



## **Fourth Quarter Meeting Minutes and Reports to Committee**

January 27, 2016, 10:00am - noon

New Garden Township Building, 299 Starr Road, Landenberg, PA 19350

### **Attendees:**

Chuck Barszcz	Ed O'Donnell	Mike Zuk	Angel Burns
Tom Hubbard	Michael Cardile	Kyle Sonnenberg	Don Peters
Grant DeCosta	Lamonte Garber	Tom Coleman	April Schmitt
Beth Burnam	Dana Cooley	Susan Cooley	Erin McCormick
Shane Morgan	John Goodall	Aileen Parrish	Martha Narvaez
Brian Styche	Edward Pietlock		

Approval of October Minutes

### **Announcements**

Wild and Scenic Film Festival, February 25 & 26, 6-9pm, Chester County Historical Society

Christina River Basin Clean Up, Saturday April 9, 8am-noon, multiple locations

White Clay Creek Fest, Saturday, May 2, noon-4pm

White Clay Creek State Park Bioblitz, All day Saturday May 21

### **Presentations**

Grant DeCosta (Brandywine Conservancy) Land Conservation and Stewardship in White Clay Creek Watershed

Lamonte Garber (Stroud Water Research Center), Farm Stewardship Program and Hurricane Sandy Project

### **Financial Report(s)**

Fourth Quarter 2015 Statement of Financials

NLT/BC Contract Agreement – need to spend down \$106,000 by June 2016

FY2016 Budget – Plan to expect about \$95,000 (similar to last year)

### **Old Business**

The Artesian Broad Run Well docket was approved in December with a modified, more robust monitoring plan including suggestions made during (and put in writing) at the private meeting held with Shane, Jerry Kauffman (UDWRA), Janet Bowers (CCWRA), Denis Newbold (Senior scientist), Artesian representatives and DRBC representatives. Artesian still needs to get approvals from the PUC, and resolve remaining issues with township ordinances prior to any pumping. Save Our Water members have begun doing some supplemental monitoring of broad run, including flow measurements as well as some chemical parameters. The approved docket and monitoring plan is on the DRBC site.

### **New Business**

Chuck Barszcz, Chief, National Wild and Scenic Rivers Northeast Region will be assuming Julie Bell's responsibilities as River Manger for the White Clay Wild and Scenic River.

## **Open Space (Land Preservation)**

Erin McCormick provided updates on existing NLT projects in the White Clay:

- Proposal signed by Boddorffs and London Grove Township in November; working on due diligence and draft easement (\$8000 WCWS funds reserved)
- Easement completed for 178 acre Green Valleys property in New Garden Township. Currently working on updating draft conservation plan for Orphans' Court petition; petition should be submitted in the next month, but no on the groundwork can be completed until NLT receives approval from the Orphan's Court. This property is not expected to close by June 2016. (\$20,000 WCWS funds reserved)

Erin circulated supplemental materials regarding the following 'new' projects for review prior to the Steering Committee meeting and gave a presentation on each of the projects below along with accompanying maps:

- Acquisition of a conservation easement on 137.2 acres of the St. Anthony In The Hills property. The property is the site of a day camp/recreational activities run by St. Anthony of Padua Catholic Church, which is based in Wilmington, DE. This property is located within the White Clay Creek watershed and contains much of the headwaters for Broad Run Creek. The conservation easement will include a trail easement to connect properties to the north and south. A draft conservation plan and summary of restrictions were developed and the township ordered an appraisal of the conservation easement value in August 2015. The appraisal valued the conservation easement at \$9,500/acre, or \$1,303,400 for 137.2 acres (5.8 acres on the other side of Rt. 7/Limestone Rd. is being left out). Representatives from St. Anthony's have agreed to this purchase price and would like to proceed with the sale as soon as possible. At its Dec. 21<sup>st</sup> Board of Supervisors meeting, the township approved moving forward with the easement at the above purchase price. Erin requested \$15000 of Wild and Scenic Funding be applied to this project.
- Acquisition of a conservation easement on 15.3-acre Farm in London Grove Township. The property has been in the family for several generations. The owner no longer lives on the property and has rented out the house for a number of years. The fields are also leased to a local farmer. The owner is looking to sell the property in the near future but would like to sell a conservation easement on the property prior to doing so. London Grove Township's Open Space Committee and Board of Supervisors have reviewed this property and have expressed an interest in moving forward with a purchased conservation easement. The township understands that it will be responsible for most of the costs associated with this project. The owner and NLT are currently working on revisions to the draft conservation plan and summary of restrictions and the next step will be to order an appraisal of the conservation easement value. Erin requested \$10,000 of Wild and Scenic Funding be applied to this project.

