

**Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – UNION COUNTY**

**Green** - action has been completed or is moving forward as planned    **Yellow** - action has encountered minor obstacles    **Red** - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available		Resources Needed		Annual Progress to Date (2021 + 2022)
							Technical	Financial	Technical	Financial	
<b>Priority Initiative 1: County Programmatic Initiatives</b>											
1.1A	Implement County Comprehensive Plan policies and actions  Update County Comprehensive plan beginning 2021/2022	Ensure that growth activities address existing water quality impairments through stormwater BMP implementation already required by local ordinance  Preserve Environmentally sensitive areas from new development through zoning, ordinances and land trusts.  <b>Conserve 1,500 acres of forest.</b>  <b>Conserve 125 acres of wetlands.</b>	Union County Planning Commission (UCPC), growth boundary municipalities, Union County Hazard Mitigation Plan (CHMP), Act 167, Union County Greenway Plan, Municipalities	Countywide	Begin update to County Comprehensive plan beginning 2021/2022	Educating municipalities, Updating local plans and ordinances, Growth areas not consistent with Census Urbanized Areas  Local governments willing to propose ordinances to protect economically and environmentally friendly landscapes	Education, outreach		1 – FTE Clean Water Coordinator for UCPC	\$130,000 per year  \$2,000 per acre of forest conserved through easement ☐ Total \$3.0M  \$2,000 per acre of wetland conserved through easement ☐ Total \$250K  \$40,000 to support Comprehensive plan implementation	<b>2022:</b> Starting the plan update. Municipalities were made aware that the process was beginning. Estimated to take 18-20 months. HRG will plan to attend public participation events to review how the CAP can support or benefit from Comprehensive Plan initiatives.
1.1B	Advance local comprehensive planning efforts  Implement the Source Water Protection (SWP) Plan  Preparation and implementation of an effective stormwater management (SWM) plan	Protecting Union County’s surface water and groundwater as a viable resource is critical to preserving water quality and healthy communities  Work with municipal authorities to educate on the benefits of SWP Plan – work with DEP on development of Plans.	Municipalities, DEP NRCO Staff to assist with SWP, New Berlin and Mifflinburg Borough	Countywide  New Berlin and Mifflinburg Boroughs	1-2 years	Reinforcing the municipal role in coordinating with the water authorities to perform education and outreach.  The problem is the protection areas often lie outside the political boundary of the municipality that owns the system. Some of the adjacent municipalities have no zoning. The plans might be dated but the implementation realities are unchanged.			1 – FTE Clean Water Coordinator for UCPC  SWP development	\$130,000 per year  \$100,000 SWP	<b>2022:</b> HRG developed a list of water suppliers for Union County and will verify the need for SWPPs with DEP. After the list is confirmed, HRG will be performing outreach in 2023 to discuss the importance of the SWPPs and urge water suppliers to contact DEP to request assistance with the development of SWPPs. HRG will review existing plans with the water suppliers and help them determine if they need additional funding to implement the plans.

1.1C*	Evaluate areas to establish riparian buffers to stabilize stream banks and limit encroachment	Identify landowners willing to participate and work with the following partners to implement new buffers  Work with Chesapeake Conservancy through rapid de-listing approach to identify new landowners.  Identified over 1,600 acres of opportunity within Union County to implement a 35 ft wide buffer.	Municipalities, UCCD, CBF, Pheasants Forever, National Trout Unlimited, Buffalo Creek Watershed Association, Merrill Linn Conservancy (MLC)	Countywide	5-10 years	Adopting ordinances, may require a pilot project in a willing municipality to demonstrate success. Look to revise and promote ordinances where feasible. Some ordinances promote destruction of buffers due to "mowing" ordinances.  Buffer funding programs must include 5-10-year minimum maintenance plan, incentive money for landowners, along with volunteers to establish the buffer.	Landowner outreach; on the ground riparian project execution		1 – FTE Clean Water Coordinator for UCPC  1 – Clean Water Coordinator for UCCD	\$130,000 per year  \$130,000 per year  Expand Buffer Bonus Program to provide \$10,000 per acre of buffer installed to include 5-year maintenance contract: \$2.85M total	<b>2022:</b> Established a Riparian Ranger Program in the summer of 2022. The Riparian Ranger Program planted approximately 10-site locations that required maintenance. To date 17 volunteers are currently signed up. It is anticipated additional volunteers will sign up in the fall. There is an additional training opportunity planned for the fall. In the fall of 2022, 5 acres of buffers will be planted. CBF K10 trees are coming in the fall for additional buffer plantings. Lewisburg Borough completed a buffer and stream restoration project as part of the Bull Run Greenway Plan.
1.1D	Adopt and update an on-lot sewage management program (Act 537)	Look to review and update all Act 537 plans by municipality. Explore plan creation for municipalities for those who do not have a plan, look to incorporate new pumping guidelines.	Municipalities, Sewage Enforcement Officer	Countywide	5 years	Landowner education will be needed to promote proper on-lot septic system maintenance  Municipal buy-in to update Act 537 plans.  Lack of timely DEP enforcement of the 537 Program.		Sewage Enforcement Officer	1 – FTE Clean Water Coordinator for UCPC	\$130,000 per year  \$1,000,000 funding to update willing municipalities	<b>2022:</b> No progress to date. Municipalities are not interested in enforcing nor developing 537 plans.
1.2	Union CHMP	Improve flood prone areas with BMPs that also enhance water quality  Proceed with project to improve West Milton and Kelly Township  Flood control measure in place for Mifflinburg Borough and West Buffalo Township (Act 167)	UCPC, Union County Comprehensive Plan, ACT 167,	Countywide  West Milton and Kelly Township  Lewisburg Borough Flood Resiliency Green Infrastructure	2022-2025	Flood controls can capture pollution, if considered in design and maintained.  Current Requirements by Pennsylvania Emergency Management Agency (PEMA)/ Federal Emergency Management Agency (FEMA) are tough to receive funding – funding available only if hazard is identified by FEMA/PEMA and needs extremely project specific. Also, can't plant buffers in buy-out areas without FEMA approval.	CRS program guides		Engineering Feasibility Study  1 – FTE Clean Water Coordinator for UCPC  Project Implementation	\$150,000  \$130,000 per year  \$500,000	<b>2022:</b> Plan has recently been updated. For 2023, coordinate on potential project implementation support.

