

Action #	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 (2020 + 2021 + 2022)	2023 Update
							Technical	Financial	Technical	Financial		
Buffers Action Team												
Priority Initiative 1: Buffer Implementation												
1.1	1 stellar buffer demonstration of 1-2 acres in every township (60 total), and full buffer goal implementation		Municipalities, Lancaster's buffer action team, Lancaster County Clean Water Consortium	All municipal partners	2018-2025 NEXT STEPS: List of names (both public and private buffers) acquired to identify which municipality owned buffers exist and where gaps need addressed	<p>With stormwater fees on the horizon, prepare to incentivize Ag and buffers with stormwater exemptions. (Financial and technical support from municipalities as we all wade through new MS4 flexibility);</p> <p>Not enough boots on the ground to find willing land-owners, train municipal staff, and organize plantings;</p> <p>Financial and technical support from municipalities as we all wade through new MS4 flexibility;</p> <p>CREP is no longer available for municipalities (example given at public meeting where they used to get support to use CREP dollars and trees for available lands but that has stopped)</p> <p>Explore compromise for implementation of buffers in sewer easement areas along riparian corridors</p>	Public works staff employed to maintain projects		Signage to explain the value of a buffer at every project	Dollars specifically set aside to address extreme weather events for buffer repairs so teams aren't spending general funds	<p>2022: Buffers team is a well-oiled machine with a strong ability to target identified opportunities. There is an understanding to continue building an inventory to better gauge where buffers are, maintenance needs, and related considerations.</p> <p>Individuals on the buffer team are working to map all known stellar buffer locations around the county. Thus far, 32 are identified and mapped. The mapping layer will include photos of the buffer and information on acreage, who planted it, how to visit the buffer, etc. This mapping layer will be added to the Collaborative Watershed Mapping Tool and live as a standalone layer in the Partners StoryMap. More work will be done to identify more stellar buffer sites.</p> <p>2021: Inventory is nearly complete, outreach has begun for new buffers on public land in each twp. Efforts will continue into 2022</p> <p>2020: The Collaborative Mapping Tool (CMT) added a strong ability to identify and target opportunity areas. The catchment prioritization efforts currently underway will further target very specific locations to allocate limited resources for buffer implementation. A large number of opportunity areas have been identified, but multiple landowners and stakeholders tied with limited capital and human resources for implementation and long-term maintenance has resulted in a slower implementation rate than originally desired or planned. Several municipalities have incorporated buffer requirements as part of the land development process.</p>	This action item has evolved more towards exploring approaches and methods to preserve existing buffers encountered (or re-establishing existing buffers), and may be threatened by removal for a number of different actions (construction, production, etc.). LTVPs have led to the identification of existing buffers that may not have previously been reported, and require review to determine needs, status, etc. This effort was further extended with assisting a handful of watershed groups to help build an inventory of projects (in particular-buffers) as well. There is no easy, one-stop answer to help protect existing buffer areas; but the Buffers Action Team and LCWPs continue to engage and implement other action items with an over-arching objective to not only expand the number of buffers, but capture and preserve existing buffers.
							Some municipalities already have a buffer that could serve as a demonstration project		More boots on the ground (planning, planting, maintenance)	Estimates: \$4,000 per acre (source: EQIP) plus 20% for pre- and post-project work (willing landowner contact, monitoring, etc.) done by boots on the ground staff		
							COG's, source water collaboratives, and Lancaster County Clean Water Consortium can work as coordinating leadership groups to get groups of municipalities done		Willing municipalities			
							Grant money available for implem., will assist with overall MS4 permit compliance and public education		Consistent professional development for municipal and conservation staff so messaging is the same			
							Existing partner support for consistent signage across the county		Mapping point person/group to show progress spatially so the public can see where their dollars are going			
							Non-municipal partners currently installing buffers (Farmland Trust, ACB, CBF, PSU, Stroud, Conservancy, LCED)					

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Buffers Action Team												
Priority Initiative 1: Buffer Implementation												
1.2	Create and maintain an online map of buffer miles to show progress across the county (Community engagement and public education)		Lancaster's buffer team, Buffer specialist provided by Focus Lancaster NFWF grant, DEP	All areas but priority watersheds first	Map is online	This allows us to adjust our efforts if we realize there is a specific area where buffers are disappearing at a detrimental rate; Consistent and timely reporting of projects; CREP data is private; Lidar frequency is limiting; Data Management Action Team lead online mapping tool development	We can model the reporting after CBF's K10 initiative (online GIS map); use Chesapeake Conservancy buffer gap opportunity maps to determine available next places to work in priority watersheds	Private found. support for Chesapeake Conservancy's ability to work in Lancaster County	Access to Practice Keeper or a shared map with the option for partners to add their own GIS layers so specialists can integrate projects with other efforts to show an accurate spatial image of work happening	Dollars to pay for consistent way of reporting buffer implementation (acres, feet, etc.)	2022: CMT is fully operational and a primary support tool for targeting, outreach, and reflecting implementation. Through NFWF grant, Water Science Institute is using LIDAR data to map erosion rates. This data layer in combination with existing data layers will assist to target implementation areas. 2021: In progress under auspices of Data Management Action Team. Proposed new GIS person from the Chesapeake Conservancy will also be an added benefit. 2020: The platform (CMT) has been developed. Currently wading through and finalizing operational and end user details. Alignment with multiple platforms may prove difficult, but achievable.	The CMT has been updated to include both the tier 1 and tier 2 catchments as part of the stream de-listing strategy along with BMPs implemented (including riparian buffers) in each catchment. The CMT is currently organized into 4 interfaces for end-users: 1) prioritization, 2) water quality, 3) policy, and 4) implementation data and information. Current CWMT calls out approximately 40% of stream miles buffered.
1.3	Directed and strategic landowner outreach for immediate implementation – Ag projects will get top priority and all projects will be combined with other types of restoration projects as often as possible (streamside, floodplain, wetland, dam removal, etc)	Forest buffer – 8,555 total acres Forest buffer narrow – 314 total acres	All partners across Lancaster County, Lancaster's buffer team, Lancaster Conservancy	Ag projects get top priority, specifically if a project will limit livestock access to streams; Pequea Watershed, Octoraro Watershed, Chiques watershed, and Cocalico watershed because the data is available, municipal partners are already participating, and/or the loading is the highest	Implemented or process started for implementation by 2025 Use the charter document for more specific timeline/a Gantt chart approach (Buffer AT is the lead for annual goals) De-listing strategy to assist with priority locations.	Time; Not enough boots on the ground to find willing land owners and organize plantings; CREP acre cap for the state; No Farm Bill means a closed door for CREP; Financial and technical support from municipalities as we all wade through new MS4 flexibility; Outreach to the plain sect community can be sensitive;	Chesapeake Conservancy's buffer gap analysis ReLeaf Report WSI's list of priority landowners 2019 planting schedule from buffer team members (see Appendix)	NFWF Private foundations CREP	Plain sect outreach Staff to do landowner outreach, plant, and maintain PennDOT support	Non-federal income-replacing incentive Dollars specifically set aside to address extreme weather events for buffer repair so teams aren't spending general funds ~\$29 million for new acres	2022: Contractor capacity is the primary bottleneck for increased implementation rates. Discussions underway where the Buffers Action Team individuals entities identified by the Buffers team could serve as primary liaisons for LTVPs for the natural sector. Buffer Action Team will begin engaging more with municipal leaders, with help from Technical Coordinator. RCPP required to do any other work on property. Verification process will help assess remaining buffer goal in the county.	The Buffer Action Team identified four (4) priorities for the 2023 calendar year: 1) remove barriers to efficient landowner outreach, 2) advance outreach initiatives to potential landowners, 3) provide prompt responses and implementation of projects to newly interested landowners, and 4) streamline and fully utilize the buffer maintenance BEST program. These priorities promote or further all Buffer Priority Initiative action items; but fully provides an elevated focus with directed and strategic landowner outreach and implementation activities. Capacity remains a significant challenge, and affects the rate of implementation (lower than desired). That said, capacity has been growing annually. Additionally, participation in both federal and state-

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Priority Initiative 1: Buffer Implementation												
						USACE issue permit for development on wetlands so the easement is held by USACE with different language (federal level)	CBF's K10 campaign				2021: Some partners are engaging in targeted work within prioritized catchments (Delisting strategy). The reality is still that the amount of landowners who volunteer or who are found through other project work exceeds current capacity though. A big outreach push is needed to increase acres, but without increasing professional capacity in the county, this will only result in wait lists. <i>STORY LINKS ></i> Pioneering project targets 8 Lancaster streams for rapid delisting Gov. Wolf, Chesapeake Conservancy & Partners Announce Initiative to Restore 30 Agriculturally Impaired Streams by 2030 https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/newsroom/releases/?cid=ncseprd1769025 Millions in federal funding to cover costs of restoring 350 miles of Lancaster County streams 2020: The catchment prioritization efforts currently underway will further target very specific locations to allocate limited resources for buffer implementation. Limited human and capital resources provides a bottleneck with strategic landowner outreach activities.	funded buffer programs have been increasing in alignment with the increasing capacity.
							Plain sect outreach is happening in specific communities					
							REAP credits					
							Municipal leaders					
Priority Initiative 2: Buffer Strategy and Regulation												
2.1	We will examine how high-quality template language from existing ordinances can help make required buffers the norm across the county (look at	All implemented projects as a result of this Priority Initiative will be counted in reductions outlined in 1.1 or 1.3	LCWP and Consortium, Lancaster's buffer team, Kate Gonick and the Lancaster County Conservancy	All of Lancaster County Buffering headwaters is the priority so we can protect source water	2019-2025 Include session at MS4orum about ordinances	Example recommendation: All headwater streams be required to have a 35-50 foot buffer; all new developments must include buffers,	Report from PSU coming		A collection of common language that has been well-received by municipal boards		2022: More capacity for municipal collaboration from Technical Coordinator at the Partners. He will keep efforts moving forward in 2023 including to: (1) Document buffer ordinances in each municipality to better inform outreach and implementation possibilities; (2) Examine	This action item remains a priority and will continue moving forward once a new Technical Coordinator is identified and brought on board with the LCWPs. The update to the Lancaster County Stormwater Management Ordinance (SWMO) was previously identified as the

