

Phase 3 Watershed Implementation Plan (WIP) Annual Progress Update – Berks 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 # Green Yellow Red	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available		Resources Needed		Annual Progress to Date (2022) <small>*add new 2022 progress above the existing 2021 progress. Date each entry</small>
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Priority Initiative 1: Little Swatara											
1.1	Upper Little Swatara (ULS) 319 Plan Development and Implementation	Summer 2022 for 319 Plan	Upper Little Swatara (ULS) 319 Plan Steering Committee, Center for Watershed Protection (CWP), BCCD, NRCS, Ag Technical Service Providers (TSPs)	Upper Little Swatara (ULS) catchments	Mid 2021-mid 2022 for plan development followed by implement.	Carry over identified 319 plan opportunities and initiatives into the Berks Bay Action Plan (BBAP) and Catchment Targeting inventories BBAP participation with 319 plan steering committee "Leaning" on 319 Plan development as the driver for BBAP implementation in the ULS catchments	CWP, BCCD, BerksNature, County, local engineers/consultants, TSPs	Growing Greener (GG) (funding secured for 319 Plan develop.)		BMP implement. funding (as noted under Action 3.1 for implement. challenges and recom.)	QAPP for 319 plan approved by EPA. 319 plan is currently on hold while PA DEP updates the Crosskill Creek TMDL. Held Little Swatara 319 plan & BMP funding meeting with local farmers & stakeholders. Awarded \$277,000 CAP Implementation Grant for BMP installation (projects lined up for Spring 2023 implementation)
1.2	One-on-one farmer engagements via Catchment Management Database (CMD) prioritization	Engagements list for each catchment per Action 3.1	CWP, BCCD, NRCS, TSPs	All catchments	On-going with inherent tie to Actions 1.1 and 3.1	Augmented messaging and outreach combining 319 plan goals and objectives with BBAP action items and goals	CWP, BCCD, TSPs; additional person hired by BCCD for on-the-ground verifications	\$30k verifications funds being applied towarded efforts			Completed first verification run (test run) focused on ag parcels to fine tune process for remaining catchments. Current plan is finalize two watersheds through the end of 2022 and continue into 2023 per action 3.1.

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1.3	One-on-one municipal engagements	Engagements list for each catchment per Action 3.1	CWP, County	All catchments	On-going with inherent tie to Actions 1.1 and 3.1	Augmented messaging and outreach combining 319 plan goals and objectives with BBAP action items and goals	BCCD, County, local engineers/consultants				Currently working with the Berks County Planning Commission/GIS to prioritize catchments for verifications and capture non-ag BMPs. Coordinating with Berks Ag Preservation for additional verifications for ag BMPs.
1.4	Explore partnerships with Lebanon and Schuylkill counties for regional efforts		County, BCCD	Catchments within shared watersheds	On-going	Watershed-based, multi-entity, collaborative grant applications are viewed favorable with conventional funding organizations (NFWF, etc.) Lower Little Swatara identified as a priority watershed in the Lebanon CAP.		NFWF Small Watershed Grant (SWG), Most Effective Basins Funding (MEBF), Ches. Bay Trust (CBT), Growing Greener (GG)			Contacting LCDD and possibly CBF to coordinate. Initial efforts underway in Crosskill Creek watershed (shared with Lebanon) where a partnership may be applicable.
1.5	Promote and monitor BMP implementation	Per BMP targets outlined in P.I. 3 Coordination for individual catchments	County, BCCD, TSPs, municipal., farmers, local watershed groups, non-profits	Upper Little Swatara catchments	On-going with inherent tie to Actions 1.2 and 1.3	Outreach materials may be needed for individual engagements (Expanded BMP Quick Reference Guide with all BMPs included would assist this effort)*	CWP, BCCD, County, TSPs, local engineers/consultants	All noted under other actions		BMP implement. funding (as noted under Action 3.1 for implement. challenges and recom.)	Meeting with stakeholders in Little Swatara watershed to discuss RCPP funding for BMP's. Entering, updating, capturing, etc. BMP's into Practice Keeper (PK) as part of the overall catchment targeting initiative, long-term verification processes (LTVPs) implementation, and 319 plan(s) development and implementation.

