ATTACHMENT Q -1

LEBANON COUNTY MITIGATION MASTER PLAN

(UNDER SEPARATE COVER)

Permittee-Responsible Mitigation Master Plan for the Atlantic Sunrise Project – Lebanon County

Lancaster County, Pennsylvania
Transcontinental Gas Pipe Line Company, LLC.

Prepared By:
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1. Introduction

First Pennsylvania Resource, LLC. (FPR), a wholly-owned subsidiary of Resource Environmental Solutions ("RES"), has prepared this Permittee-Responsible Mitigation (PRM) Master Plan for the Atlantic Sunrise Project (Project) on behalf of Transcontinental Gas Pipe Line Company, LLC. (Permittee or Transco). The purpose of this plan is to compensate for unavoidable impacts to waters of the United States (U.S.) associated with Project activities in Lebanon County, Pennsylvania (PA). This PRM Master Plan includes one site-specific PRM Plan as Appendix C: Hibred Farms PRM Plan, which provides additional detail for the PRM Site (Hibred Farms) where mitigation will occur to offset the proposed wetland impacts within Lebanon County. Appendix A, Figure 1: Project Location Map provides an overview of the proposed Project and associated PRM Site. Required biological and cultural concurrences have been obtained for the PRM Site. The approved Erosion and Sediment Control Plan (ESCP) will be on-hand prior to commencement of construction activities.

2. Objectives

The objectives of the PRM Plan are to restore, enhance, and preserve wetland and riparian resources to replace the functions and values lost in association with unavoidable temporary (construction) and permanent (operational) impacts to non-exceptional value (non-EV) Palustrine Scrub Shrub (PSS) and non-EV and EV Palustrine Forested (PFO) wetlands associated with the Project. As described in this PRM Master Plan for Lebanon County, and in the individual PRM Plan prepared for the PRM Site (Appendix C: Hibred Farms PRM Plan), the proposed mitigation approach employs a functional based, watershed scale approach to provide optimal replacement of PSS and PFO functions and values lost as a result of the Project. This PRM Master Plan for Lebanon County also uses ratio based replacement requirements to ensure that the functional replacement being provided adequately replaces the physical acreage of the functional areas being impacted in Lebanon County. Additionally, while the PRM Site will mitigate for impacts that occur across two counties as a result of the Project, the PRM Plan (Attachment C: Hibred Farms PRM Plan) addresses impacts that occur only in Lebanon County.

Overarching Approach and Mitigation Site

Developing multiple smaller mitigation projects along the entire length of the Project closer to the individual impact locations will result in a piecemeal mitigation approach and diminished overall functional uplift and watershed benefit, while also having a lower probability of long-term success for each individual PRM location. Therefore, the proposed approach concentrates on a smaller number of sites strategically located in the headwaters and floodplains of watersheds that will benefit from the mitigation efforts while ensuring optimal replacement of functions and values lost as a result of the Project.

Mitigation for Project impacts in Lebanon County will be offset within one PRM Site as shown in Table 1: Proposed PRM Site for the Atlantic Sunrise Project (Lebanon County).

Table 1: Proposed PRM Site for the Atlantic Sunrise Project (Lebanon County)

PRM Site	Watershed	County	PRM Plan Appendix
Hibred Farms	7	Lancaster	C

The PRM Site contains EV wetlands which will be restored and permanently protected. Hibred Farms is contiguous to known bog turtle habitat, and contains habitat for bog turtles, a state endangered and federally threatened species. Mitigation of these resources will optimize ecological uplift to replace the functions and values that will be lost as a result of the Project.

The mitigation efforts proposed at the PRM Site listed above will replace the primary functions and values impacted at the impact site, which include wildlife habitat, flood flow alteration, nutrient removal and retention, and sediment/toxicant reduction. Additional information on the evaluated functions and values at the impact locations as well as the proposed mitigation site is provided in Section 6.0: Determination of Mitigation Needs.

3. Site Selection

The General Compensatory Mitigation Requirements of the Compensatory Mitigation Final Rule ("Final Rule," (33 CFR 332.3(b)(2))) establishes mitigation credits as the preferred method of compensatory mitigation for impacts to aquatic resources of the U.S., followed by In-Lieu Fee credits (ILF), and finally on-site or off-site mitigation. Transco investigated each of these options through the site selection process, as described below.

Mitigation Banking

Transco first sought to purchase approved mitigation credits from the Upper Susquehanna River Mitigation Bank – Phase I (USRMB I) within the Upper Susquehanna River Subbasin (State Water Plan Watershed 4) for impacts to PSS and PFO wetlands resulting from the Project. There are not enough available credits from USRMB I to compensate for the proposed impacts and credits are needed to offset Project impacts in other Watersheds. There are no other available banks from which to purchase credits in other impact watersheds, and therefore mitigation banking is not a viable option.

In-Lieu Fee

ILF crediting is not an option for this project because no active ILF programs are available.

On-Site Mitigation

To minimize impacts to aquatic features and habitat areas, the Permittee has limited the width of the proposed construction limits of disturbance (LOD) and permanent easements to the greatest extent practicable. This narrowed easement does allow room for on-site restoration, and not all homeowners are interested in providing larger easements which would provide space for on-site restoration. Lastly, even with larger easements which would allow for on-site restoration, not all the sites have land suitable for restoration. Restoration could be done outside of an area with a permanent easement, however this would not be acceptable mitigation as there is no guarantee this area would be preserved into perpetuity. The avoidance measure of using a narrow LOD thereby narrows the potential area available for resource restoration. Even if possible, small on-site restorations would provide minimal benefit to the local watersheds relative to the impacts proposed within the LOD.

Completing on-site mitigation would create multiple, small, spatially separate PRM projects. These smaller isolated projects have been shown to be less ecologically beneficial, have a lower likelihood for long-term success, are more susceptible to invasive species due to increased edge effect. They also create an increased number of maintenance plans to be reviewed, increasing the long-term regulatory burden on the state by requiring reviews and field visits to multiple small restoration sites.

The Permittee therefore has determined that the on-site mitigation opportunities are less conducive to complying with the "no net loss" and/or "watershed approach" policy(s) commensurate with the Final Rule.

Off-Site Permittee-Responsible Mitigation

Due to the ecological demands of the PRM, Transco concluded that using a restoration approach which combines construction and operational impacts from multiple locations into a few larger restoration sites will provide the best ecological uplift, long-term sustainability, and functional replacement of the impacted wetland resources. In making that determination, Transco decided that entrusting the legal, logistical, and environmental aspects of compensatory mitigation to FPR will ensure the greatest chance of success for this Project and most effectively address watershed needs. The proposed PRM Site capitalizes on many of the critical components of the Final Rule including the likelihood for success and sustainability, the significance of the restored water body within the watershed, and the proximity of the impact and mitigation sites from a watershed perspective. The likelihood of success was the most important factor that the Permittee considered while evaluating the following mitigation options. By selecting primarily exceptional value riparian and headwaters mitigation sites, the restoration approach will provide watershed-scale benefits and functional uplift well suited to replace functions and values lost as a result of the Project.