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Priority Initiative 1: Buffer Implementation												
	<p>Warwick Township and East Cocalico as examples)</p> <p>We will hold a meeting of all municipalities who currently have ordinances with buffer requirements with the intention of getting all municipalities to adopt similar requirements</p>			and preserve pristine areas	In conjunction with SWMO update process in 2022-2023	<p>landowner maintenance, and signage;</p> <p>Financial and technical support from municipalities as we all wade through new MS4 flexibility;</p> <p>Outreach to the plain sect community can be sensitive;</p> <p>USACE issue permit for development on wetlands so the easement is held by USACE with different language (federal level)</p>	Willing and experienced municipal staff		Peer-to-peer stories and outreach from municipal officials, developers, and landowners that show how buffers make economic sense for both parties		<p>how high-quality template language from existing ordinances can help make required buffers the norm</p> <p>2021: Not much progress yet, but the main opportunity will be tied to the next MS4 Permit cycle and updates to local SWMOs that may be required by the 2023-2027 permit.</p> <p>2020: Several municipalities have incorporated buffer requirements as part of the land development process in their ordinances. There is significant pushback from most municipalities to incorporate required buffers language in ordinances. However, efforts and messaging continue to improve understanding and buy-in for establishing buffer requirements.</p>	most plausible reference point for improved buffer language in ordinances across municipalities. With a proposed countywide Act 167 plan update and upcoming new MS4 permit cycle, it is anticipated these actions will occur in 2024.
2.2	Create a Lancaster County Buffer Program (BEST)	All implemented projects as a result of this Priority Initiative will be counted in reductions outlined in 1.1 or 1.3	Lancaster buffer team, LCWP, Lancaster County Conservancy, Lancaster County Clean Water Consortium	Across the county, priority watersheds TBD	2019 BEST documentation was completed by end of 2020	<p>Have an organized effort (not an official County project) that complements CREP and coordinates a care establishment program;</p> <p>This group will oversee the buffer work across the county;</p> <p>Financial and technical support from municipalities as we all wade through new MS4 flexibility;</p> <p>Outreach to the plain sect community can be sensitive;</p> <p>USACE issue permit for development on wetlands so the</p>	Lamonte Garber, Ashley Spotts		Township outreach to monitor township-held easements and buffer ordinances	Dollars for the incentive part of the program	<p>2022: A current focus of the team is to improve collaboration/coordination amongst varying entities with different approaches with the intent to better protect existing buffers or ensure the approach compliments existing approaches.</p> <p>2021: Pilot program has been successful so far! There are acres maintained with BEST to date (accounting of acres still in progress). Private donation of \$10k into BEST fund was a huge success. We now need more funds. A subset of the Buffer Action Team is working on planning, strategizing, and getting more funding. Working on getting additional funding from another partner organization in the amount of \$40,000 STORY LINK > Action Teams tree planting at overlook park</p> <p>2020: Framework for team and program has been established. Group in early stages</p>	The BEST program is operational. However, the Buffers Action Team is exploring and testing varied approaches during 2023 to better streamline and maximize the potential of the program. Intent is to stabilize the BEST program as a long-term program serving Lancaster County that dovetails into LTVPs. Funding was also secured to support multi-year buffer establishment activities to landowners for newly established buffers.

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Priority Initiative 1: Buffer Implementation												
						<p>easement is held by USACE with different language (federal level);</p> <p>Boots on the ground now are doing every role in every phase of buffers - we need 3x our current capacity at every organization</p>				we can all be more efficient.	of efforts, but successful in facilitating actions necessary to meet objectives. Limited human and capital resources is a factor restricting BMP implementation rates.	
							Township solicitors meeting to speak to them all at once					
							LCWP buffer specialist					
2.3	<p>Create a coordinated outreach campaign for public lands and semi-public lands to be required to have forested buffers</p>	<p>60% of churches, schools, libraries, municipalities, parks, will have buffers</p> <p>All implemented projects as a result of this Priority Initiative will be counted in reductions outlined in 1.1 or 1.3</p>	LCWP	Across the county	<p>2025</p> <p>2022-Buffer Year</p>	<p>Focus on public health and flood control;</p> <p>Feedback loop: getting landowners all the right resources;</p> <p>Coordination of all partners outreach efforts</p>	<p>Alliance for the Chesapeake Bay</p>		<p>Point person to work with at Council of Churches, real estate associations, builders associations, authorities associations, libraries, school districts etc.</p>		<p>2022: Efforts continue to be opportunistic as the de-listing strategy has become the primary driver in furthering buffer protection and/or implementation in defined areas where classification of the parcel as public, semi-public, or private is not a driving factor but whether a need for a buffer has been identified.</p> <p>2021: Efforts have been more opportunistic and ad-hoc to date, but successful at getting more public land buffers. In 2022, will need to begin concerted/coordinated effort Buffer Year should help with this coordinated effort.</p> <p>2020: Efforts associated with this activity have been limited thus far. Anticipate</p>	The de-listing strategy continues to drive locations of primary efforts, but support has been and continues to be provided to partners (particularly in the public and semi-public sector) in the form of technical and financial assistance; including the City of Lancaster's "Trees for People Plan".
							DCNR		Marketing materials for each audience			
							Existing success stories to be the examples we need		Calendar of events so we don't duplicate			

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Priority Initiative 1: Buffer Implementation												
							Groundwater and source water collaboratives		NGO's currently installing buffers (Farmland Trust, Alliance, CBF, PSU, Stroud, Conservancy, LCCD) with approximately 2-3 staff now, we need 3x that at every organization		measurable progress as Action 2.1. and 2.2 progress further ahead (this action is considered a successor to 2.1 and 2.2)	
2.4	Increase the presence of buffers in marketing and events of Water Week	All implemented projects as a result of this Priority Initiative will be counted in reductions outlined in 1.1 or 1.3	LCWP, Conservancy, Consortium	Across the county	On-going	<p>Limited participation in Water Week events - have to make sure we're not only "preaching to the choir"</p> <p>Use email addresses of event participants for invitations to future workshops</p> <p>Continuous and effective engagement plan would be helpful</p>	Amazing staff who organize Water Week	Private foundations, corporate sponsors of Water Week	More marketing materials and a way to get them to each audience	Dollars for more marketing materials and a way to get them to each audience (estimate: \$60,000)	2022: Buffer awareness is a consistent and constant theme in most communications, marketing materials, and similar considerations. 2022 included incorporating protections of existing buffers where restoration, improvements, etc. are planned in stream corridors as a part of the messaging.	Buffer awareness efforts have expanded from initial efforts tied to Water Week events. The BEST group will hold an informative session in October for the public. Extended partners including the ACB are promoting numerous buffer awareness activities tied with Buffer Awareness Month.
							Hundreds of participants		More public participation	Incentives for landowners to install buffers even after Water Week	2021: Buffer awareness is increasing, and we are reaching beyond Water Week to accomplish this. October 2021 will be "Buffer Month" and we have decided that 2022 should be "The Year of the Buffer", with cross-sector unified messaging and celebrations of riparian forests all year long to increase awareness further. This will help to increase awareness and promote buffers amongst all Lancaster County streamside landowners.	

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.*

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).

Phase 3 Watershed Implementation Plan (WIP) Progress and Milestones 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

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Agriculture Action Team														
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	Initial tasks involve conversion of 25% to approximate pounds, and identification of distribution between manure and commercial fert.	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	2022: Across the entire ag sector, implementation progressing despite hurdles encountered (Inflation and cost volatility, limited number of contractors, permitting delays, and learning curve for new contractors amongst other considerations). Long-term Verification Processes (LTVPs) development launched to help reconcile existing BMPs versus BMP needs. Funding approach has been fully coordinated amongst across the board ag sector – additional funding committed/awarded through Regional Conservation Partnership Program (through NRCS); ACAP; MEB, SWIG, and INSR through NFWF; and County-level commitment of ARPA funding. 2021: Implementation was slowed due to COVID but still progressing; material costs are rising thus further straining limited financial capacity for implementation; beginning to experience a lack of contractor capacity for implementation – delaying construction. <i>STORY LINK ></i> https://drive.google.com/file/d/1t88kTL05W2VOo-AVaUcO14dWzmhjt15N/view?usp=sharing 2020: 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	2023 witnessed a continuation of 2022 efforts (and hurdles) and implementation of the RCPP funding. With the addition of the Data Coordinator at the Conservation District, a better picture and understanding of BMPs implemented and captured against BMPs implemented and need for capture was identified. This understanding has not and does not restrict the efforts to continually engage farmers and the ag community for implementation of a suite of BMPs on a farm. LFT (as a member of the CAP Coordinator Team) aims to visit at least 100 farms in 2023 in addition to the Conservation District's outreach efforts with the intent to capture existing BMPs or identify BMPs for implementation. Elevated effort to dial-in metrics (BMP implementation rates) was conducted. Effort was primarily based on cross-referencing PK data, other local data, surveys, field/aerial analyses, collaborative discussions, and existing data/information (e.g. ag census data). Local partners (including ACB, LFT, etc.) have visited over 125 farmers to discuss practices and comprehensive conservation projects. All partners continue to scale up outreach efforts; including with corporate agricultural partnerships (Land O'Lakes, Organic Valley, Perdue, and so on).		
		<i>Barnyard Runoff Controls – 1,352 total acres/57 new acres</i>					De-listing strategy is determining priority locations	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	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	\$138,000 for barnyard runoff controls (for new BMP acres)
		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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											identification of human and capital needs for long-term verification processes.	
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)		<p>2022: A more deliberate and defined approach to determine feasibility will be conducted in 2023 to reach a final decision if this should remain a priority.</p> <p>2021: Implications from COVID restricted progress during the 2021 calendar year.</p> <p>2020: 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.</p>	An effort for a large-scale regional facility has been shelved for the time being, but not abandoned in favor of small-scale digesters for individual farms. This effort is in the planning process and is anticipated to mimic recent efforts in Maryland. Performance target remains, but remainder of 2023 and 2024 will require focus on appropriately capturing metrics for reporting as the planning unfolds into implementation.
1.2	Livestock access management	Grass buffer with exclusion fencing 894 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	<p>Develop local incentive programs to promote the practice as a viable option for landowners;</p> <p>Add watering facilities or crossings;</p> <p>Current PA clean streams law restricts any local ability to require fencing livestock out of a stream or river;</p> <p>Financial and technical support from municipalities as we all wade through new MS4 flexibility;</p>	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	<p>2022: Implementation progressing, but limited number of contractors, supply chain issues, etc. are continuous bottlenecks as noted in Ag 1.1. Qualitatively, the perception was an increase in exclusion fencing was realized in 2022. 2023 will include a reconciliation process for metrics to quantify the perception.</p> <p>2021: Plain Sect acceptance of implementation is becoming</p>	2023 witnessed a continuation of 2022 efforts. The addition of the data manager in conjunction with the Metrics Analysis Initiative has identified a magnitude of existing buffers that require capturing in addition to a more plausible target for implementation of livestock access management BMPs. Grass buffers with exclusion fencing perceived with significant underreported

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Agriculture Action Team												
						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	more widespread; implementation proceeding a slower pace due to limited capital and human resources. Additional resources for moving into other catchments as part of the de-listing strategy may help accelerate implementation rates. <i>STORY LINK > Millions in federal funding to cover costs of restoring 350 miles of Lancaster County streams</i> 2020: 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.	acreage. Effort to reconcile needs finalized.
1.3	Increase the number of manure storages and better barnyard management	<i>Animal Waste Management Systems – 535,220 total animal units/476,699 new animal units</i>	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	NRCS	More boots on the ground to do farmer outreach and implementation	Dollars to pay the outreach staff	2022: Reduced implementation rates observed as a direct result of COVID impacts have carried over into 2022. 2021: Implementation was slowed due to COVID but still progressing; material costs are rising thus further straining limited financial capacity for implementation; beginning to experience a lack of contractor capacity for implementation – delaying construction. 2020: 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.	Implementation rates are not aligned with original targets, but they may be a function of aspirational targets previously identified as a possibility. That being said, manure storage and barnyard improvements are currently being implemented. Financial capacity, outreach timelines, permitting timeframes, and related considerations will continue to drive implementation rates in the long-term. Outreach efforts are a critical step in the implementation process, and successful outreach efforts cannot be accomplished in a single friendly one-on-one visit. Performance targets were revised to reflect more probable implementation rates versus original aspirational rates. Consolidation of total dairy operations continued observance in 2023.
							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		
							NRCS	DEP's small business grants for fence materials				
							Private Consultants					
							NGO's					

