

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
Priority Initiative 1: County Programmatic Initiatives														
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	Tri-County Regional Planning Commission, Dauphin County Conservation District, Dauphin County Planning Commission, Dauphin County Community and Economic Development, HRG		ARPA funds, Stormwater Fee proceeds, USACE	1 – FTE Clean Water Coordinator for Planning Commission	Planning Commission	\$130,000 per year \$1M line of credit – startup funding	DEP Dauphin County, Municipalities
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 TCRCP staff person			1 – FTE Clean Water Coordinator for Planning Commission Source Water Protection Plan development	Planning Commission PADEP Southcentral Regional Office, utility staff, private sector	\$130,000 per year \$100,000	DEP USDA/FSA/NRWA Source Water Protection Program

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
1.3*	Evaluate areas to establish riparian buffers to stabilize stream banks and limit encroachment	Utilize public data sets (future Chesapeake Conservancy?, PSU) to identify buffer gap project opportunities	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 TCRPC GIS staff person to identify prospective properties, 2 Conservation District staff people for outreach			1 – FTE Clean Water Coordinator for Planning Commission 1 – Additional Watershed Specialist for Conservation District	Planning Commission 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	DEP DEP Funding Options: CFA Watershed Restoration and Protection Program, PA Fish and Boat Commission, CBF, Alliance for the Bay, DCNR, Growing Greener, NFWF

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
1.4	Implement County Hazard Mitigation Plan & Emergency Management Plan	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	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	FEMA Region III STAFF, Dauphin County Emergency Management			1 – FTE Clean Water Coordinator for Planning Commission Planning, engineering, permitting, construction Flood elevation certificates for program entry 3– Municipal Planners	Planning Commission Contractors Homeowner responsibility Planning Commission	\$130,000 per year \$5,000,000 \$390,000 per year	DEP PEMA/FEMA BRIC program DEP
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	Planning Commission	\$130,000 per year \$250,000 for Act 167 Plan Update	DEP DEP

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available			Resources Needed				
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
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. -1,500 acres of farmland conservation 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 recommendations, easement revision recommendations, supplemental BMP funding research	Ag Land Preservation Board	\$1,750 per acre increase this year	Ag Land Preservation Program1 – FTE AG Land Preservation Specialist	Ag Land Preservation Staff Administrator - inspections, plan writing, and full farm walks every two years 1 – FTE Clean Water Coordinator for Conservation District	1 DCCD staff person Conservation District	\$130,000 per year \$130,000 per year \$250,000 per farm funded, total of 24 farms → \$6M	American Farmland Trust, PDA DEP American Farmland Trust, PDA, SCC, landowner donation

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
1.7*	<p>Establish funding/staff support to assist the agricultural community</p> <p>692 farms in Dauphin County (2017 USDA Census)</p>	<p>Approximately 150 farms have their plans in Dauphin County, goal is to complete 280 by 2025 (40% of total).</p> <p>Enter Conservation and Nutrient Management Plans into PracticeKeeper.</p> <p>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.</p>	<p>DCPC, DCCD, Contracted planners, ACT 38 operators, Organic Farmers, Preserved Farms, integrators</p>	<p>Countywide</p>	<p>2022-2025</p>	<p>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.</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&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.</p>					<p>6 – additional Ag Planners to provide technical assistance and ag planning</p> <p>3 – FTE Design, Engineer, Permit</p> <p>3 – FTE Inspector Construction Services</p> <p>1 – FTE Clean Water Coordinator for Conservation District</p> <p>1 – Administrative Assistant</p>	<p>District/NRCS/Private Sector Farm Visits</p> <p>Private Sector/DCCD</p> <p>Private Sector/DCCD</p> <p>Conservation District</p> <p>Conservation District</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>\$75,000 per year</p>	<p>DEP/NRCS/SCC/PDA</p> <p>DEP/NRCS/SCC/PDA</p> <p>DEP/NRCS/SCC/PDA</p> <p>DEP</p> <p>DEP/NRCS/SCC/PDA</p>

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
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	PSU AEC			5 – Student Internships to Support CAP Implementation	HU, PSU, HACC University or Other Students who live locally and attend other colleges	\$50,000 per year	TBD
1.9A	Water quality communication plan, leveraging existing documents and covering topics including hazard mitigation plan, MS4 municipalities, comprehensive plan and Act 167	Develop messages and audience; execute plan and distribute messaging through staff and partners Utilize the DPJM County Countywide Action Plan (arcgis.com) - ARC GIS website as a source of consistent communication	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	TCRPC			Website development and continued maintenance 1 – FTE Marketing and Outreach Coordinator 1 – FTE Clean Water Coordinator for Planning Commission	Tri-County Regional Planning Commission Planning Commission Planning Commission	\$10,000 per year \$130,000 per year \$130,000 per year	Administrative budget tag-along to project-related grant award NFWF DEP

