Any future applicable revisions, clarifications and updates of the above statutes and guidance documents. That is, as documents are prepared pursuant to this agreement, they shall conform to the standards or guidelines in place at the time of submission, not necessarily at the time the LRG-UMBI was approved.

B. AUTHORITY OF THE CORP

The Corps the official lead chair of the IRT shall be responsible for establishing the IRT designating Points of Contact (POCs) for the Corps and the IRT. After consultation with the appropriate federal and state review agencies through the permit review process, the Corps shall make final decisions concerning the amount and type of compensatory mitigation to be required for unavoidable, permitted wetland and stream impacts (direct, indirect, and temporary), and whether the use of credits from the LRG-UMBI is appropriate and, if so, the amount and type of credits necessary to offset those impacts.

The IRT members shall review the Site-Specific Mitigation Plans and LRG-UMBI. Amendments for each Bank Site proposed to be added to the LRG-UMBI. The Corps shall request additional technical resources, as needed to assist in performing their technical evaluation of Site Specific Mitigation Plans.

III. GENERAL PROVISIONS

A. DEFINITIONS

1. **Adaptive Management** means an approach to natural resource management which incorporates changes to management practices, including corrective actions as determined to be appropriate by the IRT in discussion with the Bank Sponsor [Bank Name] Aquatic Resources Bank and/or the Property Owner, as appropriate, based upon Bank monitoring and annual report results, and the IRT review of overall Bank performance and compliance.
2. **Bank Establishment Date** is the date determined pursuant to Section 1 Part III-C-8, when the Bank is considered established and Transfer of Credits may begin.
3. **Catastrophic Event** shall mean an unforeseen event, such as the impact of a vehicle or falling aircraft, which has a material and detrimental impact on the Bank Property, and over which neither the Bank Sponsor nor the Property Owner has control.
4. **Conservation Easement** means an instrument that protects the resources for perpetuity.
5. **Credits** are units of measure representing the accrual, attainment, restoration, or protection of the Covered Species and Conservation Values on the Bank Property. One Credit is equivalent to one square foot or linear foot based on the resources, or as otherwise defined in Section 1 Part III-C-8.
6. **Credit Release** means an action by the Sponsor and the IRT to make specified Credits available for transfer pursuant to the LRG-UMBI.
7. **Endowment Deposit** is the deposit or series of deposits made or required to be made by the Bank Sponsor to fully fund the initial Endowment Principal.
8. **Endowment Fund** is a sum of money, held by the Endowment Fund Manager, to provide income to fund perpetual management, maintenance, monitoring, and other activities on the Bank Property consistent with the Long-term Management Plan. The term “Endowment Fund”

as used in this LRG-UMBI shall refer to the Endowment Deposit and all interest, dividends, other earnings, additions and appreciation thereon.

9. **Endowment Fund Manager** means an independent third-party conservation organization (non-profit), or such other similarly qualified entity, selected by the [Bank Name] Conservation Bank. The endowment manager is responsible for holding, managing, and disbursing the Endowment Fund in accordance with Section 1 Part III-D-3.
12. **Endowment Principal** means that portion of the Endowment Fund that is nonwasting and that is to be maintained and managed in perpetuity to generate earnings and appreciation in value for use in funding perpetual management, maintenance, monitoring, and other activities as required by the Long-term Management Plan. Endowment Principal shall consist of the Endowment Deposit and any additions to the principal that are made from earnings, appreciation in value or subsequent deposits for the purpose of compensating for inflation and ensuring the real value of the principal does not decline over time.
13. **Force Majeure** shall mean war, insurrection, riot or other civil disorder, flood, earthquake, fire, disease, governmental restriction or the failure by any governmental agency to issue any requisite permit or authority, or any injunction or other enforceable order of any court of competent jurisdiction, which has a material and detrimental impact on the Bank or the Bank Property and over which neither the Bank Sponsor nor the Property Owner has control; provided, however, that (i) a riot or other civil disorder shall constitute an event of Force Majeure only if the event has broad regional impacts and is not endemic to the Bank Property and its immediate locale; (ii) a flood shall be considered an event of Force Majeure only if it is greater than a presently projected 100-year flood, where “flood” refers to a runoff event; (iii) disease shall constitute an event of Force Majeure only if such event has broad regional impact and is not endemic to the Bank Property and its immediate locale; and (iv) governmental restriction or the failure by any governmental agency to issue any requisite permit or authority, or any injunction or other enforceable order of any court of competent jurisdiction shall not constitute an event of Force Majeure unless there is no other feasible means of Remedial Action.
14. **Interim Management Period** means the period from the Bank Establishment Date until the first anniversary of the full funding of the Endowment Fund has occurred and all the Performance Standards in the Bank Management and Monitoring Documents have been met.
15. **Interim Management Plan** found in Section 1 Part III-D-2 that describes the management, monitoring, Adaptive Management, reporting and other activities to be implemented by the Bank Sponsor during the Interim Management Period. [Bank Name]
16. **Interim Management Security** is the financial assurance specified in Section 1 Part III-D-2 and Exhibit H, to be provided by the Bank Sponsor to guarantee the implementation of the Interim Management Plan.
17. **Long-term Management Period** means the period beginning upon conclusion of the Interim Management Period and continuing in perpetuity, during which the Bank Property is to be managed, monitored and maintained pursuant to the Long-term Management Plan.

18. **Long-term Management Plan** in Section 1 Part III-D-3 that is intended to ensure the Bank Property is managed, monitored and maintained in perpetuity to conserve and protect its Covered Species and Conservation Values.
19. **Performance Standards** means observable or measurable administrative and ecological (physical, chemical, or biological) attributes that are used to determine if a compensatory mitigation project meets the agreed upon conservation objectives identified in a mitigation instrument or the conservation measures proposed as part of a permitted or otherwise authorized action. Performance criteria are developed to measure success of habitat establishment or restoration at a mitigation site, as well as for long-term performance of habitat. The latter are tied to long-term management objectives and require less intensive monitoring over the long-term.
20. **Perpetuity** endless or infinitely long duration or existence; permanent.
21. **Preservation** means the protection and management of existing resources for the species that would not otherwise be protected through removal of a threat to, or preventing the decline of, the resources to compensate for the loss of the same species or resources elsewhere.
22. **Property Assessment and Assurance** means the written Property evaluation and assurance completed by the Sponsor and attached in Section 2 Exhibit C.
23. **Property Owner** means the owner(s) of fee simple title to the Bank Property.
24. **Remedial Action** means any corrective measures which the Bank Sponsor or Property Owner is required to take to ameliorate any injury or adverse impact to the Bank Property as preserved, restored or enhanced or as a result of a failure to achieve the Performance Standards.
25. **Resources** (*resources of concern*)—fish, wildlife, plants, and their habitats for which the IRT has authority to recommend or require the mitigation of impacts resulting from proposed actions.
26. **Service Area** means the geographic area(s) within which impacts to resources that occur may be mitigated or compensated through Credits from the Bank.
27. **Transfer** means the use, sale, or conveyance of Credits by the Bank Sponsor.
28. **Trustee** an organization to whom property is legally committed to be administered for the benefit of a beneficiary.
29. **Unlawful Act** shall mean the unlawful act of any person or entity other than the Bank Sponsor or Property Owner and shall include an event or series of events, such as the intentional release within the Bank Property, or any connected watercourse, of any Hazardous Substance, or the discharge of such a substance in violation of a statute, ordinance, regulation or permit, which event or series of events has a material and detrimental impact on the Bank Property.

B. ESTABLISHMENT THE AQUATIC RESOURCES LRG-UMBI AND BANK SITES

1. Establishment Of The LRG-UMBI:

Sponsor shall obtain all appropriate environmental documentation, permits, or other authorizations needed to establish and maintain the LRG-UMBI. This UMBI does not fulfill or substitute for such authorization. This UMBI fulfills authorization for establishment, use, operation, and maintenance of an LRG-UMBI to be administered by Sponsor pursuant to the Rule.

2. Establishment of Bank Sites And LRG-UMBI Amendments:

Sponsor shall obtain all appropriate environmental documentation, permits, or other authorizations needed to establish and maintain the Bank Sites. This LRG-UMBI does not fulfill or substitute for such authorization. This LRG-UMBI and LRG-UMBI Amendments do fulfill authorization for the establishment, use, operation and maintenance of Bank Sites to be administered via the LRG-UMBI pursuant to the Rule.

3. Perpetual Protection/ Real Estate Provisions:

The Sponsor shall record a Site Protection Instrument on each Mitigation Bank Site and provide a copy of the recorded instrument to the IRT prior to sale of any Credits in favor of any permittee. The Sponsor shall receive approval by the IRT prior to recording a Site Protection Instrument. The Site Protection Instrument shall be recorded in the chain of title for the Mitigation Bank Site property and ensure the right of ingress and egress for the Bank Sponsor, IRT, and Long-Term Steward of the Mitigation Bank Site. Sample Site Protection Instruments are attached in Exhibits F. A copy of the recorded document shall be provided to the IRT Chairs within 30 days of recordation. Notwithstanding anything in this Instrument or any related documents or Agreements, such as the Mitigation Site Plan, no Credits will be released or debited or credited until the Chairs receive proof of recordation of approved Site Protection Instrument on the portions of the Mitigation Bank Sites over which Credits are sought.

Each Site Protection Instrument shall contain a provision requiring the Sponsor or Long-Term Steward to provide the Chairs with 60 days advance notice before any action is taken to void or modify the Instrument, management plan, or other long-term protection mechanism. The Site Protection Instrument, management plan, or other long-term protection mechanism may not be altered, amended, modified, vacated or terminated in whole or in part in any way without the express written approval of the IRT, acting through the Chairs.

4. Assumption Of Legal Responsibility:

Sponsor will be responsible for following the protocols and procedures established in this instrument for the development of dedicated bank sites statewide for use on transportation projects. Sponsor will comply with the 33 CFR Part 332, Compensatory Mitigation for Losses of Aquatic Resources; Final Rule (“Mitigation Rule”) for the establishment and management of mitigation banks.

C. OPERATION OF AQUATIC RECOURSES MITIGATION BANK SITES

1. Conservation Bank Geographic Service Area

The geographic service area of the LRG-UMBI shall be statewide within the Commonwealth of Pennsylvania which means that sites may be proposed anywhere within the state. Banking Sites will be sited as needed to compensate for the Sponsor's future requirements that might occur within each area of the state water plan and federal 8 digit hydrologic unit. (Figure 1). The service area for each specific bank site will be determined and assigned according to the 8 digit HUC in which a Bank Site is located. In some instances multiple HUC's and watersheds within the State Watershed Plan will be assigned to a banking site based upon location, watershed, wetland functions and values and biological ecosystem/habitat rarity and/or statewide importance. Service Areas will be defined by the mapped Hydrologic Units/ State Watershed Plan of Pennsylvania. Each Bank Site will provide mitigation within one or more 8 digit HUC and Watershed within the State watershed plan, as defined in each Site Specific Mitigation Plan. Use of a Bank Site to compensate for impacts beyond the geographic Service Area may be considered by the IRT on a case-by-case basis.

2. Site Selection Criteria

The following guidelines will be used to determine if a site meets the qualifications for inclusion in the LRG-UMBI. A candidate site must be assessed in relation to these requirements in a Pre-Application Prospectus. The more criteria that are met, the more appropriate the site is likely to be for addition to the LRG-UMBI.

- A. Mitigation site has excellent potential for wetland restoration, enhancement, and/or creation.
- B. For preservation parcels, the site is under threat from degradation in the next 20 years and contains both aquatic resources and healthy upland buffers.
- C. Project replaces or protects those wetland types lost in the biophysical region.
- D. Mitigation parcel is connected to or in close proximity to protected lands held by a stewardship organization in the interest of maintaining and preserving habitat connectivity.
- E. Mitigation site is in a Focus Area. It has high or unique natural resource value, and/or protects a drinking water supply.
- F. Site supports regional conservation initiatives, including priorities of Regional Planning Organizations and local land trusts.
- G. Mitigation site is feasible regarding ease of acquisition, construction, cost, achieving success, and meeting regulatory bank requirements.
- H. Site provides a wide selection of wetland types and related functions and values, including habitat diversity.
- I. Project has local support from municipalities, residents, and abutters.

3. Pre-Application Prospectus

A Pre-application Prospectus shall be developed by Sponsor and submitted to the IRT for each Bank Site. To facilitate the processing of Bank Sites from Pre-application through "close out", procedures have been developed as part of the Rule.

In summary, a Pre-application Prospectus shall contain information such as:

- A. Location of the site including maps, watershed.
- B. Site condition, including present/recent land use and adjacent area land use.

- C. Current zoning and ownership for adjacent properties.
- D. Ownership of the Bank Site, willingness of the seller, status of land exchange/control by LRG, encumbrances, utility easements, etc. on the land.
- E. Each type of mitigation proposed on the site and an estimate of existing and proposed acreage/linear footage based on wetland criteria and/or brief functional assessment.
- F. Preliminary Site Plan and explanation of how habitat functions will be improved/preserved.
- G. Specific objectives for the site.
- H. Service area for the site.
- I. Ecological suitability of the site to achieve the objectives.
- J. Adequate hydrology (for projects with restoration, creation, and enhancement).

4. Site Specific Mitigation Plans/LRG-UMBI Amendments:

Site Specific Mitigation Plans / LRG-UMBI Amendments shall be developed by Sponsor and submitted to the IRT for each proposed Bank Site. To facilitate the processing of Bank Sites from Pre-application through “close out,” procedures have been developed as part of the Rule. The Sponsor will submit a plan for a specific site to the IRT for their review. All sites submitted after the approval of the LRG-UMBI will follow the guidelines set forth in this instrument.

5. Phasing:

It is possible that, for unforeseen reasons, though not required or desired, the Bank Sites or portions thereof may be developed in several phases that shall be set forth in the Site Specific Mitigation Plans. Such phasing may be proposed in the Site Mitigation Plan to address potential government funding gaps. Scope and timing of each phase shall be at the discretion of Sponsor, subject to IRT approval. However, if the Sponsor develops mitigation areas in excess of the areas for which design has been approved by the IRT, it does so at its own risk. Credit release for a Bank Site or phases of a Bank Site will be based on the credit release schedule (or as modified in LRG-UMBI Amendment) and achievement of the defined Success Criteria contained in the Site Specific Mitigation Plan for the Bank Site or phase of a Bank Site.

Sponsor’s intent is to limit phasing on Bank Sites to the maximum extent practicable to minimize administrative efforts on behalf of the IRT and Sponsor. However, the parties to this agreement recognize that there may be instances where phasing is appropriate and preferred, such as when phased funding is involved, timing of availability of land from property owners on multiple tracts of land is phased, and when multiple types of mitigation (wetlands, streams) are included in a Bank Site. Should phasing be used on a Bank Site, each phase will individually be reviewed, tracked, monitored and have its credits released.

6. As-Built Report:

The Bank Sponsor agrees to submit an As-Built Report to the IRT within 60 days following completion of the grading for each Mitigation Bank Site or respective phase(s) of a Mitigation Bank Site if construction is to occur in defined development phases as described in the Mitigation Site Plan. The IRT will respond within 30 days receipt of the As-Built Report indicating receipt and acknowledging Approval or any request for additional information. The As-Built Report will depict the completed portions of the Mitigation Bank Site for that operational year, including a survey showing finished grades, the elevation of any constructed structures (e.g. berms, weirs, etc.), and will describe in detail any substantial deviations from the requirements described in the Mitigation Site Plan(s) submitted to the IRT in accordance with Exhibit A

The stream as-built information will be used as a comparative measure for stream channel stability and will be referenced in each Monitoring Report, in accordance with the terms found in Exhibit D.

7. Access to Bank Sites:

The members of the IRT will be allowed reasonable access to the Property of Bank Sites under control of the Sponsor for the purposes of inspection of the Bank Sites and compliance monitoring of the Site-Specific Mitigation Plans. The IRT will notify the Sponsor where possible that such access has been gained on a Bank Site. Any document transferring rights such as to a long-term steward must include the right of access for the IRT.

8. Establishment and Use of Credits:

Upon Establishment of the LRG-UMBI in accordance with this section of the Instrument, LRG may sell or convey credits to any Purchaser when the LRG-UMBI and the associated bank site are approved by the IRT.

LRG shall have the exclusive right to determine the price for any and all the credits. The sale price of Credits is considered proprietary and confidential business information and will not be disclosed in accordance with applicable laws.

Credits will be determined by the square foot for a wetland. They will be determined by the linear foot for stream projects. Buffers will be incorporated into the evaluation of the resources. Since the ACOE uses a Ratio-Based evaluation the sponsor will consider the buffer adjacent to the waters as a value and interpret it as an enhancement. This will provide an improvement or environmental lift.

When the Pennsylvania Function Based Aquatic Resource Compensation Protocol (Compensation Protocol), for wetlands and streams is implemented by the state as the standard operating procedure for evaluation of the resources, the Sponsor may update its credit calculations via an addendum to the mitigation site plan for each site. All projects proposed after an update shall use the latest version of the Compensation Protocol. If, for any reason, the Compensation Protocol is delayed, discontinued, or otherwise not in use the Sponsor may propose to use a linear foot or acreage based compensation system until such time as the Compensation Protocol is made available and approved for use collectively by the IRT and actively used in each agency's various field offices. Should the principal units for credits and debits become acres and linear feet, the compensation will take into account resource types and functions through the use of an alternative, existing, functional assessment methodology.

Mitigation credits available from the LRG-UMBI and its component Banking Sites, can be debited by applicable projects. Direct, indirect/secondary, and temporary wetland and stream impacts shall be computed using a method accepted by the parties to this agreement. Mitigation, including credits generated and utilized, will be tracked and reported separately for each Bank Site under the LRG-UMBI (See Exhibit E for credit tracking sheet). The necessary worksheets will be completed along with an explanation for the selection of those factors included in the calculations for each component Bank Site to determine credits. For each project that proposes to use the LRG-UMBI for mitigation, an individual assessment shall be computed based on, but not limited to, the most current version of the credit establishment guidance at the time of the 404, and DEP Chapter 105 permit applications. On a case-by-case basis, revised criteria for quantifying mitigation and credits/debits, if agreed to by the parties to this agreement, may be incorporated for individual Bank Sites through a LRG-UMBI Amendment.

The Sponsor is the only identified entity that can authorize the use of the mitigation (credits) from the LRG-UMBI with the IRT's written authorization.

Should the Sponsor determine it necessary to withdraw an approved Bank Site, or approved phases of a Bank Site, from which credits have not been debited from the LRG-UMBI the Sponsor shall notify the IRT of this need. The proposal to withdraw a Bank Site will be discussed by the IRT. The Sponsor shall present information leading up to the decision that a withdrawal is needed. The IRT shall provide the final decision regarding the request. Should credits have been withdrawn from a Bank Site, Sponsor agrees to continue to meet the obligations contained in the Site Specific Mitigation Plan/LRG-UMBI Amendment for that Bank Site area containing the credit used and to develop a proposal for how any used credits that are "lost" as a result of the withdrawal will be replaced.

The Sponsor has developed standards for the performance criteria however, due to the expected variability in remedial actions that might be required for individual Bank Sites, specific success criteria may be developed and submitted for each Bank Site, phase of a Bank Site or component added as part of the Site-Specific Mitigation Plan/LRG-UMBI Amendment. Final mitigation credit release from a Bank Site or phase of a Bank Site shall be expected to occur following completion of the appropriate monitoring period and achievement of approved success criteria contained in the Site-Specific Mitigation Plan. Monitoring, survival, and morphology goals and schedules shall be developed and submitted per each Site-Specific Mitigation Plan. Mitigation credit withdrawals from a Bank Site shall cease once an official "close-out" notification letter from the IRT has been issued.

Based upon the Rule, the Sponsor's State-Wide Umbrella Component Mitigation Bank may be an appropriate form of compensation for any projects that require Corps authorization.

It is anticipated by the parties to this agreement that use of mitigation shall be "in-kind" to the greatest extent practicable, for example, wetland and stream mitigation will be used to offset wetland and stream impacts, respectively.

The objective of this umbrella mitigation bank is to help insure no net loss of wetland function for unavoidable direct, secondary, and temporary impacts to aquatic resources in each service area. Generally, preservation-only bank sites will be used to supplement credits from non-preservation-only bank sites, an in-lieu fee payment, and/or permittee-responsible compensation that results in a gain in wetland functions.

Notwithstanding the above, all decisions concerning the appropriateness of using mitigation from the LRG-UMBI to offset impacts to aquatic resources as well as all decisions concerning the quantity and type of such mitigation to be used to offset impacts to wetland, streams, and other waters as authorized by Department of the Army permits, shall be made by the Corps, pursuant to Section 404 of the Clean Water Act and implementing regulations and guidance and DEP Chapter 105, after notice of any proposed use of the LRG-UMBI to the members of the IRT, and consultation with the members of the IRT concerning such use.

9. LRG-UMBI Crediting Method Credit Generation Definitions

Establishment- (Creation) The Credit for the sponsor is at a 1:1 Ratio

The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area and functions

Re-establishment- The credit for the Sponsor is a 1:1 ratio

Area that is constructed to be stream or wetland. Before construction the area was not stream or wetland. The area developed is a gain in aquatic resource area.

Rehabilitation Credit 1.5:1(Lifting 3 functions)

An area that is currently stream or wetland and three major functions are being restored or improved. Gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Enhancement Credit 2:1 (Lifting 2 functions), Credit 2.5:1 (Lifting 1 function)

An area that is currently stream or wetland and only one or two major functions listed above are being restored/ improved. Gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Preservation: Credit 10:1

High quality streams or wetlands under threat of development that are only being protected in perpetuity. No additional ground work is necessary.

10. Schedule of Credit Availability:

Upon submittal of all appropriate documentation by the Sponsor and subsequent approval by the Corps, in consultation with the other members of the IRT, it is anticipated that the credits generated by Bank Sites will become available for use by the Sponsor in accordance with the following described Standard Umbrella Bank Credit Release Schedules found in Exhibit C. The release schedules are conceptual and subject to modification based on project-specific considerations. The schedules may change based upon the existing site conditions; location; confidence in the project design; risk, etc.:

The schedule applies only to the extent the Sponsor documents acceptable survival and growth of planted vegetation, attainment of acceptable wetland/stream hydrology, and acceptable installation of any proposed watershed BMPs, as described under the success criteria in the monitoring section of the Site-Specific Mitigation Plan and Exhibit D. The final 10% of credits of a Bank Site will be available for withdrawal only upon a determination by the IRT of functional success as defined in the Site-Specific Mitigation Plan. All credit releases are at the determination of the IRT.

a. Wetland Crediting

The Sponsor will develop wetlands based upon the Cowardian Classification. All wetlands on a site will be evaluated based on the 1987 wetland delineation manual and the regional supplement depending on where the wetlands are constructed. Wetlands will be evaluated as follows:

- 1) Palustrine Forested Wetlands, PFO
- 2) Palustrine Shrub Wetlands, PSS
- 3) Palustrine Emergent, PEM
- 4) Open water less than 2 feet in depth, POW

Wetland credits have been determined based on the USACE/DEP typical replacement guidelines. The level of priority for the use of the credit will be as follows:

- 1) 1:1 mitigation for all habitat types (Ex 1 acre of PFO permitted lost for 1 acre of PFO)

- constructed for mitigation)
- 2) If the bank site does not have the required habitat type for mitigation the sponsor would have the opportunity to improve the habitat type with the required monitoring for that habitat type. (ex 1 acre PFO lost mitigated in at a PEM site where trees planted at a 2.5:1 due to the temporal and permanent loss of the forest)

The Sponsor will receive credit for development of various wetland habitat. As represented in Table 1 the sponsor will receive the typical credit for the creation of the various wetland types. If the sponsor restores or enhances a wetland from a less quality habitat to a higher quality habitat there is a different multiplier for the improvement to the wetland.