- Acquisition of a conservation easement on 55.7 acres of the 81.8-acre property located in London Britain Township. The conservation easement will be donated by the family's estate. The 81.8-acre Kraus property is located on the west side of London Tract Road, south of Glen Road, and the north side of Indiantown Road in London Britain Township, Chester County and is bordered by the White Clay Creek Preserve. The Property lies on a hilltop with steep north and south facing slopes and moderately sloping east facing slopes. The easement area covers 55.7 acres of the 81.8-acre property. The easement area has approximately twenty-five acres of mature, oak-beech woodlands, fifteen acres of young woodlands and shrublands, and fifteen acres of old fields, lawn and meadows. Erin requested \$5000 of Wild and Scenic Funds be applied to this project.

Erin also mentioned another new project she is working on in New Garden Township that includes a trail easement. This project is still in the preliminary stages and she will have more for the committee at a later date.

***A motion was made by Kyle Sonnenberg to financially support these three projects Erin presented in need of funding. Tom Coleman seconded the motion. All were in favor.***

John Goodall presented three additional new projects that Brandywine Conservancy is working on in the White Clay:

- London Grove (41 acre) – This farm is 40 acres in size and adjacent to two other preserved farms in the White Clay. Last year the Conservancy assisted owners with their application to the Chester County Farmland Preservation Program. London Grove Township is willing to participate in the preservation of the farm and negotiations are underway for the preservation of the farm and a soil and conservation plan is being put together.
- Two properties in neighboring townships under same ownership. Penn Township (160 acre farm)- The owners are interested in preserving the farm and then selling the farm. The Conservancy is currently preparing a conservation plan for the farm and it is expected that the family will apply later this year to the Chester County farmland Preservation Program for that portion of the farm. The 38 acres in London Grove is mostly wooded. London Grove Township is willing to purchase the development rights and have the Conservancy hold the easement. An appraisal is currently being done to determine the value.

**Research and Restoration (Shane provided updates on the following projects):**

**Water Quality/Bacteria Monitoring** –Meeting at Stroud in early December to go over data, shared site locations, and land use maps for each sampling sites catchment basin (made by UD WRA), as well as our preliminary analysis of the data we collected over the past three years with environmental microbiologist Jinjun Kan. In early January, Jinjun collected additional samples at select sites based on our results where the highest concentrations of E. coli were found and had them analyzed. Shane is meeting with him early February to go over his findings and determine a path forward in terms of how to sample in the coming year and include microbial source tracking.

**New Garden Park Riparian Buffer Project** – Trees and shrubs installed in November, live stakes to go in this winter/early spring. NGT agreed to remove volleyball court and reseed with native wetland seed mix. We could additionally do a plug planting to help get something established. We were able to continue past the second bridge to the edge of the wood line buffering not just the 1250' length estimated, bringing entire length buffered to about 1700'.

**Curtis Mill Riparian Buffer:** 100 trees and shrubs planted Nov 21 by Newark High School students in Bob MacDowell's Class (using White Clay Restoration Funds). WCWA voted to release up to \$2000 in WCRF for Phase 2 planting of 27 flats of pollinator plants. Newark High School students will install the plants on May 14.

**Riparian Gap Analysis/Mapping** – Rob Daniels (Brandywine Conservancy) created maps for us to use with municipalities, residents, and other non-profit groups. Shane showed some example maps and explained how we can use them– especially with respect to the preserve and friends groups, state park, and interested townships who know their landowners better than we do. The maps distinguish between protected and unprotected lands. Aileen Parrish asked Shane and Beth to come to one of their BOS meetings and to present the maps and riparian gap analysis. Aileen is going to present the London Britain map to the London Britain Land Trust at their next meeting.

