



Chesco Chesapeake Communities Action Plan (C3AP)

An adaptive plan summarizing approaches and tracking implementation efforts for local water quality improvements

September 30, 2021

TABLE OF CONTENTS

I. INTRODUCTION AND BACKGROUND

Plan Purpose
Plan Highlights
Key Findings
Opportunities for Success
Challenges to Implementation

II. INITIATIVES

Summary
Programmatic/Policy Recommendations
Priority Initiatives Detail
 Catchment Targeting
 Agriculture
 Buffers and Streams
 Municipal
 Data Management

III. REPORTING AND SUPPORT DOCUMENTS

Proposed BMPs for Implementation (Implementation Scenario)
Initiatives Tracking Document(s) (PADEP Planning and Progress Template)
Programmatic Recommendations Document (PADEP Programmatic Template)

IV. APPENDIX

Organizational Chart
Watersheds Map
Catchment Management Database (CMD)

INTRODUCTION AND BACKGROUND

Plan Purpose

The Pennsylvania Department of Environmental Protection (PADEP) developed the third phase of their Chesapeake Bay Watershed Implementation Plan (Ph. III WIP) in 2018. The plan requires implementation of local water quality improvements by 2025 to meet statewide pollution reduction goals. PADEP's Ph. III WIP is based on a collaborative and bottom-up clean water planning approach between the state and each county in the Chesapeake Bay drainage area. This approach gives each county flexibility to create a plan that meets local needs and is unique to the jurisdiction.

The Chesco Chesapeake Communities Action Plan (C3AP) represents the approach that will be undertaken by local stakeholders and agencies in Chester County as part of the overall state strategy. The plan and associated teams can serve as the collaboration hub of multiple existing plans already in place and representatives across various sectors present in the county. Furthermore, and due to the dynamic and evolving nature of the C3AP, initiatives can be adapted or modified to reflect changing objectives or focus areas in a timely manner and serve as a foundational document for securing funding or communicating new goals without developing an entirely new plan.

Plan Highlights

The C3AP is a summary of approaches, initiatives, and considerations for existing and proposed water quality improvements in the Chesapeake Bay drainage areas of Chester County. In 2014, the Chester County Conservation District (CCCD) released the Chester County Implementation Plan (CIP) (formerly the Chesapeake Bay Tributary Strategy) focusing on the Chesapeake Bay watershed areas of the county. The C3AP is intended to build upon the successes of the CIP and other strategies developed by county partners to significantly reduce nutrients entering streams and delivered to the Bay while balancing other direct and indirect goals and objectives of the local communities.

The C3AP in conjunction with state efforts aims to ultimately reduce nearly 914,000 pounds of nitrogen and 39,000 pounds of phosphorus annually to local streams and water resources through BMPs implemented by 2025. Current efforts and opportunities have identified approaches that will result in approximately 510,000 pounds of Nitrogen reductions (~55% of the target) and 38,000 pounds of Phosphorus reductions (~97% of the target) annually. Communications with the state will contain general references to the plan as the "Countywide Action Plan (CAP)", but locally the plan will be referred to and communicated as the "C3AP". This is due to the fact the Chesapeake Bay Watershed (CBWS) areas only encompass a portion of Chester County. C3AP activities are intended to flush out approaches and opportunities that will result in a revised BMP implementation scenario in 2023 with a higher level of confidence in proposed BMPs.

The C3AP is a dynamic and adaptive plan summarizing approaches and tracking implementation efforts for local water quality improvements. The plan is aspirational but realistic. The plan will be updated on an annual basis and reports will be provided to both local stakeholders and PADEP through 2025 summarizing progress towards identified long-term goals or adjustments to overall approaches. Key goals and objectives of the C3AP are:

- Conservation needs should drive approaches in lieu of fitting improvements into programs.
- Prioritization and implementation steps driven by assessments of individual catchments (organized through the Catchment Management Database; 59 total catchments)
- Action Teams focused on agriculture, buffers & streams, municipal, data management, and catchment targeting initiatives.
- Balance theoretical reductions with real-world improvements for prioritization of BMP implementation.
- Continually asking “what are we missing?” during assessments, prioritization, and targeting exercises.
- Reconcile and report uncaptured and/or under-reported BMPs across all sectors against proposed BMP implementation rates.
- Initiate implementation during the last quarter of 2021 to provide sufficient time and ability to capture data and information prior to the 2023 BMP implementation scenario revisions, and build an inventory of uncaptured BMPs and opportunities across multiple catchments.

Key Findings

Success of the C3AP implementation process will be dependent upon a combination of funding, regulatory flexibility, innovative techniques, and political will coming together. Baseline conditions and elements that will be observed to increase the long-term success of C3AP implementation include:

- Formation of a steering committee and action teams to guide C3AP development and monitor implementation efforts.
- A methodical data capture and opportunities identification exercise (Catchment Targeting Initiative) is necessary to balance BMP reconciliation and conservation needs identification efforts.
- Creative and long-term funding streams will be necessary not only for BMP implementation, but also for long-term maintenance and verification processes.
- Success is highly predicated on financial and funding assistance.
- Strong GIS capabilities countywide.
- Broad presence of technical service providers (TSPs) assisting the agricultural community.
- It is necessary to complement existing programs and plans in place (countywide Act 167 plan, Comprehensive Plan, etc.) in lieu of competing with existing programs and plans.
- The mushroom industry is a critical element of the agricultural community in Chester County.