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
1.9B	Utilize local arts and businesses to promote water quality messaging and general public education	Identify local businesses that support water initiatives or need clean water for their businesses to thrive Identify local artists who have a passion for water/environmental issues	Millworks, Paxton Creek Watershed & Education Association, Paxton Creek Cooperative (Capital Region Water, Susquehanna Township, Lower Paxton Township), CBF	Paxton Creek watershed?	2022 – coalition building, one event	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?							\$5,000	Project location and materials
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	District/NRCS/Private Sector Farm Visits Planning Commission 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.	DEP/NRCS/SCC/PDA NFWF DEP

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
1.10*	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	Planning Commission	\$130,000 per year	DEP
											1 – FTE Clean Water Coordinator for Conservation District	Conservation District	\$130,000 per year	DEP
Priority Initiative 2: Reporting and Tracking														
2.1*	Existing BMP cataloguing (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	Chesapeake Conservancy QAPP Varies by BMP	N/A N/A	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	Chesapeake Conservancy District/NRCS/Private Sector Farm Visits Local University Student or local student attending nearby university etc.	\$46,000 (2022 only) \$780,000 per year \$50,000 per year	DEP/EPA PDA/SCC/NRCS/DEP TBD

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
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 – cataloging 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	Chesapeake Conservancy DEP/SRBC Varies by BMP	N/A 	N/A 	Further GIS and data processing/method refinement 5 – Student Internships to Support CAP Implementation	Chesapeake Conservancy Local University Student or local student attending nearby university etc.	\$46,000 (2022 only) \$50,000 per year	DEP/EPA TBD
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	FieldDoc	N/A	N/A	Training 5 – Student Internships to Support CAP Implementation 3 – Municipal Planner	DEP Local University Student or local student attending nearby university etc. DCPC, Municipality, etc.	N/A \$50,000 per year \$390,000 per year	DEP TBD DEP

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
2.4*	<p>Implement a documentation program for commercial and homeowner applications in developed lands</p> <p>Support current legislation for fertilizer bill.</p>	<p>Support fertilizer legislation – where legislation requires reporting, be the data clearinghouse</p> <p>Legislation will support the implementation of Urban Nutrient Management – 1,000 acres</p>	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	TBD based on fertilizer legislation if passed	TBD based on fertilizer legislation if passed	1 – FTE Clean Water Coordinator for Planning Commission	Planning Commission	\$130,000 per year	DEP
												Urban Nutrient Management \$10 per acre → \$10,000	DEP/PDA	
2.5*	<p>Improve Agricultural BMP reporting utilizing PracticeKeeper, Capital RC&D Transect Survey, PSU Survey, Manure Transport Reporting and Remote Sensing</p>	<p>Increase reporting of agriculture plans into PracticeKeeper.</p> <p>Work with Capital RC&D to improve current transect survey routes to be more inclusive.</p> <p>Work with PSU to produce better response rate to the PSU survey for Dauphin County.</p> <p>Work with PDA/DEP to improve manure transport reporting.</p>	DEP, DCCD, NRCS, PDA, NRCS, Dauphin County Farm Bureau, Capital RC&D, Chesapeake Conservancy, PSU Survey, Manure Brokers	Countywide	2022-2025	<p>Private sector ag planners do not have access to PracticeKeeper. Ag planners do not have time to report into PK.</p> <p>Current Capital RC&D routes are not all inclusive and could be improved.</p> <p>Current response rates are low and miss a large demographic of Dauphin County farmers.</p> <p>Manure brokers are not required to report data annually. CAST data is not inclusive.</p>					5 – Summer interns for reporting and verification	Local University Student or local student attending nearby university etc.	\$50,000 – per year	DEP/PDA/ SCC
												See 3.5 for funding needs to improve cover crop reporting for Capital RC&D		

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
Priority Initiative 3: Achieve New Pollutant Reductions														
3.1a	Implement Paxton Creek Master Plan	Restoration includes naturalized channel, vegetated riparian zones, green space, large parks, multi-use trails	Capital Region Water, PennDOT, City of Harrisburg, PCWEA, HRA, USGS	North Paxton Creek Greenway, Paxton Creek Park, South Paxton Creek Greenway	2022 - 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	N/A	N/A	1 – FTE Clean Water Coordinator for Planning Commission	Planning Commission	\$130,000 per year	DEP
		1 – FTE Clean Water Coordinator for Conservation District									Conservation District	\$130,000 per year	DEP	
		N/A									N/A	\$60 - \$90 million dollar estimate	Army Corps, EPA – Chesapeake Bay Program, CWA Section 117(d), etc.	
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	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	N/A	N/A	1 – FTE Clean Water Coordinator for Planning Commission	Planning Commission	\$130,000 per year	DEP
		1 – FTE Clean Water Coordinator for Conservation District									Conservation District	\$130,000 per year	DEP	
		N/A									N/A	\$60 - \$90 million dollar estimate	Army Corps, EPA – Chesapeake Bay Program, CWA Section 117(d), etc.	

