

**2023 Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Report – DAUPHIN COUNTY**

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Action #	Description	Performance Target(s)	Responsible Party(s) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available		Resources Needed		Annual Progress to Date (2021 to 2023)	to Action Item (2023-2024 milestone)
							Technical	Financial	Technical	Financial		
<b>Priority Initiative 1: County Programmatic Initiatives</b>												
1.1	Advance the Dauphin County Regional Water Resource Enhancement Program	Finalize intergovernmental cooperation agreement and sign-up municipalities for participation  Identify early actions valued most by participating municipalities	All municipalities in Dauphin County	Countywide	2021 finalize intergovernmental cooperation agreement  2022 identify early actions	Commitment from all municipalities to work together to address water quality and flooding issues, jointly. Logistical challenges of geographies divided by multiple watershed boundaries. Uncertainty of future MS4 regulations that would impact the anticipated cost savings.	Planning, grant writing, coordination		1 – FTE Clean Water Coordinator for Planning Commission	\$130,000 per year  \$1M line of credit – startup funding	2023: The 15 municipalities involved in WREP have continued to meet on a regular basis. These meetings will determine the components of the 2024 WREP program which will lead to urban BMP implementation with a focus on flood resilience with MS4 credit being a co-benefit in the next permit term.  2022: The intermunicipal agreement was finalized on 8/17/22. Outreach to all municipalities will proceed this summer with advisory committee meetings projected to occur during 2022 Q4.	
1.2	Advance local comprehensive planning efforts  Implement existing Source Water Protection Plans	Consider intersection of areas of high nitrates in GW (use Conservation District Data), source water protection support from DEP, and develop communication strategy with municipal and landowner stakeholders in mind for BMP goals and quantitative action	Northern Dauphin Municipalities and Authorities, PADEP Bureau of Safe Drinking Water, DCCD	Wiconisco Creek watershed  Other watersheds where feasible	2022 – review raw water chemistry data to better quantify need and potential cost savings for treatment (DCCD Data)	Reinforcing the municipal role in coordinating with the water authorities to perform education and outreach. Landowner connection of farming activities to water supply needs in downstream municipalities.	Coordination of meetings and continued education.	1 – FTE Clean Water Coordinator for Planning Commission  Source Water Protection Plan development	\$130,000 per year  \$100,000	2023: No progress to date.  2022: No progress to date.		
1.3*	Evaluate areas to establish riparian buffers to stabilize stream banks and limit encroachment	<a href="#">Utilize public data sets (future Chesapeake Conservancy?, PSU) to identify buffer gap project opportunities</a>	Municipalities, Conservation District, Chesapeake Bay Foundation, Doc Fritchey Chapter Trout Unlimited, Capital Area Greenbelt Association, Tri-county Conewago Creek, Greening the Lower Susquehanna, Manada Conservancy, Paxton Creek Watershed and Education Association, Susquehanna Greenway Partnership, Dauphin County Woodland Owners Association	Countywide, Detweiler Park (demonstration BMPs), larger-sized municipal parks/public lands	2022-2025 (MS4 support)  2026-beyond (all municipalities)	Adopting ordinances, may require a pilot project in a willing municipality to demonstrate success.  Lack of technical assistance to support implementation goals for forest buffers.  Buffer funding programs must include 5-10-year minimum maintenance plan, incentive money for landowners, or with volunteers to establish the buffer.	Landowner outreach; on the ground riparian project execution	1 – FTE Clean Water Coordinator for Planning Commission  1 – Additional Watershed Specialist for Conservation District	\$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 \$220,000 total	2023: Utilizing CAP funds, DCCD is installing 3.5 acres of buffers across two sites in Spring 2024.  A 2024 project has been identified with the Manada Conservancy which will account for 6+ acres of buffers.  HRG continues to foster the relationship with PSU Ag and Enviro. Center's Riparian Ranger program through offering training sites and helping to recruit members.  2022: DCCD has a few buffers planned to be implemented within the next year from a legacy of landowner outreach with little success in funding. Staff turnover is going to make next steps a challenge, but the project information is available for CD and HRG staff to advance the lead.  Ag producers are looking to plant buffers as well, the largest being 11-12 acres. To be planted within the next year.  PSU Extension Master Watershed Stewards and Ag and Enviro. Center staff have established a Riparian Ranger Program in Dauphin County and will be recruiting for members in early 2023.		
1.4	Implement County Hazard Mitigation Plan & Emergency Management Plan	<a href="#">See 2021 Hazard Mitigation Plan for flood trouble spots for municipalities, review PENNDOT Paxton Creek study for next steps and potential for FEMA BRIC funding</a>	Municipalities, Planning Commission, Dauphin County Emergency Management, Local Emergency Management Agencies, Public Works Departments	Countywide  Work with emergency management plan to identify flood prone areas.  Millersburg Borough/Upper Paxton Township?	2022 – review trouble spots and other stormwater drainage pinch points and include on a GIS map for regional project strategy	Flood controls can, if considered in design and maintained, capture pollution.  Large scale projects are likely needed, which can be expensive and require large parcels of land to make a difference.  Consider pairing up flood mitigation with a resilient park concept so that during dry weather, the general public can enjoy the area.	CRS program guides	1 – FTE Clean Water Coordinator for Planning Commission  Planning, engineering, permitting, construction  Flood elevation certificates for program entry  3 – Municipal Planners	\$130,000 per year  \$5,000,000  \$390,000 per year	2023: Annual review is scheduled for September 2023. Updates and additional information will be included based on public and shareholder input. Funding is being sought for the next complete update.  2022: Mapping of flood prone areas has been completed.  In process of applying for Hazard Mitigation Grant Program, and have supported municipalities in applying for Hazard Mitigation grants.  Creation of a Dedicated Hazard Mitigation Position  >\$250,000 acquisition of a duplex in the Paxtang watershed for future projects.  \$200,000 secured for a shovel ready project at the McKelvey Bridge project in Middle Paxton Township.  \$500,000 project in Penbrook Borough.		
1.5*	Act 167 Plan	Dauphin County's Act 167 Plan is over 10 years old. Explore the feasibility of updating this plan if funding is available.  Re-visit the model stormwater ordinance that would require/incentivize additional protections for streams	Tri County Planning Commission, Municipalities, DCCD, Municipal engineers and solicitor	Countywide	2023 – collaborate with municipalities to discuss the benefits and challenges of tackling an update	Should local involvement exist additional responsibility.  Finding funding to update a Countywide Act 167 Plan.  Lack of DEP funding for plan update.		1 – FTE Clean Water Coordinator for Planning Commission	\$130,000 per year  \$250,000 for Act 167 Plan Update	2023: Dauphin County applied for a Growing Greener grant.  2022: The 2022/2023 state budget includes new funding to support the development of Act 167 plans. If funding is available, Dauphin County will explore the possibility of updating their current plan.		
