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

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Priority Initiative 1: Achieve Pollution Reduction Goals (these projects work directly toward TMDL reductions)

A. Agriculture

1.1	Increase cover crop BMPs	<p>-8,000 additional acres by 2025 (estimated \$40/acre)</p> <p>-Have a supplemental cover crop sign up/survey at the conservation district to give more nuanced data than transect survey (Currently have 4000 acres reported in cover crop -can double that number with the supplemental sign up). This sign up could act like a local contract like is done for federal contracts.</p> <p>-2000 of the 8000 acres are from Growing Greener grant</p>	<p>-LCCD</p> <p>-FSA</p> <p>-NRCS</p> <p>-Lycoming County</p>	- Countywide	-2025 and beyond	<p>-Not getting expected ROI or outcome</p> <p>-Buy-in from farmers may be limited – need more participation from landowners</p> <p>-Would like to have location data – X% of cover cropping is coming from X location, but not a lot from X location. We currently have no other place that there’s a number for cover crop recording because every cover crop reported is in the lowest category as wheat in transect survey</p> <p>-Need more nuanced species for cover crop in sign up</p> <p>-Transect survey should have additional species, and should also consider existing cover crops that are located further from the road (current reporting only identifies cover crops that are a short distance</p>	<p>-County staff</p> <p>-Equipment – Green Drill</p> <p>-Operator list</p>	-LCCD equipment/information	<p>-Growing Greener: Tiered funding for new and experienced cover croppers (multi-species) reimbursement for 3 years in a row</p> <p>-DEP Small Business Advantage grants</p> <p>- Use the Soil Health Enhancement Reimbursement Program through Columbia County Conservation District as a model</p>	<p>-Growing Greener</p> <p>-DEP</p> <p>-Columbia County Conservation District</p>	<p>-Acquire baseline cover crop numbers to supplement transect survey</p> <p>- 1 clerical staff position for collecting cover crop data - \$80,000/year</p> <p>-1 technical staff - \$80,000/year</p>	<p>-NRCS</p> <p>-FSA</p> <p>-DEP</p> <p>-Funding for staffing - DEP</p>	<p>-More incentives to participate (\$40/acre) \$320,000</p> <p>-2 additional vehicles - \$100,000</p>	<p>-DEP</p> <p>-Growing Greener</p> <p>-Funding for vehicles - DEP</p>
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						from the road, and in many instances cover crops are one or two crop rows back from the road that is on the survey route)									
1.2	Soil Conservation and Water Quality Plans	-Write Ag Erosion & Sediment (E&S) Plans for operations that still need them -9,200 acres by 2025	-LCCD	- Countywide	-2025 and beyond		-LCCD staff					-2 technical staff - \$160,000/year	-Funding for staffing - DEP		
1.3	Animal Waste Management Systems	-Manage runoff with multiple BMPs -Increase barnyard runoff control -20 acres by 2025 -Loafing lot management -10 acres by 2025 -Increase manure storage facilities -2 projects/year – 10 systems by 2026	-LCCD	- Countywide	-2025 and beyond	-Farmer willingness -Engineering costs -Takes over a year to get a project on the ground -Permitting can be cumbersome						-2 technical staff - \$160,000/year -1 grant manager/coordinator - \$80,000/year	-Funding for staffing - DEP	-Costs about \$500,000 to do runoff control for one farm – would need about \$500,000 per BMP (\$1.5 million/year)	-DEP
1.6	Increase rotational/prescribed grazing	-2,700 acres by 2025 -Write grazing plans for grazing operations in the county	-LCCD	- Countywide	-2025 and beyond							-1 technical staff - \$80,000/year	-Funding for staffing - DEP		
1.7	Increase no-till/conservation tillage BMPs	-Have a no-till reporting/sign up at the conservation district to give more nuanced data -Expand equipment rental program – -300 acres/yr increase starting in 2023	-LCCD	- Countywide	-2025 and beyond					-\$5000 coming from Growing Greener		-2 additional staff to coordinate - \$160,000/year	-Funding for staffing - DEP	-\$40,000 for one additional 10 foot no-till drill -Storage for	-Funding for equipment - DEP

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		<p>-285.8 acres by 2025</p> <p>Off Stream Watering Without Fencing</p> <p>-20.3 acres by 2025</p> <p>Forest Buffer-Narrow with Exclusion Fencing</p> <p>-48.9 acres by 2025</p> <p>Precision Intensive Rotational/Prescribed Grazing</p> <p>-153 acres by 2025</p> <p>Land Retirement to Pasture</p> <p>-6 acres by 2025</p> <p>Land Retirement to Ag Open Space</p> <p>-9.75 acres by 2025</p> <p>Forest Buffer</p> <p>-9.2 acres by 2025</p> <p>Grass Buffer</p> <p>-117.2 acres by 2025</p> <p>Conservation Planning</p> <p>-1,500 acres/year</p>												
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B. Developed/Urban

