

							Winter matrix	Chesapeake Bay Foundation, Stroud, No-Till Alliance			MORE private sector consultants		\$51.9M for regional biodigester (per 2011 HRG feasibility study, adjusted for inflation to 2018 dollars)	
							Regular formal communication avenues from local partners to farmers				MORE non-profit partners who do agricultural outreach and conservation projects		\$100,000 for barnyard runoff controls	
											More coverage in national agriculture communications so this is widely viewed and accepted message (Farm Journal, etc)			
1.2	Livestock access management	<i>Grass buffer with exclusion fencing 2,500 acres</i> <i>Develop local incentive programs to promote the practice as a viable option for landowners</i>	All partners Alliance for the Chesapeake Bay Lancaster County Conservation District	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	Current PA clean streams law restricts any local ability to require fencing livestock out of a stream or river Financial and technical support from municipalities as we all wade	Educational materials about herd health benefits of fencing herds out of streams	Penn State Extension, LCCD, Dept of Ag, NRCS, private consultants, Lancaster	NRCS NFWF grants that include implementation dollars DEP's small business		More boots on the ground to do farmer outreach and implementation MORE Ag technician and Plain		Dollars to pay the outreach staff Dollars to pay for fencing materials and an incentive program for	Private foundations, federal grants, EPA, NFWF, CRP for limiting use by farmers

		<i>Add watering facilities or crossings</i>			2024 with full implementation by 2027	through new MS4 flexibility Extreme weather events cause damage and staff end up delayed or spending time/resources on repair instead of new implementation		Farmland Trust	grants for fence materials		Sect Outreach coordinators who are all consistently trained to ensure BMPs are standardized and high quality More coverage in national agriculture communications so this is widely viewed and accepted message (Farm Journal, etc)		farmers to take any land out of production \$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	<i>Animal Waste Management Systems – 100,000 AU's</i>	All partners LCCD Private sector agriculture consultants		Built by 2025	Dollars 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, Dept of Ag, NRCS, private consultants, NGO's,	NRCS NFWF grants that include implementation dollars DEP's small business grants for fence materials		More boots on the ground to do farmer outreach and implementation More coverage in national agriculture communications so this is		Dollars to pay the outreach staff For six months of waste storage accommodating 100,000 AUs, approximately \$80M would be	Private foundations, federal grants, EPA, NFWF, CRP for limiting use by farmers

											widely viewed and accepted message (Farm Journal, etc)		needed for tank storage and engineering and construction	
1.4	<p>Create a more comprehensive reporting system for manure transport in and out of the county</p> <p>Host meetings of all brokers to understand what data is available</p>	<p>Manure transport out of the county – 150,000 tons</p>	<p>Lancaster County Conservation District</p> <p>Manure haulers</p> <p>DEP or Dept of Ag needs to be holder of this data for proper analysis and application to the model</p> <p>SCC</p>	All of Lancaster County	<p>Meetings to start in fall 2018 and continue until accurate recording system is established and running by 2025</p>	<p>No required reporting Data gap from planners/farmers to brokers to state</p> <p>Practice Keeper is only available to Conservation District and specific DEP employees so accessing the specifics of where manure goes is limited</p> <p>Act 49 does not require haulers/brokers to submit data about tons moved and where it's going, therefore no data is going into Practice Keeper.</p>	Haulers and brokers		NFWF grants that include research and implementation dollars		<p>Point person at DEP and/or Dept of Ag for the data and analysis</p> <p>Incentive for haulers to submit data accurately and timely</p>		<p>Incentive for haulers to submit data accurately and timely</p> <p>\$2.6M to transport manure and farmer compensation</p>	
1.5	<p>Write and implement 2,400 conservation plans for better nutrient management</p> <p>Improve consistent verification</p>	<p>Soil Conservation/Water Quality Plans – Additional 200,000 acres</p> <p>Nutrient management Core N – Additional 150,000 acres</p>	<p>Lancaster County Conservation District, private agriculture consultants, NRCS, DEP</p>	All of Lancaster County	2025	<p>Financial and technical support from municipalities as we all wade through new MS4 flexibility</p> <p>Limited resources stifle the District's ability to do sufficient compliance checks</p>	<p>USDA</p> <p>Private Agriculture consultants</p> <p>Plain sect church leaders</p>		<p>NFWF grants that include implementation dollars</p> <p>DEP's Agricultural Planning</p>		<p>MORE compliance/enforcement staff</p> <p>MORE Ag technician and Plain Sect Outreach coordinators who are</p>		<p>Funding (\$2.4M) for more plan writers and compliance staff to enforce current regulations</p>	<p>NRCS</p> <p>DEP</p> <p>Private foundations</p> <p>NFWF grants</p>

