

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

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

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
Priority Initiative 1: County Programmatic Initiatives														
1.1A	Implement County Comprehensive Plan policies and actions	Development directed to established growth areas; limited development and protection of natural resources in established rural areas Develop a process to calibrate the land use changes on the landscape to long-term land use change prediction in CAST Catalogue annual ordinance updates Catalogue actions that occur at municipal level	CCPC, CCPD, municipalities	Cumberland County	Ongoing	Need to level the municipal knowledge base on the interplay between land use and water quality, updating local plans and ordinances, growth areas not consistent with Census Urbanized Areas and their contributing storm sewersheds, limited resources to address diverse needs from east to west	Education, outreach GIS analysis for long-term land use prediction Ordinance and action cataloguing	1 CCPD staff person 1 County GIS staff person 1 CCPD staff person	N/A	N/A	Local planning coordination	4 Municipal staff (two in east, two in west), planning commissions	N/A	N/A
1.1B	Implement Cumberland Plans Program (CPP)	Countywide municipal comp plan and ordinance conformance with 2017 comp plan vision Encourage municipalities to review their ordinances through this program to address topics such as resource overlay districts, required parking reductions, climate mitigation, warehouse landscaping and lawn reduction	CCPC, CCPD, municipalities	Cumberland County	Ongoing	Municipal investment in reviewing/updating comp plans and ordinances	Education, outreach, ordinance review, comp plan review	1 CCPD staff person	\$100k (county grant 50%, municipal 50% match)	CPP	Local planning coordination	4 Municipal staff (two in east, two in west), planning commissions	N/A	N/A

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

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

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
1.1C	Model ordinances (SWM)	Ag E&S/NM plan local requirement (plans need to exist, local muni doesn't review) – trigger mechanism (building permit); collect by muni, pass onto CD for input into Practice Keeper – stormwater permits for ag engineers – boilerplate BMP design options	CCPD, CCCD, municipalities	Start with select municipalities where stormwater fees exist (Monroe Twp, Silver Spring Twp, Upper/Lower Allen Twp)	Ongoing	Municipalities understanding the value of these actions, provide support on data sharing to keep the paperwork burden low, opportunity reduce review time if boilerplate BMP designs are widely adopted by practitioners	Receive plans if submitted through SBD/LD process	1 CCPD staff person	N/A	N/A	Plan review capacity	1 Additional Bay Technician	\$100,000 per year	Increased Conservation District budget
											Practice Keeper data input/management	1 CCCD staff person	\$60,000 per year	
											Building Permit Approval Process Update/Training	1 staff person per municipality	Variable based on municipalities willing to participate and whether or not it can be incorporated into existing job description	
											Boilerplate BMP design development	Consultant		
1.2A	Implement County Farmland Preservation Program	Total preservation farm goal 30,000 acres by 2030 900 ac/year to reach commissioners' goal	CCPD, PDA, municipalities	Ag land use area that fits farmland preservation criteria	2020-2025	Operator/landowner acceptance, additional staff capacity	Overall program management	1 CCPD staff person		Cumberland County	Program management support	1 CCPD administrative/outreach person		Cumberland County
							Easement purchase	1 CCPD staff person	\$750,000 PER YEAR	Cumberland County	Easement purchase	1 CCPD administrative/outreach person	\$2,250,000 PER YEAR (PRESERVATION) + \$60,000 per year for staff	PDA