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 Available		Resources Needed		Annual Progress to Date (2020 + 2021 + 2022)	2023 Update
							Technical	Financial	Technical	Financial		
Agriculture Action Team												
1.4	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)	Manure transport out of the county – 149,536 total dry tons/138,035 new dry 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) Continued meetings/ discussions may be appropriate as the Act 38 reporting changes are better understood.	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	2022: Limited focus on 2022 with this effort. 2023 will include an analysis of Act 38 changes as it pertains to the county and tracking manure transport. 2021: Act 38 reporting changes may help the process, and will be assessed at a later date to ascertain the comprehensive reporting system and reporting mechanism components of the action description. 2020: 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.	A general reliance on Act 38 reporting processes for progress.
		Private consultants Winter matrix SWP teams							Incentive for haulers to submit data accurately and timely Local lead	\$2.6M to transport manure and farmer compensation		
1.5	Write and implement 2,400 conservation plans for better nutrient management (improve consistent verification of BMPs done by any conservation professional)	Soil Conservation/Water Quality Plans – 176,792 total acres/106,417 new 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) Develop inventory of plan needs via de-listing strategy catchments.	USDA	NFWF grants that include imp. dollars	MORE compliance/enforcement staff	Funding (\$4.4M) for more plan writers and compliance staff to enforce current regulations, and plans for new acres	2022: Early stages of implementation of LTVPs and data management (PK) to gain a better understanding of the extent of developed and implemented plans. Concentration centered in priority catchments. LCCD hired a data manager during 3 rd quarter. Anticipate a reconciliation of number of plans against total farm parcels will be pursued in 2023. 2021: Numerous plans submitted to the APRP but specific quantity is unknown (number of plans and where); beginning to experience TSP capacity issues to develop plans in a timely manner. Will	Through the Data Coordinator and Metrics Analysis Initiative during 2023, a better understanding of the number of written plans captured was identified, along with a process to incorporate plans into PK (which serves as the first-step for BMP data entry into PK. Approximately 121,000 acres have been captured into PK as of current reporting, with the acreage increasing monthly with new plans written and/or existing plans captured through LTVPs. The ~121,000 acres represents roughly 50% of existing farms in the county. While significant progress has been observed,
		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 ~\$1.6 million for Nutrient Management new acres		

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Agriculture Action Team							Technical	Financial	Technical	Financial		
		Nutrient Management Core P – 119,962 total acres/ 88,717 new acres				Direct transfer of BMPs in NRCS generated plans to local PK platform would provide a better snapshot of progress and needs*	Plain sect church leaders		MORE private sector consultants	Bankers, insurance agents, etc. to give farmers incentive reasons to use conservation practices	continue priority focus on catchments targeted under the de-listing strategy, 2020: 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.	implementation remains a challenge due to capacity limitations or farmer hesitation. For practical purposes, efforts have been more focused on writing and identifying (existing) plans over the past year in lieu of concentrating on implementation of previously identified plans.
		Nutrient Management N Placement – 37,850 total acres							MORE non-profit partners who do agricultural outreach and conservation projects			
		Nutrient Management N Rate – 20,613 total acres/ 20,479 new acres							More coverage in national agriculture communications so this is widely viewed and accepted message (Farm Journal, etc)			
		Nutrient Management N Timing – 6,286 total acres						Dedicated individual at LCCD for PK management and data entry				
		Nutrient Management P Placement – 63,577 total acres										
		Nutrient Management P Rate – 34,420 total acres										
		Nutrient Management P Timing – 47,073 total acres										
		Dairy Precision Feeding – 500 total animal units										

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Agriculture Action Team							Technical	Financial	Technical	Financial			
Priority Initiative 2: Soil Health													
2.1	<p style="background-color: yellow; margin: 0;">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 – 115,538 total acres/110,587 new acres</i>	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>2022: Verification underway by Lancaster Farmland Trust through a pilot of verification by 3rd parties. This will include cover crops. CBF developed a no-till and cover crop aerial imagery analysis tool that will be explored in more detail during 2023. Current assumption is possibly marrying the CBF tool with LFT on-the-ground efforts to improve cover crop and no till reporting.</p> <p>2021: Implementation continues and is a focus in outreach and engagement efforts</p> <p>2020: 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>	<p>Exploratory discussions were conducted with CBF, and the general perception is the no-till and cover crop aerial imagery analysis tool can serve as an improved reporting tool for county-level tracking. CBF is currently in a refinement process with the tool, and anticipate next steps for possible implementation into Lancaster County LTVPs to be better understood sometime during the fall of 2023.</p> <p>A Soil Health Learning Group is under development (led by ACB and PA Soil Coalition) for 2024 to build on the momentum created by the Lancaster Soil Health Club. As an offshoot of the club, the group will focus on creating an information sharing environment for farmers and TSPs.</p>	
		<i>Cover crop commodity – 17,775 total acres</i>					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
		<i>Traditional cover crop – 3,545 total acres</i>					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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Agriculture Action Team												
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 – 105,311 total acres/75,698 new acres	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> <p>Capture of practices via transect survey can help ascertain progress.</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	<p>2022: See Ag 2.1 note</p> <p>2021: Extremely difficult to measure progress (but we know implementation is occurring) as there is no required reporting; many partners focusing on/promoting soil health practices; emerging markets may enhance implementation. Communication of transect survey data for practices may help ascertain progress.</p> <p>2020: 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.</p>	See Ag 2.1 note. Success has also been observed with the development of a tobacco no-till planter arrangement developed by LCCD and PSU AEC.
		Conservation till – 65,078 total acres/821 new acres					Host more movie premier events of Stroud’s soil health film and pair it with a panel of farmers	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			
							Peer-to-peer outreach from NTA members					
							Municipalities who want to support this practice to protect their roads					
2.3	Better pasture and crop management for healthier upland soils	Prescribed grazing – 9,116 total acres/6,327 new 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	<p>2022: Injector not taking off as initially anticipated</p> <p>Need to set time aside to better understand the whole picture associated with injection (SCC reporting? Module in PK?) to outline a flowchart in 2023</p> <p>Injections have occurred, but not seeing the numbers showing up yet, metrics analyses for 2023 annual report will include a reconciliation process to ensure these numbers are captured and reported via PK.</p> <p>In addition to funding from a private foundation, the Lancaster County Conservation District has received additional funding from NFWF to expand the manure injection incentive program.</p>	Manure incorporation efforts have been entered into PK. Level of implementation is not up to original targets; but tracking, reporting, etc. has been resolved. 2023 implementation efforts included silvopasture type approaches and bioreactor(s) along with traditional prescribed grazing BMPs.
		Manure Injection – Additional 76 acres (at least 1,876 injected in 2021 (per records))					Private Consultants		Farmers to do peer-to-peer conversations	\$800K for prescribed grazing (new acres) 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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Agriculture Action Team												
											<p>2021: Opportunities for implementation may be increasing as many farmers are transitioning away from dairy and reducing pressure on pasture areas; prototype of manure injection equipment for Plain Sect was developed STORY LINK > <u>Keep up the momentum, together!</u> (campaign-archive.com)</p> <p>2020: Without an incentive program to cover start-up costs and offset other losses, this action has been difficult to achieve meaningful implementation rates.</p>	
Priority Initiative 3: Ag Community Education and Outreach												
3.1	<p>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)</p>		<p>NGO's, LCCD, DEP, Dept of Ag, Penn State Extension, Lancaster Clean Water Partners, municipalities ELANCO and EAJA source water collaboratives</p>	<p>All of Lancaster County Focus on the plain sect communities in priority watersheds Drinking water in ELANCO</p>	<p>On-going</p>	<p>Time;</p> <p>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>	<p>2022: TSPs generating inventories with the intent that we have an understanding where individual farmers stand leading to an effort to organize "buckets" of awaiting technical assistance, funding, etc.</p> <p>Parcel-level data gleaned through outreach visits as part of the delisting strategy is being collected to document not only the number of farms visited, but also their willingness, plan status, BMP needs, funding sources, and openness to federal funding.</p> <p>Delisting strategy progress: On-the-ground partners have completed outreach to approximately 39% of landowners of high-priority farms, with outreach anticipated to 100% estimated to be complete by the end of 2022. Across all catchments, implementation is now completed/underway, or with</p>	<p>2023 witnessed a continuation of efforts from 2022; particularly with follow-ups with the amenable farmers in priority catchments. These efforts take time through the trust-building process and outreach efforts as noted in Ag 1.3. However, implementation is occurring through multiple funding streams (RCPP, NFWF, LCF, etc.) where successful trust-building efforts have led to plans and BMPs for implementation. 2024 may be considered aspirational for previously identified 76% of agricultural restoration goals (and 84% buffer restoration goals), but it's not out of line either.</p> <p>The Amish Liaison Program was re-launched in de-listing catchments in the Octoraro Watershed.</p>

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Agriculture Action Team							Technical	Financial	Technical	Financial		
											<p>landowners who are likely amenable make up a total of 76% of the agricultural restoration goals and 84% of buffer restoration goals. 12 of the 21 catchments are on track to meet restoration goals by 2024.</p> <p>Relationship building and addressing goals of the farm are the most important and viable in-roads for outreach and getting to 'yes' for implementation. Reality is that to do that currently, it is a slow process – very hard to jumpstart implementation regardless of funding in-hand by bypassing the trust building.</p> <p>2021: Both outreach and corresponding implementation funding need to increase substantially to meet goals by 2025; outreach has been successful but timing bottlenecks emerged with flow of implementation funding; risk of losing landowner interest if unable to implement BMPs in a timely manner. Pace currently dictated by catchments of focus in de-listing strategy.</p> <p>2020: 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</p>	

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).

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Water Quality Monitoring (“Data Management”) Action Team							Technical	Financial	Technical	Financial		
Priority Initiative 1: Data Management												
1.1	Create a central location for County conservation plans, restoration project permits, grant applications, etc.		LCCD, DEP, SRBC	Countywide	Ongoing; intend to have the system set up and running by 2023	<p>Explore opening Practice Keeper to more agriculture and conservation professionals; make it talk to programs like CSDatum, etc.;</p> <p>Lack of immediately-available funding to set up the software;</p> <p>Not all partners are ready to share their data;</p> <p>Practice Keeper is currently a private and locked system;</p> <p>Concerns over landowners’ privacy</p> <p>FieldDoc use and data integration</p> <p>Input deck for long-term verification processes may be helpful and need to be considered*</p>	Practice Keeper, World View experts at the LCCD and DEP		1-2 staff people at the Conservation District to spearhead the work (Conservation Plans)	\$200,000	<p>2022: Continued in efforts to ensure individual platforms (PK, CSDatum, etc.) are recording the data/info needed and we are not duplicating efforts. Efforts are starting to progress “into the weeds” (e.g. who, what, where, etc. is recorded for SWM facilities on ag lands (e.g. chicken house triggers local SWMO for SWM).</p> <p>2022 included launching an exploration of using CSDatum as the central repository for urban/suburban sector BMPs for reporting and long-term verification processes (LTVPs) management (at least as an interim step until DEP launches an online portal for MS4s and the discussion will shift to capturing data and information from non-MS4s.</p> <p>2021: Currently exploring and developing individual modules of data and information (e.g. WQ data from CSDatum) for incorporation into the CWMT. How the data will be displayed for the end-user is still under consideration. Data entry is a bottleneck overall with multiple platforms.</p> <p>2020: There is not a true central location but working through the probability there will be three systems (PracticeKeeper, FieldDoc,</p>	PK is serving as the primary database for ag and some natural sector BMPs implemented. CSDatum and individual municipal databases are serving as the primary repositories for urban-suburban BMPs. Some natural sector BMPs are currently being built into tracking spreadsheets. It is understood no absolute centralized database can be created that adheres to requirements or limitations tied to individual sectors; as individual sector requirements may conflict with another sector. In turn, efforts are regularly completed to coordinate and collaborate data and information across sectors and databases to help guide BMP implementation efforts. <p>Improvements have been identified for data and information to be captured and distributed amongst partners. Some data for older BMPs may never be fully identified, but data and information for CAST reporting has been built into current platforms for current and future BMPs.</p>
						CS Datum, ESRI, and ARRO experts ready to help		ArcGIS license and more Practice Keeper licenses	\$10,000			
						County GIS team		Staff time to collate data	Planning grant \$500,000+			