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
3.2a	Manada Creek Coldwater Conservation Plan	Prioritization of the stream channel for restoration projects, riparian restoration including buffers	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	DCCD	1 – FTE Clean Water Coordinator for Planning Commission	Planning Commission	\$130,000 per year	DEP
		1 – FTE Clean Water Coordinator for Conservation District									Conservation District	\$130,000 per year	DEP	
												\$1,000,000 for plan implementation and restoration prioritization	DEP, DCNR, PAFBC, PDA	
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	Planning Commission	\$130,000 per year	DEP
		1 – FTE Clean Water Coordinator for Conservation District									Conservation District	\$130,000 per year	DEP	
												\$1,000,000 for plan implementation and restoration prioritization	DEP, DCNR, PAFBC, PDA	

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
3.2c	Develop a Coldwater Conservation Plan for Spring Creek	Develop a Coldwater Conservation 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	Planning Commission	\$130,000 per year	DEP
											1 – FTE Clean Water Coordinator for Conservation District	Conservation District	\$130,000 per year	DEP
													\$150,000 for Coldwater Conservation plan development	DEP, PAFBC, DCNR

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
3.2d	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&S control, floodplain restoration, constructed wetlands and wet swales, bioswales, bioretention/rain gardens, and permeable pavement.	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	NFWF			\$14M (WIP update scope), \$54M overall watershed restoration	NRCS, DEP, NFWF, landowner cost share, USDA Farm Service Agency, US EPA

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
3.3*	Help farmers and operators to be in compliance with state and federal Conservation and Nutrient Management Plans	<p>Soil and Water Quality Conservation Plans (Ag E&S) 33,700 new acres</p> <p>Nutrient Management (Manure Management) 40,300 new acres of Core N, 14,400 new acres of Core P</p> <p>Work with ACT 38 operators (22), Preserved Farms (193), and certified organics to document plans required as part of the program</p>	4R Alliance, DCCD, Dauphin County Farm Bureau, NRCS, Private Sector Agriculture Farm Visits	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 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</p> <p>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>	Educational support	CBF/4R Alliance			6 – additional Ag Planners to work with farmers to develop required plans	District/NRCS/Private Sector Farm Visits	\$780,000 per year	DEP/NRCS/SCC/PDA
											Conservation Plans	\$15 per acre for a total cost of \$505,500	DEP/SCC/PDA/NRCS	
											Core N and Core P	\$15 per acre for a total cost of \$604,500	DEP/SCC/PDA/NRCS	

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
3.4	Advanced Nutrient Management (4R) Practice Education and Implementation	<p>Transition manure management plans to nutrient management plans and incentivize implementation</p> <p>Increase existing 4R practice N Rate by 1,700 acres, N Timing and Placement; P Timing, Rate and Placement by 1,000 acres.</p> <p>Explore the idea of increasing pre-sidedress nitrogen testing (PSNT) or Chlorophyll testing to District program participants</p>	4R Alliance, CBF, DCCD, Dauphin County Farm Bureau, NRCS, Private Sector Agriculture Farm Visits	Countywide AG Land	2022-2025	<p>Landowner interest, BMP verification (annual)</p> <p>Lack of Technical assistance to support agriculture planning and implementation</p> <p>Additional funding to support soil testing. Soil testing is key to meeting the recommendations of supplemental BMPs.</p> <p>Machine dependent for most farming operations</p> <p>Cost of fertilizer is self-regulating farmers to use less fertilizer; therefore, lower rates</p>	Educational support	CBF/4R Alliance			6 – additional Ag Planners to work with farmers to meet 4R standards	District/NRCS/Private Sector Farm Visits	\$780,000 per year	DEP/NRCS/SCC/PDA
													\$10 per acre of advanced nutrient management planning per type → total cost for all is \$67,000	DEP/PDA/SCC/NRCS

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
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 Implement tillage management and cover crops on an annual rate of 24,000 acres High Residue, 10,000 acres Conservation Tillage, 4,000 acres Low Residue, 6,000 acres of cover crops and 15,000 acres of cover crops with fall nutrients	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	Capital RC&D			6 – additional Ag Planners to transition farmers to high residue County DCCD – staff to administer the program Capital RC&D Transect Survey	District/NRCS/Private Sector Farm Visits Cover Crop Incentive Program Improved data reporting	\$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	DEP/NRCS/SCC/PDA PDA, SCC, Growing Greener, Pennsylvania Association of Conservation Districts (PACD) DEP

