Template 1. Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template - Agriculture

Note: Certain priority initiatives proposed in this plan do not have specific representation in the CAST model (e.g. reductions in winter manure spreading). In these cases, recommended BMPs were used in the CAST model to account for their associated reductions. As a result, targets listed here align with, but do not necessarily match numbers entered into the CAST model. Please see draft scenario tables and documentation for specific clarifications.

Actio n#	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations		Resource	s <u>Available</u>			Resources	<u>Needed</u>	
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggeste Source
riori	ty Initiative	1: Manure	Management											
1.1	Implement a	Reduce	Lancaster	All of	Research	Cultural shift is	Ag	County	NRCS		MORE		Money for	
	suite of on-	manure being	County	Lancaster	process	needed to accept	technician	Conserva			contractor		storages	
	farm BMP's	applied to	Conservation	County	and	that too much	and Plain	tion	NFWF		s who are		and	
	to address	farmland by	District,		initial	liquid manure is a	Sect	District	grants		able to		alternativ	
	the manure	25%	Lancaster Clean	Projects to	impleme	problem instead of	Outreach				build		e BMPs to	
	so less of a		Water Partners,	go in	ntation	a resource	coordinat		Plain sect		manure		address	
	need to	Barnyard	all partners in	priority	done by		or		self-		storages		the	
	spread	Runoff	the county,	watersheds	2025:	Currently not			funding		and install		manure	
	during the	Controls – 100	DEP, Dept of Ag	TBD based	vision is	enough on-farm 6	Private	TeamAg,			BMPs to		during	
	winter	acres		on results	for a	month storages	sector	Red			address		winter	
				from	required		consultan	Barn,			the		months	
	Introduce an	Animal Waste		community	ban to	Financial and	ts	other			manure			
	end to	Management		mapping	start in	technical support		private			during		Financial	
	winter	Systems –		tool	2024	from municipalities	Non-	consulta			winter		framewor	
	spreading	100,000 AU's			with full	as we all wade	profit	nts			months		k that	
	(5-8 year				impleme	through new MS4	partners						includes	
	phase-in				ntation	flexibility	who do				MORE Ag		research	
	period)	Manure			by 2027	·	agricultur	Alliance			technician		into	
		treatment			·		al	for the			and Plain		nutrient	
		technologies –				Extreme weather	outreach	Chesape			Sect		credit	
		20,000 tons				events cause	and	ake Bay,			Outreach		trading,	
	Explore					damage and staff	conservati	Penn			coordinato		business	
	digester or					end up spending	on	State			rs who are		models	
	alternative					time/resources on	projects	Agricultu			all		for	
1.1	manure					repair instead of		re and			consistentl		manure-	
	treatment					new		Environ			y trained		to-energy	
	technologies					implementation	EPA and	ment			to ensure		plants, etc	
	Establish a					•	DEP	Center,			BMPs are		to support	
	business						source	Lancaste			standardiz		farms as	
	model that						water	r			ed and		local	
	will work						teams	Farmland			high		businesse	
								Trust,			quailty		S	

							Winter	Chesape				
							matrix	ake Bay		MORE	\$51.9M	
							macina	Foundati		private	for	
							Regular	on,		sector	regional	
							formal	Stroud,		consultant	biodigeste	
							communic			S	r (per	
							ation	Alliance			2011 HRG	
							avenues			MORE	feasibility	
							from local			non-profit	study,	
							partners			partners	adjusted	
							to farmers			who do	for	
										agricultural	inflation	
										outreach	to 2018	
										and	dollars)	
										conservati		
										on projects	\$100,000	
											for	
										More	barnyard	
										coverage	runoff	
										in national	controls	
										agriculture		
										communic		
										ations so		
										this is		
										widely		
										viewed		
										and		
										accepted		
										message		
										(Farm		
										Journal,		
										etc)		
4.5		Control of	All control	All - C	D	C DA	Ed	D	NIDGG		B. II .	Dial
1.2		Grass buffer	All partners	All of	Research	Current PA clean	Education	Penn	NRCS	More	Dollars to	Private
		with exclusion	Allianaa faratha	Lancaster	process	streams law	al materials	State	NIEVA/E	boots on	pay the	foundatio
		fencing	Alliance for the	County with	and	restricts any local		Extensio	NFWF	the ground	outreach	ns,
		2,500 acres	Chesapeake Bay	direct	initial	ability to require	about	n, LCCD,	grants	to do	staff	federal
	Livestook	Dayalan lasal	Lancastar	farmer	impleme	fencing livestock	herd	Dept of	that	farmer	Dellars to	grants,
	Livestock	Develop local incentive	Lancaster	outreach	ntation	out of a stream or river	health benefits	Ag, NRCS,	include implemen	outreach and	Dollars to	EPA,
	access		County Conservation	happening in priority	done by 2025:	11761	of fencing	private	tation	implement	pay for fencing	NFWF, CRP for
	management	programs to promote the	District	watersheds	vision is	Financial and	herds out	consulta	dollars	ation	materials	limiting
		promote the	טוטנו וכנ	first	for a	technical support	of		uuliai S	ation	and an	use by
		viable option		11150	required	from municipalities	streams	nts, Lancaste	DEP's	MORE Ag	incentive	farmers
		for			ban to	as we all wade	311 Call 13	r	small	technician	program	101111013
		landowners			start in	as we all wade		'	business	and Plain	for	
		Tallaoville13			Start III				DUSITIESS	and riam	101	