**Bella Vista Community Mill Creek** –Since the last Steering Committee meeting Shane (and others) met with resident Dana Cooley to look at Mill Creek that runs through his development (Bella Vista, Hockessin, DE). She reviewed the potential pitfalls of moving forward and lingering questions regarding privately owned open space. Ed suggested Dana look into the status of the privately owned areas and request to see the record plan with the County Land Use Department. Tom Coleman has a contact in the Land Use Department he will provide to Dana. Dana will look into this and report back to Shane. In the mean time Shane suggested that we do some smaller landowner plantings/projects to garner interest and promote native buffers. She requested up to \$10,000 unreserved funds from WCRF for single homeowner projects in Bella Vista (estimated avg. \$1750/owner – 50 trees/shrubs/\$50each + deer protection) to be used as example landscapes and keep the community interested while we work on potential grant sourcing and partners to do a larger scale restoration project. She noted that there are problems associated with planting on private lands and we can't expect the owners to sign a 20 year contract, but if the watershed is mainly made up of private landowners, it may be time to work with them and develop some sort of contract such as maintenance and follow up visits and start installing plants on private lands. This project also fits in with riparian buffer gap analysis. The Steering Committee supported the idea and Shane will request funding from WCWA using the White Clay Restoration Funds.

**Landenberg Junction** - Shane requested up to \$2000 in Restoration Funds (or NLT funds if can't be used up by June) for herbicide application, deer protection, and installation of trees and shrubs along main stem of East Branch at Landenberg Junction Preserve. ***A motion was made by Mike Zuk to support the project and seconded by Kyle Sonnenberg. All were in favor.***

## Education/Outreach

**School Programs** - Newark H.S. (27 AP biology students) scheduled, Assumption BVM (27 seventh graders) scheduled, AGIS (370 fourth graders – still working out details due to delays in the recently passed PA state budget to determine amount of EITC funds available) Total Program Costs matched by EITC: estimated at \$5250  
Transportation Estimate: \$1500  
Remaining Balance in our School Programs Funding Line: \$2418

**Community Outreach:** Provided storm water education tips and graphic for the New Garden Township mailing to go out to all residents in February, continuing to create blog posts for White Clay website, and provide articles to New Garden and London Grove quarterly e-newsletters.

Planning underway for **2016 Creek Fest**, May 7, noon-4pm – 50<sup>th</sup> anniversary of the WCWA to be the theme this year. Working on a history of the watershed association shuttle bus ride to run throughout the event in which visitors can take a shuttle ride down to the area where the dam was proposed and hear about how the watershed and bi state preserve were formed.

Shane asked for feedback on the new **Website and Mail chimp** newsletter format launched since the last meeting. Everyone was happy with the new look. Shane noted our average open rate is 35.4% and average click rate is 7%, both higher than the nonprofit industry average, which is 20% and 2% respectively.

**Wild and Scenic Watershed Signage** –New signs were ordered and received, most municipalities agreed to replace the old signs and install the new ones. New Garden and London Grove were provided their new signs and our student intern is working on notifying and delivering signs to the rest of the municipalities.

**BMP marker signage** –Ordered and received 5 10” x 13” aluminum signs of each BMP design (45 altogether). Shane is keeping an inventory and tracking which signs are going where. Trying to get them at all of our projects that need signs (New Garden Park, Landenberg Junction, Goddard Park) as well as other public locations where they would help to educate the public on stormwater BMPs.

**White Clay Creek State of the Watershed 2016 Report** (formerly called the 15 year report) is complete and is currently being professional proofed and edited at University of Delaware. The final draft will be ready for Committee review in the next week. Shane asked the Committee if they thought it would be worthwhile to take the final (50 page) scientific report and make a more condensed, more visual, public friendly version to hand out at outreach events. The Committee agreed this was a good idea to look into. Shane will meet with a designer and get a proposal for the Committee to vote on once the final report is complete and ready to be published. She noted we have \$10000 in Design services remaining for educational/promotional materials.