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							Technical	Financial	Technical	Financial		
Water Quality Monitoring (“Data Management”) Action Team							Technical	Financial	Technical	Financial		
Priority Initiative 1: Data Management												
											and the CMT) that capture and display all the necessary information for CAP implementation and related objectives and goals. LFT (as part of the CAP Coordinator team) is currently entering captured conservation plans into PracticeKeeper (PK). An approach to capture plans previously developed and held by private consultants is under development, but will most likely require fiscal support to compensate for time to transfer plans into PK. FieldDoc is in the early stages of use and will capture projects that don't fit a cost-share category, permit, etc. CMT will be used to assist with prioritization and project-specific information for BMPs. It is anticipated an SOP (or protocol) will be developed to ensure information is entered into the appropriate platform.	
							FieldDoc					
1.1.1	Manure transport	Better documentation of current practices so we have accurate baselines and are able to measure progress	Haulers, brokers	Countywide	On-going (tied to Ag Action team)	Currently no system to track manure transport; Funding for staffing; Funding for PracticeKeeper			Staff time to collate data		2022: See Ag 1.4 2021: Waiting to assess changes to Act 38 reporting to ascertain next steps. 2020: Relevant stakeholders have agreed in principle that a central	See Ag 1.4

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Water Quality Monitoring (“Data Management”) Action Team							Technical	Financial	Technical	Financial		
Priority Initiative 1: Data Management												
											system is appropriate but that is the extent of results associated with this action.	
1.3	In-stream monitoring		SRBC, DEP, EPA, USGS, CBP, WSI Presently: 7 sondes + 4 USGS stations (known)	Countywide	On-going (thru 2025 and beyond)	Collate and organize Lancaster specific data to help us set better baselines and measure progress Monitor watershed management units Assess Octorara approach for potential replication	SRBC		Staff time to collate and analyze data		2022: The Octorara Watershed Assoc. (OWA) with assistance from multiple partners and the EPA is developing a comprehensive water quality modeling tool designed to better reflect localized conditions. Based on the final product(s) of this tool, it may be appropriate to replicate across other watersheds; but will cross that bridge after the OWA tool is up and running. The DM team has evolved into a committee more focused on monitoring-related considerations. DM efforts overall are monitored by the CAP Coord team 2021: WQ modeling tool under development in the Octorara. Resources shifted with assistance from the Penn State AEC for de-listing strategy monitoring support. Data dump into the CWMT, but end user data display still under development. 2020: Activities have progressed albeit at a slower pace than desired or originally planned due to human and capital resource limitations. Through the PSU Ag and	The LCWPs were successfully able to implement ten (1) water quality monitoring stations in the Conestoga and Pequea watersheds to complement existing SRBC water quality monitoring stations. The OWA continues to roll out its comprehensive water quality modeling tool to assist with decision points for BMP implementation and assess improvements in the Octorara watershed. The Lititz Run Watershed Alliance (LRWA) installed a “cabinet” on Lititz Run with several pieces of water quality monitoring equipment. The LRWA intends to expand the amount of equipment to gather a more comprehensive list of parameters to gauge stream health and corresponding watershed health. Additional monitoring equipment would be ideal to capture long-term trends across watersheds, but the introduction of the current slate of
							Citizen Data volunteer at Lancaster County Conservancy and LCCD		SRBC staff time			
							PSU-NFWF macro sampling teams/entities		Lab(s) and/or equipment (initial and long-term water quality monitoring equipment)	\$160,000 (sondes/stations-initial install, maintain, analyses); long-term equipment maintenance		

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 Available		Resources Needed		Annual Progress to Date (2020 + 2021 + 2022)	2023 Update
							Technical	Financial	Technical	Financial		
Water Quality Monitoring (“Data Management”) Action Team							Technical	Financial	Technical	Financial		
Priority Initiative 1: Data Management												
											Environment Center, monitoring efforts associated with the Conewago Initiative and other endeavors will be “transferred” to select (priority) areas across the county to capture water quality and macroinvertebrate data.	equipment has been welcomed.
1.4	Display of monitoring results spatially to promote greater public involvement in the tracking process		SRBC, DEP, LCCD, LCCWC, municipalities, non-profits and private sector consultants	Countywide	Four per year	Funding and staff for collection and maintenance of units Acquiring and incorporating WQ data from DEP Willingness to share data	SRBC portal	NFWF Focus Lancaster grant (till 2020)	Software and web support to display data		2022: Efforts focused on better defining long-term goals and measurement via long-term monitoring. This will dictate what the dashboard will look like in the long run. Efforts in 2022 are on-going with current focus on defining over-arching goals and objectives and subsequent activities. 2021: Data dump into the CWMT, but end user data display still under development (funding needed to assist-pursuing Campbell Found. for funding) 2020: Components and functionality of information for display has been established. Currently working through multiple platform interface “rules”.	CSDatum was modified to allow data entry of water quality monitoring results from municipal and non-municipal users and partners. Discussions regarding how to reflect water quality data in the CWMT have been broached, but a definitive approach has not been established yet. The CWMT primarily shows modeling results and BMP implementation locations.
							DEP web interfaces					
							CSDatum					
1.5	Implement GIS-based collaborative tool (Collaborative Watershed Management Tool (CWMT))			Countywide		Data alignment with other web-based/GIS-based tools (e.g. FieldDoc, PK, etc.)	CSDatum, WQ portals, etc. for WQ related information		Web support		2022: CWMT is up and running. Per Action 1.4, a discussion is anticipated in 2023 to build or inject a level of communication or data transfer between differing platforms.	The CWMT (version 2.0) is up and running. The tool is public-interfacing platform and tool for catchment leads and delisting strategy tracking.

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Water Quality Monitoring (“Data Management”) Action Team												
Priority Initiative 1: Data Management												
									Historical data analysis prior to transfer to CWMT		2021: CWMT “upgrades” continue and a primary tool for the de-listing strategy. Pursuing funding (Campbell Found.) for better organization of WQ data “dumped” into platform 2020: The CMT is up and running; with continued development and data alignment activities underway.	

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.*

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).

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 Available		Resources Needed		Annual Progress to Date (2020 + 2021 + 2022)	2023 Update
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Stormwater Action Team												
Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
1.1	<p style="background-color: yellow;">Prioritize Act 167 planning in the County (develop new Act 167 plan that includes updated plan information and modeling for every County watershed. A new plan will provide updated ordinances to support regional runoff and flood management)</p>		County Planning, Municipal., Lancaster County Clean Water Consortium	Countywide	When funding is available				Lead org. (Consulting engineer/ planner) to assist LCPD	\$3 million for Lancaster County	<p>2022: County planning (LCPD) is interested in updating the Act 167 Plan if the funding hurdle can be overcome. A draft scope for a two phase plan update has been generated.</p> <p>LCPD has had preliminary meetings with the Clean Water Partners (Partners) and the Lanc Co Conservation District (LCCD) to discuss the importance of updating the Act 167 plan and feasibility of submitting a request for County ARPA funds. LCPD is creating an outline and scope of work to advance this effort. Next step to get feedback from PA DEP in coordination with the Partners and LCCD.</p> <p>Partners staff mentioned that an alternative to ARPA funds is the \$8.8 mill in new State funding (formatted like GGG and would need a match)</p> <p>LCPD would need funding for consultant to draft the plan as well as help managing the consultant.</p> <p>LCPD staff must assess if it makes sense to update Blueprints or create an entirely new document. Blueprints strategic focus and strategies would not change, and not sure it makes sense to just update background info/base data.</p> <p>2021: County Planning Commission should take lead on this effort. It is important for financial and technical resources to be allocated to the County to update Blue Prints. Alternative is to petition</p>	An application for an update of the countywide Act 167 Plan was spearheaded by the LCPD and approved by the County Commissioners. The application submitted to PADEP is limited to the phase 1 planning effort for an Act 167 plan update. If awarded, the effort would launch in 2024.

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

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Stormwater Action Team												
Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
											DEP to allow CAP to count toward update and Action Teams as implementation resource. 2020: There is consensus that both an Act 167 plan update is appropriate; and an update should incorporate data, considerations, etc. that reflects water quality information and modeling to better ensure stormwater management and flood mitigation planning and project implementation balances both water quantity and quality. Actions to move this initiative forward are limited by financial considerations.	
1.2	Have 167 plan that has pollutants/modeling parameters consistent with CAST (dependent on 1.1)		County planning, Municipalities	Countywide	When funding available	Modeling is not consistent with the CAST model and more accurate baselines are required. New legislation at the state level to provide consistency between Act 167 and CAST model		Local consultants			2022: Updated plan should definitely include data and modeling, and ideally would be consistent with the CAST model. Action is still coded red, but has been a subject of discussion for the Act 167 Plan update scope development noted under 1.1. 2021: See Action 1.1 2020: See progress to date on Action 1.1.	Intent for an Act 167 plan update would include modeling parameters consistent with CAST. This topic would be visited during phase 1 of the plan update in 2024 if awarded funds.

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

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Stormwater Action Team												
Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
1.3	Update model ordinance(s) for countywide and/or watershed goals		County Planning, Municipalities, Solicitors, Community Stakeholders	Countywide	FY2024-2025	Develop a robust model municipal stormwater ordinance(s) for Lancaster County that explicitly defines water quality goals, implementation requirements, buffer extents, and supports other initiatives in the County WIP, including green infrastructure, conservation overlays, riparian corridor standards, and restricting development and construction within floodplains and advocate for municipal adoption. Time constraints, no funding, and municipal adoption	Local agencies, local consultants				<p>2022: Individual municipalities have largely moved forward on adopting new ordinances independently. Model ordinance should be updated in coordination with the Act 167 Plan, and because many Munis will have already adopted a new SWM ordinance, it would be best to wait until next MS4 permit cycle in 2024-2025.</p> <p>LCPD staff are serving on Stormwater Action Team, Ordinance subcommittee and advocating for working together on updating the SWM ordinance and other related ordinances</p> <p>2021: Intent is to develop model ordinance options under Stormwater Action Team and Lancaster Conservancy partnership. Tie county-wide stormwater ordinance model to Act 167 and/or new MS4 permit requirements.</p> <p>2020: There is consensus an Act 167 plan update is appropriate, and a subsequent update to the model ordinance is necessary. The engineer's group has convened several times to move this action forward, but there is also consensus to wait until the next MS4 permit draft (2023-2028 cycle) is issued first.</p>	It is anticipated the model ordinance update will coincide with an Act 167 Plan update and/or MS4 permit renewal cycle. Both are anticipated to occur/launch during the 2024 calendar year. Discussions have occurred during 2023 with the Engineers Roundtable group to begin organizing considerations, changes, etc. to the current model ordinance for the next update.
1.4	Establish greater regionalization of runoff and flood management	<p><i>Stormwater Performance Stds – Runoff Reduction (35,762 total acres treated/6,205 new acres treated)</i></p> <p><i>Stormwater Performance Stds – Treatment (7,152 total acres treated/158 new acres treated)</i></p>	County Planning, Municipalities	Countywide	On-going	Updated Act 167 and model ordinance(s) would establish basis for watershed-wide implementation of practices to cost-effectively achieve pollutant reduction goals.	Local agencies, local consultants		Flexibility in regional management of water quality under Act 167	Funding for development of more advanced GIS tools: \$180,000 total to do; and funding for Act 167 Plan and subsequent	<p>2022: LCPD is supportive of this regionalization effort. Best opportunity to include the planning portion of this initiative (not necessarily implementation) would be to incorporate this work into the Act 167 planning.</p>	It is anticipated this subject will be touched on in further detail during an act 167 plan update. If awarded funds, efforts would get underway in 2024. Metrics analyses conducted during 2023 in conjunction with urban-suburban LTVPs guidance development

