

Phase 3 Watershed Implementation Plan (WIP) Annual Progress Update – Luzerne 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		Annual Progress to Date (2022) *add new 2022 progress above the existing 2021 progress. Date each entry
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Priority Initiative 2: Urban and Developed Stormwater											
2.1	MS4 Community Partnership Projects	Partner with MS4 Communities to assist with sediment and nutrient removal projects. Target projects that MS4 communities are implementing that would increase nutrient reductions.	WVSA, DAMA, municipalities, LCD, County Planning	MS4 Communities	2021-2025	Cost of implementation and development of partnership.	Program Guidance, project design	Cost of implementations	Provide input and identify possible cooperative efforts for project implementation/enhancement	Dedicated and sustainable funding source for district staff positions & implementation of projects	2022- WVSA and DAMA are proceeding with design and permitting for multiple new and retrofit projects for sediment collection, stormwater catchment, and urban stream restoration. These projects should be implemented shortly. On top of projects in development, multiple BMP designs, stormwater park, restoration sites, and stabilization projects have been completed by townships and municipalities from 2020-2022. A partnership for these projects has been under development and has been utilized when appropriate for review and additional funding.
2.1a	Collect data on existing/planned PRPs from MS4s Permittees	Quantify completed and planned efforts and projects to meet MS4 Permit requirements.	WVSA, DAMA, municipalities, LCD, PennDOT	MS4 Communities	2021-2025	Staffing to collect and report existing pollution reduction plans.	Knowledge of existing MS4 permits	N/A	Dedicated staff to compile existing data and complete outreach to MS4 permittees and data entry	Dedicated and sustainable funding source for district staff position	2022- Planning and discussions have occurred surrounding feasibility of this initiative and is planned to be incorporated once PRPs are accounted for. This initiative has the potential to be captured through BMP verification funding.
2.2	Residential Stormwater Management Program	Develop an outreach, technical assistance, and cost-share program for implementing water quality improvement BMPs on residential and	LCD, PSU Extension, WVSA, DAMA	County	2022-2025	Lack of staffing, funding for materials; resistance to participation; maintaining BMPs	Existing example programs	Cost of management	Dedicated staff to develop and coordinate the program	Dedicated and sustainable funding source for district staff positions & implementation of outreach programs and projects	2022- Program planning and feasibility discussion have occurred, and this initiative is looking for dedicated funding to implement. Potential funding sources include DEP EE Grant and Economic Development funds.

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		small commercial properties. <u>75 residential properties per year</u>									
2.3	Nutrient and Fertilizer Planning for Turf Grass	Create outreach program to encourage and provide guidance to property owners and local governments for the development of and implementation of plans and for improving nutrient/fertilizer use on turf grass. <u>2 programs per year</u>	LCD, PSU Extension	County Turf grass areas	2024	Reporting and Lack of participation	Guidance documents, outreach materials	Funding for planning	Dedicated staff to develop and coordinate the program, Example plans, outreach,	Dedicated and sustainable funding source for district staff positions & implementation of outreach programs	2022- This program is still of high importance and project locations are being identified and discussed to gain interest and availability for project sites once the program is kicked off.
2.4	Existing Stormwater BMP retrofit and Maintenance Program	Upgrade and maintain existing basins, drainage systems to improve function <u>10 systems per year</u>	Municipalities, WVSA, DAMA, School Districts, landowners, Recreational properties	Existing sites within county	2022-2025	Funding; identifying suitable facilities	Example projects, Guidance documents, Development of planting specs, coordinating projects with landowners	Municipal/authority funds	Design assistance, landowner outreach, and project design/permitting, Site data collection;	Dedicated and sustainable funding source for staff position(s)/consultants and design/implementation funds	2022- WVSA and DAMA are proceeding with design and permitting for multiple new and retrofit projects. These projects should be implemented shortly. Stormwater BMP retrofits are occurring through MS4 projects and on an as needed basis as they meet the needed criteria. A program to establish a backlog of needed infrastructure retrofits is under discussion. Funding to increase retrofit capacity will need to be established.

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2.5	Urban Green Space and Planting	Increase Green Space and continue to plant trees and shrubs within urban settings <u>35 acres per year</u>	Municipalities, Landowners, LCD, PSU Extension	Developed areas with minimal green space	2021-2025	Funding and Participation	Development of planting specs, coordinating projects with landowners	Tree sapling source	Design assistance, landowner outreach, and project design	Dedicated and sustainable funding source for staff position(s) and design/implementation funds	2022- Urban green space and plantings are of high interest and possible project sites have been discussed. A designated funding source will need to be identified to move this project forward. Ten Million Trees and DCNR funding may be utilized in the future.

