

Phase 3 Watershed Implementation Plan (WIP) Progress and Milestones 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 <u>Available</u>		Resources <u>Needed</u>		Progress to Date
Agriculture Action Team							Technical	Financial	Technical	Financial	
Priority Initiative 1: Manure Management											
1.1	Implement a suite of on-farm BMP's to address the manure so less of a need to spread during the winter, and introduce an end to winter spreading (5-8 year phase-in period)	Reduce manure being applied to farmland by 25%	Lancaster County Conservation District, Lancaster Clean Water Partners, all partners in the county, DEP, Dept of Ag	All of Lancaster County Projects to go in priority watersheds TBD based on results from community mapping tool	Initial tasks involve conversion of 25% to approximate pounds, and identification of distribution between manure and commercial fert. Research process and initial implementation done by 2025: vision is for a required ban to start in 2024 with full implementation by 2027 20 installs per year	Cultural shift is needed to accept that too much liquid manure is a problem instead of a resource; Extreme weather events cause damage and staff end up spending time/resources on repair instead of new implementation; Currently not enough on-farm 6 month storages Financial and technical support from municipalities as we all wade through new MS4 flexibility	Ag technician and Plain Sect Outreach coordinator-LCCD	NRCS	MORE contractors who are able to build manure storages and install BMPs to address the manure during winter months	Money for storages and alternative BMPs to address the manure during winter months	Controls and storage facilities are being built albeit at a slower pace than originally desired or planned due to limited capital and human resources. Game plan(s) for ensuring BMPs are captured in a central system (PracticeKeeper) are under development to assist with identification of human and capital needs for long-term verification processes.
		Private sector consultants					NFWF grants	MORE Ag technician and Plain Sect Outreach coordinators who are all consistently trained to ensure BMPs are standardized and high quality	\$100,000 for barnyard runoff controls		
		Non-profit partners who do agricultural outreach and conservation projects					Plain-sect self-funding	MORE private sector consultants	Financial framework that includes research into nutrient credit trading, business models for manure-to-energy plants, etc to support farms as local businesses		
								MORE non-profit partners who do agricultural outreach and conservation projects			
								More coverage in national agriculture communications so this is widely viewed and accepted message (Farm Journal, etc)			

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1.1.1	Explore digester or alternative manure treatment technologies (establish a business model that will work)	Manure treatment technologies – 20,000 tons	All partners							\$51.9M for regional biodigester (per 2011 HRG study, adjusted to 2018 dollars)	Potential regional digester in Cocalico Creek watershed area stalled. During preliminary exploratory and development phases, it became apparent the business model that will most likely succeed involves the ability for processing operations to result in a by-product (e.g. electricity, biochar, etc.) that can be sold to cover collection and processing costs.
1.2	Livestock access management	Grass buffer with exclusion fencing 2,500 acres (largely underreported – PSU survey will capture new info)	All partners, Alliance for the Chesapeake Bay, LCCD	All of Lancaster County with direct farmer outreach happening in priority watersheds first	Research process and initial implementation done by 2025; vision is for a required ban to start in 2024 with full implementation by 2027	Develop local incentive programs to promote the practice as a viable option for landowners;	Educational materials about herd health benefits of fencing herds out of streams	NRCS	More boots on the ground to do farmer outreach and implementation	Dollars to pay the outreach staff	Outreach and implementation of controls have been proceeding but at a slower pace than originally desired or planned due to limited capital and human resources.
						Add watering facilities or crossings;					
						Current PA clean streams law restricts any local ability to require fencing livestock out of a stream or river;		NFWF grants that include imp. dollars	Ag technician and Plain Sect Outreach coordinators who are all consistently trained to ensure BMPs are standardized and high quality	Dollars to pay for fencing materials and an incentive program for farmers to take any land out of production	
					Financial and technical support from municipalities as we all wade through new MS4 flexibility;	Extreme weather events cause damage and staff end up delayed or spending time/resources on repair instead of new implementation		DEP's small business grants for fence materials	More coverage in national agriculture communications so this is widely viewed and accepted message (Farm Journal, etc)	\$40.0M for fencing, with \$3.7M for stream crossings and \$11.9M for access approaches	
1.3	Increase the number of manure storages and better barnyard management	Animal Waste Management Systems – 100,000 AU's (~150 farms per year; ~50,000 cows/700 farms)	All partners, LCCD, Private sector agriculture consultants	Projects to go in priority watersheds TBD based on results from community mapping tool	Built by 2025	Dollars (funding);	LCCD	NRCS	More boots on the ground to do farmer outreach and implementation	Dollars to pay the outreach staff	Outreach and implementation of controls have been proceeding but at a slower pace than originally desired or planned due to limited capital and human resources. Game plan(s) for ensuring BMPs are captured in a central system (PracticeKeeper) are under development to assist with identification of human and capital needs for long-term verification processes.
						Financial and technical support from municipalities as we all wade through new MS4 flexibility;					
					Extreme weather events cause damage and limit time staff/contractors have for new implementation		Dept. of Ag	NFWF grants that include imp. dollars	More coverage in national agriculture communications so this is widely viewed and accepted message (Farm Journal, etc)	For six months of waste storage accommodating 100,000 AUs, approximately \$80M would be needed for tank storage and engineering and construction	