			2024	through new MS4	Farmland	grants for	Sect	farmers to	
	Add watering		with ful	_	Trust	fence	Outreach	take any	
	facilities or		implem	e		materials	coordinato	land out	
	crossings		ntation	Extreme weather			rs who are	of	
			by 2027	events cause			all	productio	
				damage and staff			consistentl	n	
				end up delayed or			y trained		
				spending			to ensure	\$40.0M	
				time/resources on			BMPs are	for	
				repair instead of			standardiz	fencing,	
				new			ed and	with	
				implementation			high	\$3.7M for	
							quality	stream	
								crossings	
							More	and	
							coverage	\$11.9M	
							in national	for access	
							agriculture	approach	
							communic	es	
							ations so		
							this is		
							widely		
							viewed		
							and		
							accepted		
							message		
							(Farm		
							Journal,		
1.3	Animal Waste	All partners	Built by	Dollars	LCCD,	NRCS	etc) More	Dollars to	Private
3	Management	All partilers	2025	Dollars	Dept of	INKCS	boots on	pay the	foundatio
	Systems –	LCCD	2023	Financial and	Ag,	NFWF	the ground	outreach	ns,
	100,000 AU's	LCCD		technical support	NRCS,	grants	to do	staff	federal
	100,000 A0 3	Private sector		from municipalities	private	that	farmer	Stan	grants,
Increase the		agriculture		as we all wade	consulta	include	outreach	For six	EPA,
number of		consultants		through new MS4	nts,	implemen	and	months of	NFWF,
manure		consultants		flexibility	NGO's,	tation	implement	waste	CRP for
storages and				nexionicy	1,00 3,	dollars	ation	storage	limiting
better				Extreme weather				accommo	use by
barnyard				events cause		DEP's	More	dating	farmers
management				damage and limit		small	coverage	100,000	
gss.re				time		business	in national	AUs,	
				staff/contractors		grants for	agriculture	approxim	
						-	5	1 1 1	
				have for new		fence	communic	atelv	
				have for new implementation		fence materials	communic ations so	ately \$80M	

									widely viewed and accepted message (Farm Journal, etc)	needed for tank storage and engineeri ng and constructi on	
1.4	Create a more comprehensi ve reporting system for manure transport in and out of the county Host meetings of all brokers to understand what data is available	Manure transport out of the county – 150,000 tons	Lancaster County Conservation District 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 recordin g system is establish ed and running by 2025	No required reporting Data gap from planners/farmers to brokers to state Practice Keeper is only available to Conservation District and specific DEP employees so accessing the specifics of where manure goes is limited Act 49 does not require haulers/brokers to submit data about tons moved and where it's going, therefore no data is going into Practice Keeper.	Haulers and brokers	NFWF grants that include research and implemen tation dollars	Point person at DEP and/or Dept of Ag for the data and analysis Incentive for haulers to submit data accurately and timely	Incentive for haulers to submit data accurately and timely \$2.6M to transport manure and farmer compensa tion	
1.5	Write and implement 2,400 conservation plans for better nutrient management Improve consistent verification	Soil Conservation/ Water Quality Plans — Additional 200,000 acres Nutrient management Core N — Additional 150,000 acres	Lancaster County Conservation District, private agriculture consultants, NRCS, DEP	All of Lancaster County	2025	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	Private Agricultur e consultan ts Plain sect church leaders	NFWF grants that include implemen tation dollars DEP's Agricultur al Planning	MORE complianc e/enforce ment staff MORE Ag technician and Plain Sect Outreach coordinato rs who are	Funding (\$2.4M) for more plan writers and complianc e staff to enforce current regulation s	NRCS DEP Private foundations NFWF grants