1.13	Turf field Nutrient Management	-Implement a documentation program for commercial and homeowner nutrient applications in developed lands	-LCCD -Lycoming County	-Little League -Churches	-2025 and beyond	-Landowner buy-in -Education of responsible parties	-Lycoming County staff		-DCNR Environmental Education grant		-Having solutions to offset fertilizer	-DEP -Extension	-Funding to cover costs for soil tests -\$9	-DEP -Extension
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		<ul style="list-style-type: none"> -Support fertilizer legislation -Quantify artificial turf acres – ID data -Golf course improvements (use BMPs for PA Golf Courses Guide) <ul style="list-style-type: none"> -White Deer Golf Course -Williamsport Country Club -Convert turf fields and lawns to meadow/riparian – 20 acres of turf conversion by 2025 	-NRCS	<ul style="list-style-type: none"> -Hospitals -Cemeteries -School Districts -Golf courses -Colleges 		<ul style="list-style-type: none"> -Coordination between partners -Limited by plant height (don't want them to get too high on golf courses) -Maintenance -Landowners may be limited in their scope of interest -Focus on benefits of managing land holistically/big-picture to increase quality of experience -Better management with BMPs would lead to less costly maintenance -Ensure local/county ordinances do not conflict with goal 	<ul style="list-style-type: none"> -Data from LCCD -DCNR Lawn Conversion Program -Penn State Extension soil testing resources -Master naturalists/gardener program 		<ul style="list-style-type: none"> -DCNR Lawn Conversion program -PennVest 		<ul style="list-style-type: none"> -More soil tests -1 Edu/outreach staff - \$80,000/yr 		<ul style="list-style-type: none"> per test through Penn State Extension 	
1.14	Green infrastructure, buffers, and plantings	<ul style="list-style-type: none"> -Ensure projects are equitably distributed and address environmental justice issues -Improve stormwater management by implementing and expanding green infrastructure: 	<ul style="list-style-type: none"> -Flood buyout plantings -FEMA -Local Munis -PEMA -Airport 	- Countywide	-2025 and beyond	<ul style="list-style-type: none"> -Expand funding for targeted green infrastructure projects that are located in low-income/minority neighborhoods (e.g. Targeted Outreach for Green Infrastructure (TOGI)) 	<ul style="list-style-type: none"> -Landscapers -Small businesses -Chesapeake Conservancy data available 		<ul style="list-style-type: none"> -NFWF -DCNR C2P2 grant -Growing Greener 		<ul style="list-style-type: none"> -Technical assistance -Maintenance -Penn State Capstone 	<ul style="list-style-type: none"> -Funding for staff – DEP -Maintenance and technical assistance – 	<ul style="list-style-type: none"> - Funding/capacity for municipal maintenance -\$5 million per year 	<ul style="list-style-type: none"> -Funding for maintenance and programs - DEP

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		<ul style="list-style-type: none"> - Street trees -Bioswales -Rain gardens -Plantings along local streets and bordering parking lots to capture and filter stormwater -Establish Street Tree Committee -Do plantings on hospital campuses -Improve and increase trails/ID ways to improve the “Pathways to Health” -Expand TreeVitalize program in County -Plant buffers and basins on golf courses (use BMPs for PA Golf Courses Guide) <ul style="list-style-type: none"> -White Deer Golf Course riparian buffers/vegetated plantings -Remove earthen berm from White Deer Golf Course (county may own that land) 	<ul style="list-style-type: none"> -Municipalities -Lycoming County -LCCD -Businesses and campuses -Golf courses -Susquehanna Greenway Partnership (SGP) -DCED -DCNR 			<ul style="list-style-type: none"> -Resistance from developers -Expense -Maintenance - Look at what properties (authorities and muni land ownership) exist for long-term plantings for consistency of ownership -If we rely on college interns, the internships may not line up with when maintenance needs are highest -Training interns long term would be laborious and inconsistent -Landowners would not feel ownership over plantings if we use interns to maintain the planting -Need buy-in and willingness to modify management practices -Landowners may be limited in their scope of 	<ul style="list-style-type: none"> -Penn State Capstone Project for maintenance (internship) - Universities/Colleges for internship for maintenance -FSA data -10 Million Trees program -Chesapeake Conservancy – buffer maintenance -Live Stake Collaborative: hiring personnel in the Fall 2021 (increased capacity) -LCCD Nature Trail for cuttings (live stakes) 		<ul style="list-style-type: none"> -TreeVitalize -DEP -Private sector grants -Keep Pennsylvania Beautiful Community Improvement Grants (Healing the Planet Grant Program) -PennVest -PPL Community Roots 	<ul style="list-style-type: none"> Project for maintenance (internship) - Universities/Colleges for internship for maintenance -1 Lycoming County Planning staff to implement and run green infrastructure program - \$80,000/year -1 grant coordinator for Lycoming County Planning and LCCD - \$80,000/year 	<ul style="list-style-type: none"> TreeVitalize, Clean Water Institute, SGP, and AmeriCorps - Greenways, Trails, and Recreation funding potential 	<ul style="list-style-type: none"> -Ten \$7,000 mini grants per year - \$70,000 - 	
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		<p>-Continued maintenance in floodplain restoration site at White Deer</p> <p>-Williamsport Country Club</p> <p>-Involve Lycoming County Little League Network to improve multiple potential planting sites on turf fields</p> <p>-Plantings on flood buyout lots</p> <p>-Expand streambank plantings</p> <p>-100 acres of forest buffers</p> <p>-10 acres of rain gardens</p> <p>-30 acres of green infrastructure (“filter strip runoff reduction, filter strip stormwater treatment, filtering practices”)</p> <p>-200 acres of tree planting</p> <p>-100 acres of wetland restoration</p> <p>-5 acres of bioswales</p>				<p>interest (more specific to business owners)</p> <p>-Focus on benefits of managing land holistically/big-picture to increase quality of experience</p> <p>Flood buyout plantings: -FEMA regulations for plantings (Challenges with FEMA buyout lots with needed technical studies)</p> <p>-Chapter 106 studies</p> <p>-Lots of permits would be needed to do plantings</p> <p>-Need revision to the regulation – allowing native tree and shrub plantings on flood buyout lots - would allow us to do more nutrient reduction BMPs</p> <p>Find out if MS4s are already working with TreeVitalize</p>					<p>-Funding for edu/outreach staff and grant coordinator</p> <p>- \$80,000/year</p>			
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1.16	Dirt and Gravel Roads	<p>-LCCD Dirt and Gravel: -10 feet Driving Surface Aggregate + Raising the Roadbed by 2025</p> <p>-49 feet Driving Surface Aggregate with Outlets by 2025</p> <p>-1 foot Outlets only by 2025</p> <p>-Trout Unlimited (see also "Trout Unlimited Projects", Action # 1.19): -Flocks Run Road, Dirt and Gravel Road Improvement - 4,235 feet</p> <p>-MS4 Dirt and Gravel (see also "Continue MS4 Projects", Action #4.5): -8.7 feet</p>	<p>-LCCD -Municipalities -Lycoming County</p>	- Countywide	-2025 and beyond	<p>- Possible lack of landowner buy in for right of way to allow BMP's to work properly.</p> <p>- Lack of qualified workers</p> <p>-No way to increase funding from LCCD unless looking for other sources of funding (based on a specific formula)</p> <p>-Need availability to shale and cost of driving surface aggregate can affect number of projects</p> <p>- To improve existing practices allow Tar and Chip for current D&G roads to remove dust as a source of pollution.</p> <p>- Update prevailing wage requirements for D&G to the same as other municipal monies.</p> <p>- Have D&G and DEP compromise on matching stream crossing requirements for expedited reviews</p> <p>- Ability to obtain shale at a reasonable price for the quantities that would be</p>	<p>-LCCD staff -Trout unlimited technical assistance</p>		<p>-LCCD funding for program (set number of dollars), but always get more inquiry than they have available</p>		<p>-2 technical staff - \$80,000/year</p>	<p>-Funding for staff - DEP</p>	<p>-3 additional vehicles - \$150,000</p> <p>-Survey equipment -\$30,000</p> <p>-Additional office space - \$40,000/year for 2,000 sq ft office space (\$20/sq ft)</p>	<p>-Funding for equipment - DEP</p>
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						<p>needed, also obtain DSA that meets D&G spec at the quantities needed at a reasonable price.</p> <p>- D&G stream crossing requirements too extorted compared to DEP's requirements.</p> <p>- Townships keep roads on the books to keep liquid fuels payments up but no one uses them and they are in rough condition and probably big polluters. So maybe liquid fuels money could be allocated differently or revamped.</p>								
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C. Natural

