

Attachment A, Part I - White Clay Creek Watershed Management Plan Implementation, Budget and Work Plan Summary, **2018 Funds**

**Cooperative Agreement Number New ID**

**Program Administration and Support (\$ 61,810)**

Funding under this category covers services provided by the Management Plan Coordinator to implement and oversee implementation of the White Clay Creek Watershed Management Plan. This includes time required to administer the Cooperative Agreement; manage approved projects; and provide staff assistance to the White Clay Creek Management Steering Committee. This also includes travel expenses; operating expenses; continuing education (pre-authorized workshops, professional membership dues, and conference fees); WCWA insurance coverage and indirect costs. Technical and student assistance provided by the University of Delaware Water Resources Agency are part of this budget category.

**Timeline: Ongoing operations throughout the year.**

**1. Management Plan Coordinator**

1272 hours/year @ \$35.86/hour = \$ 45,614 (Personnel)

**2. University of Delaware, Water Resources Center (WRC) Technical Assistance:**

Website support and Geographic Information System Mapping

100 hours @\$50.00/hour = \$5,000 (Contractual)

**3. University of Delaware, Water Resources Center (WRC) Student Assistance:**

Website and blog support; Creek Fest support; misc. administrative and project support

140 hours @ \$21.43/hour = \$3,000 (Contractual)

**4. White Clay Watershed Association Insurance: \$2,600 (Other)**

**5. Travel:** Management Plan Coordinator, to attend meetings and implement projects, generally within the White Clay Watershed (travel based on average number of trips per month at government mileage rate for private vehicle.

2160 miles/year @ \$0.54/mile plus tolls and parking = \$1,166 (Travel)

**6. Indirect Costs:** Office supplies, Internet services, utilities, conference fees, printing, postage, application fees, memberships/dues and subscriptions, annual report design layout and distribution: \$4,430 (Indirect Costs)

## Restoration (\$ 30,490)

Water Quality Monitoring and Improvement Projects, Ecological Restoration Projects, and Historical & Cultural Resource Preservation projects are all represented under restoration. Resource protection and enhancement and restoration of habitat and water quality in the White Clay Creek are primary goals of the White Clay Creek Wild & Scenic Watershed Management Plan. These projects often require multiple funders whose requirements and funding levels never match completely. This budget is geared toward covering the "gap" between funding requirements to insure completion of implementation projects.

Implementation of a suite of best management practices including, but not limited to, riparian buffer plantings, stormwater retention/filtration practices such as tree trenches and rain gardens, rainwater storage such as barrels and cisterns, and removal of impervious paving within the watershed, targeting suburban developments. The Resource Management Goals and Key Actions outlined in The White Clay Creek Watershed Management Plan include, under Existing Water Quality, the proposed action to "develop strategies . . . to reduce soil erosion into the streams, which comes from constructions disturbance, urban runoff . . . and streambank erosion." And in Land-Use Effects-Key Actions, the Plan proposes "work with communities . . . to develop innovative strategies for stormwater management and promote infiltration. . ." In addition to meeting these goals and key actions, Green Stormwater Infiltration projects can reduce nonpoint source pollution and help White Clay municipalities meet challenging new MS4 stormwater and TMDL permit requirements.

Planned project outputs:

1. Bacteria Monitoring and Research: Collection and analysis for bacteria (enterococcus, E. coli, Total coliform) a minimum of 150 recreational season stream water samples over approximately 30 sites across the watershed as part of our recreational season water quality monitoring. DNA fingerprinting and real-time PCR (qPCR) assay for host-specific bacterial groups (e.g., Bacteroides) will be performed on selected samples to sort out the potential FIB sources (human, bovine, equine, poultry etc.) and their contribution to specific samples/sites to identify potential bacterial sources in the White Clay Creek (Pennsylvania portion) to target best management practices (BMPs) and implementation strategies. Lead Partner: Stroud Water Research Center; Other Identified Partners: Delaware Nature Society, USGS, University of Delaware Water Resources Center, City of Newark
2. White Clay Watershed Stream Watch Program: Continue in to second year of stream monitoring/citizen science program using remote DIY sensors to measure physical and chemical parameters in select tributaries. Work with volunteers to collect continuous data at a minimum of 4 sites over a 12-month period (including collection and analyses of nutrients, sediment (TSS), and chlorides). Recruit additional volunteers and collaborate with listed partners to provide training, coordinate sharing of volunteers and equipment, and host a citizen scientist workshop. Lead Partner: Stroud Water Research Center; Support: Save Our Water, Delaware Nature Society, The Nature Conservancy of Delaware Stream Stewards, Chester County Master Watershed Stewards.
3. White Clay Catch the Rain Program: Program administration and refinement of pilot program materials and rebate structure, conduct a minimum of 10 site visits

and accompanying site reports with concept plan, follow-up/maintenance requirements on installed BMPs, and provision of BMP cost share incentives. Minimum of ten on site education visits, and implementation of 4 rebates. Other Identified Partners: White Clay Watershed Municipalities.

4. Land Stewardship: Continued land management services for enhanced riparian buffer establishment at locations throughout the White Clay Creek. Target locations of new buffer plantings include the 4-acre Franklin Preserve (Franklin Township), 2-acre farm (New Garden Township), and 2-acre farm (Penn Township). The focus is on invasive species management, natural succession strategies to improve habitat, and monitoring the survivorship of newly planted trees. A variety of techniques are being monitoring within specific areas to provide a learning opportunity for this and future projects including the use of tubes, cages, and larger deer enclosures.

Potential project outputs include:

Evaluation of suspended sediment sources, concentrations, and loads in relation to streamflow and season in White Clay Creek.

Lead Partner: USGS (grant dependent); Other Identified Partners: Chester County Water Resources Authority

Freshwater mussel bed restoration project in conjunction with the DeIDOT floodplain restoration work at Middle Run

Lead Partners: Partnership for the Delaware Estuary, Delaware Department of Transportation (grant dependent)

Implementation of Catch the Rain program practices in conjunction with a larger stream restoration in West Grove Township, PA. Lead Partner: West Grove Township

Riparian Buffer Plantings utilizing the Riparian Gap Analysis Maps developed by Brandywine Conservancy. Lead Partner: Brandywine Conservancy

Implementation of best management practices on agricultural lands. Lead Partner: Brandywine Conservancy; Other Identified Partners: Chester and New Castle County Conservation Districts, Chester County Planning Commission.

## **Education (\$16,200)**

Planned project outputs:

1. School Programs: Provide environmental education awards to 3 schools (or multiple grades of students in same school) for children and teachers in grades 4-12 to attend hands on watershed science classes at Stroud Water Research Center (\$350/class of 24 students) plus transportation if needed (generally \$300/bus load). In School Programming can be substituted for field trips to Stroud depending on school situation. Lead Partner: Stroud Water Research Center. Other potential partners: Delaware Nature Society, White Clay Creek State Park
2. Creek Fest: Creek Fest is an annual, one day event that celebrates the many ways to enjoy and protect the White Clay Creek. Our goal is to raise awareness of the drinking water, scenic, recreational, historical and natural resource values of the

White Clay Creek through various activities and exhibits. Watershed residents are informed on various ways to protect, improve, and promote these resource values. Lead Partners and Sponsors: White Clay Creek State Park, Friends of White Clay Creek State Park, SUEZ, Mushroom Farmers of Pennsylvania.

