

**Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – JUNIATA COUNTY**

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Action #	Description	Performance Target(s)	Partners	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			
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<b>Priority Initiative 1: County Programmatic Initiatives</b>														
1.1A	Update/Revise Existing County Comprehensive Plan (2009)	Ensure that growth activities address existing water quality impairments through stormwater BMP implementation. Encourage municipalities to follow their existing ordinances. Include priorities of the completed CAP Plan.  Encourage municipalities to plan by watershed.  Encourage minimized fragmentation of forest and ordinances to conserve sensitive natural areas and promote conservation – <b>450 acres of forest conserved</b>	JCPD, Municipal Officials, Juniata Clean Water Partnership	Countywide	2022 Plan Funding Secured – Begin Plan  2025 – Finalize Plan	Educating municipalities, updating local plans and ordinances, ensure municipalities understand how ordinances can affect the watershed.  Ordinance enforcement is a challenge.	Education & Coordination	Re-establish 2009 planning team if possible			1 – FTE Clean Water Coordinator for Planning Commission	Planning Commission	\$130,000 per year  \$300,000 funding to support Comprehensive Plan Update  \$2,000 per acre of forest easement → \$900K total	DEP  DEP, DCED, PennDOT  DEP

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1.1B	<p>Advance local comprehensive planning efforts</p> <p>Implement the Source Water Protection Plan</p>	<p>Help ensure the groundwater and surface water resources of the county are protected from overuse or degradation.</p> <p>Work with municipal authorities to educate on benefit of Source Water Protection Plan – work with DEP on development of Plans where feasible.</p>	<p>Municipalities, Municipal Water Authorities, Mifflintown Municipal Authority</p>	<p>Countywide</p> <p>Mifflintown – Source Water Protection Plan</p>	2022 - Education	<p>Juniata County has no local (Municipal) land use authority.</p> <p>Reinforcing the municipal role in coordinating with the water authorities to perform education and outreach and connecting landowners with water quality needs with available resources.</p>					<p>1 – FTE Clean Water Coordinator for Planning Commission</p> <p>Source Water Protection Plan development</p>	<p>Planning Commission</p> <p>PADEP Southcentral Regional Office, utility staff, private sector</p>	<p>\$130,000 per year</p> <p>\$100,000</p>	<p>DEP</p> <p>USDA/FSA/NR WA Source Water Protection Program</p>

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1.1C*	Evaluate areas to establish riparian buffers to stabilize stream banks and limit encroachment	Identify landowners willing to participate and work with the following partners to identify (5) buffer opportunities: JCCD, JCPC, PSU Extension, Juniata Watershed Alliance.  As stated in Juniata County Heritage Plan, look to increase buffer width where feasible and preserve existing buffers.	JCCD, CBF, PPL, DCNR, PFB, PSU Extension, Juniata Watershed Alliance	Countywide	Ongoing	Willing Landowners interested in implementation. "Selling" buffers is tough.  Buffer funding programs must include 5-10-year minimum maintenance plan, incentive money for landowners, along with volunteers to establish the buffer.  Tree availability has been an issue the last 2-years. Not enough inventory to plant desired species.	landowner outreach; on the ground riparian project execution	1 JCCD Staff	CBF/PPL trees are free, as available		1 – FTE Clean Water Coordinator for Planning Commission  1 – Additional Watershed Specialist for Conservation District	Planning Commission  Conservation District	\$130,000 per year  \$130,000 per year  Expand Buffer Bonus Program to provide \$10,000 per acre of buffer installed to include 5-year maintenance contract → \$1.1M total	DEP  DEP  CFA Watershed Restoration and Protection Program, PA Fish and Boat Commission, CBF, Alliance for the Bay, DCNR, Growing Greener, NFWF

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1.1D	Look to revise existing Act 537 plans in Juniata County	Existing Act 537 plans range in age from 1968 – 2010. Look at the feasibility of updating plans or plan creation for municipalities for those who do not have a plan, look to incorporate new pumping guidelines.	Municipalities	Municipalities	2022 Municipal Meeting to discuss options	Landowner education will be needed to promote proper on-lot septic system maintenance. Municipal enforcement will also be needed. Juniata County has no local land use authority.  Lack of timely DEP enforcement of the Act 537 Program					1 – FTE Clean Water Coordinator for Planning Commission	Planning Commission	\$130,000 per year  \$1,000,000 funding to update Act 537 plan with willing municipalities	DEP  DEP/DCED/CAP Grant
1.2*	Act 167 Stormwater Management	Secure funding to develop new Municipal Act 167 plan for willing municipalities.  Look to incorporate municipal SALDO Ordinances.	JCPD, JCCD, Municipal Officials	Interested Municipalities	2022 - Municipal Meeting to discuss options	Should local involvement exist, funding for Plan update, Juniata County has no local (Municipal) land use authority  Need for technical assistance to develop Act 167 Plan					Act 167 Plan Development  1 – FTE Clean Water Coordinator for Planning Commission	Consultant  Planning Commission	\$1,000,000  \$130,000 per year	DEP  DEP

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1.3	Implement County Hazard Mitigation Plan	<p>Improve flood prone areas with BMPs that also enhance water quality.</p> <p>Refer to the 2020 Juniata County Hazard Mitigation Plan Update.</p> <p>Ensure all municipalities have updated their floodplain management ordinances.</p>	County Planning Commission, Emergency Management agencies, municipalities	Countywide	<p>2022 – prioritize projects identified in HMP for funding</p> <p>2023 – work with PEMA to develop BRIC App for feasibility study</p>	<p>Funding, mitigation projects as submitted by Municipalities.</p> <p>Current Requirements by PEMA/FEMA are tough to receive funding – funding available only if hazard is identified by FEMA/PEMA and needs extremely project specific.</p>	JCPD, JCEMS	1 staff JCPD, 1 staff JCEMS			<p>Engineering Feasibility Study</p> <p>1 – FTE Clean Water Coordinator for Planning Commission</p> <p>Project Implementation</p>	<p>Consultants</p> <p>Planning Commission</p> <p>Consultant</p>	<p>\$150,000</p> <p>\$130,000 per year</p> <p>\$500,000</p>	<p>PEMA/FEMA</p> <p>DEP</p> <p>PEMA/FEMA</p>

