

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

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

Agriculture Action Team

Priority Initiative 1: Manure Management

1.1	<p>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)</p>	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	<p>Projects to go in priority watersheds TBD based on results from community mapping tool</p>	<p>Initial tasks involve conversion of 25% to approximate pounds, and identification of distribution between manure and commercial fert.</p> <p>Research process and initial implementation done by 2025: vision is for a required ban to start in 2024 with full implementation by 2027</p> <p>20 installs per year</p>	<p>Cultural shift is needed to accept that too much liquid manure is a problem instead of a resource;</p> <p>Extreme weather events cause damage and staff end up spending time/resources on repair instead of new implementation;</p> <p>Currently not enough on-farm 6 month storages</p> <p>Financial and technical support from municipalities as we all wade through new MS4 flexibility</p>	Ag technician and Plain Sect Outreach coordinator	LCCD	NRCS	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	
		<i>Barnyard Runoff Controls – 100 acres (~700 farms with 6000 SF treatment area)</i>						Private sector consultants	TeamAg, Red Barn, other private consultants	NFWF grants	NFWF	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						Alliance for the Chesapeake Bay, Penn State Agriculture and Environment Center, Lancaster Farmland Trust, Chesapeake Bay Foundation, Stroud, No-Till Alliance	Plain-sect self-funding	Plain-sect farmers	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			

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

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	Financial	Suggested Source

Agriculture Action Team

											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)			
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)	
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; Add watering facilities or crossings; Current PA clean streams law restricts any local ability to require fencing livestock out of a stream or river;	Educational materials about herd health benefits of fencing herds out of streams	Penn State Extension, LCCD, Dept of Ag, NRCS, private consultants, Lancaster Farmland Trust	NRCS	NRCS	More boots on the ground to do farmer outreach and implementation		Dollars to pay the outreach staff	
									NFWF grants that include imp. dollars	NFWF	Ag technician and Plain Sect Outreach coordinators who are all consistently		Dollars to pay for fencing materials and an incentive program for farmers to take	

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

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	Financial	Suggested Source

Agriculture Action Team

						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					trained to ensure BMPs are standardized and high quality		any land out of production	
									DEP's small business grants for fence materials	DEP	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); 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	LCCD	LCCD	NRCS	NRCS	More boots on the ground to do farmer outreach and implementation		Dollars to pay the outreach staff	
							Dept. of Ag	Dept. of Ag	NFWF grants that include imp. dollars	NFWF	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	
							NRCS	NRCS	DEP's small business grants for fence materials	DEP				
							Private Consultants	Private Consultants						
							NGO's	NGO's						

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

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	Financial	Suggested Source

Agriculture Action Team

1.4	<p>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	<p>No required reporting (data gap from planners/ farmers to brokers to state);</p> <p>PK is only available to LCCD and specific DEP employees so accessing the specifics of manure is limited;</p> <p>Act 49 does not require haulers/ brokers to submit data about tons moved and dest. (no data into Practice Keeper)</p>	Haulers and brokers	Haulers and brokers	NFWF grants that include imp. dollars	NFWF	Point person at DEP and/or Dept of Ag for the data and analysis		Incentive for haulers to submit data accurately and timely	
								Private consultants				Incentive for haulers to submit data accurately and timely		\$2.6M to transport manure and farmer compensation
1.5	<p>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	<p>Assess the option of establishing minimum/baseline BMP's for all plan writers to suggest in order to achieve nutrient management and soil health;</p> <p>Financial and technical support from municipalities as we all wade through new MS4 flexibility;</p>	USDA	USDA	NFWF grants that include imp. dollars	NFWF	MORE compliance/enforcement staff		Funding (\$2.4M) for more plan writers and compliance staff to enforce current regulations	NRCS, DEP, Private found., NFWF
		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

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

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	Financial	Suggested Source

Agriculture Action Team

Nutrient Management P Timing – 6661 acres

Priority Initiative 2: Soil Health

2.1	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)	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	No current required documentation; No data system currently identified but Practice Keeper has potential; Bay Program cover crop definitions do not fit Lancaster County cultural practices very well – little credit because of manure application; Financial and technical support from municipalities as we all wade through new MS4 flexibility; Extreme weather events; Humid summers make seed less available for fall purchase (ref Lancaster Farming article)	NRCS and USDA		NFWF grants that include imp. dollars	NFWF	Satellite imagery for verification using best technology available		Dollars (\$15.4M) for more equipment
		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			

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

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	Financial	Suggested Source

Agriculture Action Team

						NRCS new satellite data not accepted in the model					viewed and accepted message (Farm Journal, etc)			
							PraticeKeeper							
							Conservation Plans							
							Ag Technicians							
2.2	<p>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)</p>	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</p>	More no-till planters are available from local equipment manufacturers	Dennis Eby at the Conservation District	NFWF grants that include imp. and peer-to-peer outreach dollars to pay farmers for their time (Stroud)		Local benefits for no-till farmers	Bank support, equipment deals, AAA-like discounts	Dollars (\$3.1M annually) for more equipment	Whole Foods is demanding the products but not paying extra at this point (according to farmer expert) Wrangler Jeans say they are committed to soil health (new slogan, etc), Cargill made a statement about
		Conservation till – 80,000 acres					Host more movie premier events of Stroud’s soil health film and pair it with a panel of farmers	Stroud		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			

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

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	Financial	Suggested Source

Agriculture Action Team

						need to get the no-till message to them before they make the switch; Promoting soil health to horse farmers is especially difficult	Peer-to-peer outreach from NTA members	Stroud						cover crops and No-till importance , Blue Apron focusing on conserv. practices when sourcing their produce
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	Average farm size is small so enough pasture can be difficult; Manure injection equipment is expensive; Participation rates are currently low so peer-to-peer is difficult; Shifting dairy industry will likely drive more farmers to produce	LCCD				More staff to do outreach to find willing land-owners	Master Farmers Association	Incentive program to do soil health practices	
		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							

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

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	<u>Resources Available</u>				<u>Resources Needed</u>			
Agriculture Action Team							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source

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).