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
3.6	<p>Implement more pasture management BMPs</p> <p>Use Ag Land Preservation Goals to reach Pasture Management Goals</p>	<p>Off Stream Watering – 150 acres</p> <p>Forest buffers on fenced pasture corridor – 10 acres</p> <p>Grass buffers on fenced pasture corridor – 10 acres</p> <p>Land Retirement to Ag Open Space – 170 acres</p>	<p>DCCD, Dauphin County Farm Bureau, NRCS, Private Sector Agriculture Farm Visits, CBF</p>	<p>County ag lands – landowners who raise horses, dairy, beef and other pasture grazing animals</p>	2025	<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 cancelling NRCS contracts</p>	Landowner education	NRCS			<p>6 – additional Ag Planners to provide technical assistance and ag planning</p> <p>3 – additional FTE environmental technician/rapid delisting program management</p>	<p>District/NRCS/Private Sector Farm Visits</p> <p>Chesapeake Conservancy, CBF, etc.</p>	<p>\$780,000 per year</p> <p>\$390,000 per year</p> <p>Off stream Watering \$500 per acre → \$75K total</p> <p>FB Buffer W/ Exclusion \$10,500 per acre → \$105K total</p> <p>GB Buffer W/ Exclusion \$2,750 per acre → \$27.5K total</p> <p>Land Retirement \$500 per acre → \$85K total</p>	<p>DEP/NRCS/SCC/PDA</p> <p>DEP/NRCS/SCC/PDA/DCNR/NFWF/EPA</p> <p>DEP/NRCS/SCC/PDA/DCNR/NFWF/EPA</p>

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
3.7*	Riparian buffer and re-forestation BMPs	<p>363 riparian forest buffer acres, (353) acres lost since 2017 need reverified</p> <p>41 riparian grass buffer acres – (31) acres lost since 2017 need reverified</p> <p>29 acres – Agriculture Tree Planting</p> <p>12 acres – urban forest buffer</p> <p>Forest Conservation – 2,100 acres</p>	<p>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</p>	<p>Countywide</p> <p>Explore implementation at Ned Smith Center, Millersburg & Wiconisco park</p>	<p>2022 - 2023 – line up landowners for new acres, re-verify acres “lost” in reporting system</p> <p>2023-2025 – in the field 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>Lack of technical assistance to conduct landowner outreach, implementation and maintenance of proposed projects</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>Materials</p> <p>Mapping</p>	<p>DCCD (in-kind, annual tree sale efforts), CBF</p> <p>Chesapeake Conservancy</p>	<p>Budget available to be determined</p>	<p>CBF, NFWF, NFWS, NRCS – CREP, DCNR, C3RP, Alliance for the Bay, Green Ribbon Landscape, Audubon</p>	<p>6 – additional Ag Planners to provide technical assistance and ag planning</p> <p>3 – additional FTE environmental technician/rapid delisting program management</p>	<p>District/NRCS/Private Sector Farm Visits</p> <p>Chesapeake Conservancy, CBF, etc.</p>	<p>\$780,000 per year</p> <p>\$390,000 per year</p> <p>Forest Buffer \$10,500 per acre → \$325K</p> <p>Grass Buffer \$2,500 per acre → \$25K</p> <p>Tree/Forest Planting \$10,000 per acre → \$290K</p> <p>Forest Conservation \$2,000 per easement acre → \$4.2M</p>	<p>DEP/NRCS/SCC/PDA</p> <p>DEP/NRCS/SCC/PDA/DCNR</p> <p>DCNR, NFWF, PACD, TreeVitalize, DEP, Coldwater Heritage Partnership Implementation Grants, Landscape Scale Restoration (LSR) Grant Program – US Forest Service, Pennsylvania Habitat Stewardship Program, Alliance for the Bay, CBF, CC</p>

