

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

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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			Review Checklist Comments	
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Priority Initiative 3: Coordination														
3.1	Catchments Assessments and Prioritization	TBD for each individual catchment 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 <i>Game plan by late 2021</i>	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) Analyses order will follow “worst-to-first” hierarchy based on Catchment Management Database (CMD) mass and incremental loading scores.	Funding assisted timeline: 27 total catchment groups 2021: 4, 2022: 18 2023: 4 Existing funding timeline: 27 total catchment groups, 6/year (2022-2026)	Upper Little Swatara and Upper Conestoga efforts will result in prioritization info, opportunities identification, etc. for catchments in these areas Action Teams (Ats) will provide additional focus on areas outside of 319 Plan(s) efforts GIS overlay analyses of individual catchments to outline engagements, opportunities, etc. (“game plan” for each catchment) Results of these analyses are intended to outline specific BMP implementation actions. Implementation actions will only be realized with additional funding and permitting flexibility across all considerations.*	Catchment Management Database (CMD), County GIS, USGS SPARROW, Practice Keeper (PK)		NFWF SWG/ INSRG programs		Game plan outlining assess. processes		Funding for “boots on the ground” verifications and/or engagements (\$2,500/catchment = \$67,500; long-term verification processes funding and personnel outlined with PK needs under Action 3.2 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 added funding	DEP, NFWF

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3.2	Promote and monitor ag BMP implementation	<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	Various	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)		
		<i>Nutrient Management Core Nitrogen – 10,500 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									Capital Cost: ~\$8.9 million (includes ~\$300,000 for SC plans, ~\$700,000 for cover crops, ~\$7.0 million for AWS, and ~\$40,000 for prescribed grazing practices)
		<i>Nutrient Management Core Phosphorus – 4,700 acres</i>				Farmer resistance and buy-in									
		<i>Nutrient Management Placement Nitrogen – 3,400 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 Timing Nitrogen – 3,800 acres</i>				Limited definition of cover crops and what counts as a reduction*									
		<i>Nutrient Management Rate Nitrogen – 2,700 acres</i>				Transfer of plans in NRCS platform to PK would reduce long-term additional									
		<i>Nutrient Management Placement Phosphorus – 2,700 acres</i>													
<i>Nutrient Management Timing Phosphorus – 2,700 acres</i>															
<i>Nutrient Management</i>															

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		<p><i>Dairy Precision Feeding – 2,300 animal units</i></p> <p><i>Animal Waste Management Systems – 7,800 animal units</i></p> <p><i>Manure Transport out of Berks County – 2,000 dry tons/year</i></p> <p><i>Mortality Composting – 3 systems</i></p> <p><i>Manure Incorporation – 700 acres</i></p>				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								
3.3	Promote and monitor urban/developed BMP implementation	<p><i>Runoff Reduction Performance Standards – 400 acres</i></p> <p><i>Stormwater Treatment Performance Standards – 200 acres</i></p> <p><i>Extended Dry Ponds – 50 acres</i></p> <p><i>Infiltration Practices – 40 acres</i></p>	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	<p>Significant reconciliation of numbers is necessary (to be completed via catchment analyses)</p> <p>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.</p>	Local engineers, DEP, County MS4 group, County GIS		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)		Costs are based on if full slate of

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		<p><i>Bioretention – 25 acres</i></p> <p><i>Vegetated Open Channels – 25 acres</i></p> <p><i>Impervious Disconnection – 0.24 acres</i></p> <p><i>Advanced IDD&E Control – 140 acres treated</i></p> <p><i>Conservation Landscaping – 40 acres</i></p> <p><i>Urban Tree Canopy – 1 acre</i></p> <p><i>Urban Forest Planting – 10 acres</i></p> <p><i>Urban Nutrient Management – 650 acres</i></p> <p><i>Conv. Septic Denitrification – 150 systems</i></p>				<p>Identify needs and assistance channels for compliant MS4 programs (specifically MCM #3 and education/outreach channels) by individual muni.</p> <p>Modify implementation rates in 2023 after catchment targeting inventories generated.</p> <p>319 plan efforts will focus on ag, Coord. AT will focus on complementing efforts for developed areas in applicable catchments.</p> <p>Separate database may need to be considered for capturing all Ch. 102/ land development BMPs already in place*</p> <p>Track developments by catchments (to track impervious)</p>								<p>BMPs are required), current high-level assumption is 60%-75% of the proposed BMPs are already implemented but not captured through an appropriate reporting mechanism</p>	
3.4	Promote and monitor riparian buffers and stream BMP implementation	<p><i>Forest buffers – 300 acres</i></p> <p><i>Forest buffers with exclusion fencing – 50 acres</i></p>	BCCD, ACB, CBF, Stroud, TSPs, local municipalities, local watershed groups, local municipalities,	All areas with emphasis provided towards prioritized catchments	Ongoing with inherent tie to Action 3.1 and 319 plan(s) development timelines	<p>Landowner/farmer resistance or buy-in</p> <p>Buffers with exclusion fencing are exclusive to riparian corridors (and applied to pasture land uses);</p>	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		