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1.4*	Continue to Implement County Farmland Preservation Program.	<p>Total farmland preservation (26 farms in program currently – approx. 3100 acres)</p> <p>Look to fund 1 additional farm per year in preservation program. – <b>3,000 acres of farmland conservation</b></p> <p>As stated in the Juniata Heritage Plan &amp; Open Space Plan look to create Ag Preservation Zones</p> <p>Work to identify additional funding for Agriculture Conservation Easement program with goal to double acreage preserved.</p>	JCALPB, JCCD, County Commissioner s, Municipal Officials, Juniata County Heritage Plan, Juniata County Greenways and Open Space Plan	Agricultural Security Area farms that fit farmland preservation criteria	Ongoing	<p>Preserved farms in Juniata Co. are inspected annually for Nutrient Management, Ag E&amp;S, etc., and are kept in compliance with current regs as per easement conditions.</p> <p>Preserved farms are required to have an NRCS Conservation Plan, work with farmers to ensure Conservation Plan is reported in PracticeKeeper. Recommend making this a program requirement statewide.</p> <p>Lack of funds to preserve land. Landowner willingness decreases due to the reality of the limited funds, if they don't rank at the "top" of the list, over years they quit applying.</p>	JCCD – 1 staff	JCCD			JCALP Administrator	JCO, JCCD	\$75,000/year	JCO
											Easement Purchases	Conservation District	\$160,000 state funding per year and \$15,000 from county per year → total \$875,000	JCO, PDA, CAP Implementation Grant, SCC
											1 – FTE Clean Water Coordinator for Conservation District	Conservation District	\$130,000 per year	DEP/DCNR/PDA/SCC

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1.5*	<p>Establish funding/staff support to assist the Agricultural community.</p> <p>670 farms exist in Juniata County</p>	<p>Approximately 100 have their plans in Juniata County, goal is to complete 200 by 2025.</p> <p>Work with private ag consultants to document plan reporting.</p> <p>Implementation challenges (continued): In order to communicate effectively with the farming community one on one farmer outreach must be conducted.</p> <p>The most effective way to capture and report BMPs is through one-on-one farm visits. Farmers do not participate in surveys or other methods.</p>	<p>JCCD, ACT 38 operators, preserved farms, West Branch Association, certified organic farmers, Integrators, Private AG Consultants</p>	Countywide	2022-2025	<p>Limited compliance activities by DEP.</p> <p>Lack of Technical assistance to support the farming community</p> <p>Private sector Ag plans are not required to be shared with District staff.</p> <p>Work with ACT 38, Preserved farms and organic farms to report AG E&amp;S and NRCS Conservation Plans. These operations are required to have plans, but no requirement to report the plans. It is recommended state agencies make changes to ACT 38 and Persevered Farm programs to require PracticeKeeper reporting.</p>	<p>Field verification, troubleshooting, plan writing for compliance following DEP compliance inspections.</p>	<p>JCCD – 1 staff</p> <p>Consultants</p>	CSP	NRCS	<p>6 – additional Ag Planners to provide technical assistance and ag planning</p> <p>3 – FTE Design, Engineer, Permit</p> <p>3 – FTE Inspector Construction Services</p> <p>1 – FTE Clean Water Coordinator for Conservation District</p> <p>1 – Administrative Assistant</p> <p>1 – agronomist</p>	<p>District/NRCS/Private Sector Farm Visits</p> <p>Private Sector/JCCD</p> <p>Private Sector/JCCD</p> <p>Conservation District</p> <p>Conservation District</p> <p>PSU Extension</p>	<p>\$780,000 per year</p> <p>\$420,000 per year</p> <p>\$315,000 per year</p> <p>\$130,000 per year</p> <p>\$75,000 per year</p> <p>\$130,000 per year</p>	<p>DEP/NRCS/SCC/PDA</p> <p>DEP/NRCS/SCC/PDA</p> <p>DEP/NRCS/SCC/PDA</p> <p>DEP</p> <p>DEP/NRCS/SCC/PDA</p> <p>DEP/SCC/PDA/FDA/NRCS</p>

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1.6	<p>Juniata River Watershed Management Plan</p> <p>Look to identify a rapid delisting watershed as part of the plan.</p>	<p>WPC applied for DCNR C2P2 grant to update the Juniata River Watershed Management Plan. CAP can help leverage funding for the Juniata River Watershed Management Plan.</p> <p>Work with the Chesapeake Conservancy to rapidly delist a watershed within the Juniata River Watershed Plan.</p>	Western Pennsylvania Conservancy, Chesapeake Conservancy	Juniata River Watershed (Blair, Fulton, Huntingdon, Juniata, Mifflin, Perry)	<p>2021 – Conservancy Exploring options for funding</p> <p>2022 – outreach</p> <p>2023 implementation</p>	<p>Performance Target Continued: Our goal is basically to update the existing plan with work that has been done since the original plan, do some more in-depth GIS analysis, and get public and municipal input into what they see are the issues in the watershed. I think the GIS analysis will be a big part of the process. We're planning on using the new 1-meter resolution data set, incorporating some of the buffer gap analysis work from Chesapeake Conservancy, etc.</p>			Applied for \$37,785 & 37,286 of match	WPC/DCNR	<p>1 – FTE Clean Water Coordinator for Planning Commission</p> <p>1 – FTE Clean Water Coordinator for Conservation District</p>	<p>Planning Commission</p> <p>Conservation District</p>	<p>\$130,000 per year</p> <p>\$130,000 per year</p> <p>Rapid Delisting Approach Project and Program Budget \$1,000,000</p>	<p>DEP</p> <p>DEP</p> <p>Growing Greener/DCNR</p>



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1.7	Utilize Existing TMDLs to leverage the need for water quality improvement plans	<p>Leverage TMDLs to help educate local citizens on the need for water quality improvements</p> <p>Explore the potential feasibility of developing 319 WIPs, Coldwater Conservation Plans or Alternative Restoration Plans for TMDL watersheds</p>	JCCD, JCPC, WPC	<p>Markee Creek, Hunters Creek, West Branch Mahantango, Warble Run, Cedar Spring Run</p> <p>Working in Little Lost Creek</p>	Ongoing	<p>Financial and Technical assistance to develop 319 or Alternative Restoration Plan plans for TMDL watersheds.</p> <p>Willingness of local volunteers to support in implementation of 319 plans.</p> <p>Lack of existing watershed organizations and dwindling membership.</p>					<p>1 – FTE Clean Water Coordinator for Planning Commission</p> <p>1 – FTE Clean Water Coordinator for Conservation District</p> <p>Additional staff for PFBC</p>	<p>Planning Commission</p> <p>Conservation District</p> <p>Stream Restoration Team</p>	<p>\$130,000 per year</p> <p>\$130,000 per year</p> <p>\$1,000,000</p> <p>\$500,000 for restoration plan development</p>	<p>DEP</p> <p>DEP</p> <p>PFBC, NFWF,</p> <p>DEP, PAFBC, DCNR</p>