Table 1 Base Credits for Wetlands			
	Multiplier	Square foot	Credit
Creation	1	1	1
Re-Establishment / Restoration	1	1	1
Rehabilitation (3 Functional Lifts)	0.75	1	0.75
Enhancement (2 Functional lifts)	0.5	1	0.5
Enhancement (1 Functional lift)	0.25	1	0.25
Preservation	0.1	1	0.1

An example of the functional lifts under an enhancement would be as follows:

1. The diversity of the vegetation (Elimination of Reed Canary Grass)
2. Change of habitat from PEM to PSS or PFO
3. Providing protected a buffer around the mitigation site. At a minimum of 100 feet.

These lifts of function and value will provide additional water quality to the resource.

b. Stream Crediting

The sponsor plans to develop various stream habitat, a protection instrument, and riparian zones features which will cumulatively provide a total amount of credit for the site.

Based on the definitions from the Federal Rule the sponsor will determine to a certain level of enhancement for the stream mitigation site. Each mitigation technique will have various values to score the credits for the reach of stream based on the definition. The base credit is one foot for stream improvement equals one credit this is based on the improvement level defined by the definitions. Additionally, The sponsor will gain credit for Function and Value of the

improvements to the waterway. Credits will be based according to **Table 2**.

The base credit will provide credit to the sponsor for preservation of the property, and the type of improvement based on the definitions.

Table 2 Base Credits for Stream			
	Multiplier	LF	Credit
Creation	1	1	1
Re-Establishment / Restoration	1	1	1
Rehabilitation (3)	0.75	1	0.75
Enhancement (2)	0.5	1	0.5
Enhancement (1)	0.25	1	0.25
Preservation	0.1	1	0.1

11. MAINTENANCE / MONITORING OF BANK SITES

a. Monitoring

Sponsor agrees to perform all necessary work to monitor the Bank Sites (and if appropriate, phases of Bank Sites) and to demonstrate compliance with the Success Criteria established in this LRG-UMBI and the Site-Specific Mitigation Plan(s)/LRG-UMBI Amendments. Monitoring goals and schedules, based on the monitoring criteria outlined in the site-specific mitigation plan or other methods as agreed to by the IRT at the time the Site-Specific Mitigation Plan was developed, shall be developed and submitted for each Amendment to the LRG-UMBI. Monitoring procedures, duration, reporting criteria, report development and scope are included in more detail in Exhibit D.

b. Performance Standards

The IRT will use best professional judgment, visual observations, and monitoring reports to evaluate attainment of performance standards and in determining whether part of or the entire Bank is successful or whether corrective actions are warranted. Success will be determined on a plot, well, field, or cell basis. All of the following standards will be used to assess project success and must be achieved each monitoring year.

Performance standards should be consistent with site specific goals; therefore, performance standards will be developed for each wetland bank site on a site-specific basis. Performance standards for each site will address one or more of the following: Total delineated wetland acreage; acreage of wetland by wetland type; achievement of wetland functions benefiting the watershed; diversity of hydro-phytic vegetation; observed wildlife use/wildlife habitat; vegetative cover; hydrology; hydric soils; and invasive species control. Site specific performance measures will identify easily measurable and reasonably attainable ecologically based criteria to be used as a measure of the degree of success or failure of the wetland bank site to create the anticipated credits (such as Cowardin and the 1987 Wetland Delineation Manual Method).

Acreage by wetland type is utilized in the determination of credits available for release or withdrawal. A comparison of acreage of wetland by wetland type is also typically utilized as a performance measure. A standardized method for the identification of vegetative classes/wetland types is warranted to assure consistent and replicable assessment. A rapid assessment method utilizing percent cover will be applied in the determination of acreage by wetland type. Wetland type will be defined utilizing the commonly accepted wetland classification system developed for the U.S. Fish and Wildlife Service Cowardin et al. (1979). To assure an accurate assessment of PFO, PSS and PEM habitats, within each identified wetland community, vegetative strata (Tree, Sapling/Shrub, Herb and Woody Vine) as defined in the 1987 Corps of Engineers Wetlands Delineation Manual and related Regional Supplements will be identified.

1) Wetland Vegetation

The following performance standards shall be used for Wetland vegetative cover. All habitat areas shall have a minimum size of 0.05 acres. All plant communities must have a majority of facultative or wetter wetland plant indicator status each year monitored.

2) Stream Buffer Vegetation

The forested or shrub stream buffers sites will need to be established comparably to the wetland vegetation performance standards. The stream buffer will be monitored annually. Several standards will be evaluated for performance of the Streams success. LRG will monitor the buffer, evaluating the growth of the plants (Height) and success rate of plants (% survival). The goal for the survival is 70% for rooted plants and 50% for live stakes. Failure to meet this goal will require replanting of the unsuccessful plants to meet the goal of the proposed final habitat commitment. The final goal is to attain an 80% canopy coverage in forested buffer and a 90% canopy coverage for shrub coverage.

3) Stream Ecology

A base line evaluation will be developed using the Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol. The site evaluation will provide an Index score that will serve as a baseline to rate future evaluations against. A level of success will be determined on the post construction monitoring and review of the site, and the level of improvement within the channel. The measured environmental lift will provide measure to release credits based on the schedule in the instrument.

c. Long Term Management

Sponsor shall implement the long-term management measures described in the Site-Specific Mitigation Plan for each Bank Site.

At the end of the active monitoring period for each Bank Site, Sponsor reserves the right to transfer the property easements or deed of the Bank Site lands to a third party (if available and approved by the IRT). The third party may be a state agency such as the Pennsylvania Game Commission, PA DCNR or an appropriate Land Trust whose mission is to preserve/conservate the resources of Pennsylvania. Subsequently, this entity shall be responsible for managing the lands in perpetuity. If appropriate to ensure this protection and/or management in perpetuity, an endowment to the long-term steward may be required of the Sponsor.

d. Assurance of Success

Sponsor is responsible for assuring, as outlined in the Rule, the success of the restoration, creation, enhancement and preservation activities at the Bank Sites, and for the overall operation and management of the LRG-UMBI. Should a Bank Site or phase of a Bank Site be transferred to a land trust, non-profit with a conservation mission, or agency with a conservation mission, the organization will be required to assure the success of the Bank Site or phase of the Bank Site per this agreement, with the mechanism of assurance to be determined by the IRT. Financial assurances, other than documentation of adequate funding within the Sponsor, to cover construction, monitoring, and remediation are not typically required, nor anticipated to be required for typical Bank Sites, under the LRG-UMBI. However, the need for type of and amount of financial assurance required for an individual Bank Site meeting the unique criteria will be evaluated on a case-by-case basis per the Guidance and incorporated into the Bank Site LRG-UMBI Amendment/Site Specific Mitigation Plan. It will be the responsibility of the Sponsor to secure needed bank site funding through the work plan to cover all real estate acquisition, preliminary engineering, construction, construction engineering, post-construction monitoring, site remediation, long-term monitoring and potential stewardship costs.

e. Maintenance Provisions

Sponsor agrees to perform all necessary work in accordance with the provisions of the LRG-UMBI and approved Site-Specific Mitigation Plans/LRG-UMBI Amendments, to establish and maintain the Bank Sites until:

1. Credits have been exhausted or banking activity is voluntarily terminated with written notice by the Sponsor provided to the Corps and other members of the IRT;
2. It has been determined and agreed upon by the IRT that the debited Bank Site has satisfied all the conditions herein and in the Site-Specific Mitigation Plans.

Should the conditions described above be met based on Corps and the IRT review (after all comments received from the IRT members), the Corps shall issue a “close-out” letter to the Sponsor for a Bank Site or phase of a Bank Site. Upon receipt of the “close-out” letter, Sponsor will update the accounting ledger to reflect the new status. Following close-out, the Sponsor or an approved third party will conduct annual inspections to ensure performance standards continue to be met. If not, the Sponsor or the third party will address site specific problems and remediate after coordination with the IRT and approval from the Corps. During the year following remedial efforts, bi-annual inspections of remediation sites will be implemented to ensure compliance, with reports provided to the IRT for review and approval by the Corps.

f. Accounting Procedures

The Sponsor shall submit to the IRT an annual ledger report by December 15th of each monitoring year. An electronic version of this report shall be submitted to the IRT Chairs or uploaded to

RIBITS concurrently with this submittal. The report shall contain documentation of balance in credits and any financial assurances account referred to in Section 1Part III-D-6. The balance in this account (principal balance without earned interest) must match the amount required to be set aside in accordance with the Mitigation Site Plan minus any approved expenditures or distributions. An example of the Credit ledger to be kept is included below. Credits will be tracked according to habitat type. Since the Functional Ratio Method Credits are translatable to Compensation Protocol Credits, the Sponsor will submit a ledger in both formats, if requested. Otherwise, the Sponsor will default to the Functional Ratio Method ledger until the Compensation Protocol is approved.

All reports/ledgers shall identify mitigation debited by type for a particular project/permit (e.g., wetland, stream), and shall identify acres/linear feet, or other units of measure established for an individual Bank Site, as well as the cumulative total of debits used and remaining credits by type. All reports/ledgers shall include, for each reported debit, the Corps Permit ID number for which the mitigation was used.

The Sponsor shall submit to the IRT an annual financial report detailing the status of the financial assurances, such as the amount released of any bond and the balances of any escrow accounts.

g. Contingency/Adaptive Management and Remedial Plans

Contingency and remedial plans, consistent with those outlined in the most recent Guidance or future published revisions as appropriate, shall be developed for each Bank Site. These plans will be included in the Site-Specific Mitigation Plans. These plans shall establish the groundwork by which the Sponsor will proceed to correct deficiencies identified on a given Bank Site, as appropriate. In that remedial actions cannot be determined at this time or at the time of the preparation of the Site-Specific Mitigation Plan, Sponsor retains the right to propose and use amended remedial action plans, as appropriate, upon identification of remedial needs in the future after review by the IRT and approval by the Corps.

The Corps shall review the annual monitoring reports and may at any time, after consultation with the Sponsor and the IRT, direct the Sponsor to take remedial action at a Bank Site. Remedial action required by the Corps shall be designed to achieve the performance criteria specified above. Sponsor shall use its best effort to initiate the implementation of remedial actions at the first appropriate opportunity (for example, supplemental plantings will be completed during the first appropriate season).

In the event the Sponsor determines that remedial action may be necessary to achieve the required performance criteria at a Bank Site, it shall provide notice of such proposed remedial action to the Corps for distribution to all members of the IRT. No remedial actions shall be taken by the Sponsor, prior to the concurrence of the Corps in consultation with the IRT. Once a need for “major” remedial action is identified by the Sponsor and the IRT, the IRT will respond within 60 days on the plans proposed for remedial actions. “Major” shall be defined as a remedial action that could alter the goals of the Bank Site or require IRT concurrence on the affect the action may have on credits released to date. Should the Sponsor identify “minor” actions required that would not alter goals set forth in the Site Specific Mitigation Plan (herbicide treatment, invasive species removal, supplemental plantings, etc.), Sponsor shall conduct the work as needed and notify the IRT of the need for the remediation after the action is completed, such as in an annual monitoring report. It is understood that “emergency” remedial actions will be responded to with “urgency” by the parties to this agreement.

Sponsor may determine that adaptive management may be appropriate for individual Bank Sites. Sponsor shall notify the IRT on a case-by-case basis of this potential need. Sponsor and the IRT will discuss the merits of a proposal for adaptive management on a specific site at the next available meeting of the agencies. An adaptive management program will only be carried out by the Sponsor after review by the IRT and approval by the Corps.

h. Default

Should the IRT determine that the Sponsor is in material default of any provision of this Agreement, the IRT, may notify the Sponsor that the use of any credits will be suspended until the appropriate deficiencies have been remedied. Upon notice of such suspension, the Sponsor agrees to immediately cease the transfers of mitigation credits until the IRT authorizes the Sponsor that transfers may be resumed. Should the Sponsor remain in default, the IRT may terminate the LRG-UMBI and any subsequent bank operations. Upon termination, the Sponsor agrees to perform and fulfill all obligations under this agreement relating to credits that were transferred prior to termination.

i. Bank Closure

Once all the bank credits are debited from a bank site, the Sponsor will notify the IRT of its intentions to close the site. The Sponsor will contact the trustee, and arrange for property title transfer where applicable. The protection mechanisms outlined in the bank site's conservation easement shall remain with the site in perpetuity.

D. FINANCIAL ASSURANCES

1. Short Term Management Financial Assurances

The Sponsor will manage short-term financial assurances through a performance bond. LRG plans to develop stream and mitigation sites that do not require maintenance or monitoring to control the water on the site. The development of self-sustaining environmental systems that require minimal oversight and no human intervention is the goal of the sponsor. However, if the requirement of replanting shrubs, trees, stabilizing soils with seed or rock is required to complete the mitigation site the performance bond for the site could be utilized to attain the final performance goals of the mitigation site.

2. Interim Management/ Financial Assurances

Interim financial assurances will be upheld by the Sponsor in an amount adequate to fund management and operation of the mitigation site until long-term stewardship funds (i.e., endowment) are available. The amount is expected to be calculated based on the projected cost of managing and monitoring the mitigation site for a period of no less than 5 years after the long-term management endowment has been fully funded, to grant the endowment time to grow as a buffer against future market fluctuations. Interim financial assurances are intended to be phased out once the endowment fund becomes available and may be released to trustee or other financial assurance provider, or may be used to fund the initial years of long term management, as applicable. The mitigation instrument, habitat conservation plan or other federal permit must clearly specify the conditions under which the financial assurances are to be released to the trustee.

The following apply to short-term and interim financial assurances:

- a. Each form of financial assurance must include a provision that states the IRT will receive notification at least 120 days in advance of any termination or cancellation. For third-party assurance providers, this may take the form of a contractual requirement for the assurance provider to notify the IRT at least 120 days before the assurance is revoked or terminated.
- b. In the event a mitigation project has not met performance criteria as specified in the mitigation instrument or management plan, the financial assurance will be used for corrective action. Specific instructions for use must be included in the financial assurance instrument (i.e., letter of credit, performance bond, escrow account, casualty insurance, etc.). These funds will be spent in accordance with the provisions of the instrument. When a standby trust is used (e.g., performance bonds or letters of credit), all amounts paid by the financial assurance provider shall be deposited directly into the standby trust fund for distribution to the trustee in accordance with instructions in the mitigation enabling instrument, conservation easement, or other controlling document. Generally, the entity holding the easement or long-term management endowment is an appropriate designee.

3. Long-term Management/ Financial Assurances

Sponsor shall implement the long-term management measures described in the Site-Specific Mitigation Plan for each Bank Site.

At the end of the active monitoring period for each Bank Site, the Sponsor reserves the right to transfer the easements for the Bank Site lands to a third party (Trustee) (approved by the IRT). Subsequently, this entity shall be responsible for managing the lands in perpetuity. If appropriate to ensure protection and/or management in perpetuity, an endowment to the long-term steward may be required of the Sponsor.

Long-term financial assurances are required to ensure long-term stewardship of compensatory mitigation site. The Long term financial commitment in the form of an endowment will be established by the Sponsor for the Trustee.

Endowments will be funded over time only when the mitigation project is established in advance of its use as an offset, and the funding source is from the sale of mitigation credits. In cases of phased project a schedule and a target date for fully funding the endowment must be specified in the site-specific Mitigation plan. If a mitigation project endowment is not fully funded within 180 days after the final credits are sold, then the instrument must require 100% of all subsequent credit sales to be deposited into the escrow account until it is fully funded by the sponsor.

Endowments must be held by qualified third parties who are subject to approval by the IRT. LRG plans to work with a third-party endowment holder that must meet the following conditions:

- a. Hold, invest, and manage the endowment to the extent allowed by law and consistent with modern “prudent investor” and endowment law, such as the Uniform Prudent Management of Institutional Funds Act of 2006 (UPMIFA) or successor legislation. UPMIFA incorporates a general standard of prudent spending measured against the purpose of the fund and invites consideration of a wide array of other factors. For states that have not adopted UPMIFA, such as Pennsylvania, analogous state legislation (e.g., the Pennsylvania Uniform Trust Act) can be relied upon to achieve this purpose, and must be cited in the instrument.
- b. Disburse funds on a timely basis to meet the stewardship expenses of the entity holding the property easement.

- c. Use accounting standards consistent with standards promulgated by the Financial Accounting Standards Board or any successor entity (if a nonprofit) and with standards promulgated by the Governmental Accounting Standards Board or any successor entity (if a governmental entity).
- d. Provide the IRT with an annual fiscal report that contains at least the following elements:
 - i. Balance of each individual endowment at the beginning of the reporting period;
 - ii. Amount of any contribution to the endowment during the reporting period including, but not limited to gifts, grants, and contributions received;
 - iii. Net amounts of investment earnings, gains, and losses during the reporting period, including both realized and unrealized amounts;
 - iv. Amounts distributed during the reporting period that accomplish the purpose for which the endowment was established;
 - v. Administrative expenses charged to the endowment from internal or third

4. Assurance of Success of Longevity

The Sponsor is responsible for assuring, as outlined in the current Corps Regulations and Guidance, the success of the restoration, creation, enhancement and preservation activities at the Bank Site, and for the overall operation and management of the LRG-UMBI. Should a Bank Site or phase of a Bank Site be transferred to a land trust, non-profit with a conservation mission, or agency with a conservation mission, the organization will be required to assure the success of the Bank Site or phase of the Bank Site per this agreement, with the mechanism of assurance to be determined by the IRT. Financial assurances, other than documentation of adequate funding within the agency, to cover construction, monitoring, and remediation are not typically required, nor anticipated to be required for typical Bank Sites, for the LRG-UMBI. However, the need for type of and amount of financial assurance required for an individual Bank Site meeting the unique criteria will be evaluated on a case-by-case basis per the Guidance and incorporated into the Bank Site LRG-UMBI Amendment/Site Specific Mitigation Plan. It will be the responsibility of the Sponsor to secure needed bank site to cover all real estate acquisition, preliminary engineering, construction, construction engineering, post-construction monitoring, site remediation, long-term monitoring and potential stewardship costs.

5. Maintenance Provisions

Sponsor agrees to perform all necessary work in accordance with the provisions of the LRG-UMBI and approved Site-Specific Mitigation Plans/LRG-UMBI Amendments, to establish and maintain the Bank Sites until the following are completed:

- a. Credits have been exhausted or banking activity is voluntarily terminated with written notice by the Sponsor provided to the IRT; and
- b. It has been determined and agreed upon by the IRT that the debited Bank Site has satisfied all the conditions herein and in the Site-Specific Mitigation Plans. Should the conditions described above be met based on IRT (after all comments received), the IRT shall issue a “close-out” letter to the Sponsor for a Bank Site or phase of a Bank Site. Upon receipt of the “close-out” letter, Sponsor will update the accounting ledger to reflect the new status. Following close-out, the Sponsor or an approved third party will conduct annual inspections to ensure performance standards continue to be met. If the site is not meeting the performance standards, the Sponsor or the third party will address site specific problems and remediate after coordination and approval from the IRT. During the year following remedial efforts, bi-annual inspections of remediation sites will be implemented to ensure compliance, with reports provided to the PA Field office of the US FWS for review.

6. Accounting Procedures

Sponsor shall track mitigation credits and debits with a debiting sheet agreed to by both parties, annually reporting the LRG-UMBI status to the IRT, as set forth in the Maintenance/Monitoring of Bank Sites (Section III, C, 11) of this LRG-UMBI. Such tracking will include debits resulting from authorized impacts from authorized projects which were compensated for using the LRG-UMBI Bank site, and any mitigation credits accrued when success criteria are met as specified in the LRG-UMBI. A ledger for tracking debits, available credits, and permitted projects will be submitted to IRT. Sponsor shall use its best effort to submit the updated ledger within 60-days of an approved LRG-UMBI transaction. A copy of a sample accounting ledger/tracking format is included as Exhibit E. All reports/ledgers shall identify mitigation debited for a particular project/permit (e.g., Acreage of Habitat), and shall identify acres, or other units of measure established for an individual Bank Site, as well as the cumulative total of debits used and remaining credits. All reports/ledgers shall include, for each reported debit, the IRT, Permit ID number for which the mitigation was used.

E. ROLE OF THE IRT

1. Oversite

The IRT agrees to provide appropriate oversight in carrying out the provisions of this LRG-UMBI.

2. Best Efforts

The IRT agrees to use its best efforts to review and provide comments on all Pre-application Prospects Site Specific Mitigation Plans, monitoring reports, success criteria, credit review reports, and remedial action plans for the LRG-UMBI and Bank Sites within 60 days.

3. Compliance Inspections

For each Bank Site, the IRT and Sponsor (as appropriate), may conduct compliance inspections to verify credits available in the Bank Site and recommend corrective measures (if any) within 60 days of inspection until the terms and conditions of the Site-Specific Mitigation Plan/LRG-UMBI Amendment have been determined to be fully satisfied or until all credits have been debited, whichever is later.

4. Other Inspections

In coordination with the long-term steward, inspections may continue to be made by the Sponsor and the IRT after the site is “closed”.

F. MISCELLANEOUS

1. Validity

This LRG-UMBI shall become valid on the date of the last signatory’s signature on the accompanying concurrence memo/letter. This LRG-UMBI may be amended or modified with the written approval of all signatory parties.

2. Dispute Resolution

Should the Sponsor and IRT have any disputes pertaining to the LRG-UMBI and the bank sites contained within, the parties agree to resolve such disputes as follows:

A. reach consensus per the Guidance or

- B. Avail itself of other remedies that become appropriate in the future through published Corps guidelines (as an example, should the Corps permit appeals process allow for mitigation banks to use this process in the future)

3. Participation Termination

Any participant may terminate its participation in the Instrument with notice in writing. Termination shall be effective fourteen (14) days from placing said notices in the United States mail. Member withdrawal shall not affect any prior issuance of credits and all remaining parties shall continue to implement and enforce the terms of this LRG-UMBI and LRG-UMBI Amendments and Site Specific Mitigation Plans associated with Bank Sites. Except for termination as described above, this agreement may be modified only with the written agreement, through the Corps, of all remaining parties to this agreement at the time of the modification.

4. Force Majeure/Delays

Any delay or failure of the Sponsor shall not constitute a default hereunder if and to the extent that such delay or failure is primarily caused by any act, event, or conditions beyond the Sponsor's reasonable control and significantly adversely affects its ability to perform its obligations hereunder including:

- a. natural events such as; lightning, earthquake, fire, landslide, drought, hurricane, storm, or flood;
- b. condemnation or other taking by any governmental body;
- c. change in applicable law, regulation, rule, ordinance or permit condition, or the interpretation or enforcement thereof;
- d. any order, judgment, action or determination of any federal, state or local court, administrative agency or government body; or
- e. the suspension or interruption of any permit, license, consent, authorization or approval. If the performance of the Sponsor is affected by any such event, the Sponsor shall give written notice thereof to the IRT as soon as is reasonably practicable. If such event affects a Bank Site and occurs before the final availability and use of all credits, Sponsor shall take remedial action (Contingency and Remedial Plans Section III, C, 11g) to restore the property to its reasonably appropriate and expected condition prior to such issuance of further credit, in a manner sufficient to provide adequate mitigation to cover credits that were issued prior to such delay or failure to compensate for impacts to waters, including wetlands, authorized by Department of the Army permits. Such remedial action shall be taken by Sponsor only to the extent necessary and appropriate, as determined by the IRT. Should such actions be unable to replace any lost functions, they must be replaced in some other manner to be proposed by Sponsor and approved by the IRT. Such actions are only necessary if the Bank Site has not received official notification from the Corps that the Bank Site has been "closed-out".