FPR will act as the mitigation services agent (Agent) on behalf of Transco. FPR on behalf of Transco, will be responsible for implementation of the PRM plan in addition to meeting performance standards, monitoring, and long-term management of the property as described in 33 CFR §332.3(l). The Permittee will remain responsible for legal duties and responsibilities associated with wetland mitigation as necessary in accordance with PADEP Chapter 105 Rules and Regulations regarding wetland replacement criteria guidelines and 33 CFR § 332.3.

4. Site Protection Instrument(s)

The PRM Site will be permanently protected by a declaration of restrictive covenant or conservation easement in advance of the proposed activities outlined in the mitigation plan, ensuring the long-term protection of the PRM Site. The site protection instrument will be recorded in the county courthouse within 60 days following the U.S. Army Corps of Engineers (USACE) and PA Department of Environmental Protection (PADEP) ("Agencies") approvals. A copy of the site protection instrument to be filed upon permit approval is included in the PRM Plan (Appendix C: Hibred Farms PRM Plan). The site protection instrument restricts activities that are incompatible with the objectives of the PRM Plan.

FPR will act as the initial long-term steward unless another qualified, watershed-focused, entity is willing to assume long-term stewardship responsibilities. FPR's heirs, assigns, or purchasers will be responsible for protecting lands contained within the PRM Site in perpetuity in accordance with the terms of the PRM Plan, unless the lands are transferred or sold to a local, state, or federal resource agency or non-profit conservation organization.

Should a trustworthy, willing third-party conservation easement holder wish to protect the PRM Site in perpetuity, they will have the option to switch the declaration of restrictive covenant to a conservation easement. Entrusting the PRM Site to a third-party conservation easement holder may commence only when FPR, the Permittee, and the Agencies have mutually concluded that the PRM Site has achieved all its objectives and sufficiently satisfied performance standards.

5. Baseline Data

Baseline site investigations were conducted to develop an appropriate mitigation plan for the PRM Site. These baseline site investigations yielded a significant amount of existing condition project information including, but not limited to:

- Waters of the U.S. delineation and Global Positioning System (GPS) location of the boundary;
- USACE Jurisdictional Determination of wetland boundaries and nexuses;
- Surface soil borings;
- Flora community composition data;
- Informal terrestrial and aquatic fauna community composition data;
- Topographic survey (up to 6-inch accuracy) throughout the proposed conservation area;
- Land steward interviews relative to historical and present site conditions including land use practices;
- Extensive photo and field note documentation;
- Cultural Resources Geographic information System (CRGIS) searches,
- Pennsylvania Natural Diversity Inventory (PNDI) searches,
- General documentation of site conditions including constraints, access, potential staging areas, and a resulting plan for probable construction sequencing.

Specific baseline data collected for the PRM Site is provided in Section 5.0: Baseline Data of the PRM Plan (Appendix C: Hibred Farms PRM Plan). The following table provides a summary of existing resources at the PRM Site. The PRM Plan contains further detail regarding the existing PRM Site resources based upon the wetland delineations and other environmental surveys.

Table 2: Summary of Existing PRM Site Resources

Resource Type		PRM Site Pre-Mitigation Resources
Total Acres		27.80
Uplands		15.73
Wetlands (Acres)	PEM[1]	11.80
	PEM/PSS[1]	-
	PEM/PSS/PFO[1]	-
	PSS	-
	PFO	-
	PUB[1]	0.27
	TOTAL	**12.07**
Streams (Linear Feet)	Perennial	1,555.32
	Intermittent	89.00
	Ephemeral	-
	TOTAL	**1,644.32**

Notes:
1. PEM – Palustrine Emergent; PSS – Palustrine Scrub Shrub; PFO – Palustrine Forested; PUB – Palustrine Unconsolidated Bottom

The following table provides a summary of clearances and approvals received for the PRM Site. Further detail regarding the status and history of these clearances, including copies of individual approvals, is provided within the PRM Plan (Appendix C: Hibred Farms PRM Plan).

Table 3: Summary of PRM Site Clearances and Approvals		
PRM Site	**Approval Type**	**Approval Status**
	USACE Section 404/401 WQC	Under Review
	Cultural Resources (PHMC Consultation)	Clearance received 5/18/2016
	Rare, Threatened, and Endangered Species (PNDI Consultations)	USFWS clearance received 9/15/2016 PFBC clearance received 9/23/2016
	E&S Control (PADEP Chapter 102)[1]	***ESCP adequacy letter received 3/1/2017***

6. Determination of Mitigation Needs

Project Impacts

The Project will result in ***1.04*** acres of impacts to non-EV PSS and non-EV and EV PFO wetlands in Lebanon County (excluding temporary PSS wetland impacts). Of the ***1.04*** wetland impact acres, 0.01 are non-EV PSS impacts, ***0.49*** are non-EV PFO impacts, and 0.54 are EV PFO impacts. No EV PSS wetland impacts are anticipated in Lebanon County. Mitigation will be required for the ***1.04*** acres of wetland impacts within Lebanon County.

The PADEP defines EV wetlands under PA Code Title 25 § 105.17, and has requested separate mitigation ratios for EV and non-EV PSS and PFO wetlands. Project impacts in Lebanon County are proposed within PA State Water Plan Watershed 7 (Lower Susquehanna River Subbasin). Appendix A, Figure 2: Mitigation Site/Impact Reference Location Map depicts the locations of the proposed mitigation in relation to the Project.

No permanent fill of any wetland resources will occur as a result of the Project. All long-term impacts are expected to be a result of conversion from PFO to PEM or PSS wetlands. The temporary (construction) impacts will occur in the areas where construction will take place and existing wetlands will be allowed to revert to their previous state following construction in these areas. The permanent (operational) impacts will occur within the maintained ROW, where annual operational maintenance is required by Federal Energy Regulatory Commission (FERC) Wetland and Waterbody Construction and Mitigation Procedures. These permanent impacts will not involve dredging or filling of wetlands, but will involve annual mowing of PSS wetlands.

All temporary PFO impacts resulting from the Project are proposed to be mitigated for at the PRM Site. The PFO construction impacts will however be seeded following construction, under the site restoration requirements of the Erosion and Sediment Control Plan. Replanting of woody vegetation or wetland replacement species in the construction right-of-ways (ROWs) is not proposed because these areas are not protected under any easement and could be impacted by future landowner activities. Accounting for these areas at the PRM Site will provide greater functional replacement, and ensure the long-term success of mitigation for these temporary impacts.

For the Project PRM Site, the following wetland mitigation ratios are being used: 2.5:1 for EV PFO wetlands, 2:1 for non-EV PFO wetlands, 1.75:1 for EV PSS wetlands, and 1.5:1 for non-EV PSS wetlands. No impacts to EV PSS wetlands are anticipated in Lebanon County. Impact ratios were discussed with both the PADEP and USACE during multiple meetings prior to and during permit submittal and review, and are based on previous ratios used for similar projects. Impact locations and proposed mitigation site locations are depicted by watershed in Appendix A, Figure 2: Mitigation Site/Impact Location Reference Map. As discussed in Section 2.0: Objectives, the PRM

Site will provide a total of 7.03 acres of wetland mitigation which will be used to offset Project impacts across two counties, of which ***1.11*** wetland mitigation acres are required for impacts occurring in Lebanon County. Table 4: Summary of Impacts in Lebanon County and Required Mitigation provides a summary of mitigation needs and physical impacts.