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1.8	Juniata College, PSU University, or other nearby institution Partnership - Implementation	Develop undergraduate and graduate students to support staff with implementation	Juniata College, PSU University or other nearby institution, Water4Ag	319 Priority Watershed  Riparian properties  Preserved farms  Priority Corridor Watersheds - Markee Creek, Hunters Creek, West Branch Mahantango, Warble Run, Cedar Spring Run, Little Lost Creek	2022-2025	Continued undergraduate/graduate engagement as students graduate, distance for students to travel.  Lack of technical assistance professionals to mentor students.  Lack of competitive paying job opportunities that ensure long term sustainable for recently graduated students.					5 – Student Internships to Support CAP Implementation	Juniata College, PSU University or Other Students who live locally and attend other colleges	\$50,000 per year	TBD
1.9A	Work to develop a Juniata County Water quality communication plan, leveraging existing documents, Coldwater Conservation Plans, Comprehensive Plan, Heritage Plan, Hazard Mitigation Plan, and Greenways Plan  Utilize existing TMDLs as part of the messaging	Develop messages and audience; execute plan and distribute messaging through staff and partners  Utilize the DPJM County <a href="#">Countywide Action Plan (arcgis.com)</a> - ARC GIS website as a source of consistent communication	CBF, Chesapeake Conservancy, NRCS, JCCD, JCPC, Private Sector Agriculture Farm Visits, Juniata Watershed Alliance, municipalities, Farm Bureau, Juniata College	Countywide	2022 – develop local content, timing, identify responsible staff	Simplifying the resources that are available  Sharing staff resources across the 4-county region	Arc GIS Hub Website  1 – lead county contact	Tri County Regional Planning Commission  Conservation District and Planning Commission			Website development and continued maintenance  1 – FTE Marketing and Outreach Coordinator  1 – FTE Clean Water Coordinator for Planning Commission	Tri-County Regional Planning Commission  Planning Commission  Planning Commission	\$10,000 per year  \$130,000 per year  \$130,000 per year	Administrative budget tag-along to project-related grant award  NFWF  DEP

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1.9B	Agricultural Communication Strategy	<p>One on one farm outreach is the best way to communicate with farmers. Work to develop a plan to complete one on one farm visits.</p> <p>Work to develop a communication plan to engage integrators.</p> <p>Partner with pesticide meetings and other AG meetings to provide information.</p> <p>Utilize Farm Bureau Newsletter for announcements</p>	CD, County Farm Bureau, Integrators, Ag Land Preservation, PSU Extension, NRCS, 4R Alliance	Countywide	2022-2025	<p>Funding to support the technical assistance required to complete one on one farm outreach.</p> <p>Outreach to integrators is a challenge due to the number of integrators and multiple country boundaries they serve. It is recommended DEP/PDA/SCC communicate with integrators on a frequent basis to reduce mixed messages.</p>					<p>6 – additional Ag Planners to provide technical assistance and ag planning</p> <p>1 – FTE Marketing and Outreach Coordinator</p> <p>1 – FTE Clean Water Coordinator for Conservation District</p> <p>1 – agronomist</p>	<p>District/NRCS/Private Sector Farm Visits</p> <p>Planning Commission</p> <p>Conservation District</p> <p>PSU Extension</p>	<p>\$780,000 per year</p> <p>\$130,000 per year</p> <p>\$130,000 per year</p> <p>\$130,000 per year</p> <p>See 1.9A for website costs.</p> <p>Costs for meeting attendance and administration may be covered through other funding requests.</p>	<p>DEP/NRCS/SCC/PDA</p> <p>NFWF</p> <p>DEP</p> <p>DEP/SCC/PDA/FDA/NRCS</p>



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2.2*	Identify future ag/urban project opportunities using automated means	BMP opportunity analysis – ag conservation, land retirement, alternative crop, forest conservation, stream restoration  Back check with staff field views  Batch upload to FieldDoc to calculate credit opportunity	Lead - Chesapeake Conservancy  Stakeholder peer review – Juniata College, USGS, Farm Bureau, PDA, Municipal Engineers, municipalities	Countywide	2022 – cataloguing  2023 – batch upload processing and field views  2024 – 2025 – implementation focus	Different data set scales/precision, processing time	Precision Conservation Tools  Batch upload processing  BMP field backcheck	Chesapeake Conservancy  DEP/SRBC  Varies by BMP	N/A   	N/A   	Further GIS and data processing/method refinement  5 – Student Internships to Support CAP Implementation	Chesapeake Conservancy  Local University Student or local student attending nearby university etc.	\$46,000 (2022 only)  \$50,000 per year	DEP/EPA  TBD
2.3*	Develop a local system to capture data collection on urban structural and non-structural practices	Add development related BMPs to PK/FieldDoc so that as land use data sets are updated, there are accompanying BMPs	Municipal engineers, Chesapeake Conservancy, JCPC, Municipalities, student interns	Urban/suburban landscape	2022	Currently municipalities are not collecting BMP data because it is not required in non-MS4 communities. Must incentivize communities to report, no existing system in place.	Reporting platform	FieldDoc	N/A	N/A	Training  5 – Student Internships to Support CAP Implementation  1 – Municipal Planner	DEP  Local University Student or local student attending nearby university etc.  JCPC, Municipality, etc.	N/A  \$50,000 per year  \$130,000 per year	DEP  TBD  DEP

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2.4*	Implement a documentation program for commercial and homeowner nutrient applications in developed lands  Support current legislation for fertilizer bill.	Support fertilizer legislation – where legislation requires reporting, be the data clearinghouse  Legislation will support the implementation of <b>Urban Nutrient Management – 1,200 acres</b>	PSU Extension	Countywide	TBD	Education of responsible parties, receiving timely information, training on reporting system, will need direction from State on what’s expected and any reporting system that’s developed.	TBD based on fertilizer legislation if passed	TBD based on fertilizer legislation if passed	TBD based on fertilizer legislation if passed	TBD based on fertilizer legislation if passed	1 – FTE Clean Water Coordinator for Planning Commission	Planning Commission	\$130,000 per year  Urban Nutrient Management \$10 per acre → \$12,000	DEP  DEP/PDA
2.5*	Improve Agricultural BMP reporting utilizing PracticeKeeper, Capital RC&D Transect Survey, PSU Survey, Manure Transport Reporting and Remote Sensing	Increase reporting of agriculture plans into PracticeKeeper  Work with Capital RC&D to improve current transect survey routes to be more inclusive  Work with PSU to produce better response rate to the PSU survey for Juniata County  Work with PDA/DEP to improve manure transport reporting	DEP, JCCD, NRCS, PDA, NRCS, Juniata County Farm Bureau, Capital RC&D, Chesapeake Conservancy, PSU Survey, Manure Brokers	Countywide	2022-2025	Private sector ag planners do not have access to PracticeKeeper. Ag planners do not have time to report into PK.  Current Capital RC&D routes are not all inclusive.  Current response rates are low and miss a large demographic of Juniata County farmers.  Manure brokers are not required to report data annually. Data is not all inclusive.					5 – Summer interns for reporting and verification	Local University Student or local student attending nearby university etc.	\$50,000 – per year  See 3.5 for funding needs to improve cover crop reporting for Capital RC&D	DEP/PDA/ SCC