of BMPs			for current plans		Reimburs	all	
done by any	Nutrient		(need to be done		ement	consistentl	Fast track
conservation			more often than		Program	y trained	option to
professional	Core P –		once a year and 3		-0 -	to ensure	get
processiona.	Additional		strike rule)			BMPs are	Ag/enviro
Assess the	150,000 acres		serine raie,			standardiz	nmental
option of	130,000 46763					ed and	students
establishing	Nutrient					high	certified
minimum/ba						quailty	to write
seline BMP's						quanty	plans
for all plan	6661 acres					MORE	piaris
writers to						private	Bankers,
suggest in	Nutrient					sector	insurance
	Management						
order to	N Rate – 6661					consultant	agents,
achieve	acres					S	etc to give
nutrient	Nutrient					MORE	farmers incentive
managemen	Management						
and soil	N Timing -					non-profit	reasons to
health	6661 acres					partners	use
						who do	conservati
	Nutrient Management					agricultural	on
	P Placement –					outreach	practices
	6661 acres					and 	
	0.00					conservati	
	Nutrient					on projects	
	Management						
	P Rate – 6661					More	
	acres					coverage	
	Nutrient					in national	
	Management					agriculture	
	_					communic	
	P Timing –					ations so	
	6661 acres					this is	
						widely	
						viewed	
						and	
						accepted	
						message	
						(Farm	
						Journal,	
						etc	

Actio n #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Re	esources <u>Available</u>	Res	sources <u>Needed</u>
Prior	ity Initiative	2: Soil Heal	th							
Prior 2.1	Create a system to verify and document use of cover crops, increasing the number acres at the same time 85% of farms will have cover crops during winter months	2: Soil Heal Cover crops with fall nutrients – 100,000 acres Cover crop commodity – 11,000 acres Traditional cover crop – 2,500 acres	Lancaster County Conservation District Ag Council Stroud	All of Lancaster county with a focus on priority watersheds and plain sect community	2025	No current required documentation No data system currently identified but Practice Keeper has potential Bay Program cover crop definitions do not fit Lancaster County cultural practices very well – little credit because of manure application Financial and technical support from municipalities as we all wade through new MS4 flexibility Extreme weather events Humid summers make seed less available for fall purchase (ref Lancaster Farming article)	NRCS and USDA, Penn State, Bay Program, Plain sect church leaders Practice Keeper, conservati on plans, Ag technician s	NFWF grants that include implemen tation dollars	Satellite imagery for verification using best technology available Staff time to canvass the county A better cover crop definition in CAST to give credit to cover crops that receive nutrients, are harvested in the spring as sillage for animals on the same farm More coverage in national agriculture communic ations so this is widely viewed	Dollars (\$15.4M) for more equipmen t Industry leaders (supermar kets, food processor) to pay a higher premium for crops raised with conservati on practices/ cover crops

till practices till - 110,000 County - Specific acres Conservation District a focus on priority to the Conservation plain sect communit ites to identify - 5-8 farm clusters who are sharing equipme nt or										message (Farm Journal, etc)			
Promoting soil ties who West health to horse want to Cocalico farmers is support Twp especially difficult this practice to protect	2.2	till practices - Specific request to the Conservation plain sect communication till – 80,000 acres ties to identify 5-8 farm clusters who are sharing equipme nt or who could share equipme nt – we want to get them the equipme nt if it	County Conservation District Pennsylvania No-Till Alliance	Lancaster county with a focus on priority watersheds and plain sect communitie	2025	push for PA to be the #1 state for organic production can be more integrated with water quality efforts and messaging overall (example: organic makes no-till a more difficult sell because they cannot use herbicides) Financial and technical support from municipalities as we all wade through new MS4 flexibility Shifting dairy industry will likely drive more farmers to produce but we need to get the no- till message to them before they make the switch Promoting soil health to horse farmers is	till planters are available from local equipmen t manufact urers Host more movie premier events of Stroud's soil health film and pair it with a panel of farmers Peer-to- peer outreach from NTA members Municipali ties who want to support this practice	Eby at the Conserva tion District Stroud West Cocalico	grants that include implemen tation and peer-to- peer outreach dollars to pay farmers for their time	benefits for no-till farmers More coverage in national agriculture communic ations so this is widely viewed and accepted message (Farm Journal,	support, equipmen t deals, AAA-like	Industry leaders to pay a higher premium for crops raised	Whole Foods is demanding the products but not paying extra at this point (accordin to farmer expert) Wrangler Jeans say they are committed d to soil health (new slogan, etc), Cargill made a statemen about cover crops and No-till importan e, Blue Apron focusing on conservat on practices when

