Phase 3 Watershed Implementation Plan (WIP) Annual Progress Update and Two-Year Milestones Report Northumberland 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 **Highlight changes for 2023-2024 milestone period**

Action # Green Yellow Red	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available		Resources Needed		Annual Progress to Date (2021 + 2022) *add new 2022 progress above the existing 2021 progress. Date each entry	Reason for Change to Action Item (2023-2024 milestone period)	
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Priority Initiative 1:													
1.1A Green	Implement County Comprehensive Plan policies and actions	Ensure that growth activities address existing water quality impairments through stormwater BMP implementation already required by local ordinances Preservation of environmentally sensitive, economically important and culturally important lands – **Conserve 1,800 acres of forest** **-Conserve 70 acres of wetland** Utilize conservation easements to protect land	NCPC, municipal engineers, NCCD, Municipalities, SEDA-COG, Keystone COG, ACT 167 Plan, Hazard Mitigation Plan, Greenway Plan	Multi-Municipality	Ongoing	Educating municipalities, Updating local plans and ordinances, Growth areas not consistent with Census Urbanized Areas Local governments willing to propose to ordinances to protect economically and environmentally friendly landscapes	Education, outreach	1 NCPC staff person	1 – FTE Clean Water Coordinator for Planning Commission	$130,000 per year $2,000 per acre of forest conserved through easement → Total $3.6M $2,000 per acre of wetland conserved through easement → Total $140K	2023- Twps. Either adopted or reverted back to the county. Yellow- the county developed and approved a ACT 167 plan. Twps. Must adopt the county plan or develop a more stringent plan.	2023- Twps. Either adopted or reverted back to the county.	2024 – Twps.either adopted or reverted back to the county.
1.1B* Green	Evaluate areas to establish riparian buffers to stabilize stream banks and limit encroachment	Identify landowners willing to participate and work with the partners to identify (5) buffer opportunities Leverage municipal parks along creeks for education, BMP work, habitat value, etc. Protect riparian greenways, promote establishment and maintenance of riparian forest buffers	CBF, Sunbury Chapter of TU, Chesapeake Conservancy, NRCS, NCCD, PAFBC, DCNR, North Central PA Conservancy, Merrill Linn Conservancy, Middle Susquehanna River Keepers,	Countywide	5-10 years	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.	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 $5,000 per acre of buffer installed →	2023- Two buffers will be installed this fall prior to 10/31 The District has been working with landowners to have a working list for buffer installations in the future. We have three planned for next year contingent on funding. This is yellow because we did not	2023- Two buffers will be installed this fall prior to 10/31	2024-Three buffers will be installed this fall.

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			Northumberland AOAA, Watershed groups LSCWA and SCRA, SEDA-COG, PennDOT, AG Land Preservation, Brush Valley Preservation Association, ACT 167 Plan, Greenway Plan			Buffer funding programs must include 5- to 10-year minimum maintenance plan, incentive money for landowners, along with volunteers to establish the buffer.				$1,010,000 total Maintenance equipment/ contract $50,000 per year for upkeep	anticipate the cost being so high.		
1.2 **Yellow**	Northumberland County Hazard Mitigation Plan	Improve flood prone areas with BMPs that also enhance water quality Develop a stream corridor restoration plan to protect the Susquehanna River Banks and Creek Enforce flood plain development regulations Promote open space preservation and purchase flood prone easements	NCPC, municipal engineers, NCCD, Municipalities, SEDA-COG, Keystone COG, County Comprehensive Plan, ACT 167 Plan	Countywide West Milton and Kelly Township	2022-2025	Funding, land for BMPs, willing landowners to implement projects Enforcement and compliance with local zoning ordinances			1 – FTE Clean Water Coordinator for Planning Commission	$130,000 per year $2,000 per acre of flood prone easement → total easement TBD $100,000 Stream Restoration Corridor Plan	The District is delegated under the Chapter 105 program to ensure no encroachment activities happens within the floodway.	2023- No Change	2024 – No change

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1.3* Green	Continue to Implement ACT 167 requirements, look to update requirements where opportunities exist to improve water quality benefits	Revise existing model stormwater ordinance where needed. Look to incentivize additional protections for streams Enforce urban forest and landscape management policies for stormwater management Encourage the development of a wellhead protection plan where appropriate	NCPC, municipal engineers, NCCD, Municipalities, SEDA-COG, Keystone COG, Hazard Mitigation Plan, Comprehensive Plan	Countywide	2022-2025	Should local involvement exist, funding to support coordination of ACT 167 requirements	Institutional knowledge		1 – FTE Clean Water Coordinator for Planning Commission	$130,000 per year	The County approved the ACT 167 Plan.	2023-the twps. Have adopted their own plan or reverted back to the county for review.	2024-the twps. Have adopted their own plan or reverted back to the county for review.