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Priority Initiative 2: Conestoga-Cocalico											
2.1	Upper Conestoga (UC) 319 Plan development and implementation	Summer 2023 for 319 plan (dependent on securing funding)	UC 319 Plan Steering Committee, Chesapeake Bay Found. (CBF), Berks County Conservation District (BCCD), NRCS, Ag Technical Service Providers (TSPs)	Upper Conestoga catchments	2022-2023 for plan development followed by implement.	Carry over identified 319 plan opportunities and initiatives into the Berks Bay Action Plan (BBAP) and Catchment Targeting inventories BBAP participation with 319 plan steering committee "Leaning" on 319 plan development for BBAP implementation in the UC catchments	CBF, BCCD, BerksNature, County, local engineers/consultants, TSPs, Lancaster Farmland Trust (LFT)	Growing Greener (GG) (CBF applying for 319 plan develop. Funds)		BMP implement. Funding (as noted under Action 3.1 for implement. Challenges and recom.)	Plan development in very early stages, but initial steps underway or upcoming. Current target date for 319 plan completion is June 1, 2023.
2.2	One-on-one farmer engagements via Catchment Management Database (CMD) prioritization	Engagements list for each catchment per Action 3.1	CBF, BCCD, NRCS, TSPs	All catchments	On-going with inherent tie to Actions 2.1 and 3.1	Augmented messaging and outreach combining 319 plan goals and objectives with BBAP action items and goals Conduct Cocalico-based efforts in conjunction with Upper Conestoga efforts	CBF, BCCD, TSPs			Funding for expanded engagements as noted under Action 3.1	This effort is primarily in a holding pattern until 319 plan development is in full swing. However, previously launched efforts underway and adjusted to compliment CAP efforts
2.3	One-on-one municipal engagements	Engagements list for each catchment per Action 3.1	CBF, County	Municipalities in all catchments	On-going with inherent tie to Actions 2.1 and 3.1	Augmented messaging and outreach combining 319 plan goals and objectives with BBAP action items and goals Conduct Cocalico-based efforts in conjunction with Upper Conestoga efforts	BCCD, County, local engineers/consultants				This effort in a holding pattern until 319 plan development is in full swing. It is anticipated the plan will be complete mid-2023.

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Priority Initiative 3: Coordination												
3.1	Catchments Assessments and Prioritization	TBD for each individual catchment	Berks County Conservation District (BCCD), Berks County Planning Commission (BCPC)/GIS, 319 plan comm., local municipalities, County GIS, Ag Preserve. Board, NRCS	All areas (all catchments to be analyzed and prioritized)	Funding assisted timeline: 27 total catchment groups: 2021-4, 2022-18, 2023-4	Upper Little Swatara and Upper Conestoga efforts will result in prioritization info, opportunities identification, etc. for catchments in these areas	Catchment Management Database (CMD), County GIS, USGS SPARROW, Practice Keeper (PK)	NFWF SWG/ INSRG programs; \$30k verifications funding		Berks Bay Action Plan (BBAP) implement. activities associated with assessments, engage., data entry, etc. that drive long-term BMP imp. would occur 2021-2030 without funding	\$30,000 implementation grant obtained for physical BMP verifications and entry of data into Practice Keeper. Completed a practice verification run (test run) of 1 watershed (5 catchments). Overall process being fine-tuned for remaining catchments based on results of the test run (actions to be finalized include identification of exact data entry responsibilities (PK vs. PK partner portal, transfer of information, etc.).	
		See timeline for annual targets of assessments; each catchment will have an identified BMP acreage from the BMP targets identified in Actions 3.2 – 3.5		Analyses order will follow “worst-to-first” hierarchy based on Catchment Management Database (CMD) mass and incremental loading scores.		Existing funding timeline: 27 total catchment groups, 6/ year (2022-2026)						Action Teams (Ats) will provide additional focus on areas outside of 319 Plan(s) efforts
		Game plan by late 2021										GIS overlay analyses of individual catchments to outline engagements, opportunities, etc. (“game plan” for each catchment)