1.6*	Continue to Implement County Farmland Preservation Program	Total farmland preservation (193 farms in program currently – 18,546 acres)  Estimated that (6) farms per year are preserved. Total goal of 24 over the next 4 years.  <b>-1,500 acres of farmland conservation</b>  Begin outreach campaign in fall of 2021	Farmland Trust and Agricultural Preservation Coordinator, NRCS, DCCD, Manada Conservancy	Ag land use area that fits farmland preservation criteria	2021 – begin new outreach strategy  2021 – increase per acre pay  2022-2025 continue the program on annual basis	Technical assistance to coordinate preservation plans  Preserved farms are required to have an NRCS Conservation Plan, work with farmers to ensure Conservation Plan is reported in PracticeKeeper. Recommend to make this a program requirement statewide.  Gaining Plain Sect Involvement  Generating additional applications is challenging.  Long term administration, no money from the state to monitor track and enforce and easement, more than 100 inspections per year	Priority recommendation s, easement revision recommendation s, supplemental BMP funding research	\$1,750 per acre increase this year  Ag Land Preservation Staff Administrator - inspections, plan writing, and full farm walks every two years  1 – FTE Clean Water Coordinator for Conservation District	\$130,000 per year  \$130,000 per year  \$250,000 per farm funded, total of 24 farms \$6M	2023: 6 farms will be preserved in 2023 totaling 530 acres.  2022: Five farms are planned for preservation through 2023. There are 11 left on the list to be preserved.		

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1.7*	Establish funding/staff support to assist the agricultural community  692 farms in Dauphin County (2017 USDA Census)	Approximately 150 farms have their plans in Dauphin County, goal is to complete 280 by 2025 (40% of total).  Enter Conservation and Nutrient Management Plans into PracticeKeeper.  Potential implementation challenges (Continued): In order to communicate effectively with the farming community one on one farmer outreach must be conducted. Farmers do not participate in outreach events or read information provided in newsletters.	DCPC, DCCD, Contracted planners, ACT 38 operators, Organic Farmers, Preserved Farms, integrators	Countywide	2022-2025	Limited compliance activities by DEP. In 2018 DEP conducted inspections in Northern Tier of Dauphin County and resulted in a lot of farmers to get Conservation Plans.  Lack of Technical assistance to support the farming community  Private sector Ag plans are not required to be shared with District staff.  Work with ACT 38, Preserved farms and organic farms to report AG E&S and NRCS Conservation Plans. These operations are required to have plans, but no requirement to report the plans. It is recommended state agencies make changes to ACT 38 and Persevered Farm programs to require PracticeKeeper reporting. The most effective way to capture and report BMPs is through one on one farm visits. Farmers do not participate in surveys or other methods.			6 – additional Ag Planners to provide technical assistance and ag planning  3 – FTE Design, Engineer, Permit  3 – FTE Inspector Construction Services  1 – FTE Clean Water Coordinator for Conservation District  1 – Administrative Assistant	\$780,000 per year  \$420,000 per year  \$315,000 per year  \$130,000 per year  \$75,000 per year	2023: Penn State University is creating a Center for Agriculture Conservation Assistance which will support the agricultural community and train conservation professionals in agricultural BMPs.  A partnership between Penn State Extension, Lancaster Farmland Trust, and HRG is leveraging funding to initiate targeted farmer outreach in Dauphin County.  2022: 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 2021 Lancaster Farmland Trust completed 20 farm visits. In 2022 the Lancaster Farmland Trust completed an additional 30 farm visits.  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.	
1.8	University Partnership - Implementation	GIS deliverables, stormwater studies/monitoring, BMP field/aerial identification, regulatory support  Develop undergraduate and graduate students to support staff with implementation as interns and upon graduation	Harrisburg University, PSU Harrisburg, Harrisburg Area Community College, PSU Ag and Environment Center (AEC), Shippensburg University, Widener University, Millersville University, Temple University	Countywide, university-owned land	2022-2025	Continued undergraduate/graduate engagement as students graduate, distance for students to travel.  Lack of technical assistance professionals to mentor students.  Lack of competitive paying job opportunities that ensure long term sustainable for recently graduated students	Outreach boots on the ground		5 – Student Internships to Support CAP Implementation	\$50,000 per year	2023: Dauphin Planning: Two interns on staff in 2023. One was from Harrisburg University and the other was from Shippensburg University, who was then hired full time by TCRPC.  2022: Dauphin Planning: Two interns on staff in 2022: One from Harrisburg University and one from Pennsylvania Western University, California Campus. The interns contributed toward the data collection and mapping contained on the Water Quality and CAP portions of the website.	
1.9A	Water quality communication plan, leveraging existing documents and covering topics including hazard mitigation plan, MS4 municipalities, comprehensive plan and Act 167	<a href="#">Develop messages and audience, execute plan and distribute messaging through staff and partners</a>  <a href="#">Utilize the DPJM County Countywide Action Plan (arccgis.com) – ARC GIS website as a source of consistent communication</a>	Multi-partner, TCRPC as lead entity building upon environmental aspects	Countywide	2022 – 2025	Simplifying the resources that are available, targeting Dauphin County farmers and other landowners  Sharing staff resources across the 4-county region	Website development and continued maintenance	Website development and continued maintenance  1 – FTE Marketing and Outreach Coordinator  1 – FTE Clean Water Coordinator for Planning Commission	\$10,000 per year  \$130,000 per year  \$130,000 per year	2023: The DPJM Countywide Action Plan website and GIS tracking data continues to be updated.  2022: The DPJM Countywide Action Plan website listed in the Performance Targets has been updated to include information about implementation of the Countywide Action Plans. Additionally, a GIS tracking data base has been added to capture the location of potential projects.		
<del>1.9B</del>	<del>Utilize local arts and businesses to promote water quality messaging and general public education</del>	<del>Identify local businesses that support water initiatives or need clean water for their businesses to thrive</del>  <del>Identify local artists who have a passion for water/environmental issues</del>	<del>Millworks, Paxton Creek Watershed &amp; Education Association, Paxton Creek Cooperative (Capital Region Water, Susquehanna Township, Lower Paxton Township), CBF</del>	<del>Paxton Creek watershed?</del>	<del>2022 – coalition building, one event</del>	<del>Fortitude to see small projects through to gain momentum and realize general public understanding about stormwater runoff, local stormwater fees may provide a reason for public to understand what they're paying for, will art translate to the call to action?</del>				<del>\$5,000</del>	<del>2023: No progress to date.</del>  <del>2022: No progress to date.</del>	Initial project idea stakeholders from 2021 are no longer involved in the lead organizations, so the idea hasn't gained traction.
1.9C	Agricultural Communication Strategy	Develop a strategy to complete one on one farm visits.  Develop a communication plan to engage integrators.  Utilize Farm Bureau Newsletter for announcements  Partner with pesticide meetings and other AG meetings to provide information.	CD, County Farm Bureau, Integrators, Ag Land Preservation, PSU Extension, NRCS	Countywide	2022-2025	One on one farm outreach is the best way to communicate with farmers in addition to reporting practices.  Funding to support the technical assistance required to complete one on one farm outreach  Outreach to integrators is a challenge due to the number of integrators and multiple country boundaries they serve. It is recommended DEP/PDA/SCC communicate with integrators on a frequent basis to reduce mixed messages.		6 – additional Ag Planners to provide technical assistance and ag planning  1 – FTE Marketing and Outreach Coordinator  1 – FTE Clean Water Coordinator for Conservation District	\$780,000 per year  \$130,000 per year  \$130,000 per year  See 1.9A for website costs.  Costs for meeting attendance and administration may be covered through other funding requests.	2023: A partnership between Penn State Extension, Lancaster Farmland Trust, and HRG is leveraging funding to initiate targeted farmer outreach in Dauphin County. A total of 25 occurred in 2023.  2022: Farm visits have been utilized to conduct outreach to farmers about the Countywide Action Plan. In 2021 20 farm visits were conducted and in 2022 an additional 30 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 Dauphin County. Scaling up of farm visits would allow for additional outreach to occur.		