2.3	Better	Prescribed	LCCD,	All of	2025	Average farm size	LCCD,	More staff	Master	Incentive	
	pasture and	grazing –	Private Ag	Lancaster		is small so enough	private	to do	Farmers	program	
	crop	Additional	consultants,	county with		pasture can be	consultan	outreach	Associatio	to do soil	
	management	10,000 acres	Stroud	a focus on		difficult	ts, NGO's,	to find	n	health	
	for healthier			priority			NRCS,	willing land		practices	
	upland soils	Manure		watersheds		Manure injection		owners			
	·	Injection –		and plain		equipment is				\$520K for	
		Additional		sect		expensive		Farmers to		prescribe	
		10,000 acres		community				do peer-to-		d grazing	
						Participation rates		peer		and	
						are currently low		conversati		\$339K for	
						so peer-to-peer is		ons		manure	
						difficult		0113		injection,	
						difficult		More		with	
						Shifting dains					
						Shifting dairy		coverage		services	
						industry will likely		in national		provided	
						drive more farmers		agriculture		largely by	
						to produce		communic		haulers	
								ations			
								(Farm			
								Journal,			
								etc)			
	•	1	n and Outrea	1							
	Education	Focus on	NGO's, LCCD,	All of	ongoing	Time		More		\$400K per	
	Education and	Focus on flood control,	NGO's, LCCD, DEP, Dept of Ag,	1	ongoing	Funding for staff		coverage		year for	
	Education	Focus on	NGO's, LCCD,	All of	ongoing					year for additional	
	Education and	Focus on flood control,	NGO's, LCCD, DEP, Dept of Ag,	All of Lancaster	ongoing	Funding for staff		coverage		year for	
	Education and	Focus on flood control, public health	NGO's, LCCD, DEP, Dept of Ag, Penn State	All of Lancaster	ongoing	Funding for staff		coverage in national		year for additional	
	Education and	Focus on flood control, public health benefits, herd	NGO's, LCCD, DEP, Dept of Ag, Penn State Extension,	All of Lancaster County	ongoing	Funding for staff time		coverage in national agriculture		year for additional staffing (5	
	Education and	Focus on flood control, public health benefits, herd health,	NGO's, LCCD, DEP, Dept of Ag, Penn State Extension, Lancaster Clean	All of Lancaster County Focus on	ongoing	Funding for staff time So many		coverage in national agriculture communic		year for additional staffing (5 persons)	
	Education and	Focus on flood control, public health benefits, herd health, building	NGO's, LCCD, DEP, Dept of Ag, Penn State Extension, Lancaster Clean Water Partners,	All of Lancaster County Focus on the plain	ongoing	Funding for staff time So many landowners to		coverage in national agriculture communic ations so		year for additional staffing (5 persons) and	
	Education and	Focus on flood control, public health benefits, herd health, building legacy options	NGO's, LCCD, DEP, Dept of Ag, Penn State Extension, Lancaster Clean Water Partners,	All of Lancaster County Focus on the plain sect	ongoing	Funding for staff time So many landowners to		coverage in national agriculture communic ations so this is		year for additional staffing (5 persons) and	
	Education and	Focus on flood control, public health benefits, herd health, building legacy options for families,	NGO's, LCCD, DEP, Dept of Ag, Penn State Extension, Lancaster Clean Water Partners,	All of Lancaster County Focus on the plain sect communitie	ongoing	Funding for staff time So many landowners to reach		coverage in national agriculture communic ations so this is widely		year for additional staffing (5 persons) and	
	Education and	Focus on flood control, public health benefits, herd health, building legacy options for families, economics,	NGO's, LCCD, DEP, Dept of Ag, Penn State Extension, Lancaster Clean Water Partners, municipalities	All of Lancaster County Focus on the plain sect communitie s in priority	ongoing	Funding for staff time So many landowners to reach So many options		coverage in national agriculture communic ations so this is widely viewed		year for additional staffing (5 persons) and	
	Education and	Focus on flood control, public health benefits, herd health, building legacy options for families, economics, and achieving	NGO's, LCCD, DEP, Dept of Ag, Penn State Extension, Lancaster Clean Water Partners, municipalities	All of Lancaster County Focus on the plain sect communitie s in priority	ongoing	Funding for staff time So many landowners to reach So many options that it gets		coverage in national agriculture communic ations so this is widely viewed and		year for additional staffing (5 persons) and	