5. Third Party Beneficiary

No third party shall be deemed a beneficiary hereof and no one except the signatories hereof, their successors and assigns, shall be entitled to seek enforcement hereof.

6. Entire Agreement

This LRG-UMBI constitutes the entire agreement between the parties concerning the subject matter hereof and supersedes all prior agreements or undertakings.

7. Specific Language Controlling

In the event, any one or more of the provisions contained in this LRG-UMBI are held to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality or unenforceability will not affect any other provisions hereof, and this LRG-UMBI shall be construed as if such invalid, illegal, or unenforceable provision had not been contained herein.

8. Governing Laws

This LRG-UMBI shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania and the United States of America as appropriate.

9. One Agreement

This LRG-UMBI may be executed by the parties in any combination, in one or more counterparts, all of which together shall constitute but one and the same instrument/agreement.

10. Binding Terms and Conditions

The terms and conditions of this LRG-UMBI shall be binding upon, and inure to the benefit of the parties hereto and their respective successors/assigns.

11. Amendments

This LRG-UMBI can be amended in the future to reflect changes in regulatory programs, Sponsor needs, or IRT requirements. Amendments must be mutually agreed upon by Sponsor and the IRT. Amendments to the LRG-UMBI must follow the guidelines for amending the LRG-UMBI attached as Exhibit B of this document.

12. Assigns

This agreement can be assigned to another party subject to approval by the IRT and Sponsor. Any future assignee of the LRG-UMBI or a Bank Site shall be subject to the terms and conditions of this agreement and shall be subject to the Rule. Assignee will be responsible for adherence to all aspects of this agreement and the FWS Guidance.

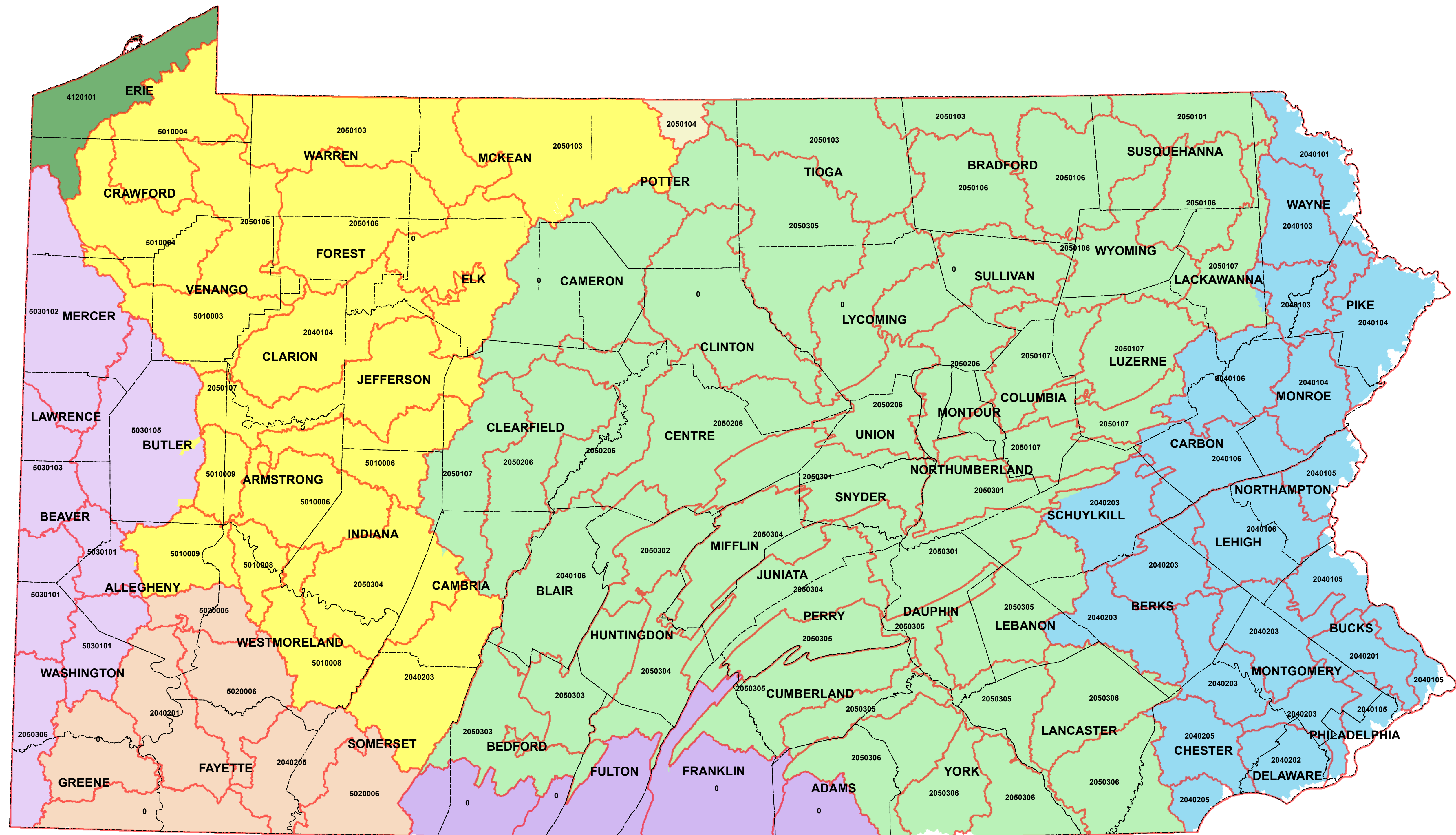
13. Re-Evaluation

Due to the anticipated longevity of the LRG-UMBI, the Sponsor and the IRT agree to re-evaluate the LRG-UMBI and its effectiveness in meeting the parties' mutual objectives of streamlining the Sponsor's mitigation process and developing environmentally favorable mitigation Bank Sites. The re-evaluation shall be conducted only after the process of preparing LRG-UMBI Amendments/Site Specific Mitigation Plans on several Bank Sites has been completed. The IRT or the Sponsor can request the re-evaluation, but both parties must agree to the appropriateness of the timing of the re-evaluation. Amendments to the LRG-UMBI must be agreed to by all the parties to this agreement through signature. Should the LRG-UMBI be amended or terminated after the re-evaluation, the Sponsor and the IRT shall continue to be responsible for honoring commitments made to date with respect to the LRG-UMBI and any approved on-going Bank Sites (LRG-UMBI Amendments/Site Specific Mitigation Plans). Site Specific Mitigation Plans and LRG-UMBI Amendments shall conform to the agency standards or guidelines in place at the time of submission of individual Bank Site documents. This also applies to additional phases or expansions to previously approved Bank Sites.

14. Communications/Contacts

All notices and required reports, except as otherwise noted in the LRG-UMBI, shall be sent to each of the parties (via the Points of Contact) at their respective addresses, provided on Section 2 Part III A (should a Point of Contact change, written notice providing the new Point of Contact shall be provided to the IRT or LRG depending on where the change occurred).

Figure 1: Statewide Umbrella Mitigation Instrument Service Area Map



PA County
 HUC 8 Watersheds

DRAINAGE

- allegheny
- Delaware
- Erie
- Genesee
- Monongahela
- Ohio
- Potomac
- Susquehanna

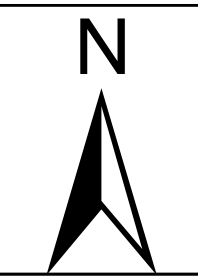


Exhibit A: As Built Report

As-Built Report: For each mitigation site, an As-Built Report shall be submitted to the IRT within 60 days of completion of mitigation activities depicted in the applicable Mitigation Site Plan(s). Below are general guidelines for the requirements of all as-built reports. Exhibit B contains information on variations that may pertain specifically to wetlands, streams, or particular types of restoration. Unless a specific project requirement necessitates alteration, all reports shall include:

- A title page indicating the Instrument name, Mitigation Bank Site name, Mitigation Bank Site phase (if applicable), USACE and PADEP Permit Numbers, monitoring year, any requested action (e.g. credit release, IRT review), Bank Sponsor identification, and Preparer identification;
- Plan view of the constructed/restored wetlands, streams, and/or adjacent buffers using 0.5 foot contours with location of all permanent sampling stations, photo stations, monitoring wells, in-stream and stream bank structures, and all permanent cross-sections and profiles;
- Photographs of the completed Mitigation Bank Site taken from permanent photo stations;
- Profiles of in-stream structures, cross-sections (a minimum of two permanent cross sections shall be established in each stream reach), and longitudinal stream profiles taken from permanent locations and compared to design plans;
- Pebble counts and summary geomorphologic data;
- Planting zones, phases, and densities;
- Stream gage locations;
- As-built elevations; and
- Revised credit breakdown.

For Wetland Restoration Only: An as-built survey is not required for wetland restoration that is based solely upon plugging or filling ditches or stream mitigation based solely on riparian buffer establishment. When this is applicable and an As-built survey is not required, the final planting schedule as implemented in these areas of the Mitigation Bank Site will be provided as documentation of the mitigation actions completed onsite subsequent to the completion of planting consistent with the schedule for the as-built report.

For Streams Only: The stream as-built information will be used as a comparative measure for streambank stability and will be referenced in each Monitoring Report as detailed below. For stream channel enhancement, enhancement with structures, and restoration activities, the monitoring report shall include physical measurements at the permanent channel cross-section locations consistent with the hydrology and channel design parameters table in the detailed construction plan for each Mitigation Bank Site.

Exhibit B: Performance Standards

1. The IRT will use best professional judgment, visual observations, and monitoring reports to evaluate achievement of Performance Standards and in determining whether part or the entire Mitigation Bank Site is successful or whether corrective actions are necessary. Success will be determined on a plot, reach, field, or cell basis. Submittal of required documentation per Exhibit D (Monitoring Reports) will be required for credit releases. The following standards will be used to assess project achievements and credit releases:
 - a. In general, all Success Criteria set forth in the below tables must be met in order for credit release.
 - b. To enable credit releases, performance standards listed in the columns within each credit release schedule must be satisfied, except in those instances where the performance standard measures is not applicable to the mitigation strategy involved (e.g., stem counts for emergent wetland mitigation projects). It is the Sponsor's responsibility to identify deviations clearly in each Mitigation Site Plan.
 - (1) Emergent wetlands may not need to satisfy tree-height and woody stem counts.
 - (2) Stream bank conservation may not require a bank full event to determine that performance standards have been met.
 - c. Deviations should be considered only for the purposes of applicability to the particular mitigation strategy as provided above and not for any other reason, unless directed by the IRT.
2. At the written request of the Bank Sponsor, the IRT will perform a compliance visit to determine whether all Performance Standards have been satisfied.
3. The IRT may also request to perform a compliance visit on any site by providing reasonable notice to the Sponsor.
4. The Bank Sponsor agrees to submit an As-Built Report to the IRT within 60 days following completion of the grading for each Mitigation Bank Site as described in the Mitigation Site Plan. The IRT will respond within 30 days receipt of the As-Built Report indicating receipt and acknowledging Approval or any request for additional information.
5. Any site-specific requirements for determination of success which fall outside of the below criteria, will be addressed in the Mitigation Site Plan.
6. In areas of Preservation or Conservation activity, the Sponsor shall submit proof of the placement of a Site Protection Instrument complying with performance standards, along with a letter requesting release of any associated credits, commensurate with the requirements of Exhibit B (Monitoring Plan).
7. In areas of enhancement, restoration, or establishment activity, the Sponsor shall submit a letter requesting release, which provides proof of compliance with the below criteria as modified in the Mitigation Site Plan.
8. Stream mitigation projects involving channel enhancement with structures will utilize the typical structure details developed by the U.S. Fish and Wildlife Service and Pennsylvania Fish and Boat Commission and incorporate aquatic habitat elements to the maximum extent practicable.
9. Presenting averages or means of plot data across a Mitigation Bank Site is not satisfactory to demonstrate success. Any means or averages of plot data must apply to distinctly homogenous areas, with sampling conducted on a stratified random basis and sampling intensity shall be sufficient to calculate means and the coefficient of variation.

Table 3. Functional Groups*		
Resource Type	Functional Group	Functions Contained within each Functional Group
Riverine	Hydrologic (HYD1)	The storage capacity of the floodplain, energy dissipating characteristics, maintenance of characteristic watershed hydrologic dynamics (e.g., seasonal and storm flow patterns), geomorphic channel stability and sediment transport processes
	Biogeochemical (BGC1)	The biogeochemical processes, temperature regulation, nutrient cycling and organic matter cycling (both above and below ground)
	Habitat (HAB1)	Providing for the life requirements of invertebrate, vertebrate, emergent plant, macrophytes and other plant species located within or on the banks of an active watercourse
	Recreation (REC1)	Public recreational opportunities that include fishing, boating, swimming, etc.
	Resource Support (RS)	The chemical, physical and biological attributes (RS) that contribute to maintaining downstream water quality designations and uses
Palustrine/ Tidal Wetlands	Hydrologic (HYD2)	Energy dissipation, short-term and long-term surface water detention, and maintenance of characteristic hydrology
	Biogeochemical (BGC2)	Inorganic nitrogen removal, solute adsorption capacity, inorganic particulate retention and export of dissolved and particulate organic carbon
	Habitat (HAB2)	Characteristic native plant community compositions, characteristic detrital biomass, vertebrate community structure and composition and maintenance of landscape scale biodiversity
Lacustrine	Habitat (HAB3)	Comprised of numerous attributes within and immediately adjacent to the wetted perimeter of the lake, reservoir or large non-wadeable river including the physical requirements to provide invertebrate, vertebrate and macrophyte species' life requirements
	Recreation (REC2)	Public recreational opportunities including fishing, boating, swimming, etc. This group also includes the maintenance of existing and designated recreational uses.

Exhibit C: Credit Release Schedule

Table 4. Pennsylvania Standard Wetland Function (HYD2, BGC2 and HAB2) Credit Release Schedule				
Release of initial 15% of credits	Release of next 15% of credits	Release of next 25% of credits following Tier 2 or Tier 3 Monitoring Event	Release of next 25% of credits following Tier 2 or Tier 3 Monitoring Event	Release of final 20% of credits following Tier 2 or Tier 3 Monitoring Event
LRG-UMBI and the associated Mitigation Site Plan Approval PA DEP WO&E Compensation Operation Permit	After Construction Completion and As-Built Approval	Minimum of 200% of woody stems of native trees per acre relative to the density of a documented mature forested wetland.	Minimum of 175% of woody stems of native trees per acre relative to the density of a documented mature forested wetland	Minimum of 150% of woody stems of native trees per acre relative to the density of a documented mature forested wetland
Implementation of Financial Assurances		No more than 15% of aerial cover shall be made up of invasive species with no individual colony \geq 5% of aerial cover	No more than 10% of aerial cover shall be made up of invasive species with no individual colony \geq 5% of aerial cover	No more than 10% of aerial cover shall be made up of invasive species with no individual colony \geq 5% of aerial cover
Recordation of Approved Site Protection Instrument		Native non-invasive herbaceous plant coverage shall be at least 60%	Native non-invasive herbaceous plant coverage shall be at least 70%	Native non-invasive herbaceous plant coverage shall be at least 40%
		Average tree height of all surviving trees within sample plots are at least 3 feet in height	Average tree height of all surviving trees within sample plots are at least 5 feet in height	Average canopy cover within sample plots is at least 40%
		Saturation of the upper 12 inches of the surface soil profile for at least 12.5% of the growing season and/or establishment of hydrograph similar to a reference HGM subclass profile.	Saturation of the upper 12 inches of the surface soil profile for at least 12.5% of the growing season and/or establishment of hydrograph similar to a reference HGM subclass profile.	Saturation of the upper 12 inches of the surface soil profile for at least 12.5% of the growing season and/or establishment of hydrograph similar to a reference HGM subclass profile.

* Success and credit release discussed in Table 2 shall apply to all wetland activity regardless of functional model used as it is based on the achievement of specific performance milestones. If using the PADEP function-based aquatic resource protocol, this schedule shall apply to HYD2, BGC2 and HAB2 credits.

Stream Channel Performance Standards and Release Schedules:

The overall goal for the stream compensation is to ensure that the dimension, pattern, and profile of the stream enhancement and restoration areas: 1) remain within the natural range of variability present in the reference data obtained for the design; 2) remain stable such that the channel features are maintained and the stream channel neither aggrades nor degrades; 3) exhibit appropriate habitat diversity; and 4) have healthy viable riparian buffers. In addition, restoring appropriate biological diversity and integrity should be the aim of any project. For the purpose of providing increased clarification relative to “stability” referenced as item 2 of this paragraph, the Rosgen definition of stream channel stability will be utilized as a reference standard. Under this standard, stream channel stability “is the ability of a stream, over time, in the present climate, to transport the sediment and flows produced by its watershed in such a manner that the stream maintains its dimension, pattern, and profile without either aggrading nor degrading” (Rosgen, 1996).

Table 5. Pennsylvania Standard Riverine Function (HYD1, HAB1 and RS) Credit Release Schedule				
Release of initial 15% of credits	Release of next 15% of credits	Release of next 35% of credits following Tier 2 or 3 Monitoring Event	Release of next 25% of credits following Tier 2 or 3 Monitoring Event	Release of last 10% of credits following Tier 2 or 3 Monitoring Event
LRG-UMBI and the associated Mitigation Site Plan Approval and PA DEP WO&E Compensation Operation Permit	After Construction Completion and As-built Plan Submittal and Acceptance	The project must have achieved at least <i>one</i> successful bankfull event during its project life to warrant credit release	The project must have achieved at least <i>one</i> successful bankfull event during its project life to warrant credit release	The project must have achieved at least <i>one</i> successful bankfull event during its project life to warrant credit release
Implementation of Financial Assurances		At least one living stem per 50 square feet per stream edge along the bank or until canopy coverage is 30% for any identified reach	At least one living stem per 50 square feet per stream edge along the bank or until canopy coverage is 40% for any identified reach	At least one living stem per 50 square feet per stream edge along the bank or until canopy coverage is 50% for any identified reach
Recordation of Approved Site Protection Instrument		Bank Erosion Hazard Index (BEHI) Total Score shall be within the range of “Moderate” or a more stable Total Score range (i.e., either “Low” or “Very Low”)	Bank Erosion Hazard Index (BEHI) Total Score shall be within the range of “Moderate” or a more stable Total Score range (i.e., either “Low” or “Very Low”)	Bank Erosion Hazard Index (BEHI) Total Score shall be within the range of “Low” or a more stable Total Score range (i.e., “Very Low”)
		Sinuosity of the stream does not increase or decrease by amount greater than 0.2 of the approved As-built pattern	Sinuosity of the stream does not increase or decrease by amount greater than 0.1 from the previous Tier 2 or 3 monitoring event	Sinuosity of the stream does not increase or decrease by amount greater than 0.1 from the previous Tier 2 or 3 monitoring event
		The thalweg of each channel cross-section does not move by more than 15% of the width of the approved As-built channel width	The thalweg of each channel cross-section does not move by more than 10% of the width of the previous Tier 2 or 3 monitoring event channel width	The thalweg of each channel cross-section does not move by more than 10% of the width of the previous Tier 2 or 3 monitoring event channel width
		Bankfull Width Ratio does not increase or decrease by an amount greater than 0.4 of the As-built condition	Bankfull Width Ratio does not increase or decrease by an amount greater than 0.2 of the previous Tier 2 or 3 monitoring event	Bankfull Width Ratio does not increase or decrease by an amount greater than 0.2 of the previous Tier 2 or 3 monitoring event

*Success and credit release discussed in Table 3 shall apply to all stream channel activity regardless of functional model used as it is based on the achievement of specific performance milestones. If using the PADEP function-based aquatic resource protocol, this schedule shall apply to HYD1, HAB1 and REC or RS credits. Tier 2 and Tier 3 monitoring events are described in Exhibit B.

** Should a bankfull discharge event not occur during the year(s) preceding each of the last two monitoring events, the cumulative credit release should be reduced by 10% for each event, with the final 10% - 20% retained until a bankfull event occurs up to monitoring year 7.

Table 6. Pennsylvania Standard Riverine Function (BGC1) Credit Release Schedule				
Release of initial 15% of credits	Release of next 15% of credits	Release of next 35% of credits following Tier 2 or 3 Monitoring Event	Release of next 25% of credits following Tier 2 or 3 Monitoring Event	Release of last 10% of credits following Tier 2 or 3 Monitoring Event
LRG-UMBI and the associated Mitigation Site Plan Approval	After Construction Completion and As-built Plan Submittal and Acceptance	Minimum of 200% of woody stems of native trees per acre relative to the density of a reference standard	Minimum of 175% of woody stems of native trees per acre relative to the density of a reference standard	Minimum of 150% of woody stems of native trees per acre relative to the density of a reference standard
Implementation of Financial Assurances		No more than 15% aerial cover shall be made up of invasive species with no individual colony making up >5% of aerial cover	No more than 10% aerial cover shall be made up of invasive species with no individual colony making up > 5% of aerial cover	No more than 10% aerial cover shall be made up of invasive species with no individual colony making up > 5% of aerial cover
Recordation of Approved Site Protection Instrument		Native non-invasive herbaceous plant coverage shall be at least 60%	Native non-invasive herbaceous plant coverage shall be at least 70%	Native non-invasive herbaceous plant coverage shall be at least 80%
		Average tree height of all surviving trees within sample plots are at least 3 feet in height	Average tree height of all surviving trees within sample plots are at least 5 feet in height	Average canopy cover within sample plots is at least 40%

*Success and credit release discussed in Table 4 shall apply to all stream bank activity regardless of functional model used as it is based on the achievement of specific performance milestones. If using the PADEP function-based aquatic resource protocol, this schedule shall apply to BGC1 credits.

Table 7. Pennsylvania Standard Riverine and Lacustrine Function (REC1 and REC2) Credit Release Schedule

Release of initial 35% of credits	Release of next 35% of credits	Release of final 30% of credits
LRG-UMBI and the associated Mitigation Site Plan Approval and PA DEP WO&E Compensation Operation Permit	After Construction Completion and As-built Plan Submittal and Acceptance	Long-term stewardship/ownership arrangements finalized and approved.
Implementation of Financial Assurances		
Recordation of Approved Site Protection Instrument		

Tier 1 Wetland Monitoring Elements	Tier 2 Wetland Monitoring Elements	Tier 3 Wetland Monitoring Elements
<ul style="list-style-type: none"> • Visual observation and report of physical conditions • Photos 	<ul style="list-style-type: none"> • Tier 1 Elements • Hydrologic Monitoring • Vegetation sampling including plant survival, condition, browsing damage, mortality, etc. • Invasive vegetation species presence and control 	<ul style="list-style-type: none"> • Tier 1 Elements • Tier 2 Elements • Wetland Delineation • Mapping or Verifying percent relative covers • Ecological Functional Assessment • Other Target Community-Specific Sampling

The following are typical monitoring requirements for stream resources, but these may vary based upon the type of project (i.e. enhancement versus restoration).