- A set of detailed “game plans” that have been identified for specific actions under Priority Initiatives require additional discussions and deliberate tasks that will be necessary for reducing barriers to implementation. The game plans are intended to provide more details behind the who, what, when, how, etc. Game plans are required for:
 - Catchment assessments “step-by-step” analysis process (Action 1.1)
 - Plain sect community outreach plan and general agricultural outreach plan and materials (and associated education (EE) grant application) that would provide needed funding to support identified goals (Action 2.1 and Action 2.2).
 - Processes for road run-off to farms (Action 2.8)
 - “Buffer Bonus” program (Action 3.4)
 - Complete list of existing plans, efforts, etc. from an urban/suburban standpoint that needs to be considered and/or encompassed by the Catchment Targeting Initiative (Action 4.7).
 - Conversion or translation of County Health Dept. septic system information and data for reporting and realizing nutrient reductions (Action 4.12)
 - Potential expansion of the Lancaster County Collaborative Watershed Mapping Tool into Chester County (Action 5.1)

Opportunities for Success

C3AP development included the identification of appropriate collaborations, priority areas, and funding needs specific to Chester County that would improve implementation success while providing extended benefits to the community. Opportunities and considerations that will improve success of implementation include:

- Leveraging existing groups, funding, and efforts where the C3AP can complement efforts.
- Potential expansion of the Lancaster County Collaborative Mapping Watershed Tool into Chester County.
- Build upon the Octoraro Watershed Association (OWA)’s water quality monitoring program under development for other areas for long-term monitoring goals.
- Separate compliance vs. conservation with farmer engagements.
- Collaboration and buy-in amongst multiple local, state, and federal agencies.
- Piggy-back onto existing outreach and social media accounts to support general efforts.
- Specific C3AP objectives or initiatives should be based on previously identified focus areas found in existing plans.
- One-on-one engagements with farmers in the agricultural community and with individual municipalities is absolutely critical for long-term success.
- Long-term funding for “boots-on-the-ground” engagements/assessments and BMP implementation.
- Organize and launch Action Teams during last quarter of 2021 to detail game plans and coordinate efforts.

Challenges to Implementation

Several opportunities for success and overall C3AP implementation will inherently encounter challenges. How these challenges unfold will determine the level of successful implementation by 2025. Primary anticipated challenges include:

- Funding for BMP implementation and limited resources in general;
- Data chasing and/or centralized data organization to ensure all implemented BMPs are captured;
- Plain sect community/farmer resistance or buy-in;
- Public buy-in and extent of local landowner willingness to participate;
- Capacity for PracticeKeeper (PK) data entry and management;
- Conflicting and/or inconsistent policies or regulatory requirements;
- Time and resources to adequately capture under-reported BMPs;
- Programmatic hurdles, timelines, or conflicting requirements; and
- Long-term verification processes.

INITIATIVES

Summary

The C3AP includes actions and goals to guide the county's clean water efforts for the next several years. These are included in the Planning and Progress Templates and the State Programmatic Recommendations. The central coordinating and driving effort for all actions is Priority Initiative 1 (Catchment Targeting Initiative). This initiative is a technically-driven and engagement-heavy set of actions intended to define the details and framework of discrete areas (catchments) from which all action teams can implement individual initiative actions.

BMP implementation targets are based on high level assumptions and limited data (CAST data was used to define total available acres with desktop analyses conducted to establish assumptions of current implementation rates). Long-term approach is governed by moving one catchment to the next to build an inventory and foster opportunities. **However, if opportunities arise outside of the catchment targeting processes, those opportunities will be pursued.** For ease of review, the Priority Initiatives and Action Items they include are summarized below.

Priority Initiative 1: Catchment Targeting Initiative

- Action 1.1 Catchment Assessments and Prioritization
- Action 1.2 Conservation Opportunities
 - Farmland Conservation – 4,000 total acres
 - Forest Conservation – 300 total acres
 - Wetland Conservation – 20 total acres
- Action 1.3 Low Volume/Dirt & Gravel Road Opportunities

- Driving Surface + Raising the Roadbed – 2,000 new linear feet

Priority Initiative 2: Agriculture

- Action 2.1 Plain sect farmers outreach and engagement
- Action 2.2 General ag-focused education and outreach
- Action 2.3 Catchment Targeting Initiative
- Action 2.4 Focused Ag BMP Implementation
 - Soil Conservation and WQ Plans – 26,210 total acres
 - Nutrient Management/Core Nitrogen – 12,000 total acres
 - Nutrient Management/Core Phosphorus – 8,000 total acres
 - Barnyard Runoff Controls – 20 new acres
 - Prescribed Grazing – 1,350 total acres
 - Manure Storage Facilities – 11,925 new Animal Units (AUs)
 - Precision Feeding – 4,000 Dairy Cow Animal Units (AUs)
- Action 2.5 Mushroom Farms Conservation
- Action 2.6 BMP Reporting Reconciliation
- Action 2.7 Horse Farms Conservation
 - Horse Pasture Management – 1,450 total acres
- Action 2.8 Road run-off to farms
- Action 2.9 Farmer’s Only Roundtable
- Action 2.10 Soil Health BMP implementation
 - High Residue Tillage Management – 11,000 total acres/year
 - Conservation Tillage Management – 8,000 total acres/year
 - Traditional Cover Crops – 6,000 total acres/year
 - Cover Crops with Fall Nutrients – 12,500 total acres/year
 - Commodity Cover Crops – 300 total acres/year
- Action 2.11 Expanded Nutrient Management
 - Nitrogen Rate – 5,000 acres
 - Nitrogen Placement – 4,000 acres
 - Nitrogen Timing – 4,000 acres
 - Phosphorus Rate – 5,000 acres
 - Phosphorus Placement – 4,000 acres
 - Phosphorus Timing – 4,000 acres
- Action 2.12 Manure Transport
 - Manure Transport out of Chester County – 1,000 dry tons/year

Priority Initiative 3: Riparian Buffers and Streams

- Action 3.1 Buffer Opportunities and Targeting Tools
- Action 3.2 Ag Riparian Zones
 - Forest Buffer – 300 new acres
 - Forest Buffer with exclusion fencing – 300 new acres
 - Narrow Forest Buffer with exclusion fencing – 200 new acres
 - Grass Buffer – 200 new acres
 - Grass Buffer with exclusion fencing – 110 new acres