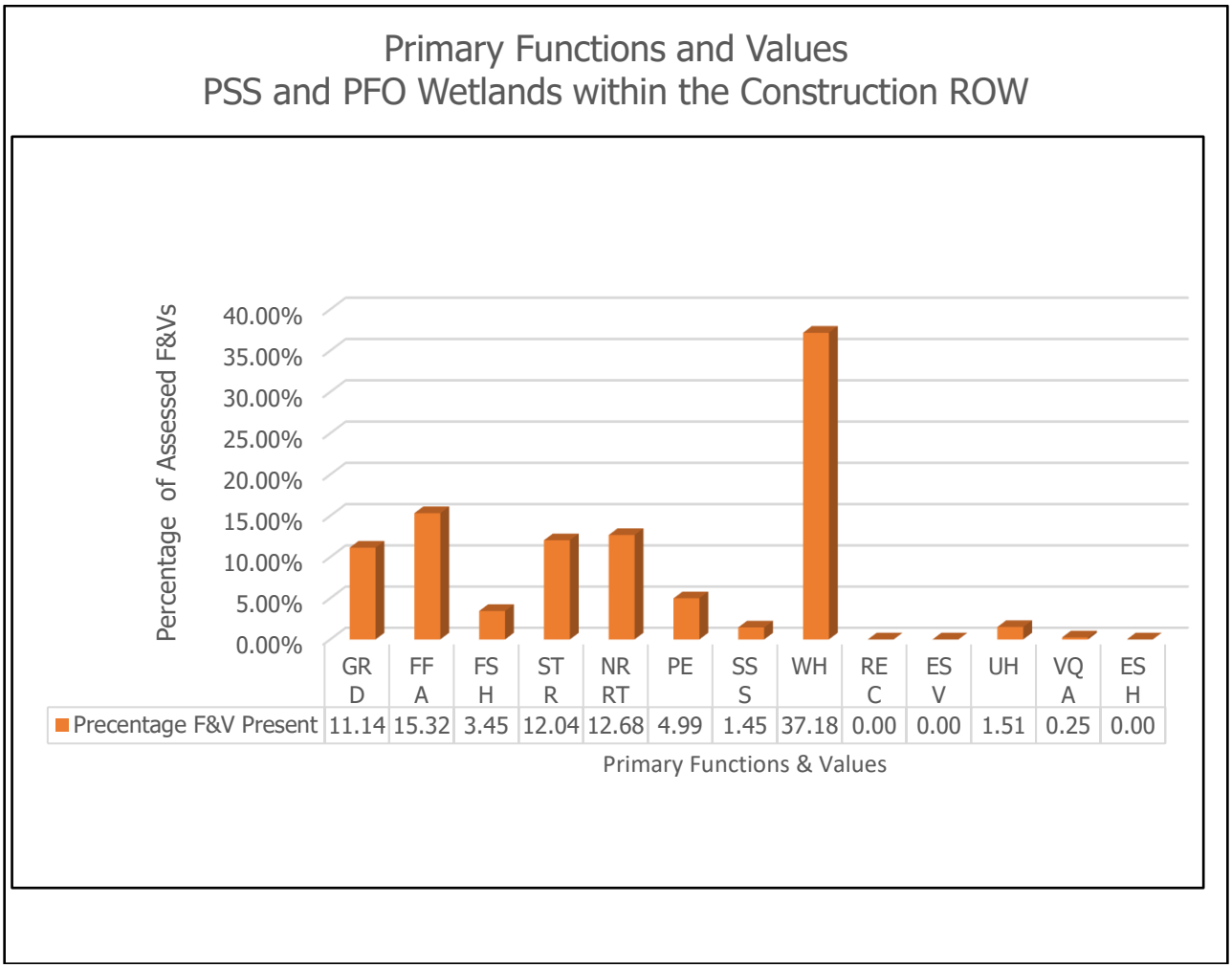
Table 4: Summary of Impacts in Lebanon County and Required Mitigation

Wetland Type	PFO Wetland Impacts (Acres)	Proposed Mitigation Ratio	Mitigation Needed	Total Mitigation Available (Acres)
EV PFO	0.54	2.5	1.35	**7.03**
Non-EV PFO	***0.49***	2.0	***0.98***	
EV PSS	0.00	1.75	0.00	
Non-EV PSS	0.01	1.5	0.02	
Total	***1.04***	**-**	***2.35***	

Functional Impacts

The USACE *Highway Methodology Workbook Supplement: Wetland Functions and Values* (Supplement, 1993) was used to evaluate the functions and values of the wetlands at the impact site and the PRM Site. The Supplement is a qualitative approach to describing the physical characteristics of and identifying the functions and values exhibited by a wetland. The approach to applying functions and values to the impacted wetlands and the mitigation wetlands was agreed upon between the PADEP, USACE, and Transco during a pre-application meeting on March 17, 2015. A bar graph showing the primary functional impacts associated with the Project is provided below.

Bar Graph 1. Summary of Impacted Wetland Functions and Values for All Wetlands within the Construction and Operational ROW in Lebanon County



Key:

- **GRD** - Groundwater Recharge/Discharge
- **FFA** - Floodflow Alteration
- **FSH** - Fish and Shellfish Habitat
- **STR** - Sediment/Toxicant Retention
- **NRRT** - Nutrient Removal and Retention
- **PE** - Production Export
- **SSS** - Sediment/Shoreline Stabilization
- **WH** - Wildlife Habitat
- **REC** - Recreation
- **ESV** - Educational/Scientific Value
- **UH** - Uniqueness/Heritage
- **VQA** - Visual Quality and Aesthetics
- **ESH** - Endangered Species Habitat

Based on an assessment of any potential impacts to the functions and values of PEM wetlands in association with construction and operational of the Project, it was deemed no mitigation will be required. Impacts to PEM wetlands will be temporary, and all areas will be returned to grade, and reseeded following construction.

Permanent conversion impacts to PSS wetlands are anticipated within the operational footprint as a result of the Project, and mitigation will be provided at the PRM Site to offset these impacts. Construction (temporary) impacts to PSS wetlands will be temporary; these areas outside the 10-foot wide operational ROW will be seeded with a native seed mix, and will naturally revert to PSS. A 10-foot-wide operational ROW will be maintained in PSS wetlands

no more frequently than on an annual basis in accordance with FERC Wetland and Waterbody Construction and Mitigation Procedures and the Transco plan.

Proposed Functional Uplift

The *Wetland Function-Value Evaluation Form* from the USACE Highway Supplement was used to document the existing functions and values that will be impacted as part of the Project. They were also used to determine the baseline and anticipated ecological lift the PRM Site will experience as a result of the proposed mitigation. The baseline field forms are included within the PRM Plan (Appendix C: Hibred Farms PRM Plan). These improvements to the wetland functions and values after restoration combined with the additional upland acreage restored as part of the PRM Site will more than offset the overall functions and values lost as a result of the Project. The following table summarizes proposed functional uplift for the PRM Site.