1.3*	Act 167 SWM	Revise existing model stormwater ordinance when feasible. Look to incentivize additional protections for streams. Support implementation of existing ordinances where feasible.	UCPC, municipal engineers, UCCD, Union County Farm Bureau, Buffalo Creek Act 167, Bull Run and White Deer Act 167 Watershed Plan	Countywide Buffalo Creek, Bull Run, White Deer	2022-2025	Should local involvement exist, funding to support coordination of Act 167 requirements.	Institutional knowledge		1 – FTE Clean Water Coordinator for UCPC	\$130,000 per year	<p><b>2022:</b> The 2022/2023 state budget includes new funding to support the development of Act 167 plans. Snyder county currently has no Act 167 plan, but with new funding plans to explore opportunities to develop an Act 167 Plan.</p> <p>Limited interest in pursuing 167 from municipalities.</p>
1.4*	Continue to Implement County Farmland Preservation Program.	<p>Total preservation farm goal (91 farms in program currently – 10,000 acres)</p> <p>Look to fund 300 acres (2-3 farms) per year in preservation program.</p> <p>– <b>1,300 acres of farmland conservation</b></p> <p>Preservation of Agriculture and Open Space Land Use through the encouragement of local governments to implement effective land use ordinances</p> <p>Utilize conservation easements to protect land</p>	Agricultural Preservation Coordinator, Natural Resource Conservation Service (NRCS), UCCD, Farm Bureau, Land Trusts	Prime farmland soils countywide	2022-2023 – explore incentive opportunities	<p>Operator acceptance, additional resources for plan development incentivize BMP installation as a farmland preservation goal.</p> <p>Preserved farms are required to have an NRCS Conservation Plan, work with farmers to ensure Conservation Plan is reported in PracticeKeeper. Recommend making this a program requirement statewide.</p> <p>Lack of funds to preserve land. Landowner willingness decreases due to the reality of the limited funds, if they don't rank at the "top" of the list, over years they quit applying.</p>			<p>Technical assistance for program management</p> <p>1 – FTE Clean Water Coordinator for UCCD</p> <p>1 – administrative assistant</p> <p>6 – Ag planners to assist with technical assistance</p>	<p>Assume \$250,000 per farm: \$3,000,000</p> <p>\$130,000 per year</p> <p>\$75,000 per year</p> <p>\$780,000 per year</p>	<p><b>2022:</b> In the spring of 2022 Union County celebrated surpassing 10,000 acres of total farmland preservation. In 2022, UCCD preserved 5-farms. Of the 5-farms, one farm was a donation and four farms were paid. In 2023, UCCD will preserve an additional 5-farms totaling 380 acres. Two of the farms set to be preserved in 2023 are donations. Explore working with preserved farms for reporting into PracticeKeeper. A good working relationship with these farmers and UCCD has been established. Continue to explore opportunities to engage preserved farms.</p>

1.5*	<p>Establish funding/staff support to assist the Agricultural community (day to day support)</p> <p>574 farms exist in Union County</p>	<p>Approximately 350 have their plans in Union County, goal is to complete 450 by 2025.</p> <p>Support local farms with financial assistance from institutions</p> <p>Work with private ag consultants to document plan reporting.</p> <p>In order to communicate effectively with the farming community one on one farmer outreach must be conducted.</p> <p>Work to document Act 38 and preserved farms conservation and nutrient management plans.</p>	<p>UCPC, UCCD, Contracted planners, Union County Farm Bureau, ACT 38 operators, organic farmers, preserved farms, integrators</p>	<p>Countywide</p>	<p>2022-2025</p>	<p>Limited compliance activities by DEP.</p> <p>Lack of Technical assistance to support the farming community</p> <p>Private sector Ag plans are not required to be shared with District staff.</p> <p>Work with Act 38, preserved farms and organic farms to report Ag E&amp;S and NRCS Conservation Plans. These operations are required to have them, but no requirement to report the plans. It is recommended state agencies make changes to Act38 and preserved farm programs to require PracticeKeeper reporting.</p>	<p>Field verification, troubleshooting</p> <p>25 farm visits per year</p> <p>Contracted Planners</p>	<p>Conservation Plan Inventory</p> <p>0.5 FTE (\$32,500)</p> <p>\$50/plan to be paid to contractor</p>	<p>6 – additional Ag Planners to provide TA and planning</p> <p>3 – FTE Design, Engineers, Permits</p> <p>3 – FTE Construction Inspector</p> <p>1 – FTE Clean Water Coordinator for UCCD</p> <p>0.5 FTE – Bay Technician to expand this position to a full time</p> <p>1 – administrative assistant</p>	<p>\$780,000 per year</p> <p>\$420,000 per year</p> <p>\$315,000 per year</p> <p>\$130,000 per year</p> <p>\$32,500 per year</p> <p>\$75,000 per year</p>	<p><b>2022:</b> The Foundation for Pennsylvania Watersheds applied for a Growing Greener grant totaling \$1.6 million to support additional ag engineering needs along with increased farm visits. In 2022 the Lancaster Farmland Trust (LFT) will completed 30 farm visits across the county. LFT also completed 20 farm visits in 2021.</p> <p>Agriculture Conservation Assistance Program (ACAP) was announced in the Pennsylvania State Budget in July of 2022. This program will provide all counties in Pennsylvania with funding totaling \$154 million over the next 3-years to support Ag project implementation and technical assistance needs.</p> <p>The Chesapeake Conservancy was awarded \$10 million in RCPP funding to add additional technical assistance and BMPs to Union County. Additionally, the Conservancy submitted a Growing Greener application to increase technical assistance in the Rapid Delisting Watersheds in Union County.</p> <p>Sustainable Chesapeake applied to NFWF MEB Program for Expanding the Adoption of Manure Injection in PA's Most Effective Basins. This grant application will connect farmers with custom applicators to pay for manure injections and provide the technical assistance to educate farmers.</p>
1.6A	<p>Bucknell University (Bucknell) Partnership Implementation</p>	<p>Develop undergraduate and graduate students to support staff with implementation.</p> <p>Work with Bucknell students and staff to support 319 WIP implementation</p>	<p>Bucknell – Professors</p>	<p>319 Priority Watershed – Buffalo Creek</p> <p>Riparian properties</p> <p>Preserved farms</p> <p>Priority Watersheds: Turtle Creek Headwaters, Turtle Creek South (Winfield Creek), Conley Run, and Cold Run Watersheds</p>	<p>2022-2025</p>	<p>Continued undergraduate/graduate engagement as students graduate through program, implementation funding</p> <p>Lack of technical assistance professionals to mentor students</p> <p>Lack of competitive paying job opportunities that ensure long term sustainability for recently graduated students</p>	<p>Outreach boots on the ground</p>	<p>N/A</p>	<p>5 – Student Internships to Support CAP Implementation</p>	<p>\$50,000 per year</p>	<p><b>2022:</b> Susquehanna University students have been participating in the Riparian Ranger Program with the Union County Conservation District. The Foundation for PA Watersheds applied to National Fish and Wildlife Foundation Most Effective Basins for Phase 2 of BMP Verification. Phase 2 would include funding to support internships for Susquehanna University students working with the Union County Conservation District to document and verify BMPs into PracticeKeeper. Interns would be provided for 2023 and 2024. Bucknell University has completed annual sampling for UCCD. UCCD had an intern from Bucknell University who support with PK efforts. A senior Capstone project with Bucknell University is in the process to complete mobile milk processing facility. UCCD worked with Susquehanna University to complete Macro survey in Winfield Creek.</p>