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Stormwater Action Team												
Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
						<p>Localized plans (with conditions outlined in watershed permits or local SWMOs) that usurp Act 167 plans be a more efficient approach*</p> <p>BMP reconciliation during 2022-2023 will be critical to align accounting with on the ground conditions</p>			<p>elements (see Action 1.1)</p> <p>Capital Cost of new BMPs: ~\$208 million (current assumption is ~60% of BMPs simply need reported)</p>	<p>2021: Follow delisting strategy to work on priority watersheds. Identify opportunities for regional projects/permits/joint construction to comply with MS4 requirements and met CAP goals.</p> <p>2020: Implementation of projects that provide regional and extended community benefits have become more prevalent across the county. Mechanisms to better track or plan for more targeted project locations would be ideal (see Actions 1.1 and 1.2).</p>	<p>revealed potentially uncaptured/unreported BMPs across urban-suburban sector. Performance targets revised assuming capture of PCM BMPs and related urban-suburban BMPs through MS4 permit annual reporting revised processes</p>	
Priority Initiative 2: Update MS4 Performance Criteria, Oversight, and Implementation												
2.1	<p style="background-color: #e6ffe6;">Clarify and broadly publicize flexibility criteria allowing focus on watersheds rather than municipally regulated MS4-UAs (process for watershed-based permits established, understood, and implemented by permittees to allow for greater documentation recording, verification, and reporting of BMP beyond those located in MS4-UAs)</p>		Lancaster County, municipalities	Countywide Priority Watersheds: Pequea Creek, Cocalico Creek, Chiques Creek, Others	CY2019-2021	<p>As presented to permittees over the last ten years, DEP and EPA requirements and programs complicate this process and serve as a disincentive. However, recent guidance distributed to municipalities outlines a different methodology. Consistent training and regulation is vital.</p> <p>Generalized process for regional general permits (e.g. watershed-based) would be ideal.*</p>		<p>Technical expertise is present; DEP clarification memo/letter watershed groups</p>		<p>12 plans (1 per watershed) at \$50,000 = \$600,000 minimum needed to do the plans</p>	<p>2022: LCPD strongly supports watershed based or regional planning and permits that cross political boundaries, and which reflect natural watershed boundaries to the greatest extent possible. The Lititz Run WBP has been developed with assistance from NFWF and is currently planned to serve as the basis of the Warwick/Lititz Joint Individual MS4 Permit application in 2024.</p> <p>2021: Develop watershed permit in the Little Conestoga and implement Lititz Run WBP to demonstrate multi-municipal regional project. Take advantage of pre-application permit process with LCCD and DEP to discuss options for joint and/or regional watershed-based permits and plans.</p> <p>2020: The development and implementation of watershed-based permits and plans is slowly progressing forward (Lititz Run WBP, Chiques Creek</p>	<p>Lititz/Warwick will submit a watershed-based permit as the baseline consideration from PADEP for their Joint Individual MS4 permit application during the fall 2023. Efforts in 2023 have focused more on urbanized municipalities subject to MS4 permit requirements during the 2023 calendar year. Intent would be to expand identified criteria (specifically with LTVPs and BMP inventories) to rural municipalities after initial efforts are stream-lined. Members of the CAP Coordinator team are assisting five municipalities during 2023 to better define processes, criteria, findings, etc.</p>

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

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Stormwater Action Team												
Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
											Report Card, Pequea WIP) that prioritizes watershed health have been moving along. Financial limitations are the primary hurdle for further efforts across other watersheds.	
2.2	Create goal line that is both definitive and does not stop at the end of a permit cycle (Establish quantifiable milestones that are consistent with CAST/Bay models, verifiable via consistent reporting templates that are consistent, accessible, and widely accepted)		Lancaster County, municipalities, Lancaster County Clean Water Consortium	Countywide	CY2019-2023	Milestones need to be consistent beyond those under current MS4 permits Action is required by DEP/EPA to make this process less complicated DEP/EPA must provide clear direction with regard to pollutant reduction calculation methodologies, verification protocols, and reporting requirements.	Technical expertise is present			\$20,000 per year is necessary to create and maintain a local report. \$80,000 – \$100,000 per year is necessary to host a point person for stormwater for the county	2022: Conversations centered around expanded long-term monitoring that would measure progress towards goal lines are in early stages. See Water Quality “Action team” actions. 2021: Formalize metrics based on CAP goals. Work to create consistent reporting and counting of BMPs in CAP. 2020: While there is consensus this is an appropriate action to undertake, it is difficult to establish definitive and broad milestones due to changing technologies, changing requirements, and so on. This action may come to the forefront through the further development of watershed-based documents (see Action 2.1).	Outreach efforts and communications with several municipalities have evolved where municipalities are taking more into account the health of a watershed and/or stream system overall in lieu of simply meeting MS4 permit obligations; along with additional benefits of proposed projects (flood mitigation, infrastructure protection, etc.). No definitive approaches have been established to create a goal or measurement mechanisms yet, but the fact conversations have progressed down this “rabbit hole” are promising.

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Stormwater Action Team												
Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
2.3	<p style="background-color: yellow;">Seek creative solutions to focus on the problem (pollution), not the geography (MS4 and urban areas) – Prioritize projects that include multiple benefits</p>	<p><i>Bioretention and rain garden – 955 total acres treated/273 new acres treated</i></p> <p><i>Bioswales – 3,455 total acres treated</i></p> <p><i>Filter strip runoff – 14 total acres treated/10 new acres treated</i></p> <p><i>Urban buffers – 256 total acres/144 new acres</i></p> <p><i>Impervious surface reduction – 58 total acres treated/58 new acres treated</i></p> <p><i>Wet ponds and wetlands – 706 total acres treated/322 new acres treated</i></p> <p><i>Stormdrain cleanout – 29,610 lbs. of sediment removed</i></p> <p><i>Grey infrastructure – 23,772 acres</i></p> <p><i>Street sweeping – 155 acres treated</i></p> <p><i>Dry ponds – 2,444 total acres treated/396 new acres treated</i></p> <p><i>Infiltration practices – 1,784 total acres treated/120 new acres treated</i></p> <p><i>Extended dry basins – 9,602 total acres treated/386 new acres treated</i></p>	Lancaster County, Municipalities	Countywide, Priority watersheds: Pequea Creek Cocalico Creek Chiques Creek, etc.	FY2021	<p>Current DEP and EPA requirements make it more difficult for municipalities to focus on water quality rather than specific, inefficient program requirements.</p> <p>MS4 permits shifting from TSS to TN reductions. –this will take new dollars and expertise from the municipalities and engineers.</p> <p>Process established for meeting water quality goals outside of regulated geography and in a cost-efficient manner</p> <p>PennDOT/turnpike coordination and collaboration (including legislator support to help facilitate the process)</p> <p>BMP reconciliation during 2022-2023 will be critical to align accounting with on the ground conditions (existing local databases uncovered show approximately 5,000 uncaptured/ unreported BMPs)</p>	Technical expertise is present	Dollars for PRP projects are listed in the PRP report but need to be updated based on final, approved PRP's	Currently, Lancaster County MS4s will collectively spend appx. \$1M to achieve a 100,000-lb N reduction in the current MS4 permit cycle. This funding could be leveraged against future permit cycle compliance if it could be spent on watershed-based solutions that includes projects outside of the traditional MS4 area.	<p>\$45,000 per watershed plan:</p> <p>- Dollars would be mostly for BMP's that will be listed in other Priority Initiatives but can receive credit in stormwater work</p> <p>Capital Cost of New BMPs: ~\$69 million (current assumption is ~50%~60% of BMPs simply need reported)</p>	<p>2022: Several municipalities have collaborated together and partnered in an official capacity (Intergovernmental Cooperation Agreement(s)- Lititz & Warwick, East Hempfield & West Hempfield, etc.) for BMP implementation, and focused on ag-based reductions (East Lampeter Twp., East Cocalico Twp., etc.) directed at priority areas.</p> <p>2021: Identifying and implementing projects that provide multiple benefits and extended community benefits is not the issue with this action. Changes to programmatic/policy requirements, coordination amongst multiple stakeholders</p> <p>2020: Identifying and implementing projects that provide multiple benefits and extended community benefits is not the issue with this action. Changes to programmatic/policy requirements, coordination amongst multiple stakeholders, and so on inherently slows the overall process down. There are more opportunities (projects) than current funding streams.</p>	See Stormwater 2.2. Additionally, several municipalities (West Lampeter Twp., East Hempfield Township, and Warwick Township) are taking a more proactive approach with assisting entities without resources to tackle and correct problems affecting water resources within jurisdictions. Metrics analyses conducted during 2023 in conjunction with urban-suburban LTVPs guidance development revealed probable numerous uncaptured/unreported BMPs across urban-suburban sector. Performance targets revised assuming capture of PCM BMPs and related urban-suburban BMPs through MS4 permit annual reporting revised processes (reflected in total acres treated only).

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Stormwater Action Team												
Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
		Vegetated open channel – 1,257 total acres treated /432 new acres treated Filtering Practices - 148 total acres treated Permeable Pavement – 8.3 total acres treated/1 new acre treated										
Priority Initiative 3: Create Programmatic Consistency												
3.1	Align permit parameters to water quality goals		Lancaster County, municipalities, DEP	Countywide		If a municipality is asked to submit the same information for each plan (102, 537, etc.), they should not need to duplicate efforts like hiring engineers twice or reformulate the data each time. Various DEP and EPA strategies are presently not aligned and improvements are not accounted for across programs (102, 105, 537, NPDES, MS4, etc.)	Technical expertise is present		Staff time at DEP		2022: Action is still coded red. However, there is anticipation that the DEP MS4 workgroup organized for 2022-2023 discussions may address this item and next steps would reveal themselves. 2021: Consistent data across DEP, other state agencies and funding programs should align to “count” all projects that affect water quality. 2020: The municipalities in the Lititz Run watershed are progressing with this action (but they are currently the only ones). There has been pushback from various departments at DEP regarding this effort. The draft Lititz Run WBP is anticipated to be submitted to DEP during the first quarter of 2021.	There is awareness the MS4 workgroup collaborated on improvements to the general MS4 permit for the next cycle. Extent of permit parameters aligning with water quality goals are unknown until the new draft permit is released
3.2	Create greater consistency and accountability for review, inspections, and documentation of operation and maintenance of permit sites		Lancaster County, municipalities	Countywide	Understanding full funding and human resource needs is still under development	County and municipalities should clarify and implement protocols to ensure consistent	Technical expertise is present		Consistent inspection requires staff time from LCCD E&S staff and DEP; documentation and	More funding for staff and staff training (details under development)	2022: Urban/suburban guidance document and associated LTVPs development and implementation across all municipalities was pursued in	A substantial effort to communicate urban-surburban LTVPs and BMP inventories was conducted in 2023 with the intent to ensure BMPs are re-