Table 5: Summary of Functional Uplift

Site Location	Functions and Values	Pre-Project Principal Function	Post-Project Principal Function
Project Impact Locations	Flood Flow Alteration	Yes	No
	Nutrient Removal	Yes	No
	Wildlife Habitat	Yes	No
Hibred Farms	Flood flow alteration	No	Yes
	Fish and Shellfish Habitat	No	Yes
	Nutrient Removal	No	Yes
	Sediment/Toxicant Retention	No	Yes
	Wildlife Habitat	Yes	Yes
	Endangered Species Habitat	Yes	Yes
	Sediment/Shoreline Stabilization	No	Yes
	Production Export	No	Yes

Proposed Mitigation Acreage

The mitigation ratios used to allocate mitigation acreage for each restoration activity at the PRM Site is based on previously used mitigation ratios. The mitigation ratios, in combination with the previous discussed impact ratios ensures that the functions and values being replaced at the mitigation sites provide an adequate physical replacement of those functions and values impacted as a result of the Project, while also taking into account temporal losses. The proposed mitigation for the Project will include wetland enhancement and upland restoration in the amounts indicated in Table 6: Wetland Mitigation Summary, which includes the mitigation approach, wetland resources, applicable mitigation ratios and mitigation acreage provided by the PRM site. Appendix A, Figure 3 presents the resource development map for the proposed restoration activities at the PRM Site as summarized below.

Table 6: Wetland Mitigation Summary					
PRM Site	**Mitigation Approach**	**Wetland Type**	**Site Acreage**	**Mitigation Ratio**	**Mitigation Acreage**
Hibred Farms	Re-establishment		-	1:1	-
	Rehabilitation	PEM	5.96	1.5:1	3.97
	Enhancement	PEM/PUB	6.11	2:1	3.06
		Totals	**12.07**		**7.03**

In addition to providing sufficient acreage to compensate for impacts to PSS and PFO resources as a result of the Project, mitigation at the PRM Site will additionally include upland restoration and preservation providing additional ecological benefits beyond the required mitigation. Construction of the Project will not result in any permanent impacts to streams or other waterbodies. As such, none of the proposed stream restoration or enhancement work is being used for mitigation on this Project.

7. Mitigation Work Plan

The Mitigation Work Plan is included within the Mitigation Work Plan section of the PRM Plan (Appendix C: Hibred Farms PRM Plan). This work plan discusses how the specific physical characteristics of the site (e.g. topography, hydrology, soils, past land use) factored into the mitigation design, and the proposed actions that will be undertaken to attain ecological uplift.

8. Maintenance Plan

The PRM Site will be monitored and maintained by FPR, as described in the Monitoring Requirements section of the PRM Plan. FPR will act as the willing agent to perform all duties associated with satisfying compensatory mitigation requirements. Through contractual agreement with the Permittee, FPR will commit to restoring, enhancing, and preserving wetland functions and maintain wetland habitats in accordance with the provisions in the PRM Plan.

Yearly maintenance will be documented in the annual monitoring report along with a discussion of any anticipated maintenance events that will be needed the following year. In general, two to three site visits will be conducted annually during the first 3 years to monitor the sites for invasive species and adapt the yearly maintenance plans as needed based upon these observations.

In general, maintenance will be heaviest during the first 3 years of establishment, and will usually entail mechanical weed control events, along with two to three chemical control events, all targeting invasive species. Maintenance will focus on controlling any pockets of invasive species that might still be present on-site and monitoring for the establishment of any new stands of invasive species. Control methods will be targeted to deal with the individual species as they are found and will include both mechanical and chemical control. The Agent projects that by the 4th and 5th years, the intensity of management efforts required will drop off significantly as the native plant community will be relatively well established and resilient against the establishment and encroachment of invasive species.

9. Performance Standards

The Permittee will monitor the PRM Site to demonstrate compliance with the Performance Standards as detailed in Section 9.0: Performance Standards within the PRM Plan.

10. Monitoring Requirements

In accordance with the provisions detailed in the Monitoring Plan of the PRM Plan (Appendix C: Hibred Farms PRM Plan), an as-built report will be submitted to the PADEP and USACE within 60 days following completion of all work outlined in the PRM Plan. The Permittee will monitor the PRM Site for 5 years to demonstrate compliance with the Performance Standards. A 5-year monitoring period is appropriate because the mitigation provided by the PRM Site will not be used to offset permanent fill impacts, and most the restoration is enhancement and rehabilitation of existing wetlands. The monitoring provisions are detailed in Section 10.0: Monitoring Plan of the PRM Plan (Appendix C: Hibred Farms PRM Plan). FPR will submit a monitoring report to the PADEP and USACE by December 31st of the year monitoring occurs. The monitoring report will include data sufficient for comparison to the Performance Standards described in the Hibred Farms PRM Plan (Appendix C). FPR will also include a discussion of all activities that took place at the PRM Site. At a minimum, the monitoring report will include the monitoring program components detailed in Section 10.0: Monitoring Plan of the Hibred Farms PRM Plan (Appendix C).

11. Long-Term Management Plan

The following long-term management plan will apply to the PRM Site. Site-specific details are provided within the long-term management plan included in the PRM Plan.

To ensure the long-term sustainability of the restoration project, FPR will initially perform maintenance and long-term management. The Permittee anticipates that these activities will be minimal as the project is designed to be self-sustaining with limited management activities. After the performance standards have been successfully attained, annual visual inspections will be conducted after each growing season to identify any need for invasive species control, additional signage, or boundary maintenance. The USACE and PADEP will be notified if any remedial action is necessary to ensure compliance with the original performance standards detailed in the PRM Plan. Specific items required as part of a Long-Term Management Plan are listed below.

Annual Patrols

Walk-through surveys will be conducted annually to qualitatively monitor the general condition of the habitats on the site. Notes to be made may 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. If there are any noted items that require maintenance, this should be recorded and submitted in a report to the Agencies.

Invasive Species Monitoring

The walk-through survey will include a qualitative assessment (e.g. visual estimate of cover) of invasive species. If there is a continuous area exceeding 1/8 of an acre containing invasive species, the Long-Term steward should note this in a report to the agencies and conduct invasive species control to remove the noted species. Follow up monitoring should be conducted the following year, with follow up maintenance if needed.

Forestry Management Practices

Any practices to reduce diseased or dead vegetation will be allowed if the vegetation compromises the long-term viability of the PRM Site.

Trash and Trespass

If needed, trash will be removed and any necessary measures to prevent or repair damage from vandalism and trespass impacts should be taken.

Enforcement

The Long-term Steward will be responsible for the enforcement of the conservation easement.

FPR will be the initial designated Long-term Steward charged with long-term management and maintenance responsibility once performance standards as described in the PRM Plan are attained. FPR may appoint a third-party Long-term Steward in accordance with 33 CFR 332.7(d)(1) to take over as the long-term easement holder for the PRM Site into perpetuity. At that time the new easement holder may if they wish transfer the Deed of Restrictive Covenant into a Conservation Easement. The long-term stewardship funding will transfer to the appointed long-term easement holder upon transfer of legal responsibility, to provide funding for the long-term maintenance and monitoring of the property. The appointment of such an entity will be approved by the PADEP and/or USACE.