## Other Business

Shane informed the Committee that she is taking a Non-Profit Management Certificate Course offered by University of Delaware. The course fee of \$1750 was funded by the WCWA using the remaining Jack Murray Scholarship Funds. This is a 16-week course held on Thursdays from February 11 – June 2.

Meeting adjourned at 12pm.

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**Management Plan Coordinator Report to White Clay Steering Committee**

**QUARTERLY/ANNUAL PERFORMANCE REPORT NARRATIVE**

Cooperative Agreement #: CA_P13AC01266
Award Recipient: White Clay Watershed Association
Project/Program Title: Wild & Scenic River Funding
Date: January 4, 2016
Period Covered by Report: October 1, 2015- December 31, 2015
Funds expended during this reporting period: \$12,036.42
Submitted by: Shane Morgan, Management Plan Coordinator
Submitted to: National Park Service – Partnership Wild & Scenic Rivers

**Summary of work performed during the period covered by the report:** This quarter work focused on locating new restoration projects working with willing landowners and the Brandywine Conservancy. Refining our bacteria monitoring program to locate potential sources for targeted restoration with Stroud and University of Delaware WRA, the Chester County Conservation District, and our water quality intern, Patrick Herringslack. Installation of a 1250 foot riparian buffer at New Garden Park with LandStudies, volunteers, as part of our PA DEP growing greener project with New Garden Township. We also strengthened our web presence with an updated website hosted on Squarespace and a professional email newsletter service (mail chimp).

**Progress Achieved in Accomplishing Program Goals & Objectives**

**Objective/Task #1 Cooperative Agreement:** Plan and implement the enumerated goals in the White Clay Creek Watershed Management Plan with county, state and federal agencies, watershed municipal governments and non-government organizations with watershed conservation interests.

**Deliverable/Planned Outcome:** Partner with municipalities on installing and maintain existing and new green infrastructure.

**Actual 1:** Planted native woody shrubs and trees (some with deer protection) along a 1700 foot stretch of Lamborn Run running through New Garden Township Park as part of our Growing Greener Grant Project.

**Deliverable/Planned Outcome:** Provide a watershed education experience to 4 school groups during the year.

**Actual 1:** Three schools signed up for Spring Programs at Stroud.

**Favorable Development:** Working with one of these schools (Newark H.S.) to implement better riparian habitat along the White Clay main stem in Newark at the former Curtis Mill site. Phase 1 was planted in late November with 30 students and accompanying adults. Phases 2 and 3 will occur in 2016 with this group of students and teacher as a supplement to part of their educational programming. Materials were purchased using the White Clay Restoration Fund.

**Objective/Task #2 Cooperative Agreement:** Develop and produce interpretive exhibits, publications, other media and programs that interpret the resources of the White Clay Creek and watershed, with priority given to updating the website and maintaining an active social media presence.

**Deliverable/Planned Outcome:** New website design. COMPLETED

**Deliverable/Planned Outcome:** Provide quarterly articles to watershed municipalities (New Garden Township and London Grove Township) promoting watershed stewardship and highlighting watershed projects. Continue posting to Whiteclay.org blog.

**Actual 1:** Assisted New Garden Township with their Stormwater messaging in a mailing going out to all Township Residents this January 2016. Continue providing education materials and articles as requested to townships.

**Actual 2:** Edited and published a blog post for the City of Newark and the White Clay Website entitled, '*Building Partnerships Through Community Greening.*' (<http://whiteclay.org/blog/building-partnerships-through-community-greening-in-newark-delaware>)

**Objective/Task #3 Cooperative Agreement:** Promote the long-term protection of the White Clay Creek watershed and its outstandingly remarkable resources.

**Deliverable/Planned Outcome:** Attend community events to increase general awareness of and appreciation for the natural, cultural and recreational resources of the watershed and expand audiences.

**Actual 1:** Assisted with logistic and presented information about the Wild and Scenic Program at the White Clay Watershed Association Annual Meeting.