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Priority Initiative 4: Watershed Health											
4.1	AMD Treatment for Nutrient Reductions	Detailed evaluation of nutrient loads in AMD discharges and development of treatment plans. <u>Evaluate 3 sites per year</u>	EPCAMR, BAMR, LCD, Landowners	AMD treatment sites: Mehoopany Creek, Bowman Creek, Fishing Creek, Susquehanna River, Lackawanna River, Delaware River Basin, Nescopeck Creek, and Catawissa Creek Watersheds	2023-2025	High Cost, Landowner participation, complex treatment systems	Existing AMD treatment technologies	Funding for existing treatment reductions	Chemical analysis of discharges and specific treatment designs, measured flow data	Funding for research, design, & construction	2022- AMD treatment evaluation has been occurring and is still of high interest for completion. This initiative is planned to be completed once funding is secured through BAMR, OSM, and infrastructure funds in the up-coming years. A prioritized list of project sites is under development.
4.2	Stream Restoration	Provide bank protection, instream habitat and riparian buffers on streams in degraded sections of streams in rural and developed areas. <u>400 linear feet per year</u>	LCD, municipalities, Trout Unlimited, watershed associations	County impaired streams Mehoopany Creek, Bowman Creek, Fishing Creek, Susquehanna River, Lackawanna River, Delaware	2022-2025	High cost/lack of matching funds, Lack of available land for stream restoration, landowner participation	Standard stream design guidance	Existing grant programs (e.g. Growing Greener), Public lands in urban areas (parks, trails, etc.)	Project coordination, Design/permitting services	Dedicated and sustainable funding source for district staff position & funding for design, permitting, and implementation of projects	2022- Stream restoration projects have been completed this year and are under development and planning for continued implementation. Two projects for Emergency Watershed Protection were completed totaling 284 linear feet of streambank stabilization. District is constantly evaluating projects sites and will continue to implement them as funding becomes available.

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				River Basin, Nescopeck Creek, and Catawissa Creek Watersheds							
4.3	Riparian Buffer Development	Protect and plant trees along critical stream sections. <u>Implement and verify 200 acres per year</u>	LCD, watershed associations, Trout Unlimited	County impaired streams Mehoopany Creek, Bowman Creek, Fishing Creek, Susquehanna River, Lackawanna River, Delaware River Basin, Nescopeck Creek, and Catawissa Creek Watersheds	2022-2025	Landowner cooperation/willingness to enter into long-term agreements (DCNR program), volunteers for planting, limited availability of certain tree species	Development of planting specs, coordinating projects with landowners, Standard guidance, education/outreach materials	Existing Grant Programs	Additional outreach to landowners and volunteers & coordination/design of buffer projects	Dedicated and sustainable funding source for district staff positions & implementation of buffer projects	2022- Riparian buffer plantings are being implemented throughout the county to protect critical stream stability and water quality. Verification of riparian buffers is occurring and is being reported. 8.23 acres of riparian buffer were implemented this year.
4.4	Farmland and Forestry Preservation	Quantify existing preserved open space to ensure proper pollutant reduction credits and Preserve additional	LCD, County Planning & Zoning Department, North Branch Land Trust	County farm and forestlands	2021-2025	Having enough staffing resources to compile, verify, report data, and coordinate additional preservation efforts and Funding to purchase	Existing land trust and Farmland Preservation Program resources	Existing grant programs	Additional outreach to landowners and coordination of data collection effort and future land preservation projects	Dedicated and sustainable funding source for staff positions & additional Funding to purchase additional conservation easements	2022- Farmland and forestry preservation applications are being received and are being preserved when funding is available to do so. 133.11 acres have been preserved this year. Increased funding is needed to reach additional acreage goal each year.

