

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

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Action #	Description	Performance Target(s)	Responsible Party(is) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available		Resources Needed		Progress to Date
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Priority Initiative 1: County Programmatic Initiatives											
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 – 450 acres of forest conserved	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		1 – FTE Clean Water Coordinator for Planning Commission	\$130,000 per year \$300,000 funding to support Comprehensive Plan Update \$2,000 per acre of forest easement ☐ \$900K total	2022: Funding sources are being investigated by the County Commissioners. No movement at this time.
1.1B	Advance local comprehensive planning efforts Implement the Source Water Protection Plan	Help ensure the groundwater and surface water resources of the county are protected from overuse or degradation. Work with municipal authorities to educate on benefit of Source Water Protection Plan – work with DEP on development of Plans where feasible.	Municipalities, Municipal Water Authorities, Mifflintown Municipal Authority	Countywide Mifflintown – Source Water Protection Plan	2022 - Education	Juniata County has no local (Municipal) land use authority. 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.			1 – FTE Clean Water Coordinator for Planning Commission Source Water Protection Plan development	\$130,000 per year \$100,000 for Plan	2022: Outside of one on one discussions, there hasn't been formal training. Municipalities have other priorities at the moment. Mifflintown Water Authority SWP Plan is the only one that JCCD is aware of.
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	CBF/PPL trees are free, as available	1 – FTE Clean Water Coordinator for Planning Commission 1 – Additional Watershed Specialist for 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	2022: Ongoing. There have been 6-8 identified and implemented. There have been some done with partnerships, DCNR, and by JCCD by itself. Working to identify additional landowners to participate.

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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	\$130,000 per year \$1,000,000 funding to update Act 537 plan with willing municipalities	2022: No updated plans at this time. Look to hold a municipal meeting in the fall of 2022. Funding still remains an issue.
1.2*	Act 167 Stormwater Management	Secure funding to develop new Municipal Act 167 plan for willing municipalities.	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	\$1,000,000 \$130,000 per year	2022: The 2022/2023 state budget includes new funding to support the development of Act 167 plans. Juniata county currently has no Act 167 plan, but with new funding plans to explore opportunities to develop an Act 167 Plan. With Juniata County having no ordinances, JCCD is investigating how the process and requirements will work for the County. Hold municipal meeting in the fall of 2022.
1.3	Implement County Hazard Mitigation Plan	Improve flood prone areas with BMPs that also enhance water quality. Refer to the 2020 Juniata County Hazard Mitigation Plan Update. Ensure all municipalities have updated their floodplain management ordinances.	County Planning Commission, Emergency Management agencies, municipalities	Countywide	2022 – prioritize projects identified in HMP for funding 2023 – work with PEMA to develop BRIC App for feasibility study	Funding, mitigation projects as submitted by Municipalities. 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.	JCPD, JCEMS		Engineering Feasibility Study 1 – FTE Clean Water Coordinator for Planning Commission Project Implementation	\$150,000 \$130,000 per year \$500,000	2022: The 2022 plan update was completed in June and has gone to the Commissioners for review. There was robust township participation in the update. With update in hand, funding will need to be secured to bring plan projects to shovel readiness for implementation.
1.4*	Continue to Implement County Farmland Preservation Program.	Total farmland preservation (26 farms in program currently – approx. 3100 acres) Look to fund 1 additional farm per year in preservation program. – 3,000 acres of farmland conservation As stated in the Juniata Heritage Plan & Open Space Plan look to create Ag Preservation Zones Work to identify additional funding for Agriculture Conservation Easement program with goal to double acreage preserved.	JCALPB, JCCD, County Commissioners, Municipal Officials, Juniata County Heritage Plan, Juniata County Greenways and Open Space Plan	Agricultural Security Area farms that fit farmland preservation criteria	Ongoing	Preserved farms in Juniata Co. are inspected annually for Nutrient Management, Ag E&S, etc., and are kept in compliance with current regs as per easement conditions. 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. 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.	JCCD – 1 staff	JCALP Administrator Easement Purchases 1 – FTE Clean Water Coordinator for Conservation District	\$75,000/year \$160,000 state funding per year and \$15,000 from county per year = total \$875,000 \$130,000 per year	2022: There are about two farms, roughly 143 acres, are to be preserved. JCCD is waiting on the landowners to accept their offers and submit deposits. JCCD is securing encumbering funds and they are expected to close in summer of 2023. The application period is advertised in the local paper and online. The application period is every other year from December to the end of January. 13 applications came in for this round. JCCD was able to select 2. It is a popular program that doesn't need a lot of outreach to identify participants. Landowners who aren't selected receive a letter to reapply in future rounds. If there was more money in the pipeline, there would be more applicants.	