1.17	Stream/streambank restoration	<p>-Trout Unlimited (see also "Trout Unlimited Projects", Action # 1.19):</p> <ul style="list-style-type: none"> -Cemetery Road (Bear Run) -1,030 feet -Spring Garden Hunting Club (Blockhouse Creek) - 1,000 feet -Tiadaghton State Forest Chop and Drop (Browns Run) -1 mile of large wood additions. 	<ul style="list-style-type: none"> -LCCD -Lycoming County -NRCS -US Fish and Wildlife -Extension partners -Northcentral PA Conservancy -Trout Unlimited -Fish and boat commission 	<ul style="list-style-type: none"> -Plunketts Creek -Little Pine Creek -Pine Run Watershed -Ag impaired streams focus 	-2025 and beyond	<ul style="list-style-type: none"> -Depth of streambank stabilization/restoration projects does not get counted in CAST Model -Landowners may need technical assistance, equipment, and education for project maintenance -Establish a regional work crew to help maintain projects/limit invasives -Have regional entity to work with the conservation 	<ul style="list-style-type: none"> -Trout Unlimited technical assistance/engagement/projects -US Fish and Wildlife -Fish and Boat Commission -Chesapeake Conservancy data/rapid 		<ul style="list-style-type: none"> -NFWF (will not fund streambank restoration for this grant round - 2021) -Growing Greener -TreeVitalize -Trout Unlimited funding 		<ul style="list-style-type: none"> -Case studies to showcase success -Technical assistance, equipment, and education to landowners for project maintenance (Penn State) 	<ul style="list-style-type: none"> -DEP -Penn State Extension 	<ul style="list-style-type: none"> -Outreach and education money -Funding for maintenance (for contractors or create a regional work crew) 	<ul style="list-style-type: none"> -DEP -PA Fish and Boat Commission
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		-Northcentral Pa Conservancy projects (see also “Northcentral PA Conservancy projects”, Action # 1.25): -Plunketts Creek -2,000 feet -Integrate rapid stream de-listing planning strategy	-Watershed Associations - Chesapeake Conservancy			districts on landowner outreach. They would go on site visits, and would provide continuity when districts have staff changes. -Loosen restrictions on buffer and fencing money (fencing 15 feet from the top of a streambank is not ideal) -Allow GP6 ag crossing in special protection watersheds	stream de-listing -Fish and boat commission has technical assistance		-Fish and boat commission has funding for staff		Extension has some resources) -Incentive program - Comprehensive Stream Assessment, temp monitoring			
1.18	Floodplain Restoration	-Lycoming College Biology Field Station project -2,225 feet converted to floodplain	-LCCD -Lycoming County -Chesapeake Conservancy -Trout Unlimited -FWS -DEP -Lycoming College	- Countywide	-2025 and beyond		-Chesapeake Conservancy data -Trout Unlimited wetland delineations -Kip Starks from DEP -Mark Roberts from US FWS		-Lyco College Clean Water Institute -PennVest -Growing Greener					
1.19	Trout Unlimited Projects	-Cemetery Road (Bear Run) -1,030 feet -Spring Garden Hunting Club (Blockhouse Creek) - 1,000 feet	-Trout Unlimited (Phil Thomas, Stream Resto Specialist, Philip.thomas@tu.org , 814-242-2696 and Jerry White, Tiadaghton Office,	-Blockhouse Creek -Browns Run -Flooks Run Road		-Limited time and capacity for the additional projects they’d like to do in the county -Funding for maintenance and implementation is restrictive and limited	-TU technical staff		-Existing funding from private foundation, NFWF, Growing Greener, and		-1 Field staff who would split their time between Lycoming County projects and	-DEP	-Funding for excavators and other earthwork equipment - \$1 million	-DEP