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2.6*	Standardized Reporting for Dairy Precision Feeding	Counties would like to utilize the dairy precision feeding BMP. However, current reporting guidelines do not allow for clear reporting standards on feed reduction amounts, how to report, and who is qualified to report. <b>Improved reporting standards would allow 3,400 Animal Units of Dairy Precision Feeding</b>	Chesapeake Bay Program, Penn State Extension, Dairy co-ops	Countywide	2022	It is recommended that milk urea nitrogen (MUN) be an acceptable standard for reporting dairy precision feeding. Guidelines need to be posted on acceptable MUN rates and work with dairy integrators to receive MUN data to report to DEP.	N/A	N/A	N/A	N/A	Reporting protocol	Chesapeake Bay Program, Penn State Extension, Dairy co-ops	N/A	N/A

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<b>Priority Initiative 3: Achieve New Pollutant Reductions</b>														
3.1	Implement Willow Run Cold Water Conservation Plan	<p>Potential agriculture BMP restoration on a CAFO located in Dougherty Run</p> <p>Look at requiring timber management plans for lumber mills in the watershed</p> <p>Widen forest buffer at State Game Land 215 to 100 feet in width</p> <p>Plant a buffer in Willow Run and Dougherty Run</p> <p>Work with landowners to improve riparian areas</p> <p>Increase water quality monitoring</p>	JCCD, Juniata Watershed Alliance, Municipalities	<p>Willow Run Watershed</p> <p>Dougherty Run</p> <p>Lack and Tuscarora Townships</p>	Ongoing	<p>Lack of volunteers to support Juniata Watershed Alliance. Ensure support of watershed alliance moving forward.</p> <p>Lack of technical assistance and funding to support BMP implementation.</p>	Technical Support and plan development	Conservation District		Cold Water Heritage Program	<p>1 – FTE Clean Water Coordinator for Planning Commission</p> <p>1 – FTE Clean Water Coordinator for Conservation District</p>	<p>Planning Commission</p> <p>Conservation District</p>	<p>\$130,000 per year</p> <p>\$130,000 per year</p> <p>\$25,000 to increase water quality monitoring</p> <p>\$500,000 for BMP Implementation</p>	<p>DEP</p> <p>DEP</p> <p>DEP, PAFBC, ALLARM</p> <p>DEP, DCNR, PAFBC</p>



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3.2	Implement Lost Creek Cold Water Conservation Plan	<p>Opportunities for streambank restoration especially in lower portions of lost creek watershed</p> <p>Riparian buffers and agriculture BMPs are also a way to restore lost creek</p> <p>Potential formation of a new watershed group</p> <p>2 – potential new restoration opportunities to explore</p> <p>1 – stream restoration project to be completed soon</p>	JCCD, Juniata Watershed Alliance, WPC, PFBC	Lost Creek Watershed	Ongoing	<p>Lack of volunteers to support Juniata Watershed Alliance. Ensure support of watershed alliance moving forward.</p> <p>Lack of technical assistance and funding to support BMP implementation.</p>	Technical Support and plan development	Conservation District		Cold Water Heritage Program	1 – FTE Clean Water Coordinator for Conservation District	Conservation District	\$130,000 per year	DEP/PDA/ SCC
													\$500,000 for project implementation	DEP, PDA, SCC, PAFBC, NRCS

**Phase 3 Watershed Implementation Plan (WIP) Planning and Progress Template – JUNIATA COUNTY**

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							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
3.3*	Help farmers and operators to be in compliance with state and federal requirements: Conservation and Nutrient Management Plans	<p><b>Soil and Water Quality Conservation Plans (Ag E&amp;S)</b> 30,000 new acres</p> <p><b>Nutrient Management (Manure Management)</b> 22,000 new acres of Core N and 16,200 new acres of Core P</p> <p>Work with Act 38 operators (54), Preserved Farms (26), and certified organic farms to document plans already required by the respective program</p>	4R Alliance, JCCD, Juniata County Farm Bureau, NRCS, Private Sector Agriculture Farm Visits, Juniata County PSU Extension, West Branch Association, Integrators (Bell and Evans, Country View, Empire Kosher, Cramers, Pilgrims Pride, Milk Industry)	Countywide Ag Land	2022-2025	<p>Lack of DEP inspections.</p> <p>Reporting and verification of Ag Plans, NRCS plans expire and do not get reverified, private plans are never entered.</p> <p>Lack of technical assistance to support agriculture planning and implementation, one on one farm outreach is best way to capture existing plans.</p> <p>Act 38 and Preserved Farms not required to enter plans in PK, Recommendations to require programs to enter plans into PK</p> <p>State agencies must work with integrators to require compliance by farmers. Some integrators require compliance, but not all, great way to communicate with farmers as well.</p>					6 – additional Ag Planners to work with farmers to develop required plans	District/NRCS/Private Sector Farm Visits	\$780,000 per year	DEP/NRCS/SCC/PDA
												Conservation Plans	\$15 per acre for a total cost of \$450,000	DEP/SCC/PDA/NRCS
												Core N and Core P	\$15 per acre for a total cost of \$330,000	DEP/SCC/PDA/NRCS