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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>	JCCD, ACT 38 operators, preserved farms, West Branch Association, certified organic farmers, Integrators, Private AG Consultants	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&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>	Field verification, troubleshooting, plan writing for compliance following DEP compliance inspections.	CSP	<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>\$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>	2022: The Foundation for Pennsylvania Watersheds applied for a Growing Greener grant totaling \$1.6 million to support additional ag engineering needs along with increased farm visits. In 2021 Lancaster Farmland Trust completed 20 farm visits. In 2022 the Lancaster Farmland Trust completed an additional 10 farm visits.
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	<p>1 – FTE Clean Water Coordinator for Planning Commission</p> <p>1 – FTE Clean Water Coordinator for 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>	2022: Juniata Watershed Management Plan Update is a DCNR grant that will cover the entire Juniata River watershed. The planning process will include partners from the county conservation districts in the watershed, Juniata College, St. Francis University, Chesapeake Conservancy, HRG, Foundation for PA Watersheds, Little Juniata River Association, and county planning commissions. Project will start with a kick-off meeting late summer/early fall.

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1.7	Utilize Existing TMDLs to leverage the need for water quality improvement plans	Leverage TMDLs to help educate local citizens on the need for water quality improvements Explore the potential feasibility of developing 319 WIPs, Coldwater Conservation Plans or Alternative Restoration Plans for TMDL watersheds	JCCD, JCPC, WPC	Markee Creek, Hunters Creek, West Branch Mahantango, Warble Run, Cedar Spring Run Working in Little Lost Creek	Ongoing	Financial and Technical assistance to develop 319 or Alternative Restoration Plan plans for TMDL watersheds. Willingness of local volunteers to support in implementation of 319 plans. Lack of existing watershed organizations and dwindling membership.			1 – FTE Clean Water Coordinator for Planning Commission 1 – FTE Clean Water Coordinator for Conservation District Additional staff for PFBC	\$130,000 per year \$130,000 per year \$1,000,000 \$500,000 for restoration plan	2022: Cocolamus Creek is undergoing the development of an alternative restoration plan to address nutrients and sediment. The plan is set to be finished by the end of 2022.
1.8	Juniata College, PSU, 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	\$50,000 per year	2022: No progress at this time.
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 Countywide Action Plan (arcgis.com) - 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		Website development and continued maintenance 1 – FTE Marketing and Outreach Coordinator 1 – FTE Clean Water Coordinator for Planning Commission	\$10,000 per year \$130,000 per year \$130,000 per year	2022: The DPJM Countywide Action Plan website listed in the Performance Targets has been updated to include information about implementation of the Countywide Action Plans. Additionally, a GIS tracking data base has been added to capture the location of potential projects.

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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 county 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>\$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>	2022: Farm visits have been utilized to conduct outreach to farmers about the Countywide Action Plan. In 2021 20 farm visits were conducted and in 2022 an additional 10 visits were completed. The Foundation for Pennsylvania Watersheds submitted a Growing Greener grant titled 12-County Investment to Catalyze Agricultural Project Readiness that would support rapid scaling up of farm visits within Juniata County. Scaling up of farm visits would allow for additional outreach to occur.