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

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

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
1.2B	Implement County Farmland Preservation WQ Project Shovel Readiness	Hire a shared contract employee with NRCS (soil conservationist) to perform planning activities on preserved farms that comply with NRCS standards Pre-inspection form data improvements	CCPD, NRCS	Countywide	Annual contract (Oct 1 – Sept 30)	50% match to NRCS contribution, training, onboarding time, planner certification	Staff training	NRCS	N/A	N/A	N/A	N/A	\$20,000 PER YEAR \$20,000 PER YEAR	NFWF, Growing Greener NRCS
1.2C	Farmland preservation program incentives enhancement	Increase scoring criteria for preserved farm candidates that implement WQ BMPs Include preserved farm plans and BMPs in PracticeKeeper → ~190 farms Explore prioritization of those farms on the preservation waiting list that need BMPs and are willing to implement them if proceeds above and beyond land value are provided; include research on supplemental BMP funding sources with preservation priority.	CCPD, PDA, Agricultural Land Preservation Board, LFT	Countywide	2021	O&M partnership for buffers, ag plans, BMP verification, provide more incentive based on the implementation of BMPs on site (beyond baseline compliance), would be a means of getting farms preserved with all the required BMPs in place simultaneously.	Guidelines update recommendation Priority recommendations, easement revision recommendations, supplemental BMP funding research	Ag Land Preservation Board 1 CCPD staff, Lancaster Farmland Trust	N/A	N/A	Guideline updates Practice Keeper data input/management Legal support	PDA 1 CCCD staff person Land use attorney consultant	Assume \$50,000 per farm \$60,000 per year Assume \$10,000 budget	CEG, NFWF, GG Increased Conservation District budget American Farmland Trust, PDA

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

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

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
1.2D	Implement Land Partnerships Grant Program – scope = farmland preservation, water resource management, parks, trails and greenways	Implement Cumberland County Land Partnerships Plan by preserving priority conservation areas, riparian buffers, ridgeline, steep slopes and other sensitive natural features. Promote landowner adoption of conservation practices. Conservation landscaping – 0.25 ac per year Preserved forest/ environmental sensitive land – 20 ac per year	CCPC, Land Partnerships Grant Review Committee, municipalities, watershed associations, non-profit conservation organizations, CPC and other land trusts	Countywide	2021	Recreation project focus historically, water quality and land preservation promotion needs on the short-term	Program promotion, application review	1 CCPD staff person, 1 CCCD staff person	\$4,000 (2021)	Act 13 Marcellus Shale Legacy Fund (\$200,000 available)	N/A	N/A	\$4,000 (2021)	DEP
												TBD	DCNR Lawn Conversion Grant Program	
												TBD	DCNR C2P2 Grant funding	
1.2E	Implement the Cumberland County Hazard Mitigation Plan – to be adopted by municipalities in 2021	Municipal adoption (2021) Green infrastructure implementation ordinance guide (2022 at the earliest)	Municipalities, County and local emergency services, PEMA, FEMA	Countywide – floodplains	Ongoing	Timely adoption by municipalities, funding for large scale projects of meaningful result with small storm water quality benefit	Plan implementation team	1 CCPD staff person	TBD	TBD	TBD	TBD	TBD	TBD
1.2F	Implement the Cumberland County Local Climate Action Plan – to be developed in 2021	Public participation – plan development (survey, meetings) Green infrastructure policy recommendations County facility energy efficiency results	Carlisle Borough, other municipalities, CCPD, educational institutions – Dickinson College and Shippensburg University	Countywide	2022 – plan horizon to be determined	Plan development during COVID, public support of the initiative, municipal role to be determined	Plan development team	1 CCPD staff person, educational institutions, ICLEI, DEP	TBD	TBD	TBD	TBD	TBD	TBD