1.6B	Quantify Land/BMPs Managed by Bucknell	Work with Bucknell to ensure that water quality improvements that they manage are captured in PK/FieldDoc	Bucknell	Bucknell Owned Lands in Union County	2022	Getting maximum credits for experimental BMPs	Institutional knowledge	N/A	5 – Student Internships to Support CAP Implementation	\$50,000 per year	2022: No progress to date. In years past, there was a professor who worked with the Conservation District. This long term relationship has fallen off due to professor retiring. New contact hasn't been identified.
1.7A	Develop a Union County Water quality communication plan, leveraging existing documents and covering topics including Hazard Mitigation, Comprehensive Plan, Greenways Plan, Act 167, Buffalo Creek 319 etc.	<p>Work to Develop messages and audience; execute plan and distribute messaging through staff and partners.</p> <p>Utilize the Union County website as a source of consistent communication, website development is underway.</p>	Board of Commissioners staff, PA DEP Northcentral Office, Penn State Extension (Master Gardeners), PA Rural Water Association, Trout Unlimited, Buffalo Creek Watershed Alliance, USDA-NRCS, DCNR, Bucknell, UCCD	Countywide	<p>2022-2023 Commence discussions and planning to develop a communication plan</p> <p>2023 – develop local content, timing, identify responsible staff</p>	Simplifying the resources that are available			<p>Website development and continued maintenance</p> <p>1 – FTE Marketing and Outreach Coordinator</p> <p>1 – FTE Clean Water Coordinator for UCPC</p>	<p>\$30,000 per year</p> <p>\$130,000 per year</p> <p>\$130,000 per year</p>	2022: The Union County GIS team is developing a joint website for both Snyder and Union Counties to utilize for outreach efforts. Included in the website will be a tool to enter project opportunities, along with more information about the CAPs. HRG is developing a messaging schedule for timely outreach newsletter articles and social media post. HRG will support in drafting public outreach pieces.
1.7B	Agricultural Communication Strategy	<p>Work to develop a communication plan to engage integrators:</p> <ol style="list-style-type: none"> <li>1-4 mailings a year, for equipment rental, ag preservation, etc.</li> <li>Short postcard surveys to get feedback</li> <li>Social Media</li> <li>Trying to set up software that can email or text messages to our farmer lists</li> <li>Outreach events - piggy backing on annual events hosted by partners (Extension, Commercial (Hoover Tractor), Community Events (Fair)</li> <li>Stories or ads in local paper</li> <li>Posters on bulletin boards at local businesses</li> <li>Attending meetings of outside groups – Young Farmers, 4H, etc.</li> </ol>	UCCD, County Farm Bureau, Integrators, Ag Land Preservation, PSU Extension, NRCS, 4R Alliance, Young Farmers, Pesticide Meetings	Countywide	2022-2025	<p>Funding to support the technical assistance required to complete one on one farm outreach</p> <p>Outreach to integrators is a challenge due to the number of integrators and multiple county boundaries they serve. It is recommended DEP/PDA/SCC communicate with integrators on a frequent basis to reduce mixed messages</p> <p>One on one farm outreach is the best way to communicate with farmers. Work to develop a plan to complete one on one farm visits.</p>			<p>6 – additional Ag Planners to provide technical assistance and ag planning</p> <p>1 – FTE Marketing and Outreach Coordinator</p> <p>1 – FTE Clean Water Coordinator for UCCD</p>	<p>\$780,000 per year</p> <p>\$130,000 per year</p> <p>\$130,000 per year</p> <p>See 1.7A for website costs.</p> <p>Costs for meeting attendance and administration may be covered through other funding requests.</p>	2022: Farm visits have been utilized to conduct outreach to farmers about the Countywide Action Plan. In 2021, 15 farm visits were conducted and in 2022 an additional 25 visits are scoped. The Foundation for Pennsylvania Watersheds submitted a Growing Greener grant titled 12-County Investment to Catalyze Agricultural Project Readiness that would support rapid scaling up of farm visits within Union County. Scaling up of farm visits would allow for additional outreach to occur. UCCD provided a soil health demonstration at the County Fair. UCCD will be performing annual field days for the next 3 years to educate farmers. UCCD performed an ag land preservation field day to focus on soil health: taught landowners soil testing. UCCD performed "Soil Your Undies" education event with farmers through the PA Soil Health Coalition.

Priority Initiative 2: Reporting and Tracking

2.1*	Existing BMP cataloguing (quantity and location) for select BMPs, expanding on general recommendations provided in Quality Assurance Project Plan (QAPP)  BMPs = forest buffers, urban forest buffers, grass buffers, urban grass buffers, manure storages, grassed waterways, wet ponds and wetlands, fencing	Expand use of existing buffer layer with urban hydrology layer  R&D into distinguishing ag, pasture, and turf covers from grassed buffers  Manual digitizing where leaf-off <1 ft resolution imagery is available  Field verify with staff where required  Add data to Practice Keeper or another batch upload option (FieldDoc)	Lead - Chesapeake Conservancy  Stakeholder peer review – Bucknell, United States Geological Survey (USGS), Farm Bureau, PDA, Environmental Protection Agency (EPA)	Countywide	2022 – cataloguing  2023 – Practice Keeper batch upload processing and field views	EPA acceptance of the approach, further refine guidance in QAPP so that counties can accomplish this or so that the state can take the burden off of counties, utilize the approach to catalogue existing BMPs and do on the ground verification where required for reporting purposes, this is an accelerated BMP catch up approach while we continue to provide support to farmers on planning and BMP installs, reduce the amount of interruption of government entities to compliant farm operations.	Precision Conservation Tools  General methodology outline  BMP field backcheck	N/A	Further GIS and data processing/method refinement  5 – Student Internships to Support CAP Implementation  6 – additional Ag Planners to provide technical assistance and verification support	\$46,000 (2022 only)  \$50,000  \$780,000 per year	<b>2022:</b> In April of 2022, the Foundation for PA Watersheds applied to the National Fish and Wildlife Foundation Most Effective Basins grant application to support Phase 2 of a remote sensing analysis. Phase 2 of the analysis would support analysis focusing on six priority BMPs including: Barnyard Runoff Controls, Animal Waste Management Systems, Forest Buffers, Grassed Waterways, Streambank Exclusion Fencing, and Wet Ponds/Detention Basins. Remote sensing efforts would take place in the Buffalo Creek Watershed. A BMP Verification Quick Guide is being developed by HRG to assist with field verification efforts. The grant was not awarded.  In conjunction with site visits conducted by the Lancaster Farmland Trust, 30 possible sites were identified to verify BMPs in Union County. Those sites will be visited in December of 2022 and the results will be entered into PracticeKeeper.
2.2*	Identify future ag/urban project opportunities using automated means	BMP opportunity analysis – ag conservation, land retirement, alternative crop, forest conservation, stream restoration  Back check with staff field views  Batch upload to FieldDoc to calculate credit opportunity	Lead - Chesapeake Conservancy  Stakeholder peer review – Bucknell, USGS, Farm Bureau, PDA	Countywide	2022 – cataloguing  2023 – batch upload processing and field views  2024 – 2025 – implementation focus	Different data set scales/precision	Precision Conservation Tools  Batch upload processing  BMP field verify  GIS Mapping Abilities	N/A	Further GIS and data processing/method refinement  5 – Student Internships to Support CAP Implementation	\$46,000 (2022 only)  \$50,000	<b>2022:</b> No progress to date.
2.3*	Develop a local system to capture data collection on urban structural and non-structural practices	Add development related BMPs to PK/FieldDoc so that as land use data sets are updated, there are accompanying BMPs	Municipal engineers, Chesapeake Conservancy, Central Keystone Council of Governments (CKCOG), Susquehanna Economic Development Association – Council of Governments (SEDA-COG)	Urban/suburban landscape	2022	Currently municipalities are not collecting BMP data because it is not required in non-Municipal Separate Storm Sewer System (MS4) communities. Must incentivize communities to report, no existing system in place.	Reporting platform	N/A	Training  5 – Student Internships to Support CAP Implementation  1 – municipal planner	N/A  \$50,000 per year  \$130,000 per year	<b>2022:</b> The Foundation for Pennsylvania Watersheds applied for a NFWF Most Effective Basins grant in April of 2022 to support Phase 2 of BMP verification remote sensing analysis. Phase 2 would include analyzing wet ponds and detention basins in urban areas across Union County. PA DEP has updated FieldDoc to allow for additional reporting of urban practices. The grant was not awarded.