1.4A* **Green**	Continue to address and support existing Acid Mine Drainage (AMD) treatment systems and streams impaired by Acid Mine Drainage	Continue to provide funding to both active and passive treatment systems that are reducing the impacts of AMD impairments. If funding recedes water quality could degrade.	PA DEP Bureau of Mining, Conservation District, watershed groups, NRCS, Stream Restoration INC. Office of Surface Mining, AOAA	Countywide Shamokin Creek Mahantango Creek	Ongoing	Need to support legislation regarding the RECLAIM Act to support funding of new treatment systems. Lack of technical assistance to support restoration efforts	Monitoring		Support for monitoring 1 – FTE Clean Water Coordinator for Conservation District	$25,000 per year for water quality monitoring $75,000 per year for maintenance of restored AMD sites $130,000 per year	The District continues to work with watershed group to seek out grant opportunities to address AMD.	2023- No Change	2024- No Change

1.4B* **Green**	Identify new funding to support the implementation of Acid Mine Drainage treatment systems	Opportunities still exist to address AMD runoff into local streams. New passive and active treatment systems are needed to support water quality improvements. Work with DEP and other identified partners to find funding to support the implementation of new treatment systems	PA DEP Bureau of Mining, Conservation District, watershed groups, NRCS, Stream Restoration INC. Office of Surface Mining, AOAA	Countywide Shamokin Creek Mahantango Creek	2022-2025	Need to support legislation regarding the RECLAIM Act to support funding of new treatment systems. Lack of technical assistance to support restoration efforts Work with USGS to monitor Shamokin Creek prior to restoration efforts to display the nutrient benefits of AMD treatment. CAST acceptance of results to depict nutrient reductions associated with in stream AMD repair			Coordination of restoration Monitoring Shamokin Creek 1 – FTE Clean Water Coordinator for Conservation District	$10,000,000 $150,000 $130,000 per year	The District continues to work with watershed group to seek out grant opportunities to address AMD.	2023- a comprehensive water testing schedule is ongoing with SCRA through a grant. NCCD Watershed Specialist is mailing the samples.	2024- no changes

1.5 RED	Anthracite Outdoor Adventure Area (AOAA) Authority conservation measures	6,500 acres to conserve, implement BMPs, implement AMD and recreational activities – specific BMP targets to be identified at a later date	AAOA, NCCD, Keep PA Beautiful, PennDOT, Shingara Enterprises, SEDA-COG, COG Rail Authority, American Chestnut Foundation, Carbon Run Initiative, Shamokin Creek Restoration Alliances	AOAA	2022-2025	Funding and technical assistance to support restoration work Additional AMD needs funding to improve water quality			1 – FTE Clean Water Coordinator for Conservation District	$130,000 per year	**No progress has been made.**	2023-No Change	2024- No Change

1.6* **Yellow**	Implement County Farmland Preservation Program with farmland preservation program incentives enhancement	**Total farmland preservation 9,104 acres currently in preservation** **54 farms waiting to enter Ag Land Preservation – goal is to enroll as many as funding allows** Utilize conservation easements to protect and preserve agriculture land	4R Alliance, NCCD, Northumberland County Farm Bureau, NRCS, Private Sector Agriculture Farm Visits, FSA, Ag Land Preservation, Greenway Plan	Ag land use area that fits farmland preservation criteria	2022-2023 – explore incentive opportunities	Operator acceptance, additional resources for plan development to incentivize BMP installation as a farmland preservation goal, need funding to support farmers wanting to enter farmland preservation Preserved farms are required to have an NRCS Conservation Plan, work with farmers to ensure Conservation Plan is reported in PracticeKeeper. Recommend making this a program requirement statewide. Sharing NRCS data must comply with 1619 form.			Technical assistance for program management 1 – FTE Clean Water Coordinator for Conservation District	Assume $150,000 per farm → $8,100,000 $130,000 per year	The District continues to implement the program. The lack of funding hinders the amount of Agland that can be Preserved.	2023-No Change	2024 – No Change