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Promote and monitor ag BMP	<i>Soil Conservation and WQ Plans – 12,000 acres</i>	BCCD, NRCS, Ag Technical Service Providers (TSPs), farmers, Center for Watershed Protection (CWP), Chesapeake Bay Foundation (CBF)	All areas with emphasis provided towards prioritized catchments through Action 3.1 and 319 plan(s) development	On-going with inherent tie to Action 3.1 and 319 plan(s) development and implement. timelines	Broad slate of BMP types across ag industry and based on individual farm conservation needs as identified through CMD prioritization and 319 plan objectives	Farm survey, NRCS, TSPs, BCCD, Ag Preserve Board, CWP, CBF, Penn State Ext.	REAP, CEG, EQIP, RCPP, MEBF, State reimb. Program, PennVEST, PL566, \$30k verifications funding	2 persons: PK manage. and BMP verifications and/or reconcile. processes (these individuals would perform these activities indefinitely)	\$120,000/yr for additional personnel (2 persons noted under technical needs; this includes funding for added personnel and equipment costs)	BCCD has received \$2.2 million from NRCS/RCPP which has been contracted to 10 operations for structural BMP's. A grant request has been submitted to NFWF Most Effective Basins totaling \$850,000 for BMP incentive payments, precision nutrient management, cover crops and nutrient management core planning. Berks County & LSI have begun verifications in 1 watershed (5 catchments). Recieved \$30,000 Implementation Grant for BMP verification & data entry into Practice Keeper.	
	<i>Nutrient Management Core Nitrogen – 10,500 acres</i>										
	<i>Nutrient Management Core Phosphorus – 4,700 acres</i>										
	<i>Nutrient Management Placement Nitrogen – 3,400 acres</i>										Several rates based on a combination of underreported BMPs where capture of unreported acres will be achieved through catchment prioritization efforts and Practice Keeper (PK) data entry and management
	<i>Nutrient Management Timing Nitrogen – 3,800 acres</i>										Farmer resistance and buy-in
	<i>Nutrient Management Rate Nitrogen – 2,700 acres</i>										Education to be achieved via one-on-one engagements by balancing farmer's needs and wants with fitting into a recognized BMP for nutrient and sediment reductions.
	<i>Nutrient Management Placement Phosphorus – 2,700 acres</i>										Limited definition of cover crops and what counts as a reduction*
	<i>Nutrient Management Timing Phosphorus – 2,700 acres</i>										Transfer of plans in NRCS platform to PK would reduce long-term additional resource needs tied to data entry*
	<i>Nutrient Management Rate Phosphorus – 2,700 acres</i>										Multiple composting approaches should be considered in the 2023 scenario update (Mushroom composting may be an additional potential alternative for reductions*)
	<i>Conservation Tillage – 6,100 acres</i>										
	<i>High Residue Tillage – 6,600 acres</i>										
	<i>Traditional Cover Crops – 4,500 acres</i>										
<i>Cover Crops with Fall</i>											

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3.2	Promote and monitor ag BMP implementation	Nutrients – 4,500 acres				Engagements with retailers/vendors and NRCS for fertilizers should help long-term promotion of nutrient management goals					
		Commodity Cover Crops – 550 acres									
		Prescribed Grazing – 500 acres									
		Pasture Alternative Watering – 400 acres									
		Horse Pasture Management – 20 acres									
		Barnyard Runoff Controls – 2 acres									
		Loafing Lot Management – 2 acres									
		Dairy Precision Feeding – 2,300 animal units									
		Animal Waste Management Systems – 7,800 animal units									
		Manure Transport out of Berks County – 2,000 dry tons/year									
		Mortality Composting – 3 systems									
Manure Incorporation – 700 acres											
						Clear messaging regarding livestock in streams would improve engagements with farmers*					
						CAP implementation funding as incentive payments via EQIP/NRCS funding					
						Identification of demonstration projects based on initial farmer engagements during Action 3.1 activities to be able to demonstrate worthiness of a particular BMP will provide a strong basis for future buy-in					
						350 inspections occurring annually (with NRCS visiting ~500 farms/year), these efforts and knowledge will streamline Action 3.1 activities for farms in targeted catchments; added persons would augment these visits for verifications					