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		<p><i>Narrow forest buffers with exclusion fencing – 50 acres</i></p> <p><i>Grass Buffers – 300 acres</i></p> <p><i>Grass Buffers with exclusion fencing – 10 acres</i></p> <p><i>Narrow grass buffers with exclusion fencing – 10 acres</i></p> <p><i>Urban forest buffers – 20 acres</i></p> <p><i>Urban stream restoration – 1,500 linear feet</i></p> <p><i>Non-urban stream restoration – 3,500 linear feet</i></p> <p><i>Wetland restoration – 8 acres</i></p> <p><i>Wetland creation – 12 acres</i></p> <p><i>Dirt & Gravel Road Program (Driving Surface + Raising the Roadbed) – 750 linear feet</i></p>	<p>Ag Preserve. Board</p>			<p>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)</p> <p>Newly acquired buffer maintenance equipment should assist with long-term considerations</p>									<p>for stream restoration)</p> <p>Long-term maintenance costs will need TBD</p>
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3.5	Promote and monitor conservation/preservation BMP implementation	<i>Forest Conservation – 293 acres</i> <i>Agricultural Conservation – 492 acres</i> <i>Wetland Conservation – 15 acres</i>	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) BerksNature, Ag Preserve. Board, and Kittatinny Coalition are drivers for preserved farms	Ag Preserve. Board, BCCD, County, BerksNature, CBF							
3.6	Data management	<i>Action 3.1 established processes by fall of 2021 to dictate data management tasks and activities</i>	County, BCCD	All areas/catchments	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 Final game plan for Catchment Targeting Initiative will dictate layers and attributes table Ag information stored in PK at BCCD	PK, FieldDoc, County GIS						Dependent on PK manager funding noted under Action 3.2	

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3.7	Programs/plans alignment as part of assessment processes	<i>Master list of plan(s) overlays as part of Action 3.1 established assessment processes game plan</i>	County, BCCD, CWP, CBF	All areas/catchments	On-going with master list established as part of Action 3.1	<p>Ensure efforts do not conflict and/or align with other efforts; alignment protocols built into Catchment Targeting processes.</p> <p>Push/pull applicable information/data from 319 plan(s) development processes</p> <p>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)</p>	MS4 PRPs, Comp Plan, Source Water Protection (SWP) program, and related local plans							
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.	<p>Ensure centralized platform (County GIS) appropriately captures and displays individual catchment needs, captured unreported BMPs, etc. and aligns with reporting processes</p> <p>Will require “boots-on-the-ground” verifications</p>	Local engineers/consultants, TSPs, BCCD					<p>Dependent on PK funding noted under Action 3.2 for ag-related BMPs reconcile. and data entry</p> <p>Dependent on funding outlined under Action 3.1 for catchment targeting</p>		

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Each county-based local area will use this template to identify:

1. Inputs – These are both existing and needed resources, public and private, to implement the identified priority initiative. These include both technical and financial resources, such as personnel, supplies, equipment and funding.
2. Process – what is each partner able to do where and by when. These are the action items listed under each priority initiative.
3. Outputs and outcomes – both short and long-term. These are the priority initiatives identified by each county. The performance targets are the intermediate indicators that will measure progress.
4. Implementation challenges – any potential issues or roadblocks to implementation that could impede outputs and outcomes.

Asterisk: Place an asterisk next to the action number(s) for action items that appear in both the County Planning and Progress Template and the Programmatic Recommendations Template.

For each Priority Initiative or Program Element: Use the fields, as defined below, to identify the inputs and the process that will be followed to achieve each priority initiative. This is the “who, what, where, when and how” of the plan:

Description = What. This may include programs that address prevention, education, or as specific as planned BMP installations that will address the Priority Initiative. A programmatic or policy effort will require some ability to quantify the anticipated benefits which will allow calculation of the associated nutrient reductions.

Performance Target = How. This is an extension of the Description above. The Performance Target details the unique BMPs that will result from implementation of the Priority Initiative and serves as a benchmark to track progress in addressing the Priority Initiative. Performance Targets may be spread across multiple Responsible Parties, Geographies, and Timelines based on the specifics of the Initiative.

Responsible Party(ies) = Who. This is/are the key partner(s) who will implement the action items through outreach, assistance or funding, and who will be responsible for delivering the identified programs or practices.

Geographic Location = Where. This field identifies the geographic range of the planned implementation. This could extend to the entire county or down to a small watershed, based on the scale of the Priority Initiative, range of the Responsible Party, or planned funding/resources. *NOTE: Resource limitations alone should not limit potential implementation as additional funding may become available in the future.*

Expected Timeline = When. Provide the expected completion date for the planned activity. This should be a reasonable expectation, based on knowledge and experience, that will aid in tracking progress toward addressing the Priority Initiative.

Resources Available: Technical & Funding = This field will note technical and financial resources secured/available to implement the program (Description). This is the total of the resources identified in the County Resources Inventory Template below allocated to the priority initiative as a whole; or, if available, to each action.

Resources Needed: Technical & Funding = This field will note technical and financial resources needed/outstanding to implement the program (Description). This is the total of the additional resources projected and identified as needed in the County Resources Inventory Template below allocated to the priority initiative as a whole; or, if possible, to each action.

Potential Implementation Challenges/Issues = This field will note challenges and issues that may delay program implementation (Description).