Tier 1 Stream Monitoring Elements	Tier 2 Stream Monitoring Elements	Tier 3 Stream Monitoring Elements
<ul style="list-style-type: none"> • Visual observation and report of physical conditions • Hydrologic (Bankfull Event) Monitoring • Photos 	<ul style="list-style-type: none"> • Tier 1 Elements • In-Channel stability surveying and analysis • Vegetation sampling including plant survival, condition, browsing damage, mortality, etc. • Invasive vegetation species presence and control 	<ul style="list-style-type: none"> • Tier 1 Elements • Tier 2 Elements • Floodplain Delineation • Mapping or Verifying vegetation percent relative covers • Chemical Water Quality Monitoring • Aquatic Species Colonization and Habitat Biological Assessment • Ecological Functional Assessment • Other Target Community Specific Sampling

Exhibit D: Monitoring Plan/Reports

Monitoring Reports: For each Mitigation Bank Site, reports will be submitted to the IRT via an electronic mail attachment to be submitted to the Chairs and/or uploaded to RIBITS by November 30th of each monitoring year. Monitoring is required annually, however the levels of monitoring have been broken down into three tiers of varying requirements. Further information about tiered monitoring may be found under Monitoring Plans of this section. All monitoring reports shall contain the following:

1. A title page indicating the Instrument name, Mitigation Bank Site name, Mitigation Bank Site phase (if applicable), USACE and PADEP Permit Numbers, monitoring year, any requested action (e.g. credit release, IRT review), Bank Sponsor identification, and Preparer identification;
2. A restatement of the compensation site plan goals, objectives and performance standards (i.e. a summary paragraph defining the purpose of the approved project, a description of how the sites are progressing against performance standards set forth in Exhibit A, and a comparison of the baseline conditions);
3. Directions to the Mitigation Bank Site(s);
4. Dates each form of compensatory mitigation commenced and was completed;
5. A description of monitoring methods must be provided. If using sampling methods, include sample size, statistical justification for sampling regime and data analyses performed. If appropriate, include an assessment of natural population growth by target species;
6. Any structural failures or external disturbances on the Mitigation Bank Site, and describe any management activities and/or corrective measures that were implemented during the previous year. A description of all differences between the approved mitigation plan and the as-built mitigation site and rationale for variance from the approved Mitigation Plan;
7. Summary data to substantiate the success and/or potential challenges associated with the compensatory mitigation projects;
8. All reports for stream mitigation shall provide a status of the enhanced and restored stream segments, including photographs from established stations for consistency and narrative descriptions of channel development;
9. Figures depicting topography, and the location of wells, sampling plots, cross- section, and permanent photo stations. Hand drawings are not sufficient;
10. Any available post construction aerial photography;
11. A detailed narrative summarizing the conditions of the Mitigation Bank Site with a description of regular maintenance activities;
12. A map depicting areas associated with previous credit releases, and the location and extent of areas associated with any current credit release request;
13. A summary of Credits created by the Mitigation Bank Site and the permits that have been Debited against these Credits cumulatively and for this monitoring year;
14. Any additional information required to adequately characterize site conditions (as needed);
15. If corrective action is required, the Sponsor, as necessary, shall review and propose an updated monitoring plan for IRT approval; and
16. If the Sponsor fails to submit a monitoring report, IRT shall notify the Sponsor and provide sixty (60) days to cure. After this period, credit sales will stop until curative actions satisfying the IRT have been completed.

A monitoring plan and report(s) are required components of any successful Mitigation Site Plan. The below are general terms to which all Mitigation Site Plans must adhere. Any need for deviation will be addressed specifically in each Mitigation Site Plan.

Overview

1. Monitoring events are separated into three Tiers of increasing informational requirements.
2. At a minimum, a Tier 1 monitoring event is required annually in order to evaluate site conditions during the initial monitoring period. The Tier 1 monitoring events will continue to be conducted absent of Credit releases for a period no less than the first five years after construction.
3. Until all released credits have been sold, and the project is monitored for the minimum amount of time as specified in the Mitigation Site Plan, the sponsor shall submit annual monitoring reports to the IRT. The sponsor may utilize the Tier 1 monitoring event elements at a minimum, unless the IRT requires a Tier 2 or Tier 3 monitoring event which will be determined on a case by case basis.
4. In order to request a release of Credits after administration or construction releases, a Tier 2 monitoring event is required.
5. If all Credits are requested for release within three years of Construction permit approval from the Corps and PADEP, a full Tier 3 monitoring event is required for review.
6. Further site-specific definition of the monitoring criteria to be collected may be included in the Mitigation Site Plan. Additional stream or wetland monitoring elements as determined to be necessary for the mitigation project, shall be specified in the Mitigation Plan for the bank site.
7. Monitoring may be terminated or the extent of monitoring may be reduced over part or the entire site at the discretion of the IRT. Conversely, the Corps and PADEP may extend the original monitoring period upon a determination that performance standards have not been met or the bank is not on track to meet them.

Table 1: Wetland Tiers

Tier 1 Wetland Monitoring Elements	Tier 2 Wetland Monitoring Elements	Tier 3 Wetland Monitoring Elements
<ul style="list-style-type: none"> • Visual observation and report of physical conditions • Photos 	<ul style="list-style-type: none"> • Tier 1 Elements • Wetland Delineation • Mapping or Verifying percent relative covers 	<ul style="list-style-type: none"> • Tier 1 Elements • Tier 2 Elements • Further hydrologic modeling beyond a typical wetland delineation as required by the IRT • Ecological Functional Assessment (Pennsylvania Function-Based Aquatic Resource Protocol or other as matches the Mitigation Site Plan’s current ledger) • Other Target Community-Specific Sampling as required by IRT

Table 2: Stream Tiers

Tier 1 Stream Monitoring Elements	Tier 2 Stream Monitoring Elements	Tier 3 Stream Monitoring Elements
<ul style="list-style-type: none"> • Visual observation and report of physical conditions • Hydrologic (Bankfull Event) Monitoring • Photos 	<ul style="list-style-type: none"> • Tier 1 Elements • In-Channel stability surveying and analysis • Vegetation sampling including plant survival, condition, browsing damage, mortality, etc. • Invasive vegetation species presence and control 	<ul style="list-style-type: none"> • Tier 1 Elements • Tier 2 Elements • Floodplain Delineation • Mapping or Verifying vegetation percent relative covers • Chemical Water Quality Monitoring • Aquatic Species Colonization and Habitat Biological Assessment • Ecological Functional Assessment (Pennsylvania Function-Based Aquatic Resource Protocol or other as matches the Mitigation Site Plan’s current ledger) • Other Target Community-Specific sampling as requested by the IRT

Wetlands

8. Monitoring activities shall occur during the growing season until final Performance Standards are reached. The Initial Monitoring Period will be determined on a case by case basis taking into consideration Performance Standards set forth within Exhibit A, the type of mitigation being proposed (e.g., restoration, reestablishment, enhancement, etc.), and the type of aquatic resource that is being mitigated (e.g., emergent wetland, scrub-shrub wetland, forested wetland, stream) in accordance with 33 C.F.R. 332.6(b). In addition, monitoring shall adhere to the following schedules:
 - a. For any year in which planting was conducted, monitoring shall occur at the end of the first complete growing season in accordance with Monitoring Year 1.
 - b. Monitoring of vegetation (herbaceous and woody species) shall be conducted during the growing season.
 - c. If all Performance Standards (Exhibit A) have not been met in the 10th year, then a monitoring report shall be required for each consecutive year until two sequential annual reports indicate that all criteria have been successfully satisfied.

9. Tier 1 Visual Observations: Visual observations shall be provided with each monitoring report through a written discussion of the buffer condition, any significant changes to the buffer, and photographic documentation, as necessary to further describe the buffer condition. Visual observations including name of the observer and date of the observation shall also be noted. Ground level photographs shall be taken facing north, south, east and west, from stations located adjacent to each vegetation plot. Permanent markers shall be established to ensure that the same locations are monitored in each monitoring period.

10. Vegetation. Sample plots shall be located on a stratified random basis over the Mitigation Bank Site in order to sample all habitat areas of buffer at locations adjacent to each photo location marker. A minimum of 2 plots per acre will be established. However, all cells, fields, or blocks shall be sampled and additional plots will be established as appropriate.

Each plot shall be of a size no less than 400 square feet for woody plants and 3'x3' for herbaceous plants (or circular with approximately the same surface area). The vegetation data shall be collected in each sample plot during the growing season and shall include:

 - a. For herbaceous plots, identification (common and scientific name) of all herbaceous species found in the sampling plot with corresponding estimate of percent cover, indicator status, native status, and the percent of bare ground and open water as applicable.
 - b. For woody plots, identification (common and scientific name) of all live woody species found in the sampling plot with corresponding indicator status, native status, stem count, extrapolated living stems/acre, and average height of living woody species.
 - c. Percent cover of non-native or invasive species in each vegetation layer.

11. Hydrology or "Hydrologic Modeling" for Purposes of Tier 3 reporting. For surface saturation driven systems located on top of a clayey substrate, soil saturation measurement devices may be used in lieu of groundwater wells and other secondary hydrology indicators to determine groundwater elevation and/or hydro Specific details on the soil saturation measurement device and location or groundwater monitoring wells shall be provided in the Final Construction Documents for IRT approval. For each monitoring report, a minimum of either 60 days of continuous automated monitoring, or 8 consecutive weekly measurements shall

be provided during the growing season to demonstrate achievement of the hydrology performance criterion (actual monitoring may be of longer duration, as needed, to obtain proof of wetland hydrology). Where possible, all guidelines should follow the Corps of Engineers Wetland Delineation Manual and all applicable regional supplements.

12. For areas in which establishment is used as a mitigation strategy, hydric soils must be demonstrated using an accepted standard such as the Hydric Soil Technical Standard (Technical Note 11) developed by the National Technical Committee for Hydric Soils.

Streams

1. Monitoring activities for streams, including non-wetland riparian buffer areas, shall occur during the growing season. After Year 3, any physical monitoring of stream condition (e.g. longitudinal profiles, cross-sections, channel width and depth) may be conducted outside of the growing season. For stream chemical and biological monitoring, monitoring events shall occur consistently in either spring or fall of each monitoring year. Spring sampling shall be conducted between March 1 and May 31. Fall sampling shall be conducted between September 1 and November 30.

In addition, monitoring shall adhere to the following schedules:

- a. For any year in which planting was conducted, monitoring of woody vegetation shall take place no earlier than September or at least 6 months following planting.
 - b. Monitoring of vegetation (herbaceous and woody species) shall be conducted during the growing season.
 - c. If all Performance Standards (Exhibit A) have not been met in the 7th year, then a monitoring report shall be required for each consecutive year until two sequential annual reports indicate that all criteria have been successfully satisfied.
 - d. Within one week after any storm event that meets or exceeds a 1-year, 24-hour duration, as determined by the onsite rain gauge or the nearest National Weather Service station, the stream(s) shall be visually inspected for damages. Any damage noted shall be reported to the IRT in writing within 1 week of inspection, with supporting photographs, and accompanied by a remediation plan. Photographs and narrative shall be utilized to summarize performance and necessity of remediation efforts in the next monitoring report.
2. Tier 1 visual observation and report of physical conditions shall include a discussion of the overall health of the restored resource, identifying any particular structure or vegetative community that may appear to be damaged or in danger of damage. Visual observations including name of the observer and date of the observation shall also be noted.
 3. Permanent cross-sections shall be established to ensure that the same locations are used each monitoring year. A minimum of one cross-section per 1,000 linear feet will be required. Total number required will vary depending on project length and complexity. Additional cross-sections may be required to show areas where aggradation, degradation, erosion, and mid-channel bars have developed.

The following will be documented at each cross-section:

- a. Ground level photographs shall be provided with each monitoring report for the purpose of documenting vegetation and stream stability. The photographs will

- clearly show the channel upstream and downstream, the riparian buffer area, and each stream bank.
- b. Cross-sectional measurements shall include streambanks, streambed, water surface, bankfull, and adjacent floodplain elevations.
 - c. The same cross section for the as-built and previous monitoring year (as applicable) will be overlain on this cross section.
4. Cross-sections shall include the ability to collect:
- a. Sample plots for stream bank vegetation (minimum 10 square feet in size) shall be located in association with select cross-sections where streambank plantings were completed. Identification (common and scientific name) of all living stream bank livestock and/or woody stem plantings found in the sampling plot with corresponding indicator status, stem count, and extrapolated living density.
 - b. The Bank Erodibility Hazard Index (BEHI) will be assessed at each permanent cross-section and additional locations selected in consultation with the IRT to provide a representative assessment.
 - c. Sinuosity of representative section.
 - d. Bankfull event gage documentation.
 - e. Photographs documenting the structural integrity and function at each habitat structure as applicable.
 - f. For restoration/establishment areas, a surveyed longitudinal profile of the stream within the thalweg with measurements of the locations, depths, and slopes of riffles, runs, pools, and glides. A separate profile will be prepared depicting previous as-built and the previous year's longitudinal profiles (as appropriate) superimposed.
 - g. Wetted-perimeter cross-section pebble count of representative riffles (not constructed riffles).
 - h. The D50 analysis of the pebble count data.
 - i.
5. The IRT, on a case by case basis, may request additional stream monitoring parameters such as those found in Table 3: Hydrology and Channel Design Parameters.
6. Tier 3 “Chemical Water Quality Monitoring” or “Aquatic Species Colonization and Habitat Biological Assessment.” The objective of the chemical and biological sampling is to document the evolution of the Mitigation Bank Site following construction as well as allow for comparison between Mitigation Banks Sites and other similar ecological restoration projects involving stream channel restoration activities; to identify issues that may need to be addressed in the restoration design; to determine realistic expectations for the post-restoration aquatic community; and to inform future stream restoration project development efforts.

Data collection efforts may be based on procedures included the EPA’s Rapid Bioassessment Protocols for Use in Wadeable Streams and Rivers (2nd Edition 1999) or its Environmental Monitoring & Assessment Program (EMAP). The selection of a particular metric(s) will be determined on a case-by-case basis for individual mitigation banks, dependent on the aquatic resource being restored. Specifically, a Habitat Assessment Field Data Sheet for High Gradient

Streams and a Physical Characterization/Water Quality Field Data Sheet will be completed for each bioassessment site.

- a. **Chemical** – Temperature, total dissolved oxygen, pH, and conductivity shall be collected at each designated monitoring location site using a multi-probe meter.
- b. **Biological** – A quantitative survey for benthic macroinvertebrates and a habitat assessment shall be conducted at designated monitoring locations. Benthic macroinvertebrates shall be identified to the Order level. The resulting benthic macroinvertebrate data will be analyzed to calculate stream condition index information which will be compared to background site-specific data and appropriate state and/or regional condition index metrics. The appropriate analysis comparison measures will be determined through consultation with the IRT.

Table 3: Hydrology and Channel Design Parameters

Design Parameters
Stream Name
Drainage Area, DA (sq mi)
Stream Type
Bankfull Discharge, Q_{bkf} (cfs)
Bankfull XSEC Area, A_{bkf} (sq ft)
Bankfull Mean Velocity, V_{bkf} (ft/s)
Width to Depth Ratio, [W/D]
Bankfull Width, W_{bkf} (ft)
Bankfull Mean Depth, D_{bkf} (ft)
Valley Slope, S_{val} (ft/ft)
Sinuosity, K (ft/ft)
Average Channel Slope, $S_{ave}=S_{val}/K$
Bankfull Wetted Perimeter, P (ft)
Bankfull Hydraulic Radius, R (ft)
Bankfull Mannings n
Manning Bkf Discharge, Q_{bkf} (cfs)
Shear Stress (tau)
Shields - Diameter Mobilized (mm)
d50 (mm)
Bkf Max Depth Ratio, [D_{max}/D_{bkf}]
Bkf Max Depth, D_{max} (ft)
Bank Height Ratio, [D_{tob}/D_{max}]
Max Depth Top of Bank, D_{tob} (ft)
Entrenchment Ratio, [W_{fpa}/W_{bkf}]
Width Flood Prone Area, W_{fpa} (ft)
Meander Length Ratio, [L_m/W_{bkf}]
Meander Length, L_m (ft)
Rc Ratio, [R_c/W_{bkf}]
Radius of Curvature, R_c (ft)
MW Ratio, [W_{bit}/W_{bkf}]
Meander Belt Width, W_{bit} (ft)
Riffle Slope Ratio, [S_{rif}/S_{ave}]
Riffle Slope, S_{rif} (ft/ft)
Riffle Length Ratio, [L_{rif}/W_{bkf}]
Riffle Length, L_{rif} (ft)
Pool Slope Ratio, [S_{pool}/S_{ave}]
Pool Slope, S_{pool} (ft/ft)

Table 3: Hydrology and Channel Design Parameters Continued

Pool Area Ratio, $[A_{pool}/A_{bkf}]$
Pool Area, A_{pool} (sq ft)
Pool Depth Ratio, $[D_{pool}/D_{bkf}]$
Pool Depth, D_{pool} (ft)
Pool Width Ratio, $[W_{pool}/W_{bkf}]$
Pool Width, W_{pool} (ft)
Pool Length Ratio, $[L_{pool}/W_{bkf}]$
Pool Length, L_{pool} (ft)
Pool Spacing Ratio, $[Z_{pool}/W_{bkf}]$
Pool Spacing, Z_{pool} (ft)
Run Slope Ratio, $[S_{run}/S_{ave}]$
Run Slope, S_{run} (ft/ft)
Glide Slope Ratio, $[S_{glide}/S_{ave}]$
Glide Slope, S_{glide} (ft/ft)

Exhibit E: Credit Tracking Ledger

Exhibit F: Sample Conservation Easement

CONSERVATION EASEMENT

THIS CONSERVATION EASEMENT is made this ____ day of _____, 201__, by **[NAME OF GRANTING LANDOWNER]** (hereinafter “Grantor”);

WITNESSETH:

WHEREAS, Grantor is the fee simple owner of certain tracts of land located in _____, and being **[USE IF APPLICABLE: a portion of]** the property conveyed to the Grantor by deed recorded in deed book _____, at page _____ in the land records of _____ County, Pennsylvania, more particularly described on Exhibit A attached hereto and incorporated by reference, hereinafter referred to as the “Property”; and

*[**NOTE TO DRAFTER: Attach a legal description (i.e. metes and bounds) of the Property, and if less than the whole property, also include a separate, clearly identified, legal description of the Conservation Area, all in an exhibit identified as “Exhibit A.” In addition, also include an Exhibit B that depicts a drawing of the area subject to the Conservation Easement. The restricted area should be clearly labeled on the plan as “Conservation Area” and should be clearly identified by crosshatching and/or shading. Also include on the drawing the location and extent of all known, pre-existing easements, rights of ways, utilities, drainage ditches, stormwater facilities, cattle crossings, and structures. Also attach as Exhibit C a copy of the Mitigation Plan.]*

WHEREAS, **[Name of Bank Entity]** (the “Sponsor”) entered into the Pennsylvania Statewide Umbrella Mitigation Banking Instrument (the “MBI”) with an Interagency Review Team (the “IRT”) consisting of members of the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, the Pennsylvania Department of Environmental Protection and **[add other agencies that are parties to the MBI]** (collectively, the “Agencies” and each, an “Agency”) dated _____, 20__; and

WHEREAS, the MBI includes a Mitigation Plan attached as Exhibit B hereto governing the area on the Property indicated on Exhibit C attached hereto (the “Conservation Area”); and

WHEREAS, pursuant to the MBI, Sponsor proposes to create, maintain, and preserve a self-sustaining natural aquatic system located on the Conservation Area; and

WHEREAS, the MBI requires that this Conservation Easement be executed and recorded in order that the Conservation Area shall remain substantially in its natural condition forever; and

WHEREAS, the Grantor desires to comply with the conditions of the MBI by imposing this Conservation Easement on the Conservation Area within the Property; and

WHEREAS, the Conservation Area may contain land, functions, values, and services that serve as compensation and mitigation for impacts to waters of the U.S. and/or waters of the Commonwealth of Pennsylvania (the “Commonwealth”) that were permitted by one or more of the Agencies; and

WHEREAS, under Federal and State law, the Agencies have issued one or more permits (collectively, the “Permits”) for impacts to waters of the United States and/or the Commonwealth expected to result from the creation of the self-sustaining natural aquatic system located on the Conservation Area; and

WHEREAS, because the Conservation Area may serve as compensation for such above-referenced impacts, the Agencies are third-party beneficiaries under this Conservation Easement; and

WHEREAS, the Grantor and the Sponsor agree to the creation of these conservation-based covenants and intend the Conservation Area shall be preserved and maintained in a natural condition in perpetuity.

NOW, THEREFORE, in consideration of the mutually-held interests in preservation of the environment, as well as the terms, conditions, and restrictions contained herein, and pursuant to the laws of the Commonwealth, Grantor does agree to the following terms and conditions:

1. PURPOSE.

The purpose of this Conservation Easement is:

To preserve and protect the native flora, fauna, soils, water table and drainage patterns, and other conservation values of the Conservation Area;

To view the Conservation Area in its scenic and open condition; and in general,

To assure that the Conservation Area, including its air space and subsurface, will be retained in perpetuity in its natural condition as provided herein and to prevent any use of the Conservation Area that will impair or interfere with its natural resource functions and values, Grantor intends that this Conservation Easement will confine the use of the Conservation Area to such activities as are consistent with the purpose of this Conservation Easement.

To accomplish the purpose of this Conservation Easement, the following rights are created in accordance with Pennsylvania law:

A. To allow the Grantor, the Sponsor and the Agencies the right to enter upon the Property to inspect the Conservation Area at reasonable times to monitor compliance with and otherwise enforce the terms of this Conservation Easement; provided that, except in cases where Grantor determines that immediate entry is necessary to prevent, terminate, or mitigate a violation of this Conservation Easement; such entry shall, when practicable, be upon reasonable prior notice to the Grantor, any successor or assign, and Grantor shall not unreasonably interfere with the use and quiet enjoyment of the Property by Sponsor, its successors and assigns, in accordance with the terms of this Conservation Easement;

B. To allow the Grantor, the Sponsor and the Agencies to enforce the terms of this Conservation Easement by appropriate legal proceedings in accordance with applicable law so as to prevent any activity on or use of the Property that is inconsistent with the purpose of this Conservation Easement and to require the restoration of such areas or features of the Conservation Area that may be damaged by any inconsistent activity or use; and

C. To allow the Grantor, the Sponsor, or their authorized representatives, to enter upon the Property and its Conservation Area at reasonable times, upon prior notice to the property owner; and upon prior notice and written approval by the applicable Agencies to take any appropriate environmental or conservation management measures consistent with the terms and purposes of this Conservation Easement, including:

- 1) Planting of native vegetation (i.e. trees, shrubs, grasses and forbs);
- 2) Restoring, altering or maintaining: the topography; hydrology; drainage; structural integrity; streambed; water quantity; water quality; any relevant feature

- of any stream, wetland, water body, or vegetative buffer within the Conservation Area as provided in the Mitigation Plan approved by the IRT; or
- 3) Performing such other activities as may be required by any Agency, or in the discretion of the Sponsor, to maintain or restore the Conservation Area as required by the Mitigation Plan approved by the IRT or any related permit issued by any Agency in connection therewith.