- Narrow Grass Buffer with exclusion fencing – 80 new acres
- Action 3.3 Urban/Developed Areas Riparian Zones
 - MS4 Riparian Forest Buffers – 20 new acres
 - Non-MS4 Forest Buffers – 30 new acres
- Action 3.4 Buffer Bonus Program
- Action 3.5 Focused Stream Corridor BMP Implementation
 - Urban Stream Restoration – 12,000 new linear feet
 - Non-urban stream restoration – 22,430 new linear feet
 - Wetland Creation – 15 new acres
 - Wetland Restoration – 30 new acres

Priority Initiative 4: Municipal

- Action 4.1 Basin Retrofits Pilot Project
- Action 4.2 MS4 Compliance Assistance
 - Advanced IDD&E Control – 3,000 acres treated
- Action 4.3 MS4 Circuit Rider
- Action 4.4 Existing BMPs Needs
- Action 4.5 Catchment Targeting Initiative
- Action 4.6 BMP Reporting Reconciliation
- Action 4.7 Existing Plans Alignment
- Action 4.8 PennDOT PRP Reductions
- Action 4.9 Joint PRP Projects
- Action 4.10 Focused Stormwater BMP Implementation
 - Rate Reduction SW Performance Standards – 3,000 new acres treated
 - Treatment SW Performance Standards – 89 new acres treated
 - Wet Ponds and Wetlands – 50 new acres treated
 - Infiltration Practices – 64 new acres treated
 - Bioretention – 58 new acres treated
 - Bioswale – 25 new acres treated
 - Vegetated Open Channels – 30 new acres treated
 - Filtering Practices – 25 new acres treated
 - Impervious Surface Reduction – 4 acres
- Action 4.11 Urban Landscape
 - Conservation Landscaping – 100 total acres
 - Urban Forest Planting – 20 new acres
 - MS4 Tree Canopy – 10 new acres
 - Urban Nutrient Management – 2,000 acres
- Action 4.12 Septic Systems
 - Conv. Septic Denitrification – 3,000 systems
 - Septic System Pumping – 6,000 systems

Priority Initiative 5: Data Management

- Action 5.1 Centralized GIS-based database/platform and targeting tool
- Action 5.2 Reporting QA/QC

- Action 5.3 Catchment Targeting Initiative and BMP Reconciliation data

Programmatic/Policy Recommendations

Chester County stakeholders identified a set of initial actions necessary to reduce policy and programmatic hurdles for implementation of certain BMPs or supporting activities identified in the CAP:

- Action 1.1 Expand definition and specific approaches for cover crops
 - Create a cover crops classification that allows the application of fall nutrients and is harvested in the spring
- Action 1.2 Cover crop incentive program
 - Dedicated fund that counties (or farmers) can apply to or tap into when adopting cover crops
- Action 1.3 Separate and dedicated funding assistance program for ag community engagements
 - Dedicated funding mechanism for engagement activities (personnel, equipment, etc.)
- Action 1.4 Transfer of NRCS generated Soil Conservation Plans into local Practice Keeper platform
- Action 1.5 Definition for Mushroom composting
 - Create a separate definition (or a sub-category of existing manure composting definitions) specific to mushroom composting.
- Action 1.6 BMP Reconciliation parameters
 - Establish a list of the minimum parameters and attributes that should be noted when underreported Ch. 102/land development BMPs are captured.
 - Establish a reporting mechanism(s) for captured Ch. 102/land development BMPs.
- Action 1.7 Horse pasture nutrient reductions
- Action 1.8 Accelerated permitting for plan identified projects of regional importance
- Action 1.9 Buffers sub-categories
 - Creation or establishment of additional set of codes for buffers outside the riparian corridor that can be incorporated into Soil Conservation plans
- Action 1.10 Fertilizer Legislation

Priority Initiatives Detail

The C3AP Priority Initiatives are centered around a set of considerations, focus areas, and actions intended to directly and indirectly support the implementation of BMPs across the Chesapeake Bay drainage areas of the county. The C3AP includes a Catchment Management Database (CMD). The CMD provides the baseline prioritization information and data capture warehouse tied to catchment targeting efforts.

Development of the C3AP was guided by a Steering Committee with administrative support from the Management Team. An organizational chart was developed reflecting relationships

between the Steering Committee, Management Team, stakeholders, proposed Action Teams, and others.

PRIORITY INITIATIVE 1: Catchment Targeting Initiative

- Description
 - A technically driven effort was identified to balance BMP reconciliation activities and the identification of conservation needs and BMP implementation opportunities. This team will guide the step-by-step activities and findings for prioritization of BMP implementation efforts. This effort forms the lynchpin and driving data for all other actions in assessed and prioritized areas.
 - The process will include three primary steps: 1) desktop analysis that also involves cross-referencing existing plans to establish a preliminary understanding of an individual catchment (including identification of potential uncaptured BMPs and opportunities for exploration); 2) “Boots-on-the-ground” field verifications and initial outreach activities to establish a game plan for catchment; and 3) one-on-one engagements and organizational activities to capture under-reported BMPs and prioritize new BMPs for implementation.
 - The Catchment Management Database (CMD) includes and outlines the preliminary rankings of catchment groups based on the USGS SPARROW mass loading and incremental loading data. A three-tiered hierarchy was established to grade groups and is a red-yellow-green light system (red is poor, yellow is fair/vulnerable, green is optimal).
 - See Planning Template for Priority Initiative 1 in the Reporting and Support Documents section for more information and details
- Focus Areas
 - All 59 catchment groups with the Catchment Targeting Initiative prioritizing areas of engagement and focus.
 - Additional funding provides ability to assess all catchments prior to 2025. No additional funding will require processes through 2030.
- Actions and Proposed BMPs
 - Action 1.1 Catchment Assessments and Prioritization
 - Desktop analyses followed by “boots-on-the-ground” verifications and engagements with local stakeholders by abled individuals. This approach directly supports capturing unreported BMPs as part of the BMP reconciliation process.
 - Action 1.2 Conservation Opportunities
 - Farmland Conservation – 4,000 total acres
 - *Land use change that simulates rate of farmland conservation based on participation in state programs and land trust activities.*
 - Forest Conservation – 300 total acres
 - *Land use change that simulates rate of forest conservation based on participation in state programs and land trust activities.*
 - Wetland Conservation – 20 total acres