Priority Initiative 2: Reporting and Tracking

2.1*	<p>Existing BMP cataloguing (quantity and location) for select BMPs, expanding on general recommendations provided in QAPP</p> <p>BMPs = forest buffers, urban forest buffers, grass buffers, urban grass buffers, manure storages, grassed waterways, wet ponds and wetlands, fencing</p>	<p>Expand use of existing buffer layer with urban hydrology layer</p> <p>R&D into distinguishing ag, pasture, and turf covers from grassed buffers</p> <p>Manual digitizing where leaf-off <1 ft resolution imagery is available</p> <p>Back check with staff field views where required</p> <p>Add data to Practice Keeper or another batch upload option (FieldDoc)</p>	Juniata College, Chesapeake Conservancy, Stakeholder peer review - USGS, Farm Bureau, PDA, EPA	Countywide	<p>2022 – cataloguing</p> <p>2023 – Practice Keeper batch upload processing and field views</p>	EPA acceptance of the approach, further refine guidance in QAPP so that counties can accomplish this or so that the state can take the burden off of counties, utilize the approach to catalogue existing BMPs and do on the ground verification where required for reporting purposes, this is an accelerated BMP catch up approach while we continue to provide support to farmers on planning and BMP installs, reduce the amount of interruption of government entities to compliant farm operations	<p>Precision Conservation Tools</p> <p>General methodology outline</p> <p>BMP field backcheck</p>	N/A	<p>Further GIS and data processing/method refinement</p> <p>2 staff people to follow up on BMP verification annually (staffers are a part of the identified 6 – ag planners identified elsewhere)</p> <p>5 – Student Internships to Support CAP Implementation</p>	<p>\$46,000 (2022 only)</p> <p>\$260,000 per year</p> <p>\$50,000 per year</p>	2022: In December of 2021, Juniata County was awarded \$30,000 to conduct Phase 1 of a multiphased BMP verification remote sensing effort. Juniata County elected to use all of the money on the remote sensing analysis focusing on five priority BMPs including: Barnyard Runoff Controls, Animal Waste Management Systems, Forest Buffers, Grassed Waterways, and Streambank Exclusion Fencing. Remote sensing data analysis performed by the Chesapeake Conservancy is being finalized in August of 2022 and results are provided in an online ARC Gis Portal. Qualified 3rd party staff will begin field verification efforts to verify the remotely identified practices. A BMP Verification Quick Guide is being developed by HRG to assist with field verification efforts. In April of 2022, the Foundation for Pennsylvania Watersheds applied for a NFWF Most Effective Basins grant to support Phase 2 of the BMP verification analysis in the MEB in Juniata County. Initial results from Phase 1 look excellent in providing opportunities to take credit for practices on the ground that are not currently reported.
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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	N/A	Further GIS and data processing/method refinement 5 – Student Internships to Support CAP Implementation	\$46,000 (2022 only) \$50,000 per year	2022: No progress to date.
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	N/A	Training 5 – Student Internships to Support CAP Implementation 1 – Municipal Planner	N/A \$50,000 per year \$130,000 per year	2022: The Foundation for Pennsylvania Watersheds applied for a NFWF Most Effective Basins grant in April of 2022 to support Phase 2 of BMP verification remote sensing analysis. Phase 2 would include analyzing wet ponds and detention basins in urban areas across Juniata County. PA DEP has updated FieldDoc to allow for additional reporting of urban practices. The grant was not awarded.
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 Urban Nutrient Management – 1,200 acres	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	1 – FTE Clean Water Coordinator for Planning Commission	\$130,000 per year Urban Nutrient Management \$10 per acre @ \$12,000	2022: On July 11, Governor Wolf signed SB 251, a bipartisan bill sponsored by Senator Gene Yaw (R) and Senator Carolyn Comitta (D), into law. Pennsylvania now has a law governing turfgrass fertilizer application dates, practices, rates, and type of fertilizer used. We are uncertain on how documentation and crediting will occur with the new bill.
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	\$50,000 – per year See 3.5 for funding needs to improve cover crop reporting for Capital RC&D	2022: In the Spring of 2022 HRG participated in a beta testing group for the PracticeKeeper 3rd Party Module. PADEP initially released the module in June of 2022 before recalling the system for additional bug fixes. Phase 2 of the BMP verification grant submitted by the Foundation for PA Watersheds includes budget for interns from Susquehanna University to enter BMPs into PracticeKeeper.