12. Adaptive Management Plan

An adaptive management plan including contingency, and remedial responsibilities will be implemented in the event monitoring reveals that certain Success Criteria have not been met. In the event of a deficiency, FPR will provide notice to the PADEP and USACE. The notice will include an explanation for the deficiency and will outline specific practices and measures that will guide decisions for revising the compensatory mitigation plan if needed. An individual adaptive management plan based on project-specific performance standards is provided within the PRM Plan.

13. Financial Assurances

FPR will establish a performance bond to ensure that PRM Site construction is completed and all success criteria are met. A sample performance bond is provided in the PRM Plan (Appendix C). The financial assurance mechanism will be a surety bond for the PRM Site that will cover construction, maintenance and monitoring costs associated with the PRM Site, proof that the surety bond has been executed will be provided to the agencies 60 days after approval of the joint permit. The performance bond utilized by FPR is underwritten by a Surety with a rating of A+ (A.M. Best Ratings, 2010).

Once the restoration activities (planting) at the PRM Site are completed and the as built plans are approved by the PADEP and USACE, as a proportionately larger percentage of the projects costs is long term maintenance and monitoring. The bond will be closed once all performance standards are met, and final sign-off on the PRM Site has been provided by the USACE and PADEP.

Long-term Stewardship Funding

Prior to construction of the Project, the Permittee will deposit funds into an escrow account to cover long-term stewardship of the PRM Sites. These funds are anticipated to be sufficient to cover the full cost of long-term stewardship activities for the entire PRM Site. The total sum for the PRM Site escrow amount includes all expenses for long-term management and allocates funds for invasive species management contingency funds, and is provided in the PRM Plan.