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1.10 <sup>a</sup>	Countywide WQ Credit Offset Pilot	Demonstrate success of a pilot project area where MS4-regulated areas and non-regulated areas can benefit from achieving sediment and nutrient goals	MS4 municipalities that include agricultural land use in the vicinity of the Urbanized Area	MS4 watershed HUC12 pilot area – Swatara Creek watershed?	2022–2023	DEP acceptance of approach, permit compliance coordination among sectors, farmers in compliance with state and federal regulations			1 – FTE Clean Water Coordinator for Planning Commission  1 – FTE Clean Water Coordinator for Conservation District	\$130,000 per year  \$130,000 per year	2023: The anticipated need for this has not come to fruition since all of the MS4s in Dauphin County are on track to meet their Pollutant Reduction Plan requirements by their permit deadlines. We will remove it from the CAP due to a lack of need.  2022: No progress to date.	The anticipated need for this has not come to fruition since all of the MS4s in Dauphin County are on track to meet their Pollutant Reduction Plan requirements by their permit deadlines.
<b>Priority Initiative 2: Reporting and Tracking</b>												
2.1*	Existing BMP cataloging (quantity and location) for select BMPs, expanding on general recommendations provided in QAPP  BMPs = forest buffers, urban forest buffers, grass buffers, urban grass buffers, manure storages, 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  Back check with staff field views where required  Add data to Practice Keeper or another batch upload option (FieldDoc)	Harrisburg University, PSU Harrisburg, Harrisburg Area Community College, Chesapeake Conservancy, Stakeholder peer review - USGS, Farm Bureau, PDA, 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 on compliant farm operations.	Precision Conservation Tools  General methodology outline  BMP field backcheck	N/A	Further GIS and data processing/method refinement  6 – additional Ag Planners to provide technical assistance and ag planning  5 – Student Internships to Support CAP Implementation	\$46,000 (2022 only)  \$780,000 per year  \$50,000 per year	2023: No progress to date. Lack of funding for verification and cataloguing is the issue.  In December of 2021, Dauphin County was awarded \$30,000 to conduct Phase 1 of a multiphased BMP verification remote sensing effort. Dauphin County elected to use all of the money on the remote sensing analysis focusing on six priority BMPs including: Barnyard Runoff Controls, Animal Waste Management Systems, Forest Buffers, Grassed Waterways, Streambank Exclusion Fencing, wet ponds and detention basins. Remote sensing data analysis performed by the Chesapeake Conservancy is being finalized in August of 2022 and results are provided in an online ARC Gis Portal. Qualified 3rd party staff will begin field verification efforts to verify the remotely identified practices. A BMP Verification Quick Guide is being developed by HRG to assist with field verification efforts. In April of 2022, the Foundation for Pennsylvania Watersheds applied for a NFWF Most Effective Basins grant to support Phase 2 of the BMP verification analysis in the MEB in Dauphin County. Initial results from Phase 1 look excellent in providing opportunities to take credit for practices on the ground that are not currently reported.	
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 – Harrisburg/ SHIP/PSU/Etc. University, USGS, Farm Bureau, PDA, municipalities with MS4 permits, Municipal Engineers, Dauphin County Woodland Owners Association	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 backcheck	N/A	Further GIS and data processing/method refinement  5 – Student Internships to Support CAP Implementation	\$46,000 (2022 only)  \$50,000 per year	2023: As a part of the Chesapeake Conservancy's Cooperative Agreement with the Chesapeake Bay Program, the CIC has been working to adapt the USDA Agricultural Conservation Planning Framework (ACPF) toolbox and produce its related GIS conservation practice opportunity outputs for the entire watershed. The toolbox outputs a suite of NRCS agricultural practice opportunities at the field scale -- some have direct equivalents to Bay Program BMPs, while others do not. Since there are many assumptions made to produce these opportunity footprints across the entire watershed, they are not intended to be ground truth and should only serve as a high level reference for helping to plan efforts in combination with expert on-the-ground input. The outputs are expected to be publicly available after June 2024.  2022: 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, DCPC, Tri County Regional Planning, student interns	Urban/suburban landscape	2022	Currently municipalities are not collecting BMP data because it is not required in non-MS4 communities. Must incentivize communities to report, no existing system in place. FieldDoc would need to be accessible to municipalities to self-report BMPs that are installed and continue to function.	Reporting platform	N/A	Training  5 – Student Internships to Support CAP Implementation  3 – Municipal Planner	N/A  \$50,000 per year  \$390,000 per year	2023: No progress.  2022: Phase 1 of BMP verification will identify Wet Ponds and Detention Basins in Dauphin County. Field verification will need to occur on these projects. PA DEP has updated FieldDoc to allow for additional reporting of urban practices.	
2.4 <sup>a</sup>	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 Urban Nutrient Management – 1,000 acres	PSU Extension, PDA	Countywide	TBD based on fertilizer legislation if passed	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.	TBD based on fertilizer legislation if passed	TBD based on fertilizer legislation if passed	1 – FTE Clean Water Coordinator for Planning Commission	\$130,000 per year  Urban Nutrient Management \$10 per acre à \$10,000	2023: No update.  2022: 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.	DEP is recognizing conservation landscaping through reporting in FieldDoc. Awaiting DEP's direction on the future of Urban Nutrient Management Plans.
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 Dauphin County.  Work with PDA/DEP to improve manure transport reporting.	DEP, DCCD, NRCS, PDA, NRCS, Dauphin 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 and could be improved.  Current response rates are low and miss a large demographic of Dauphin County farmers.  Manure brokers are not required to report data annually. CAST data is not inclusive.			5 – Summer interns for reporting and verification	\$50,000 – per year  See 3.5 for funding needs to improve cover crop reporting for Capital RC&D	2023: DCCD participated in the Capital RC&D transect Survey in Spring 2023.  2022: 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.	