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

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

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
1.2G	Implement Return on Environment (ROE) Reports	Utilize data as part of clean water communications Help Penn Township carry out recommendations and landowner outreach training Identify priority areas for implementation and assess municipal interest in further ROE applicability.	CCPD, CCCD, Penn Township, South Mountain Partnership, Audubon, Ag Land Preservation Board	Countywide and Penn Township	2021	Implementation partner need	Overall planning guidance	1 CCPD staff person	N/A	N/A	Distill data down to layperson language Boilerplate BMP design and ordinance amendment	1 County Communications Department Township engineer and solicitor	Project budget as landowners have interest	South Mountain Partnership funds, Land Partnerships Program
1.3A	Countywide Water Quality Credit Offset Pilot	Demonstrate measurable success of a pilot project area where MS4s and non-MS4s can collaborate on sediment and nutrient goals	Lower Allen Township, South Middleton Township, MS4 Workgroup, Homebuilder Association, Chesapeake Bay Foundation (policy/advocacy)	MS4 watershed HUC12	2021	DEP acceptance of approach	Engineering/MS4 permit requirement coordination Project opportunity ideas	HRG (CAP coordinator)	N/A	N/A	For implementation, if the pilot works, 1 FT MS4 Coordinator, 1 PT ag Coordinator Project design and construction	Rural/suburban township staff Municipal engineers, consultants	\$150,000 per year Unknown until concept is developed and cost-savings are calculated	Municipality stormwater fees or general fund Growing Greener, PennVEST, CFA Act 13 grants, NFWF
1.3B	Countywide Stream Restoration Bundling Pilot	Bundle stream restoration design and construction activities to more cost effectively meet MS4 requirements	MS4 Workgroup	MS4 watershed HUC12 scale	2022-2025	Municipality acceptance of approach, technical capacity of private sector to handle glut of stream restoration projects toward end of MS4 permit cycle, opportunity for more efficient permitting reviews rather than one application package per project	Review PRPs for logical bundling packages	HRG (CAP coordinator)	N/A	N/A	Engineering/construction	Municipal engineers/RFPed contractor	Assume \$2,000,000 project budget scale	PennDOT, Growing Greener, municipal match

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

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

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
1.4	Water Quality Communication Plan	Develop messages and audience; execute plan and distribute messaging through staff	County Communications Department	Countywide	2020-2025	Staff bandwidth, consistency (type and frequency of messages)	Communications Plan Assistance Developed by county staff with input from internal planning team	DEP/Water Words that Work County Communications Department	N/A	N/A	N/A	N/A	\$5,000 (tabling materials, brochures)	DEP Block Grant, NFWF
1.5A	Chesapeake Bay Technical Inspection/ Plan Data Gathering	Collect data regarding existing farm plans and implementation progress 50 farms per year → 200 farms through 2025	CCCD	Ag land use area	2021-2025	Farmer knowledge of the location and contents of their plan, obtaining copies of existing plans to determine if they are up to date	Site visits and plan reviews	CCCD	\$200,000	DEP	N/A	N/A	N/A	N/A
1.5B	Other Plan Data Gathering	Collect data regarding existing farm plans and implementation progress ~45 farms per year → 170 farms through 2025	CCCD, LFT, Ag Consultants, NRCS	Ag land use area	2021-2025	Farmer knowledge of the location and contents of their plan, obtaining copies of existing plans to determine if they are up to date	50 farm visits per year Existing plans data sharing Request/review plans as part of farm support	LFT (CAP coordinator) NRCS (with landowner permission) 1 CCCD staff person	N/A	N/A	Existing plan data	Farm Consultants	Could need financial assistance after 2021	Growing Greener, NFWF Technical Assistance

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

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

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
Priority Initiative 2: Achieve New Pollutant Reductions														
2.1A	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	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 to capture ag BMPs that are visible 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 - PSU, USGS, Farm Bureau, PDA, LFT, EPA	Cumberland County	2021 – cataloguing 2022 – Practice Keeper batch upload processing and field views	EPA acceptance of the approach, further refine guidance in QAPP so that counties can accomplish this or so that the state can take the burden off of counties, utilize the approach to catalogue existing BMPs and do on the ground verification where required for reporting purposes, this is an accelerated BMP catch up approach while we continue to provide support to farmers on planning and BMP installs, reduce the amount of interruption of government entities to compliant farm operations	Precision Conservation Tools General methodology outline BMP field backcheck	Chesapeake Conservancy QAPP Varies by BMP, but likely 1 CCCD staff person, 1 CBF staff person, 1 PSU Extension staff person	N/A	N/A	Further GIS and data processing/ method refinement	Chesapeake Conservancy	\$94,000 (2021) – assume similar annual budget while R&D continues on expanded BMP list	DEP/EPA