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		-Tiadaghton State Forest Chop and Drop (Browns Run) -1 mile of large wood additions. -Flocks Run Road, Dirt and Gravel Road Improvement - 4,235 feet	whitesgordonsetters@gmail.com , 570-662-2167)	-Bear Run					Cold Water Heritage		other regional projects outside of the county - \$80,000/year			
1.20	Sylvan Dell improvements	-200 trees planted -70 acre wetland and meadow -Implement future improvements (trails, wetlands, plantings)	-Currently owned by Armstrong Twp (will be new South Side Rec Authority ownership) -Ducks Unlimited	-South Williamspott	-2025 and beyond	-Funding -Could be challenges with wetland boardwalk because it is a regulated wetland -Public Access issues with railroad (Norfolk Southern)	-Brian Auman worked on a preliminary plan -Jim Dunn working on planning and stewardship -Plantings and wildlife boxes were established -Ducks Unlimited		-Variety of funding (planning, development, riparian buffers) -DCNR -NFWF -PennVest -DEP (Growing Greener) -First Community Foundation money -Look at DCNR funding list from		-Needs planning (master planning/stewardship planning) -Funding for edu/outreach staff and grant coordinator - \$160,000/year	-DCNR -Funding for staff - DEP	-Need grant matches -Need planning documents -Need soil testing -Need volunteers for maintenance -Need more trees/vegetation	-Grant matches - DEP -Planning documents - DCNR -Soil testing - DEP/Extension - Volunteers - Clean Water Institute, TreeVitalize, Penn State -Trees - TreeVitalize, Penn State, 10

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									Northwest region					Million Trees
									-Greenways, Trails, and Recreation grant (submitted for \$250,000 for 1.5 mile trail expansion for Nature Trail at the Robert Porter Allen Natural Area)					
1.21	Pine Creek Valley Improvements	<ul style="list-style-type: none"> -Implement streamside parks (Waterville park example) -Work on rail trail improvements -Identify project gaps -Include parks along Pine Creek -20 acres of forest buffer by 2025 	<ul style="list-style-type: none"> -Municipalities -Lycoming County -Pine Creek Watershed Council (Jim Weaver) -Trout Unlimited -Pine Creek COG -DCED -DCNR 	-Pine Creek Valley	-2025 and beyond	<ul style="list-style-type: none"> -Funding for projects and maintenance can be restrictive and limited -Prioritize projects on government/municipal-owned land 	-Trout Unlimited technical resources		<ul style="list-style-type: none"> -Greenways, Trails, and Recreation grant -PennVest 		<ul style="list-style-type: none"> - Coordination among multiple entities 	-Multiple sources		

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1.22	Municipal park improvements	<p>-South Williamsport park -Address stormwater (current swales retain water) -Sensory garden -Brandon Park nature-based playground -New baseball field -6 acres of plantings by 2025</p> <p>-East Lycoming Recreation Authority park -Wetland restoration and tree plantings at Lime Bluff to address drainage issues -55 acres of field conversion by 2025</p> <p>-Trout Run park -10 acres of plantings by 2025</p> <p>-Muncy Improvements -Green Street park -Improvements to Glade Run streambank and stream bed</p>	<p>-Lycoming County -Municipalities -Chamber of Commerce -DCED -DCNR</p>	<p>-South Williamsport -Hughesville -Lewis Twp -Muncy Borough - Montoursville Borough - Montgomery Borough - Williamsport -Loyalsock Twp</p>	- Continuous	<p>-Funding for maintenance -Some improvements are located in floodplain, which can cause permitting and logistics issues -Some areas are wet and will need mosquito treatment -Ensure projects are equitable distributed</p>	<p>-Local interest -K10 Partnership (10 million trees) -Muncy projects found in Muncy Recreation Sites Report, 2013; see pdf pg 33 and in Muncy Resiliency Plan, 2021 -Restoration plans— “Montoursville Borough Parks Master Plan Summary Report” by Brian Auman, 2014 -Projects in Muncy Resiliency Plan, 2021</p>		<p>-DCNR funding for stormwater management with green infrastructure -Variety of funding (planning, development, riparian buffers) -NFWF -PennVest -DEP (Growing Greener) -First Community Foundation money -Look at DCNR funding list from Northwest region</p>		<p>-Funding for edu/outreach staff and grant coordinator - \$160,000/year -Parks may need updated/new planning/Site development/strategic plans -Volunteers (TreeVitalize)</p>	<p>-Funding for staff – DEP -Funding for planning – DCNR and DEP</p>	<p>-Funding for maintenance and implementation - \$5 million</p>	-DEP
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							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source

		-Muncy Creek Floodplain Restoration Project - Indian Park -20 acres of plantings by 2025 - Montgomery -Restoration -Plantings - Heshbon park - Williamsport Ball Park (may be MS4 credit) -Convert former brownfield to ballpark field - Loyalsock Twp -Riverfront Park Canfield Island Heritage Trail Park - Old Lycoming Twp -Buyout lots (community garden and veterans park) -Increase native plantings and removing invasive species								-Greenways, Trails, and Recreation grant -Borough funds, state grants, community fundraising -Great American Outdoors Act -LWCF funding					
1.23	Trail/Greenway projects	- Miller’s Run Greenway construction	-Loyalsock Twp Rec Department involvement	-Loyalsock Twp	- Continuous	-3 rd street crossing for Miller’s Run going over bridge is very expensive	-Discussed in 2017 Lycoming County		-NFWF -PennVest		- Funding for edu/outreach staff and	-Staffing funding – DEP	- Funding for updating	-Funding for planning	