	Education and	Focus on flood control, public health benefits, herd health, building legacy options for families, economics, and achieving	NGO's, LCCD, DEP, Dept of Ag, Penn State Extension, Lancaster Clean Water Partners, municipalities ELANCO and EAJA source	All of Lancaster County Focus on the plain sect communitie s in priority watersheds	ongoing	Funding for staff time So many landowners to reach So many options that it gets confusing for		coverage in national agriculture communic ations so this is widely viewed and accepted		year for additional staffing (5 persons) and	
	Education and	Focus on flood control, public health benefits, herd health, building legacy options for families, economics, and achieving compliance	NGO's, LCCD, DEP, Dept of Ag, Penn State Extension, Lancaster Clean Water Partners, municipalities ELANCO and EAJA source water	All of Lancaster County Focus on the plain sect communitie s in priority watersheds Drinking	ongoing	Funding for staff time So many landowners to reach So many options that it gets confusing for landowners and conservation		coverage in national agriculture communic ations so this is widely viewed and accepted message		year for additional staffing (5 persons) and	
Prior	Education and	Focus on flood control, public health benefits, herd health, building legacy options for families, economics, and achieving compliance Winter/spring 2020 Ag event	NGO's, LCCD, DEP, Dept of Ag, Penn State Extension, Lancaster Clean Water Partners, municipalities ELANCO and EAJA source water	All of Lancaster County Focus on the plain sect communitie s in priority watersheds Drinking water in	ongoing	Funding for staff time So many landowners to reach So many options that it gets confusing for landowners and		coverage in national agriculture communic ations so this is widely viewed and accepted message (Farm Journal,		year for additional staffing (5 persons) and	
	Education and	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	NGO's, LCCD, DEP, Dept of Ag, Penn State Extension, Lancaster Clean Water Partners, municipalities ELANCO and EAJA source water	All of Lancaster County Focus on the plain sect communitie s in priority watersheds Drinking water in	ongoing	Funding for staff time So many landowners to reach So many options that it gets confusing for landowners and conservation professionals		coverage in national agriculture communic ations so this is widely viewed and accepted message (Farm		year for additional staffing (5 persons) and	
	Education and	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	NGO's, LCCD, DEP, Dept of Ag, Penn State Extension, Lancaster Clean Water Partners, municipalities ELANCO and EAJA source water	All of Lancaster County Focus on the plain sect communitie s in priority watersheds Drinking water in	ongoing	Funding for staff time So many landowners to reach So many options that it gets confusing for landowners and conservation professionals Plain Sect are		coverage in national agriculture communic ations so this is widely viewed and accepted message (Farm Journal,		year for additional staffing (5 persons) and	
	Education and	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	NGO's, LCCD, DEP, Dept of Ag, Penn State Extension, Lancaster Clean Water Partners, municipalities ELANCO and EAJA source water	All of Lancaster County Focus on the plain sect communitie s in priority watersheds Drinking water in	ongoing	Funding for staff time So many landowners to reach So many options that it gets confusing for landowners and conservation professionals Plain Sect are traditionally		coverage in national agriculture communic ations so this is widely viewed and accepted message (Farm Journal,		year for additional staffing (5 persons) and	
	Education and	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	NGO's, LCCD, DEP, Dept of Ag, Penn State Extension, Lancaster Clean Water Partners, municipalities ELANCO and EAJA source water	All of Lancaster County Focus on the plain sect communitie s in priority watersheds Drinking water in	ongoing	Funding for staff time So many landowners to reach So many options that it gets confusing for landowners and conservation professionals Plain Sect are		coverage in national agriculture communic ations so this is widely viewed and accepted message (Farm Journal,		year for additional staffing (5 persons) and	

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

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

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

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

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

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

Responsible Party(ies) = Who. This is/are the key partner(s) who will implement the action items though 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)