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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. Improved reporting standards would allow 3,400 Animal Units of Dairy Precision Feeding	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	Reporting protocol	N/A	2022: No progress to date, reporting standards still remain an issue to utilize the BMP.
Priority Initiative 3: Achieve New Pollutant Reductions											
3.1	Implement Willow Run Cold Water Conservation Plan	Potential agriculture BMP restoration on a CAFO located in Dougherty Run Look at requiring timber management plans for lumber mills in the watershed Widen forest buffer at State Game Land 215 to 100 feet in width Plant a buffer in Willow Run and Dougherty Run Work with landowners to improve riparian areas Increase water quality monitoring	JCCD, Juniata Watershed Alliance, Municipalities	Willow Run Watershed Dougherty Run Lack and Tuscarora Townships	Ongoing	Lack of volunteers to support Juniata Watershed Alliance. Ensure support of watershed alliance moving forward. Lack of technical assistance and funding to support BMP implementation.	Technical Support and plan development		1 – FTE Clean Water Coordinator for Planning Commission 1 – FTE Clean Water Coordinator for Conservation District	\$130,000 per year \$130,000 per year \$25,000 to increase water quality monitoring \$500,000 for BMP Implementation	2022: No progress at this time.
3.2	Implement Lost Creek Cold Water Conservation Plan	Opportunities for streambank restoration especially in lower portions of lost creek watershed Riparian buffers and agriculture BMPs are also a way to restore lost creek Potential formation of a new watershed group 2 – potential new restoration opportunities to explore 1 – stream restoration project to be completed soon	JCCD, Juniata Watershed Alliance, WPC, PFBC	Lost Creek Watershed	Ongoing	Lack of volunteers to support Juniata Watershed Alliance. Ensure support of watershed alliance moving forward. Lack of technical assistance and funding to support BMP implementation.	Technical Support and plan development		1 – FTE Clean Water Coordinator for Conservation District	\$130,000 per year \$500,000 for project implementation	2022: Stream restoration project completed. Continuing to focus on Lost Creek as the top priority watershed for restoration, but finding willing landowners is a barrier. 2 projects have been identified and Western Pennsylvania Conservancy is in the process of developing I&Es and has applied for a Growing Greener Grant for completing design and installation.

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3.3*	Help farmers and operators to be in compliance with state and federal requirements: Conservation and Nutrient Management Plans	<p>Soil and Water Quality Conservation Plans (Ag E&S) 30,000 new acres</p> <p>Nutrient Management (Manure Management) 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>			<p>6 – additional Ag Planners to work with farmers to develop required plans</p> <p>\$780,000 per year</p> <p>\$15 per acre for a total cost of \$450,000</p> <p>\$15 per acre for a total cost of \$330,000</p>	<p>2022: PACD recently announced their Growing Greener grant for Ag Plan Reimbursement. Farmers in Juniata County will be able to take advantage of this opportunity to produce Ag E&S and Manure Management Plans. HRG will be attending the rollout of this program to maximize opportunities to get farmers additional plans.</p> <p>JCCD is enhancing its inspections/manure management planning as programs require and staff capacity permits.</p>	
3.4	Advanced Nutrient Management (4R) Practice Education and Implementation	<p>Transition manure management plans to nutrient management plans and incentivize implementation</p> <p>Increase existing 4R practice (N & P Rate, Placement and Timing by 6,000 acres per year)</p> <p>Explore the idea of increasing pre-presides 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 grant	<p>6 – additional Ag Planners to work with farmers to meet 4R standards</p> <p>1 – agronomist</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>	2022: No progress at this time.	