<p>of BMPs done by any conservation professional</p> <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><i>Nutrient Management Core P – Additional 150,000 acres</i></p> <p><i>Nutrient Management N Placement – 6661 acres</i></p> <p><i>Nutrient Management N Rate – 6661 acres</i></p> <p><i>Nutrient Management N Timing - 6661 acres</i></p> <p><i>Nutrient Management P Placement – 6661 acres</i></p> <p><i>Nutrient Management P Rate – 6661 acres</i></p> <p><i>Nutrient Management P Timing – 6661 acres</i></p>				<p>for current plans (need to be done more often than once a year and 3 strike rule)</p>			<p>Reimbursement Program</p>		<p>all consistently trained to ensure BMPs are standardized and high quality</p> <p>MORE private sector consultants</p> <p>MORE non-profit partners who do agricultural outreach and conservation projects</p> <p>More coverage in national agriculture communications so this is widely viewed and accepted message (Farm Journal, etc</p>		<p>Fast track option to get Ag/environmental students certified to write plans</p> <p>Bankers, insurance agents, etc to give farmers incentive reasons to use conservation practices</p>	
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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			
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	<p><i>Cover crops with fall nutrients – 100,000 acres</i></p> <p><i>Cover crop commodity – 11,000 acres</i></p> <p><i>Traditional cover crop – 2,500 acres</i></p>	<p>Lancaster County Conservation District</p> <p>Ag Council</p> <p>Stroud</p>	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)</p>	NRCS and USDA, Penn State, Bay Program, Plain sect church leaders		NFWF grants that include implementation dollars		Satellite imagery for verification using best technology available	Staff time to canvass the county	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	More coverage in national agriculture communications so this is widely viewed and accepted
												Dollars (\$15.4M) for more equipment	Industry leaders (supermarkets, food processor) to pay a higher premium for crops raised with conservation practices/cover crops	

											message (Farm Journal, etc)			
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	<i>High residue till - 110,000 acres</i> <i>Conservation till – 80,000 acres</i>	Lancaster County Conservation District Pennsylvania No-Till Alliance Stroud	All of Lancaster county with a focus on priority watersheds and plain sect communities	2025	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) Financial and technical support from municipalities as we all wade through new MS4 flexibility 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 Promoting soil health to horse farmers is especially difficult	More no-till planters are available from local equipment manufacturers <i>Host more movie premier events of Stroud’s soil health film and pair it with a panel of farmers</i> Peer-to-peer outreach from NTA members Municipalities who want to support this practice to protect their roads	Dennis Eby at the Conservation District Stroud Stroud West Cocalico Twp	NFWF grants that include implementation and peer-to-peer outreach dollars to pay farmers for their time (Stroud)	Local benefits for no-till farmers More coverage in national agriculture communications so this is widely viewed and accepted message (Farm Journal, etc)	Bank support, equipment deals, AAA-like discounts	Dollars (\$3.1M annually) for more equipment Industry leaders to pay a higher premium for crops raised with conservation tillage practices	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 cover crops and No-till importance, Blue Apron focusing on conservation practices when sourcing their produce	

2.3	Better pasture and crop management for healthier upland soils	<p><i>Prescribed grazing – Additional 10,000 acres</i></p> <p><i>Manure Injection – Additional 10,000 acres</i></p>	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, private consultants, NGO's, NRCS,				<p>More staff to do outreach to find willing land owners</p> <p>Farmers to do peer-to-peer conversations</p> <p>More coverage in national agriculture communications (Farm Journal, etc)</p>	Master Farmers Association	<p>Incentive program to do soil health practices</p> <p>\$520K for prescribed grazing and \$339K for manure injection, with services provided largely by haulers</p>	
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Priority Initiative 3: Education and Outreach

3.0	Education and Outreach	<p>Focus on flood control, public health benefits, herd health, building legacy options for families, economics, and achieving compliance</p> <p>Winter/spring 2020 Ag event organized by source water collaboratives</p>	<p>NGO's, LCCD, DEP, Dept of Ag, Penn State Extension, Lancaster Clean Water Partners, municipalities</p> <p>ELANCO and EAJA source water collaboratives</p>	<p>All of Lancaster County</p> <p>Focus on the plain sect communities in priority watersheds</p> <p>Drinking water in ELANCO</p>	ongoing	<p>Time Funding for staff time</p> <p>So many landowners to reach</p> <p>So many options that it gets confusing for landowners and conservation professionals</p> <p>Plain Sect are traditionally nervous about govt funding</p>					<p>More coverage in national agriculture communications so this is widely viewed and accepted message (Farm Journal, etc)</p>		<p>\$400K per year for additional staffing (5 persons) and outreach</p>	
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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

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)