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<b>Priority Initiative 3: Achieve New Pollutant Reductions</b>												
3.1a	Implement Paxton Creek Master Plan	Restoration includes naturalized channel, vegetated riparian zones, green space, large parks, multi-use trails  North Paxton Park Greenway 7,600 linear feet  Paxton Creek Park 5,300 linear feet  South Paxton Greenway 5,400 linear feet	Capital Region Water, PennDOT, City of Harrisburg, PCWEA, HRA, USGS	North Paxton Creek Greenway, Paxton Creek Park, South Paxton Creek Greenway	2021 Begin implementation  Ongoing construction and maintenance	Obtaining required permits for stream corridor reconstruction, funding to support expensive restoration efforts; plan implementation requires a dedicated, multi-jurisdictional team and potentially significant land acquisition	N/A	N/A	1 – FTE Clean Water Coordinator for Planning Commission  1 – FTE Clean Water Coordinator for Conservation District  N/A	\$130,000 per year  \$130,000 per year  \$60 - \$90 million dollar estimate	2023: No progress to date. County, City of Harrisburg, and Capital Region Water have been meeting in an effort to define roles and responsibilities to advance the Master Plan.  2022: Capital Region Water and CREDC are taking the lead on this project, though many partners are at the table and roles are being determined. A partner agreement will be drafted with quarterly meetings. Design funding is being investigated for the project. Once the concept design is completed, feasibility and final design will be completed, including eminent domain as needed.	
3.1b	Implement Paxton Creek Master Plan	Provide adequate channel size and flood conveyance to reduce 100-year flood elevation to 314 feet, provide stormwater retention and treatment  Ongoing monitoring conducted by USGS	PennDOT, City of Harrisburg, PCWEA, HRA, Capital Region Water, USGS	North Paxton Creek Greenway, Paxton Creek Park, South Paxton Creek Greenway	2021 Begin implementation  Ongoing construction and maintenance	Obtaining required permits for stream corridor reconstruction, funding to support expensive restoration efforts; plan implementation requires a dedicated, multi-jurisdictional team and potentially significant land acquisition	N/A	N/A	1 – FTE Clean Water Coordinator for Planning Commission  1 – FTE Clean Water Coordinator for Conservation District  N/A	\$130,000 per year  \$130,000 per year  \$60 - \$90 million dollar estimate	See 3.1a above.	
3.2a	Manada Creek Coldwater Conservation Plan	Prioritization of the stream channel for restoration projects, riparian restoration including buffers  Establish buffers between MNDA 08.72 and 07.12  Stream restoration below MNDA 07.12  Agriculture BMPs near state Route 443  Education and enforcement of septic tank maintenance	DCCD, Doc Fritchey Chapter TU, Wildlife Program Fort Indiantown Gap, Manada Creek Watershed Association, Sewage Enforcement Officers, municipalities in the watershed	Manada Creek, Fort Indiantown Gap	2022-2025	Willingness of private landowner to implement BMPs that will improve water quality.  Funding to support restoration efforts.  Lack of technical assistance to promote and support implementation of restoration practices.		Coldwater Heritage Grant – 2013 Manada Creek	1 – FTE Clean Water Coordinator for Planning Commission  1 – FTE Clean Water Coordinator for Conservation District	\$130,000 per year  \$130,000 per year  \$1,000,000 for plan implementation and restoration prioritization	2023: Through a partnership with Manada Conservancy and the Hershey Trust, DCCD has identified potential projects for 2024 and 2025.  2022: No progress to date.	
3.2b	Clarks Creek Coldwater Conservation Plan	Prioritization of the stream channel for restoration projects, riparian restoration including buffers, include fish habitat restoration, promote stormwater management BMPs were feasible	DCCD, Doc Fritchey Chapter TU, Clarks Creek Watershed Association, Middle Paxton Township and Rush Township	Clarks Creek, Middle Paxton Township and Rush Township	2022-2025	Willingness of private landowner to implement BMPs that will improve water quality.  Funding to support restoration efforts  Lack of technical assistance to promote and support implementation of restoration practices			1 – FTE Clean Water Coordinator for Planning Commission  1 – FTE Clean Water Coordinator for Conservation District	\$130,000 per year  \$130,000 per year  \$1,000,000 for plan implementation and restoration prioritization	2023: No progress to date.  2022: No progress to date.	
3.2c	Develop a WIP for Spring Creek East	Develop a WIP/Alternative Restoration Plan for Spring Creek that is consistent with CAP initiatives and can help to support implementation of the CAP.	Doc Fritchey TU, Penn State Extension, Derry Township Municipal Authority	Spring Creek – Derry Township/Conewago Township	2022-2025	Funding to support the development of a Coldwater Conservation Plan.  No watershed organization currently exists for Spring Creek.			1 – FTE Clean Water Coordinator for Planning Commission  1 – FTE Clean Water Coordinator for Conservation District	\$130,000 per year  \$130,000 per year  \$150,000 for Coldwater Conservation plan development	2023: The Spring Creek (Hershey) WIP continues to develop and is in the field assessment phase. The plan is being developed through a partnership with Derry Township, Penn State, DCCD, The Center for Watershed Protection, and EPR.  2022: \$14,971 from 319 grant funds (via pass-through from Trout Unlimited Doc Fritchey) to assist with the development of a 319 plan for Spring Creek (Hershey) - Penn State will be completing virtual and in person land surveys of the watershed in summer 2022 to create a comprehensive list of potential ag BMPs (and potentially urban stormwater). Water Quality Monitoring plan was approved by EPA.	

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3.2d	<a href="#">Support implementation of Conewago Creek WIP Update, which will result in cover crops, conservation tillage, riparian buffers, grazing land management, cropland retirement, nutrient management, streambank stabilization, streambank fencing, animal management waste systems, contour farming/strip cropping, ag E&amp;S control, floodplain restoration, constructed wetlands and wet swales, bioswales, bioretention/rain gardens, and permeable pavement.</a>	Assist existing WIP team where requested on funding needs, landowner outreach, and reporting.	Tri-county Conewago Creek Association, PSU AEC, Londonderry Township, Conewago Township, TetraTech, LandStudies, Red Barn Consulting, TeamAg, Rosetree Consulting, HRG, Dauphin County Conservation District, DEP, NFWF, NRCS, USGS	Conewago Creek watershed – Hoffer Creek, Brills Run, Lynch Run, Conewago mainstem	Year 2 Milestone Year 5 Milestone Year 10+ Milestone  (see page 57 of WIP Update for details)	Many partners and great momentum should enable the group to move forward. Technical assistance and funding at this scale will be a challenge. Willing landowners are a challenge.		Penn State AEC Recipient		\$14M (WIP update scope), \$54M overall watershed restoration	2023: Phases 1, 2, and 3 of the stream restoration goals were accomplished in a project in Londonderry Township. Tri-County Conewago Creek Association continues to take actions to develop projects and fundraise for these WIP efforts. <a href="https://conewagocreek.net/meeting-minutes/">https://conewagocreek.net/meeting-minutes/</a>  2022: \$955,282 from NFWF - "The Chiques-Conoy-Conewago Regional Partnership: Integrating the Cloud, Muddy Boots and the Business of Farming to Get Farmers to Yes" - while much of this work is in Lancaster County, it does include the Dauphin County portion of the Conewago and all of Londonderry Township outside of the Conewago as well. These funds are to be spent by December 2022. Also supported buffer plantings and maintenance in East Hanover Twp, Londonderry Twp, Lower Swatara Twp, and Derry Twp.	