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3.5*	Implement Practice to improve soil health and sustainability (Tillage Management and Cover Crops)	<p>Determine feasibility of having a county/state cost share program to enhance adoption of the annual practice</p> <p>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</p> <p>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</p>	JCCD, Juniata County Farm Bureau, NRCS, Private Sector Agriculture Farm Visits, Juniata County PSU Extension, West Branch Association Crop Management	Countywide Ag Land	<p>2022 – investigation</p> <p>2023 – next steps</p>	<p>Capacity to manage the program, landowner interest</p> <p>Lack of technical assistance and farm planners to work with farmers to transition to High Residue Tillage</p> <p>Current verification methods do not accurately capture implemented amounts – work with Capital RC&D to improve Transect Survey Routes</p> <p>Farmers are harvesting cover crops for forage, need accurate efficiency crediting for commodity cover crops</p> <p>Existing Cover Crop Programs have strict plant by date that does not work with changing weather patterns and wetter years</p>	Transect survey	Many Farmers use CSP for tillage management	<p>6 – additional Ag Planners to transition farmers to high residue</p> <p>County JCCD – staff to administer the program</p> <p>Capital RC&D Transect Survey</p>	<p>\$780,000 per year</p> <p>\$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</p> <p>\$50,000</p>	<p>2022: Ongoing through NRCS through their CSP program.</p> <p>Soil Health Workshop planned for October of 2022.</p> <p>Soil health was highlighted at the Enviro-camp.</p> <p>Ongoing meetings with Soil Health Group which meets 3-5 times a year.</p> <p>Through these efforts, willing landowners will be identified to implement the practices.</p> <p>Capital RC&D is continuing to survey and verify tillage and cover crop rates in the County.</p>
3.6	Implement more pasture management BMPs	<p>Prescribed grazing – 3,200 acres</p> <p>Off Stream Watering – 150 acres</p> <p>Forest buffers on fenced pasture corridor – 20 acres</p> <p>Grass buffers on fenced pasture corridor – 20 acres</p> <p>Land Retirement to Ag Open Space – 170 Acres</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		<p>6 – additional Ag Planners to provide technical assistance and ag planning</p> <p>3 – additional FTE environmental technician</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>2022: Phase 1 of BMP verification identified 197 potential hits for streambank exclusion fencing. This data set will allow for increased reporting of buffered acres with exclusion fencing.</p> <p>JCCD is discussing the potential to reactivate the Streambank Fencing Program. There is a concern for JCCD capacity to hit targets by 2025.</p>