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Stormwater Action Team												
Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
						reporting for Bay TMDL compliance. Tied to long-term verification processes inventory efforts. Clarification of appropriate procedure to report verifications per the BMP Verification Plan is needed*	PennDOT Connect		reporting protocols for operation and maintenance.		2022. 2023 would include direct assistance efforts to help select municipalities. 2021: Human and capital resources are the main limitations for fully implemented programs. There are several efforts underway to use stormwater fees to fund inspection and maintenance activities (including for privately-owned BMPs). 2020: There is strong consensus and support for this action. Human and capital resources are the main limitations for fully implemented programs. There are several efforts underway to use stormwater fees to fund inspection and maintenance activities (including for privately-owned BMPs).	verified at proper intervals and BMP inventories are fully updated to capture "unreported" BMPs. Changes and updates to CSDatum and individual municipal databases have been underway to improve the number of known BMPs. Performance targets for urban-suburban type BMPs have been updated to reflect the anticipated and previously "unreported" (or uncaptured) BMPs along with projected new BMPs.
Priority Initiative 4: Project Funding												
4.1	Seek and acquire creative legislation and funding for implementation, operation, and maintenance of water quality projects (obtain sufficient funding for implementation and ongoing maintenance of all BMPs necessary to achieve Bay TMDL compliance)	Nutrient management planning – 10,577 acres	Lancaster County, municipalities, private companies related to fertilizer legislation	Countywide	Coordination with Ag Action Team	Current state legislation that complicates and/or prohibits various public-private initiatives should be addressed to facilitate P3 initiatives and allow for private and public funds to be used collaboratively. The goal for this BMP is taken from the state recommendation, which relies on a change in the fertilizer legislation. Without that legislative change, we can only strive to treat 100 acres.	Technical expertise is present			Funding and legislation to support larger goal*	2022: Creative funding mechanisms were explored in more detail during 2022 (including N4W with East Lampeter) along with collaboration events held by LCWPs to align different entities with known funding streams and unifying support for pursuit of different funding streams. 2021: Funding mechanism would remove many barriers 2020: This may always be a limiting factor.	Creative funding mechanisms is a central objective to the LCWPs overall. A continuous limiting factor is sufficient funding to conduct maintenance and monitoring activities for implemented BMPs.

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

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Stormwater Action Team												
Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
4.2	Employ market-driven solutions for project funding (e.g. stormwater offset, credit trading, environmental impact bonds, etc.)		Lancaster County, municipalities	Countywide	On-going	Practices such as stormwater offsets and wetlands banking transfers need to be enabled and established by DEP. EIB, green-crowd funding, and other private investments programs must be permitted via legislative change.	Technical expertise is present			Funding	<p>2022: This action is a fundamental component of discussions regarding creative funding mechanisms, regional opportunities, etc. Lancaster County saw a surge in interested organizations identifying opportunities, potential mechanisms, etc. for implementation over the next few years.</p> <p>2021: Efforts continue</p> <p>2020: Efforts have been underway implementing strategies or components of market-driven solutions (developer implemented regional stormwater management projects, social impact bonds, mitigation banking, and so on). Legislative or programmatic support would be ideal to knocking down remaining barriers for desired actions related to P3 efforts.</p>	See Stormwater 4.1
4.3	Revise funding criteria to ensure alignment with adopted policy and planning goals		Lancaster County MPO/TIP, Smart Growth Funds, Lancaster County Ag Preserve Board, LGH Lighten Up Lancaster	Countywide	On-going	Increase funding for Green Infrastructure and water quality BMPs for preserved farms, transportation and bridge projects, and complete streets	Technical expertise is present			Funding	<p>2022: MPO is currently modifying the TIP scoring process, and draft version has removed environmental factors in selection process. However, the LCPD and MPO is still supportive of this effort through the PennDOT Connects Program. LCPD/MPO do not see this as a funding criteria issue now, but instead a partnership issue after projects are selected.</p> <p>Adjusted the sub-grants program to align with GG program</p> <p>2021: Water quality and regional projects have seen greater emphasis in local funding programs. Technical</p>	Changes to criteria noted in 2022 were completed. Effects will not be known until next 2-year TIP cycle.

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Stormwater Action Team												
Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
											resources are needed to develop master list of projects in county to tie together limited resources. 2020: There is consensus this is needed, but limits to financial resources are real.	
4.4	Build water quality improvement measures into capital and maintenance projects	<i>Dirt and Gravel Roads E&S – 224,245 total linear feet/181,151 new linear feet</i>	Municipalities, Municipal Authorities, Lancaster County Conservation District Watershed team for Dirt and Gravel Roads program	Countywide	2025	Increase # of green infrastructure projects and water quality BMPs installed with municipal capital and maintenance projects				Capital Cost of new BMPs: ~\$2.88 million	2022: This action could be considered a fundamental component of capital improvement plans now. However, there is also an elevated focus on building resiliency into proposed projects. 2021: Continuing as originally envisioned. 2020: The Dirt & Gravel Road/Low-Volume Roads program is very popular (even amongst boroughs and urbanized areas). Several municipalities have been implementing true asset management programs that provides considerations for stormwater facilities and water quality improvements in other focus areas (e.g. transportation improvements).	As noted in 2022, this is a fundamental component of capital improvement efforts now. Coupled with notes provided in Stormwater 2.2, municipalities are identifying projects that provide multiple benefits more and more (e.g. complete stream restoration while simultaneously improving the structure and protection of sewer mains)
Priority Initiative 5: Identify alternate sources of project identification												
5.1	Identify projects from hazard mitigation planning initiatives		Municipalities, Lancaster County	Countywide	On-going	Regular review of hazard mitigation plans Limited staffing to review materials		Dirt and Gravel Roads program and dollars			2022: Not uncommon for municipalities to prioritize projects with multiple benefits. Limitations are only related to funding, permitting, and contractor availability bottlenecks. 2021: Continuing as originally envisioned. 2020: This is becoming more normal in overall project development and	See Stormwater 2.2 and 4.4

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Stormwater Action Team												
Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
											implementation efforts. However, human and capital resource limitations slow efforts to fully implement and coordinate/prioritize opportunities.	
5.2	Identify projects from municipal capital improvement plans		Municipalities, Municipal Authorities, Lancaster County	Countywide	On-going	Regular review of municipal capital improvement plans Limited staffing to review materials		Dirt and Gravel Roads program and dollars			2022: See Actions 4.4 and 5.1 2021: See Action 5.1 2020: See Action 5.1	See Stormwater 2.2, 4.4, and 5.1
5.3	Identify projects from local, county, and state infrastructure improvement plans		Municipalities, Municipal Authorities, Lancaster County	Countywide	On-going	Regular review of local, county, and state infrastructure improvement plans Limited staffing to review materials		Dirt and Gravel Roads program and dollars			2022: See Actions 4.4 and 5.1 2021: See Action 5.1 2020: See Action 5.1	See Stormwater 2.2, 4.4, and 5.1
5.4	Identify projects from watershed plans		Municipalities, Conservation District, Watershed groups, Lancaster County	Countywide	On-going, with emphasis on de-listing strategy priority locations	Regular review of watershed plans Limited staffing to review materials		Dirt and Gravel Roads program and dollars			2022: This has become a primary driver in certain watersheds for selecting BMPs for implementation including Chiques, Lititz Run, and Pequea watersheds. 2021: See Action 5.1 and watershed plans provided a starting point for the delisting strategy 2020: See Action 5.1	319 plans and watershed action plans are serving as primary catalysts and planning mechanisms for the identification and implementation of projects that encompass water quality benefits, watershed improvements, infrastructure protection, and capital improvements.
Priority Initiative SR1: Stream Restoration												
SR1.1	50 projects plus basic, cost effective monitoring (field inspections) of before and after water quality results that are shared (include sourcewater protection work)	<i>In-stream restoration - Urban (35,180 total linear ft/35,179 new linear feet)</i>	Municipalities, LCCD, WSI, watershed groups, DTU, USFWS, LandStudies, USACE, DEP, Lancaster	Contiguous projects in priority watersheds TBD	2019 – 2025 (and beyond)	As site specific details become available, we will use the alternative BMP template for floodplain and stream restoration	Practice Keeper as data hub for permits and projects	319 funding for Mill Creek, Conowingo, and Conewago	Outreach staff to make initial contact with landowners	Funding	2022: Discussions regarding expanded monitoring (not just projects) underway	Significant stream and floodplain restoration projects have been completed or are underway (e.g. Little Conestoga Blue-Green Corridor). Monitoring conducted is

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Stormwater Action Team												
Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
		<p><i>In-stream restoration – Non-urban (138,948 total linear ft/76,775 new linear feet)</i></p> <p><i>Wetland restoration/creation in floodplain – 452 total acres/266 new acres</i></p>	County Clean Water Consortium, DEP, PAFBC, EPA	<p>Specific sites TBD based on opportunity, permit cycles, and compliance needs</p> <p>The intention is to address source water issues as well</p>		<p>projects with legacy sediment.</p> <p>Lack of funding available to achieve the projects at the pace we need</p> <p>Long permit timelines</p> <p>Presumed contiguous willing landowners when that may not be the case, especially in the short term</p> <p>Develop an acceptable monitoring protocol that includes a publically viewable format</p> <p>Greater state/federal permit process speed (especially for commercial projects)</p> <p>Current MS4 set up limits municipal interest/availability to participate</p> <p>In general, current municipal ordinances do not make these projects an easy “yes” for a developer.</p>	<p>Data experts like the Academy of Natural Science, SRBC, WSI, Chesapeake Conservancy, PSU, and more</p>	<p>Growing Greener funding</p>	<p>Permit processors (Harrisburg-based work)</p>	<p>Capital Cost of new BMPs: ~\$58 million</p>	<p>Regional-based stream restoration type projects under development (Little Conestoga)</p> <p>2021: Projects have been implemented but data management has not caught up to be able to track implementation progress. CAP funding is providing another source of funding for implementation but funding remains the limiting factor.</p> <p>2020: There is no shortage of opportunities and potential projects. Shortage of financial resources is the only limiting factor.</p>	<p>generally dictated by permit requirements. Discussions have occurred for long-term monitoring necessary as part of LTVPs, but a definitive process has yet to be locked down (this is an on-going conversation).</p>
SR1.2	Dam removal notification system so that appropriate restoration accompanies any removals (programmatic recommendation)		County, PAFBC, Water Science Institute	All areas	2025	A necessary comprehensive approach with connection between dam removal and restoration work; current situation allows a dam to be removed and the permittee to walk away, which results in much more sediment pollution	County, PSU, watershed specialists, PAFBC				<p>2022: Collaboration and engagements with entities known to target dam removals (e.g. American Rivers) was elevated to increase the awareness of proposed dam removals.</p> <p>2021: Emphasize greater communication and coordination with state agencies prior to scheduled removal.</p>	Collaboration and communications continue to ensure known proposed dam removals are known.