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							NRCS	DEP's small business grants for fence materials			
							Private Consultants				
							NGO's				
1.4	<p style="background-color: yellow;">Create a more comprehensive reporting system for manure transport in and out of the county (host meetings of all brokers to understand what data is available) (reporting mechanism needed)</p>	Manure transport out of the county – 150,000 tons	LCCD, Manure haulers, DEP or Dept of Ag needs to be holder of this data for proper analysis and application to the model, SCC	All of Lancaster County	Meetings to start in fall 2018 and continue until accurate recording system is established and running by 2025	No required reporting (data gap from planners/ farmers to brokers to state); PK is only available to LCCD and specific DEP employees so accessing the specifics of manure is limited; Act 49 does not require haulers/ brokers to submit data about tons moved and dest. (no data into Practice Keeper)	Haulers and brokers	NFWF grants that include imp. dollars	Point person at DEP and/or Dept of Ag for the data and analysis	Incentive for haulers to submit data accurately and timely	Meetings and discussions have yielded fruitful results and established baseline agreements that a more comprehensive reporting system is needed but should be developed and implemented at the state level due to inter-county trading.
							Private consultants		Incentive for haulers to submit data accurately and timely	\$2.6M to transport manure and farmer compensation	
1.5	<p style="background-color: yellow;">Write and implement 2,400 conservation plans for better nutrient management (improve consistent verification of BMPs done by any conservation professional)</p>	Soil Conservation/Water Quality Plans – Additional 200,000 acres	LCCD, private agriculture consultants, NRCS, DEP	All of Lancaster County	2025	Assess the option of establishing minimum/baseline BMP's for all plan writers to suggest in order to achieve nutrient management and soil health; Financial and technical support from municipalities as we all wade through new MS4 flexibility; Limited resources stifle the District's ability to do sufficient compliance checks for current plans (need to be done more often than once a year and 3 strike rule)	USDA	NFWF grants that include imp. dollars	MORE compliance/enforcement staff	Funding (\$2.4M) for more plan writers and compliance staff to enforce current regulations	Outreach and implementation of plans have been proceeding but at a slower pace than originally desired or planned due to limited capital and human resources. It is evident private consultants have plans that are not captured in PracticeKeeper, and efforts to capture plans will most likely require financial resources.
		Nutrient management Core N – Additional 150,000 acres					Private Agriculture consultants	DEP's Ag. Planning Reimb. Program	MORE Ag technician and Plain Sect Outreach coordinators who are all consistently trained to ensure BMPs are standardized and high quality	Fast track option to get Ag/environmental students certified to write plans	

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Priority Initiative 2: Soil Health

2.1	<p style="background-color: yellow; padding: 2px;">Create a system to verify and document use of cover crops, increasing the number acres at the same time (85% of farms will have cover crops during winter months)</p>	Cover crops with fall nutrients – 100,000 acres	LCCD, Ag Council, Stroud	All of Lancaster county with a focus on priority watersheds and plain sect community	2025	<p>No current required documentation;</p> <p>No data system currently identified but Practice Keeper has potential;</p> <p>Bay Program cover crop definitions do not fit Lancaster County cultural practices very well – little credit because of manure application;</p> <p>Financial and technical support from municipalities as we all wade through new MS4 flexibility;</p> <p>Extreme weather events;</p> <p>Humid summers make seed less available for fall purchase (ref Lancaster Farming article) NRCS new satellite data not accepted in the model</p>	NRCS and USDA	NFWF grants that include imp. dollars	Satellite imagery for verification using best technology available	Dollars (\$15.4M) for more equipment	<p>Implementation of cover crop approaches have grown exponentially and been successful. However, not all approaches are counted or being counted due to slight variations from the three specific approaches that count as reductions.</p>
		Cover crop commodity – 11,000 acres					Penn State		Staff time to canvass the county	Industry leaders (supermarkets, food processor) to pay a higher premium for crops raised with conservation practices/cover crops	
		Traditional cover crop – 2,500 acres					Bay Program		A better cover crop definition in CAST to give credit to cover crops that receive nutrients, are harvested in the spring as silage for animals on the same farm		
							Plain Sect church leaders		More coverage in national agriculture communications so this is widely viewed and accepted message (Farm Journal, etc)		
							PraticeKeeper				
							Conservation Plans				
							Ag Technicians				