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							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
3.4	Advanced Nutrient Management (4R) Practice Education and Implementation	<p>Transition manure management plans to nutrient management plans and incentivize implementation</p> <p><b>Increase existing 4R practice (N &amp; P Rate, Placement and Timing by 6,000 acres per year)</b></p> <p>Explore the idea of increasing pre-sidress nitrogen testing (PSNT) or Chlorophyll testing to District program participants</p>	4R Alliance, JCCD, Juniata County Farm Bureau, NRCS, Private Sector Agriculture Farm Visits, Juniata County PSU Extension, West Branch Association Crop Management	Countywide Ag Land	2022-2025	<p>Landowner interest, BMP verification (annual).</p> <p>Lack of Technical assistance to support agriculture planning and implementation.</p> <p>Additional funding to support soil testing. Soil testing is key to meeting the recommendations of supplemental BMPs.</p> <p>Machine dependent for most farming operations.</p> <p>Cost of fertilizer is self-regulating farmers to use less fertilizer; therefore, lower rates are applied.</p>	Educational support	CBF/4R Alliance	CBF grant	NFWF	<p>6 – additional Ag Planners to work with farmers to meet 4R standards</p> <p>1 – agronomist</p>	<p>District/NRCS/Private Sector Farm Visits</p> <p>PSU Extension</p>	<p>\$780,000 per year</p> <p>\$130,000 per year</p> <p>\$10 per acre of advanced nutrient management planning per type → total cost for all is \$360,000</p>	<p>DEP/NRCS/SCC/PDA</p> <p>DEP/PDA/SCC/NRCS</p> <p>DEP/PDA/SCC/NRCS</p>

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3.5*	Implement Practice to improve soil health and sustainability (Tillage Management and Cover Crops)	Determine feasibility of having a county/state cost share program to enhance adoption of the annual practice  <b>Implement tillage management and cover crops on an annual rate of 26,500 acres High Residue, 3,200 acres Conservation Tillage, 1,500 acres Low Residue, 8,300 acres of cover crops and 12,600 acres of cover crops with fall nutrients</b>  Implementation challenges (continued): Organic farmers are using tillage to manage weeds and vertical tillage is becoming more popular among farmers, younger generation is “trying” tillage for experience	JCCD, Juniata County Farm Bureau, NRCS, Private Sector Agriculture Farm Visits, Juniata County PSU Extension, West Branch Association Crop Management	Countywide Ag Land	2022 – investigation  2023 – next steps	Capacity to manage the program, landowner interest  Lack of technical assistance and farm planners to work with farmers to transition to High Residue Tillage  Current verification methods do not accurately capture implemented amounts – work with Capital RC&D to improve Transect Survey Routes  Farmers are harvesting cover crops for forage, need accurate efficiency crediting for commodity cover crops  Existing Cover Crop Programs have strict plant by date that does not work with changing weather patterns and wetter years	Transect survey	Capital RC&D	Many Farmers use CSP for tillage management	NRCS CSP Program	6 – additional Ag Planners to transition farmers to high residue  County JCCD – staff to administer the program  Capital RC&D Transect Survey	District/NRCS/Private Sector Farm Visits  Cover Crop Incentive Program  Improved data reporting	\$780,000 per year  \$90 per acre traditional per year → \$747K for a 5-year total of \$3.735M (incentive payment, administration , Capital RC&D reporting) \$50 per acre fall nutrients per year → \$630K for 5-year total of \$3.15M  \$50,000	DEP/NRCS/SCC/PDA  PDA, SCC, Growing Greener, Pennsylvania Association of Conservation Districts (PACD)  DEP

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3.6	Implement more pasture management BMPs	<p><b>Prescribed grazing – 3,200 acres</b></p> <p><b>Off Stream Watering – 150 acres</b></p> <p><b>Forest buffers on fenced pasture corridor – 20 acres</b></p> <p><b>Grass buffers on fenced pasture corridor – 20 acres</b></p> <p><b>Land Retirement to Ag Open Space – 170 Acres</b></p>	JCCD, NRCS, Private Ag Consultants, CBF, Chesapeake Conservancy, Juniata County PSU Extension, West Branch Association	Countywide ag lands – landowners who raise horses, dairy, beef and other pasture grazing animals	2025	<p>Landowner education, BMP funding for non-buffer work, plan updates, data gathering.</p> <p>Lack of Technical assistance to support agriculture planning and implementation.</p> <p>Old NRCS plans need to be updated to comply with prescribed grazing definition – difficult to get landowner buy-in – fund alternative watering and fencing; most pastures are streamside.</p> <p>Increasing construction costs are resulting in canceled NRCS contracts.</p>	Landowner education	NRCS			<p>6 – additional Ag Planners to provide technical assistance and ag planning</p> <p>3 – additional FTE environmental technician</p>	<p>District/NRCS/Private Sector Farm Visits</p> <p>Chesapeake Conservancy, CBF, etc.</p>	<p>\$780,000 per year</p> <p>\$390,000 per year</p> <p>Prescribed Grazing \$540 per acre → \$1.728M total</p> <p>Off stream Watering \$500 per acre → \$75K total</p> <p>FB Buffer W/ Exclusion \$10,500 per acre → \$210K total</p> <p>GB Buffer W/ Exclusion \$2,750 per acre → \$55K total</p> <p>Land Retirement \$500 per acre → \$85K total</p>	<p>DEP/NRCS/SCC/PDA</p> <p>DEP/NRCS/SCC/PDA/DCNR/NFWF/EPA</p> <p>DEP/NRCS/SCC/PDA/DCNR/NFWF/EPA</p>

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							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	Suggested Source
3.7*	Riparian buffer and re-forestation BMPs	<p><b>320 riparian forest buffer acres, (260) acres lost since 2017 need reverified</b></p> <p><b>100 riparian grass buffer acres – (25) acres lost since 2017 need reverified</b></p> <p><b>25 acres – Agriculture Tree Planting</b></p> <p><b>50 acres – urban forest buffer</b></p> <p><b>1 acres – urban tree canopy</b></p> <p><b>70 acres – urban forest planting</b></p>	CBF, Chesapeake Conservancy, NRCS, JCCD, Private Sector Agriculture Farm Visits, Juniata Watershed Alliance, West Branch Association, PPL	<p>Countywide</p> <p>Mifflintown Boat Launch and Muskrat Spring are an opportunity</p> <p>WPC and PFCBC working on projects in Delaware Creek</p>	<p>2022 – line up landowners</p> <p>2023-2025 – implementation</p>	<p>Landowner partnerships, landowner education, volunteer acceptance of buffer plantings, buffer maintenance guide for farmers, routine site visits to confirm buffers are thriving, invasive species removal during establishment.</p> <p>Flash grazing must be allowed with buffer installation.</p> <p>Funding program must include a 5-10-year maintenance program to establish buffers along with incentive program \$4K minimum per acre payment.</p>	<p>Materials</p> <p>JCCD (in-kind, annual tree sale efforts), CBF</p>	<p>Mapping</p> <p>Chesapeake Conservancy</p>	<p>Budget available to be determined</p>	<p>CBF, NFWF, NFWS, NRCS – CREP, DCNR, PPL</p>	<p>6 – additional Ag Planners to provide technical assistance and ag planning</p> <p>3 – additional FTE environmental technician</p>	<p>District/NRCS/Private Sector Farm Visits</p> <p>Chesapeake Conservancy, CBF, etc.</p>	<p>\$780,000 per year</p> <p>\$390,000 per year</p> <p>Forest Buffer \$10,000 per acre → \$1.1M</p> <p>Grass Buffer \$2,500 per acre → \$187,500</p> <p>Tree Canopy \$5,500 per acre → \$5.5K</p> <p>Tree/Forest Planting \$10,000 per acre → \$710,000K</p>	<p>DEP/NRCS/SCC/PDA</p> <p>DEP/NRCS/SCC/PDA/DCNR</p> <p>DCNR, NFWF, PACD, TreeVitalize, DEP, Coldwater Heritage Partnership Implementation Grants, Landscape Scale Restoration (LSR) Grant Program – US Forest Service, Pennsylvania Habitat Stewardship Program, Alliance for the Bay, CBF, CC</p>