2.4*	Implement a documentation program for commercial and homeowner nutrient applications in developed lands  Support current legislation for fertilizer bill.	Support fertilizer legislation – where legislation requires reporting, be the data clearinghouse  Legislation will support the implementation of <b>Urban Nutrient Management – 2,000 acres</b>	PSU Extension	Countywide	TBD	Education of responsible parties, receiving timely information, training on reporting system, will need direction from State on what’s expected and any reporting system that’s developed.  Counties aren’t equipped with technology or field experience to manage this initiative Fertilizer Legislation has failed to pass congress in the last two years.	TBD based on fertilizer legislation if passed	TBD based on fertilizer legislation if passed	1 – FTE Clean Water Coordinator for UCPC	\$130,000 per year  Urban Nutrient Management \$10 per acre ☒ \$20,000	<b>2022:</b> On July 11, Governor Wolf signed SB 251, a bipartisan bill sponsored by Senator Gene Yaw (R) and Senator Carolyn Comitta (D), into law. Pennsylvania now has a law governing turfgrass fertilizer application dates, practices, rates, and type of fertilizer used. We are uncertain on how documentation and crediting will occur with the new bill.
2.5*	Improve Agricultural BMP reporting utilizing PracticeKeeper, Capital RC&D Transect Survey, PSU Survey, Manure Transport Reporting and Remote Sensing	Increase reporting of agriculture plans into PracticeKeeper  Work with Capital RC&D to improve current transect survey routes to be more inclusive  Work with PSU to produce better response rate to the PSU survey for Union County  Work with PDA/DEP to improve manure reporting	DEP, UCCD, NRCS, PDA, NRCS, Union County Farm Bureau, Capital RC&D, Chesapeake Conservancy, PSU Survey, Manure Brokers	Countywide	2022-2025	Private sector ag planners do not have access to PracticeKeeper. Ag planners do not have time to report into PK.  Current Capital RC&D routes are not all inclusive.  Current response rates are low and miss a large demographic of Union County farmers.  Manure brokers are not required to report data annually. Data is not all inclusive.			5 – Summer interns for reporting and verification	\$50,000 – paid internships  See 3.5 for funding needs to improve cover crop reporting for Capital RC&D	<b>2022:</b> In the Spring of 2022 HRG participated in a beta testing group for the PracticeKeeper 3rd Party Module. PADEP initially released the module in June of 2022 before recalling the system for additional bug fixes. Phase 2 of the BMP verification grant submitted by the Foundation for PA Watersheds includes budget for interns from Susquehanna University to enter BMPs into PracticeKeeper. Union County has been utilizing in-house staff as part of the \$30,000 for BMP verification to report "Old Bay Special Projects" into PracticeKeeper along with other practices and plans. LFT is being subcontracted to come on board to complete additional BMP verification and data entry into PracticeKeeper.
2.6*	Standardized Reporting for Dairy Precision Feeding	Counties would like to utilize the dairy precision feeding BMP. However, current reporting guidelines do not allow for clear reporting standards on feed reduction amounts, how to report, and who is qualified to report.	Chesapeake Bay Program, Penn State Extension, Dairy co-ops	Countywide	2022	It is recommended that milk urea nitrogen (MUN) be an acceptable standard for reporting dairy precision feeding. Guidelines need to be posted on acceptable MUN rates and work with dairy integrators to receive MUN data to report to DEP.	N/A	N/A	Reporting protocol	N/A	<b>2022:</b> No progress to date, reporting standards still remain an issue to utilize the BMP.

Priority Initiative 3: Achieve New Pollutant Reductions

<p>3.1</p>	<p>Implement Union County Greenway Plan</p>	<p><b>Protect 250 miles of riparian buffers using easements</b></p> <p><b>Install 200 acres of riparian buffers along the Susquehanna River</b></p> <p><b>Protect 50 acres of flood plain next to Koons Easement in Mifflinburg</b></p> <p><b>Permanently protect 1.5 miles of riverfront land in Great Stream Commons</b></p> <p>Make strategic additions to the state forest and other public lands</p>	<p>UCPC, UCCD, Buffalo Creek Watershed Alliance, Land Trusts</p>	<p>Countywide</p>	<p>2021-2025</p>	<p>Gaining landowner interest, design/permit/construction schedules, dedicated funding to support BMP implementation.</p> <p>Lack of technical assistance and engineering staff to support implementation.</p> <p>Lack of technical assistance to implement the plan.</p> <p>Lack of adequate funding to implement the plan.</p>			<p>1 – FTE Clean Water Coordinator for UCPC</p>	<p>\$130,000 per year</p> <p>\$2,000 per acre of buffer conserved through easement: Total \$125K</p> <p>For buffer implementation see initiative 3.8</p> <p>\$2,000 per acre flood plain conserved through easement: Total \$100K</p>	<p><b>2022:</b> Working through Merrill Linn Conservancy and Susquehanna Greenway for implementation. Implementation progress has been slow due to lack of funds, lack of political will, and the COVID-19 pandemic. More work will be done when it is included with the updated Comprehensive Plan. As of the writing of this report, postcard outreach has occurred and meetings are being scheduled to try to secure buy-in.</p>
<p>3.2</p>	<p>Implementation of the Buffalo Creek Watershed 319 Plan</p>	<p>Conduct farm visits, windshield surveys, GIS Studies.</p> <p>Utilize Precision Conservation assessments to target strategic farm locations.</p> <p>2016 to present – market program to landowners in impaired segments.</p> <p>Aim for 3 farms per year for implementation</p>	<p>Bucknell, UCCD, other partners to be identified</p>	<p>Buffalo Creek Watershed</p> <p>Prioritizing Buffalo Creek mainstream, Beaver Run, Muddy Run/Coal Run, Little Buffalo, Rapid Run, Spruce Run, Panther Run, Black Run, Stony Run, Conley Run</p>	<p>2021-2025</p>	<p>Funding, landowner interest in BMPs, implementation partner coordination</p> <p>Reverification of existing farm BMPs</p>			<p>Design, permit, construction oversight</p> <p>1 – New Environmental Specialist</p>	<p>\$500K per farm at \$1.5M per year → \$7.5M over 5 years</p> <p>\$75,000</p>	<p><b>2022:</b> While project opportunities exist in the watershed, no funding currently applied to for the 2022 calendar year. Project opportunities include: manure storage installation, earthen manure decommissioning, buffers, and grassed waterway reconstruction. Buffalo Creek Watershed Association is actively working with landowners to identify new project opportunities. Due to CD capacity, staff turnover and additional workload of CAP and thinking about ACAP, nothing has been done with 319 implementation in 2022.</p>