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3.7*	Riparian buffer and re-forestation BMPs	<p>320 riparian forest buffer acres, (260) acres lost since 2017 need reverified</p> <p>100 riparian grass buffer acres – (25) acres lost since 2017 need reverified</p> <p>25 acres – Agriculture Tree Planting</p> <p>50 acres – urban forest buffer</p> <p>1 acres – urban tree canopy</p> <p>70 acres – urban forest planting</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>	Materials	Budget available to be determined	<p>6 – additional Ag Planners to provide technical assistance and ag planning</p> <p>3 – additional FTE environmental technician</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>2022: Applied for in 2022, DEP Growing Greener - Prioritizing Forested Buffer Incentives - Tier 1 and 2 Counties, Huntingdon, Juniata, and Dauphin - NRCS Codes: 560/575/340/382/561/468/516/367/558/578/580/620/645/360/313/614 - Conservation Districts and NRCS, This project will pickup landowner cost-share for NRCS practices if a buffer is installed, we also pay for site prep and maintenance of buffers. We have 12 projects, still looking for more, and are in the process of contracting with 7 contractors to do site prep and maintenance on buffers.</p> <p>Juniata County's Riparian Ranger Program has been up and running since June of 2021. The program helps to maintain existing forest buffers around the county with 5 volunteers.</p> <p>Phase 1 of BMP verification will identify potential hits for grassed waterways and forest buffers implemented in the past 10 years. These potential BMPs will need field verified but provide a great opportunity to identify BMPs not currently reported.</p>
3.8	Wetland restoration implementation on marginal production ag land	<p>18 acres of Wetland Restoration</p> <p>Identify 1 large property owner from University of Vermont restorable wetland layer to help identify where wetland restoration is feasible</p>	Chesapeake Conservancy, JCCD, NRCS, Private Sector Agriculture Farm Visits, Juniata Watershed Alliance	Countywide	2022 –2025	<p>Willing landowner; appropriate siting, design, and construction for successful restoration result</p> <p>Lack of technical assistance for landowner outreach and agriculture planning</p>	Landowner outreach		<p>3 – additional FTE environmental technician</p> <p>2 – stream biologist</p>	<p>\$390,000 per year</p> <p>\$280,000 per year</p> <p>Wetland Restoration \$30,000 per acre ☐ \$540K</p>	2022: No progress at this time.
3.9	Stream Restoration (Urban and Agriculture)	<p>11,000 Linear feet (~2 miles) Urban Stream Restoration</p> <p>4,400 Linear feet (<1 mile) Agriculture Stream Restoration</p>	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	<p>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</p> <p>Lack of funding to cover engineering design</p>			<p>Design, permit, construction services</p> <p>2 – Municipal Engineers</p> <p>3 – FTE Design, Engineering, Permit</p> <p>2 – stream biologists</p>	<p>Assume urban \$900/LF - \$9.9M</p> <p>Assume rural \$400/LF -\$1.8M</p> <p>\$280,000 per year</p> <p>\$420,000 per year</p> <p>\$280,000 per year</p>	<p>2022: Western Pennsylvania Conservancy applied to Growing Greener with an application titled South Central Pa Stream Restoration Partnership. The grant is designed to support stream restorations in Juniata County along with three other counties. In total the funding applied for was \$531.8 thousand.</p> <p>Landowners have been identified, but waiting on implementation funding.</p>

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3.1	Implement more barnyard runoff control/loafing lot management	0 acres of barnyard runoff control - see implementation challenge/CAST model issue 31 acres of agricultural drainage management	JCCD, NRCS, Private Ag Consultants, CBF, Chesapeake Conservancy, Juniata County PSU Extension, West Branch Association	Countywide Farms	2022-2025	Lack of Technical assistance to support agriculture planning and implementation Lack of funding to cover engineering design Increasing construction costs are cancelling NRCS contracts 0 acres are currently available in CAST and is not accurate, need to address model limitations			6 – additional Ag Planners to provide technical assistance and ag planning 3 – FTE Design, Engineer, Permit 3 – FTE Inspector construction Services	\$780,000 per year \$420,000 per year \$315,000 per year Agriculture Stormwater Management \$10K per acre @ \$310K	2022: Phase 1 of BMP verification will identify where barnyard clusters are located and determine if they are livestock operations or poultry operations. CAST continues to limit the number of opportunities for this BMP. While not reporting at 100% as previously reported in 2020. Due to the loss of 7 acres the BMP is below 100%, but will hit 100% if those 7 acres are reverified. This does not allow for the reporting of new acres.
3.11	Animal Waste Storage Systems	2,000 AUs of animal waste management systems Current capacity through NRCS and JCCD implements about 5 farms projects per year	JCCD, NRCS, Private Ag Consultants, CBF, Chesapeake Conservancy, Juniata County PSU Extension, West Branch Association	Livestock & Poultry farms	2022-2025	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 Lack of funding to cover engineering design	Project implementation – 5 farms a year		6 – additional Ag Planners to provide technical assistance and ag planning 3 – FTE Design, Engineer, Permit 3 – FTE Inspector construction Services	\$780,000 per year \$420,000 per year \$315,000 per year Animal waste management system \$175,000 per project, assume 100 AUs per project \$3.5M in total	2022: BMP Verification Phase 1, shows the potential to report an additional 31 animal waste storage facilities currently not reported through PracticeKeeper.
3.12*	Urban Stormwater Management Non-Regulated Communities	Implement existing ordinances and Catalogue existing BMPs that fit into this category Stormwater Treatment – 2 acres treated Wet Ponds and Wetlands – 73 acres treated Dry Detention Ponds – 4 acres treated Impervious surface reduction - 1 acre	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		5 Summer interns for reporting and verification 2 – Municipal Engineers 1 – municipal planner	\$50,000 – per year \$280,000 per year \$130,000 per year \$160,000 for all stormwater BMPs	2022: There aren't any MS4's in Juniata County. JCCD is attempting to map PSCM BMP's from NPDES permitted sites into PracticeKeeper - started doing this in 2021, will attempt to keep doing this as projects are terminated and staff time permits.