14. References

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APPENDIX A

Figures

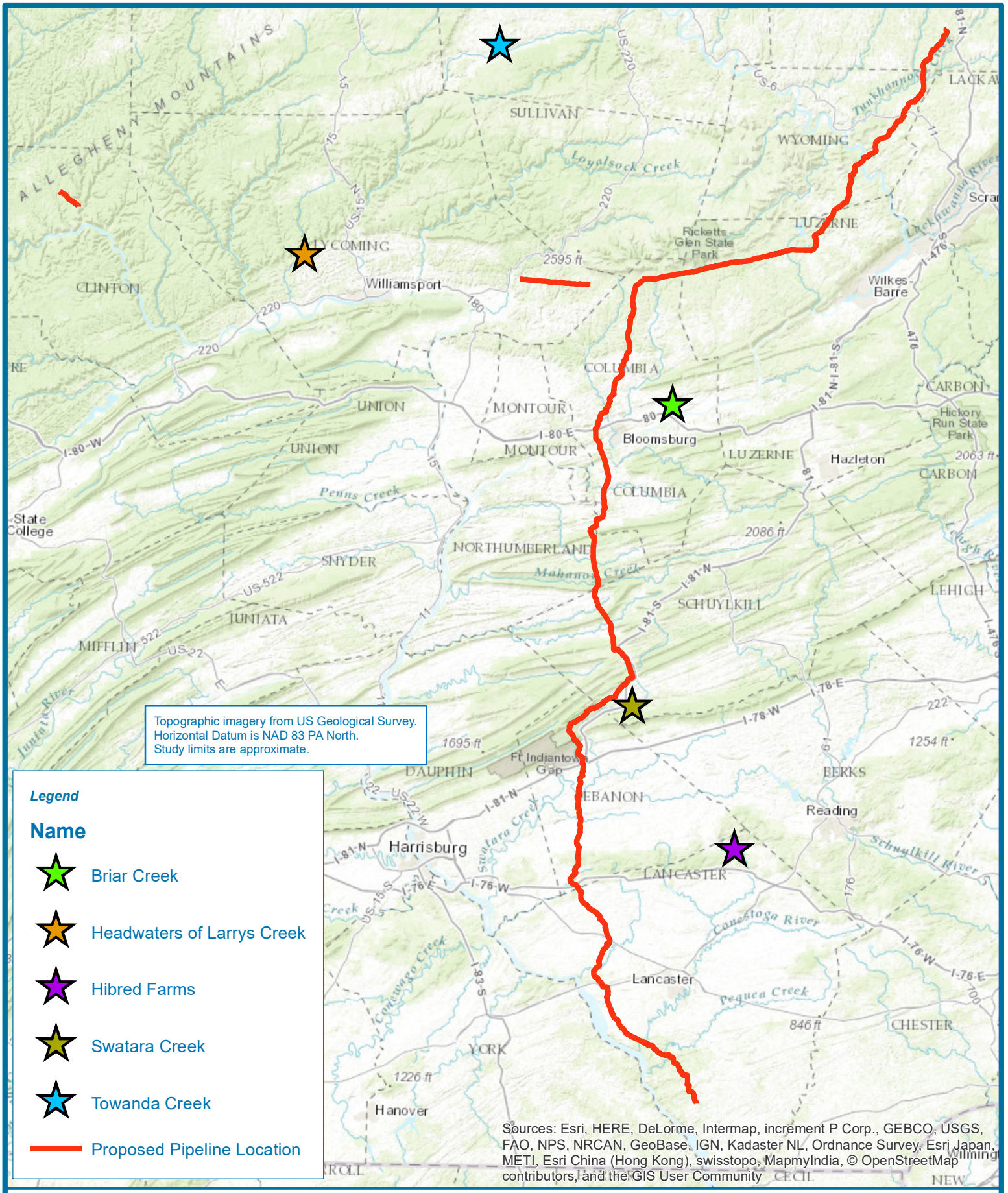

FIGURE 1

ATLANTIC SUNRISE PROJECT
PROJECT LOCATION MAP

PENNSYLVANIA

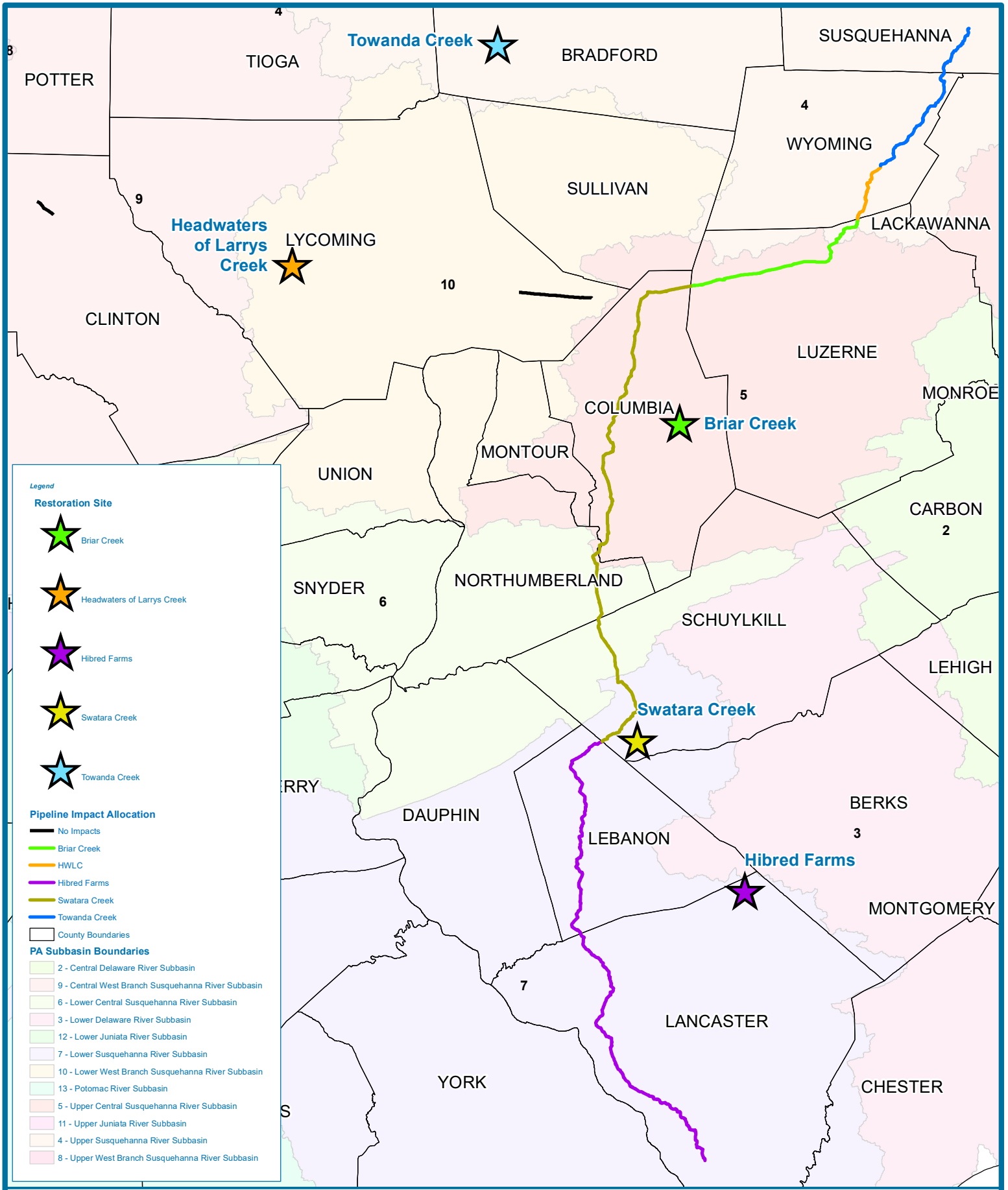

FIGURE 2

ATLANTIC SUNRISE PROJECT
MITIGATION SITE/IMPACT LOCATION
REFERENCE MAP

PENNSYLVANIA

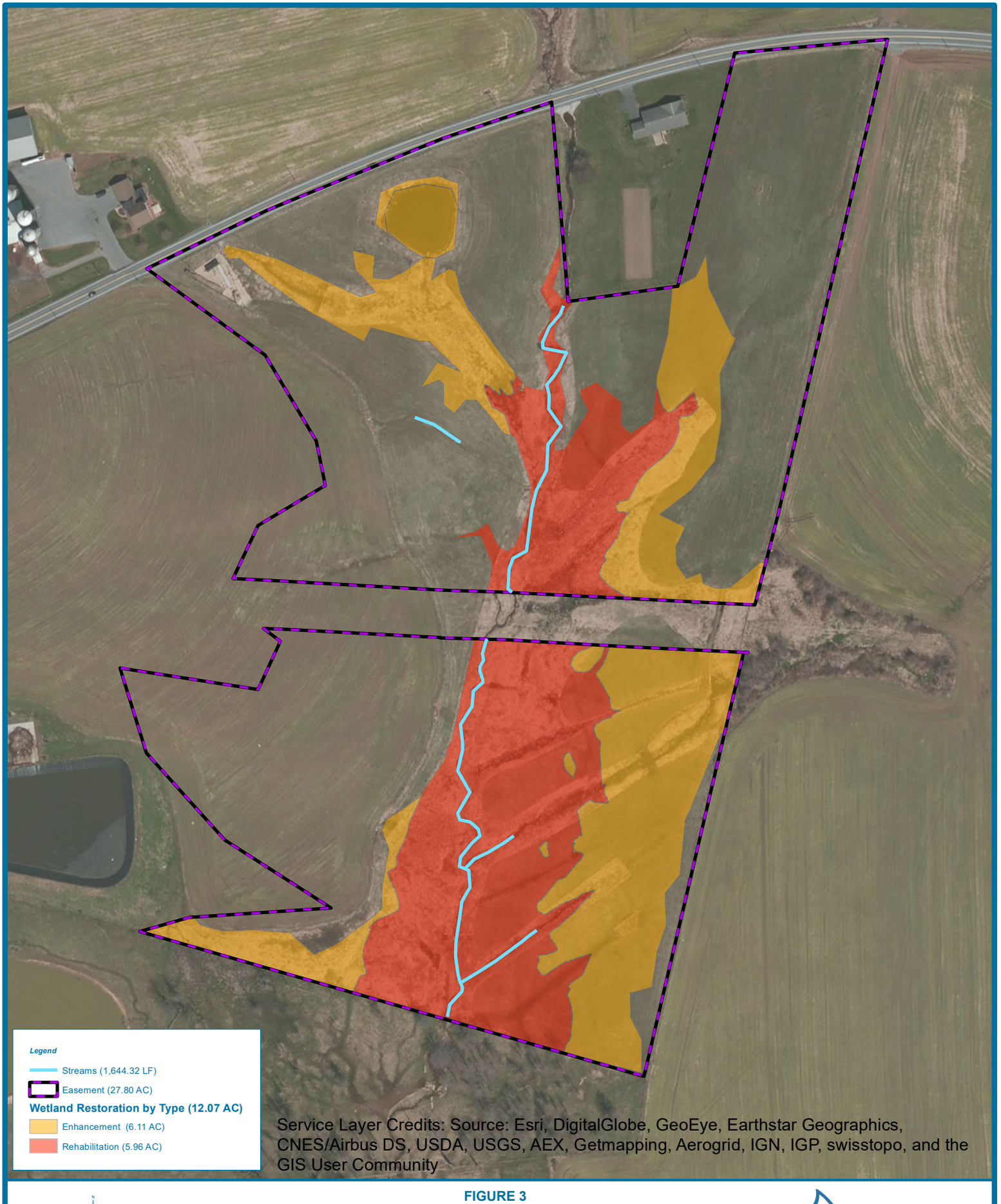

FIGURE 3

ATLANTIC SUNRISE PRIJECT
HIBRED FARMS MITIGATION SITE
RESOURCE DEVELOPMENT MAP

LANCASTER COUNTY, PENNSYLVANIA

APPENDIX B

Impact Site Wetland Function-Value Evaluation Forms

Wetland Function-Value Evaluation Form

Total area of wetland_____ Human made? No Is wetland part of a wildlife corridor?_____ or a "habitat island"?_____

Adjacent land use FOREST Distance to nearest roadway or other development <200'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present_____

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? MIDDLE, ABUTTING MODERATE GRADE STREAM