2. PERMITTED USES

This Conservation Easement will not prevent the Grantor, any subsequent owner of the Property, and the personal representatives, heirs, successors, and assigns of either the Grantor or any subsequent Property owner, from making use of the area(s) that are not included in the Conservation Area, which uses are not expressly prohibited herein and are not inconsistent with the purpose of this Conservation Easement.

3. RESTRICTIONS

Any activity in or use of the Conservation Area inconsistent with the purpose of the Conservation Easement by the Grantor, any subsequent owner of the Property, and the personal representatives, heirs, successors, and assigns of either the Grantor or subsequent Property owner, is prohibited. Without limiting the generality of the foregoing, and except when an approved purpose Section 1 above, or as necessary to accomplish mitigation approved under the aforementioned Mitigation Plan, the following activities and uses are expressly prohibited in, on, over, or under the Conservation Area, subject to all of the express terms and conditions below:

- A. **Structures.** The construction of man-made structures, including but not limited to the construction, removal, placement, preservation, maintenance, alteration, or decoration of any buildings, roads, utility lines, billboards, or other advertising. This restriction does not include deer stands, bat boxes, bird nesting boxes, bird feeders, duck blinds, and the placement of signs for safety purposes or boundary demarcation.
- B. **Demolition.** The demolition of fencing structures constructed for the purpose of demarcation of the Conservation Area or for public safety.
- C. **Soils.** The removal, excavation, disturbance, or dredging of soil, sand, peat, gravel, or aggregate material of any kind; or any change in the topography of the land, including any discharges of dredged or fill material, ditching, extraction, drilling, driving of piles, mining, or excavation of any kind.
- D. **Drainage.** The drainage or disturbance of the water level or the water table, except for pre-existing or approved project-related stormwater discharges and any maintenance associated with those stormwater discharges. All pre-existing or approved project-related drainage/stormwater discharge features should be shown on the accompanying plat map or approved plan and attached to this Conservation Easement.
- E. **Waste or Debris.** The storage, dumping, depositing, abandoning, discharging, or releasing of any gaseous, liquid, solid, or hazardous waste substance, materials or debris of whatever nature on, in, over, or underground or into surface or ground water, except for preexisting or approved project-related stormwater discharges and any maintenance associated with those stormwater discharges.

- F. **Non-Native Species.** The planting or introduction of non-native species.
- G. **Herbicides, Insecticides and Pesticides.** The use of herbicides, insecticides, or pesticides, or other chemicals, except for as may be necessary to control invasive species that threaten the natural character of the Conservation Area. State-approved municipal application programs necessary to protect the public health and welfare are not included in this prohibition.
- H. **Removal of Vegetation.** The mowing, cutting, pruning, or removal of any kind; disturbance, destruction, or the collection of any trees, shrubs, or other vegetation, except for pruning, cutting or removal for:
 - 1) safety purposes; or
 - 2) control in accordance with accepted scientific forestry management practices for diseased or dead vegetation; or
 - 3) control of non-native species and noxious weeds; or
 - 4) scientific or nature study.
- I. **Agricultural Activities.** Conversion of, or expansion into, any portion of the Conservation Area for use of agricultural, horticultural, aquacultural, livestock production or grazing activities. This prohibition also includes conversion from one type of these activities to another (e.g., from agricultural to silvicultural).
- J. **Other.** Other acts, uses, excavation, or discharges that adversely affect fish or wildlife habitat or the preservation of lands, waterways, or other aquatic resources within the Conservation Area.

4. INSPECTION, ENFORCEMENT AND ACCESS RIGHTS

The Agencies and their authorized representatives shall have the right to enter and go upon the Property, to inspect the Conservation Area and take actions necessary to verify compliance with this Conservation Easement. When practicable, such entry shall be upon prior reasonable notice to the Grantor or the then current owner of the Property. The Grantor grants to the Agencies a discretionary right to enforce this Conservation Easement in a judicial action against any person(s) or other entity(ies) violating or attempting to violate these restrictive covenants: provided, however, that no violation of these restrictive covenants shall result in a forfeiture or reversion of title. In any enforcement action, an enforcing Agency shall be entitled to a complete restoration for any violation, as well as any other judicial remedy such as civil penalties. Nothing herein shall limit the right of the applicable Agencies to modify, suspend, or revoke any permit.

5. RECORDING AND EXECUTION BY PARTIES

The Grantor agrees that this Conservation Easement may be recorded in the Land Records of the county or counties where the Property is located. Further, if anticipated activities in the Conservation Area are agreed upon for future phases of the site, as spelled out in the "Reserved Rights," the Grantor must submit plans to the applicable Agencies for review and approval prior to any work in the Conservation Area.

6. NOTICE OF TRANSFER OF PROPERTY INTERESTS

No transfer of the rights of this Conservation Easement, or of any other property interests pertaining to the Conservation Area or the underlying property it occupies, shall occur without sixty (60) calendar days prior written notice to the Agencies.

7. MODIFICATIONS

The restrictions contained in this Conservation Easement are required by the attached Mitigation Plan. There shall be no changes or alterations to the provisions in this Conservation Easement without prior written approval from the appropriate Agencies. The Agencies shall be provided with a 60-day advance written notice of any legal action concerning this Conservation Easement or of any action to extinguish, void, or modify this Conservation Easement in whole or in part, including transfer of title to, or establishment of any other legal claims over, the Property. This Conservation Easement is intended to survive foreclosure, bankruptcy, condemnation, or judgments affecting the Property.

8. RESERVED RIGHTS

A. The Grantor and any holders of easements or other property rights for the operation and maintenance of pre-existing or project-related structures or infrastructure such as roads, utilities, drainage ditches, or stormwater facilities that are present on, over or under the Conservation Area reserve the right, within the terms and conditions of their permits, their agreements, and the law, to continue with such operation and maintenance. All pre-existing or approved project-related structures or infrastructure shall be shown on the accompanying plat map or approved plan and attached to this instrument.

B. If the authorized project requires any related or unanticipated infrastructure modifications, utility relocation, drainage ditches, or stormwater controls within the identified Conservation Area, or if situations require measures to remove threats to life or property within the identified Conservation Area, said activities must be approved in writing by the applicable Agencies. Approval is subject to the sole discretion of the applicable Agencies. If approved, said activities must be identified on amended Exhibits A and C and must be recorded and specifically noted as an "amendment" and copies of the recorded amended Exhibits must be provided to the Agencies within 60 days of approval by the Agencies. Approval of said activity by the applicable Agencies is in addition to any Clean Water Act Section 404 permit or other authorization that may be required in order to legally implement said activity. The Grantor accepts the obligation to place any other responsible party on reasonable prior notice of their need to request such Agency approval

9. SEVERABILITY

If any portion of this Conservation Easement, or the application thereof to any person or circumstance, is found to be invalid, the remainder of the provisions of this instrument, or application of such provision to persons or circumstances other than those as to which it is found to be invalid, as the case may be, shall not be affected thereby.

10. MITIGATION

If the work required by a mitigation plan including maintenance or remedial work, under the Department of Army permit for the authorized project occurs within the Conservation Area, then the Grantor is allowed to construct the mitigation work in accordance with the authorized mitigation plan, a copy of which is incorporated by reference.

11. COAL RIGHTS NOTICE.

The following notice is given to and accepted by Grantor for the purpose and with the intention of compliance with the requirements of the Pennsylvania Conservation and Preservation Declarations Act. Nothing herein shall imply the presence or absence of workable coal seams or the severance of coal interests from the Property.

NOTICE: This Declaration may impair the development of coal interests including workable coal seams or coal interests which have been severed from the Property.

12. DURATION; COVENANT RUNNING WITH THE LAND

THIS CONSERVATION EASEMENT VESTS A SERVITUDE RUNNING WITH THE LAND THAT SHALL REMAIN IN EFFECT IN PERPETUITY. THIS CONSERVATION EASEMENT IS BINDING UPON THE UNDERSIGNED GRANTOR AND, UPON RECORDATION IN THE PUBLIC RECORDS, ALL SUBSEQUENT OWNERS OF THE PROPERTY OR ANY PORTION OF THE PROPERTY THAT INCLUDES THE CONSERVATION AREA WILL BE BOUND BY ITS TERMS, WHETHER OR NOT SUCH SUBSEQUENT OWNER HAD ACTUAL NOTICE OF THIS CONSERVATION EASEMENT AND WHETHER OR NOT THE DEED OF TRANSFER OF THE PROPERTY SPECIFICALLY REFERS TO THE TRANSFER BEING UNDER AND SUBJECT TO THIS CONSERVATION EASEMENT.

IN WITNESS WHEREOF said GRANTOR has executed this Conservation Easement the day and year first above written.

GRANTOR (if entity):

(Name of entity)

By: _____
Name: _____
Title: _____

GRANTOR (if individual(s)):

Name: _____

Name: _____

COMMONWEALTH OF PENNSYLVANIA)
) : SS
COUNTY OF _____)

On _____, before me, a Notary Public for the Commonwealth aforesaid, personally appeared _____, who acknowledged himself/herself to be **[TITLE OF OFFICER OF GRANTOR ENTITY, OR GRANTOR'S NAME, IF AN INDIVIDUAL]**, and that s/he, as **[USE IF APPLICABLE: an officer of]** the Grantor, being authorized to do so, executed, in my presence, the foregoing Conservation Easement for the purposes herein contained

IN WITNESS WHEREOF, I have set my hand and official seal.

Notary Public
My commission expires:

[SEAL]

ACCEPTANCE OF CONSERVATION EASEMENT

The undersigned accepts the rights and responsibilities of the Sponsor conferred by this Conservation Easement.

[NAME OF SPONSOR ENTITY]

By: _____
Name: _____
Title: _____

COMMONWEALTH OF PENNSYLVANIA)
) : SS
COUNTY OF _____)

On _____, before me, a Notary Public for the Commonwealth aforesaid, personally appeared _____, who acknowledged himself/herself to be _____ of **[Name of Sponsor]**, and that s/he, as such officer, being authorized to do so, executed, in my presence, the foregoing Acceptance of Conservation Easement for the purposes herein contained

IN WITNESS WHEREOF, I have set my hand and official seal.

Notary Public
My commission expires:

[SEAL]

EXHIBIT A

LEGAL DESCRIPTION OF THE PROPERTY

EXHIBIT B
MITIGATION PLAN

EXHIBIT C

DEPICTION OF CONSERVATION AREA

Exhibit G: Endowment Agreement

Exhibit H: Bonding/Letter of Credit

Exhibit I: Mitigation Rule Timeline

Exhibit I: Compensatory Mitigation Rule Timeline For Bank Or ILF Instrument Approval

Compensatory Mitigation Rule Timeline for Bank or ILF Instrument Approval*

		Event	# of Days**			
Phase I		Optional Preliminary Review of Draft Prospectus	30	DE provides copies of draft prospectus to IRT and will provide comments back to the sponsor within 30 days.		
	Sponsor Prepares and Submits Prospectus ~DE must notify sponsor of completeness w/in 30 days of submission~					
Day 1** Complete Prospectus Received by DE						
Phase II	Day 1**	Public notice must be provided within 30 days of receipt of a complete prospectus	30			
	Day 30	30-Day Public Comment Period	30			
	Day 60	DE must provide the sponsor with an initial evaluation letter within 30 days of the end of the public comment period.	30			15
Day 90	Sponsor Considers Comments, Prepares and Submits Draft Instrument ~DE must notify sponsor of completeness w/in 30 days of submission~					
Day 1 Complete Draft Instrument Received by IRT Members						
Phase III		30-day IRT comment period begins 5 days after DE distributes draft instrument to IRT members	30	90	Within 90 days of the receipt of a complete draft instrument by IRT members, the DE must notify the sponsor of the status of the IRT review.	
		DE discusses comments with IRT and seeks to resolve issues ~ # of days variable~	60			
Day 90	Sponsor Prepares Final Instrument ~Sponsor provides copies to DE and all IRT members~					
Day 1 Final Instrument Received by DE & IRT						
Phase IV	Day 1	DE must notify IRT members of intent to approve/not approve instrument within 30 days of receipt.	30	45	IRT members have 45 days from submission of final instrument to object to approval of the instrument and initiate the dispute resolution process.	
	Day 30	Remainder of time for initiation of dispute resolution process by IRT members	15			
Day 45	INSTRUMENT APPROVED/NOT APPROVED, or DISPUTE RESOLUTION PROCESS INITIATED					

EPA/Corps draft 4/02/08

Total Required Federal Review (Phases II-IV): ≤225 Days

*Timeline also applies to amendments

**The timeline in this column uses the maximum number of days allowed for each phase.

Tunnel Road Aquatic Resources Bank Site Prospectus

Allegheny Township, Somerset County

June 2017



Land Reclamation Group
632 Hunt Valley Circle
New Kensington, PA 15068

SECTION 2: LRG TUNNEL ROAD AQUATIC RESOURCES MITIGATION BANK

I. Introduction and Bank Site Details

A. Project Name

Land Reclamation Group, LLC (LRG) will be the proposed Bank Sponsor (Sponsor). As the Sponsor, LRG will manage and maintain the Tunnel Road Bank (Bank or Bank Site) in Allegheny Township, Somerset County, Pennsylvania (Figure 1). This prospectus serves as a plan for a compensatory mitigation bank for Aquatic Resource impacts authorized in Pennsylvania.

B. Project Purpose

Use of credits from the LRG-UMBI are used to offset direct, indirect, secondary, and temporary wetland and stream impacts authorized by Clean Water Act permits. The Sponsor must be in compliance with the Clean Water Act and implementing regulations, including, but not limited to the 404(b)(1) Guidelines, the National Environmental Policy Act (NEPA), DEP Chapter 105, and all other applicable federal and State legislation, rules and regulations. This agreement has been drafted following the guidelines set forth in the U. S Corps of Engineers (ACOE)(33 CFR Part 332) and Environmental Protection Agency's (EPA)(40 CFR Part 230) Compensatory Mitigation for Losses of Aquatic Resources (hereafter "the Rule"). This agreement shall incorporate and follow guidelines to be set out in future amendments to these documents as appropriate.

The Sponsor plans to restore the existing wetland and waterways to best of its ability prior to the impacts that occurred over the past 80 years.

C. Supporting ACOE and IRT Coordination

Coordination with the ACOE and the IRT is required to establish an aquatic resources mitigation bank. The IRT will review the proposed site when requested by LRG.

The establishment and use of the Bank for off-site compensatory mitigation or conservation is governed by one or more of the following statutes, regulations, policies, and guidelines:

1. Clean Water Act (33 USC 1251 et seq.);
2. Rivers and Harbors Act (33 USC 403);
3. Fish and Wildlife Coordination Act (16 USC 661 et seq.);
4. Regulatory Programs of the Corps of Engineers, Final Rule (33 CFR Parts 320-332);
5. Guidelines for Specification of Disposal Sites for Dredged and Fill Material(40 CFR Part 230);
6. Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army concerning the Determination of Mitigation Under Clean Water Act, Section 404 (b)(1) Guidelines (February 6, 1990);
7. Regulatory Guidance Letter No. 05-01. U.S. Army Corps of Engineers, February 14, 2005;
8. Compensatory Mitigation for Losses of Aquatic Resources; Final Rule. 33 CFR Parts 325 and 332, Department of the Army, Corps of Engineers and 40 CFR Part 230, Environmental Protection Agency, April 10, 2008;
9. Regulatory Guidance Letter No. 08-03. U.S. Army Corps of Engineers, October 10, 2008;

10. Pennsylvania Department of Environmental Protection, Chapters 102, 105, and 106 regulatory programs;
11. Pennsylvania State Programmatic General Permits (PASPGP) and the requirements of Title 25 PA Code 105 rules and regulations.

II. MITIGATION PROPOSAL

A. Proposed Resources

LRG proposes to protect and preserve a property at 449 Tunnel Road, Allegheny Township in Somerset County. The site is planned for a Conservation Bank and an Aquatic Resources Mitigation Bank. The site is 150 acres. Approximately 110 acres of the property is comprised of a mature forest. The forest contains various hardwood species native to Pennsylvania. There are approximately 7 acres of land that will be proposed for this as a bank site under the LRG-UMBI to construct stream and wetland mitigation for compensatory mitigation.

B. Sustainable Compensatory Mitigation

LRG plans to work with the land owner to protect the land and water resources on the property to preserve the aquatic habitat and the forested habitat recognized as significant to various species in the areas.

C. Site Selection Process

The Sponsor is working with the IRT to develop an aquatic resource mitigation bank. The existing landowner has retained all surface and subsurface mineral rights. However, the landowner desires to maintain the entire 150-acre property to for future generations for recreational use. The land owner approached LRG to see if there was an opportunity to secure the property in a long-term easement to prevent future generations to subdivide the property. LRG provided the landowner with this opportunity to set the land development rights aside and develop the natural resources for and habitat conservation. The Sponsor has completed aquatic resource investigations at the site and has found existing resources at the site that can be preserved additional other areas can be developed into resources aquatic resources. The sponsor plans to improve the proposed wetland resources on the property as additional habitat for the endangered bat species.

D. Site Protection Instrument

The Bank Sponsor has attached the proposed Site Protection Instrument for the Bank Site (*Section 1: Exhibit E: Sample Conservation Easement*). The responsibilities set forth within the site protection instrument may be transferable to an acceptable conservation organization upon fulfillment of project objectives with Site ownership remaining with the titled owner. The Bank Sponsor will provide the perpetual protection and preservation of the site through, Conservation Easement, maintenance agreement, and an endowment for long-term funding. These provisions will conform to the current U.S. Army Corps of Engineers (COE) and DEP guidance.

E. Baseline Information

The proposed Tunnel Road Aquatic Resources Bank is a mitigation bank for the loss of aquatic resources habitat. This aquatic resource bank is found on the Allegheny Ridge in Somerset County. It is located on the New Baltimore USGS 7.5' quadrangle.

The site is characterized by a single ridge which has a peak elevation of 2200 feet with the ridge running in a northerly direction to approximately 1800 feet. The property associated with the bank primarily extends from this hillside ridge to Tunnel Road which is parallel to Three Lick Run to

the east of the ridge. This waterway has a drainage area of approximately 7 square miles. The mitigation bank property is approximately 150 acres. The terrain is very steep with a easterly facing slope. The site has a mature forest approximately 50-80 years old with various hardwood species native to the area. The forested area over looks abandoned agricultural land along Three Lick Run. There are two streams on the property, an un-named tributary to Three Lick Run and Three Lick Run are located on the property. An abandoned pasture contains, emergent wetland, scrub-shrub wetland, and open water resources. LRG plans to enhance the existing emergent wetlands developing scrub shrub and forested wetland. Furthermore, LRG plans to enhance the waterways to provide additional habitat for instream species and benthic organisms.

According to the Natural Resource Conservation Service (NRCS) as presented in Figure 2 the property contains soils listed with hydric inclusions listed in within the resources report in Exhibit A of this section of this document. A hydric soil is a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation (USDA-SCS, 1985).

The Tunnel Road Bank is located within the 8-digit Hydrologic Unit (02050303) of the Raystown Branch of the Juniata. Within the Pennsylvania State watershed plan the resource bank is located in Dunning Creek Section 11c. The site is drained by Three Lick Run which flows off site to meet the Raystown Branch within a mile of the site. According to Chapter 93 of the PA DEP, Three Lick Run is listed as a cold-water fishery (CWF) but the receiving waters of the Raystown Branch is considered to be trout stocked waters.

There is approximately 3500 feet of stream on the property and 2.34 acres of Emergent and Scrub Shrub Wetlands.

The current land use and zoning is agricultural. There is a low risk of development in the area due fact the site is fairly rural and the travel time to existing developed areas is nearly a 35-minute drive. Additionally, the existing infrastructure is limited and does not provide the opportunity for business development in the area. The highest risk of environmental resource impacts in this area is due to the extraction of natural resources and minerals. Silviculture, natural gas, and minerals such as lime stone, and sand stone present a higher risk to impact aquatic resources and habitat.

F. Mitigation Work Plan

LRG will serve as the sponsor of the Tunnel Road Aquatic Resource site. The baseline condition of the proposed aquatic resources is described in the Waters of the United States Resources Report. Enclosed in Section II Exhibit A. This report has provided the environmental features, species and habitats occurring on site.

There are PEM and PSS wetlands onsite. All jurisdictional streams and wetlands identified onsite have been degraded through anthropogenic alterations including historic agricultural activities, the construction of a pond and relocation of the waterway due to the placement of fill, and the establishment of non-native pasture grasses (i.e. reed canary grass, *Phalaris arundinacea*). Typical site photographs are included in Exhibit A.

The site has two perennial waterways. A first order perennial waterway, an un-named tributary to Three Lick Run. The second stream is Three Lick Run. The un-named tributary has been relocated and it flows into a non-jurisdictional dam on the property. The Sponsor plans to remove the dam and re-establish the stream channel as it once did. Three Lick Run was relocated in about 1980. A large amount of waste rock material was placed on the property. Prior to the placement of the waste material Three Lick Run was relocated to where it is today. The sponsor does not want to relocate

Three Lick into its original location as presented on the historical aerial photos. Three Lick is in moderate condition for being relocated about forty years ago. The Sponsor will evaluate the waterway and provide habitat enhancements along the stream corridor. Additionally, in several areas the stream has been cut off from the flood plain. The sponsor would like to create an approximate twenty year flood plain connecting the stream to the wetlands adjacent to the stream providing flood storage helping to protect the community downstream.

There are approximately 2.75 acres (119,790 Sq. Ft.) of existing PEM and PSS wetlands on site. The sponsor would like to enhance the PEM Wetland into PSS wetlands. Additionally, there are 4.25 acres of pasture. The Sponsor plans to reestablished into PEM, PSS and PFO wetland.

G. Determination of Credits

Upon establishment of the LRG-UMBI in accordance with Section 1-III-C-8 of the Instrument.

LRG shall have the exclusive right to determine the price for any and all the credits. The sale price of Credits is considered proprietary and confidential business information and will not be disclosed in accordance with applicable laws. LRG may sell or convey credits to any Purchaser

Mitigation credits established under the LRG-UMBI and its component Banking Sites and debits incurred by applicable projects' direct, indirect/secondary, and temporary habitat impacts shall be computed using a method accepted by the IRT and the Sponsor. Mitigation, including credits generated and utilized, will be tracked and reported. (See Exhibit E of Section 1 for credit tracking sheet).

The sponsor will complete the Aquatic Resource Condition of the Level 2 Rapid Assessment (PA-RAP) for the proposed site prior to submission of the Final Site Specific mitigation plan and the PA DEP Permit. The Sponsor will use the scoring within the assessment to satisfy the environmental lift required to demonstrate the improvement to the habitat. An explanation of the evaluation the for the selection of those factors that worked into the calculation for the Tunnel Road Aquatic Resource Bank Site to determine credits release will be further described in the Baseline Habitat Assessment for the Tunnel Road Bank.

This Site will follow the Ratio Based mitigation as described in the instrument in Section 1 Part III-C-9. The Sponsor expects to gain wetland and stream credits as follows.