3.3	Accelerated Implementation of Rapid Delisting Catchment Strategy through the Precision Conservation Partnership	<p>Have identified four priority catchments.</p> <p>Looking to identify 3-6 parcels per priority catchment</p> <p>Turtle Creek is priority number 1 with six catchments already identified for outreach</p>	Chesapeake Conservancy, UCCD and Precision Conservation Partnership Stakeholders	Turtle Creek Headwaters, Turtle Creek South (Winfield Creek), Conley Run, and Cold Run Watersheds	2022-2025	<p>Gaining landowner interest, design/permit/construction schedules, dedicated funding to support BMP implementation, Lack of technical assistance and engineering staff to support implementation.</p> <p>Can only work with 1-3 parcel owners per year based on current staffing.</p>	<p>Program management and GIS</p> <p>Landowner outreach</p>		3 – additional FTE municipal/ environmental planners	<p>\$390,000 per year</p> <p>\$100,000 dollars to complete rapid delisting program management per year total cost \$500,000</p> <p>Other funding identified in below initiatives</p>	<p><b>2022:</b> Chesapeake Conservancy continues to advance Rapid Delisting efforts. In August, the Conservancy was awarded an RCPP application to support additional technical assistance and AG outreach. For RCPP the county are contributing a significant portion of funding as match to the application.</p> <p>Chesapeake Conservancy applied to Growing Greener for project funding to support 3 full farm restoration projects.</p> <p>Chesapeake Conservancy contracted with Huntingdon County Watershed Specialist to perform Macro, habitat and water chemistry monitoring in Turtle Creek South in the spring.</p>
3.4*	Help farmers and operators comply with state and federal requirements: Conservation and Nutrient Management Plans	<p><b>Soil and Water Quality Conservation Plans (AG E&amp;S) 10,000 new acres</b></p> <p><b>Nutrient Management (Manure Management) 10,500 new acres of Core N and 13,000 new acres of Core P</b></p> <p>Work with ACT 38 operators (47), Preserved Farms (91), and certified organics to document plans already required</p> <p>Implementation challenges (continued): State agencies must work with integrators to ensure they are requiring compliance by farmers. Some integrators require compliance, but not all, great way to communicate with farmers as well.</p>	4R Alliance, UCCD, Union County Farm Bureau, NRCS, Private Sector Agriculture Farm Visits, integrators (Bell and Evans, Country View, Pilgrims Pride, Empire Kosher, BJE Land O'Lakes, Dairy Farmers of America, Maryland and Virginia Milk Producers Cooperative, BJE Poultry, Chick to Chicken, Tyson, Purdue, Eggs for Vaccines, Smithfield Hatfield, Swift) ACT 38 farmers	Countywide Ag Land	2022-2025	<p>Lack of DEP inspections.</p> <p>Reporting and verification of AG Plans, NRCS plans expire and do not get reverified, private plans are never entered.</p> <p>Lack of Technical assistance to support agriculture planning and implementation, one on one farm outreach is best way to capture existing plans.</p> <p>Act 38 and Preserved Farms not required to enter plans in PK, Recommended to require programs to enter plans into PK.</p>	<p>25 farms per year inspected</p> <p>No-till drills and manure spreader equipment</p>	0.5 FTEs per year	6 – additional Ag Planners to work with farmers	<p>\$780,000 per year</p> <p>\$15 per acre for a total cost of \$150,000</p> <p>\$15 per acre for a total cost of \$195,000</p>	<p><b>2022:</b> PACD recently announced their Growing Greener grant for Ag Plan Reimbursement. Farmers in Union County will be able to take advantage of this opportunity to produce Ag E&amp;S and Manure Management Plans. HRG will be attending the rollout of this program to maximize opportunities to get farmers additional plans.</p> <p>From 2020 to 2021 progress scenario in CAST Union County has increased Soil and Water Quality Conservation Plan reporting by over 2,600 acres. Additionally, Nutrient Management Core N increased by 1,000 acres and Core P increased by over 2,000 acres.</p> <p>25 inspections completed in 2022 by UCCD staff (March-June 2022).</p> <p>Received 2021 Growing Greener Grant to work with local plan writers to develop manure management plans and AG E&amp;S Plans. Approximately \$435,000 for cover cropping, plans, manure testing and soil testing. This funding also Created 10 Soil Health Ambassadors to promote plans and soil health practices.</p> <p>3000 acres of multispecies cover crop planted in the Fall of 2022.</p>