**Favorable Development:** Met Thalia Pappas (Delaware Department of Agriculture) at the WCWA annual meeting. She is responsible for creating Delaware's draft plan in response to the call for states to develop managed Pollinator Protection Plans. We had a follow up meeting discussing White Clay projects and she would like to meet with the Committee to determine how we might partner with them on creating and documenting quality pollinator habitat as it relates to some of our projects.

**Actual 2:** Started planning and outreach to exhibitors, sponsors and vendors for the 2016 Creek Fest.

**Actual 3:** Attended a private meeting with DRBC officials, Artesian officials, Jan Bowers (CCWRA), Jerry Kauffman (UD WRA), and Denis Newbold (Stroud Scientist) regarding the proposed monitoring plan of the Artesian Broad Run Well in New Garden Township and submitted follow up comments to the DRBC. DRBC made several positive changes and issued a revised monitoring plan, to the docket, which was approved at the DRBC public meeting held in December 2015.

**Objective/Task #4 Cooperative Agreement:** Provide technical support to NPS for planning, education, outreach and research activities as they relate to the White Clay Creek watershed.

**Actual:** Continued to assist/facilitate conversations between NPS and the Brandywine Conservancy as they navigate the Section 7 review process for the Moorehead equestrian farm. This project will include 100'-300' riparian buffers along Exceptional Value waters of the White Clay on 19 acres of horse farm. It involves 3 remove and replace stream crossings that will be reviewed by NPS. This project was approved.

**Objective/Task #5 Cooperative Agreement:** Support the needs and goals of the White Clay Creek Steering Committee.

**Actual:** Attended multiple meetings and conferences with other non-profits and government entities representing the interests of the White Clay Steering Committee and White Clay Management Plan, including Water Fund Planning meetings and Master Watershed Steward planning meetings.

**Favorable Development:** Met several times with Ellen Kohler (The Nature Conservancy) regarding the potential Healthy Water Fund (research funded by William Penn). Instead of targeting the entire Christina Basin, they are currently targeting White Clay as the pilot watershed for this fund. I was also asked to sit on the Steering Committee for the First State National Park new Volunteer Stream Monitoring Program. This is a pilot program that could be adapted to the White Clay.

**Objective/Task #6 Cooperative Agreement:** Work with the Water Resources Agency, Natural Lands Trust, and the Brandywine Conservancy to provide GIS analysis, technical assistance and recommendations to the NPS, watershed counties and municipalities, other non governmental organization and the State of Delaware and the Commonwealth of Pennsylvania concerning the management of river resources.

**Deliverable/Planned Outcome:** Continued to work with WCWA partners at the UD WRA to research and publish a 15-year progress report for the White Clay Creek Wild & Scenic River Program, including a municipal ordinance review.

**Actual:** Reviewed and edited two more drafts of report. Met with Martha and Andrew (UD WRA) to go over suggested content edits and additional mapping needs. Met with Derek Stoner (Delaware Nature Society) to update bird status in the White Clay for the final report. Final draft is being formatted at WRA for distribution to committee in January.

**Deliverable/Planned Outcome:** Continued to work with Brandywine Conservancy of finalizing riparian gap analysis for the White Clay.

**Favorable Development:** Working with local residents in the Bella Vista community (Hockessin, DE), Brandywine Conservancy, (and potentially Stroud), to target potential restoration projects using White Clay Restoration Funds (and potential grant sources for larger scale restoration) along a large section of Mill Creek.

**Actual:** Initial maps completed for entire watershed. Working on creating more user-friendly maps that each municipality can use to target and implement projects.

**Deliverable/Planned Outcome:** Student and technical assistance from UD WRA to generate GIS maps for displays and website.

**Actual 1:** Generated land use maps in the surrounding catchment basins for each bacteria-sampling site in Pennsylvania. Working with CCCD to enter more detailed data not available in GIS layers.

**Actual 2:** Completed watershed signage report which includes map locating existing watershed signage and corresponding addresses, photos of existing condition of sign, contact information for replacements, and replacement priorities indicated. Map will be used in an effort to replace outdated, vandalized, and faded signage and keep track of new signage.