The Sponsor plans to construct stream and wetland on site. This would be considered Reestablishment credits. The Tunnel Road site will produce the following credits based on the sponsors preliminary evaluation. (Figure 6)

Wetlands

Reestablished wetland would be 5.14 Acres providing 5.14 Acres of Credit

Enhancement wetland would be 2.34 Acres providing 1.375 Acres of Credit

Un-named tributary to Three Lick

Reestablishment of stream would be 600 linear feet providing 600 credits of first order stream

Enhancement of 780 feet of stream providing 390 feet of credit of first order stream

Three Lick

Enhancement of 2200 feet of stream providing 1100 feet of credit.

Final mitigation credit release from Tunnel Road Bank Site shall be expected to occur following completion of the appropriate monitoring period and achievement of approved success criteria contained in the Site-Specific Mitigation Plan.

It is anticipated by the parties included in this instrument, that use of mitigation shall be “in-kind” to the greatest extent practicable. The objective of this umbrella mitigation bank instrument is to help insure no net loss of Bat habitat through unavoidable direct, secondary, and temporary impacts to the Bat habitat in the IRT area. Notwithstanding the above, all decisions concerning the appropriateness of using mitigation from the LRG-UMBI to offset impacts to bat habitat as well as all decisions concerning the quantity and type of such mitigation to be used to offset impacts to forested habitat authorized by Department of the Army permits, shall be made by the Corps recommended by the FWS, pursuant to Section 404 of the Clean Water Act and implementing regulations and guidance and DEP Chapter 105 of the Dam safety and waterway management and Section 102 of the Clean Streams law, after notice of any proposed use of the LRG-UMBI to the US FWS , and consultation with US FWS concerning such use.

H. Maintenance Plan

The Bank Sponsor agrees to perform all necessary maintenance to ensure the continued viability of the Site once initial construction is complete. The need to perform maintenance will be assessed in the monitoring reports and during monitoring site visits, and if deemed necessary by the Bank Sponsor or the IRT. The appropriate required maintenance will be conducted. At a minimum, the monitoring site visits will occur once prior to the start of the growing season and once during the growing season to collect data for the monitoring report. Additional monitoring events will occur after large storm events to validate bankfull events.

Once the monitoring requirements are deemed complete at the end of the 10-year monitoring period and upon satisfaction of the Performance Standards, described in Exhibit B of Section 1 the LRG-UMBI general maintenance responsibilities of the site will be relinquished. all of the terms and conditions set forth in the Long-Term Management and Maintenance Plan, described in Section K of this document, will take effect.

I. Performance Standards

The Bank Site Requires no special deviation from the performance Standards set forth within the LRG-UMBI in Exhibit B.

J. Monitoring Requirements

Monitoring will follow the guidance set forth in the LRG-UMBI in Exhibit D of the Instrument.

K. Long Term Management Plan

A Long-Term Management and Maintenance Plan (LTM Plan) ensures that the Bank Site is managed, monitored, and maintained in perpetuity. The LTM Plan shall be funded through a fee provided to the Long-Term Steward. This fee shall be paid by the Sponsor from funds in an endowment. This plan, described below, establishes objectives, priorities and tasks to monitor, manage, maintain and report on the jurisdictional waters of the U.S. within this Bank Site. An annual report will be submitted to the IRT by November 30th containing photographic information and a brief discussion of any maintenance needed to keep the property in a non-threatened state.

1. Periodic Patrols. At least one annual walk-through survey will be conducted to qualitatively monitor the general condition of these habitats in perpetuity. General topographic conditions, hydrology, general vegetation cover and composition, invasive species, and erosion will be noted, evaluated and mapped during a site examination. Notes to be made will include observations of species encountered, water quality, general extent of wetlands and streams, and any occurrences of erosion, structure failure, or invasive or non-native species establishment. The report should provide a discussion of any recent changes in the watershed.
2. Invasive Species Monitoring. Each year's annual walk-through survey (or a supplemental survey) will include a qualitative assessment (e.g. visual estimate of cover) of invasive species. Additional actions to control invasive species will be evaluated and prioritized in coordination with the IRT.
3. Signage. Signage will be installed and maintained at property boundaries to prevent casual trespass while allowing necessary access. During each site visit, notes will be made as to the condition of signs, crossings, and property boundaries. Recommendations to implement repair or replacement to signage, crossings, or property boundary markers will be made, if applicable.
4. Fencing. The Bank Site is not currently fenced. After site development, the Long-Term Steward may determine the need to install fencing. The Land Steward will need to consult with the IRT and the land owner. If there is no need, none will be installed.
5. Crossings and Structures. There are no crossings or other structures to maintain within the bank site.
6. Forestry Management Practices. Vegetation will be reduced in any areas recommended by authorities, and as approved by the IRT, for fire control. Any practices to reduce diseased or dead vegetation will be allowed if the vegetation compromises the long-term viability of the project or any installed structure on the site.
7. Trash and Trespass. At least once yearly trash will be removed and any necessary measures to prevent or repair damage from vandalism and trespass impacts will be taken.

L. Adaptive Management Plan

The Sponsor will follow the standards developed in the LRG-UMBI to address the adaptive Management Plans. This can be found in Section 1 part-III-C-11-g of this Document.

M. Real Estate Assurance

All real estate assurances are addressed in the LRG-UMBI for long term protection under Section 1-Exhibit F. The Conservation Easement will be developed for the site. The Surface and subsurface rights and the Conservation Easement for the Bank Site will be included in Exhibit B of Section 2.

N. Financial Assurances

All financial assurances are addressed in the LRG-UMBI. The Sponsor will follow the written guidance for the short-term, Interim, and Long-term financial assurances. These commitments are addressed in Exhibit G and H. The dollar value of the financial assurance will be based on the size of the site and the potential for risk.

O. Service Area

The Service area for the bank will encumber the six digit HUC 020503 of the Lower Susquehanna. This includes the entire Juniata Basin and the Lower Susquehanna from the confluence of the two rivers. Under the State Watershed Plan the Sponsor would like to provide the opportunity for credits in watersheds 5, 6,7, 11 and 12. These watersheds are all part of the Lower Susquehanna Watershed Hydrologic Unit. (Figure 3)

The primary service area would be watershed 5 which would include the entire Juniata Basin. The separate drainage areas include the Raystown Branch, the Upper Juniata, and the Lower Juniata. The Secondary service area would include the Lower Susquehanna-Swatarra Watershed, Lower Susquehanna Penns Watershed, and the Lower Susquehanna. This project is occurring in the headwaters of the Raystown Branch it is understood when we address storm water and water quality issues at the headwaters of a stream we can have a positive impact within the whole watershed. The Sponsor is entering this project with a wholistic approach towards watershed quality. The sponsor understands that addressing water quality, storm water and flood storage in the headwaters of a watershed all these improvements benefit the areas downstream.

P. Credit Release Schedule

The LRG-UMBI has a release schedule of credits under Exhibit C. The Sponsor plans to follow this schedule included in this Exhibit.

III. OWNERSHIP AND LONG-TERM MANAGEMENT

A. Contact Information

The site Owner and Address is:
Richard Schoedel & Kimberly Kuhns
449 Tunnel Road
New Baltimore, PA 15553
Attn Richard Schoedel

Bank Sponsor:
Land Reclamation Group, LLC
632 Hunt Valley Circle
New Kensington PA 15068
ATTN: Michael Barrick.

B. Encumbrances

The Bank Site has no known encumbrances at this time. A formal survey confirming the presence or absence of encumbrances has been completed prior to submission of the LRG-UMBI. A permanent conservation easement will be included as part of the mitigation bank.

C. Long-Term Ownership

The current land owner will retain ownership of the land while the Bank Sponsor will retain an easement over the Bank Site. The use of areas within the Bank for any purpose that interferes with its conservation purposes shall not be conducted nor authorized by the Bank Sponsor/Long-Term Owners. The following activities are proposed to be permissible within the proposed easement areas, unless the IRT directs otherwise:

1. Monitoring of vegetation and the general overall site continuance;
2. Maintenance vegetation, tree succession as approved by the IRT;
3. Hunting, trapping, tapping trees for maple syrup, and fishing and other passive recreational uses such as hiking and bird watching;

4. Ecological education; and
5. Compliance with applicable Federal, State, or local regulations or appropriate court orders.

The long-term management will be undertaken following the completion of success monitoring. Long-term success achievement will be verified by the submittal of status reports to the ACOE on a schedule approved by the IRT.

D. Site Protection Instrument Holder

The Bank Sponsor has coordinated with a third party (Western Pennsylvania Conservancy, WPC) for long term easement monitoring of the site. The transfer to this group will take place upon review and approval by the IRT. The Sponsor plans to transfer the easement to the WPC after the site reaches the desired metrics and 100% of the credits are released.

E. Sponsor Qualifications

The Land Reclamation Group management team has 30 years of mitigation development for transportation and nonprofit sectors. The LRG team consists of Michael Barrick and Andrew Dzurko. Both members have experience working with partners such as the NRCS, PA Fish and Boat Commission, County Conservation Districts, Regional DEP offices, California University, Partners for Fish and Wildlife, US Fish and Wildlife Service, Penn State Dirt and Gravel Road Program and various local contractors from the region.

Michael Barrick has 10 years coordinating and implement site specific and bank mitigation sites at District 12-0 Penn DOT. Michael managed the development of stream and wetland mitigation plans, review, and contracting for construction of the mitigation sites. Additionally, he has experience with site inspection and monitoring of the mitigation sites. Michael also has 17 years of experience developing site specific Non-Point Pollution mitigation sites working with the Jacobs Creek Watershed Association and Westmoreland Conservation District.

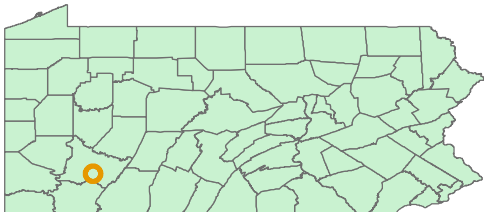
Andrew Dzurko has 20 years of site development, design, and inspection for wetland and stream mitigation projects. He has experience with construction of site specific and Wetland Bank sites throughout western Pennsylvania. Andrew also worked with the Jacobs Creek Watershed Association for 15 years developing Non-point pollution mitigation sites.

Figure 1: Location and Vicinity Maps

Figure 1
USGS Project Location Map
Tunnel Road Banking Site
Allegheny Township, Somerset County, Pennsylvania



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 Site Boundary



Scale: 1:24,000

Map Source: USGS
Mt. Pleasant Quadrangle

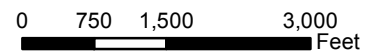
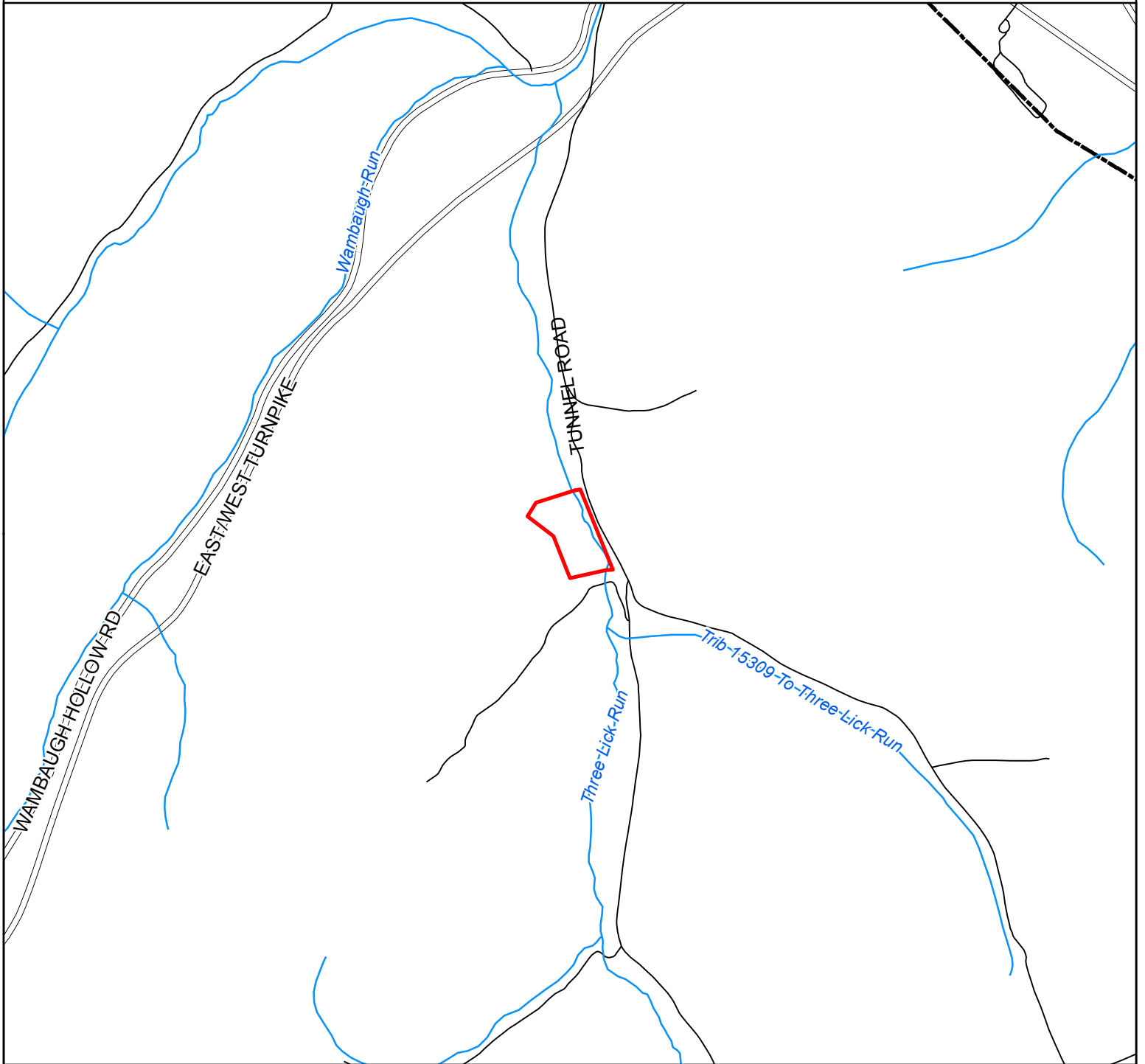





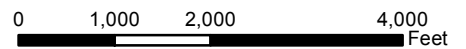


Figure 2: Vicinity Map

Figure 2
Vicinity Map
Tunnel Road Banking Site
Allegheny Township, Somerset County, Pennsylvania



-  Site Boundary
-  Stream
-  Local Road
-  State Road
-  Municipalities

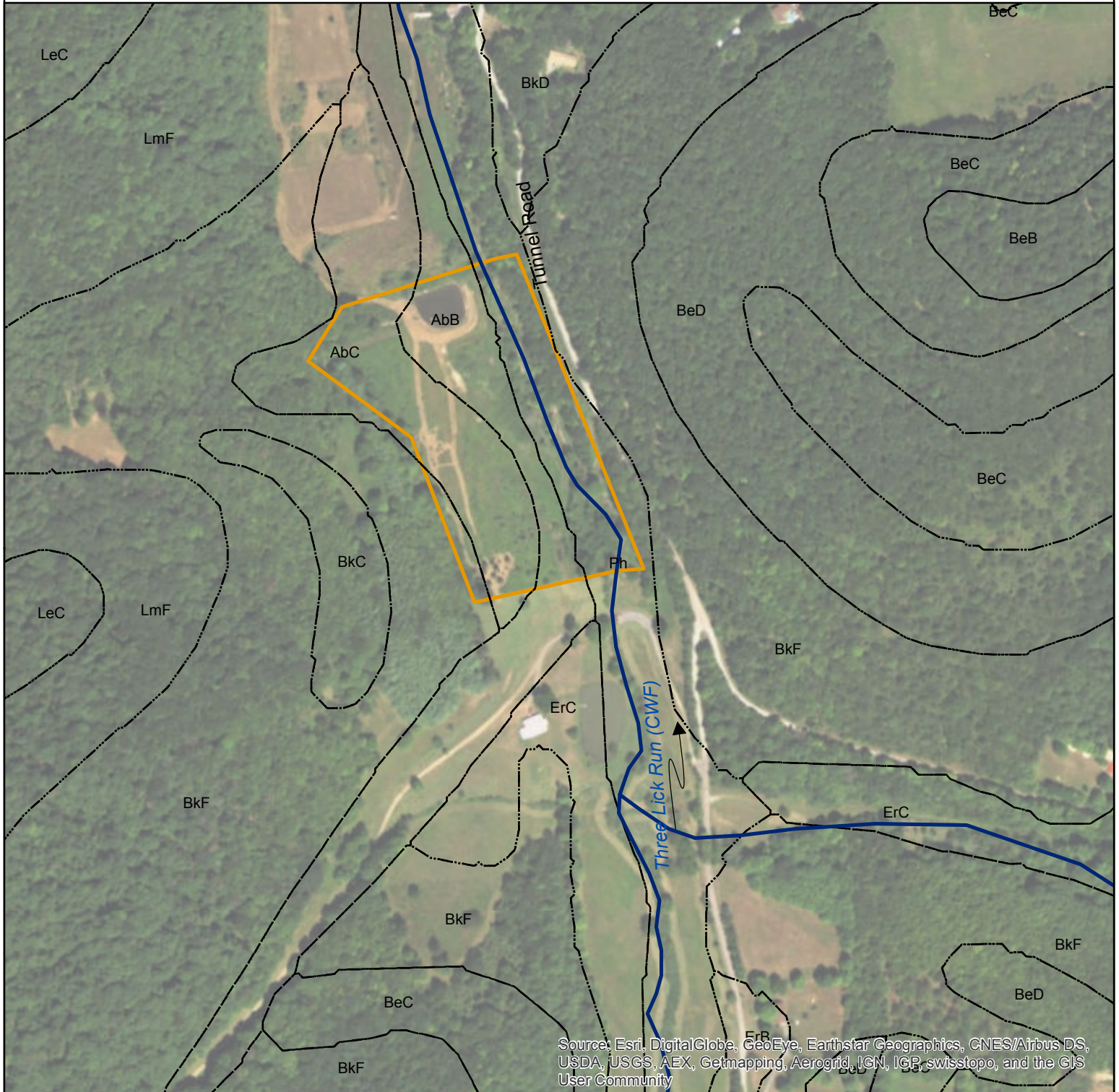


Scale 1:24,000

Figure 3: Soil Map

Figure 3 Soils Map

Tunnel Road Aquatic Resources Mitigation Bank Site
Allegheny Township, Somerset County, Pennsylvania



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

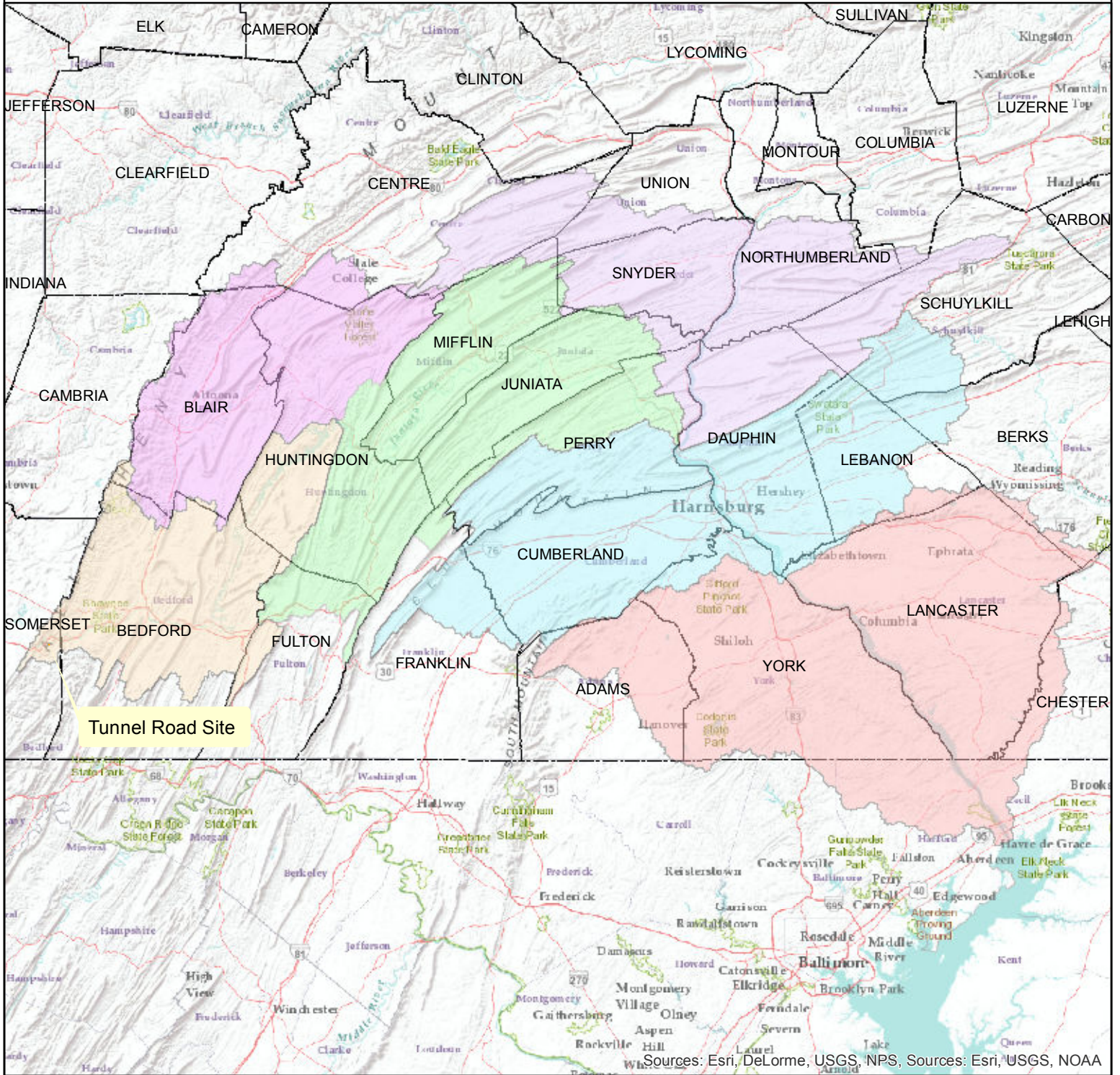
- Soil Boundary
- Site Boundary



0 187.5 375 750 Feet

Figure 4: Service Area Map

Figure 4 Service Area Map Tunnel Road Banking Site Allegheny Township, Somerset County, Pennsylvania



Sources: Esri, DeLorme, USGS, NPS, Sources: Esri, USGS, NOAA

- | | | |
|---|---|---|
| Lower Juniata | Lower Susquehanna-Swatara | Site Boundary |
| Lower Susquehanna | Raystown | |
| Lower Susquehanna-Penns | Upper Juniata | |

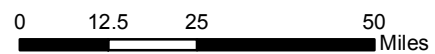


Figure 5: Historical Aerial Photos

Figure 5A
Historic Aerial: 1967
Tunnel Road Banking Site
Allegheny Township, Somerset County, Pennsylvania



Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

 Site Boundary



0 500 1,000 2,000
Feet

Scale 1:12,000

Figure 5B
Historic Aerial: 1958
Tunnel Road Banking Site
Allegheny Township, Somerset County, Pennsylvania



Source: Esri, DigitalGlobe, GeoEye, I-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