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3.8	Wetland restoration implementation on marginal production ag land	<b>18 acres of Wetland Restoration</b>  Identify 1 large property owner from University of Vermont restorable wetland layer to help identify where wetland restoration is feasible	Chesapeake Conservancy, JCCD, NRCS, Private Sector Agriculture Farm Visits, Juniata Watershed Alliance	Countywide	2022 – 2025	Willing landowner; appropriate siting, design, and construction for successful restoration result  Lack of technical assistance for landowner outreach and agriculture planning	Landowner outreach	1 JCCD staff person			3 – additional FTE environmental technician  2 – stream biologist	Chesapeake Conservancy, CBF, etc.  PAFBC, USGS, JCCD, etc.	\$390,000 per year  \$280,000 per year  Wetland Restoration \$30,000 per acre → \$540K	DEP/DCNR  DEP/DCNR/PAFBC/ USGS  DEP/DCNR/ USDA Conservation Reserve Program (CRP) or NRCS Wetlands Reserve Program (WRP)
3.9	Stream Restoration (Urban and Agriculture)	<b>11,000 Linear feet (~2 miles) Urban Stream Restoration</b>  <b>4,400 Linear feet (&lt;1 mile) Agriculture Stream Restoration</b>	CBF, Chesapeake Conservancy, TU National, PFBC Stream Restoration Team, JCCD, JCPC, Juniata Watershed Alliance, Municipalities, West Branch Association	Rapid delisting areas top priority & Countywide	2022 – 2025	Design/permit/construction cycle seems to work in two-year increments, there is an assumption that eroded/degraded streams exist based upon 403(d) listing – should that not be the case in the field, adjust quantitative goal down and ensure buffers are in place  Lack of funding to cover engineering design					Design, permit, construction services  2 – Municipal Engineers  3 – FTE Design, Engineering, Permit  2 – stream biologists	Private sector, USFWS, TU  Municipalities, Planning Commission  Private Sector/ JCCD  PAFBC, USGS, JCCD, etc.	Assume urban \$900/LF - \$9.9M  Assume rural \$400/LF - \$1.8M  \$280,000 per year  \$420,000 per year  \$280,000 per year	Growing Greener, NFWF, DEP, DCNR  TBD  DEP/NRCS/ SCC/PDA  DEP/DCNR/ EPA

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3.10	Implement more barnyard runoff control/loafing lot management	<p><b>0 acres of barnyard runoff control - see implementation challenge/CAST model issue</b></p> <p><b>31 acres of agricultural drainage management</b></p>	JCCD, NRCS, Private Ag Consultants, CBF, Chesapeake Conservancy, Juniata County PSU Extension, West Branch Association	Countywide Farms	2022-2025	<p>Lack of Technical assistance to support agriculture planning and implementation</p> <p>Lack of funding to cover engineering design</p> <p>Increasing construction costs are cancelling NRCS contracts</p> <p>0 acres are currently available in CAST and is not accurate, need to address model limitations</p>					<p>6 – additional Ag Planners to provide technical assistance and ag planning</p> <p>3 – FTE Design, Engineer, Permit</p> <p>3 – FTE Inspector Construction Services</p>	<p>District/NRCS/Private Sector Farm Visits</p> <p>Private Sector/JCCD</p> <p>Private Sector/JCCD</p>	<p>\$780,000 per year</p> <p>\$420,000 per year</p> <p>\$315,000 per year</p> <p>Agriculture Stormwater Management \$10K per acre → \$310K</p>	<p>DEP/NRCS/SCC/PDA</p> <p>DEP/NRCS/SCC/PDA</p> <p>DEP/NRCS/SCC/PDA</p> <p>DEP/NRCS/SCC/PDA</p>



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3.11	Animal Waste Storage Systems	<p><b>2,000 AUs of animal waste management systems</b></p> <p>Current capacity through NRCS and JCCD implements about 5 farms projects per year</p>	JCCD, NRCS, Private Ag Consultants, CBF, Chesapeake Conservancy, Juniata County PSU Extension, West Branch Association	Livestock & Poultry farms	2022-2025	<p>Time to get through planning, design, and construction; outreach to smaller farms that likely need the assistance; match cash value for small farms; readiness to plan/implement projects when outreach efforts yield willing landowners</p> <p>Lack of funding to cover engineering design</p>	Project implementation – 5 farms a year	NRCS, JCCD, Private Ag Sector			<p>6 – additional Ag Planners to provide technical assistance and ag planning</p> <p>3 – FTE Design, Engineer, Permit</p> <p>3 – FTE Inspector construction Services</p>	<p>District/NRCS/Private Sector Farm Visits</p> <p>Private Sector/JCCD</p> <p>Private Sector/JCCD</p>	<p>\$780,000 per year</p> <p>\$420,000 per year</p> <p>\$315,000 per year</p> <p>Animal waste management system \$175,000 per project, assume 100 AUs per project \$3.5M in total</p>	<p>DEP/NRCS/SCC/PDA</p> <p>DEP/NRCS/SCC/PDA</p> <p>DEP/NRCS/SCC/PDA</p> <p>DEP/NRCS/SCC/PDA</p>