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3.3	Promote and monitor urban/developed BMP implementation	<i>Runoff Reduction Performance Standards – 400 acres</i>	Local municipalities, local watershed groups, BerksNature, Alliance for the Chesapeake Bay (ACB), County GIS, developers	Developed and semi-rural areas (all catchments)	On-going with inherent tie to Action 3.1	Significant reconciliation of numbers is necessary (to be completed via catchment analyses)	Local engineers, DEP, County, MS4 group, County GIS, Clean Water Academy, EPA, ACB	GG, NFWF, CBT, DCNR, Keystone, developers, municipal, PennVEST		Capital Cost: ~\$19.9 million (includes ~\$8,000 for conservation landscaping, ~\$6.3 million for SWM facilities, and ~\$5.7 million for septic systems)	Implementation is occurring. However, data capture and reporting processes are still under development and/or being finalized. One item under consideration/ review is the implementation of a title block requirements for land development plans that pass through county planning (and non-ag BMPs can be captured at that point).
		<i>Stormwater Treatment Performance Standards – 200 acres</i>									
		<i>Extended Dry Ponds – 50 acres</i>									
		<i>Infiltration Practices – 40 acres</i>									
		<i>Bioretention – 25 acres</i>									
		<i>Vegetated Open Channels – 25 acres</i>									
		<i>Impervious Disconnection – 0.24 acres</i>									
		<i>Advanced IDD&E Control – 140 acres treated</i>									
		<i>Conservation Landscaping – 40 acres</i>									
		<i>Urban Tree Canopy – 1 acre</i>									
		<i>Urban Forest Planting – 10 acres</i>									
		<i>Urban Nutrient Management – 650 acres</i>									
<i>Conv. Septic Denitrification – 150 systems</i>											
						Individual municipal engagements via one-on-one engagements and as part of the catchment prioritization processes will be key for “buy-in” and establishing individual municipal needs.					
						Identify needs and assistance channels for compliant MS4 programs (specifically MCM #3 and education/outreach channels) by individual muni.					Costs are based on if full slate of BMPs are required), current high-level assumption is 60%-75% of the proposed BMPs are already implemented but not captured through an appropriate reporting mechanisms
						Modify implementation rates in 2023 after catchment targeting inventories generated.					
						319 plan efforts will focus on ag, Coord. AT will focus on complementing efforts for developed areas in applicable catchments.					
						Track developments by catchments (to track impervious)					
						Separate database may need to be considered for capturing all Ch. 102/ land development BMPs already in place*					