1.7** **Green**	Establish funding/staff support to assist the Agricultural community (day to day support) 728 farms exist in Northumberland County Approximately 100 farms have their plans in Northumberland County	**The goal is to Complete 200 total farms by 2025** Work with private consultants to document plans. In order to communicate effectively with the farming community one on one farmer outreach must be conducted. 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. Work with agricultural community to implement BMPs consistent with E&S regulations	4R Alliance, NCCD, Northumberland County Farm Bureau, NRCS, Private Sector Agriculture Farm Visits, FSA, Ag Land Preservation, Northumberland County Greenways Plan	Countywide AG Land	2022-2025	Limited compliance activities by DEP. 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 them, 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.	Field verification, troubleshooting	N/A	6 – additional Ag Planners to provide technical assistance and ag planning 3 – FTE Design, Permit construction Services 3 – FTE Design, Permit construction Services 1 – FTE Clean Water Coordinator for Conservation District	$780,000 per year $420,000 per year $315,000 per year $130,000 per year	The district administers the Bay program in our county and works with farmers to ensure they have the proper plans they are required to have. Rachael began writing plans for farmers as needed. We hired another staff member fulltime to assist with the CAP implementation and coordinator position.	2023-We hired a fulltime CAP Coordinator/ACAP.	2024 – No Change

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1.8 Yellow	Bloomsburg, Susquehanna, and Bucknell University Partnership - Implementation	Develop undergraduate and graduate students so that they can effectively engage in landowner outreach during implementation years.	Bloomsburg University, Susquehanna University, Bucknell University	319 Priority Watershed Riparian properties Preserved farms Priority Corridor Watersheds – Warrior Run, Mahantango, Shamokin	2022-2025	Continued undergraduate/graduate engagement as students graduate through program, implementation funding Lack of technical assistance professionals to mentor students and develop workforce development. Lack of competitive paying job opportunities that ensure long term sustainable for recently graduated students	Outreach boots on the ground	N/A	5 – Student Internships to Support CAP Implementation	$50,000 See 3.3 for funding needs on plan development and reporting	The district had one intern during the summer of 2022.	2023- we hired our intern in a fulltime position and did not receive and additional intern this year.	2024 – the district had two interns during the summer of 2024.

1.9A **Green**	Water quality communication plan, leveraging existing documents and covering topics including Comprehensive Plan, Greenway, Plan, ACT 167 Plan, Hazard Mitigation Plan, Watershed Implementation Plans	Develop messages and audience; execute plan and distribute messaging through staff and partners	CBF, Sunbury Chapter of TU, Chesapeake Conservancy, NRCS, NCCD, NCPC PAFBC, DCNR, North Central PA Conservancy, Merrill Linn Conservancy, Middle Susquehanna River Keepers, Northumberland AOAA, Watershed groups LSCWA and SCRA, Universities, Other Recreational groups, Universities, etc.	Countywide	2022 – develop local content, timing, identify responsible staff	Simplifying the resources that are available	Website Development	N/A	Website development and continued maintenance 1 – FTE Marketing and Outreach Coordinator 1 – FTE Clean Water Coordinator for Planning Commission	$30,000 per year $130,000 per year $130,000 per year	The district has been collaborating with landowners to develop stream restoration plans for future stream projects. These efforts support our WIP.	2023-No Change	2024- No Change

1.9B **Green**	Agricultural Communication Strategy	One-on-one farm outreach is the best way to communicate with farmers in addition to reporting practices. Work to develop a plan to complete one on one farm visits. Work to develop a communication plan to engage integrators. Partner with external ag partners to present CAP goals at meeting. Utilize Farm Bureau Newsletters for announcements	CD, County Farm Bureau, Integrators, Ag Land Preservation, PSU Extension, NRCS	Countywide	2022-2025	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 is covered through other funding requests.	District staff has been going on farm visits for inspections and BMP verification.	2023- No Change	2024 – district staff have Continued to go on farm Visits for inspections and Held a farmer field day to Provide information on Programs.
Priority Initiative 2:													

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2.1* Yellow	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, wet ponds and wetlands, fencing, cover crop and tillage management	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)	Lead - Chesapeake Conservancy Stakeholder peer review – Bloomsburg University, 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 to streamline the process, utilize the approach to catalogue existing BMPs and do on the ground verification where required for reporting purposes, this is an accelerated BMP catch up approach while we continue to provide support to farmers on planning and BMP installs, reduce the amount of interruption of government entities to compliant farm operations	Precision Conservation Tools General methodology outline BMP field backcheck	N/A	Further GIS and data processing/method refinement 5 – Student Internships to Support CAP Implementation	$46,000 (2022 only) $50,000	The district began the process but it has been limited due to the amount of staff available.	2023- Staff worked on this early in 2023 but we had a large staff turnover this spring and are currently getting staff up to speed.	2024- the district began The process but it Has been limited due to Staff availability.