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Stormwater Action Team												
Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
											2020: This became a specific issue in the Chiques Creek watershed and revealed an inherent gap in the overall coordination efforts that have been accomplished. Programmatic/policy changes are requested to address this issue.	
Priority Initiative LP1: Growth Management												
LP1.1	Direct growth to UGA's and VGA's (DGA's). Prioritize redevelopment and infill in DGAs. Build more compactly and efficiently		Municipalities, Lancaster Co Planning Commission (LCPC), and developers.	Countywide (Focus: Designated Growth Areas)	LCPC Growth tracking - 2 year increments	Municipal participation Increase % of new dwellings in UGAs to accommodate projected pop and increase % of new non-residential SF. Increase residential net density to target density for each UGA; 9.0+ DU/Ac, 6.5 DU/Ac or 5.5 DU/Ac depending on the UGA.	Municipalities (Regs & Impl.). LCPC staff for growth tracking			Grants and resources needed by municipalities	2022: The LCPD is actively working towards this goal, and it is a priority initiative, however full cooperation is needed from Municipalities. Unfortunately, the LCPD doesn't have any recent growth tracking data to demonstrate progress on this item, last time period is from 2015-2019. This will be updated in the near future 2021: Coordinate with LCPC and county planning to coordinate model ordinances around UGAs and VGAs 2020: There is consensus for this action. Economic and political realities limit observance from time to time.	More information will be captured and known after the next LCPD update.
LP1.2	Utilize low impact development (LID) practices	Conservation Landscaping – 125 total acres	Municipalities, LC Clean Water Consortium, Developers, and LCPC	Countywide (Focus: Designated Growth Areas)	2019-2025	Increase use of LID practices. Municipal participation Developer resistance	Staff of various partners			Capital Cost of new BMPs: ~\$26,000	2022: LCPD recommends including LID best practices in the model SWM ordinance drafted with the Act 167 Plan. Could be an appendix item, and even voluntary and suggested, but would be good to advocate for the use of LID practices. The LCPD already has a document of "Recommended Model Development	The current model ordinance essentially promotes LID approaches, with several municipalities updating SWMOs to call out LID approaches more deliberately. It is anticipated the more deliberate call-outs for LID approaches will be included in the next model ordinance update.

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Stormwater Action Team												
Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
											Principles" dated Nov 2004 that could serve as a start. 2021: Baseline component of most stormwater projects (green infrastructure or GI-based elements included on a majority of applications) 2020: This is a fundamental component of implemented projects.	
LP1.3	Limit large-lot suburban development in rural areas		Municipalities and LCPC	Countywide (Focus: Designated Growth Areas)	LCPC Growth tracking - 2 year increments	Reduce total acres developed per year in rural areas, and reduce % of new dwellings outside UGAs Municipal participation Developer resistance	LCPC staff for growth tracking				2022: LCPC has policies in place and is tracking this. Unfortunately, the LCPC doesn't have any recent growth tracking data to demonstrate progress on this item, last time period is from 2015-2019. This will be updated in the near future. 2021: More naturalized open spaces being observed with large-lot subdivisions, which may be the compromise. 2020: There is consensus for this action. Economic and political realities limit observance from time to time.	See Stormwater LP 1.1
LP1.4	Plan to fully serve Urban Growth Areas (UGAs) and align water and sewer service with UGA's	Septic connection of 3,008 total systems (to municipal service)/2,645 new systems	Municipalities, Municipal Authorities and LCPC (education & advocacy)	Countywide (Focus: Designated Growth Areas)	LCPC Growth tracking - 2 year increments	Increase % parcels in UGA with water and sewer service Costs, Municipal participation, Authority participation	LCPC staff for growth tracking		Matching funds to municipalities for Act 537 plans (of approx. \$100,00 per muni)* Capital Cost of new BMPs: ~\$38.2 million	2022: LCPC has policies in place to encourage this. LCPC is currently working on a water and sewer capacity analysis – mapping tool and has performed edge parcel analyses for regional comp plan implementation meetings. LCPC intends on conducting review/reassessment of designated growth areas (DGA's) boundaries with municipalities in the future. 2021: Financial resource limitations still exist.	LCPC is still working through a capacity analysis. Primary focus is currently with increasing municipal participation efforts in the process.	

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Stormwater Action Team												
Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
											2020: There is consensus for this action. Economic and political realities limit observance from time to time. Financial resource limitations hinder full realization of this action.	
LP1.5	Plan for appropriate wastewater management in rural areas	Septic pumping of 10,000 systems	Municipalities, Municipal Authorities, PA DEP and LCPC	Countywide (Focus: Rural Areas)	2019-2025	Reduce number of failing on-lot disposal systems (OLDS) Costs, Stricter regulations required from state, municipal participation				Funding for countywide system (details TBD)	2022: This effort was not considered a priority in 2022, and may not come to front burner until 2024. 2021: Efforts under consideration to collect data on total septic systems, annual pump outs, condition and immediate failures. Coordinate with Sewer Authorities for service areas and areas to upgrade. 2020: There is consensus for this action. Economic and political realities limit observance from time to time. Financial resource limitations hinder full realization of this action.	See Stormwater LP1.4, and anticipate a 2024 focus by LCPD regarding this topic.

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Stormwater Action Team												
Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
LP1.6	Adopt and/or Update Act 537 Plans		Municipalities, PA DEP, and LCPC	Countywide, with emphasis on priority areas determined by de-listing strategy	2019-2025	Increase number of municipalities that adopt or update their Act 537 Plans Costs, Stricter regulations required from state, municipal participation					<p>Matching funds to municipalities for Act 537 plans (approx. \$100,000 per muni)*</p> <p>2022: LCPD reviews Act 537 plans as part of the municipal and DEP adoption process, but this process is entirely driven by municipalities and funding resources. Recent Act 537 Plans to be reviewed and adopted include West Cocalico Twp and West Earl Twp</p> <p>2021: Due to limited resources, needs will originate in priority areas</p> <p>2020: Financial resource limitations hinder full realization of this action. This may be resolved through WBPs and fully integrated water resource plans as noted in previous initiatives.</p>	No known recent Act 537 updates besides municipalities noted for 2022
LP1.7	Utilize TDRs for Ag land, woodlots and other natural areas as a tool to promote greater density in UGAs/VGAs		Municipalities, LCPC (guidance)	Countywide	2019-2025	Increase # of muni using TDRs. Explore possibility of a pilot TDR ordinance between multiple municipalities Logistical hurdles, municipal participation					<p>Funding/grants to revise or draft ordinances</p> <p>2022: While the LCPD recognizes this as one possible tool, it is not specifically mentioned in places2040, and while supportive of these when proposed by municipalities, they do not typically advocate for them. This is considered a potential tool in the toolbox where it could be a fit if other approaches are exhausted.</p> <p>2021: Elements are being observed in select areas.</p> <p>2020: This is a complicated subject, but interest in adopting this approach or elements of this approach is growing.</p>	This is a tool with significant supporting information provided by LCPD, but limited number of municipalities have adopted this tool.
Priority Initiative LP2: Improve Planning and Design												

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Stormwater Action Team												
Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
LP2.1	Improve Planning & Design and Utilize Integrated Water Resource Planning and Management (IWRP & IWRM)		Municipalities, with LCPC	Countywide	2019-2025	Increase number of Comprehensive watershed management, water/sewer infrastructure, rural wastewater management, stormwater management and green infrastructure plans Funding. Municipal participation				Grants and funding (\$50,000 - \$100,000 per plan/ordinance)	2022: IWRP & IWRM types of approaches will become more apparent with the next MS4 permit cycle. 2021: Limitations hinder progress. 2020: There is consensus for this action. Economic and political realities limit observance from time to time. Financial resource limitations hinder full realization of this action.	IWRP and IWRM approaches may become more apparent after the next draft MS4 permit is released. However, a significant number of municipalities are participating in watershed planning efforts across the county (Chiques, Lititz Run, Cocalico, Pequea, Little Conestoga)
LP2.2	Amend or adopt local ordinances that minimize stormwater runoff and regulate development that protects water resources (tied to Act 167 focus areas and goals)		Municipalities, with LCPC	Countywide	2019-2025	Increase number of ordinances municipalities adopt that minimize stormwater runoff and regulate development that protects water resources; including Zoning, SALDO, stormwater and floodplain management, well head protection ordinances, conservation zoning district and natural resource protection standards) Municipal part.				Funding/grants to revise or draft ordinances (\$50,000 - \$100,000 per plan/ordinance)	2022: The LCPC began to address this initiative through the comp plan catalytic tool "Simplified Zoning". Water Quality & Stormwater Management Workshop Topic reports with strategies to implement various ordinances were created and can be used to help advocate for this item. LCPC staff serves on the Stormwater Action Team ordinance subcommittee 2021: Sub-committee of Stormwater Action Team to develop model ordinances with municipal officials. 2020: There is consensus for this action. Economic and political realities limit observance from time to time.	See Stormwater 1.1
LP2.3	Revise Project Funding Criteria		Municipalities, LCPC, Lancaster Co MPO (TTAC), DEP and DCNR	Countywide	2019-2025 (i.e. 2019-2022 MPO/TIP)	Funding criteria should be revised to ensure alignment with adopted policy and planning goals. Current PennDOT, DEP, and DCNR regs do not require consistency.	Various stakeholders. (i.e. PennDot Connects Program and County LRTP)			Need to leverage existing funding	2022: MPO is currently modifying the TIP scoring process, and draft version has removed environmental factors in selection process. However, the LCPC and MPO is still supportive of this effort through the PennDOT Connects Program. LCPC/MPO do not see this as a funding criteria issue now, but instead a	See Stormwater 4.3

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Stormwater Action Team												
Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
						<p>Consistency between Central office and districts.</p> <p>Coordination between MPO and municipalities</p>					<p>partnership issue after projects are selected. The PennDOT Connects program relies on strong partnership and collaboration with LCPD/MPO and its municipal planning partners.</p> <p>2021: Progress has been made and several local, county, and state funding programs have shifted to include water quality goals part of funding criteria. Additional technical resources needed.</p> <p>2020: Programmatic and/or policy changes outside the control of local governments is necessary for this action to be fully realized.</p>	
LP2.4	Water quality improvement measures should be built into capital and maintenance projects		Municipalities, Municipal Authorities, LCPC, Lancaster MPO (TTAC)	Countywide	2019-2025 (i.e. 2019-2022 MPO/TIP)	<p>Increase # of green infrastructure projects installed with municipal capital and maintenance projects</p> <p>Municipal participation, funding</p>	Various stakeholders. (i.e. PennDot Connects Program, and County LRTP)			Need to leverage existing funding	<p>2022: As noted in Action 4.4, this is a fundamental consideration when developing and implementing projects.</p> <p>2021: Several instances where the development of parks is intersecting with water quality improvement projects. STORY LINKS > https://www.lancasterpublicart.com/cullitonpark https://lancastersciencefactory.org/cullitonpark/ https://pacleanwateracademy.remote-learner.net/mod/page/view.php?id=4342 https://lancastercleanwaterpartners.com/2020/07/murry-ridge-park-green-infrastructure-improvements/</p> <p>2020: Programmatic and/or policy changes outside the control of local governments is</p>	See Stormwater 4.4 and 5.2

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Stormwater Action Team												
Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
											necessary for this action to be fully realized.	
LP2.5	Practice regional and place-based planning and analysis		Municipalities, LCPC	Countywide	2019-2025	Increase # of municipalities with regional comprehensive plans and natural resource and water resource plans Municipal participation, resistance to regionalization	LCPC and municipal staffs				2022: The LCPC is currently working with local municipalities on three multi-municipal regional plans: South Region, Northwest Region, and Cocalico Region. These plans will serve as those required municipal regional comprehensive plan updates. 2021: Underway, albeit minimal locations <i>STORY LINK > Save the Bay Magazine - Spring 2020 - Chesapeake Bay Foundation (cbf.org) (p.7)</i> 2020: There is consensus for this action. Economic and political realities limit observance from time to time.	Along with previous regions identified in 2022, the north central region is currently conducting a regional comprehensive plan update.
LP2.6	Utilize official maps for regional stormwater management and protection of natural resources		Municipalities, LCPC	Countywide	2019-2025	Increase number of municipalities participating in regional official maps Municipal participation, lack of municipal familiarity with official maps under MPC	LCPC and municipal staffs			Funds and ability to municipalities for utilizing official maps for regional SWM*	2022: The LCPC advocates for including stormwater management and natural resource protection elements on Official Maps. Four official maps were adopted or amended in 2021, so far none in 2022. These included Denver Boro (incl. trails and corridors), East Hempfield Twp (incl. open space/parks/trails & regional stormwater management	This approach is still advocated for. No new maps have been adopted thus far in 2023.