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

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

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
2.1B	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 - PSU, USGS, Farm Bureau, PDA, MS4s	Cumberland County	2021 – cataloguing 2022 – batch upload processing and field views 2023 – 2025 – implementation focus	Different data set scales/precision	Precision Conservation Tools Batch upload processing BMP field backcheck	Chesapeake Conservancy DEP/SRBC Varies by BMP, but likely 1 CCCD staff person, 1 CBF staff person, 1 PSU Extension staff person	N/A N/A	N/A N/A	Further GIS and data processing/method refinement	Chesapeake Conservancy	\$44,000 (2021)	DEP
2.1C	Improve continuous data collection on urban non-structural practices	Add development-related BMPs to CAST/FieldDoc so that as land use data sets are updated, there are accompanying BMPs	NonMS4s/MS4 /muni engineers, MS4 Workgroup, Conservation District, Southampton Township?	Urban/suburban landscape	2022	Coordination/training for municipal staff, FieldDoc batch opportunity, non-MS4 engagement, difficulty obtaining past information (MS4s typically have databases from 2003-present)	Reporting platform	FieldDoc	N/A	N/A	Training Municipal data input	DEP 1 staff person per developing municipality	N/A Assume \$5000 administrative cost per municipality per year and 7 developing municipalities → \$35,000 per year	N/A Municipal general fund or stormwater fees
2.1D	Implement a documentation program for commercial and homeowner nutrient applications in developed lands	Support fertilizer legislation – where legislation requires reporting, be the data clearinghouse	Cumberland County – TBD, Center for Water Quality Excellence	Countywide	TBD	Education of responsible parties, receiving timely information, training on reporting system	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
2.2A	Additional Technical Assistance to Serve Farm Operators	Hire 1 new in-house engineer/planner	CCCD, NRCS	Cumberland County	2021-2025	Funding, expertise in labor pool, limited compliance activities by DEP, lack of funding for staff to assist the ag community in a proactive way	Plan development and BMP design, field verification, troubleshooting	District Engineer, CCCD, USDA-NRCS, Private Consultants	\$200,000 per year	NRCS, CEG	1 engineer, 1 planner, 2 technicians	In-house hires	\$350,000 per year	NRCS – SWAT agreement, additional Conservation District budget

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

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

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
2.2B	Additional Technical Assistance to Serve Farm Operators	RFP an on-call contractor to assist with plan and BMP implementation backlog (design, construction)	CCCD, consultants	Mount Rock Spring Creek Watershed	2021-2023	Funding, expertise in labor pool, Limited compliance activities by DEP. Lack of funding for staff to assist the ag community in a proactive way. Schedule lag between interested landowner, connection with consultant to do the work, consultant delivering the plan, follow up with CCCD staff who can assist with plan implementation, design/permitting, construction during schedule that works for landowner	N/A	N/A	N/A	N/A	1 engineer, 1 planner, 2 technicians	Consultant	Assume 10 project opportunities in watershed – budget \$1.8 million	Growing Greener, NFWF
2.3	Additional nutrient management (NM) and agriculture erosion and sediment (E&S) plan development	560 new/updated plans developed and added to Practice Keeper (ag pres program, Bay Technician progress, other outreach)	CCCD, TeamAg, Private Consultants, County Farm Bureau	Cumberland County	2021-2022 2023-2025	Landowner interest, funding	Plan development	TeamAg (DEP coordinator), private consultants	\$6,000 per plan	DEP (Ag planning reimbursement program grant - 2021)	Administrative (enter information into PK)	DEP	N/A	N/A
											Plan updates after reimbursement program expires	DEP	Assume 20 plans per year (\$120,000 per year)	Growing Greener