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2.2* RED	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 – Bloomsburg University, USGS, Farm Bureau, PDA	Countywide	2022 – cataloguing 2023 – batch upload processing and field views 2024 – 2025 – implementation focus	Different data set scales/ precision	Precision Conservation Tools Batch upload processing BMP field backcheck	N/A	Further GIS and data processing/method refinement 5 – Student Internships to Support CAP Implementation	$44,000 (2022 only) $50,000 per year	No progress has been made.	2023- No Change	2024- No Change

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2.3* RED	Develop a local system to capture data collection on urban structural and non-structural practices	Add urban BMPs to CAST/FieldDoc so that as land use data sets are updated, there are accompanying BMPs Use Chapter 102 Permit Close Milestone to report BMPs	Municipal engineers, Chesapeake Conservancy, Keystone Council of Governments	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	Reporting platform	N/A	Training 5 – Student Internships to Support CAP Implementation 1 – municipal planner	N/A $50,000 per year $130,000 per year	No progress has been made.	2023- No Change	2024 – No Change

2.4* **RED**	Implement a documentation program for commercial and homeowner nutrient applications in developed lands Support current legislation for a fertilizer bill.	Support fertilizer legislation – where legislation requires reporting Legislation will support the implementation of **Urban Nutrient Management – 2,000 acres.**	PSU Extension	Countywide	2022	Education of responsible parties, receiving timely information, training on reporting system, will need direction from State on what's expected and any reporting system that's developed, Counties aren't equipped with technology or field experience to manage this initiative Fertilizer Legislation has failed to pass congress in the last two years.	TBD based on fertilizer legislation, if passed	TBD based on fertilizer legislation if passed	1 – FTE Clean Water Coordinator for Planning Commission	$130,000 per year Urban Nutrient Management $10 per acre → $20,000	No progress has been made.	2023- No Change	2024- No Change

2.5* **Green**	Improve Agricultural BMP reporting utilizing PracticeKeeper, Capital RC&D Transect Survey, PSU Survey, Manure Transport Reporting and Remote Sensing	**Increase reporting of agriculture plans (30 per year) 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 Northumberland County Work with PDA/DEP to improve manure transport reporting	DEP, NCCD, NRCS, PDA, NRCS, Northumberland 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 Northumberland County farmers. Manure brokers are not required to report data annually. Data is not inclusive.			1 – FTE Clean Water Coordinator for Conservation District 5 – Summer interns for reporting and verification	$130,000 per year $50,000 – paid internships See 3.5 for funding needs to improve cover crop reporting for capital RC&D	The district participated in the transect Survey in the spring and fall.	2023- No Change	2024- No change
2.6* **RED**	Standardized Reporting for Dairy Precision Feeding	County would like to utilize the dairy precision feeding BMP. However, current reporting guidelines do not allow for clear reporting standards on feed reduction amounts, how to report, and who is qualified to report.	Chesapeake Bay Program, Penn State Extension, Dairy co-ops	Countywide	2022	It is recommended that MUN be an acceptable standard for reporting dairy precision feeding. Guidelines need to be posted on acceptable MUN rates and work with dairy	N/A	N/A	Reporting protocol	N/A	No progress has been made.	2023- No Change	2024- No change

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		-1,000 animal units per year for dairy precision feeding				integrators to receive MUN data to report to DEP.							