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3.4	Promote and monitor riparian buffers and stream BMP implementation	<i>Forest buffers – 300 acres</i>	BCCD, ACB, CBF, Stroud, TSPs, local municipalities, local watershed groups, local municipalities, Ag Preserve. Board	All areas with emphasis provided towards prioritized catchments	Ongoing with inherent tie to Action 3.1 and 319 plan(s) development timelines	Landowner/farmer resistance or buy-in	ACB, CBF, BerksNature, BCCD, Stroud, DCNR, NRCS	CREP, DCNR, GG, MEBF, Keystone, NFWF	Added persons noted under Action 3.2 can provide long-term verification processes	Capital Cost: ~\$4.4 million (includes ~\$1.2 million for forest buffers and ~\$2.5 million for stream restoration)	BCCD received \$450,000 Growing Greener to implement 50 acres of riparian buffers in CB watershed in Berks County. Catchment Targeting efforts include capture of known buffers for inventory building.		
		Buffers with exclusion fencing are exclusive to riparian corridors (and applied to pasture land uses); Buffers (no exclusion fencing) are not exclusive to riparian corridors and applied to crop, hay, turfgrass, and similar land uses (can be applied to field borders and similar upland scenarios)										Long-term maintenance costs will need TBD	
						Newly acquired buffer maintenance equipment should assist with long-term considerations							
						<i>Narrow forest buffers with exclusion fencing – 50 acres</i>							
						<i>Narrow grass buffers with exclusion fencing – 10 acres</i>							
						<i>Grass Buffers – 300 acres</i>							
						<i>Grass Buffers with exclusion fencing – 10 acres</i>							
						<i>Urban forest buffers – 20 acres</i>							
						<i>Urban stream restoration – 1,500 linear feet</i>							
						<i>Non-urban stream restoration – 3,500 linear feet</i>							
		<i>Wetland restoration – 8 acres</i>											
<i>Wetland creation – 12 acres</i>													
<i>Dirt & Gravel Road Program (Driving Surface + Raising the Roadbed) – 750 linear feet</i>													

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3.5	Promote and monitor conservation/ preservation BMP implementation	Forest Conservation – 293 acres	BCCD, Ag. preserve. Board, BerksNature, local municipalities, Kittatinny Coalition	All areas	On-going	Carbon credits program for private forests (provides incentives for forest conservation that also provides nutrient and sediment reductions)	Ag Preserve. Board, BCCD, County, BerksNature, CBF				Approximately 108 acres of farmland preserved thus far in 2022.
		Agricultural Conservation – 492 acres				BerksNature, Ag Preserve. Board, and Kittatinny Coalition are drivers for preserved farms					
		Wetland Conservation – 15 acres									
3.6	Data Management	Action 3.1 established processes by fall of 2021 to dictate data management tasks and activities	County, BCCD	All areas	Ongoing; game plan by late summer/ early fall 2021 (tied to Catchment Targeting Action 3.1)	House the master CMD and related attributes and inventory at County GIS	PK, FieldDoc, County GIS			Dependent on PK manager funding noted under Action 3.2	Developed and implemented game plan for Catchment Targeting initiative along with Berks County Planning Commission, BCCD & Ag Preservation. Coded yellow as final details for capture of non-ag BMPs still under development.
						Final game plan for Catchment Targeting Initiative will dictate layers and attributes table					
						Ag information stored in PK at BCCD					
3.7	Programs/plans alignment as part of assessment process	Master list of plan(s) overlays as part of Action 3.1 established assessment processes game plan	County, BCCD, CWP, CBF	All areas/ catchments	On-going with master list established as part of Action 3.1	Ensure efforts do not conflict and/or align with other efforts; alignment protocols built into Catchment Targeting processes.	MS4 PRPs, Comp Plan, Source Water Protection (SWP) program, and related local plans				Primary focus is centered around the BMPs called for in the Hazard Mitigation Plan against the BMPs called for in the BBAP.
						Push/pull applicable information/data from 319 plan(s) development processes					
						Action 3.1 assessments include plan/data overlays during desktop analysis portion of activities (intent is to potentially match BMP opps. With previous plan(s) objectives)					

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3.8	BMP Reporting Reconciliation		BCCD, local municipalities, local watershed groups, County, CWP, CBF, TSPs	All areas	On-going; tied to Catchment Targeting and 319 plan(s) development findings, and Action 3.6 for data manage	Ensure centralized platform (County GIS) appropriately captures and displays individual catchment needs, captured unreported BMPs, etc. and aligns with reporting processes	Local engineers/ consultants, TSPs, BCCD	\$30k verifications funding		Dependent on PK funding noted under Action 3.2 for ag-related BMPs reconcile. and data entry	Process is essentially in place as a result of the Catchment Targeting approach. However, urban/suburban BMP reconciliation still needs final details flushed out.
						Will require "boots-on-the-ground" verifications				Dependent on funding outlined under Action 3.1 for catchment targeting	