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
3.8	Wetland restoration implementation on marginal production ag land	20 acres of Wetland Restoration 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	1 DCCD staff person			3 – additional FTE environmental technician/rapid delisting program management 2 – stream biologist	Chesapeake Conservancy, CBF, etc. PAFBC, USGS, DCCD, etc.	\$390,000 per year \$280,000 per year Wetland Restoration \$30,000 per acre → \$600K	DEP/DCNR DEP/DCNR/PAFBC/ USGS DEP/DCNR/ USDA Conservation Reserve Program (CRP) or NRCS Wetlands Reserve Program (WRP)
3.9	Stream restoration	49,800 Linear feet (9 miles) Urban Stream Restoration 3,000 Linear feet Agriculture Stream Restoration 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	Chesapeake Conservancy and partners Trout Unlimited, Municipalities			Design, permit, construction services 3 – Municipal Engineers 3 – FTE Design, Engineer, Permit 2 – Stream biologist	Private sector, USFWS, TU Municipalities, Planning Commission, COG Private Sector/ DCCD PAFBC, USGS, DCCD, etc.	Assume urban \$900/LF - \$45M Assume rural \$400/LF - \$800K \$420,000 per year \$420,000 \$280,000 per year	Growing Greener, NFWF, DEP, DCNR TBD DEP/NRCS/ SCC/PDA DEP/DCNR/ EPA/USGS

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
3.10	Implement more barnyard runoff control/loafing lot management	<p>24 acres of barnyard runoff controls</p> <p>39 acres of agriculture drainage management</p>	DCCD, NRCS, Dauphin County Farm Bureau, Private Sector Ag Consultant	Countywide Farms	2022-2025	<p>Lack of Technical assistance to support agriculture planning and implementation.</p> <p>Lack of funding to cover engineering design.</p> <p>Increasing construction costs are cancelling NRCS contracts.</p>					<p>6 – additional Ag Planners to provide technical assistance and ag planning</p> <p>3 – FTE Design, Engineer, Permit</p> <p>3 – FTE Inspector Construction Services</p>	<p>District/NRCS/ Private Sector Farm Visits</p> <p>Private Sector/ DCCD</p> <p>Private Sector/ DCCD</p>	<p>\$780,000 per year</p> <p>\$420,000 per year</p> <p>\$315,000 per year</p> <p>Barnyard Runoff Control \$175K per project, assume 1 acre per project \$1.725M in total</p> <p>Agriculture Stormwater Management \$10K per acre → \$390K</p>	<p>DEP/NRCS/ SCC/PDA</p> <p>DEP/NRCS/ SCC/PDA</p> <p>DEP/NRCS/ SCC/PDA</p> <p>DEP/NRCS/ SCC/PDA</p> <p>DEP/NRCS/ SCC/PDA</p>

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
3.11	Animal waste management BMP implementation for livestock	2,000 AUs managed through new BMPs	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	DCCD Engineering Specialist/Re source Program Supervisor			6 – additional Ag Planners to provide technical assistance and ag planning 3 – FTE Design, Engineer, Permit 3 – FTE Inspector construction Services	District/NRCS/ Private Sector Farm Visits Private Sector/ DCCD Private Sector/ DCCD	\$780,000 per year \$420,000 per year \$315,000 per year	DEP/NRCS/ SCC/PDA DEP/NRCS/ SCC/PDA DEP/NRCS/ SCC/PDA DEP/NRCS/ SCC/PDA

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
3.12*	Urban Stormwater Management Non-Regulated Communities	Implement existing ordinances and Catalogue existing BMPs that fit into this category Runoff Reduction Performance Standard – 936 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	FieldDoc			5 Summer interns for reporting and verification 3 – Municipal Engineers 3 – municipal planner	Local University or local student attending nearby university etc. Municipalities, Planning Commission, Planning Commission, Municipality, etc.	\$50,000 per year \$420,000 per year \$390,000 per year Project budget: \$4M	DEP TBD DEP DEP Environmental Stewardship Fund

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
3.14	Conservation Landscaping/Turf to Meadow Conversion	Promote new program and enable one large tract landowners' participation 100 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	Alliance for the Bay (in-kind)			3 – FTE Municipal Planner 3 – additional FTE environmental technician	Planning Commission Chesapeake Conservancy, CBF, etc.	\$390,000 per year \$130,000 per year \$2,500 per acre meadow → \$250,000 budget	DEP/DCNR DEP/DCNR/SCC/PDA/NRCS DCNR/USFW/NFWF/DEP
3.15*	Continue dirt and gravel road program	14 miles overall restored through past projects and future projects	DCCD	Countywide	2025	Continue D&G Road program funding. Expand Dirt and Gravel Road Program to include farm lanes.	Education, technical assistance, project oversight	DCCD, Center for Dirt & Gravel Road Studies, SCC	\$1.68 Million	State Conservation Commission	1 – FTE Clean Water Coordinator for Conservation District	Conservation District	\$130,000 per year Dirt and Gravel Roads \$40 per foot → TBD	DEP/PDA/ SCC SCC
3.16*	Work with PennDOT and local municipalities to reduce frequency of mowing road ditches and along roadways	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.	Local 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 Planning Commission 1 – FTE Clean Water Coordinator for Conservation District	Planning Commission Conservation District	\$130,000 per year \$130,000 per year	DEP DEP/PDA/ SCC