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		<p>-Connect the park at North Way Rd to Williamsport RiverWalk ~1 mile of buffer</p> <p>-Susquehanna Greenway completion</p> <p>-Implement buffered river access points every 5 miles</p> <p>-Improve and expand River Towns program to advance green infrastructure and buffers</p> <p>-Reduce runoff by having forested buffer throughout Susquehanna River</p> <p>-Update SGP master plan to ensure effective and efficient planning</p> <p>~36 miles of greenway (forest buffer) in Lycoming County (~430 acres of buffer)</p>	<p>-Susquehanna Greenway Partnership</p> <p>-Lycoming County</p> <p>-DCED</p> <p>-DCNR</p>	- Countywide		<p>-Funding for maintenance</p> <p>-Crossing private property is challenging</p> <p>-Railroad and street crossings are very expensive and challenging</p> <p>-Coordination and continuity between multiple entities</p>	<p>Comprehensive Plan</p> <p>-Feasibility studies for West Branch Greenway routes exist</p>		<p>-DEP (Growing Greener)</p> <p>-First Community Foundation money</p> <p>-Look at DCNR funding list from Northwest region</p> <p>-Greenways, Trails, and Recreation grant</p>		<p>grant coordinator</p> <p>- \$160,000/year</p> <p>-Maps for existing and future trails</p> <p>-Legal assistance if easements are needed</p>	<p>SGP master plan</p> <p>-Funding for technical assistance</p> <p>-Funding for trail feasibility studies</p> <p>-Funding for design/master plans and construction of trails</p> <p>-Funding and legal assistance with Norfolk Southern/railroad crossings</p> <p>-Funding for bridge upgrades and</p>	<p>and technical assistance – DCNR, DEP</p> <p>-Funding for legal assistance – DEP</p> <p>-Funding for bridge upgrades – DEP, PennDOT</p> <p>-Funding for property acquisition – DEP, PennVest</p> <p>-Funding for boat launches – DCNR, DEP</p> <p>-Funding for wayfinding – DCNR, DEP</p>
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													improvements for trails -Property acquisition funding and assistance -Funding for boat launches -Funding for wayfinding -\$10-12 million	
1.24	Trail and boat access sites/parking lot improvements	-Improvements at all sites to reduce erosion and runoff issues -5 acres of erosion and sediment control level 2 by 2025	-Fish and Boat -Lycoming County -Susquehanna Greenway Partnership -Chesapeake Conservancy -Municipal public launches (Jersey Shore and Muncy Heritage Site) -DCNR	- Countywide	-2025 and beyond	-Work with Fish and Boat maintenance crews so that they know not to mow or do specific standard maintenance	-Fish and Boat data -Susquehanna Greenway Partnership data/inventor y -DCNR data/inventor y	-DCNR -Riparian forest buffer plantings funding -Fish and Boat boating facilities grant -If in muni land, can use facilities		- Engineering, design, and construction		-Funding for pervious surfaces and engineering/design- \$3-5 million	-DEP	

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							-Chesapeake Conservancy data		improvements funding					
									-Western PA Conservancy mini grants					
									-Lumber Heritage mini grants					
1.25	Northcentral PA Conservancy projects	-Plunketts Creek stream restoration -2,000 feet of restoration -Implement future projects in the county (e.g. buffers)	-Northcentral PA Conservancy	-Plunketts Creek - Countywide	-2021 and beyond	-Depth of streambank stabilization/restoration projects does not get counted in CAST Model -Landowners may need technical assistance, equipment, and education for project maintenance -Establish a regional work crew to help maintain projects/limit invasives -Have regional entity to work with the conservation districts on landowner outreach. They would go on site visits, and would provide continuity when districts have staff changes. -Loosen restrictions on buffer and fencing money (fencing 15 feet from the	-Trout Unlimited technical assistance/engagement/projects -US Fish and Wildlife -Fish and Boat Commission -Chesapeake Conservancy data -Fish and boat commission has technical assistance		-NFWF (will not fund streambank restoration for this grant round - 2021) -Growing Greener -TreeVitalize -Trout Unlimited funding -Fish and boat commission has funding for staff		-Case studies to showcase success -Technical assistance, equipment, and education to landowners for project maintenance (Penn State Extension has some resources) -Incentive program - Compreh	-DEP -Penn State Extension	-Outreach and education money -Funding for maintenance (for contractors or create a regional work crew)	-DEP -PA Fish and Boat Commission

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						top of a streambank is not ideal)						sive Stream Assessment, temp monitoring			
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Priority Initiative 2: Coordination, Education, Outreach, and Training (these projects re-enforce projects that directly reduce TMDL's)