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

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

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
2.4	Public/private Farm BMP sponsorship program	Utilize REAP program to leverage funding, sponsor farmers who perform BMPs and pay them cash from tax rebates that corporation receives from funding the program	CAEDC, Giant Foods/Ahold, LFT, SCC, The Nature Conservancy, Chesapeake Bay Foundation, PennAg, Capital RC&D	Cumberland County	2021-2022 initiation	Corporate interest,	Initial coordination	HRG (CAP coordinator)	N/A	N/A	N/A	N/A	N/A	N/A
2.5	Low and no-till cover crop and tillage BMPs	Increase existing County program by 40% by leveraging existing County cost share program, transect survey, more detailed questionnaire information regarding BMP implementation versus cost share coverage	CCCD, NFWF, Capital RC&D	Ag lands in County	2021-2022 (adjust next steps based on first two years of adjustments)	Landowner interest, BMP verification (annual) and paperwork	Means/methods assistance Transect survey	CCCD Capital RC&D	\$54,600 \$27,300	DEP Act 13 NFWF	N/A	N/A	\$27,300 every other year	DEP
2.6	4R Practice Education and Implementation	Transition manure management plans to nutrient management plans and incentivize implementation Increase existing 4R practice (N rate and timing) adoption by 6,000 acres	4R Alliance, Capital RC&D, CBF	Priority HUC	2021-2022	Landowner interest, BMP verification (annual)	Educational support	4R Alliance/The Nature Conservancy	\$45,000	NFWF	Cost share recommendations/equipment/software	Consultant	\$50,000	DEP
2.7	Conservation Landscape/Turf to Meadow Conversion/Watershed Forestry Initiative	Promote new program and enable three large tract landowners' participation (20 acres of conversion per property, 60 acres total; assume 190 acres occur in Cumberland through other initiatives) Address weed ordinance changes in target municipalities so that conservation landscape can be adopted by landowners	Alliance for the Bay, CCPC, DCNR, Western PA Conservancy, CBF, Pheasants Forever, Audubon, Master Watershed Stewards, Lower Allen Township, South Middleton Township	Urban/suburban landscape in Cumberland County	2021-2022	Landowner education and acceptance	Planting plan assistance	CCPD, Alliance for the Bay (in-kind)	\$50,000 for lawn conversion (forest or meadow)	2021 DEP Block Grant	N/A	N/A	\$5,000 per acre (forest), \$3,700 per acre (meadow) Lawn Conversion PLUS Program \$300,000 (budget for all forest)	DCNR

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

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

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
2.8A	Riparian buffer and re-forestation BMPs	<p>Partner with Chesapeake Bay Foundation to plant 100,000 trees (portion of 500,000 trees that will be RFPed for growers)</p> <p>17 acres - 2 farms per year – forest buffers with fenced pasture</p> <p>43 acres - 3 farms per year – grass buffer with fenced pasture</p> <p>50 riparian forest acres – CREP CLEAR 30 renewal, CBF, Alliance for the Bay support/lead</p> <p>42 acres – grass buffers</p> <p>155 acres – urban forest buffer (19 stream miles) – 5 miles per year (22 acres in PRPs)</p> <p>250 acres – urban forest planting – target one large landowner in urbanized area</p>	<p>CBF, CCCD, Alliance for the Bay, CCWA, YBWA, Mountain Creek Trout Club & Conservation Society, Cumberland Valley Trout Unlimited, LFT, Pheasants Forever</p>	Cumberland County	<p>2022 – line up landowners</p> <p>2023-2025 – implementation</p>	<p>Landowner partnerships, landowner education, volunteer acceptance of grass buffer plantings, grass buffer maintenance guide for farmers, routine site visits to confirm buffers are thriving, invasive species removal during establishment</p>	<p>In-kind, annual tree sale efforts</p> <p>Buffer my Stream/Prime Prospects data set</p> <p>Landowner outreach, buffer design, planting plan, 10 Million Trees tree supplies</p> <p>Landowner outreach/education</p> <p>Implementation – planting</p>	<p>CCCD</p> <p>DCNR</p> <p>CBF</p> <p>LFT (CAP coordinator)</p> <p>Volunteers</p>	<p>CREP</p>	<p>NRCS</p>	<p>Parcel-specific BMP recommendation and contact info</p> <p>Implementation – design, equipment, materials</p>	<p>Restoration Reports</p> <p>Landscapers (private sector)</p>	<p>\$50,000</p> <p>\$2.8 M budget</p>	<p>NFWF</p> <p>DCNR, NFWF, PACD, TreeVitalize, DEP, Coldwater Heritage Partnership Implementation Grants, Foundation for PA Watersheds Project Grants</p>