3.3*	Help farmers and operators to be in compliance with state and federal Conservation and Nutrient Management Plans	<b>Soil and Water Quality Conservation Plans (Ag E&amp;S) 33,700 acres</b>  <b>Nutrient Management (Manure Management) <del>40,300</del> 20,000 acres of Core N, <del>14,400</del> 20,000 acres of Core P</b>  Work with ACT 38 operators (22), Preserved Farms (193), and certified organics to document plans required as part of the program	4R Alliance, DCCD, Dauphin County Farm Bureau, NRCS, Private Sector Agriculture Farm Visits	Countywide Ag Land	2022-2025	Lack of DEP inspections.  Reporting and verification of AG Plans, NRCS plans expire and do not get reverified, private plans are never entered.  Lack of technical assistance to support agriculture planning and implementation, one on one farm outreach is best way to capture existing plans.  Act 38 plans and plans for preserved farms not required to be entered into PK, the recommendation is to require State programs to enter plans into PK  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.	Educational support		6 – additional Ag Planners to work with farmers to develop required plans	\$780,000 per year  \$15 per acre for a total cost of \$505,500  \$15 per acre for a total cost of \$604,500	2023: A lack of plans has been identified by DCCD as a barrier for implementing projects. Through farmer outreach, DCCD is working to identify gaps in plans and target farms that require them.  DCCD has prepared 16 Manure Management Plans in 2023 totaling 1,446.83 acres and 13 Ag E&S plans totaling 2,131.79 acres. Nutrient management totals are 1,674 acres and nutrient balance sheets total 1,231 acres.  2022: PACD recently announced their Growing Greener grant for Ag Plan Reimbursement. Farmers in Dauphin County will be able to take advantage of this opportunity to produce Ag E&S and Manure Management Plans. HRG attended the rollout of this program to maximize opportunities to get farmers additional plans.  From 2020 to 2021 Dauphin County increased Nutrient Management Core N by over 4,300 acres and Nutrient Management Core P by over 12,300 acres. Additionally, Soil and Water Quality Conservation Plans increased by over 1,400 acres.  DCCD plans to continue outreach and writing plans per the State Conservation Commission Delegation Agreement.	Goals were changed due to acres already implemented (Core P), or lack of progress (Core N).
3.4	Advanced Nutrient Management (4R) Practice Education and Implementation	<del>Transition manure management plans to nutrient management plans and incentivize implementation</del>  Increase reporting of supplemental nutrient management BMPs through existing programs and initiatives  <del>Increase existing 4R practice N Rate by 1,700 acres, N Timing and Placement, P Timing, Rate and Placement by 1,000 acres.</del> <b>Increase existing 4R practice N/P Rate, Placement, Timing by 4,000 acres.</b>  Explore the idea of increasing pre-side dress nitrogen testing (PSNT) or Chlorophyll testing to District program participants	4R Alliance, CBF, DCCD, Dauphin County Farm Bureau, NRCS, Private Sector Agriculture Farm Visits	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	Educational support		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 \$67,000	2023: HRG has worked with the counties on methods to integrate supplement NM reporting into current workflows in the Chesapeake bay Contract, Nutrient Management Contract, current PSNT programs, and equipment rental programs. HRG also provided outreach at several events to increase adoption of 4R practices within the region.  2022: No progress to date.	Goals were changed due to acres already implemented and continued progress of initiative.  Action Number Performance Target verbiage updated for the 2023 Milestone.

**2023 Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Report – DAUPHIN COUNTY**

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3.5*	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 <del>24,000</del> 45,000 acres High Residue, <del>10,000</del> 14,000 acres Conservation Tillage, <del>4,000</del> 3,000 acres Low Residue, <del>6,000</del> 21,000 acres of cover crops, and <del>15,000 acres of cover crops with fall nutrients</del></b>	DCCD, Dauphin County Farm Bureau, NRCS, Private Sector Agriculture Farm Visits	Countywide Ag Land	2022 – investigation  2023 – next steps	Capacity to manage the program at the county level, 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  Organic farmers are using tillage to manage weeds and vertical tillage is becoming more popular among farmers, younger generation is “trying” tillage for experience	Transect survey		6 – additional Ag Planners to transition farmers to high residue  County DCCD – staff to administer the program  Capital RC&D Transect Survey	\$780,000 per year  \$90 per acre traditional per year \$540K for a 5-year total of \$2.7M (incentive payment, administration, Capital RC&D reporting) \$50 per acre fall nutrients per year \$750K for 5-year total of \$3.75M  \$50,000	2023: Dauphin County planted 7,742 acres of cover crops in 2023.  2022: From 2020 to 2021 Cover Crops in Dauphin County increased by over 8,500 acres.	Goals were increased to reflect number of acres already being treated, or decreased to reflect of lack of progress of action item.
3.6	Implement more pasture management BMPs  Use Ag Land Preservation Goals to reach Pasture Management Goals	<b>Off Stream Watering – <del>150</del> 1,100 acres</b>  <b>Forest buffers on fenced pasture corridor – <del>40</del> 150 acres</b>  <b>Grass buffers on fenced pasture corridor – <del>10</del> 300 acres</b>  <b>Land Retirement to Ag Open Space – <del>170</del> 650 acres</b>  <b>Precision Intensive Rotational/Prescribed Grazing - 300 acres</b>	DCCD, Dauphin County Farm Bureau, NRCS, Private Sector Agriculture Farm Visits, CBF	County ag lands – landowners who raise horses, dairy, beef and other pasture grazing animals	2025	Landowner education, BMP funding for non-buffer work, plan updates, data gathering  Lack of Technical assistance to support agriculture planning and implementation  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  Increasing construction costs are cancelling NRCS contracts	Landowner education		6 – additional Ag Planners to provide technical assistance and ag planning  3 – additional FTE environmental technician/rapid delisting program management	\$780,000 per year  \$390,000 per year  Off stream Watering \$500 per acre \$75K total  FB Buffer W/ Exclusion \$10,500 per acre \$105K total  GB Buffer W/ Exclusion \$2,750 per acre \$27.5K total  Land Retirement \$500 per acre \$85K total	2023: Prescribed grazing established as a new goal for 2023.  2022: Phase 1 of BMP verification identified 247 potential hits for streambank exclusion fencing. This data set will allow for increased reporting of buffered acres with exclusion fencing.	Goal was increased to reflect number of acres already implemented.