3.5	Advanced Nutrient Management (4R) Practice Education and Implementation	Transition manure management plans (MMP) to nutrient management plans and incentivize implementation  <b>Increase existing 4R practice (N Rate by 3,450 acres, N Timing by 7,200 acres and N Placement by 4,300 acres)</b>	4R Alliance, UCCD, Union County Farm Bureau, NRCS, Private Sector Agriculture Farm Visits, PA Game Commission	Countywide Ag Land	2022-2025	Landowner interest, BMP verification (annual)  Lack of Technical assistance to support agriculture planning and implementation  Additional funding to support soil testing. Soil testing is key to meeting the recommendations of supplemental BMPs.  Machine dependent for most farming operations  Cost of fertilizer is self-regulating farmers to use less fertilizer; therefore, lower rates are applied.  Explore the idea of increasing PSNT or Chlorophyll testing to district program participants.	Educational support  25 farms per year inspected  Manure Spreader equipment	\$32,500 per year	6 – additional Ag Planners to work with farmers to meet 4R standards	\$780,000 per year  \$10 per acre of advanced nutrient management planning per type ☐ total cost for all is \$149,500	<b>2022:</b> In 2021, UCCD received a Growing Greener grant for soil and manure testing. Testing will help farmers to meet the 4R application rates. Sustainable Chesapeake's manure incorporation grant to NFWF MEB will also support 4R implementation. In the spring of 2022, the nutrient management guidelines were updated to include additional guidance for 4R reporting.  No testing was conducted in 2022. However, as outreach and education, 6 farmers buried underwear for 60 days as part of "Soil Your Undies". It was found that the field with permanent hay had the best sign of microbiology. This was conducted to be something catchy and out of the box and farmers have seemed receptive. These findings have been shared at different events conducted by the CD and may be a way forward for outreach in the future.
3.6*	Implement Practice to improve soil health and sustainability (Tillage Management and Cover Crops)	Determine feasibility of having a county/state cost share program to enhance adoption of the annual practice  <b>Implement tillage management and cover crops on an annual rate of 30,300 acres High Residue, 3,600 acres Conservation Tillage, 1,800 acres Low Residue, 900 acres of cover crops and 30,200 acres of cover crops with fall nutrients</b>	UCCD, Union County Farm Bureau, NRCS, Private Sector Agriculture Farm Visits, PA Game Commission	Countywide Ag Land	2022 – investigation  2023 – next steps	Capacity to manage the program, landowner interest  Lack of technical assistance and farm planners to work with farmers to transition to High Residue Tillage  Current verification methods do not accurately capture implemented amounts – work with Capital RC&D to improve Transect Survey Routes  Farmers are harvesting cover crops for forage, need accurate efficiency crediting for commodity cover crops  Existing Cover Crop Programs have strict plant by date that does not work with changing weather patterns and wetter years	Transect survey  Landowner education  Existing No-Till farm equipment for Rent		6 – additional Ag Planners to transition farmers to high residue  County UCCD – staff to administer the program  Capital RC&D staff to complete Transect Survey	\$780,000 per year  \$90 per acre traditional per year: \$81K for a 5-year total of \$405K (incentive payment, administration, Capital RC&D reporting) \$50 per acre fall nutrients per year ☐ \$1.5M for 5-year total of \$7.5M  \$50,000 for improvements to Capital RC&D Transect Survey	<b>2022:</b> \$435,000 awarded in a Growing Greener Grant to launch a program to help cost-share a cover crop program and in turn will have access to soil sample results.  From 2020 to 2021 progress scenario in CAST Union County has increased Cover Crop implementation by over 8,000 acres.

3.7	Implement more pasture management BMPs	<p><b>Prescribed grazing – 350 acres</b></p> <p><b>Forest buffers on fenced pasture corridor – 75 acres</b></p> <p><b>Grass buffers on fenced pasture corridor – 26 acres</b></p>	UCCD, NRCS, Private Ag Consultants, Chesapeake Bay Foundation (CBF), Chesapeake Conservancy	Countywide ag lands – landowners who raise horses, dairy, beef and other pasture grazing animals	2025	<p>Landowner education, BMP funding for non-buffer work, plan updates, data gathering.</p> <p>Landowner education, BMP funding for non-buffer work, plan updates, data gathering.</p> <p>Lack of Technical assistance to support agriculture planning and implementation.</p> <p>Old NRCS plans need to be updated to comply with prescribed grazing definition – difficult to get landowner buy-in – fund alternative watering and fencing; most pastures are streamside.</p> <p>Increasing construction costs are resulting in cancelled NRCS contracts.</p>			<p>6 – additional Ag Planners to provide TA and ag planning</p> <p>3 – additional FTE environmental technician</p>	<p>\$780,000 per year</p> <p>\$390,000 per year</p> <p>Prescribed grazing \$540 per acre: \$189K total</p> <p>FB Buffer W/ Exclusion \$10,500 per acre: \$787,500 total</p> <p>GB Buffer W/ Exclusion \$2,750 per acre: \$71,500 total</p>	<p><b>2022:</b> The Foundation for Pennsylvania Watersheds applied to NFWF MEB for Phase 2 of BMP Verification. If awarded Streambank Exclusion Fencing would be remotely sensed to identify existing BMP implementation. Field verification would occur on remotely sensed BMPs. The grant was not awarded.</p> <p>Due to a lack of certified Pasture planners in the UCCD office and the local NRCS, not a lot has been done to advance these plans.</p>
3.8*	Riparian buffer and re-forestation BMPs	<p><b>500 riparian forest buffer acres, (275) acres lost since 2017 need reverified</b></p> <p><b>400 riparian grass buffer acres, (25) acres lost since 2017 need reverified</b></p> <p><b>15 acres – Agriculture Tree Planting</b></p> <p><b>60 acres – urban forest buffer</b></p> <p><b>2 acres – urban tree canopy</b></p> <p><b>100 acres – urban forest planting</b></p>	CBF, Buffalo Creek Watershed Alliance, MLC, Chesapeake Conservancy, NRCS, UCCD, PA Game Commission, CBF	Countywide	<p>2022 – line up landowners</p> <p>2023-2025 – implementation</p>	<p>Landowner partnerships, landowner education, volunteer acceptance of buffer plantings, buffer maintenance guide for farmers, routine site visits to confirm buffers are thriving, invasive species removal during establishment.</p> <p>Flash grazing must be allowed with buffer installation.</p> <p>Funding program must include a 5-10-year maintenance program to establish buffers along with incentive program \$4K minimum per acre payment.</p> <p>Must revise ordinances to not cut down buffers because of “messy” appearance.</p>	<p>Materials</p> <p>Mapping</p>	Budget available to be determined	<p>6 – additional Ag Planners to provide TA and ag planning</p> <p>3 – additional FTE environmental technician</p>	<p>\$780,000 per year</p> <p>\$390,000 per year</p> <p>Forest Buffer \$10,000 per acre: 2.85M</p> <p>Grass Buffer \$2,500 per acre: \$937,500</p> <p>Tree/Forest Planting \$10,000 per acre: \$1.161M</p>	<p><b>2022:</b> The Foundation for Pennsylvania Watersheds applied to NFWF MEB for Phase 2 of BMP Verification. If awarded Forest Buffers and Grassed Waterways would be remotely sensed to identify existing BMP implementation. Field verification would occur on remotely sensed BMPs. The grant was not awarded.</p> <p>Buffer easement completed for 15 acres of existing forest buffer and paid to convert cropland to permanent pasture.</p> <p>Established a Riparian Ranger Program in the summer of 2022. The Riparian Ranger Program planted approximately 10-site locations that required maintenance. To date 17 volunteers are currently signed up. It is anticipated additional volunteers will sign up in the fall. There is an additional training opportunity planned for the fall. In the fall of 2022, 5 acres of buffers will be planted. CBF K10 trees are coming in the fall for additional buffer plantings. Lewisburg Borough completed a buffer and stream restoration project as part of the Bull Run Greenway Plan.</p>