**Deliverable/Planned Outcome:** Hire summer intern to continue bacteria sampling at 12 sites in the Pennsylvania portion of the watershed following PA DEP sampling protocol. COMPLETED.

**Favorable Development:** Met with John Jackson and Matt Ehrhart (Stroud) to discuss partnering on the bacteria sampling. I am now in contact with JinJun Kan, environmental microbiologist (also at Stroud) who is looking at using our sites with the highest bacteria counts to determine the best path forward utilizing microbial source tracking.

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**NPS River Manager Report to White Clay Creek Steering Committee**

*Financials*

NPS funds tracking log indicate as of January 6, 2015 there was a total of **\$107,093** remaining in the White Clay Watershed Association's Cooperative Agreement consisting of 2013 (**\$9642**); 2014 (**\$5079**) and 2015 (**92,374**) funds. The 2015 funds are beginning to be spent, **\$2626.52** invoiced this quarter.

As of November 1, 2015, NLT had approximately **\$105,014** remaining in its Cooperative Agreement, consisting of 2012, 2013, and 2014 funds. The organization is looking at options to use these funds by June of 2016. NLT is working on conservation projects on two properties and is trying to close on these real estate transactions by the June 2016 deadline. **If these funds are not expended by the June 2016 deadline they will be deobligated by National Park Service and returned to the US Treasury.**

### *Financial Reporting*

*NPS continues to work with Shane Morgan and David Hawk to stream line financial reporting to NPS so that we get the most useful and user friendly information to the NPS and the White Clay Watershed Management Steering Committee.*

#### *Section 7 Reviews:*

*1) Newark Regional Transportation Center Project (Newark, DE - The project is essentially the replacement of an existing culvert and is well beyond the designated area of Cool Run, approximately one mile. The area is highly developed and is located at the top of the Cool Run watershed. NPS has determined that the project will not encroach or invade the designated area of Cool Run or unreasonably diminish the fish or wildlife values present in the designated area of Cool Run. The project should not significantly impact Cool Run.*

*2) Moorhead Farm (West Marlborough Township, PA) – Brandywine Conservancy, Stroud Water Research Center, & Chester County Conservation District– Agricultural Corrective Action Plan (ACAP). An Agricultural Corrective Action Plan was submitted to the PA Department of Environmental Protection for approval by the projects sponsors, Brandywine, Stroud and the Chester County Conservation District. This ACAP proposes repair and maintenance of 3 existing livestock stream crossings; reforestation of 9.8 acres of riparian buffer; installation of 4260 feet of fencing to prevent livestock access to the riparian area; as well as providing fencing to channel livestock through the livestock stream crossings.*

NPS was asked to review the project under Section 7 of the Wild and Scenic Rivers Act (WSRA) and if possible to lend the agency's support for the project. NPS concluded under Section 7 that this ACAP will not significantly or negatively impact the White Clay Creek or its resource values, and should not adversely affect the White Clay Creek National Wild and Scenic River. NPS determined that this ACAP adheres to the goals and objectives of water quality protection and enhancement as envisioned by the White Clay Watershed Management Plan (see Management Challenge page 60 attached from the White Clay Watershed Management Plan). NPS also determined that the existing livestock crossings are allowed to be maintained and repaired on designated National Wild and Scenic Rivers as long as there is not substantial additional construction in the bed and banks. NPS does not believe this proposal substantially alters the existing livestock crossings and is therefore

permitted. NPS was able to lend support for this project and believes that it will reduce erosion and sedimentation and substantially improve water quality in the White Clay Creek.

*Section 10/Other Reviews:*

1) *Eastern Shore Natural Gas pipeline project (Franklin Township, PA)* – Eastern Shore Natural Gas pipeline is moving ahead with this project. In August 2015 the Federal Energy Regulatory Commission (FERC) requested comments for a Supplemental Public Notice that was evaluating impacts between two alternatives for this project.

The Proposed Route, favored by Eastern Shore would have constructed a new 4 mile line, to circumvent Kemblesville, following Walker Road east from the existing pipeline then crossing Rt. 896 south of the Appleton & Rt. 896 intersection and then moving east and north through the Franklin Township Park and Preserve and ultimately joining the existing pipeline Right of Way near Oxford and State Roads.