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. W-T23-6002

~~Latitude~~ X 368117.01 ~~Longitude~~ Y 4482272.14

Prepared by: AMJ Date 7/14/14

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office_____ Field X

Corps manual wetland delineation completed? Y X N_____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	✓		2,5,7,9,10,15		
Floodflow Alteration	✓		1,5,6,7,8,9,10,11,13,15,18	✓	LOCATED IN TERRACE OF PER. STREAM AND VERY FLAT COMPARED TO SURR. AREAS
Fish and Shellfish Habitat	✓		1,3,4,7,8,9,10,11,12,14,16,17		HIGH QUALITY STREAM (TROUT RUN) ASSOC. W/ THIS WETLAND
Sediment/Toxicant Retention	✓		1,3,4,5,7,10,11,12,13,14,15,16		DIFFUSE FLOWS THROUGH DENSE, VARYING VEGETATION W/ MATURE TREES AND DENSE HERBACEOUS
Nutrient Removal	✓		1,3,4,5,6,7,8,9,10,11,12,13,14	✓	POTENTIAL AG SOURCES UPSTREAM
Production Export	✓		1,2,4,5,7,8,10,12,14		ABUNDANT FOOD SOURCES AND HIGH ~~LEVEL~~ TROPHIC LEVEL ~~OBSERVED~~ ORGANISMS OBSERVED (DEER)
Sediment/Shoreline Stabilization		✓	3,4,7,9		
Wildlife Habitat	✓		1,3,4,5,6,8,9,10,11,13,14,15,16,19,20		PEER OBSERVED
Recreation	✓		2,4,5,6,7,8,11		
Educational/Scientific Value	✓		2,4,5,10,11,13		
Uniqueness/Heritage	✓		5,6,7,10,11,16,17,19,22,24,27	✓	
Visual Quality/Aesthetics	✓		3,5,7,6,8,9,10,11,12	✓	MATURE TREES PRESENT IN FORESTED WETLAND ADJACENT TO STREAM
ES Endangered Species Habitat	✓		2		
Other					

Notes: LARGE MATURE FORESTED WETLAND LOCATED IN TERRACE OF STREAM (TROUT RUN). RELATIVELY UNDISTURBED AND CONTAINS A LARGE DIVERSITY OF PLANT SPECIES AND TYPES (TREE, SHRUB, ETC.)

*Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland_____ Human made? No Is wetland part of a wildlife corridor?_____ or a "habitat island"?_____

Adjacent land use Agriculture, forested Distance to nearest roadway or other development 500'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present On North side not on South

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Headwaters of stream

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. W-T13-4001

~~Latitude~~ X 369768.04 ~~Longitude~~ Y 4456843.25

Prepared by: AJ Date 6/23/14

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office_____ Field X

Corps manual wetland delineation completed? Y X N_____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y		X 2,5,7,8,10,12,13,14	✓	WETLAND FEEDS PERENNIAL STREAM AND ORIGINATES AT SPRING AREA
Floodflow Alteration		N	2,3,11,13,18		LOCATED VERY HIGH IN THE WATERSHED
Fish and Shellfish Habitat	Y		1,4,7,8,14,15,16,17		POTENTIAL FOR STREAM THAT WETLAND FEEDS AS IT PROCEEDS OFFSITE AND RECEIVES MORE DISCHARGE
Sediment/Toxicant Retention		N	3,9,10,13,14		
Nutrient Removal	Y		3,4,5,8,9,10,11,12		POTENTIAL SOURCE IN AG FIELD NEARBY, DIVERSE VEGETATION OFFERS REMOVAL POTENTIAL
Production Export	Y		1,2,4,5,7,8,10,11, 12,14	✓	
Sediment/Shoreline Stabilization		N	2,3,7,8,12		EXISTS UPSLOPE OF STREAMBANKS
Wildlife Habitat	Y		1,3,5,8,9,10,14,15,16 19,20,23	✓	
Recreation		N	3,4,5,6,12		
Educational/Scientific Value		N	4,5,9,11,13		
Uniqueness/Heritage	Y		6,7,10,11,16,19,22, 27,28,31	✓	GROUNWATER DISCHARGE/SEEP HEADWATER WETLAND MAKES FOR UNIQUE AREA
Visual Quality/Aesthetics	Y		3,5,7,8,10,11,12		
ES Endangered Species Habitat		N			
Other					

Notes: WETLAND ORIGINATES AT A HILLSIDE SEEP AND HAS OBVIOUS SIGNIFICANT CONNECTIONS TO GROUNDWATER DISCHARGE IN ADDITION TO WILDLIFE HABITAT POTENTIAL

*Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland_____ Human made? No Is wetland part of a wildlife corridor?_____ or a "habitat island"?_____

Adjacent land use Forested Distance to nearest roadway or other development >500'

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? high headwater region

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. W-T13-4004

X Latitude 36°9'6.89" Y Longitude 445779.98

Prepared by: AMJ Date 6/24/14

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office_____ Field X

Corps manual wetland delineation completed? Y X N_____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y		2,5,7,8,10,11,12,13,14	✓	WETLAND FEEDS PERENNIAL STREAM AND IS LOCATED IN SPRING AREA
Floodflow Alteration		N	2,3,9,11,13		WETLAND FED BY SPRING AND ABOVE PERENNIAL STREAM
Fish and Shellfish Habitat	Y		1,4,7,8,9,10,12,14,15,16,17	✓	
Sediment/Toxicant Retention		N	6,9,10,14		
Nutrient Removal	Y		3,5,9,10,12		
Production Export	Y		1,2,7,8,11,13		
Sediment/Shoreline Stabilization		N	2,9,14,15		LOCATED UPSLOPE OF ASSOCIATED STREAM
Wildlife Habitat	Y		1,3,4,5,6,7,8,13,15,19,20	✓	
Recreation		N	3,5,6		
Educational/Scientific Value		N	2,4,5,11,13		SITE NOT EASILY ACCESSIBLE
Uniqueness/Heritage	Y		7,11,16,17,18,19,22,28	✓	
Visual Quality/Aesthetics	Y		3,5,6,7,8,10,11,12		
ES Endangered Species Habitat					
Other					

Notes: WETLAND ORIGINATES AT HILLSIDE SEEPS AND FEEDS PERENNIAL STREAM LOCATED JUST DOWNSLOPE

*Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland_______ Human made?______ Is wetland part of a wildlife corridor?________ or a "habitat island"?________

Adjacent land use____________________ Distance to nearest roadway or other development____________

Dominant wetland systems present PEM/PFO Contiguous undeveloped buffer zone present____________

Is the wetland a separate hydraulic system?__________ If not, where does the wetland lie in the drainage basin?____________

How many tributaries contribute to the wetland?__________ Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. W-TID-6002

Latitude _____ Longitude _____

Prepared by: PHaup Date 6/25/6002

Wetland Impact:
Type____________ Area____________

Evaluation based on:
Office________ Field________

Corps manual wetland delineation completed? Y_____ N_____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		X	2,7,10,		
Floodflow Alteration	X		4,5,6,7,9,11,		
Fish and Shellfish Habitat		X			
Sediment/Toxicant Retention	X		1,2,3,5,9,10,12,14		
Nutrient Removal	X		3,4,5,9,10,13		
Production Export		X	2,4,13		deer+racoon tracks
Sediment/Shoreline Stabilization		X	1,2,5		
Wildlife Habitat	X		1,3,5,7,8,17,19		deer racoon
Recreation			1,5		
Educational/Scientific Value		X			
Uniqueness/Heritage		X			
Visual Quality/Aesthetics		X			
ES Endangered Species Habitat		X			
Other					