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
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	HRG (CAP coordinator)			1 – FTE Conservation District Grant Manager	DCCD	\$130,000 per year	TBD
											1 – FTE Planning Commission Grant Manager	Planning Commission	\$130,000 per year	TBD
											2 – staff accountants	Planning Commission and District	\$140,000 per year	TBD

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
3.18	Partner with local environmental organizations and integrators performing conservation work	<p>Partner with The Hershey Company, Land O’ Lakes and PSU Extensions to build capacity, expand education and outreach and utilize resources.</p> <p>Work with PSU extension to secure long term funding for Master Watershed steward coordinator.</p> <p>Work with Audubon to leverage Green Ribbon Landscapes and partner on more plantings in urban areas.</p> <p>Work with integrators to ensure conservation practices are reported. Working to ensure farms have conservation plans, buffers, cover crops and no-till.</p>	The Hershey Company, Land O’ Lakes, PSU Extension and Master Watershed Stewards (14), PSU Master Watershed Stewards, Audubon, TNC, CBF, PennAg	Countywide	<p>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</p> <p>2023-2025 – evaluate opportunities</p>	<p>Funding to support ongoing PSU Extension support</p> <p>Reporting Conservation Practices installed with private integrator funding</p> <p>Support Ag Conservation Assistance Program (ACAP)</p>	CAP Coordinator	DEP			<p>PSU Extension Coordinator</p> <p>1 – FTE Clean Water Coordinator for Planning Commission</p>	<p>PSU Extension</p> <p>Planning Commission</p>	<p>\$10,000 per year</p> <p>\$130,000 per year</p>	<p>TBD</p> <p>DEP</p>

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
Priority Initiative 4: Research, Education, and Training														
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	ALLARM Monitoring groups	N/A	N/A	Volunteers for Water quality monitoring New monitoring equipment 3 – additional FTE environmental technician 2 – stream biologist/envir onmental scientist	Local environmental groups DCCD Chesapeake Conservancy, CBF, etc. PAFBC, USGS, DCCD, etc.	N/A \$10,000 \$130,000 per year \$280,000 per year	TBD ALLARM DEP/NRCS/ DCNR/PDA DEP/DCNR/PA FBC/ USGS
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 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	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 2021-2022	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/pres ence mapping Survey base mapping, soil sampling, and abbreviated wetland absence/pres ence mapping	Dauphin County Parks and Recreation Dauphin County Parks and Recreation	N/A \$147,000	N/A Growing Greener Grant	Bio- and geochemical study of nitrogen sequestered/p rocessed by wetland system Feasibility study, design, engineering, construction	USGS, USACE USACE	\$1M \$10M (estimated, to be confirmed upon potential USACE feasibility study)	USGS, EPA, other Federal grants USACE Section 206 program

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – 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)	Potential Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
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	National Trout Unlimited, ALLARM, TU – Doc Fritchey, Swatara/ Paxton Creek/ Tri-Valley/ Twin Valley/ Wiconisco/ Clarks Creek, Watershed Association, SRBC, Manada Conservancy, DCCD, DEP, All Things Swatty , Swatara Water Trail	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	County – department to be determined CAP Coordinator (HRG)	Limited match	Watershed group membership dues	1 – FTE Clean Water Coordinator for Planning Commission 1 – FTE Clean Water Coordinator for Conservation District	Planning Commission 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	DEP DEP/PDA/ SCC Include support budget in larger project budget
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	Susquehanna Water Gap/Capitol Area	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 TBD	Kittatinny coalition mini-grant program DCNR Conservation Landscape Program	

Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template

Each county-based local area will use this template to identify:

1. Inputs – These are both existing and needed resources, public and private, to implement the identified priority initiative. These include both technical and financial resources, such as personnel, supplies, equipment and funding.
2. Process – what is each partner able to do where and by when. These are the action items listed under each priority initiative.
3. Outputs and outcomes – both short and long-term. These are the priority initiatives identified by each county. The performance targets are the intermediate indicators that will measure progress.
4. Implementation challenges – any potential issues or roadblocks to implementation that could impede outputs and outcomes.

Asterisk: Place an asterisk next to the action number(s) for action items that appear in both the County Planning and Progress Template and the Programmatic Recommendations Template.

For each Priority Initiative or Program Element: Use the fields, as defined below, to identify the inputs and the process that will be followed to achieve each priority initiative. This is the “who, what, where, when and how” of the plan:

Description = What. This may include programs that address prevention, education, or as specific as planned BMP installations that will address the Priority Initiative. A programmatic or policy effort will require some ability to quantify the anticipated benefits which will allow calculation of the associated nutrient reductions.