3.7*	Riparian buffer and re-forestation BMPs	<b>363 riparian forest buffer acres, (353) acres lost since 2017 need reverified</b>  <b>44 750 riparian grass buffer acres – (31) acres lost since 2017 need reverified</b>  <b>29 300 acres – Agriculture Tree Planting</b>  <b>12 acres – urban forest buffer</b>  <b>Forest Conservation – 2,100 acres</b>  <b>Tree Planting - Canopy - 1 acre</b>  <b>Forest Planting - 1 acre</b>	CBF, Dauphin County Woodland Owners Association, TU – Doc Fritchey, Swatara/ Paxton Creek/ Tri-Valley/ Twin Valley/ Wiconisco/ Clarks Creek, Watershed Association, Manada Conservancy, NRCS, DCCD, Municipalities, Environmental Team Corps, CAGA, PWECA, Scout Troops	Countywide  Explore implementation at Ned Smith Center, Millersburg & Wiconisco park	2022 -2023 – line up landowners for new acres, re-verify acres “lost” in reporting system  2023-2025 – in the field implementation	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  Lack of technical assistance to conduct landowner outreach, implementation and maintenance of proposed projects  Flash grazing must be allowed with buffer installation  Funding program must include a 5-10-year maintenance program to establish buffers along with incentive program \$4K minimum per acre payment	Materials  Mapping	Budget available to be determined	6 – additional Ag Planners to provide technical assistance and ag planning  3 – additional FTE environmental technician/rapid delisting program management	\$780,000 per year  \$390,000 per year  Forest Buffer \$10,500 per acre \$325K  Grass Buffer \$2,500 per acre \$25K  Tree/Forest Planting \$10,000 per acre \$290K  Forest Conservation \$2,000 per easement acre \$4.2M	2023: Utilizing CAP funds, DCCD is installing 3.5 acres of buffers across two sites in Spring 2024.  A 2024 project has been identified with the Manada Conservancy which will account for 6+ acres of buffers  The Capital Area Greenbelt association is leveraging a 2022 Community Conservation Partnerships Program grant of \$54,600 for the construction of approximately 12 acres of riparian forest buffers between 19th and 28th streets, along the Lower Spring Creek. The project is almost halfway through the four year effort, site preparation and planting has been completed with two years of establishment remaining.  2022- DEP Growing Greener - Prioritizing Forested Buffer Incentives - Tier 1 and 2 Counties, Huntingdon, Juniata, and Dauphin - NRCS Codes: 560/575/340/382/561/468/516/367/558/578/580/620/645/360/313/614 - Conservation Districts and NRCS, This project will pickup landowner cost-share for NRCS practices if a buffer is installed, we also pay for site prep and maintenance of buffers. We have 12 projects, still looking for more, and are in the process of contracting with 7 contractors to do site prep and maintenance on buffers.  In September of 2022, HRG will contact the Alliance for the Chesapeake Bay to establish a Riparian Ranger Program in Dauphin County. PSU Extension Master Watershed Stewards will be the leader in running the program.	Goal was increased to reflect number of acres already implemented.

**2023 Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Report – DAUPHIN COUNTY**

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3.8	Wetland restoration implementation on marginal production ag land	<b>20 acres of Wetland Restoration</b>  Identify 1 large property owner from University of Vermont restorable wetland layer to help identify where wetland restoration is feasible	Nature Conservancy, Hershey Trust, Northern Dauphin County Farmer, Manada Conservancy	Hoffer Creek (TNC), Armstrong Creek, Powells Valley Creek, Swatara Creek (East and South Hanover Township), Conewago Creek	2022-2025	Willing landowner; appropriate siting, design, and construction for successful restoration result.  Lack of technical assistance for landowner outreach and agriculture planning to identify potential site locations.	Landowner outreach		3 – additional FTE environmental technician/rapid delisting program management  2 – stream biologist	\$390,000 per year  \$280,000 per year  Wetland Restoration \$30,000 per acre \$600K	2023: As part of 2023 CAP funds, in Spring of 2024, 1.5 acres of wetland will be replanted to replace lost ash trees in Lower Paxton Township. Additional wetland restoration has been identified in the area an may be planted in Fall 2024.  2022: no progress to date.	
3.9	Stream restoration	<del>49,800</del> <b>5,000 LF (1 mile) (0.9 miles)</b> <b>Urban Stream Restoration</b>  <del>3,000</del> <b>15,000 Linear feet (3 miles)</b> <b>Agriculture Stream Restoration</b>  Armstrong Creek has shovel ready project needs \$800k in funding.	Army Corps of Engineers, Chesapeake Bay Foundation, PA Fish & Boat Commission, Watershed associations, DF Chapter TU, MS4 municipalities	Rural areas of Dauphin County – Armstrong Creek  Urban areas - Paxton Creek, Asylum Run, Slotznick Run, Swatara Creek and its tributaries, Conewago Creek and its urban tributaries	2022 – 2025	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.  Lack of funding to cover engineering design. Chesapeake Bay Pollutant Reduction Plans are primarily focused on stream restoration, so it's a great partnership opportunity for the county to assist municipalities where there's a need for regional funding solutions for the current permit term and future permit terms.	GIS  Design/GP-1 permit		Design, permit, construction services  3 – Municipal Engineers  3 – FTE Design, Engineer, Permit  2 – Stream biologist	Assume urban \$900/LF - \$45M Assume rural \$400/LF - \$800K  \$420,000 per year  \$420,000  \$280,000 per year	2023: The Capital Area Greenbelt Association is using a 2021 Growing Greener grant of \$230,150 at Spring Creek Ivey Apartments Site (SCILAS) which created streambank restorations which were completed in 2023. The streambank restorations were approximately 500 feet, including Boulder/Log Revetment. 50 linear feet, Mud Sill. 40 linear feet, Boulder Toe and Bank Regrading with Habitat Logs. 250 linear feet, Boulder Bank Revetment. 100 linear feet, and Gravel Bar Removal. Installing the Native Plantings to be completed in the Fall of 2023.  2022: The Conewago Creek Stream Restoration project received over \$500k in CAP funding to complete stream and floodplain restoration. Phase 1 construction is set to be completed by the end of 2022. Phase 2 is finalizing municipality agreements to facilitate land acquisition.	Goals were increased to reflect number of acres already restored, or decreased to reflect of lack of progress of action item.
3.10	Implement more barnyard runoff control/loafing lot management	<b>24 60 acres of barnyard runoff controls</b>  <b>2 acres of loafing lot management</b>  <b>39 acres of agriculture drainage management</b>	DCCD, NRCS, Dauphin County Farm Bureau, Private Sector Ag Consultant	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 technical assistance 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 \$1.725M in total  Agriculture Stormwater Management \$10K per acre \$390K	2023: No progress to date.  2022: Phase 1 of BMP verification will identify where barnyard clusters are located and determine if they are livestock operations or poultry operations. This will help determine potential locations for management BMPs.	Goal was increased to reflect number of acres already being treated, and an increase in available funding for related projects.
3.11a	Animal waste management BMP implementation for livestock	<del>2,000</del> <b>33,500 AUs managed through new BMPs</b>  <b>1,700 AUs animal mortality composting management</b>	NRCS, DCCD, County Farm Bureau	Livestock and 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.	Engineering		6 – additional Ag Planners to provide technical assistance 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 \$3.5 M in total	2023: 846.56 AUs of animal waste management and 245.36 AUs of animal mortality composting were implemented in 2023.  2022: BMP Verification Phase 1, shows the potential to report an additional 108 animal waste storage facilities currently not reported through PracticeKeeper. This will help determine potential locations for management BMPs.	Goal was increased to reflect number of acres already being treated, and an increase in available funding for related projects.