- All watersheds/catchments that include agricultural land uses
- Focused BMP Implementation
 - Broad identified BMP targets across the entire Chesapeake Bay watershed in Chester County.
 - BMP implementation goals were developed by identifying reasonable targets through cross-referencing maximum acres (or area) BMPs can be applied to, current BMP implementation trends, and a high-level reconciliation of approximated BMPs implemented against reported BMPs.
 - Approximately 2,700 acres identified as dedicated towards “general pasture” where prescribed grazing practices have/can be implemented through extrapolation of data from multiple sources (see Horse Farms Conservation for more information). This initiative contemplates 50% implementation rate of prescribed grazing BMPs.
- There is a significant plain sect community presence in the Chesapeake Bay Watershed (CBWS) areas of the county.
- Mushroom Farms Conservation
 - The mushroom industry represents a significant sub-sector of the agricultural community in Chester County.
- Horse Farms Conservation
 - A significant portion of pasture-related land uses in Chester County are dedicated to the equestrian sub-sector of the agricultural community.
 - Extrapolation of data and information cross-referencing CAST data, the most recent USDA farm census, and the Delaware Valley University *Economic Impact of Equine on Southeastern Pennsylvania* report (October 2017) revealed an approximate 2,900 acres dedicated to horse pasture in the CBWS of Chester County. This initiative contemplates a 50% implementation rate of horse pasture management BMPs.
- Actions and Proposed BMPs
 - Action 2.1 Plain sect farmers outreach and engagement
 - Set of specific tasks directly tied to the plain sect community including engagements, “Bay fisherman to Amish Country”, and water resources training.
 - Action 2.2 General ag-focused education and outreach
 - Engagements and supporting materials driven by promoting conservation in lieu of compliance.
 - Action 2.3 Catchment Targeting Initiative for ag-specific actions
 - Action 2.4 Focused Ag BMP implementation
 - Soil Conservation and WQ Plans – 26,210 total acres
 - *Plans are a combination of agronomic, management and engineered practices that protect and improve soil productivity and water quality, and to prevent deterioration of natural resources on all or part of a farm. Plans must meet technical standards.*

- Nutrient Management Core Nitrogen – 12,000 total acres
 - *Applications of nitrogen are made in accordance with certain elements as applicable (e.g. land-grant university recommendations, spreader calibration, manure analysis, etc.) and technical standards*
- Nutrient Management Core Phosphorus – 8,000 total acres
 - *Applications of phosphorus are made in accordance with certain elements as applicable (e.g. land-grant university recommendations, spreader calibration, manure analysis, etc.) and technical standards*
- Barnyard Runoff Controls/Loafing Lot Management – 20 new acres
 - *This includes practices such as roof runoff control, stabilization of heavy use areas, diversion of clean water from entering the barnyard and control of runoff from barnyard areas.*
- Prescribed Grazing – 1,350 total acres
 - *A range of pasture management and grazing techniques to improve the quality and quantity of the forages grown on pastures and reduce the impact of animal travel lanes, animal concentration areas or other degraded areas. PG can be applied to pastures intersected by streams or upland pastures outside of the degraded stream corridor (35 feet width from top of bank). Pastures under the PG systems need to have a vegetative cover of 60% or greater.*
- Animal Waste Management Systems – 11,925 new animal units
 - *Any structure designed for collection, transfer and storage of manures and associated wastes generated from the confined portion of animal operations and complies with NRCS 313 (Waste Storage Facility) or NRCS 359 (Waste Treatment Lagoon) practice standards.*
- Dairy Precision Feeding – 4,000 animal units
 - *Dairy Precision Feeding reduces the quantity of phosphorus and nitrogen fed to livestock by formulating diets within 110% of Nutritional Research Council recommended level in order to minimize the excretion of nutrients without negatively affecting milk production.*
- Action 2.5 Mushroom Farms Conservation
 - Continued CCCD staff person providing support to mushroom farms
- Action 2.6 BMP Reporting Reconciliation (ag)
- Action 2.7 Horse Farms Conservation
 - Horse Pasture Management – 1,450 total acres
 - *Maintaining a 50% pasture cover with managed species and managing high traffic areas.*
- Action 2.8 Road run-off to farms

- *Applications of nitrogen are made in accordance to all elements of the Nitrogen Core practice and an additional element from a list of options (e.g. Nitrogen applications are made using variable rate goals)*
 - Nutrient Management Placement Phosphorus – 4,000 acres
 - *Applications of phosphorus are made in accordance to all elements of the Phosphorus Core practice and an additional element from a list of options (e.g. Applications of inorganic phosphorus are injected into the subsurface or incorporated into the soil)*
 - Nutrient Management Timing Phosphorus – 4,000 acres
 - *Applications of phosphorus are made in accordance to all elements of the Phosphorus Core practice, and are split across the growing season into multiple applications*
 - Nutrient Management Rate Phosphorus – 5,000 acres
 - *Applications of phosphorus are made in accordance to all elements of the Phosphorus Core practice and an additional element from a list of options (e.g. Phosphorus applications are made using variable rate goals).*
 - Action 2.12 Manure Transport
 - Manure Transport out of Chester County – 1,000 dry tons/year
 - *Transport of excess manure in or out of a county. Manure may be of any type—poultry, dairy, or any of the animal categories. Transport should only be reported for county-to-county transport.*
- Implementation Considerations
 - Challenges
 - Funding for BMP implementation, “boots-on-the-ground” engagements and assessments, and limited resources in general (experienced technical staff);
 - Long-term verification processes;
 - Capacity for data management, data entry, and related considerations;
 - Tight timeline for significant BMP implementation;
 - Resources for timely and successful Catchment Targeting Initiative efforts;
 - Programmatic hurdles, timelines, or conflicting requirements; and
 - Farmer resistance/buy-in and commitments.
 - Opportunities for Success
 - Engagement/education to be achieved via one-on-one engagements by balancing farmers’ needs and wants with fitting into a recognized BMP for nutrient and sediment reductions;
 - Capturing underreported BMPs while simultaneously realizing implementation of new BMPs;