A. Outreach and Education

2.1	<p>Use County farm for education – BMP Tours</p> <p>-No-till</p> <p>-Cover Crops</p> <p>-Buffers</p> <p>-Nutrient management</p>	<p>-Hold tours for 4H, Future Farmers of America, Scout Troops, schools, etc.</p> <p>-Photo history of a buffer to see how it builds over time (set expectation that they will not look neat and tidy all the time)</p> <p>-Calibrating manure spreaders (Bradford County has scales where you can weigh to gage how many tons went onto field)</p> <p>-600 additional acres of no-till by 2025</p> <p>-8,000 additional acres of cover crops by 2025</p> <p>-4,326.4 additional acres of buffers by 2025</p>	<p>-LCCD</p> <p>-NRCS</p> <p>-Lycoming County</p>		<p>-2025 and beyond</p>	<p>-Efforts may not increase program interest or elicit behavior change</p> <p>-Can be multiple ideas of what “no-till” means among the farming community, which can lead to misunderstandings</p>	<p>-DEP for outreach/media platform/materials</p> <p>-Can expand on other agencies or organizations’ efforts</p>	<p>-DEP</p> <p>-Penn State Extension</p>			<p>-Long-term ag peer group/committee for programmatic work</p> <p>-Hire education/outreach staff - \$80,000/year</p> <p>-Hire county-wide grant coordinator - \$80,000/year</p> <p>-LCCD forester position - \$80,000/year</p>	<p>-Agriculture Peer Group contacts</p>			
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		-Host meetings/workshops with farmers and forest landowners - Field days, demos at County Farm - 2 events at County Farm per year				-Impact can be difficult to quantify -Efforts may not increase program interest or elicit behavior change					-More condensed/digestible public messaging materials			
2.4	Expand social media presence to increase BMPs	-LCCD Facebook and Instagram -Message on money saved from water quality improvements	-LCCD -Lycoming County	- Countywide	-2025 and beyond	-Ensure social media posts are available in multiple languages -Be strategic about programmatic co-benefits (Establish or expand incentive programs like cover crop or no-till) -Message the work that is being done in the County – we need to be our own ambassadors -Impact may be difficult to quantify	-Lots of social media strategies available	-LCCD -Lycoming County			-Outreach and education staff - \$80,000/year	-DEP		
2.5	Expand existing resources and technical assistance	-Permit processes and procedures-Provide permit assistance for landowners and developers -ID ways to streamline permit processes -Expand awareness of financial assistance	-FSA -NRCS -LCCD -DEP	- Countywide	-2025 and beyond	-Ensure resources are equitably distributed/available -Permits not being acquired or adhered to -Some projects do not get funding, and projects can “fall through the cracks”	-SRBC resources -Can expand on other agencies or organizations’ efforts -Ann Marie Baker –		-PennVest -NOAA funding -PPL Foundation -DEP environment		-Identify baseline for financial assistance and CREP sign up -Edu and outreach staff to help with			

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		<p>-Expand FSA, CREP, sign up</p> <p>-Expand conservation planning, grazing plans, design, and engineering</p> <p>-increase financial assistance by 30% by 2025</p> <p>-increase CREP sign up by 30% by 2025</p>				<p>-Efforts may not increase program interest or elicit behavior change</p> <p>-Not enough landowner interest</p> <p>-May not get expected outcome</p>	<p>Duboistown Borough</p> <p>-Mel Zimmerman – Lyco College, Clean Water Institute</p> <p>-Ag community</p> <p>-Meaningful Watershed Education Experience (MWEE)</p> <p>-B-Wet Farm Bureau</p> <p>-Colleges</p> <p>-Stormwater Research (University of New Hampshire as a resource)</p> <p>-Other counties are also working on the same efforts</p>		<p>al edu grants (due in Dec)</p> <p>-PA Assoc of Conservation Districts has enviro edu grants</p> <p>-PennVest</p> <p>-National Association of Conservation Districts (NACD) technical assistance grant to hire people for expanding technical assistance</p>		<p>permitting/collab/resources to help people prep and review permits - \$80,000/year</p>			
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							-Fish and Boat has staff to work with technical assistance							
2.6	Expand inter-agency collaboration	<p>-Align similar efforts with CAP (like watershed organizations) to maximize work being done by leveraging efforts and funding sources -2 collaborating meetings per year, or more if needed</p> <p>-Enhance the capacity of watershed associations by sharing each other’s media content, including them in planning efforts, encourage project implementation on the watershed level to emphasize co-benefits/diversifying membership</p> <p>-Reduce duplicative work and leverage existing work</p> <p>-ID ways to streamline permit processes</p> <p>-Ensure funding/technical resources are shared to municipalities/authorities/others when the county learns about them</p>	<p>-State agencies</p> <p>-County departments</p> <p>-watershed organizations</p> <p>-Municipal</p> <p>-Colleges</p> <p>-Game Commission partnership (Rodney Mee)</p> <p>-Grassroots organizations</p> <p>-Pine Creek Watershed Council</p> <p>-Trout Unlimited</p> <p>-Loyalsock Creek Watershed Association</p>	- Countywide	-2025 and beyond	<p>-Collaboration takes time and person power</p> <p>-Staff turnover can impact continuity and momentum</p> <p>-Keeping contact lists accurate</p> <p>-Keeping project lists up-to-date</p> <p>-Collab will be easier with orgs with staff rather than those that are all volunteer</p>	<p>-Social media</p> <p>-Other counties are also working on the same efforts</p> <p>-Current contact lists are available (Lycoming County and LCCD)</p>				<p>-Need a way to make long-term collaboration easier without needing more meetings – Explore possibility of using drive sharing platforms like share point, Google docs, or something similar</p> <p>-Staff time specifically allocated to collaboration</p> <p>- Edu/outreach and collaboration staff - \$80,000/year</p>	<p>-Funding for staff – DEP</p> <p>-Technology and admin support - DEP</p>		

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		-improved outreach and education for zoning officers, muni engineers, planning commission, local muni officials -Have regularly-scheduled meetings with DEP and others about project permits – one meeting per year	-Lycoming Creek Watershed Association -Muncy Creek Watershed Association -Larrys Creek Watershed Association -Lycoming Audubon Society -Middle Susq Riverkeeper -SGP -Other counties -Northcentral PA Conservancy											
2.7	Reduce fertilizer use School outreach	-Begin outreach campaigns -Education of alternative fertilizers -Work with school districts on soil and water testing	-Penn State Extension -LCCD -Lycoming County -Penn State Master Gardeners	- Countywide	-2025 and beyond	-Target farms/areas close to streams -Need regular outreach using multiple and diverse platforms -Efforts may not increase program interest or elicit behavior change	-Existing interest in water testing at Montgomery High School for Black Hole Creek and White Deer Hole Creek (Chris Ulrich)		-PACD mini grant for soil testing/sampling -Trout Unlimited and Fish and Boat Commission grant for multiple		-Personnel (1-2 people to do sampling) from LCCD -Personnel to create/establish soil baseline	-Funding for staff - DEP	-Grant funding for soil tests - 5,000 tests at \$9/test – \$45,000/year	-DEP