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland_____ Human made?_____ Is wetland part of a wildlife corridor?_____ or a "habitat island"?_____

Adjacent land use lawn/residental / road Distance to nearest roadway or other development_____

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present_____

Is the wetland a separate hydraulic system?_____ If not, where does the wetland lie in the drainage basin?_____

How many tributaries contribute to the wetland?_____ Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. W-T30-6080 1

Latitude_____ Longitude_____

Prepared by: KB Date 10/29/2014

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office_____ Field X

Corps manual wetland delineation completed? Y X N_____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		N	7,		
Floodflow Alteration	Y		3, 5, 6, 9, 10, 11, 13, 18	X	
Fish and Shellfish Habitat	Y		2, 4, 8, 9, 10, 14, 16, 17	X	
Sediment/Toxicant Retention	Y		1, 2, 10, 11,		
Nutrient Removal	Y		3, 8, 9, 11, 12,		
Production Export		X	1, 7, 8,		
Sediment/Shoreline Stabilization	X		2, 3, 6, 14		
Wildlife Habitat		Y	13, 15,		
Recreation		Y	—		
Educational/Scientific Value		Y	—		
Uniqueness/Heritage		Y	—		
Visual Quality/Aesthetics		Y	—		
ES Endangered Species Habitat		Y	—		
Other		Y			

Notes:

*Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland ______ Human made? ______ Is wetland part of a wildlife corridor? ______ or a "habitat island"? ______

Adjacent land use ______ Distance to nearest roadway or other development ______

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present ______

Is the wetland a separate hydraulic system? NO If not, where does the wetland lie in the drainage basin? ______

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. W-T23-6001A

Latitude 3692788.18 Longitude 4484917.29

Prepared by: MH Date 7-10-14

Wetland Impact:
Type ______ Area ______

Evaluation based on:
Office ______ Field ______

Corps manual wetland delineation completed? Y ______ N ______

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	X		1,2,7		
Floodflow Alteration		X	2		
Fish and Shellfish Habitat		X	1		
Sediment/Toxicant Retention	X		2,6,10,14	X	
Nutrient Removal		X	14		
Production Export		X	12		
Sediment/Shoreline Stabilization			2,3,4		
Wildlife Habitat	X		5,7,8,17	X	
Recreation		X	3,6		
Educational/Scientific Value		X	13		
Uniqueness/Heritage	X		10,11,19		
Visual Quality/Aesthetics		X	5,9		
ES Endangered Species Habitat					
Other					

* Refer to backup list of numbered considerations.

Notes:

Wetland Function-Value Evaluation Form

Total area of wetland_____ Human made?_____ Is wetland part of a wildlife corridor?_____ or a "habitat island"?_____

Adjacent land use HEMLOCK FOREST Distance to nearest roadway or other development_____

Dominant wetland systems present PFO Contiguous undeveloped buffer zone present_____

Is the wetland a separate hydraulic system? NO If not, where does the wetland lie in the drainage basin? CONNECTED TO WW-T20-7002

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. W-T20-7001

Latitude_____ Longitude_____

Prepared by: B. SNYDER Date 7/15/14

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office_____ Field_____

Corps manual wetland delineation completed? Y____ N____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	-	N	4	4	
Floodflow Alteration	Y	-	3,5,6,9,18	9	DENSE VEGETATION
Fish and Shellfish Habitat	-	N	1,2,8,14	1	LOCATED IN HEMLOCK FOREST
Sediment/Toxicant Retention	Y	-	5,16,14	5	DENSE VEGETATION
Nutrient Removal	-	N	3,5,8	5	
Production Export	-	N	2,7,	7	
Sediment/Shoreline Stabilization	-	N	2	2	
Wildlife Habitat	Y	-	1,3,4,6,7,13,19	4	WETLAND LOCATED IN UNDISTURBED HEMLOCK FOREST
Recreation	-	N	7,	7	
Educational/Scientific Value	-	N	2	2	
Uniqueness/Heritage	-	N	10,16,19	16	
Visual Quality/Aesthetics	-	N	5	5	
ES Endangered Species Habitat	-	N	N/A		
Other					

Notes:

* Refer to backup list of numbered considerations

Wetland Function-Value Evaluation Form

Total area of wetland_____ Human made? N Is wetland part of a wildlife corridor?_____ or a "habitat island"?_____

Adjacent land use Field Distance to nearest roadway or other development_____

Dominant wetland systems present PEM/PFO Contiguous undeveloped buffer zone present_____

Is the wetland a separate hydraulic system? N If not, where does the wetland lie in the drainage basin? High

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. W-T96-4003

Latitude 368632.72 Longitude 4452982.07

Prepared by:_____ Date 5/28/15

Wetland Impact:
Type_____ Area_____

Evaluation based on:
Office_____ Field X

Corps manual wetland delineation completed? Y X N_____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	X		2,4,7,9,		
Floodflow Alteration	X		5,6,9,10,		
Fish and Shellfish Habitat		X			
Sediment/Toxicant Retention		X			
Nutrient Removal		X			
Production Export		X			
Sediment/Shoreline Stabilization		X			
Wildlife Habitat		X			
Recreation		X			
Educational/Scientific Value		X			
Uniqueness/Heritage		X			
Visual Quality/Aesthetics		X			
ES Endangered Species Habitat		X			
Other					

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland_____ Human made? P Is wetland part of a wildlife corridor?_____ or a "habitat island"?_____

Adjacent land use_____ Distance to nearest roadway or other development_____

Dominant wetland systems present PFO/PEM Contiguous undeveloped buffer zone present_____

Is the wetland a separate hydraulic system?_____ If not, where does the wetland lie in the drainage basin?_____

How many tributaries contribute to the wetland?_____ Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. W-TH-5005

Latitude_____ Longitude_____

Prepared by: CRB Date 6/24/14

Wetland Impact:
Type ~~PSS~~ PFO/PEM Area_____

Evaluation based on:
Office_____ Field ✓

Corps manual wetland delineation completed? Y ✓ N_____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓	2,5,7,12		
Floodflow Alteration	✓		5,6,8,9,10,		
Fish and Shellfish Habitat		✓	1,15,16,17		
Sediment/Toxicant Retention		✓	1,4,10		
Nutrient Removal	✓		3,4,7,9,11		
Production Export	✓		2,4,5,10,12		
Sediment/Shoreline Stabilization	✓		1,2,3,4,9		
Wildlife Habitat	✓		1,3,5,7,13,14,17,21	✓	
Recreation		✓	4,5,7,		
Educational/Scientific Value		✓	2,4,5		
Uniqueness/Heritage	✓		10,11,18,19,22,16	✓	
Visual Quality/Aesthetics		✓	3,8,		
ES Endangered Species Habitat					
Other					

Notes:

* Refer to backup list of numbered considerations.

APPENDIX C

Hibred Farms Permittee-Responsible Mitigation Plan