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		farmland and natural lands. <u>Add 500 acres per year</u>				conservation easements					
4.5	AML Reclamation Planning and AMD Restoration	Restoring AML impacted areas, enhancing existing and future AML reclamation projects to include additional conservation benefits (e.g., use of AMD sludge and biosolids for soil improvement, planting warm season grasses and use of Forest Reclamation Approach for improved SW mgmt. & wildlife habitat, etc.), and treating AMD discharges to restore water quality.	DEP BAMR, EPCAMR, Trout Unlimited, private landowners	Mining-impacted areas of the County Mehoopany Creek, Bowman Creek, Fishing Creek, Susquehanna River, Lackawanna River, Delaware River Basin, Nescopeck Creek, and Catawissa Creek Watersheds	2024+	High Cost, Landowner participation, complex treatment systems	Existing AMD treatment technologies and AML land reclamation standards	Funding for reclamation and restoration	Project coordination, Design/permitting services	Funding for staff positions and to design, permit, implement projects	2022- AMD reclamation and restoration is still of high interest for completion but has not progressed passed the planning stage. This initiative is planned to be completed once funding is secured through BAMR, OSM, and infrastructure funds in the up-coming years.

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		<u>Evaluate 3 projects per year</u>									
4.6*	Reporting and Verification of Existing BMPs	Collect data on and verify status (including operation & maintenance needs) of existing, recently completed, and in-progress BMPs <u>50 watershed projects per year</u>	LCD, partnering organizations, local governments, and state agencies (DEP, DCNR, PGC, & PFBC)	County	2021-2025	Having enough staffing resources to compile, verify, and report data	BMPs and plans that were funded through agencies and grants are already known	N/A	Dedicated staff or contracted staff to compile existing data and do outreach (e.g., partner survey, records research) and data entry	Dedicated and sustainable funding to this position	2022- Watershed BMPs are being implemented, verified, and reported using BMP verification funding from the Bay Office
4.7	Wetland Enhancement & River Shoreline Improvement	Improve and expand wetland habitat and beneficial aquatic plant habitat for improved water quality <u>Complete 25 acres per year</u>	LCD, landowners, partnering organizations, and state agencies (DCNR, PGC, & PFBC)	County – key environmentally important areas	2021-2025	Landowner Participation, funding sources for implementation, permitting hurdles	Design assistance	Current enhancement and improvement funding	Design assistance, landowner outreach, and project design/permitting	Dedicated and sustainable funding source for district staff positions & implementation of projects	2022- This initiative has been under discussion to find a university to conduct Water Willow research and its benefit on shoreline improvements through project implementation sites and monitoring.

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Priority Initiative 1: Agriculture											
1.1	Nutrient Management Planning	Assist producers in obtaining nutrient management planning (including soil samples, manure analysis, and agronomy assistance). BMP's include Nutrient Management Core N, Core P, Timing, Placement, and Rate <u>20 operations per year</u>	LCD, NRCS, Consultant	Agricultural production lands	2022-2025	Funding and Producer Participation	Producers must hire consultants themselves or receiving a minimal amount of assistance through local agencies	EQIP	Contracted Source	Dedicated funding to assist in this program	2022- Nutrient management plans are being developed in addition to the completion of soil sampling where needed. A designated program to increase planning and sampling has not been established but is under planning for next year.
1.2*	Reporting and Verification of Existing BMPs	Collect data and verify existing BMPs on operations <u>50 operations per year</u>	DEP, LCD, NRCS	County	2021-2025	Time Capacity, Data Entry, Release of Records, producer participation and resistance	BMPs and plans that were funded through agencies and grants are already known		Dedicated staff or contracted staff to compile existing data and complete outreach (e.g., producer survey, records research) and data entry	Dedicated and sustainable funding to this position	2022- Reporting and verification of existing BMPs is underway through the use of BMP verification funding from the Bay Office. An aerial verification platform has been created by LDG to located BMPs for field verification and entry by the district. Paper records were received of past projects implemented and papers will be gone through to identify if project locations can be found.
1.3	Existing BMP Maintenance Program	Assist producers with education and resources for maintenance of existing BMPs to	LCD, NRCS, PSU Extension	County	2022-2025	Funding and Producer participation	Technical specs of BMPs and guidance for BMP maintenance		Compile existing BMP designs, O&M specs and guidance, and review with producers)	Dedicated and sustainable funding for staff time and funding to assist landowners with costly	2022- BMP maintenance activities are being completed on an as needed basis although a program to identify additional needs and increase assistance availability is still under development and requires a designated funding source.