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

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

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
2.8B	Wetland restoration implementation on marginal production agricultural land	48 acres implemented by 2025, currently programmed and likely no more because of the lead time needed to get the projects planned and funded	NRCS	Cumberland County	2025	If additional landowner interest, it takes years to get NRCS funding → would need to identify an alternative funding source; bog turtle habitat co-benefit may assist us with funding opportunities/technical assistance	Design, permit, construction	NRCS	TBD	NRCS/EQIP	N/A	N/A	N/A	N/A
2.8C	Non-urban stream restoration	4,000 feet restored with floodplain restoration scope that includes water quality credits associated with Stream Restoration Expert Panel – Protocol 3	CBF, CCWA, YBWA, Mountain Creek Trout Club & Conservation Society, Cumberland Valley Trout Unlimited, American Rivers	Mount Rock Spring Creek Watershed	2021 – identify qualifying project locations 2022 – funding solicitation 2023-2025 – design/permit/construction pending funding award	Design/permit/construction cycle seems to work in two-year increments	Habitat structures	TU/PAFBC/USFWS	N/A	N/A	Design, permit, construction services	Private sector, USFWS, TU	Assume \$450/LF - \$1.8M for total project delivery, not O&M	Growing Greener, NFWF
2.8D	Operation and Maintenance Performance	Pair up MWS volunteers w/ new buffers to incentivize landowner acceptance	Volunteer group, contractor, Master Watershed Stewards, CBF	Cumberland County	2021 – establish MWS team to provide referrals	Volunteer training, liability, materials/equipment funding	Technical guidance Volunteer maintenance labor	DCNR	N/A	N/A	N/A	N/A	N/A	N/A

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

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

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
2.9	Implement more prescribed grazing measures	40 acres per year – new and newly reported (160 acres total)	NRCS, Capital RC&D, CCCD	Cumberland County – landowners who raise horses, dairy, beef	2025	Not widely adopted today, existing funding through Capital RC&D that can be used to kickstart efforts	Landowner education	NRCS, Capital RC&D	Crop to grazing conversion funding	CBF/Capital RC&D/RC PP Grant	N/A	N/A	1 grazing plan per year (\$4000 each) - \$20,000 total planning budget 3000 LF of fencing per year – Assume \$4.50/LF - \$13,500 per project or \$67,500 total project budget	NRCS
2.10	Animal waste management BMP implementation for livestock	Goal = 40% of farms with livestock have appropriately sized waste management (~18,500 AUs or about 100 farms, 25 farms per year newly reported or newly constructed)	CCD, SCC, NRCS, CEG Program, LFT	Livestock farms	2021-2025	Current capacity through NRCS and CCCD implements about 5 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 yields willing landowners	Project implementation – 2 farms/year Project implementation – 3 farms/year	NRCS CCCD	TBD	EQIP	Design, permit, construction services	Private sector	Assume 5 projects per year, \$130,000 each, \$650,000 per year, \$3.25 M total	Growing Greener, NFWF, PennVEST, private capital

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

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

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
2.11	Implement more barnyard runoff control/loafing lot management/ag stormwater management	40 acres of treated area, assuming we map 200 more and build 20 more (5 farms per year)	CCCD, Chesapeake Conservancy, LFT	Livestock farms	2021-2025	Mapping challenges, typical logistics regarding landowner buy-in and project development/funding	N/A	N/A	\$1,568,000 per year, \$7.84 M total \$316,250 3 farms leaky barnyards	CEG 2021 DEP Block Grant	Consultant for program management and project delivery	RFP	\$219,000 per year, \$1.1 M total	DEP
2.12	Manure treatment technology	Track Dickinson College digester/composting project for dry ton treatment	CCCD, Dickinson College	Central Cumberland County	2021-2022	What if project doesn't complete/operate according to design specifications when fully implemented?	Facility operation	Dickinson College	Operational budget	Dickinson College	N/A	N/A	N/A	N/A
2.13A	Implement the Cold Water Conservation Plan for LeTort Spring Headwaters	Complete habitat study	Cumberland Valley Trout Unlimited, CCCD	LeTort Spring Watershed	2021	Connect goals of conservation plan to CAP goals	Plan writing	CCCD	\$5000	Coldwater Heritage Partnership	N/A	N/A	N/A	N/A
2.13B	Implement the Cold Water Conservation Plan for LeTort Spring Headwaters	Implement recommended BMPs from plan and habitat study	Cumberland Valley Trout Unlimited, CCCD	LeTort Spring Watershed	2022-2025		Designs for habitat restoration	TU/PAFBC	Average \$8,000 per year per project	Coldwater Heritage Partnership Program			\$ Match	CVTU Partnerships and Grants
2.14	MS4-related Pollutant Reduction Plan Implementation	Plan implementation by end of current permit term Stay up to date with MS4 Workgroup on their successes and needs	Cumberland County MS4 municipalities	Urbanized planning area	2023	Municipal capacity to implement plans (technical, financial)	Municipal engineer design/permit, construction readiness	Municipalities, public works departments	Unknown value	Municipal budgets (taxes, stormwater fees, grants)	N/A	N/A	N/A	N/A