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Priority Initiative 3: Achieve New Pollutant Reductions													

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3.1 Green	Implementation of the Warrior Run Watershed 319 Plan	Conduct farm visits, windshield surveys, GIS Studies	Bloomsburg University, NCCD, other partners to be identified	Warrior Run Watershed	2021-2025	Funding, landowner interest in BMPs, implementation partner coordination Reverification of existing farm BMPs			1 – New Environmental Specialist	$68,000.00 $1,000,000 to support implementation of Warriors Run 319	NRCS has been working in watershed.	2023- No Change	2024- No Change
3.2 Yellow	Accelerated Implementation of Rapid Delisting Catchment Strategy through the Precision Conservation Partnership	Would like to partner in the future with Chesapeake Conservancy to explore rapid delisting approach	Chesapeake Conservancy, NCCD and Precision Conservation Partnership	TBD with input from Chesapeake Conservancy	2022-2025	Gaining landowner interest, design/permit/construction schedules, dedicated funding to support BMP implementation, Lack of	Program management and GIS Landowner outreach		3 – additional FTE environmental technician	$390,000 per year $100,000 dollars to complete rapid delisting program management per	The district has been working to get buffers installed and stream project completed. It is anything but “rapid”.	2023- No Change	2024- No change

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			Stakeholders			technical assistance and engineering staff to support implementation				year → total cost $500,000			
3.3* Green	Help farmers and operators to be in compliance with state and federal Conservation and Nutrient Management Plans	**Soil and Water Quality Conservation Plans (AG E&S) 25,000 new acres** **Nutrient Management (Manure Management) 31,000 new acres Core N, 17,500 new acres Core P**	4R Alliance, NCCD, Northumberland County Farm Bureau, NRCS, Private Sector Agriculture Farm	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	Educational support	CBF grant	Cost share support for equipment/ maintenance/ staff 6 – additional Ag Planners to work	$150,000 cost share budget per year $780,000 per year $15 per acre for a total cost of $375,000	The district has been collaborating with farmers to develop MMP and AG E&S plans. We are not able to work with ACT 38		

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		Work with ACT 38 operators, Preserved Farms, and certified organics to document plans already required. State agencies must work with integrators to ensure they are requiring compliance by farmers. Some integrators require compliance, but not all, great	Visits, FSA, Ag Land Preservation			assistance to support agriculture planning and implementation, one on one farm outreach is best way to capture existing plans. Act 38 and Preserved Farm programs are not required to enter plans in PK, Recommendations to require all programs to enter plans into PK			with farmers	$15 per acre for a total cost of $465,000	operators per SCC.		

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		way to communicate				with farmers as well.							
3.4 RED	Advanced Nutrient Management (4R) Practice Education and Implementation	Transition manure management plans to nutrient management plans and incentivize implementation **Increase existing 4R practice (N/P Rate by 2,300 acres, N/P Timing by 2,300 acres and N/P Placement by 2,300 acres)** Explore the idea of increasing PSNT or	4R Alliance, NCCD, Northumberland County Farm Bureau, NRCS, Private Sector Agriculture Farm Visits, FSA, Ag Land Preservation	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	Educational support	CBF grant	6 – additional Ag Planners to work with farmers to meet 4R standards	$780,000 per year See 3.3 for cost share budget for equipment rentals. $10 per acre of advanced nutrient management planning per type → total cost for all is $138,000	No progress has been made.	2023- No Change	2024- No Change

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							Technical	**Financial**	**Technical**	**Financial**			
		Chlorophyl testing to district program participants				most farming operations Cost of fertilizer is self-regulating farmers to use less fertilizer; therefore, lower rates result when PSNTs are done at the beginning of the growing season.							

3.5* **Green**	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 58,000 acres High Residue, 7,000 acres Conservation Tillage, 4,000 acres Low Residue, 18,000 acres of cover crops and 10,000 acres of cover crops with fall nutrients**	NCCD, Northumberland County Farm Bureau, NRCS, Private Sector Agriculture Farm Visits, FSA, Ag Land Preservation	Countywide Ag Land	2022 – investigation 2023 – next steps	Capacity to manage the program, landowner interest Lack of technical assistance and farm planners to work with farmers to transition to High Residue Tillage Current verification methods do not accurately capture implemented amounts – Capital RC&D survey needs revised Farmers are harvesting cover crops for forage, need accurate efficiency crediting for commodity cover crops	Transect survey Landowner education Existing No-Till farm equipment for Rent – no longer rents Cover Crop Incentive Program	$73,749 in 2019	6 – additional Ag Planners to transition farmers to high residue County Conservation District – staff to administer the program No-till drill rental program	$780,000 per yea $90 per acre traditional per year → $1.62M for a 5 year total of $8.1M (incentive payment, administration, capital RC&D reporting) $50 per acre fall nutrients per year → $500,000 for 5-year total of $2.5M $150,000 for drill and maintenance, storage, admin	The district has a cover crop program to fund $65 per acre for multi-species cover crop.	2023- we have more acres enrolled and will be funding some of those through the new ACAP Funds.	2024- No changes