- Partnering with neighboring counties (e.g. Lancaster County for the Octoraro) to align and complement efforts;
- Expansion of ag-related workforce and increased presence of TSPs to accelerate implementation efforts;
- Balancing increased human resources with increased financial resources; and
- Finding a lead person that can appropriately engage individual farmers and simultaneously has extensive farming experience.

PRIORITY INITIATIVE 3: Buffers and Streams

- Description
 - Forested, stream corridors and natural areas represent roughly 32% of the land uses within Chester County. Protection, restoration, and improvements of streams and riparian areas were identified early on in the C3AP development process as a primary focus. This team will focus on BMP implementation in these areas.
 - See Planning Template for Priority Initiative 3 in the Reporting and Support Documents section for additional information and details.
- Focus Areas and Key Considerations
 - All watersheds/catchments with prioritized areas driven by the Catchment Targeting Initiative.
 - Focused BMP Implementation
 - Broad identified BMP targets across the entire Chesapeake Bay watershed in Chester County.
 - BMP implementation goals were developed by identifying reasonable targets through cross-referencing maximum acres (or area) BMPs can be applied to, current BMP implementation trends, and a high-level reconciliation of approximated BMPs implemented against reported BMPs.
 - Approximately 73,000 linear feet (18.85 miles) of streams have been identified in the CBWS areas of the county. Targets tied to riparian buffers are based on successful implementation in 50% of these available areas (assumed 50% forested areas in riparian corridors at this time).
- Actions and Proposed BMPs
 - Action 3.1 Buffer Opportunities and Targeting Tool(s)
 - Potentially extend tools developed in Lancaster County by the Chesapeake Conservancy in Chester County (Octorara watershed already in existing tool).
 - Action 3.2 Ag Zones (including non-riparian and riparian areas)
 - Forest Buffers – 300 new acres
 - *Linear wooded areas on or adjacent to crop and hay land uses that help filter nutrients, sediments and other pollutants from runoff as*

- well as remove nutrients from groundwater. The recommended buffer width is 100 feet, with a 35 feet minimum width required.*
- Forest buffers with exclusion fencing – 300 new acres
 - *Linear wooded areas on or adjacent to pasture land uses with fencing installed to prevent livestock from grazing and trampling the buffer or entering the stream and that helps filter nutrients, sediments and other pollutants from runoff as well as remove nutrients from groundwater. The recommended buffer width is 100 feet, with a 35 feet minimum width required.*
 - Narrow forest buffers with exclusion fencing –200 new acres
 - *Linear wooded areas on or adjacent to pasture land uses with fencing installed to prevent livestock from grazing and trampling the buffer or entering the stream and that helps filter nutrients, sediments and other pollutants from runoff as well as remove nutrients from groundwater. The recommended buffer width is at least 10 feet wide and a maximum width of 35 feet.*
 - Grass Buffers – 200 new acres
 - *Linear strips of grass or other non-woody vegetation on or adjacent to crop and hay land uses maintained to help filter nutrients, sediment, and other pollutants from runoff. The recommended buffer width for buffers is 100 feet, with a 35 feet minimum width required.*
 - Grass Buffers with exclusion fencing – 110 new acres
 - *Linear strips of grass or other non-woody vegetation on or adjacent to pasture land uses with fencing installed to prevent livestock from grazing and trampling the buffer or entering the stream and is maintained to help filter nutrients, sediment and other pollutants from runoff. The recommended buffer width for buffers is 100 feet, with a 35 feet minimum width required.*
 - Narrow grass buffers with exclusion fencing – 80 new acres
 - *Linear strips of grass or other non-woody vegetation on or adjacent to pasture land uses with fencing installed to prevent livestock from grazing and trampling the buffer or entering the stream and is maintained to help filter nutrients, sediment and other pollutants from runoff. The recommended buffer width is a at least 10 feet wide and a maximum 35 feet width required*
 - Action 3.3 Urban/Developed Riparian Areas
 - Urban forest buffers – 50 new acres (20 acres in MS4 areas)
 - *Linear wooded areas within MS4 turf areas and non-MS4 urban turf areas that help filter nutrients, sediments, and other pollutants from runoff to streams as well as remove nutrients from groundwater. The recommended buffer width is 100 feet, with a 35 feet minimum width required.*