**2023 Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Report – DAUPHIN COUNTY**

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3.11b	Manure Transport out of Dauphin County	Transport 2,000 dry tons per year out of county	DCCD, NRCS, Dauphin County Farm Bureau, Manure Brokers	Countywide	2022-2025	Current reporting standards do not require manure broker and haulers to report manure transported. New regulations must be developed to require haulers and brokers to submit information to DEP.			1 – FTE Clean Water Coordinator for Conservation District	\$130,000 per year	2023: New goal for 2023	
3.12*	Urban Stormwater Management Non-Regulated Communities	Implement existing ordinances and Catalogue existing BMPs that fit into this category  Runoff Reduction Performance Standard – <del>926</del> 4,000 acres treated  Stormwater Treatment Performance Standard – 13 acres treated	DCPC, DCCD, developing municipalities, Tri County Regional Planning, Municipal Engineers, PSU Master Watershed Stewards	County-wide	Ongoing  2022-2025	Coordination/ training for municipal staff, FieldDoc batch 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  3 – Municipal Engineers  3 – municipal planner	\$50,000 per year  \$420,000 per year  \$390,000 per year  Project budget: \$4M	2023: Funding remains an issue for those communities not included in WREP. One, non-regulated municipality is involved with WREP. Buy-in was offered to multiple municipalities, but without regulation, most did not see the benefit.  2022: A potential pilot project has been identified in Millersburg Borough and Upper Paxton Twp.	Goal was increased to reflect number of acres already being treated.
3.13*	MS4-related Chesapeake Bay Pollutant Reduction Plan Implementation	Plan implementation by end of current permit term (2023)  Wet Ponds and Wetlands – 167 acres treated  Bioretention and Raingardens – 153 acres treated  Bioswale – 75 acres treated  Vegetated Open Channels – <del>18</del> 200 acres treated  Infiltration Practices – <del>32</del> 200 acres treated  Dry Extended Detention Ponds – 181 acres treated  Advanced Street Sweeping – <del>396</del> 200 miles  Dry Detention Ponds – 2 acres treated  Stream Restoration (see Initiative 3.9)	West Hanover Township, Lower Paxton Township, Susquehanna Township, Capital Region Water, Swatara Township, Lower Swatara Township, Londonderry Township, Hummelstown Borough, Paxtang Borough, Penbrook Borough, Steelton Borough, Highspire Borough, Middletown Borough, Derry Township, South Hanover Township, East Hanover Township, PSU Master Watershed Stewards, Audubon, TNC, CBF	Urbanized planning area	2023 – might be 2025 if they’re individual permittees	Municipal capacity to implement plans (technical, financial)  Develop a grant funding source just for MS4 communities so they are not competing against all stakeholders. Need larger sources of funding.  Land available to implement projects.  Expanded flexibility to work outside of designated areas	<a href="#">Municipal engineer design/permit, construction readiness</a>  <a href="#">MCM Support, which may result in project readiness – see County 2021-2022 implementation plan</a>	Unknown	3 – Municipal Engineers  3 – municipal planner	\$420,000 per year  \$390,000 per year  Project budget \$5.4M	2023: MS4s continue to implement their individual PRPs.  A goal of WREP is to have the 15 MS4 municipalities participating in the program enter into a join PRP in 2024.  2022: No progress to date.	Goals were increased to reflect number of acres already being treated, or decreased to reflect of lack of progress of action item.
3.14	Conservation Landscaping/Turf to Meadow Conversion	Promote new program and enable one large tract landowners’ participation  100 10 new acres of Conservation Landscaping	DCPC, DCNR, Watershed Organizations, Municipalities, PSU Master Watershed Stewards, Audubon, TNC, CBF	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		3 – FTE Municipal Planner  3 – additional FTE environmental technician	\$390,000 per year  \$390,000 per year  \$2,500 per acre meadow à \$250,000 budget	2023: A project has been identified along Spring Creek in Swatara Township. This project will be implemented in 2024.  2022: \$6,190 from WPC DCNR Watershed Forestry Funding - awarded to East Hanover Township Parks and Rec and Penn State Extension is assisting. 1.24 acre turf to meadow conversion in the community park to be completed fall 2022 and spring 2023, and will include field day trainings for other municipal/grounds crews to attend and learn.	Goal was changed due to lack of progress of action item.
3.15*	Continue dirt, gravel, low volume road program	14 miles overall restored through past projects and future projects  Dirt & Gravel Road Erosion & Sediment Control - Driving Surface Aggregate with Outlets - 35,000 LF (6.5 miles)	DCCD	Countywide	2025	Continue D&G Road program funding.  Expand Dirt and Gravel Road Program to include farm lanes.	Education, technical assistance, project oversight	\$1.68 Million	1 – FTE Clean Water Coordinator for Conservation District	\$130,000 per year  Dirt and Gravel Roads \$40 per foot TBD	2023: 2 DGR projects, one 3,437.17 feet long and one 3,365.43 feet long, were installed in 2023.  2 LVR projects, one 6,506.94 feet long and one 3,365.43 feet long, were installed in 2023.  2022: One project was completed in Jefferson Township on Hemlock Road. The road base was restored, the road was resurfaced with DSA, and drainage was improved. The project was 4.577 linear feet long.	
<del>3.16*</del>	<del>Work with PennDOT and local municipalities to reduce frequency of mowing road ditches and along roadways</del>	<del>Educate local municipal leaders and work with PennDOT to address state-owned roads on the importance of keeping higher vegetation along roadways to prevent erosion and increase nutrient uptake.</del>	<del>Local Municipalities, DEP and PennDOT</del>	Countywide	<del>2023</del>	<del>PennDOT’s and Municipal willingness to cut back on mowing programs. DEP Chesapeake Bay Program will need to assist in the education of PennDOT.</del>			<del>1 – FTE Clean Water Coordinator for Planning Commission</del>  <del>1 – FTE Clean Water Coordinator for Conservation District</del>	<del>\$130,000 per year</del>  <del>\$130,000 per year</del>	<del>2023: No progress to date.</del>  <del>2022: No progress to date.</del>	Consistent lack of progress and lack of coordination/buy in from PennDOT through State partners.



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3.17	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, Ag Choice Farm Credit, Hershey Trust	Countywide	2022-2023	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 Conservation District Grant Manager  1 – FTE Planning Commission Grant Manager  2 – staff accountants	\$130,000per year  \$130,000 per year  \$140,000 per year	2023: FFAR and Walton Family Foundation opportunities did not proceed. No progress to report from County-led activities.  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 Dauphin County to increase the adoption of Conservation Practices.	
3.18	Partner with local environmental organizations and integrators performing conservation work	Partner with The Hershey Company, Land O' Lakes and PSU Extensions to build capacity, expand education and outreach and utilize resources.  Work with PSU extension to secure long term funding for Master Watershed steward coordinator.  Work with Audubon to leverage Green Ribbon Landscapes and partner on more plantings in urban areas.  Work with integrators to ensure conservation practices are reported. Working to ensure farms have conservation plans, buffers, cover crops and no-till.	The Hershey Company, Land O' Lakes, PSU Extension and Master Watershed Stewards (14), PSU Master Watershed Stewards, Audubon, TNC, CBF, PennAg	Countywide	2022 – assist The Hershey Company with corporate development of science-based targets for water for their cooperate environmental goals, connect with Audubon on Green Ribbon Landscape opportunities in Dauphin County  2023-2025 – evaluate opportunities	Funding to support ongoing PSU Extension support  Reporting Conservation Practices installed with private integrator funding  Support Ag Conservation Assistance Program (ACAP)	CAP Coordinator		PSU Extension Coordinator  1 – FTE Clean Water Coordinator for Planning Commission	\$10,000 per year  \$130,000 per year	2023: 2023: Through a partnership with Manada Conservancy and the Hershey Trust, DCCD has identified potential projects for 2024 and 2025.  2022: No progress to date.	