 Site Boundary




0 500 1,000 2,000
Feet

Scale 1:12,000

Figure 5C
Historic Aerial: 1939
Tunnel Road Banking Site
Allegheny Township, Somerset County, Pennsylvania



Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

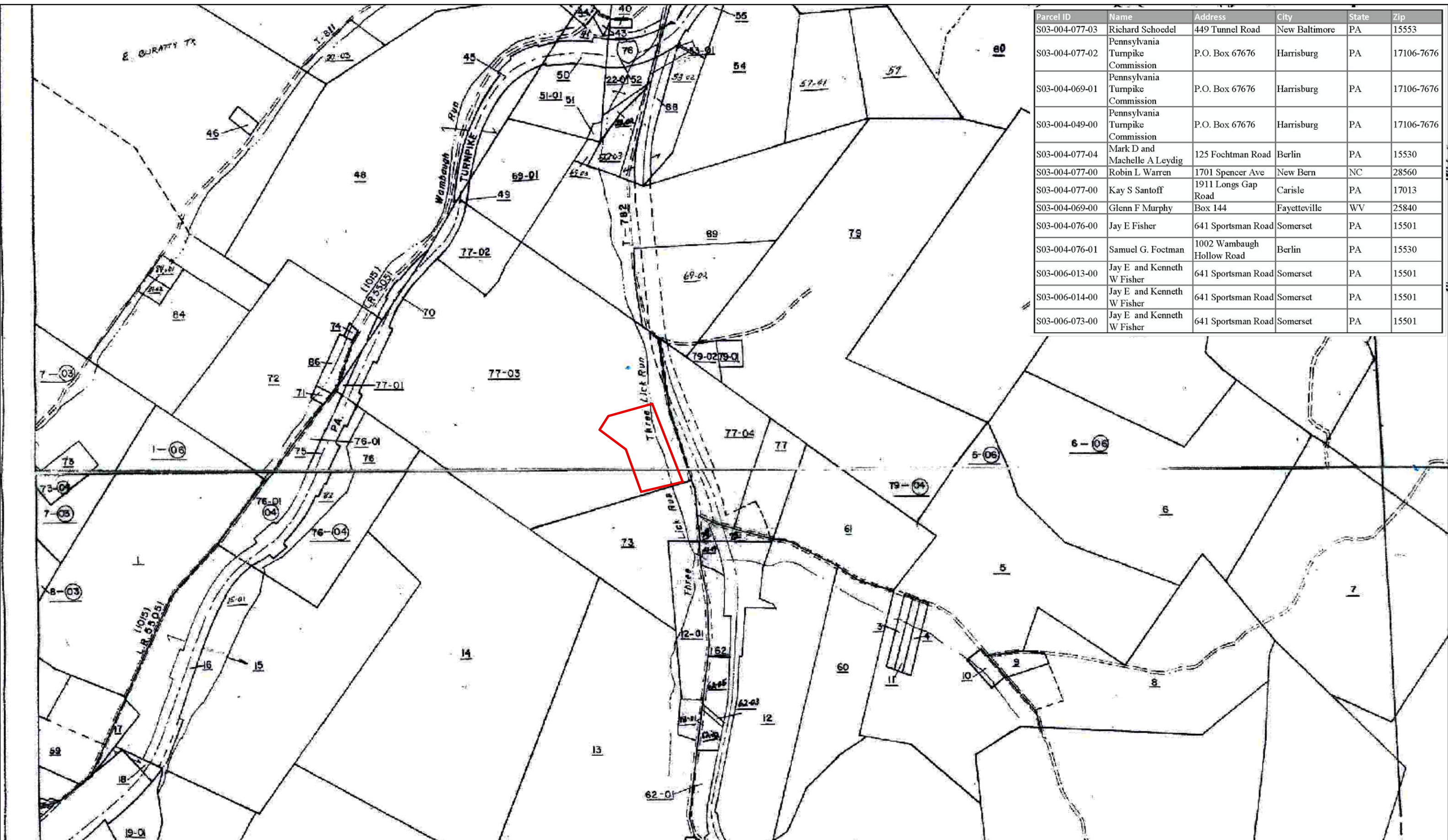
 Site Boundary



0 500 1,000 2,000
Feet

Scale 1:12,000

Figure 6: Adjacent Property Owners



Parcel ID	Name	Address	City	State	Zip
S03-004-077-03	Richard Schoedel	449 Tunnel Road	New Baltimore	PA	15553
S03-004-077-02	Pennsylvania Turnpike Commission	P.O. Box 67676	Harrisburg	PA	17106-7676
S03-004-069-01	Pennsylvania Turnpike Commission	P.O. Box 67676	Harrisburg	PA	17106-7676
S03-004-049-00	Pennsylvania Turnpike Commission	P.O. Box 67676	Harrisburg	PA	17106-7676
S03-004-077-04	Mark D and Mabelle A Leydig	125 Fochtman Road	Berlin	PA	15530
S03-004-077-00	Robin L Warren	1701 Spencer Ave	New Bern	NC	28560
S03-004-077-00	Kay S Santoff	1911 Longs Gap Road	Carisle	PA	17013
S03-004-069-00	Glenn F Murphy	Box 144	Fayetteville	WV	25840
S03-004-076-00	Jay E Fisher	641 Sportsman Road	Somerset	PA	15501
S03-004-076-01	Samuel G. Fochtman	1002 Wambaugh Hollow Road	Berlin	PA	15530
S03-006-013-00	Jay E and Kenneth W Fisher	641 Sportsman Road	Somerset	PA	15501
S03-006-014-00	Jay E and Kenneth W Fisher	641 Sportsman Road	Somerset	PA	15501
S03-006-073-00	Jay E and Kenneth W Fisher	641 Sportsman Road	Somerset	PA	15501

Figure 6

Adjacent Property Owners

Allegheny Township, Somerset County



Land Reclamation Group, LLC
 632 Hunt Valley Circle
 New Kensington, PA 15068



Figure 7: Concept Plan



**Figure 7
Concept Plan**

- Stream Segment Type**
- Restoration
 - Establishment
 - ▨ Existing Wetlands
 - ▨ Proposed Wetland

Wetlands
 Existing 2.34ac
 Proposed Additional 5.1ac.

Streams
 Three Lick Run
 Existing 2200LF
 UNT to Three Lick
 Existing 780LF
 Additional 600LF

Exhibit A: Resources Report

May 24th, 2017

This letter report is being submitted to present the results of the natural resources evaluation for the Tunnel Road Mitigation Site. Land Reclamation Group, LLC. is planning to utilize a vacant piece of land owned by Mr. Schoedel as a site for a Wetland Banking Area. The project is located near the intersection of Tunnel Rd and Benning Rd in Allegheny Township, Somerset County, PA.

LITERATURE REVIEW

The literature review included the examination of the following maps: the USDA Web Soil Survey (<http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>) and the U.S. Department of Interior Fish and Wildlife Service National Wetlands Inventory (NWI) Wetlands Mapper website (<http://www.nwi.fws.gov/>). Google Earth imagery dated: April 17 2016 of the site was also reviewed prior to the field investigation to identify areas of differing habitat.

The USDA Web Soil Survey website indicated that the soils within the project study area are identified as Albrights silt loam, 3 to 8 percent slopes (AbB), Albrights silt loam, 8 to 15 percent slopes (AbC), Philo silt loam, 0 to 3 percent slopes (Ph). The NWI map did not identify any wetlands present in the study area.

Review of existing surface water information for this study included; USGS, 7.5 minute topographic quadrangle of New Baltimore, PA, Pennsylvania Code Title 25, Chapter 87 Surface Mining of Coal and Chapter 93 Water Quality Standards and the 2008 Pennsylvania Summary of Fishing Regulations and Laws. Intermittent and perennial streams were classified in accordance with the guidelines set forth by the Pennsylvania Code Title 25, Chapter 87 Surface Mining of Coal.

FIELD RECONNAISSANCE

The field reconnaissance of the site was conducted on April 10, 2017. The wetland investigation was conducted in accordance with the *U.S. Army Corps of Engineers Wetland Delineation Manual* (Technical Report Y-87-1) and the *Eastern Mountains and Piedmont Regional Supplement* (September 2012), Pennsylvania Department of Environmental Protection (PADEP), *Chapter 105 Regulations, and Section 404 of the Federal Clean Water Act*.

Information collected during the field investigation was analyzed utilizing the routine on-site determination method as described in the *U.S. Army Corps of Engineers Wetland Delineation Manual* (Technical Report Y-87-1) and the *Eastern Mountains and Piedmont Regional Supplement* (September 2012). Pertinent information, including dominant vegetation, Munsell soil color, signs of hydrology, and types of disturbance (if applicable) was recorded onto a wetland data form for each sample plot.

Seven test plots were investigated during the reconnaissance of the site. The plots were chosen based on the aerial imagery review of the site and the initial site visit. Three of the plots met the criteria required for classification as a wetland habitat.

Plot TR-1. There were no signs of hydrology at this test plot. The dominant vegetation consists of *Solidago altissima*, *Rubus allegheniensis*, and *Rosa multiflora* species. The soil was typical for an upland area with 10YR 4/3, 10YR 5/3, and 10YR 3/3. This plot is identified as TR-1 on Figure 3 the Tunnel Rd Mitigation Site Resources Map.

Plot TR-2. Signs of hydrology at this plot included surface water, high water table, and saturation. The dominant vegetation consists of *Juncus effuses* and *Phalaris arundinacea* species. The soil was typical for a wetland area with the upper layer being 10YR 4/3, and the lower layers being a mixed matrix with 10YR 5/2 and 10YR 5/6. This area is classified as a Palustrine Freshwater Emergent Wetland.

This plot is identified as TR-2 on Figure 3 the Tunnel Rd Mitigation Site Resources Map.

Plot TR-3. Signs of hydrology included surface water, high water table, and saturation. The dominant vegetation consists of *Juncus effuses*, *Phalaris arundinacea*, and *Vernonia gigantea* species. The soil was typical for a wetland area with the top layers being 10YR 4/2, and the lower layer being 10YR 5/2. This area is classified as a Palustrine Freshwater Emergent Wetland. This plot is identified as TR-3 on Figure 3 the Tunnel Rd Mitigation Site Resources Map.

Plot TR-4. There were no signs of hydrology encountered at this test plot. The dominant vegetation consists of *Solidago altissima* and *Poa* species. The soil was typical for an upland area with the soil layers being 10YR 4/4 and 10YR 5/4. This plot is identified as TR-4 on Figure 3 the Tunnel Rd Mitigation Site Resources Map.

Plot TR-5. There were no signs of hydrology encountered at this test plot. The dominant vegetation consists of *Solidago altissima* and *Poa* species. The soil was typical for an upland area with the soil layers being 7.5YR 4/3 and 7.5YR 4/4. This plot is identified as TR-5 on Figure 3 the Tunnel Rd Mitigation Site Resources Map.

Plot TR-6. Signs of hydrology included surface water, high water table, and saturations. The dominant vegetation consists of *Cornus amomum*, *Juncus effuses*, and *Phalaris arundinacea* species. The soil was typical for a wetland area with the soil layers being 10YR 4/2. This area is classified as a Palustrine Freshwater Emergent Wetland. This plot is identified as TR-6 on Figure 3 the Tunnel Rd Mitigation Site Resources Map.

Plot TR-7. There were no signs of hydrology encountered at this test plot. The dominant vegetation consists of *Solidago altissima* and *Dipsacus fullonum* species.

The soil was typical for an upland area with soil layers being 10YR 5/3 and 10YR 4/4. This plot is identified as TR-7 on Figure 3 the Tunnel Rd Mitigation Site Resources Map.

One watercourse was identified during the resources evaluation. The stream is located to the east of the project limit of disturbance. The stream is Three Lick Run and flows north towards the Raystown Branch Juniata River. Three Lick Run is classified as a Cold Water Fishery (CWF) and is located on Figure 3 the Tunnel Rd Mitigation Site Resources Map.

CONCLUSIONS

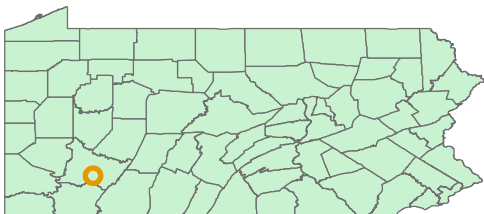
Based on the results of the field reconnaissance, seven test plots were chosen throughout the site and one cold water fishery was identified. Refer to figures 2 Soil Boundary Map and figure 3 the Tunnel Road Mitigation Site Resources Map for test pit locations, photo locations, and resources locations.

FIGURES

Figure 1
USGS Project Location Map
Tunnel Road Aquatic Resources Bank Site
Allegheny Township, Somerset County, Pennsylvania



Copyright: © 2013 National Geographic Society, i-cubed



 Site Boundary



Scale: 1:24,000

Map Source: USGS
Mt. Pleasant Quadrangle

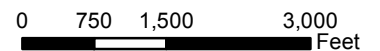
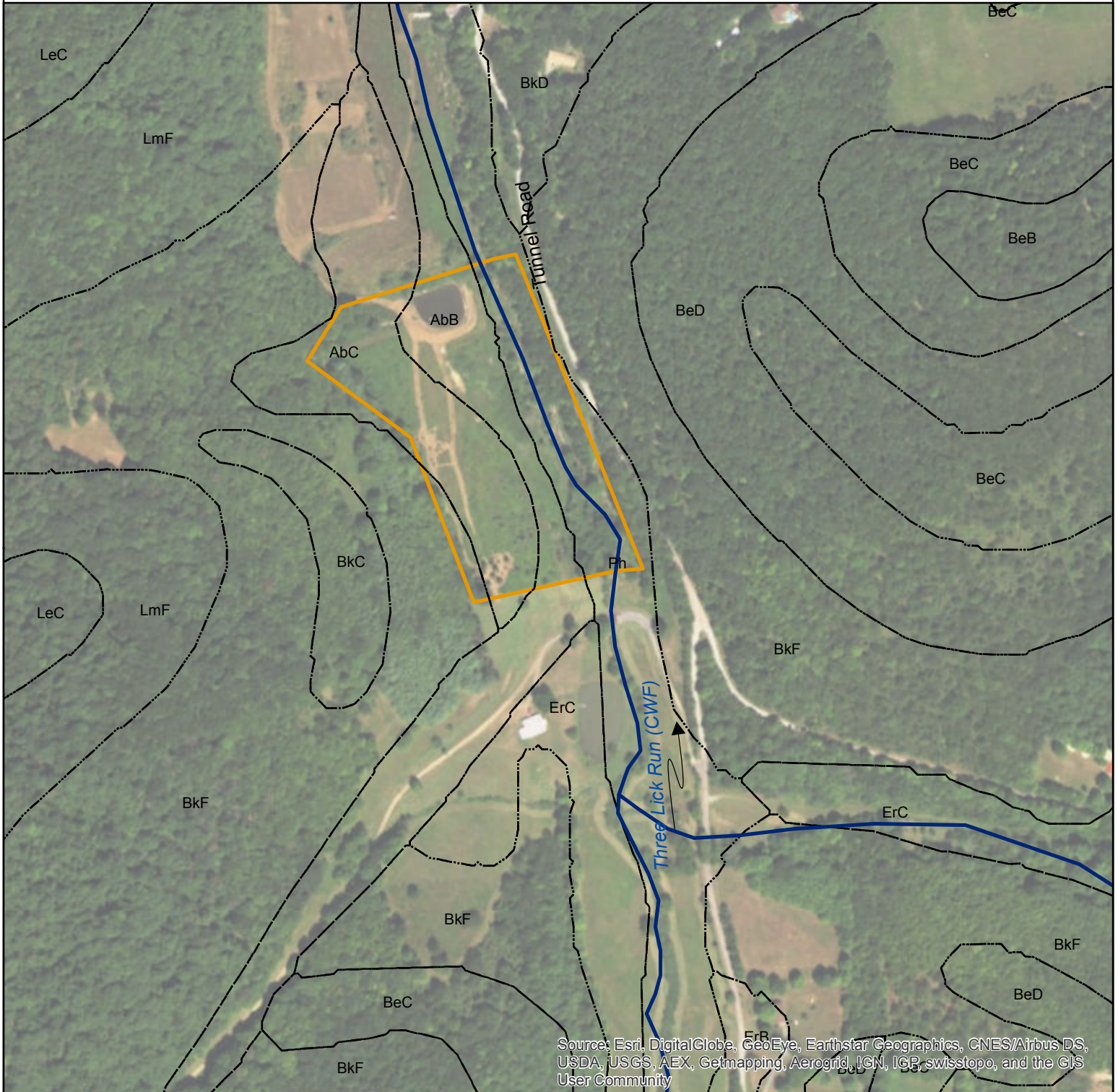




Figure 2 Soils Map

Tunnel Road Aquatic Resources Bank
Allegheny Township, Somerset County, Pennsylvania



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

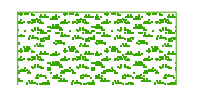

-  Soil Boundary
-  Site Boundary



0 187.5 375 750
Feet



**Figure 3
Resources Map**

-  Existing Wetlands
-  Stream

DATA FORMS

WETLAND DETERMINATION DATA FORM – Eastern Mountain and Piedmont

Project/Site: Tunnel Road Mitigation Site
 Applicant/Owner: Land Reclamation Group, LLC.
 Investigator(s): Hunt Valley Environmental, LLC
 Landform (hillslope, terrace, etc.): flat gently sloping grassy plain
 Slope (%): 1-3% Lat 39.968512
 Subregion (LRR or MLRA): N / 127
 Soil Map Unit Name: AbC - Albrights silt loam, 8 to 15 percent slopes

City/County: Berlin / Somerset County Date: 4/10/2017
 State: PA Sampling Point: TR1
 Section, Township, Range: Allegheny Twp.
 Local relief (concave, convex, none): None
 Long: -78.791841
 Datum: _____
 NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation _____ Soil _____ Hydrology _____ naturally problematic? (if needed explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B9) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches) _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches) _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches) _____ (Including capillary fringe)	Wetland Hydrology Present Yes _____ No <input checked="" type="checkbox"/>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: 30')				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>#DIV/0!</u> (A/B) Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC species _____ x 3 = <u>0</u> FACU species _____ x 4 = <u>0</u> UPL species _____ x 5 = <u>0</u> Column Totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = <u>B/A</u> = <u>#DIV/0!</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>0</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: 15')				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>0</u> = Total Cover				
Herb Stratum (Plot size: 5')				
1. <u>Solidago altissima</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Rubus allegheniensis</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
3. <u>Rosa multiflora</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
4. <u>Poa spp</u>	<u>40</u>			
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
<u>60</u> = Total Cover				
Woody Vine Stratum (Plot size: 30')				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>0</u> = Total Cover				
Hydrophytic Vegetation Present? Yes _____ No <u>N</u>				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point TR1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators).

Depth (inches)	Matrix Color (moist)	%	Redox Features				Texture	Remarks
			Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 4/3	100					loam	rocks and gravel
6-12	10YR 5/3	90	10YR 3/6	10	C	M	loam	
12-20	10YR 3/3	90	10YR 5/6	10	C	M	loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed)

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

_____ PHOTO _____ GPS

WETLAND DETERMINATION DATA FORM – Eastern Mountain and Piedmont

Project/Site: Tunnel Road Mitigation Site
 Applicant/Owner: Land Reclamation Group, LLC.
 Investigator(s): Hunt Valley Environmental, LLC
 Landform (hillslope, terrace, etc.): flat gently sloping grassy plain
 Slope (%): 1-3% Lat 39.968512
 Subregion (LRR or MLRA): N / 127
 Soil Map Unit Name: AbB - Albrights silt loam, 3 to 8 percent slopes

City/County: Berlin / Somerset County Date: 4/10/2017
 State: PA Sampling Point: TR2
 Section, Township, Range: Allegheny Twp.
 Local relief (concave, convex, none): None
 Long: -78.791841
 Datum: _____
 NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____ Soil _____ Hydrology _____ naturally problematic? (if needed explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) _____ True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) _____ Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Water Marks (B1) _____ Presence of Reduced Iron (C4) _____ Sediment Deposits (B2) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Drift Deposits (B3) _____ Thin Muck Surface (C7) _____ Algal Mat or Crust (B4) _____ Other (Explain in Remarks) _____ Iron Deposits (B5) _____ _____ Inundation Visible on Aerial Imagery (B7) _____ _____ Water-Stained Leaves (B9) _____ _____ Aquatic Fauna (B13) _____	_____ Surface Soil Cracks (B6) _____ Sparsely Vegetated Concave Surface (B9) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)

Field Observations Surface Water Present? Yes <u>X</u> No _____ Depth (inches) <u>1</u> Water Table Present? Yes <u>X</u> No _____ Depth (inches) <u>8</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches) <u>6</u> (Including capillary fringe)	Wetland Hydrology Present Yes <u>X</u> No _____
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

	Absolute % Cover	Dominant Species?	Indicator Status																									
Tree Stratum (Plot size: 30')				<p>Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)</p> <p>Prevalence Index worksheet: Total % Cover of: Multiply by:</p> <table style="width:100%; border:none;"> <tr><td>OBL species</td><td><u> </u></td><td>x 1 =</td><td><u>0</u></td></tr> <tr><td>FACW species</td><td><u>40</u></td><td>x 2 =</td><td><u>80</u></td></tr> <tr><td>FAC species</td><td><u> </u></td><td>x 3 =</td><td><u>0</u></td></tr> <tr><td>FACU species</td><td><u> </u></td><td>x 4 =</td><td><u>0</u></td></tr> <tr><td>UPL species</td><td><u> </u></td><td>x 5 =</td><td><u>0</u></td></tr> <tr><td>Column Totals</td><td><u>40</u></td><td>(A)</td><td><u>80</u> (B)</td></tr> </table> <p style="text-align:right;">Prevalence Index = <u>B/A</u> = <u>2</u></p> <p>Hydrophytic Vegetation Indicators:</p> <p><u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u> X </u> 2 - Dominance Test is >50% <u> X </u> 3 - Prevalence Index is ≤3.0¹ <u> </u> 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p><u> </u> Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <p>Definitions of Vegetation Strata:</p> <p>Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.</p> <p>Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</p> <p>Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p>Woody vines – All woody vines greater than 3.28 ft in height.</p> <p>Hydrophytic Vegetation Present? Yes <u> X </u> No <u> </u></p>	OBL species	<u> </u>	x 1 =	<u>0</u>	FACW species	<u>40</u>	x 2 =	<u>80</u>	FAC species	<u> </u>	x 3 =	<u>0</u>	FACU species	<u> </u>	x 4 =	<u>0</u>	UPL species	<u> </u>	x 5 =	<u>0</u>	Column Totals	<u>40</u>	(A)	<u>80</u> (B)
OBL species	<u> </u>	x 1 =	<u>0</u>																									
FACW species	<u>40</u>	x 2 =	<u>80</u>																									
FAC species	<u> </u>	x 3 =	<u>0</u>																									
FACU species	<u> </u>	x 4 =	<u>0</u>																									
UPL species	<u> </u>	x 5 =	<u>0</u>																									
Column Totals	<u>40</u>	(A)	<u>80</u> (B)																									
1. _____	_____	_____	_____																									
2. _____	_____	_____	_____																									
3. _____	_____	_____	_____																									
4. _____	_____	_____	_____																									
5. _____	_____	_____	_____																									
6. _____	_____	_____	_____																									
7. _____	_____	_____	_____																									
<u>0</u> = Total Cover																												
Sapling/Shrub Stratum (Plot size: 15')																												
1. _____	_____	_____	_____																									
2. _____	_____	_____	_____																									
3. _____	_____	_____	_____																									
4. _____	_____	_____	_____																									
5. _____	_____	_____	_____																									
6. _____	_____	_____	_____																									
7. _____	_____	_____	_____																									
8. _____	_____	_____	_____																									
9. _____	_____	_____	_____																									
10. _____	_____	_____	_____																									
<u>0</u> = Total Cover																												
Herb Stratum (Plot size: 5')																												
1. <u>Juncus effusus</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>																									
2. <u>Phalaris arundinacea</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>																									
3. _____	_____	_____	_____																									
4. _____	_____	_____	_____																									
5. _____	_____	_____	_____																									
6. _____	_____	_____	_____																									
7. _____	_____	_____	_____																									
8. _____	_____	_____	_____																									
9. _____	_____	_____	_____																									
10. _____	_____	_____	_____																									
11. _____	_____	_____	_____																									
12. _____	_____	_____	_____																									
<u>40</u> = Total Cover																												
Woody Vine Stratum (Plot size: 30')																												
1. _____	_____	_____	_____																									
2. _____	_____	_____	_____																									
3. _____	_____	_____	_____																									
4. _____	_____	_____	_____																									
5. _____	_____	_____	_____																									
6. _____	_____	_____	_____																									
<u>0</u> = Total Cover																												
Remarks: (Include photo numbers here or on a separate sheet.)																												