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

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

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
2.15	Wet Pond/Wetland Installation	Identify 1 large property owner from University of Vermont restorable wetland layer to install and preserve a 300-acre wetland	Wildlife for Everyone?	Priority watershed (ag or non-ag)	ID landowner (2021) Funding (2022) Design/permit (2023-2024) Construction (2025)	Landowner participation, permitting, funding	GIS mapping Outreach	CCPD Watershed group based on prospective location, CCCD	N/A 	N/A 	Design, permitting, construction	Private sector	\$1,000,000	US Endowment for Forestry and Communities, DCNR, PA F&B, private capital
2.16	Impervious surface reduction project	Identify a blighted area that could be converted to a park (3-acre area) Report 15 acres reduced through PRP implementation	Cumberland County Housing and Redevelopment Authority and municipalities	Carlisle Borough?, river-bordering Boroughs?, Newville and connect to Cumberland Valley Rail Trail?	ID landowner (2021) Funding (2022) Design/permit (2023-2024) Construction (2025)	To enhance buy-in and identify co-benefits to water quality, will need municipalities to define project priorities for the blighted property designations. Would need to do outreach/build support ahead of parcel targeting.	Mapping	CCPD	?	Municipal PRP Implementation Budget	Design, permit, construction	Private sector	\$3,000,000	CDBG (potentially), DCNR, FEMA
2.17	Continue dirt and gravel road program	Restore 0.75-mile per year, 19,800-feet overall	CCCD	County Wide	2025	Continue D&G Road program funding	Education, technical assistance, project oversight	CCCD, Center for Dirt & Gravel Road Studies, State Conservation Commission	\$225,000 per year	State Conservation Commission	N/A	N/A	N/A	N/A

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

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

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
2.18	Utilize stormwater fee credit programs (where they exist) to collect existing farm BMP information	Catalogue farm BMP information collected by municipalities with stormwater fees	Silver Spring Township	Silver Spring Township	2021	Policy is new so education to farming community will be key	Plan review/Township staff training Data collection Practice Keeper input	CCCD Silver Spring Township MS4 Coordinator Chesapeake Bay Technician	N/A	N/A	N/A	N/A	N/A	N/A
Priority Initiative 3: Monitoring, Verifying, Researching, Educating, and Training														
3.1A	Enhanced local monitoring program	CAST-21 acknowledgement of our data Expand monitoring based on Corridors of Opportunity area monitoring gaps	ALLARM/Dickinson College, Shippensburg University, CCWA, YBWA, CVTU, fly fishing outfitters	Countywide	2021-2022	Consistent data collection, QAQC continuation	Sample collection QAQC	ALLARM volunteers ALLARM staff	N/A	N/A	Sample Collection for new sites identified through CAP implementation	ALLARM volunteers	N/A	N/A
3.1B	Enhanced local monitoring program – Mount Rock Spring Creek Watershed	Set up HUC-12 level watershed monitoring program in focus watershed so that as BMPs are installed, we can monitor water quality changes	ALLARM/Dickinson College, Shippensburg University, CCWA, CVTU	Mount Rock Spring Creek Watershed	2020-2021	Consistent data collection, QAQC continuation	\$30,000 intern salary budget QAQC	PSU Harrisburg PSU/ALLARM	N/A	N/A	N/A	N/A	\$10,000 EQUIPMENT (2021)	DEP Block Grant
3.2A	Continue farm decision maker trips to showcase BMPs that work	Two trips per year, increase participation by 10% each year	CBF, CCCD, NRCS, Cumberland County Farm Bureau	Cumberland County	Fall and Spring of each year	Promotion to increase participation each year, expand logistics/# of local and Bay trips to allow for increased participation, consider alternative transportation options to canoes if it helps to scale up the initiative	N/A	N/A	Trip coordination and field facilitation	CBF	N/A	N/A	\$2000 per year to expand resources	PACD Adult Education Non-Point Source Education Grant Private Sector Donation/Sponsorship