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Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
											BMPs), Manor Twp (incl. proposed conservation easements & pedestrian trails), and Quarryville Boro (Incl. water network improvements & trails). 2021: Political and regulatory restrictions limit use of official maps. Credit could be offered in MS4 permit for those municipalities that utilize official map with water quality elements. 2020: There is consensus for this action. Economic and political realities limit observance from time to time.	
LP2.7	Utilize agricultural preservation process to promote greater implementation of agricultural BMPs		Lancaster County Agricultural Preserve Board, Lancaster Farmland Trust, Lancaster County Conservation District	Countywide (Focus: Rural Areas)	2-19-2025	Increase number of BMPs implemented on preserved farms The purchase of development rights does not carry BMP obligations Ag Action Team coordination and tie-in to Action LP3.5. Multiple planning and programmatic tools will be necessary to expand pockets of success (zoning (limit # of homes or subdivisions that can exist on ag zones property), TDRs, easements, etc.). Passage of SB64 by the House would allow private land trusts access to state funding for easement acquisition for farm preservation.* With significant ag land use in Lancaster County, multiple tools and avenues for preservation will be necessary to	APB and LFT staff				2022: The LCPD is not listed under responsible parties, but we are encouraging the LFT and APB to implement ag BMPs, especially stream buffers, and when possible, use as a criterion in selecting farms for preservation. Current conversations are centered around potential increased TSP support for APB staff or at a minimum a coordination platform. 2021: Expanding considerations and exploring needed/ additional tools to increase ag preservation beyond simply promoting the need. 2020: Ag Action Team has taken the lead	See Agriculture 1.1

Phase 3 Watershed Implementation Plan (WIP) Progress and Milestones 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		Annual Progress to Date (2020 + 2021 + 2022)	2023 Update
							Technical	Financial	Technical	Financial		
Stormwater Action Team												
Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
						improve BMP implementation rates.						
Priority Initiative LP3: Natural Resources, Open Space and Parks												
LP3.1	Preserve natural and forested lands		Lancaster County Conservancy, Municipalities, LCPC, State	Countywide (Focus: Rural Areas)	2019-2025	Preserve natural lands and land with forest cover (2,000-3,000 acres). Prioritize contiguous areas. Funding, landowner participation	Current LCC staff	Conservation Fund	Staff & maintenance	County funding	2022: This is one of the policies of places2040, under the Big Ideas, "Preserve large contiguous areas of agricultural and natural land and we actively advocate for this policy. The LCPD completed an Ag and natural lands analysis for it's Fall 2021 Comp Plan implementation workshops to encourage this initiative. 2021: Preservation is still a fundamental component of efforts, but retirement to open space is not the ideal metric 2020: There is strong consensus and realized actions associated with this initiative. Human and financial resources for outreach, long-term maintenance, etc. are the primary limiting hurdles still working through.	This is an unwritten objective. Better defined objectives may be realized through Stormwater LP1.1
							State agencies (Game Comm., State Parks, Forestry, DCNR)	State funding				
LP3.2	Conserve natural resources and services throughout Lancaster County's urban, suburban and rural areas		Municipalities, Lancaster County Conservancy Lancaster County Parks, LCPC	Countywide		Funding, landowner participation Increase acreage (or number) of areas being conserved for wise use & management to maintain ecological functions (wetlands, steep slopes, erodible soils, forest blocks < 100 acres.					2022: This is an unspoken-but inherent-objective of the Long-Term Verification Processes (LTVPs) under development and implementation in the county. 2021: Human and financial resources for outreach, long-term maintenance, etc. are the primary limiting hurdles still	See Stormwater LP3.1. Additionally, the Lancaster Conservancy has purchased more lands targeted for conservation.

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Stormwater Action Team												
Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
											<p>working through. One example such as turf to meadow BMP could be employed in suburban and rural areas. Improvements in model ordinances might assist with this (see Action LP1.2)</p> <p>2020: There is strong consensus and realized actions associated with this initiative. Human and financial resources for outreach, long-term maintenance, etc. are the primary limiting hurdles still working through.</p>	
LP3.3	Restore ecological connections and natural resource systems throughout Lancaster County's urban, suburban and rural areas		Municipalities, Lancaster County Parks, LCPC, Lancaster County Conservancy	Countywide	2019-2025	<p>Increase number of ecological connections through restoration efforts.</p> <p>Funding, landowner participation</p>					<p>2022: The LCPD Simplify Zoning implementation team addressed this issue (11/24/21) Recommends drafting a model ordinance to protect sensitive natural features.</p> <p>The LCPD is actively working on this, especially with trail planning and development.</p> <p>2021: Some funding programs are giving priority to projects in close proximity to other projects, headwaters, and natural areas.</p> <p>2020: There is strong consensus and realized actions associated with this initiative. Human and financial resources for outreach, long-term maintenance, etc. are the primary limiting hurdles still working through.</p>	These connections are being identified in watershed action plans for implementation; along with considerations for protection of existing buffers as noted in the Buffers Priority Initiative.

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Stormwater Action Team												
Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
LP3.4	Neighborhood and regional parks, greenways and trails (5 acres in county/regional parks and 10 acres in local/municipal parks)		Municipalities, Lancaster County Parks, LCPC, Lancaster County Conservancy	Countywide	Check progress towards goal in 2025	Increase number and acreage of neighborhood and regional parks, greenways and trails. Adopted County standard: 15 acres of parkland/1,000 residents. Funding, County and municipal participation				Funding and grants	2022: The LCPD is actively working on this item, especially related trail planning and development. No updated metrics available at this time 2021: Several municipalities are taking on this goal (Conewago Restoration Project, Ephrata Project CAP application) 2020: There is strong consensus and realized actions associated with this initiative. Human and financial resources for outreach, project implementation, long-term maintenance, etc. are the primary limiting hurdles.	Anticipate updated metrics in 2024 or 2025
LP3.5	Utilize TDRs as a tool to preserve high quality ag land, woodlots and other natural areas		Municipalities, LCPC	Countywide	2019-2025	Increase # of muni using TDRs. Explore possibility of a pilot TDR ordinance between multiple municipalities Logistical hurdles, municipal participation Tie-in to Action LP2.7					2022: See LP 1.7 2021: Lancaster has experienced an increase in residential and commercial development. TDRs (or similar) have not been historically needed to assist in the development process. TDRs are now present in Caernarvon, Manheim, Penn, Warwick, West Hempfield, and West Lampeter Townships. 2020: See LP 1.7	See Stormwater LP1.7
Priority Initiative LP4: Tree Canopy												
LP4.1a	Conduct a tree canopy assessment (Conduct a new tree canopy assessment in 2020, to compare to 2010 baseline)		County, Municipalities, Lancaster County Conservancy, Chesapeake Bay Conservancy	Countywide	2020	Funding, staffing	DCNR	CBF K10 Campaign, DCNR	GIS technology and staff		2022: All Tree Canopy (LP4) items are part of a process outlined in Blueprints. Funding for LCPD to do a tree canopy assessment is not available, however this data might be available through the Chesapeake Conservancy. 2021: Baseline does not exist for the county, but efforts are underway in key areas to improve canopy.	It is anticipated that the CBF aerial analysis tool may provide more detailed information and data regarding canopies after the current refinement process is complete sometime in fall 2023. Data and information is known for the City of Lancaster at this time.

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Stormwater Action Team												
Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
											2020: Activities are moving forward, but human and financial resource limitation hinder timely progress.	
LP4.1b	Set tree canopy targets, and implement tree canopy action plans at county and municipal level		LCPC, Municipalities, Lancaster County Conservancy, and Lancaster Clean Water Consortium.	Countywide	2019-2025	Increase number of municipalities setting targets Funding, staffing Possibly select 3 priority large watersheds for initial imp.	DCNR	CBF K10 Campaign, DCNR	GIS technology and staff		2022: This is one of the strategies listed in Blueprints, Action Item #14, but no action recently. Need a model Tree preservation ordinance 2021: See LP4.1a 2020: Activities are moving forward, but human and financial resource limitation hinder timely progress.	City of Lancaster organized a Trees for People Plan with targets and objectives. Several municipalities were receptive to the CBF K10 Campaign and have participated
LP4.1c	Increase tree canopy cover	<i>Tree planting of 10 total acres (urban tree canopy)</i> <i>Urban forest planting – 27 total acres/23 new acres</i>		Priority watersheds	2030	Increase % tree canopy cover in priority watersheds by 2030 Municipal buy-in	Tree Canopy Report Releaf Report (DCNR)			Capital Cost of new BMPs: ~\$21,000	2022: Several implementation grant projects included tree canopy BMP implementation. 2021: See LP4.1a 2020: Definitive buy-in and projects implemented.	See Stormwater LP4.1b
LP4.2a	Create a model tree preservation ordinance or "Planning Guide"		LCPC, municipalities, developers	Countywide	2019-2025	Adopt a model tree preservation ordinance or "Planning Guide"	PA Land Trust Assoc. (PALTA). DCNR				2022: Recently, the Simplify Zoning implementation team addressed this issue in the Water Quality and Stormwater Management Workshop Topic report (11/24/21) Recommends drafting a model ordinance. Resources for creating a tree preservation ordinance are provided. 2021: Ordinance sub-team being formed within Action Team 2020: No update at this time.	Outline to proceed with this effort has been completed, but an effort has not been launched yet.

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Stormwater Action Team												
Priority Initiative 1: Update Act 167 Integrated Water Resources County Plan												
LP4.2b	Adopt (or amend) tree preservation ordinances at municipal level		Municipalities, developers, LCPC	Countywide	2019-2025	Increase number of tree preservation ordinances adopted Municipal capacity	PALTA				2022: Process identified in the Water Quality and Stormwater Management Workshop Topic report (11/24/21). 2021: See LP4.2a 2020: No update at this time.	See Stormwater LP4.2a
LP4.2c	Enforce existing landscape ordinances and existing or new tree preservation ordinances		Municipalities, developers	Countywide	2019-2025	Preserve existing landscaping and trees Municipal Capacity, Developer/land owner cooperation			Municipal staffing		2022: Several municipalities have updated their ordinances to better align landscape considerations and requirements with water quality objectives. 2021: See LP4.2a 2020: Conflicts between ordinance language and water quality goals have been encountered.	Approximately eleven municipalities have updated ordinances requiring native vegetation as part of proposed land development plans.
LP4.3	Education and Outreach		Lancaster County Conservancy, Tree Tenders, LCPC, DCNR	Countywide	2019-2025	Conduct trainings					2022: Tree preservation and increasing tree canopy is a topic that the LCPD will be addressing in the future. 2021: Coordinate with City of Lancaster and Alliance for the Chesapeake Bay Green Infrastructure Coordinator 2020: Human and financial resource shortfalls limit capacity and ability to expand training efforts.	Numerous trainings and outreach efforts launched by the Buffers Action Team regarding trees and tree canopies have occurred through 2023 and are planned into the fall 2023. One-on-one engagements occur with municipalities to promote objectives and identify opportunities. Continuous collaboration and education/outreach efforts occur across the calendar year including but not limited to Engineers Roundtable, MS4orum, Water Week, LCWP stakeholder meetings, and so on where buffers, tree plantings, etc. are an element of discussions.

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).