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3.6* Green	Implement more pasture management BMPs	**Prescribed grazing – 800 acres** **Pasture Alternative Watering – 150 acres** **Grass buffers on fenced pasture corridor – 220 acres** **Forest buffers on fenced pasture corridor – 10 acres** **Land Retirement to Ag Open Space – 205 acres**	NCCD, Northumberland County Farm Bureau, NRCS, Private Sector Agriculture Farm Visits, FSA, Ag Land Preservation Chesapeake Bay Foundation, Chesapeake Conservancy	Countywide ag lands – landowners who raise horses, dairy, beef and other pasture grazing animals	2022-2025	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 resulting in canceled NRCS	Landowner education	CBF grant	6 – additional Ag Planners to provide technical assistance and ag planning 3 – additional FTE environmental technician	$780,000 per year $390,000 per year Prescribed grazing $540 per acre → $432,000 total Off stream watering $500 per acre → $75,000 total Land Retirement $500 per acre → $102,500 total FB Buffer W/ Exclusion $10,500 per	Byerly Ag BMP Project implements rotational grazing, a watering system, stream exclusion of livestock, installation of buffers, and environmentally sensitive area exclusion.	2023- we awarded 4 BMP applications for roofed HUA and 1-Buffer through ACAP.	2024- No change. Now that ACAP Funding will be Continued, new Projects will be in The works.

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						contracts by landowners.				acre → $105K total GB Buffer W/ Exclusion $2,750 per acre → $605K total			

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3.7* Yellow	Riparian buffer and re-forestation BMPs	**410 riparian forest buffer acres**; Need to recredit additional acres lost since 2010 **62 riparian grass buffer acres**; Need to recredit additional acres lost since 2010 **40 acres – Agriculture Tree Planting** **80 acres – urban forest buffer** **2 acres – urban tree canopy** **120 acres – urban forest planting** **500 acres – forest harvesting practices**	CBF, Sunbury Chapter of TU, Chesapeake Conservancy, NRCS, NCCD, PAFBC, DCNR, North Central PA Conservancy, Merrill Linn Conservancy, Middle Susquehanna River Keepers, Northumberland AOAA, Watershed groups LSCWA and SCRA, Universities, Other Recreational groups, DCNR, DEP BAMR	Countywide	2022 – line up landowners 2023-2025 – 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 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	$780,000 per year $390,000 per year Forest Buffer $5,000 per acre → $250K Maintenance equipment/ contract $490K Grass Buffer $2,500 per acre → $100K Tree/Forest Planting $10,000 per	The district received bids for installation of buffers. These bids exceeded the amount of money we are able to spend in 2022. They are on track if funded in 2023.	2023- two buffers will be funded through the CAP this fall. We have one additional buffer to fund through ACAP for 2024. We have additional CAP fund needs for buffers. We will be planting trees at our new office location through the keystone 10M tree program.	2024 – three buffers Will be funded Through CAP this Fall. The district Also has one Additional buffer through ACAP.

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										acre → $1.2M Forest Harvesting $60 per acre → $30K total			

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3.8 Yellow	Wetland restoration implementation on marginal production ag land	**82 acres of Wetland Restoration** Identify 1 large property owner from University of Vermont restorable wetland layer to install a wetland	CBF, Sunbury Chapter of TU, Chesapeake Conservancy, NRCS, NCCD, PAFBC, DCNR, North Central PA Conservancy, Merrill Linn Conservancy, Middle Susquehanna River Keepers, Northumberland AOAA, Watershed groups LSCWA and SCRA,	Countywide	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 Lead time it takes to secure projects can take years	Landowner outreach		3 – additional FTE environmental technician 2 – stream biologist	$390,000 per year $280,000 Wetland Restoration $30,000 per acre → $2.46M	Wetlands have been installed though a grant Montour county received in the northern end of Northumberland county.	2023- no additional wetlands have been planned.	2024- No Change