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3.13	Conservation Landscaping/Turf to Meadow Conversion	Promote new program and enable one large tract landowners' participation 70 new acres of Conservation Landscaping	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		1 – FTE Municipal Planner 3 – additional FTE environmental technician	\$130,000 per year \$130,000 per year \$2,500 per acre meadow = \$175,000 budget for all	2022: No progress to date.
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	\$1.4 Million since 1998	1 – FTE Clean Water Coordinator for Conservation District	\$130,000 per year Dirt and Gravel Roads \$40 per foot = TBD	2022: The D&G program has one project approximately 2/3 of a mile of driving surface aggregate being replaced in Fall of 2022. A stream crossing in the Lost Creek Watershed is slated for Spring 2023 which will replace two 30" pipes with a 14' single span structure.
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	\$130,000 per year \$130,000 per year	2022: No progress to date.
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		1 – FTE Conservation District Grant Manager 1 – FTE Planning Commission Grant Manager 2 – staff accountants	\$130,000per year \$130,000 per year \$140,000 per year	2022: HRG and LFT are exploring potential opportunities to apply to the Foundation for Food & Agriculture Research (FFAR) and the Walton Family Foundation's new program, Achieving Conservation through Targeting Information, Outreach and Networking (ACTION) to support innovative research that increases adoption of conservation practices. A potential grant application would bolster farm visits in Juniata County to increase the adoption of Conservation Practices.

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Priority Initiative 4: Research, Education, and Training											
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		Volunteers for Water quality monitoring New monitoring equipment 1 – watershed specialist 3 – additional FTE environmental technician 2 – stream biologist/environmental scientist	N/A \$10,000 \$130,000 per year \$130,000 per year \$280,000 per year	2022: In the fall of 2022, HRG will convene the Watershed Specialist to identify the largest "gaps" of water quality monitoring data, develop strategies to comprehensively incorporate new data to support CAP efforts. ALLARM is in the process of developing citizen scientist monitoring data collection protocols to assist with stream health data collection. Should the protocol be approved, it will be shared with all Counties.
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	Willing volunteers and leaders to establish and run watershed organizations to be successful and support with implementation 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. Maintaining 501(c)3 status can be challenging.	Social media shares Project development support		1 – FTE Clean Water Coordinator for Planning Commission 1 – FTE Clean Watershed Specialist	\$130,000 per year \$130,000 per year \$5,000 per organization to produce promotional materials (hats, shirts, stickers) for members @ \$5,000 per year	2022: JWA is actively working with JCCD. There are many outreach events, riparian installations, and participation in the Riparian Rangers.