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3.12*	Urban Stormwater Management Non-Regulated Communities	Implement existing ordinances and Catalogue existing BMPs that fit into this category  <b>Stormwater Treatment – 2 acres treated</b>  <b>Wet Ponds and Wetlands – 73 acres treated</b>  <b>Dry Detention Ponds – 4 acres treated</b>  <b>Impervious surface reduction - 1 acre</b>	JCPC, JCCD, developing municipalities, Keystone Council of Governments, Tri County Regional Planning Commission	County-wide	Ongoing  2022-2025	Coordination/training for municipal staff, FieldDoc batch opportunity, non-MS4 engagement (what’s in it for them?), difficulty obtaining past information (MS4s typically have databases from 2003-present).	Reporting platform	FieldDoc			5 Summer interns for reporting and verification  2 – Municipal Engineers  1 – municipal planner	Local University or local student attending nearby university etc.  Municipalities, Planning Commission,  Planning Commission, Municipality, etc.	\$50,000 – per year  \$280,000 per year  \$130,000 per year  \$160,000 for all stormwater BMPs	NRCS/PDA/DEP  TBD  DEP  DEP Environmental Stewardship Fund
3.13	Conservation Landscaping/Turf to Meadow Conversion	Promote new program and enable one large tract landowners’ participation  <b>70 new acres of Conservation Landscaping</b>	JCPC, DCNR, Chesapeake Conservancy, municipalities	Developed areas in County municipalities	2022 - 2025	Landowner education and acceptance.  Existing mowing ordinances and weed ordinances can be a challenge to implementation.	Planting plan assistance	Alliance for the Bay (in-kind)			1 – FTE Municipal Planner  3 – additional FTE environmental technician	Planning Commission  Chesapeake Conservancy, CBF, etc.	\$130,000 per year  \$130,000 per year  \$2,500 per acre meadow → \$175,000 budget for all	DEP/DCNR  DEP/DCNR/SCC/PDA/NRCS  DCNR/USFW/NFWF/DEP

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3.14*	Continue dirt and gravel road program	32 miles overall restored through past projects  Continue to implement the program annually	JCCD	Countywide	2025	Continue D&G Road program funding.  Expand Dirt and Gravel Road Program to include farm lanes.	Education, technical assistance, project oversight  1 – technical staff administering the program	JCCD, Center for Dirt & Gravel Road Studies, SCC	\$1.4 Million since 1998	State Conservation Commission	1 – FTE Clean Water Coordinator for Conservation District	Conservation District	\$130,000 per year  Dirt and Gravel Roads \$40 per foot → TBD	DEP/PDA/ SCC  SCC
3.15*	Work with PennDOT and local municipalities to reduce frequency of mowing road ditches and along roadways	Educate local municipal leaders and PennDOT on the importance of keeping higher vegetation along roadways to prevent erosion and increase nutrient uptake.	Local Municipalities, DEP and PennDOT	Countywide	2023	PennDOT’s and Municipal willingness to cut back on mowing programs. DEP Chesapeake Bay Program will need to assist in the education of PennDOT.					1 – FTE Clean Water Coordinator for Planning Commission  1 – FTE Clean Water Coordinator for Conservation District	Planning Commission  Conservation District	\$130,000 per year  \$130,000 per year	DEP  DEP/PDA/ SCC
3.16	Private Funding & Grant Administration	Identify some private funding sources that may be able to supplement public funding sources/existing sources utilized for stakeholders, continue to work with partners to facilitate additional funding.	Existing project implementer networks	Countywide	2022-2023	Need to expand network, educational aspect of less common funders, logistics of utilizing unproven funding sources (or lesser known).  Grant administration is a challenge due to limited staff and time-consuming nature of grant reporting and administration.	Financial services	HRG (CAP coordinator)			1 – FTE Conservation District Grant Manager  1 – FTE Planning Commission Grant Manager  2 – staff accountants	JCCD  Planning Commission  Planning Commission and District	\$130,000 per year  \$130,000 per year  \$140,000 per year	TBD  TBD  TBD

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<b>Priority Initiative 4: Research, Education, and Training</b>														
4.1	Develop new water quality monitoring data into Chesapeake Data Explorer/ Chesapeake Monitoring Cooperative database	Successful data input/acceptance by ALLARM and other environmental groups program by end of 2025	ALLARM, Keystone Water Resources Center, Juniata College, Juniata Watershed Alliance	Countywide	2025	Data precision, QAQC, opportunity to educate landowners about local stream health and what they can do about it.  Currently no groups doing water quality monitoring.	Watershed specialist	JCCD			Volunteers for Water quality monitoring  New monitoring equipment  1 – watershed specialist  3 – additional FTE environmental technician  2 – stream biologist/environmental scientist	Local environmental groups  JCCD  Conservation District  Chesapeake Conservancy, CBF, etc.  PAFBC, USGS, JCCD, etc.	N/A  \$10,000  \$130,000 per year  \$130,000 per year  \$280,000 per year	TBD  ALLARM  DEP  DEP/NRCS/DCNR/PDA  DEP/DCNR/PAFBC/ USGS

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4.2	Supporting Juniata Watershed Alliance for short-term success and long-term sustainability aligning with their goals	Continue to grow the Juniata Watershed Alliance to encompass additional members and ensure the Watershed Alliance can maintain 501(c)3 status. Work with the Alliance to support with outreach, engagement, new project identification and implementation	Juniata Watershed Alliance	Juniata Watershed Alliance – countywide	Ongoing	<p>Willing volunteers and leaders to establish and run watershed organizations to be successful and support with implementation</p> <p>Juniata Watershed Alliance only has 6-8 members and current scope may be too large. Need to redefine focus and look at establishment of new watershed groups.</p> <p>Maintaining 501(c)3 status can be challenging.</p>	Social media shares	County – department to be determined			1 – FTE Clean Water Coordinator for Planning Commission	Planning Commission	\$130,000 per year	DEP
							Project development support	CAP Coordinator (HRG)			1 – FTE Clean Watershed Specialist	Conservation District	\$130,000 per year	DEP/PDA/ SCC
												\$5,000 per organization to produce promotional materials (hats, shirts, stickers) for members → \$5,000 per year	To be included in a project-related grant application	