Performance Target = How. This is an extension of the Description above. The Performance Target details the unique BMPs that will result from implementation of the Priority Initiative and serves as a benchmark to track progress in addressing the Priority Initiative. Performance Targets may be spread across multiple Responsible Parties, Geographies, and Timelines based on the specifics of the Initiative.

Responsible Party(ies) = Who. This is/are the key partner(s) who will implement the action items through outreach, assistance or funding, and who will be responsible for delivering the identified programs or practices.

Geographic Location = Where. This field identifies the geographic range of the planned implementation. This could extend to the entire county or down to a small watershed, based on the scale of the Priority Initiative, range of the Responsible Party, or planned funding/resources. *NOTE: Resource limitations alone should not limit potential implementation as additional funding may become available in the future.*

Expected Timeline = When. Provide the expected completion date for the planned activity. This should be a reasonable expectation, based on knowledge and experience, that will aid in tracking progress toward addressing the Priority Initiative.

Resources Available: Technical & Funding = This field will note technical and financial resources secured/available to implement the program (Description). This is the total of the resources identified in the County Resources Inventory Template below allocated to the priority initiative as a whole; or, if available, to each action.

Resources Needed: Technical & Funding = This field will note technical and financial resources needed/outstanding to implement the program (Description). This is the total of the additional resources projected and identified as needed in the County Resources Inventory Template below allocated to the priority initiative as a whole; or, if possible, to each action.

Potential Implementation Challenges/Issues = This field will note challenges and issues that may delay program implementation (Description).

GLOSSARY

Act 167 Plan. The Pennsylvania Stormwater Management Act of 1978, or Act 167, required that each county must prepare and adopt a watershed stormwater management plan for each watershed located in the county as designated by DEP, in consultation with the municipalities located within each watershed.

Ag E & S – Agricultural Erosion and Sedimentation Plan. Agricultural Erosion and Sedimentation plans document best management practices on crop and pasture fields to mitigate erosion and protect soil health. Any landowner that disturbs the soil (including no tillage) more than 5,000 square feet (~ ¹/₁₀ acre) must have a written Agricultural Erosion & Sediment Control Plan according to Pennsylvania State law, Chapter 102.

ALLARM – Alliance for Aquatic Resource Monitoring. ALLARM is a program of Dickinson College that enhances local action for the protection and restoration of waterways by empowering communities with scientific knowledge and tools.

AMD – Acid Mine Drainage. Outflow of acidic water from metal mines or coal mines.

BMP – Best Management Practice. Best management practices describe a type of water pollution control. Using agricultural BMPs can help to prevent or minimize the effects of nonpoint source pollution.

BRIC – Building Resilient and Infrastructure and Communities. The Building Resilient Infrastructure and Communities (BRIC) program is a new FEMA pre-disaster hazard mitigation program that replaces the existing Pre-Disaster Mitigation (PDM) program.

CAST - Chesapeake Assessment Scenario Tool. CAST is a web-based nitrogen, phosphorus and sediment load estimator tool that streamlines environmental planning.

CBF – Chesapeake Bay Foundation. The Chesapeake Bay Foundation is a non-profit organization devoted to the restoration and protection of the Chesapeake Bay in the United States.

DCCD – Dauphin County Conservation District. The Dauphin County Conservation District serves as the primary local source of assistance to all individuals and organizations who benefit from the county’s natural resources that we collectively strive to sustain and improve.

DCPC – Dauphin County Planning Commission. The Dauphin County Planning Commission makes recommendations and decisions to maintain and enhance the high quality of life for all residents, in accordance with the Pennsylvania Municipalities Planning Code, and other laws and regulations of the Commonwealth of Pennsylvania and the County of Centre.

CHMP – County Hazard Mitigation Plan. The Dauphin County Hazard Mitigation Plan was developed for the purpose of providing a blueprint for reducing property damage and saving lives from the effects of future natural and human-caused disasters in Dauphin County; Qualifying the County for pre-disaster and post-disaster grant funding; Complying with state and federal legislative requirements related to local hazard mitigation planning; Demonstrating a firm local commitment to hazard mitigation principles; and Improving community resiliency following a disaster event.

CRS – Community Rating System. Community Rating System is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum National Flood Insurance Plan requirements.

DCNR – Department of Conservation and Natural Resources. DCNR is responsible for maintaining and preserving state parks and forests; providing information on the state's natural resources; and working with communities to benefit local recreation and natural areas.

DEP – Department of Environmental Protection. The Department of Environmental Protection's mission is to protect Pennsylvania's air, land and water from pollution and to provide for the health and safety of its citizens through a cleaner environment.