Alternative 2 would place the new pipeline within the existing pipeline Right of Way, which is approximately half a mile west of Rt. 896 and the village of Kemblesville. The existing pipeline goes through several existing subdivisions. The construction of the new pipeline in this location would impact 39 existing homes.

The FERC Supplemental Notice solicited comments on impacts to existing forest; streams from pipeline crossings and potential spread of noxious weed or invasive plants. NPS submitted the following comments:

1) *Crossings of the White Clay Creek National Wild and Scenic River* – Both the Proposed Route and Alternative 2 each contain two minor crossings of designated tributaries of the White Clay Creek National Wild and Scenic River. Based on preliminary information supplied from Eastern Shore Natural Gas the Proposed Route should be able to use Horizontal Directional Drilling to achieve the crossing on at least one of the tributary crossings for the Proposed Route; and will rely on trench cuts for the other tributary crossing on the Proposed Route and the two crossings for Alternative 2. All of these crossings will require Army Corps of Engineer 404 permits, which will trigger review of the permits by NPS under Section 7 of the Wild and Scenic Rivers Act (WSRA). Under Section 7 NPS will determine if these crossings will have a “direct and adverse” impact on free flow and water quality for any of the involved tributaries; as well as any direct and adverse impacts to any “outstandingly remarkable” resources that led to the Wild and Scenic Designation of White Clay Creek & its tributaries. Our preliminary review of these crossings at this time indicates that there should be no “direct or adverse” impacts of any kind from any of these crossings. All of the streams involved are very small and not more than a few feet across. The use of Horizontal Directional Drilling under one of the streams for the Proposed Route eliminates any potential impacts from that crossing. The other 3 stream crossings are very narrow and in existing disturbed locations; the use of trench cuts (including flumes and/or dam and pump); along with proper best management practices should insure very little impact, if at all for these crossings. None of the stream crossings are located in the vicinity of any outstandingly remarkable resources.

2) Old Growth Forested Areas Along the Pipeline Routes – The White Clay Creek & Its Tributaries Watershed Management Plan, Amended 2001 was prepared as part of the Wild and Scenic Designation and is the guide for NPS river management for White Clay Creek. The Watershed Management Plan has as a goal and an objective the preservation and maintenance of mature forest to support natural ecosystems and to enhance the quality of life for residents of the watershed. The Watershed Management Plan notes that forests provide some key functions including protection of water quality; protection of public water supplies by recharging the groundwater aquifers; control of erosion and sedimentation of streams given high forest infiltration rates for stormwater; maintenance of rare fish and wildlife populations and provision of areas for active outdoor recreation. Based on estimates provided by Eastern Shore Natural Gas the Proposed Route would eliminate almost 12 acres of mature forest, while Alternative 2 would eliminate approximately 6 acres of mature forest. Alternative 2 best meets the goals concerning the preservation of mature forest as outlined in the White Clay Creek & Its Tributaries Watershed Management Plan.

3) Noxious Weeds – Gas pipelines through their need to maintain rights of ways free from mature forest cover are inherent pathways for the spread of noxious weeds and other invasive type vines and plants. As the rights of way pass through forest they create openings for direct sunlight to penetrate into the forested environment, noxious weeds and vines thrive in direct sunlight. Many forested areas of the White Clay Creek watershed have already been decimated by the spread of these weeds and vines. The vines are especially problematic since they can cover whole trees and can over time kill them. When the vine covered trees die they are susceptible to being blown over and opening up even greater areas in the interior forest for the spread of more noxious weeds and more vines. Both the Proposed Route and Alternative 2 pass through forested areas, however, the Proposed Route will open up a greater amount of forest to the potential spread of noxious weeds and vines.

**Eastern Shore Natural Gas has since filed for permits through the Delaware River Basin Commission (DRBC) for permission to co-locate the new 16 inch pipeline within the existing Right of Way, Alternative 2. Eastern Shore has proposed to use Horizontal Directional Drilling for the two stream crossings associated with Alternative 2. NPS has indicated to DRBC that it supports the Eastern Shore proposal.**