<b>Priority Initiative 4: Research, Education, and Training</b>												
4.1	Develop new water quality monitoring data into Chesapeake Data Explorer/ Chesapeake Monitoring Cooperative database	Successful data input/acceptance by ALLARM and other environmental groups program by end of 2021	ALLARM, TU – Doc Fritchey, Swatara/ Paxton Creek/ Tri-Valley/ Twin Valley/ Wiconisco/ Clarks Creek, Watershed Association, SRBC, Manada Conservancy, DCCD, DEP	Countywide	2022	Data precision, QAQC, opportunity to educate landowners about local stream health and what they can do about it	Data QAQC and training  Data input	N/A	Volunteers for Water quality monitoring  New monitoring equipment  3 – additional FTE environmental technician  2 – stream biologist/environmental scientist	N/A  \$10,000  \$130,000 per year  \$280,000 per year	2023: Dickinson College's Alliance for Aquatic Resource Monitoring (ALLARM) is a community science center that works with communities in the Mid-Atlantic region to use science as a tool to investigate stream health while generating data that can be used for aquatic protection and restoration efforts. ALLARM's Stream Team program aims to develop baseline water quality data examining the relationship between land use, geology, and water quality. PA communities have collected biological, chemical, and physical data, and continue to do so in these targeted counties: Cumberland and Dauphin. There are currently 19 active Stream Team Sites in Cumberland County, and 3 active sites in Dauphin County. Monitoring data for these active sites, as well as sites not currently monitored in Cumberland, Dauphin, and Perry Counties are located in the CMC Data Explorer, which is a regional database for Community-collected data throughout the Chesapeake Bay Watershed. More information and the Data Explorer can be found here: <a href="https://cmc.vims.edu/#/home">https://cmc.vims.edu/#/home</a> In partnership with Letort Regional Authority, ALLARM also monitors 7 sites along Letort Spring Run in Cumberland County for baseline chemical parameters and visual observations.  Capacity changes with the Program Coordinator and Conservation Districts has pushed the convening of the Watershed Specialists. We will reevaluate in 2024 if this should be a priority at the County level or if it should be scaled to the State or Federal level.  2022: In the fall of 2022, 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.  ALLARM is in the process of developing citizen scientist monitoring data collection protocols to assist with stream health data collection. <del>Should the protocol be approved, it will be shared with all Counties.</del>	
4.2	Leverage restoration of Wildwood Lake in terms of sediment reduction credits and study of nitrogen reductions tied to performance of retained wetlands	Completed background study of nitrogen reduction performance by existing wetland system  <del>Formal partnership between Dauphin County and USACE through Section 206 for the Aquatic Ecosystem Restoration program, utilizing Growing Greener grant as local match toward initial phases of the project</del>	Dauphin County Parks and Recreation Department, DEP, USACE, Friends of Wildwood, HRG, Normandeau	Wildwood Lake park property (owned by Dauphin County, located within Harrisburg city limits)	2022-2024  <del>2021-2022</del>	The many co-benefits of restoration are sometimes conflicting and addressing the needs of all stakeholders while honoring the wild nature of Wildwood is a delicate balance. The restoration of Wildwood Lake is expected cost at least \$10 million, and the only cost-effective approach is through a USACE partnership.	Survey base mapping and abbreviated wetland absence/presence mapping  <del>Survey base mapping, soil sampling, and abbreviated wetland absence/presence mapping</del>	N/A  <del>\$147,000</del>	Bio- and geochemical study of nitrogen sequestered/processed by wetland system  <del>Feasibility study, design, engineering, construction</del>	\$1M  <del>\$10M (estimated, to be confirmed upon potential USACE feasibility study)</del>	2023: Wildwood Park restoration/dredging is shovel ready for Phase 1 with the exception of final permits from USACE. Dauphin County continues to pursue construction funding from various sources. The nitrogen reduction study concept has not yet advanced but will likely gain traction once the construction schedule is known.  2022: The formal partnership with USACE did not occur due to it being unacceptable for Growing Greener funds to be used as match. The design of the restoration project has advanced and will be completed by the end of 2022. No comprehensive funding source exists for the implementation of the full project, so phased fundraising will advance in early 2023 and will continue. The nitrogen reduction performance study has not advanced due to lack of funding and as a result of having to pivot from the USACE partnership but remains a goal through 2024.	Eliminated the USACE partnership from the CAP as it did not ultimately occur.

**2023 Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Report – DAUPHIN 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(s) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available		Resources Needed		Annual Progress to Date (2021 to 2023)	to Action Item (2023-2024 milestone)
							Technical	Financial	Technical	Financial		
4.3	Supporting watershed associations for short-term success and long-term sustainability aligning with their goals	Develop new or reestablish existing watershed associations to support with CAP implementation. Watershed organizations can support with outreach, engagement, new project identification and implementation	<a href="#">National Trout Unlimited</a> , <a href="#">ALLARM, TU – Doc Fritchey</a> , <a href="#">Swatara/ Paxton Creek/ Tri-Valley/ Twin Valley/ Wiconisco/ Clarks Creek Watershed Association, SRBC, Manada Conservancy, DCCD, DEP, All Things Swatty, Swatara Water Trail</a>	Countywide	Ongoing	Willing volunteers and leaders to establish and run watershed organizations to be successful and support with implementation.	Social media shares, meeting logistics  Project development support	Limited match	1 – FTE Clean Water Coordinator for Planning Commission  1 – FTE Clean Water Coordinator for Conservation District	\$130,000 per year  \$130,000 per year  \$5000 per organization to produce promotional materials (hats, shirts, stickers) for members \$40,000 per year	2023: Through a partnership with Manada Conservancy and the Hershey Trust, DCCD has identified potential projects for 2024 and 2025.  2022: \$162,422 from DEP Growing Greener - a portion of these funds supported to initiation of the Master Watershed Stewards program in Dauphin County. The funds are set to expire in December 2022. Live Stakes planted in Centennial Acres park (Lower Paxton) as well as a live stake nursery to expand access to live stakes for future projects, as well as educational signage.  Future NFWF funding to support ongoing work by the PSU - AEC in the southeast portion of Dauphin County.	
4.4	Leverage Dauphin County Return on Environment and Kittatinny Ridge conservation goals	Partner with Kittatinny Ridge where goals align with evolving CAP implementation	The Nature Conservancy, DCNR, Audubon Pennsylvania, Appalachian Trail Conservancy, get outdoors PA	<a href="#">Susquehanna Water Gap/Capitol Area</a>	Ongoing	Future land conservation efforts will take time and funding to see through in the Kittatinny corridor, but they are important to pursue because they preserve clean water.				TBD	2023: Increasing the advertising and awareness has occurred in 2023.  2022: Audubon Pennsylvania and Manada Conservancy are prioritizing land for protection.	