- Action 3.4 “Buffer Bonus” Program
 - Expand or mimic similar programs that incentivize implementation of buffers in conjunction with other programs.
- Action 3.5 Focused Stream Corridor BMP Implementation
 - Urban stream restoration – 12,000 new linear feet
 - *Refers to any Natural Channel Design (NCD), Regenerative Stream Channel (RSC), Legacy Sediment Removal (LSR), or other restoration project in an urban/suburban environment that meets the qualifying conditions for credits, including environmental limitations and stream functional improvements.*
 - Non-urban stream restoration – 22,430 new linear feet
 - *Refers to any Natural Channel Design (NCD), Regenerative Stream Channel (RSC), Legacy Sediment Removal (LSR), or other restoration project in non-urban/suburban environments that meets the qualifying conditions for credits, including environmental limitations and stream functional improvements.*
 - Wetland restoration – 30 new acres
 - *The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former wetland.*
 - Wetland creation – 15 new acres
 - *Establish or create wetlands in a floodplain or other areas by manipulation of the physical, chemical, or biological characteristics to develop a wetland where one did not previously exist.*
- Implementation Considerations
 - Challenges
 - Funding for BMP implementation, “boots-on-the-ground” engagements and assessments, and limited resources in general;
 - Long-term verification processes;
 - Tight timeline for significant BMP implementation;
 - Programmatic hurdles, timelines, or conflicting requirements; and
 - Landowner/farmer resistance, buy-in, and commitments.
 - Opportunities for Success
 - Engaging and partnering with existing groups and entities established in the county (e.g. OWA, Stroud, etc.);
 - Capturing underreported BMPs while simultaneously realizing implementation of new BMPs;
 - Partnering with neighboring counties (e.g. Lancaster County for the Octorara) to align and complement efforts;
 - Building upon previously successful stream corridor restoration efforts; and

- Identifying and fostering regional opportunities that provide additional benefits (e.g. MS4 PRP reductions, flood mitigation, open space, etc.).

PRIORITY INITIATIVE 4: Municipal

- Description
 - While forested/natural and agriculture land uses comprise the majority of the land uses within the Chesapeake Bay drainage areas of Chester County; there are pockets of developed areas (commercial, residential, etc.) equating to approximately 25% of overall land uses, including regulated MS4 areas. Additionally, this team will serve as point for engagements with local municipalities during implementation and Catchment Targeting efforts.
 - The proposed MS4 Circuit Rider is a critical element for the BMP reconciliation (capture of under-reported BMPs) and long-term verification processes.
 - See Planning Template for Priority Initiative 4 in the Reporting and Support Documents section for more information and details.
- Focus Areas and Key Considerations
 - All watersheds/catchments with prioritized areas driven by the Catchment Targeting Initiative.
 - Focused BMP Implementation
 - Broad identified BMP targets across the entire Chesapeake Bay watershed in Chester County.
 - BMP implementation goals were developed by identifying reasonable targets through cross-referencing maximum acres (or area) BMPs can be applied to, current BMP implementation trends, and a high-level reconciliation of approximated BMPs implemented against reported BMPs.
 - The current perception is there is a significant number of under-reported urban/developed stormwater BMPs. In turn, BMP reconciliation will be an important activity under this initiative.
 - Collaboration and assistance for MS4 municipalities is necessary for long-term success and PRP obligations in the next permit cycle.
- Actions and Proposed BMPs
 - Action 4.1 Basin Retrofits Pilot Project
 - Build basin retrofits program that can be mimicked across the county.
 - Action 4.2 MS4 Compliance Assistance
 - Provide assistance based on needs for compliance activities.
 - Action 4.3 MS4 Circuit Rider
 - Primarily focused on PCSM BMPs inventory generation and management.
 - Critical personnel for BMP reconciliation and long-term verification processes.
 - Action 4.4 Existing BMP Needs
 - Assumed long-term practices (e.g. maintenance) will require attention after building complete PCSM BMP inventory
 - Action 4.5 Catchment Targeting Initiative (for developed areas)

- Action 4.6 BMP Reporting Reconciliation
- Action 4.7 Existing Plans alignment
 - Ensure efforts and actions do not conflict with other plans and efforts (e.g. Act 167 plan).
- Action 4.8 PennDOT PRP reductions
 - Foster collaborative arena for MS4 municipalities and PennDOT with the intent to identify and assist with BMP implementation providing reductions for multiple entities including PennDOT.
- Action 4.9 Joint PRP projects
 - Communicate regional opportunities to MS4 municipalities that may provide reductions to multiple entities.
- Action 4.10 Stormwater BMP implementation
 - Runoff Reduction Performance Standards – 3,000 new acres treated
 - *The total post-development runoff volume that is reduced through canopy interception, soil amendments, evaporation, rainfall harvesting, engineered infiltration, extended filtration or evapotranspiration.*
 - Stormwater Treatment Performance Standards – 89 new acres treated
 - *Total post-development runoff volume that is reduced through a permanent pool, constructed wetlands or sand filters have less runoff reduction capability, and their removal rate is lower than runoff reduction.*
 - Wet Ponds and Wetlands – 50 new acres treated
 - *A stormwater facility constructed through filling and/or excavation that provides both permanent and temporary storage of stormwater runoff. It has an outlet structure that creates a permanent pool and detains and attenuates runoff inflows and promotes the settlement of pollutants.*
 - Infiltration Practices – 64 new acres treated
 - *A depression to form an infiltration basin where sediment is trapped and water infiltrates the soil.*
 - Bioretention – 58 new acres treated
 - *An excavated pit backfilled with engineered media, topsoil, mulch, and vegetation. These are planting areas installed in shallow basins in which the storm water runoff is temporarily ponded and then treated by filtering through the bed components, and through biological and biochemical reactions within the soil matrix and around the root zones of the plants.*
 - Bioswale – 25 new acres treated
 - *Bioswales are channels designed to concentrate and convey stormwater runoff while removing debris and pollution. Bioswales can also be beneficial in recharging groundwater. Bioswales are typically vegetated, mulched, or xeriscaped.*

- Central platform to be based on existing tools developed by the Chesapeake Conservancy.
 - Long-term monitoring game plan to measure progress and success should be developed in conjunction with platform development.
 - Action 5.2 Reporting QA/QC
 - Established flowchart for BMP capture and reporting
 - Action 5.3 Catchment Targeting Initiative and BMP Reconciliation
 - Ensure captured data and information from Catchment Targeting efforts are displayed appropriately.
- Implementation Considerations
 - Challenges
 - Funding for GIS related hardware and software that will result in more efficient data capture and entry; and
 - Conflicting requirements for data management, data entry, and related considerations.
 - Opportunities for Success
 - Leveraging existing County GIS resources, knowledge, and capabilities to appropriately capture and display data and information; and
 - Building upon the water quality model under development in the Octorara watershed.