### 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).

## **GLOSSARY**

- Act 167 Plan.** The Pennsylvania Stormwater Management Act of 1978, or Act 167, required that each county must prepare and adopt a watershed stormwater management plan for each watershed located in the county as designated by DEP, in consultation with the municipalities located within each watershed.
- Ag E&S – Agricultural Erosion and Sedimentation Plan.** Agricultural Erosion and Sedimentation plans document best management practices on crop and pasture fields to mitigate erosion and protect soil health. Any landowner that disturbs the soil (including no tillage) more than 5,000 square feet ( $\sim 1/10$  acre) must have a written Agricultural Erosion & Sediment Control Plan according to Pennsylvania State law, Chapter 102.
- ALLARM – Alliance for Aquatic Resource Monitoring.** ALLARM is a program of Dickinson College that enhances local action for the protection and restoration of waterways by empowering communities with scientific knowledge and tools.
- BMP – Best Management Practice.** Best management practices describe a type of water pollution control. Using agricultural BMPs can help to prevent or minimize the effects of nonpoint source pollution.
- BRIC – Building Resilient and Infrastructure and Communities.** The Building Resilient Infrastructure and Communities (BRIC) program is a new FEMA pre-disaster hazard mitigation program that replaces the existing Pre-Disaster Mitigation (PDM) program.
- CAST - Chesapeake Assessment Scenario Tool.** CAST is a web-based nitrogen, phosphorus and sediment load estimator tool that streamlines environmental planning.
- CBF – Chesapeake Bay Foundation.** The Chesapeake Bay Foundation is a non-profit organization devoted to the restoration and protection of the Chesapeake Bay in the United States.
- JCCD – Juniata County Conservation District.** The Juniata County Conservation District serves as the primary local source of assistance to all individuals and organizations who benefit from the county's natural resources that we collectively strive to sustain and improve.
- JCPC – Juniata County Planning Commission.** The Juniata County Planning Commission makes recommendations and decisions to maintain and enhance the high quality of life for all residents, in accordance with the Pennsylvania Municipalities Planning Code, and other laws and regulations of the Commonwealth of Pennsylvania and the County of Juniata.
- HMP – Hazard Mitigation Plan.** The County Hazard Mitigation Plan was developed for the purpose of providing a blueprint for reducing property damage and saving lives from the effects of future natural and human-caused disasters; Qualifying the County for pre-disaster and post-disaster grant funding; Complying with state and federal legislative requirements related to local hazard mitigation planning; Demonstrating a firm local commitment to hazard mitigation principles; and Improving community resiliency following a disaster event.
- DCNR – Department of Conservation and Natural Resources.** DCNR is responsible for maintaining and preserving state parks and forests; providing information on the state's natural resources; and working with communities to benefit local recreation.
- DEP – Department of Environmental Protection.** The Department of Environmental Protection's mission is to protect Pennsylvania's air, land and water from pollution and to provide for the health and safety of its citizens through a cleaner environment.
- EPA – Environmental Protection Agency.** The Environmental Protection Agency is a United States federal government agency whose mission is to protect human and environmental health.
- FEMA – Federal Emergency Management Agency.** FEMA supports citizens and emergency personnel to build, sustain, and improve the nation's capability to prepare for, protect against, respond to, recover from, and mitigate all hazards.
- FieldDoc – FieldDoc** is a protected, online database that uses geographic information to generate baseline nutrient and sediment loading information and calculate load reductions for planned BMPs.
- GIS – Geographic Information System.** GIS is a computer system that analyzes and displays geographically referenced information.
- HUC12 – Watershed.** A local sub-watershed level delineation that captures tributary systems draining into the larger Chesapeake Bay watershed.
- MMP – Manure Management Plan.** Manure management plans document how a landowner plans to capture, store, treat, and utilize animal manures in an environmentally sustainable manner. Every landowner that has livestock or spreads manure on their property must have a written Manure Management Plan according to Pennsylvania State law, Chapter 91.
- MS4 – Municipal Separate Storm Sewer System.** A separate storm sewer system is a collection of structures, including retention basins, ditches, roadside inlets and underground pipes, designed to gather stormwater from built-up areas and discharge it, without treatment, into local streams and rivers.
- NFWF – National Fish and Wildlife Foundation.** NFWF works towards sustaining, restoring, and enhancing the nation's fish, wildlife, plants and habitats for current and future generations through innovative public and private partnerships, and by investing financial resources and intellectual capital into science-based programs designed to address conservation priorities and achieve measurable outcomes.
- NMP – Act 38 Nutrient Management Plan.** Nutrient management plans are required under Pennsylvania State law Act 38 which applies to operations with more than 2,000 pounds live animal weight per acre of pasture and crop fields.
- NRCS – Natural Resource Conservation Service.** NRCS's programs help farmers reduce soil erosion, enhance water supplies, improve water quality, increase wildlife habitat, and reduce damages caused by floods and other natural disasters.
- PACD – Pennsylvania Association of Conservation Districts.** Provides support for Pennsylvania's conservation districts.
- PEMA – Pennsylvania Emergency Management Agency.** PEMA is tasked with the response to, preparedness for, recovery from, and the mitigation or prevention of disasters and other emergencies.
- PracticeKeeper.** PracticeKeeper is a protected, online database Used for reporting conservation plans, BMPs, E&S plans, nutrient management plans, watershed plans, complaints, DEP inspection reports and data exports to DEP.
- QAPP – Quality Assurance Project Plan.** A QA Project Plan documents the technical and quality aspects of a project, including project management, implementation, and assessment. It specifies responsibilities, monitoring objectives, sampling design, sample collection methods, analytical methods, quality control, data management and data validation activities. It is required by EPA prior to any monitoring or data collection.
- QAQC – Quality Assurance Quality Control.** QA/QC is the combination of quality assurance, the process or set of processes used to measure and assure the quality of a product, and quality control, the process of ensuring products and services meet consumer expectations.
- 4R Nutrient Stewardship – Precision Conservation.** Right fertilizer source at the Right rate, at the Right time and in the Right place for optimal crop management.
- SRBC – Susquehanna River Basin Commission.** SRBC's mission is to enhance public welfare through comprehensive planning, water supply allocation, and management of the water resources of the Susquehanna River Basin.
- SWM – Stormwater Management.** Stormwater management is the effort to reduce runoff of rainwater or melted snow into streets, lawns and other sites and the improvement of water quality.
- SWP – Source Water Protection.** Source Water Protection is a planning process conducted by local water utilities, as well as regional or national government agencies, to protect drinking water sources from overuse and contamination.
- USGS – United States Geological Survey.** USGS provides science about the natural hazards that threaten lives and livelihoods; the water, energy, minerals, and other natural resources we rely on; the health of our ecosystems and environment; and the impacts of climate and land-use change.
- WIP – Watershed Implementation Plan.** Watershed Implementation Plans (WIPs) are the roadmap for how the Bay jurisdictions (including Pennsylvania), in partnership with federal and local governments, will achieve the Chesapeake Bay TMDL allocations.
- WWTP – Wastewater Treatment Plant.** Wastewater treatment plants process contaminants from wastewater and convert it into an effluent that can be returned to the water cycle with acceptable impact on the environment or reused for various purposes.