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		keep them functioning <u>10 operations per year</u>								repairs/maintenance needs	
1.4*	Riparian Buffer and Stream Fencing	Implement Stream fencing and riparian buffer on crop and pasture lands <u>200 acres per year implemented and verified</u> BMP's include forested riparian buffer with exclusion fencing	LCD, NRCS, DEP	Streams located along crop and pasture lands, targeting impaired watersheds	2021-2025	Funding and Producer participation/willingness to enter into long-term agreements	Development of planting specs, coordinating projects with landowners	Existing grant programs	Additional outreach to landowner & coordination/design of buffer projects	Dedicated and sustainable funding source for district staff positions & implementation of buffer projects	2022- Riparian buffer and stream fencing projects have been completed and are still under plan for this year. 8.23 acres of riparian buffer were installed this year.
1.5	Manure to Mine Lands Program	Evaluate availability of excess manure and potential opportunities to treat abandoned mine lands. <u>1 Feasibility study</u>	EPCAMR, LCD, Earth Conservancy, DEP BAMR	County	2022-2025	Farmer and Landowner Participation, extensive coordination effort, BAMR's modification of existing reclamation practices, Availability of excess manure	Historic programs	N/A	Feasibility study, Develop/coordinate program	Dedicated and sustainable funding source for staff position(s)	2022- This program is still of high interest and is looking to utilize BAMR, OSM, and infrastructure bill funds to implement this project in the on-going years.
1.6*	Wetland Creation/Enhancement on Farmlands	Create/enhance wetlands on agricultural lands that are less productive or within	LCD, NRCS	County – key environment ally important areas	2022-2025	Landowner Participation, permitting hurdles	Design assistance	Grants	Design assistance, landowner outreach, and project design/permitting	Dedicated and sustainable funding source for district staff positions & implementation of projects	2022- Wetland creation and enhancement is being evaluated when potential project sites become available although has reached hurdles due to proper landowner cooperation and permitting. Planning and design was started to create a wetland area within an existing hay field along E.

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		environmentally sensitive areas. <u>2 acres per year</u>									Fork Toby Creek that has been put on hold due to beaver activity creating a natural wetland area in the planned project site. A new site is being identified for the project.
1.7	Soil Health Improvement	Implement soil health practices, (including no-till planting, cover crops, use of pollinator species, etc.) on agricultural lands. <u>500 acres per year, increasing by 25% yearly</u>	LCD, NRCS	Countywide agricultural operations	2022-2025	Funding and Producer participation	Existing soil health technical guidance	Existing grant programs	Additional outreach to landowners & coordination of projects	Dedicated and sustainable funding source for district staff positions & implementation of projects	2022- No-till planting and cover crop implementation has been promoted and continued to be utilized throughout the county. A Soil Health Education field day was completed to increase awareness of proper practices and increase county engagement.
1.8*	Barnyard Agricultural BMP Implementation	Continuation of LCD's & NRCS's efforts to stabilize animal feeding and travel areas and to manage manure on existing agricultural operations. <u>Complete 5 projects per year in addition to existing NRCS and County project implementations.</u>	LCD, NRCS	Countywide agricultural operations	2022-2025	Funding and Producer participation/financial capabilities, technical designer availability	Project coordination & design	Existing grant programs	Additional outreach to landowner, coordination of projects, project design	Dedicated and sustainable funding source for district staff positions & implementation of projects	2022- Barnyard BMP projects have been identified and have ongoing hurdles due to the implementation challenges and the increased cost of construction. A project from 2014 was able to utilize CAP implementation funds to complete the project successfully this year.

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Priority Initiative 3: Wastewater											
3.1	Private Septic/Sewer Maintenance	Develop a program to provide education and incentives for maintenance of residential on-lot septic systems. <u>250 systems per year</u>	County Planning, SEOs	County private systems	2022-2025	Funding and Community Participation	Septic Professionals, Guidance Documents	Maintenance funds	Educational programs for maintenance activities, maintenance activities	Cost associated with development of program and public outreach, and maintenance	2022- Private septic and sewer maintenance activities have been occurring as needed although this program has not been implemented due to the lack of dedicated funding for this resource. This project would be implemented at county lake associations as well as addition private communities with their own sewer systems or private septic. PennVEST is being evaluated as a potential funding source to complete this task.
3.2	Reporting of On-Lot Septic BMPs	Continue and enhance tracking and accounting for on-lot septic system pumping by WW treatment facilities for proper pollutant reduction credits. <u>250 systems per year</u>	Wastewater Treatment Facilities, DEP	County	2022-2025	Need for standardized process for accurate accounting	Existing program for municipalities, pumping and maintenance	Pumping costs	Formal tracking system	Costs associated with staffing for BMP reporting	2022- This initiative has not been started as a program has not been established to complete this. Reporting of on-lot Septic systems could be captured through additional BMP verification abilities in the future.