REPORTING AND SUPPORT DOCUMENTS

Reporting and support documents included in the C3AP are:

- Proposed BMPs for Implementation (“BMP Implementation Scenario”)
 - Outlines specific BMPs and total quantities proposed for implementation and delineated between the agricultural and non-agricultural (developed/other) sectors.
- Initiatives Tracking Document(s) (PADEP Planning and Progress Template)
 - Summarizes Priority Initiatives in a tracking spreadsheet
 - Tracking documents include:
 - *Catchment Targeting*
 - *Agriculture*
 - *Buffers and Streams*
 - *Municipal*
 - *Data Management*
- Programmatic Recommendations Document (PADEP Programmatic Template)
 - Summarizes programmatic and/or policy change recommendations that would reduce challenges for successful CAP implementation

This page is intentionally left blank.

Chester County Agriculture Best Management Practices (BMPs) Proposed Implementation Rates

Best Management Practice	Amount	Units of Measure	Percent of Total Available Acres
Agriculture Compliance			
Soil Conservation and Water Quality Plans	26,210	Total Acres	~75%
Nutrient Management Core N	12,000	Total Acres	~30%
Nutrient Management Core P	8,000	Total Acres	~30%
Barnyard Runoff Control	20	New Acres	~75%
Soil Health			
Tillage Management-High Residue	11,000	Acres/Year	46%
Tillage Management-Conservation	8,000	Acres/Year	~35%
Cover Crop Traditional	6,000	Acres/Year	24%
Cover Crop Traditional with Fall Nutrients	12,500	Acres/Year	~50%
Commodity Cover Crops	300	Acres/Year	~2%
Prescribed Grazing	1,350	Total Acres	~25%
Horse Pasture Management	1,450	Total Acres	~25%
Expanded Nutrient Management			
Nutrient Management N Rate	5,000	Acres	~12%
Nutrient Management P Rate	5,000	Acres	~12%
Nutrient Management N Placement	4,000	Acres	~10%
Nutrient Management P Placement	4,000	Acres	~10%
Nutrient Management N Timing	4,000	Acres	~10%
Nutrient Management P Timing	4,000	Acres	~10%
Manure Storage Facilities			
Manure Storage Facilities	11,925	New AU's	N/A
Dairy Precision Feeding			
Dairy Cow Precision Feed Management	4,000	Dairy Cow AU's	52%
Integrated System for Elimination of Excess			
Manure Transport out of Chester County	1,000	Dry Tons/Year	N/A
Agriculture Riparian Zone			
Forest Buffer	300	New Acres	N/A
Forest Buffer-Streamside with Exclusion Fencing	300	New Acres	~21%
Forest Buffer-Narrow with Exclusion Fencing	200	New Acres	~15%
Grass Buffer	200	New Acres	N/A
Grass Buffer-Streamside with Exclusion Fencing	110	New Acres	~8%
Grass Buffer-Narrow with Exclusion Fencing	80	New Acres	~6%

The agriculture BMP implementation rates provided above are based on a combination of the state recommendations identified in the Chesapeake Bay Phase 3 Watershed Implementation Plan (WIP), engagements with local TSPs and agencies, and the Chester County Steering Committee.

Chester County Stormwater Best Management Practices (BMPs) Proposed Implementation Rates

Best Management Practice	Amount	Units of Measure	Percent of Total Available Acres
Urban/Developed Areas Riparian Zone			
MS4 Riparian Forest Buffers	20	New Acres	~2%
Non-MS4 Forest Buffers	30	New Acres	~2%
Woods and Pollinator Habitat			
Conservation Landscaping	100	New Acres	N/A
Urban Forest Planting	20	New Acres	N/A
Urban Tree Canopy			
MS4 Urban Tree Canopy	10	New Acres	N/A
Forest, Farm, and Natural Areas Conservation			
Farmland Conservation	4,000	Total Acres	N/A
Forest Conservation	300	Total Acres	N/A
Wetland Conservation	20	Total Acres	N/A
Stream and Wetland Restoration			
Urban Stream Restoration	12,000	New Linear Feet	N/A
Non-urban Stream Restoration	22,430	New Linear Feet	N/A
Wetland Creation	15	New Acres	N/A
Wetland Restoration	30	New Acres	N/A
Control Measures for Illicit Discharges			
Advanced Grey Infrastructure IDD&E Control	3,000	Acres Treated	1%
Stormwater Control Measures			
Stormwater Performance Stds - RR	3,000	New Acres Treated	N/A
Stormwater Performance Stds - ST	89	New Acres Treated	N/A
Wet Ponds and Wetlands	50	New Acres Treated	N/A
Infiltration Practices	64	New Acres Treated	N/A
Bioretention/raingardens	58	New Acres Treated	N/A
Bioswales	25	New Acres Treated	N/A
Vegetated Open Channels	30	New Acres Treated	N/A
Filtering Practices	25	New Acres Treated	N/A
Industrial Stormwater			
Impervious Surface Reduction	4.00	Acres	N/A
Fertilizer Legislation			
Urban Nutrient Management	2,000	Acres	8%
Septic Systems			
Conventional Septic Denitrification	3,000	Systems	~18%
Septic System Pumping	6,000	Systems	~35%
Dirt & Gravel Road Program			
Driving Surface + Raising the Roadbed	2,000	Linear Feet	N/A

The stormwater BMP implementation rates provided above are based on a combination of the state recommendations identified in the Chesapeake Bay Phase 3 Watershed Implementation Plan (WIP), engagements with local agencies, and the Chester County Steering Committee.