EPA – Environmental Protection Agency. The Environmental Protection Agency is a United States federal government agency whose mission is to protect human and environmental health.

FEMA – Federal Emergency Management Agency. FEMA supports citizens and emergency personnel to build, sustain, and improve the nation's capability to prepare for, protect against, respond to, recover from, and mitigate all hazards.

FieldDoc – FieldDoc is a protected, online database that uses geographic information to generate baseline nutrient and sediment loading information and calculate load reductions for planned BMPs.

GIS – Geographic Information System. GIS is a computer system that analyzes and displays geographically referenced information.

HUC12 – Watershed. A local sub-watershed level delineation that captures tributary systems draining into the larger Chesapeake Bay watershed.

Legacy Sediment. Soil that was eroded from upland areas after the arrival of early settlers and over the centuries of intensive land uses, such as agriculture.

MMP – Manure Management Plan. Manure management plans document how a landowner plans to capture, store, treat, and utilize animal manures in an environmentally sustainable manner. Every landowner that has livestock or spreads manure on their property must have a written Manure Management Plan according to Pennsylvania State law, Chapter 91.

MS4 – Municipal Separate Storm Sewer System. A separate storm sewer system is a collection of structures, including retention basins, ditches, roadside inlets and underground pipes, designed to gather stormwater from built-up areas and discharge it, without treatment, into local streams and rivers.

NFWF – National Fish and Wildlife Foundation. NFWF works towards sustaining, restoring, and enhancing the nation's fish, wildlife, plants and habitats for current and future generations through innovative public and private partnerships, and by investing financial resources and intellectual capital into science-based programs designed to address conservation priorities and achieve measurable outcomes.

NMP – Act 38 Nutrient Management Plan. Nutrient management plans are required under Pennsylvania State law Act 38 which applies to operations with more than 2,000 pounds live animal weight per acre of pasture and crop fields.

NRCS – Natural Resource Conservation Service. NRCS's programs help farmers reduce soil erosion, enhance water supplies, improve water quality, increase wildlife habitat, and reduce damages caused by floods and other natural disasters.

PACD – Pennsylvania Association of Conservation Districts. Provides support for Pennsylvania’s conservation districts.

PEMA – Pennsylvania Emergency Management Agency. PEMA is tasked with the response to, preparedness for, recovery from, and the mitigation or prevention of disasters and other emergencies.

PracticeKeeper. PracticeKeeper is a protected, online database Used for reporting conservation plans, BMPs, E&S plans, nutrient management plans, watershed plans, complaints, DEP inspection reports and data exports to DEP.

QAPP – Quality Assurance Project Plan. A QA Project Plan documents the technical and quality aspects of a project, including project management, implementation and assessment. It specifies responsibilities, monitoring objectives, sampling design, sample collection methods, analytical methods, quality control, data management and data validation activities. It is required by EPA prior to any monitoring or data collection.

QAQC – Quality Assurance Quality Control. QA/QC is the combination of quality assurance, the process or set of processes used to measure and assure the quality of a product, and quality control, the process of ensuring products and services meet consumer expectations.

4R Nutrient Stewardship – Precision Conservation. Right fertilizer source at the Right rate, at the Right time and in the Right place for optimal crop management.

SRBC – Susquehanna River Basin Commission. SRBC’s mission is to enhance public welfare through comprehensive planning, water supply allocation, and management of the water resources of the Susquehanna River Basin.

SWM – Stormwater Management. Stormwater management is the effort to reduce runoff of rainwater or melted snow into streets, lawns and other sites and the improvement of water quality.

SWP – Source Water Protection. Source Water Protection is a planning process conducted by local water utilities, as well as regional or national government agencies, to protect drinking water sources from overuse and contamination.

USGS – United States Geological Survey. USGS provides science about the natural hazards that threaten lives and livelihoods; the water, energy, minerals, and other natural resources we rely on; the health of our ecosystems and environment; and the impacts of climate and land-use change.

Water Quality Credit Offset Pilot. For nitrogen, and potentially other pollutants, BMPs are more effective and cheaper to build in the agricultural landscape than the developed landscape. The goal of this pilot is to further explore the 1-mile radius beyond the MS4 Pollutant Reduction Plan planning area, and larger radii, where ag BMPs can be sited for MS4 credit under certain conditions.

WIP – Watershed Implementation Plan. Watershed Implementation Plans (WIPs) are the roadmap for how the Bay jurisdictions (including Pennsylvania), in partnership with federal and local governments, will achieve the Chesapeake Bay TMDL allocations.

WWTP – Wastewater Treatment Plant. Wastewater treatment plants process contaminants from wastewater or sewage and convert it into an effluent that can be returned to the water cycle with acceptable impact on the environment or reused for various purposes.