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2.2	Increase no-till practices (specific request to the plain sect communities to identify 5-8 farm clusters who are sharing equipment or who could share equipment – we want to get them the equipment if it helps)	High residue till - 110,000 acres (Spring 2020 transect survey revealed ~67% of the county is in no/low till)	LCCD, PA No-Till Alliance, Stroud	All of Lancaster county with a focus on priority watersheds and plain sect communities	2025	<p>The governor’s push for PA to be the #1 state for organic production can be more integrated with water quality efforts and messaging overall (example: organic makes no-till a more difficult sell because they cannot use herbicides);</p> <p>Financial and technical support from municipalities as we all wade through new MS4 flexibility;</p> <p>Shifting dairy industry will likely drive more farmers to produce but we need to get the no-till message to them before they make the switch;</p> <p>Promoting soil health to horse farmers is especially difficult</p>	More no-till planters are available from local equipment manufacturers	NFWF grants that include imp. and peer-to-peer outreach dollars to pay farmers for their time (Stroud)	Local benefits for no-till farmers	Dollars (\$3.1M annually) for more equipment	No-till approaches are widely accepted. However, implementation has been proceeding at a slower pace than originally desired or planned due to limited capital and human resources. Seed money for a local incentive program may accelerate implementation.	
		Conservation till – 80,000 acres					Host more movie premier events of Stroud’s soil health film and pair it with a panel of farmers	Peer-to-peer outreach from NTA members	Municipalities who want to support this practice to protect their roads	More coverage in national agriculture communications so this is widely viewed and accepted message (Farm Journal, etc.)		Industry leaders to pay a higher premium for crops raised with conservation tillage practices
2.3	Better pasture and crop management for healthier upland soils	Prescribed grazing – Additional 10,000 acres	LCCD, Private Ag. Consultants, Stroud	All of Lancaster county with a focus on priority watersheds and plain sect community	2025	<p>Average farm size is small so enough pasture can be difficult;</p> <p>Manure injection equipment is expensive;</p> <p>Participation rates are currently low so peer-to-peer is difficult;</p> <p>Shifting dairy industry will likely drive more farmers to produce</p>	LCCD		More staff to do outreach to find willing land-owners	Incentive program to do soil health practices	Without an incentive program to cover start-up costs and offset other losses, this action has been difficult to achieve meaningful implementation rates.	
		Manure Injection – Additional 10,000 acres					Private Consultants		Farmers to do peer-to-peer conversations	\$520K for prescribed grazing and \$339K for manure injection, with services provided largely by haulers		
							NGO’s		More coverage in national agriculture communications (Farm Journal, etc.)			
							NRCS					

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Priority Initiative 3: Ag Community Education and Outreach

3.1	Education and Outreach (focus on flood control, public health benefits, herd health, building legacy options for families, economics, and achieving compliance; winter/spring 2020 Ag event organized by source water collaboratives)		NGO's, LCCD, DEP, Dept of Ag, Penn State Extension, Lancaster Clean Water Partners, municipalities ELANCO and EAJA source water collaboratives	All of Lancaster County Focus on the plain sect communities in priority watersheds Drinking water in ELANCO	On-going	Time; Funding for staff time; So many landowners to reach; So many options that it gets confusing for landowners and conservation professionals; Plain Sect are traditionally nervous about govt funding			More coverage in national agriculture communications so this is widely viewed and accepted message (Farm Journal, etc)	\$400K per year for additional staffing (5 persons) and outreach	A significant amount of time and effort has been focused on outreach and has been very successful. However, activities have been proceeding at a relatively slow pace due to limited capital and human resources available for one-on-one or individual farm engagements
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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.

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.*

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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).