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3.9 **Green**	Stream Restoration (Urban and Agriculture)	**10,000 Linear feet (~2 miles) Urban Stream Restoration** **8,000 Linear feet (~1.5 mile) Agriculture Stream Restoration**	CBF, Sunbury Chapter of TU, Chesapeake Conservancy, NRCS, NCCD, PAFBC, DCNR, North Central PA Conservancy, Merrill Linn Conservancy, Middle Susquehanna River Keepers, Northumberland AOAA, Watershed groups LSCWA and SCRA,	Rapid delisting areas top priority & Countywide	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	Design/GP-1 permit		Design, permit, construction services 2 – Municipal Engineers 3 – FTE Design, Permit construction Services 2 – stream biologist	Assume $900/LF - $9.0M – Urban Assume $400/LF - $3.2M Agriculture $280,000 per year $420,000 $280,000	The district continues to install stream restoration projects in the county through the NPC partnership.	2023- Additional stream projects were completed.	2024- Additional Stream projects Have been Completed in 2024.

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3.10 **Green**	Implement more barnyard runoff control/loafing lot management	**49 acres of barnyard runoff controls** **72 acres of agriculture drainage management**	NCCD, Northumberland County Farm Bureau, NRCS, Private Sector Agriculture Farm Visits, FSA, Ag Land Preservation	Countywide Farms	2022-2025	Landowner buy-in and project development/funding Lack of Technical assistance to support agriculture planning and implementation Increasing construction costs are cancelling NRCS contracts Lack of funding to cover engineering design			6 – additional Ag Planners to provide technical assistance and ag planning 3 – FTE Design, Permit construction Services 3 – FTE Design, Permit construction Services	$780,000 per year $420,000 per year $315,000 per year Barnyard Runoff Control $175,000 per project, assume 1 acre per project $5.6M in total Agriculture Stormwater Management $10,000 per project, assume 1 acre per project $720K in total	The district has been implementing projects in the warrior run watershed through the NPC partnership. The district also has a project lined up for plum creek watershed for barnyard runoff BMP's.	2023- The GG Grant project "ROSS" is almost complete. We approved 4 additional BMP Projects Through ACAP.	2024 – No changes. New projects In the works Now that ACAP Funding will Continue.

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3.11 **Green**	Animal Waste Storage Systems	**5,000 new AUs of livestock waste management systems** **10,000 new AUs of poultry waste management systems**	NCCD, Northumberland County Farm Bureau, NRCS, Private Sector Agriculture Farm Visits, FSA, Ag Land Preservation	Livestock & Poultry farms	2022-2025	Current capacity through NRCS and NCCD implements about 5 farms projects per year; 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 planning, I&Es, and engineering design	Project implementation – 5 farms a year		6 – additional Ag Planners to provide technical assistance and ag planning 3 – FTE Design, Permit construction Services 3 – FTE Design, Permit 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 $26.25M in total	The district requested CAP funding but did not receive funding for a poultry storage. NRCS has funding to complete the project.	2023- we will be funding 4 storages with Roofed HUA in 2024 through ACAP.	2024- No changes, ACAP projects are Being completed & Are on schedule to Be completed By end of 2024.

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3.12* **Yellow**	Urban Stormwater Management Non-Regulated Communities	Implement existing ordinances at local municipal level **Stormwater Treatment Performance Standard – 16 acres treated** **Stormwater Treatment Performance Standard – 273 acres treated** **Advanced Grey Infrastructure – 190 acres treated** **Dry Detention Ponds – 65 acres treated**	NCPC, NCCD, developing municipalities, Keystone Council of Governments, Sunbury Municipal Authority, SEDA-COG, DCED	County-wide	Ongoing 2022-2025	Coordination/ training for municipal staff, FieldDoc batch opportunity, non-MS4 engagement (what's in it for them?), very little reporting in the non-ms4 sector, must encourage more reporting Catalogue existing BMPs that fit into this category and newly built ones	Reporting platform		5 – Summer interns for reporting and verification 2 – Municipal Engineers 1 – municipal planner	$50,000 – paid internships $280,000 per year $130,000 per year Stormwater Treatment $1,815/acre → $29,040 Runoff Reduction $4,162/acre → $1.136M Advanced Grey Infrastructure $132/acre → $25,080 Dry Detention Ponds $7,917/acre → $511,000 Infiltration Practices	The district administers the 102/105 program.	2023- No Change beside adding new staff.	2024 – No Change

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		Infiltration Practices – 58 acres treated **Impervious Surface reduction – 1 acre**								$7,917/acre → $460,000 Impervious Surface reduction $57,460/acre → $57,460			