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators).

Depth (inches)	Matrix Color (moist)	%	Redox Features				Texture	Remarks
			Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 4/3	100					silt loam	
8-20	10YR 5/2	60					silt loam	Mixed Matrix
8-20	10YR 5/6	40					silt loam	Mixed Matrix

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 136, 122**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16)
- Piedmont Floodplain Soils (F19)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed)

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No _____

Remarks:

_____ PHOTO _____ GPS

WETLAND DETERMINATION DATA FORM – Eastern Mountain and Piedmont

Project/Site: Tunnel Road Mitigation Site
 Applicant/Owner: Land Reclamation Group, LLC.
 Investigator(s): Hunt Valley Environmental, LLC
 Landform (hillslope, terrace, etc) flat gently sloping grassy plain
 Slope (%): 1-3% Lat 39.968512
 Subregion (LRR or MLRA): N / 127
 Soil Map Unit Name: AbC - Albrights silt loam, 8 to 15 percent slopes

City/County: Berlin / Somerset County Date: 4/10/2017
 State: PA Sampling Point: TR3
 Section, Township, Range: Allegheny Twp.
 Local relief (concave, convex, none): None
 Long: -78.791841
 Datum: _____
 NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____ Soil _____ Hydrology _____ naturally problematic? (if needed explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B9)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations

Surface Water Present? Yes X No _____ Depth (inches) 1
 Water Table Present? Yes X No _____ Depth (inches) 12
 Saturation Present? Yes X No _____ Depth (inches) 8

Wetland Hydrology Present Yes X No _____

(Including capillary fringe)

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: 30')				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		
Herb Stratum (Plot size: 5')				
1. <u>Juncus effusus</u>	10	Y	FACW	
2. <u>Phalaris arundinacea</u>	30	Y	FACW	
3. <u>Vernonia gigantea</u>	10	N	FAC	
4. <u>Poa spp</u>	40	Y	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
	<u>90</u>	= Total Cover		
Woody Vine Stratum (Plot size: 30')				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
	<u>0</u>	= Total Cover		

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
 Total Number of Dominant Species Across All Strata: 3 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:
 Total % Cover of: Multiply by: _____
 OBL species x 1 = 0
 FACW species 40 x 2 = 80
 FAC species 10 x 3 = 30
 FACU species x 4 = 0
 UPL species x 5 = 0
 Column Totals 50 (A) 110 (B)

 Prevalence Index = B/A = 2.2

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 X 2 - Dominance Test is >50%
 X 3 - Prevalence Index is ≤3.0¹
 4 - Morphological Adaptations¹
(Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹
 (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:
Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point

TR3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators).

Depth (inches)	Matrix Color (moist)	%	Redox Features				Texture	Remarks
			Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 4/2	100					silt loam	
4-8	10YR 4/2	90	10YR 3/6	10	C	M	silt loam	
8-20	10Yr 5/2	50	10YR 3/6	50	C	M	silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed)

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

PHOTO

GPS

WETLAND DETERMINATION DATA FORM – Eastern Mountain and Piedmont

Project/Site: Tunnel Road Mitigation Site
 Applicant/Owner: Land Reclamation Group, LLC.
 Investigator(s): Hunt Valley Environmental, LLC
 Landform (hillslope, terrace, etc.): flat gently sloping grassy plain
 Slope (%): 1-3% Lat 39.968512
 Subregion (LRR or MLRA): N / 127
 Soil Map Unit Name: AbC - Albrights silt loam, 8 to 15 percent slopes

City/County: Berlin / Somerset County Date: 4/10/2017
 State: PA Sampling Point: TR4
 Section, Township, Range: Allegheny Twp.
 Local relief (concave, convex, none): None
 Long: -78.791841
 Datum: _____
 NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation _____ Soil _____ Hydrology _____ naturally problematic? (if needed explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B9) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches) _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches) _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches) _____ (Including capillary fringe)	Wetland Hydrology Present Yes _____ No <input checked="" type="checkbox"/>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: 30')				
1. <u>Picea abies</u>	10	Y		Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>#DIV/0!</u> (A/B) Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC species _____ x 3 = <u>0</u> FACU species _____ x 4 = <u>0</u> UPL species _____ x 5 = <u>0</u> Column Totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = <u>B/A</u> = <u>#DIV/0!</u>
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
	10			
Sapling/Shrub Stratum (Plot size: 15')				
1. _____				Hydrophytic Vegetation Indicators: _____ 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 - Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ <small>(Provide supporting data in Remarks or on a separate sheet)</small> _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
	0			
Herb Stratum (Plot size: 5')				
1. <u>Solidago altissima</u>	10	Y	FACU	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.
2. <u>Poa spp</u>	40	Y		
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
12. _____				
	50			
Woody Vine Stratum (Plot size: 30')				
1. _____				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
	0			
Remarks: (Include photo numbers here or on a separate sheet.)				

WETLAND DETERMINATION DATA FORM – Eastern Mountain and Piedmont

Project/Site: Tunnel Road Mitigation Site
 Applicant/Owner: Land Reclamation Group, LLC.
 Investigator(s): Hunt Valley Environmental, LLC
 Landform (hillslope, terrace, etc.): flat gently sloping grassy plain
 Slope (%): 1-3% Lat 39.968512
 Subregion (LRR or MLRA): N / 127
 Soil Map Unit Name: AbC - Albrights silt loam, 8 to 15 percent slopes

City/County: Berlin / Somerset County Date: 4/10/2017
 State: PA Sampling Point: TR5
 Section, Township, Range: Allegheny Twp.
 Local relief (concave, convex, none): None
 Long: -78.791841
 Datum: _____
 NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation _____ Soil _____ Hydrology _____ naturally problematic? (if needed explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B9) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches) _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches) _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches) _____ (Including capillary fringe)	Wetland Hydrology Present Yes _____ No <input checked="" type="checkbox"/>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: 30')				
1. <u>Picea abies</u>	20	Y		Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>#DIV/0!</u> (A/B) Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC species _____ x 3 = <u>0</u> FACU species _____ x 4 = <u>0</u> UPL species _____ x 5 = <u>0</u> Column Totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = <u>B/A</u> = <u>#DIV/0!</u>
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
	20	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')				
1. _____				Hydrophytic Vegetation Indicators: _____ 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 - Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ <small>(Provide supporting data in Remarks or on a separate sheet)</small> _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
	0	= Total Cover		
Herb Stratum (Plot size: 5')				
1. <u>Solidago altissima</u>	15	Y	FACU	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.
2. <u>Poa spp</u>	40	Y		
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
12. _____				
	55	= Total Cover		
Woody Vine Stratum (Plot size: 30')				
1. _____				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
	0	= Total Cover		

Remarks: (Include photo numbers here or on a separate sheet.)

WETLAND DETERMINATION DATA FORM – Eastern Mountain and Piedmont

Project/Site: Tunnel Road Mitigation Site
 Applicant/Owner: Land Reclamation Group, LLC.
 Investigator(s): Hunt Valley Environmental, LLC
 Landform (hillslope, terrace, etc.): flat gently sloping grassy plain
 Slope (%): 1-3% Lat 39.968512
 Subregion (LRR or MLRA): N / 127
 Soil Map Unit Name: AbB - Albrights silt loam, 3 to 8 percent slopes

City/County: Berlin / Somerset County Date: 4/10/2017
 State: PA Sampling Point: TR6
 Section, Township, Range: Allegheny Twp.
 Local relief (concave, convex, none): None
 Long: -78.791841
 Datum: _____
 NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____ Soil _____ Hydrology _____ naturally problematic? (if needed explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) _____ True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) _____ Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Water Marks (B1) _____ Presence of Reduced Iron (C4) _____ Sediment Deposits (B2) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Drift Deposits (B3) _____ Thin Muck Surface (C7) _____ Algal Mat or Crust (B4) _____ Other (Explain in Remarks) _____ Iron Deposits (B5) _____ Inundation Visible on Aerial Imagery (B7) _____ Water-Stained Leaves (B9) _____ Aquatic Fauna (B13)	_____ Surface Soil Cracks (B6) _____ Sparsely Vegetated Concave Surface (B9) <input checked="" type="checkbox"/> Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)

Field Observations Surface Water Present? Yes <u>X</u> No _____ Depth (inches) <u>2</u> Water Table Present? Yes <u>X</u> No _____ Depth (inches) <u>12</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches) <u>12</u> (Including capillary fringe)	Wetland Hydrology Present Yes <u>X</u> No _____
--	---

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: 30')				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B) Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u> </u> x 1 = <u>0</u> FACW species <u>60</u> x 2 = <u>120</u> FAC species <u> </u> x 3 = <u>0</u> FACU species <u> </u> x 4 = <u>0</u> UPL species <u> </u> x 5 = <u>0</u> Column Totals <u>60</u> (A) <u>120</u> (B) Prevalence Index = B/A = <u>2</u> Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u> X </u> 2 - Dominance Test is >50% <u> X </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ <small>(Provide supporting data in Remarks or on a separate sheet)</small> <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>0</u> = Total Cover				
Sapling/Shrub Stratum (Plot size: 15')				
1. <u>Cornus amomum</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>20</u> = Total Cover				
Herb Stratum (Plot size: 5')				
1. <u>Juncus effusus</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Phalaris arundinacea</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
<u>40</u> = Total Cover				
Woody Vine Stratum (Plot size: 30')				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>0</u> = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.) 				

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators).

Depth (inches)	Matrix Color (moist)	%	Redox Features				Texture	Remarks
			Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 4/2	100					silt loam	
8-20	10YR 4/2	90	10YR 3/4	10	C	M	silt loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) (MLRA 147, 148)
- Thin Dark Surface (S9) (MLRA 147, 148)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- Umbric Surface (F13) (MLRA 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147, 148)
- Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed)

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No _____

Remarks:

_____ PHOTO _____ GPS

WETLAND DETERMINATION DATA FORM – Eastern Mountain and Piedmont

Project/Site: Tunnel Road Mitigation Site
 Applicant/Owner: Land Reclamation Group, LLC.
 Investigator(s): Hunt Valley Environmental, LLC
 Landform (hillslope, terrace, etc.): flat gently sloping grassy plain
 Slope (%): 1-3% Lat 39.968512
 Subregion (LRR or MLRA): N / 127
 Soil Map Unit Name: AbB - Albrights silt loam, 3 to 8 percent slopes

City/County: Berlin / Somerset County Date: 4/10/2017
 State: PA Sampling Point: TR7
 Section, Township, Range: Allegheny Twp.
 Local relief (concave, convex, none): None
 Long: -78.791841
 Datum: _____
 NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation _____ Soil _____ Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation _____ Soil _____ Hydrology _____ naturally problematic? (if needed explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B9) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches) _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches) _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches) _____ (Including capillary fringe)	Wetland Hydrology Present Yes _____ No <input checked="" type="checkbox"/>
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: 30')				
1. <u>Picea abies</u>	10	Y		Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>#DIV/0!</u> (A/B) Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species _____ x 1 = <u>0</u> FACW species _____ x 2 = <u>0</u> FAC species _____ x 3 = <u>0</u> FACU species _____ x 4 = <u>0</u> UPL species _____ x 5 = <u>0</u> Column Totals <u>0</u> (A) <u>0</u> (B) Prevalence Index = <u>B/A</u> = <u>#DIV/0!</u>
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
	10			
Sapling/Shrub Stratum (Plot size: 15')				
1. _____				Hydrophytic Vegetation Indicators: _____ 1 - Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 - Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ <small>(Provide supporting data in Remarks or on a separate sheet)</small> _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
	0			
Herb Stratum (Plot size: 5')				
1. <u>Solidago altissima</u>	15	Y	FACU	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.
2. <u>Dipsacus fullonum</u>	15	Y	FACU	
3. <u>Poa spp</u>	40	Y		
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
12. _____				
	70			
Woody Vine Stratum (Plot size: 30')				
1. _____				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
	0			

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point

TR7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators).

Depth (inches)	Matrix Color (moist)	%	Redox Features				Texture	Remarks
			Color (moist)	%	Type ¹	Loc ²		
0-9	10YR 5/3	100					loam	
9-20	10YR 4/4	100					loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

- Dark Surface (S7)
- Polyvalue Below Surface (S8) (MLRA 147, 148)
- Thin Dark Surface (S9) (MLRA 147, 148)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- Umbric Surface (F13) (MLRA 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147, 148)
- Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed)

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

_____ PHOTO

_____ GPS

PHOTOS

Tunnel Road Photo Pages



Photo 1 – Facing Southeast



Photo 2 – Facing North



Photo 3 – Facing West



Photo 4 – Facing Northwest



Photo 5 – Facing Northeast



Photo 6 – Facing East



Photo 7 – Facing Southeast



Photo 8 – Facing South



Photo 9 – Facing South



Photo 10 – Facing North



Photo 11 – Facing South



Photo 12 – Facing South



Photo 13 – Stream organisms



Photo 14 – Stream organisms



Photo 15 – Streambed



Photo 16 – Facing South

Exhibit B: PNDI Review

1. PROJECT INFORMATION

Project Name: **Tunnel Road Mitigation Bank**

Date of Review: **6/9/2017 09:07:41 AM**

Project Category: **Habitat Conservation and Restoration, Wetland Restoration, Wetland Creation, or Wetland Enhancement**

Project Area: **55.39 acres**

County(s): **Somerset**

Township/Municipality(s): **ALLEGHENY**

ZIP Code: **15530**

Quadrangle Name(s): **NEW BALTIMORE**

Watersheds HUC 8: **Raystown**

Watersheds HUC 12: **Headwaters Raystown Branch Juniata River**

Decimal Degrees: **39.969672, -78.793430**

Degrees Minutes Seconds: **39° 58' 10.8177" N, 78° 47' 36.3493" W**

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	Conservation Measure	No Further Review Required, See Agency Comments
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	Avoidance Measure	See Agency Response

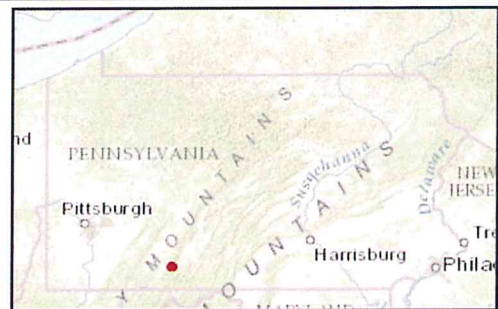
As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

Tunnel Road Mitigation Bank

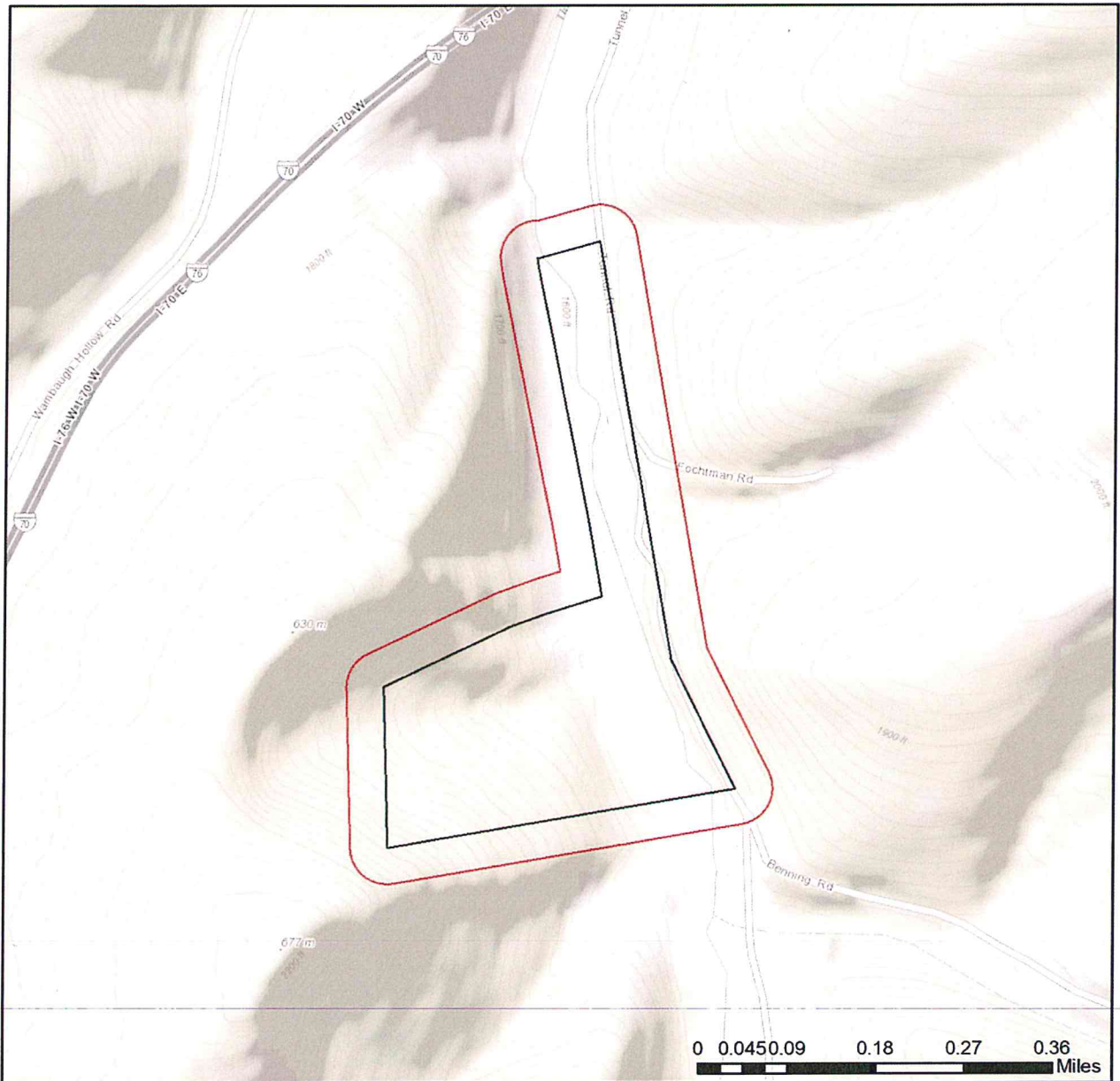


- Project Boundary
- Buffered Project Boundary

Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user

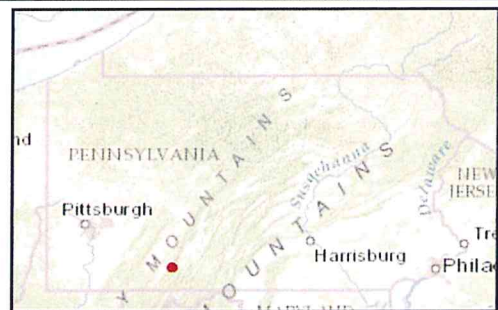


Tunnel Road Mitigation Bank



- Project Boundary
- Buffered Project Boundary

Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



RESPONSE TO QUESTION(S) ASKED

Q1: Is tree removal, tree cutting or forest clearing necessary to implement all aspects of this project?

Your answer is: Yes

Q2: How many acres of woodland, forest, forested fencerows and trees will be cut, cleared, removed, disturbed or flooded (inundated) as a result of carrying out all aspects or phases of this project? [Round acreages UP to the nearest acre (e.g., 0.2 acres = 1 acre).]

Your answer is: 1 to 10 acres

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was 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 following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE:

Conservation Measure: Potential impacts to state and federally listed species which are under the jurisdiction of both the Pennsylvania Game Commission (PGC) and the U.S. Fish and Wildlife Service may occur as a result of this project. As a result, the PGC defers comments on potential impacts to federally listed species to the U.S. Fish and Wildlife Service. No further coordination with the Pennsylvania Game Commission is required at this time.

PA Department of Conservation and Natural Resources

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

RESPONSE:

Avoidance Measure: Conduct any tree cutting, tree inundation (flooding), and prescribed burning between November 15 and March 31. ALSO, when conducting timber harvesting (rather than land clearing for development), implement the Fish and Wildlife Service's Forest Management Guidelines for Indiana Bat Swarming Habitat found at <https://www.fws.gov/northeast/pafo/endangered/forestry.html>.

As the project proponent or applicant, I certify that I will implement the above Avoidance Measure:

 (Signature)

SPECIAL NOTE: If you agree to implement the above Avoidance Measure, no further coordination with this agency regarding threatened and endangered species and/or special concern species and resources is required. If you are not able to comply with the Avoidance Measures, you are required to coordinate with this agency - please send project information to this agency for review (see "What to Send" section).

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, upload* or email* the following information to the agency(s). Instructions for uploading project materials can be found [here](#). This option provides the applicant with the convenience of sending project materials to a single location accessible to all three state agencies. Alternatively, applicants may email or mail their project materials (see AGENCY CONTACT INFORMATION).

***Note:** U.S.Fish and Wildlife Service requires applicants to mail project materials to the USFWS PA field office (see AGENCY CONTACT INFORMATION). USFWS will not accept project materials submitted electronically (by upload or email).

Check-list of Minimum Materials to be submitted:

___ Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.

___ A map with the project boundary and/or a basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)

In addition to the materials listed above, USFWS REQUIRES the following

___ **SIGNED** copy of a Final Project Environmental Review Receipt

The inclusion of the following information may expedite the review process.

___ Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)

___ Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <https://conservationexplorer.dcnr.pa.gov/content/resources>.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov

U.S. Fish and Wildlife Service
Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
NO Faxes Please

PA Fish and Boat Commission
Division of Environmental Services
595 E. Rolling Ridge Dr., Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

Name: Michael Barrick
Company/Business Name: Hunt Valley Environmental
Address: 632 Hunt Valley Circle
City, State, Zip: New Kensington, PA 15068
Phone: (724) 472-5690 Fax: (724) 594-0810
Email: MichaelB@hvenv.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.


applicant/project proponent signature

June 9, 2017
date

Exhibit C: Cultural Resources Clearances

Exhibit D: Signed Conservation Easement and Property Assurance