3.9	Wetland restoration implementation on marginal production ag land	<p><b>65 acres of Wetland Restoration</b></p> <p><b>25 Acres of Wetland Enhancement and Rehabilitation</b></p> <p>Identify 1 large property owner from University of Vermont restorable wetland layer to help identify where to implement a large project</p>	Chesapeake Conservancy, UCCD, NRCS, Buffalo Creek Watershed Alliance, MLC, PA Game Commission	Countywide	2022 –2025	<p>Willing landowner; appropriate siting, design, and construction for successful restoration result.</p> <p>Lack of technical assistance for landowner outreach and agriculture planning to identify potential site locations.</p> <p>Lead time it takes to secure projects can take years.</p>	Landowner outreach		<p>3 – additional FTE environmental technician</p> <p>2 – stream biologist</p>	<p>\$390,000 per year</p> <p>\$280,000</p> <p>Wetland Restoration \$30,000 per acre ☐ \$2.7M</p>	<p><b>2022:</b> UCCD completed the Brown Wetland restoration project paid for through CAP Block Grant dollars in Fall of 2022. East Buffalo Township applied for and was awarded a grant to acquire land and incorporate wetland restoration</p>
3.1	Stream Restoration (Urban and Agriculture)	<p><b>10,400 Linear feet (2 miles) Urban Stream Restoration</b></p> <p><b>15,000 Linear feet (~3 mile) Agriculture Stream Restoration</b></p>	CBF, Chesapeake Conservancy, TU National, NFWS, Buffalo Creek Watershed Alliance, MLC, PFBC Stream Restoration Team, NRCS	Rapid delisting areas are the top priority, and Countywide	2022 – 2025	<p>Design/permit/construction cycle seems to work in two-year increments, there is an assumption that eroded/degraded streams exist based upon 403(d) listing – should that not be the case in the field, adjust quantitative goal down and ensure buffers are in place.</p> <p>Lack of funding to cover engineering design.</p>	GIS Design/GP-1 permit		<p>Design, permit, construction services</p> <p>2 – Municipal Engineers</p> <p>3 – FTE Design, Permit construction Services</p> <p>2 – stream biologist</p>	<p>Assume \$900/LF - \$9.36M – Urban</p> <p>Assume \$400/LF -\$6.0M Agriculture</p> <p>\$280,000 per year</p> <p>\$420,000</p> <p>\$280,000</p>	<p><b>2022:</b> Stream restoration projects completed in 2022:</p> <p>Unnamed tributary to Turtle Creek - 2 stream crossings, 1,500 linear feet of stream restoration, and riparian buffer planting</p> <p>Beaver Run - 1,315 linear feet of stream restoration, riparian buffer planting, 2 stabilized stream crossings, and stream exclusion fencing</p> <p>SGL 252 - 2,100 linear feet of stream and habitat restoration</p> <p>Mifflinburg Borough - 600 linear feet of riparian buffer</p>

3.11	Implement more barnyard runoff control/loafing lot management	32 acres of barnyard runoff controls. (18 acres need reverified)	UCCD, Chesapeake Conservancy, NRCS, Union County Farm Bureau, NRCS	Countywide Farms	2022-2025	Lack of Technical assistance to support agriculture planning and implementation  Lack of funding to cover engineering design  Increasing construction costs are cancelling NRCS contracts			6 – additional Ag Planners to provide TA and ag planning  3 – FTE Design, Engineer. Permit  3 – FTE inspector construction Services	\$780,000 per year  \$420,000 per year  \$315,000 per year  Barnyard Runoff Control \$175K per project, assume 1 acre per project \$2.45M in total	<b>2022:</b> The Foundation for Pennsylvania Watersheds applied to NFWF MEB for Phase 2 of BMP Verification. If awarded Barnyard Runoff Controls would be remotely sensed to identify existing BMP implementation. Field verification would occur on remotely sensed BMPs. The grant was not awarded.  In the fall of 2021 completed a barnyard runoff project in Turtle Creek Watershed. Upcoming project opportunity in the Turtle Creek Watershed. Walter has planned project in Growing Greener grant to implement Barnyard Runoff Controls.
3.12	Animal Waste Storage Systems	20,000 Animal Units of Animal Waste Management Systems (10,000 new AUs of livestock & 10,000 new AUs of poultry)	UCCD, SCC, CEG Program, County Farm Bureau, NRCS, Private Farm Visits, Ag Land Preservation, Chesapeake Conservancy, Integrators	Livestock & Poultry farms	2022-2025	Time to get through planning, design, and construction; outreach to smaller farms that likely need the assistance; match cash value for small farms; readiness to plan/implement projects when outreach efforts yield willing landowners.  Lack of funding to cover engineering design.	Project implementation – 5 farms per year		6 – additional Ag Planners to provide TA and ag planning  3 – FTE Design, Engineer. Permit  3 – FTE inspector construction Services	\$780,000 per year  \$420,000 per year  \$315,000 per year  Animal waste management system \$175,000 per project, assume 100 AUs per project \$35M in total	<b>2022:</b> The Foundation for Pennsylvania Watersheds applied to NFWF MEB for Phase 2 of BMP Verification. If awarded Barnyard Runoff Controls would be remotely sensed to identify existing BMP implementation. Field verification would occur on remotely sensed BMPs. The grant was not awarded.  From 2020 to 2021 progress scenario in CAST Union County has increased poultry waste management systems by over 1,400 animal units.  30 farm visits are scheduled by LFT to identify earthen Manure Pits to decommission. These visits will be completed in December of 2022.  UCCD was awarded a NFWF Small Watershed Grant to help implement manure storage BMPs in Union County. This funding will target 2-3 farms and will be spent in 2023-24.

3.13*	Urban SWM Non-Regulated Communities	Document existing ordinances and BMPs associated with implementation at local municipal level  Catalogue existing BMPs that fit into this category and newly built ones  <b>Stormwater Treatment Performance Standard – 80 acres treated</b>	UCPC, UCCD, developing municipalities, CKCOG	Countywide	Ongoing  2022-2025	Coordination/ training for municipal staff, FieldDoc batch upload opportunity, non-MS4 engagement (what's in it for them?), difficulty obtaining past information (MS4s typically have databases from 2003-present).	Reporting platform		5 – Summer interns for reporting and verification  2 – Municipal Engineers  1 – municipal planner	\$50,000 – paid internships  \$280,000 per year  \$130,000 per year  Stormwater Treatment \$1,815: \$145,200	<b>2022:</b> Working with the Buffalo Valley Lutheran Village Campus Master Greening Plan to retrofit existing stormwater basins. East Buffalo Township completed a raingarden, pervious pavement and wetland to control stormwater runoff.
3.14	Conservation Landscaping/Turf to Meadow Conversion	Promote new program and enable one large tract landowners' participation  <b>80 new acres of Conservation Landscaping</b>	UCPC, DCNR, UCCD, Chesapeake Conservancy, Buffalo Creek Watershed Alliance, MLC	Developed areas in County municipalities	2022 - 2025	Landowner education and acceptance  Existing mowing ordinances and weed ordinances can be a challenge to implementation	Planting plan assistance		1 – FTE Municipal Planner  3 – additional FTE environmental technician	\$130,000 per year  \$130,000 per year	<b>2022:</b> Working to identify projects for pasture to forest/meadow conversion. A project that was identified stalled out due to the landowner not liking the aesthetics of the conversion. This seems to be an underlying concern of landowners and this initiative.
3.15*	Continue dirt and gravel road program	<b>21 miles overall restored through past projects</b>  Continue to implement the program annually	UCCD, Trout Unlimited	Countywide	2025	Continue D&G Road program funding  Expand Dirt and Gravel Road Program to include farm lanes	Education, technical assistance, project oversight  1 – technical staff administering the program	\$1.4 Million since 1998	1 – FTE Clean Water Coordinator for UCCD	\$130,000 per year  Dirt and Gravel Roads \$10 per foot TBD	<b>2022:</b> 2 projects will be completed by June of next year. An additional project to be completed in the fall of this year. Advertising for new applications in fall of 2022. \$100,000 for dirt and gravel and \$46,000 for low volume for next year.