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3.13 Red	Conservation Landscaping/Turf to Meadow Conversion	Promote new program and enable one large tract landowners' participation **120 new acres of Conservation Landscaping**	NCPC, NCCD, developing municipalities, Keystone Council of Governments, Sunbury Municipal Authority, SEDA-COG, Watershed organizations	Developed areas in County municipalities	2022 - 2025	Landowner education and acceptance Existing mowing ordinances and weed ordinances can be a challenge to implementation	Planting plan assistance		1 – FTE Municipal Planner 3 – additional FTE environmental technician	$130,000 per year $130,000 per year $2,500 per acre meadow → $300,000 budget for all	No progress has been made.	2023-No Change	2024- No change

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3.14* **Green**	Continue dirt and gravel road program	**34 miles overall restored through past projects and future projects** **5,000 new linear feet of D&G Road improvements**	NCCD	Countywide	2025	Continue D&G Road program funding Expand Dirt and Gravel Road Program to include farm lanes	Education, technical assistance, project oversight	$2.4 million since 1998	1 – FTE Clean Water Coordinator for Conservation District	$130,000 per year Dirt and Gravel Roads $40 per foot→ $200,000	The district administers this program and has project funded and projects being installed.	2023- No Change	2024 – No Change

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3.15* **Red**	Work with PennDOT and local municipalities to reduce frequency of mowing road ditches and along roadways	Educate local municipal leaders and PennDOT 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	$130,000 per year $130,000 per year	No progress has been made.	2023- no change	2024 – no change

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3.16 **Green**	Private Funding & Grant Administration	Identify some private funding sources that may be able to supplement public funding sources/existing sources utilized for stakeholders, continue to work with partners to facilitate additional funding	Existing project implementer networks	Countywide	2022-2023	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	$130,000 $130,000 $140,000 per year	The district has been completing admin on grants and working with the watershed group that seeks private funding.	2023-no change	2024 – no change

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Priority Initiative 4: Research, Education, and Training													
4.1* Yellow	Develop new water quality monitoring data into Chesapeake Data Explorer/ Chesapeake Monitoring Cooperative database	Location identification, financial and volunteer budget analysis, and initial landowner communication by end of 2021 CAST-21 acknowledgement of our data Map existing monitoring locations Expand monitoring based on Corridors of Opportunity area monitoring gaps	ALLARM, Bloomsburg University, Watershed Associations	To be determined	2022	Land access, expanded volunteer need, equipment/materials budget, Consistent data collection, QAQC continuation Data precision, QAQC, opportunity to educate landowners about local stream health and what they can do about it Consideration to expand the Keystone Water Resources Center			Volunteers for Water quality monitoring New monitoring equipment 3 – additional FTE environmental technician 2 – stream biologist	N/A $10,000 $130,000 per year $280,000 per year	The district purchased a water quality monitoring probe and has been collecting data. The district is not yet audited to submit the data for the model.	2023-no change	2024 – no Change

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4.2 **Green**	Enhance the capacity of local watershed associations for short-term success and long-term sustainability	Develop new or reestablish existing watershed associations to support with CAP implementation. Watershed organizations can support with outreach, engagement, new project identification and implementation Encourage project implementation on the watershed level so that these partners enhance their relationships with non-peers with a co-benefit of diversifying their membership	Watershed Associations, Trout Unlimited, National Trout Unlimited, Rivers Keeper, Shamokin Creek Restoration Alliance, Little Shamokin Creek Watershed Association, AOAA	Countywide	Ongoing	Willing volunteers and leaders to establish and run watershed organizations to be successful and support with implementation	Social media shares Project development support		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,	The district has been continuing to work with watershed groups in our county.	2023- new staff have been involved with the groups. No change.	2024- No Change

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							Technical	Financial	Technical	Financial			
										sticker s) for memb ers → $15,00 0 total			

Phase 3 Watershed Implementation Plan (WIP) Progress and Milestones 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 though 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).

Progress to Date = This field will be used for annual reporting on priority initiatives. This is a description of the action(s) your county took toward achieving the priority initiative. Examples include education and outreach, programmatic changes, etc. For numeric priority initiatives your county can retrieve those numbers directly from *FieldDoc* or put in the column "See *FieldDoc*."

Reason for Change to Action Item = This field will be used for two-year milestone updates. This field allows for your county to adjust your original targets and goals based on progress to date. Your county may adjust goals and targets up or down based on your progress to date. This field requires a reason as to the reason of change, whether up or down.