3. Community Outreach (Signage, Mailings, Guides, Brochures, etc): Development and design services for outreach materials such as publications, mailings, and educational signage as needed.
4. Municipal Outreach/Watershed Implementation Planning: Initiation of White Clay Watershed Implementation Plan (WIP) and continued participation in the Christina Watershed Municipal Partnership as White Clay lead on Municipal Separate Storm Sewer Systems (MS4) multi-municipal collaboration on TMDL and Pollution Reduction Plans. This will involve communication and collaboration with private, non-profit, and government partners, to design collaborative, regulatory compliant, equitable and affordable, water quality restoration programs to improve water quality in the White Clay watershed. As well as continuing to work with Chester County MS4 communities to implement BMPs that meet their regulatory obligations via the Christina Watersheds Municipal Partnership. Project Lead: Ellen Kohler, PLC; Other identified and potential partners: Brandywine Red Clay Alliance, Chester County Water Resources Authority, University of Delaware WRC, Chester County and New Castle County Conservation Districts, Stroud Water Research Center, Brandywine Conservancy, White Clay Watershed Municipalities, PA DEP, DNREC, DeIDOT, USGS and EPA.

#### **Land Preservation (\$3,046)**

Natural Lands Trust (NLT) and Brandywine Conservancy (BC) will continue to initiate potential land preservation projects within the White Clay Creek Wild and Scenic program area through outreach to appropriate landowners. This includes initial meetings with private landowners to discuss direct preservation through conservation easement or fee purchase. In addition, to evaluating potential funding scenarios for acquisition, including grant writing to secure necessary funds.

Planned project outputs include:

1. Meet with four new landowners and initiate new projects with two of them.  
Potential projects include:

#### **Land Transactions (\$7,454)**

Conservation transactions are challenging in requiring multiple funders whose requirements and funding levels never match completely. The White Clay Creek land preservation funds are geared toward covering the “gap” between funding requirements to ensure completion of acquisition projects.

Planned project outputs include:

1. Closing on at least one project approved by the White Clay Creek Management Committee
2. Advancing negotiations on at least two priority projects Priority parcel targeted for conservation.

**White Clay Creek National Wild & Scenic River  
Work Plan for Cooperative Agreement #####, FY18 Oct 1, 2018-Sept 30, 2019)**

Expense Itemization	Total	Total	Comments
	Target Amount	Less Ideal	
<b>Administrative Staff Salaries</b>			
Management Plan Coordinator (\$35.86/hour - 1272 hours/year)	45614	45614	Asking for 2% COLA increase (@70cents/hr)
<b>Fringe Benefits</b>	0	0	
<b>Travel</b>			
Travel - Administrator's mileage @2160 miles/year at \$0.54/mile	1100	1100	
Misc. Travel - tolls, parking	66	66	
<b>Subtotal Travel</b>	<b>1166</b>	<b>1166</b>	
<b>Supplies</b>	4170	4170	
<b>Contractual</b>			
UD WRA Tech Assistance	5000	5000	
UD WRA Student Assistance	3000	3000	
Water Quality Projects	10180	6000	NPF grant support?, scale back for 2019 (\$6000 base sampling, PA only Coli and enter test, 5 x 20 sites (1 interns) -\$4180
Restoration projects, land stewardship, and BMP implementation. (ideally move CTR here so more flexibility)	10440	3120	-\$5820 (less seed \$ for bmps, etc,
Education Programs/Outreach	15900	10900	-\$5000 (less seed \$ CWMP/WIP
Land Preservation	3046	3046	
Land Transactions	7454	7454	
<b>Subtotal Contractual</b>	<b>55020</b>	<b>38520</b>	
<b>Other</b>			
Catch the Rain Program	7000	2500	RT50 grant support?, WCPDF for DE
WCWA Insurance	2600	2600	
<b>Subtotal Other</b>	<b>9600</b>	<b>5100</b>	
<b>Total Direct Costs</b>	<b>115570</b>	<b>94570</b>	
<b>Indirect Costs</b>	<b>4430</b>	<b>4430</b>	
<b>Total (Can potentially \$21000 increase from NPS bc no permanent NPS manager in place)</b>	<b>120000</b>	<b>99000</b>	