3.16*	Work with PennDOT and local municipalities to improve roadside ditch and embankment maintenance programs	Educate local municipal leaders and work with PennDOT to address state owned roads on the importance of maintaining healthy vegetation along roadside ditches and embankments to prevent erosion and increase nutrient uptake and reduce Invasive species.	Municipalities, DEP and PennDOT	Countywide	2023	PennDOT's and Municipal willingness to cut back on mowing programs. DEP Chesapeake Bay Program will need to assist in the education of PennDOT.			1 – FTE Clean Water Coordinator for UCPC  1 – FTE Clean Water Coordinator for UCCD	\$130,000 per year  \$130,000 per year	2022: No progress to date.
3.17*	Work with PA Game Commission to establish BMPs and conservation easements within Game Lands. Require farmland lessees to implement Comprehensive Nutrient Management Plan (CNMP) and Ag E&S plans	Approximately 3,200 acres of state Game Lands are managed in Union County.	PA Game Commission, UCCD, MLC	PA Game Lands 193, 201, 252 and 317	2025	Coordination with Game commission often challenging, requiring leases to implement plans when not currently required by lease contract.			1 – FTE Clean Water Coordinator for UCCD	\$130,000 per year	2022: HRG had several discussion with the regional office. Most farming operations have ceased on state game lands. PA DEP was looking into crediting or land retirement statewide.
3.18	Private Funding & Grant Administration	Identify some private funding sources that may be able to supplement public funding sources/existing sources utilized for stakeholders, continue to work with partners to facilitate additional funding.	Existing project implementer networks	Countywide	2022-2025	Need to expand network, educational aspect of less common funders, logistics of utilizing unproven funding sources (or lesser known).  Grant administration is a challenge due to limited staff and time-consuming nature of grant reporting and administration.	Financial services		1 – FTE UCCD Grant Manager  1 – FTE UCPC Grant Manager  2 – staff accountants	\$130,000 per year  \$130,000 per year  \$140,000 per year	2022: HRG and LFT are exploring potential opportunities to apply to the Foundation for Food & Agriculture Research (FFAR) and the Walton Family Foundation's new program, Achieving Conservation through Targeting Information, Outreach and Networking (ACTION) to support innovative research that increases adoption of conservation practices. A potential grant application would bolster farm visits in Union County to increase the adoption of Conservation Practices.  UCCD has an existing grant from foundation for Pa Watersheds to support easements in the county.

Priority Initiative 4: Research, Education, and Training

<p>4.1*</p>	<p>Incorporate existing water quality monitoring data into Chesapeake Data Explorer/ Chesapeake Monitoring Cooperative database</p> <p>&amp;</p> <p>Initiate additional water quality monitoring sites that promote long-term trend evaluation at key locations in Union County</p>	<p>Location identification, financial and volunteer budget analysis, and initial landowner communication by end of 2021</p> <p>CAST-21 acknowledgement of our data</p> <p>Map existing monitoring locations</p> <p>Expand monitoring based on Corridors of Opportunity (COO) area monitoring gaps</p> <p>Buffalo Creek Watershed Association shared 10+ years of data with ALLARM</p> <p>Work with Bucknell to establish monitoring in Turtle Creek Watershed</p>	<p>ALLARM, Keystone Water Resources Center, Bucknell, Buffalo Creek Watershed Association, USGS, Susquehanna University</p>	<p>Countywide</p>	<p>2022</p>	<p>Land access, expanded volunteer need, equipment/materials budget, Consistent data collection, Quality Assurance Quality Control (QAQC) continuation.</p> <p>Data precision, QAQC, opportunity to educate landowners about local stream health and what they can do about it.</p> <p>Ensure USGS/DEP/SU continue monitoring in Turtle Creek.</p>	<p>\$30,000 intern salary budget</p> <p>QAQC</p>		<p>Volunteers for Water quality monitoring</p> <p>New monitoring equipment</p> <p>3 – additional FTE environmental technician</p> <p>2 – stream biologist</p>	<p>N/A</p> <p>\$10,000</p> <p>\$130,000 per year</p> <p>\$280,000 per year</p>	<p><b>2022:</b> In the spring of 2023, HRG will convene the Watershed Specialist to identify the largest ""gaps"" of water quality monitoring data, develop strategies to comprehensively incorporate new data to support CAP efforts.</p> <p>ALLARM is in the process of developing citizen scientist monitoring data collection protocols to assist with stream health data collection. Should the protocol be approved, it will be shared with all Counties."</p> <p>BCWA has been sampling for 15 years and work closely with Bucknell University to analyze the samples in their lab. BCWA is working with Bucknell University to sample for E-Coli; sampling for human, dairy, swine, poultry and waterfowl DNA in the Buffalo Creek Watershed.</p>
<p>4.2</p>	<p>Supporting watershed associations for short-term success and long-term sustainability aligning with their goals</p>	<p>Develop new or reestablish existing watershed associations to support with CAP implementation. Watershed organizations can support with outreach, engagement, new project identification and implementation. Enhance the capacity of local watershed associations for short-term success and long-term sustainability.</p>	<p>Buffalo Creek Watershed Alliance, MLC, Trout Unlimited, National Trout Unlimited</p>	<p>Countywide</p>	<p>Ongoing</p>	<p>Continued coordination among a lot of active groups, keep project leads list active so that watershed approach to grant applications can be developed well in advance of submittal deadlines.</p>	<p>Social media shares</p> <p>Project development support</p>		<p>1 – FTE Clean Water Coordinator for UCPC</p> <p>1 – FTE Clean Water Coordinator for UCCD</p>	<p>\$130,000 per year</p> <p>\$130,000 per year</p> <p>\$5000 per organization to produce promotional materials (hats, shirts, stickers) for members ☐</p> <p>\$15,000 total per year</p>	<p><b>2022:</b> Streamside Tree Stewardship program - Our goal is to find volunteers and train them to perform maintenance on buffer sites. Partners are the Chesapeake Conservancy and the Union County Conservation District.</p> <p>Water Quality Monitoring. Our organization monitors 14 sites 4 times a year, many of them since 2007, all within the Buffalo Creek Watershed. With the help of ALLARM of Dickinson College, our data as of December 2020 is now available on the Chesapeake Monitoring Cooperative interactive map. We will be contacting ALLARM to add our more recent data</p> <p>BCWA - is completing headwaters project for Acid Deposition, PA DEP is looking into delisting the stream back to a Class A Trout Stream. Approximately 5 miles of impairment.</p> <p>BCWA has a restoration plan. Linn Conservancy is trying to buy land from PA American water for permanent easement.</p> <p>Recruiting members still remains an issue.</p>