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

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

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
3.2B	Farm outreach town halls	Three per year, increase participation by 10% each year, sign farmers up for plans and project site visits	CBF, CCCD, NRCS, Cumberland County Farm Bureau, LFT	Cumberland County	Winter, Spring, Fall of each year	Promotion to increase participation each year	Coordination	CBF	\$7,000	NFWF	N/A	N/A	\$7,000	NFWF Private Sector Donation/Sponsorship
3.3	Utilize Restoration Reports for landowner outreach	Assist with development of Restoration Reports Train outreach team members on it	South Mountain Partnership, Chesapeake Conservancy, CCWA, YBWA, Mountain Creek Trout Club & Conservation Society, Cumberland Valley Trout Unlimited	Cumberland County	2021	Relevance for target landowners – guide the process to the targeted audiences	Background data to support development of Restoration Reports	Chesapeake Conservancy	~\$2000	South Mountain Partnership	Consulting support to build out Restoration Reports for Cumberland County landowners	Chesapeake Conservancy	\$10,000	DEP Block Grant, NFWF initiative for watershed approach
3.4	Enhance the capacity of local watershed associations for short-term success and long-term sustainability	Share each other’s social media content When developing water quality projects, include them in the scoping/funding process When we utilize/obtain funding for outreach, reserve some for partner promotional items (hats, shirts, etc.) 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	CCWA, YBWA, Mountain Creek Trout Club & Conservation Society, Cumberland Valley Trout Unlimited, Big Spring Watershed Association, Letort Regional Authority, Friends of Opossum Lake, Middle Spring Watershed Association, POWR	Countywide	Ongoing	Continued coordination among a lot of active groups, keep project leads list active so that watershed approach to grant applications can be developed well in advance of submittal deadlines	Social media shares Project development support	County – department to be determined CAP Coordinator (HRG)	Limited match	Watershed group membership dues	N/A	N/A	\$5000 per organization to produce promotional materials (hats, shirts, stickers) for members	Add on to a NFWF app where watershed association is engaged in project and there is an outreach/ribbon-cutting project outcome

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

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

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
3.5	Conservation Excellence Grant Planning Tool	Develop a spreadsheet decision tool or web-based “Turbo Tax”-like tool so a practitioner or farmer can decide what the right mix of grant/loan/tax credits is for their farm based on their income statement, balance sheet, and other factors to be determined	Penn State Extension, State Conservation Commission, PENNVEST, Ag Choice Farm Credit	Cumberland	2021	Success of program so that it can be expanded to other counties, support Center for Water Quality Excellence so that funding can be simpler for landowners	Farm Business Advising	Penn State Extension	N/A	N/A	Coding/programming	Center for Water Quality Excellence	N/A	N/A

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.

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.

CCCD – Cumberland County Conservation District. The Cumberland 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.

CCPD – Cumberland County Planning Department. The Cumberland County Planning Department helps build strong urban, suburban, and rural communities by promoting responsible economic development, providing transportation choices, encouraging housing diversity, and conserving natural resources in partnership with our 33 municipal governments.

COO - Corridors of Opportunity. Analysis completed comparing the County Comprehensive Plan goals to potential for co-benefits for local water quality. Since there are elevated nitrogen levels throughout Cumberland County, the analysis helped focus the planning team on particular HUC12 watersheds for the most global benefit. Once the HUC12 watersheds are identified, the next step is **to identify regulatory compliant (or in progress) farms, their neighbors, and preserved farms for targeted outreach and specific BMP installation options.**

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.