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								<p>projects https://coldwaterheritage.org/</p> <p>-County enviro funding</p> <p>-DCNR Environmental Education grant</p> <p>-PennVest</p>		<p>-Have NRCS and USDA come to county and other entities to re-emphasize their programs and projects and resources</p> <p>-Funding for edu/outreach staff and grant coordinator</p> <p>- \$160,000/year</p> <p>-Funding for professional marketing</p> <p>- \$80,000/year</p>			
2.8	<p>Reduce fertilizer use</p> <p>Landowner outreach</p>	<p>-Begin outreach campaigns</p> <p>-Education of alternative fertilizers</p> <p>-Testing samples by 1 or 2 people to have consistency</p>	<p>-Penn State Extension</p> <p>-LCCD</p> <p>-Lycoming County</p>	<p>- Countywide</p>	<p>-2025 and beyond</p>	<p>-Target farms/areas close to streams</p> <p>-Landowner engagement; managing landowner concerns</p>	<p>-Lycoming County mapping “Hot spots” maps</p> <p>-DEP – printing materials (e.g.</p>	<p>-PACD mini grant for soil testing/sampling</p> <p>-Trout Unlimited and Fish and Boat</p>		<p>-Personnel (1-2 people to do sampling) from LCCD</p> <p>-Personnel to create/esta</p>	<p>-Funding for staff - DEP</p>	<p>-Grant funding for soil tests - 5,000 tests at \$9/test</p> <p>- \$45,000/year</p>	<p>-DEP</p>

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		<p>-Develop soil sample baseline for small and large farms</p> <p>-Expanded soil testing –Free soil tests to landowners during certain times of the year</p> <p>-Showcase documents for marketing (demonstrating before and after)</p> <p>-Reduce fertilizer use by 10% by 2025</p>	<p>-Penn State Master Gardeners</p>			<p>-Need regular outreach using multiple and diverse platforms</p> <p>-Efforts may not increase program interest or elicit behavior change</p>	<p>Guidelines for Maintaining Streams in Your Communities)</p> <p>-Penn State Extension landowner webinar series on fertilizer alternatives and application practices; soil testing</p> <p>-USGS for groundwater data</p> <p>-DEP outreach materials</p> <p>-RC&D resources/out reach/materials/technical assistance</p> <p>-“Be More Floridian” marketing campaign as a case study</p>	<p>Commission grant for multiple projects https://coldwaterheritage.org/</p> <p>-County enviro funding</p> <p>-DCNR Environmental Education grant</p> <p>-PennVest</p>		<p>blish soil baseline</p> <p>-Have NRCS and USDA come to county and other entities to re-emphasize their programs and projects and resources</p> <p>-Funding for edu/outreach staff and grant coordinator</p> <p>- \$160,000/year</p> <p>-Funding for professional marketing</p> <p>- \$80,000/year</p>			
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Priority Initiative 3: Reporting and Tracking (these projects help improve reporting systems and cross-sector efficiency)

3.1	<p>Increase planning efficiency, reduce duplicative work, and to better target and coordinate projects</p> <p>-Establish project map at county level</p>	<p>-ID shovel-ready projects</p> <p>-Collect projects and data from multiple entities</p> <p>-Ensure partner data is updated at least every 6 months and uploaded onto GIS after updated</p> <p>-Ensure partners and data contributors agree on a database structure format and attribute data classification in order to better standardize the existing/future data</p>	<p>-Lycoming County</p> <p>-LCCD</p> <p>-USGS</p> <p>-Schools for internships</p>	<p>- Countywide</p>	<p>-2021</p> <p>-Update continuously</p>	<p>-Privacy concerns</p> <p>-Incomplete or unavailable data</p> <p>-Collaboration takes a lot of time</p> <p>-Limited administrative capacity</p> <p>-Communication and coordination among various entities can be challenging</p> <p>-Continually updating the map/data</p>	<p>-Lycoming County staff</p> <p>-Data from LCCD</p> <p>-Practice Keeper data</p> <p>-Get interns for this type of work (reach out to Bloom for interns, Lyco, Penn, others)</p> <p>-Penn State Capstone Projects</p>				<p>-Need cross-platform data consistency</p> <p>-Need to standardize the data and deliver it to the public and others in an innovative, captivating, and user-friendly fashion (can use interns for this)</p> <p>-May need data organization /GIS training</p>			

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	<ul style="list-style-type: none"> and coordinate projects -Improve project tracking 	<ul style="list-style-type: none"> -Reduce duplicative data -Evaluate and integrate equitable distribution of community/environmental assets and “disassets” -Track previous projects (e.g. streamside restoration) -Track LCCD and NRCS projects -Track projects identified in plans -County and Multi-Municipal Comprehensive Plans -West Branch Rivers Conservation Plan update -State Water Plan -Hazard Mitigation Plan -Greenways and Open Space Plan -Chesapeake Bay Pollutant Reduction Plans -Pine Creek Watershed Rivers Conservation plan 				<ul style="list-style-type: none"> -Limited administrative capacity -Communication and coordination among various entities can be challenging -Continually updating the map/data 	<ul style="list-style-type: none"> -DCNR River Conservation Plan -Trout Unlimited Coldwater Heritage Grant Program 				<ul style="list-style-type: none"> the data and deliver it to the public and others in an innovative, captivating, and user-friendly fashion (can use interns for this) -May need data organization /GIS training 			
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		-Establish database and maintain 4 years of consistent tracking												
3.3	Increase planning efficiency, reduce duplicative work, and to better target and coordinate projects - Watershed/wetland tracking	-Have better tracking/ID of where the wetlands are located -ID watersheds that experience natural erosion -Establish database of county projects by having a staff member or intern put BMPs into practice keeper from all different plans – need one central person to input all BMPs and report in order to ensure more efficient planning -Map every farm and put projects into the map -Establish database and maintain 4 years of consistent tracking	-LCCD -Lycoming County -Chesapeake Conservancy -Trout Unlimited -FWS -DEP -Lycoming College	- Countywide	-2025 and beyond	-Privacy concerns -Incomplete or unavailable data -Collaboration takes a lot of time -Limited administrative capacity -Communication and coordination among various entities can be challenging -Continually updating the map/data	-Lycoming County GIS and staff -Chesapeake Conservancy data -DCNR River Conservation Plan -Trout Unlimited Coldwater Heritage Grant Program				-Need cross-platform data consistency -Need to standardize the data and deliver it to the public and others in an innovative, captivating, and user-friendly fashion (can use interns for this) -May need data organization /GIS training	-DEP		
3.4	Maintain an ag operator list	- Maintain existing list to ensure effective and efficient outreach for upcoming incentives and programs	-LCCD	- Countywide	-2025 and beyond	-Contacts could change frequently -Maintaining list can be time consuming	-A current list already exists (LCCD)				- Edu/outreach and collaboration staff - \$80,000/year	-DEP		

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3.5	Turf field Nutrient Management - Tracking	-Implement a documentation program for commercial and homeowner nutrient applications in developed lands -Quantify artificial turf acres – ID data	-LCCD -Lycoming County	- Countywide	-2025 and beyond	-Contacts could change frequently -Maintaining list can be time consuming					- Edu/outreach and collaboration staff - \$80,000/year	-DEP		
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Priority Initiative 4: Programmatic, Policy, and Regulatory Changes (these projects include high-level policy changes that systematically help reduce TMDL's)

4.1	Reassess parking requirements in ordinances to reduce the amount of impervious surface	-Expand pervious surfaces by incentivizing pervious pavement on new development -Rehabilitate oversized/underused parking lots -Ensure municipal ordinances are not conflicting -5 acre reduction of impervious surfaces by 2028	-Lycoming County -Municipalities	- Countywide	- Continuous -Update ordinances - 2023	-Ensure that “heat islands” are mitigated with plantings -Resistance from developers -Landowner buy-in -Ordinances limit -Expense -Cost (engineering and design) -BMP Certification -Consider Complete Streets Standards	-Many case studies and examples exist -Rethinking Parking Requirements Using Drone Imagery: https://docs.google.com/presentation/d/16yqwMGlcIRNvUi5KyATDC-A509uSYI5pM0iGCLoKAbw/edit#slide=id.g47c21f69ac_0_6		-CAP Credits (EPA)		-Research on pavers (see University of New Hampshire) -Need additional case studies	-Waivers for using green infrastructure or other pervious system to offset cost of pervious pavement (grants, tax waivers, design and engineering assistance) -\$7/sq foot pervious pavement -\$2 million	-DEP
4.2	Reassess stormwater ordinances	-Retrofit existing stormwater facilities/retrofit parking lot to add newer stormwater	-Lycoming County -Municipalities	- Countywide	- Continuous	-Cost (engineering and design) -BMP Certification			-CAP Credits (EPA)			-Funding assistance/incentives for	-DEP

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

		mitigation (plantings, pervious pavement, green roof, etc) - Mitigating clear cutting impacts from solar farms with buffers -Integrate soil amendment and restoration into stormwater requirements -Ensure municipal ordinances are not conflicting -Integrate non-structural stormwater management, like stormwater easememnts (grass/forested buffers) -Dry well option for residential development -1 acre treated by 2025 -10 acres forested buffers by 2025 -10 acres of grass buffers by 2025 -10 acres of new amended soils by 2025 (“Stormwater Performance Standard-Runoff Reduction”)			-Update ordinances - 2023				-NRCS funding and incentives				implementation and engineering - \$10 million/year	
4.3	Stormwater Ordinance update (Act 167)	-Simplification of major/minor stormwater plan process;	-Lycoming County -LCCD – delegated duties	- Countywide	- Continuous	-Administrative challenges -Muni coordination	-Lycoming County staff		-Lycoming County funding		- Stormwater policy expert			

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		-Update/adopt and enforce floodplain management ordinances -streambank stabilization/erosion prevention -Increase community outreach/edu -Work with watershed organizations to develop a communication strategy for citizens/visitors												
4.5	Continue MS4 Programs	-Collaborate/coordinate with MS4 communities to ensure work is not duplicated/competing -Ensure funding/technical resources are shared to municipalities/authorities/others when the county learns about them -Allow MS4 projects to be located outside of urbanized area -Streamline permitting process -Improve mapping and standardize data collection and management	-Lycoming County -Municipalities	- Countywide	-2025 and beyond	-Collaboration and coordination to ensure CAP and MS4 projects are not duplicated and are co-beneficial -Provide more training on engineering, inspections, construction, and maintenance to MS4s	-Data and mapping from Lycoming County staff	-MS4s -Lycoming County	-Growing Greener -NFWF		-GPS mapping equipment - \$10,000	-DEP	-Funding for implementation and maintenance - \$2.5 mill/year	-DEP
4.6	Improve planning	-Coordinate regulations and outcomes	-Regulatory entities (LCCD, DEP, PCD, etc.)	- Countywide	-2025 and beyond	-Communication (agency and entity coordination), data availability	-Clean Water Institute		-County enviro funding					

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	effectiveness and efficiency	-Integrate rapid stream de-listing planning strategy -ID potential to re-establish county-level stormwater coordinator to work with MS4 municipalities -Coordinate with updated State Water Plan (currently being updated) -Integrative water resource planning					-Chesapeake Conservancy (for rapid stream de-listing)		-PennVest					
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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.

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

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).