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

Green - action has been completed or is moving forward as planned **Yellow** - action has encountered minor obstacles **Red** - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available			Resources Needed			Review Checklist Comments
							Technical	Source	Financial	Source	Technical	Suggested Source	

Priority Initiative 1: Catchment Targeting Initiative

1.1	Catchment Assessments and Prioritization	<p>All 59 catchments assessed prior to 2025</p> <p>Game plan outlining "step-by-step" analysis process by end of 2021</p>	<p>Chester County Conservation District (CCCD), Chester County Water Resources Authority (CCWRA), Technical Service Providers (TSPs), watershed groups, local municipalities, Environ. Advisory Committees (EACs), Ag Action Team (AT), Riparian Buffer (RB) Action Team (AT), Municipal Action Team (AT), Data Management (DM) Action Team (AT)</p>	All areas (all catchments to be assessed)	<p>59 total catchments 2021: 4, 2022: 20, 2023: 20, 2024: remaining (dependent on acquired funding)</p> <p>Timeline with no additional funding for 59 total catchments: 2021: 2-3 2022-2030 at 6/year</p>	<p>Use the Catchment Management Database (CMD) as preliminary prioritization to assess individual catchments and outline conditions, needs, opportunities, etc.</p> <p>"Political" overlay with initial steps including local municipality outreach to determine willingness or receptiveness is critical</p> <p>"Boots-on-the-ground" funding and capacity for engagements, assessments, etc.</p> <p>Coordinate with other action teams for agricultural, buffer, and urban conservation opportunities and needs</p> <p>Lack of funding would result in a timeline through 2029/2030 to cover all catchments with existing resources (~6/yr)</p> <p>Efforts should result in regional projects that provide multiple benefits where</p>	<p>CCCD, Octoraro Watershed Association (OWA), Stroud, Alliance for the Ches. Bay (ACB), Ches. Bay Foundation (CBF), Chesapeake Conservancy, Brandywine Conservancy, Ag Preserve. Board, local engineers/consultants, County DCIS (Dept. of Computer and Info. Services), TSPs, CCWRA</p>		NFWF, Chesapeake Bay Trust (CBT)		Centralized database platform		<p>\$2,500/catchment (~\$50,000/yr) for on-the-ground efforts, engagements etc. (TOTAL: \$147,500)</p> <p>Assume assessments personnel and funding will convert to long-term verifications personnel and funding; and potentially maintenance</p>	TBD	
-----	--	---	--	---	---	---	---	--	----------------------------------	--	-------------------------------	--	---	-----	--

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

Green - action has been completed or is moving forward as planned Yellow - action has encountered minor obstacles Red - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available			Resources Needed			Review Checklist Comments	
							Technical	Source	Financial	Source	Technical	Suggested Source		Financial
						accelerated permitting processes would be ideal.* Action is inherently tied to all other priority initiatives. Catchment targeting will involve a desktop analysis step followed by game plan for outreach and field verifications outlining the who, when, where, etc.								
1.2	Conservation Opportunities	<i>Farmland Conservation – 4,000 total acres</i> <i>Forest Conservation – 300 total acres</i> <i>Wetland Conservation – 20 total acres</i>	CCCD, Ag Preserve Board, County, local watershed groups	All areas with emphasis on prioritized catchments	On-going with inherent tie to Action 5.1	Potentially extend Eco Invest. Partners (EIP) P3 in Cecil County (Elk and North East watersheds) into Chester County. Transfer of Development Rights (TDR) Programs Carbon credits program for private forests (provides incentives for forest conservation that also provides nutrient and sediment reductions)	Ag Preserve. Board, Cecil Land Trust, Brandywine Conservancy, local TSPs		Ag Preserve. Board					

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

Green - action has been completed or is moving forward as planned Yellow - action has encountered minor obstacles Red - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available			Resources Needed			Review Checklist Comments	
							Technical	Source	Financial	Source	Technical	Suggested Source		Financial
1.3	Low Volume (LV) / Dirt & Gravel Road Opportunities	<i>Driving Surface + Raising the Roadbed – 2,000 new linear feet</i>	CCCD, local municipalities	All areas	On-going with inherent tie to Action 5.1	Continue popular local program	CCCD						Capital Cost: ~\$30,000	

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 though outreach, assistance or funding, and who will be responsible for delivering the identified programs or practices.

Geographic Location = Where. This field identifies the geographic range of the planned implementation. This could extend to the entire county or down to a small watershed, based on the scale of the Priority Initiative, range of the Responsible Party, or planned funding/resources. *NOTE: Resource limitations alone should not limit potential implementation as additional funding may become available in the future.*

Expected Timeline = When. Provide the expected completion date for the planned activity. This should be a reasonable expectation, based on knowledge and experience, that will aid in tracking progress toward addressing the Priority Initiative.

Resources Available: Technical & Funding = This field will note technical and financial resources secured/available to implement the program (Description). This is the total of the resources identified in the County Resources Inventory Template below allocated to the priority initiative as a whole; or, if available, to each action.

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

Green - action has been completed or is moving forward as planned
 Yellow - action has encountered minor obstacles
 Red - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available			Resources Needed			Review Checklist Comments	
							Technical	Source	Financial	Technical	Suggested Source	Financial		Suggested Source

Resources Needed: Technical & Funding = This field will note technical and financial resources needed/outstanding to implement the program (Description). This is the total of the additional resources projected and identified as needed in the County Resources Inventory Template below allocated to the priority initiative as a whole; or, if possible, to each action.

Potential Implementation Challenges/Issues = This field will note challenges and issues that may delay program implementation (Description).

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

Green - action has been completed or is moving forward as planned **Yellow** - action has encountered minor obstacles **Red** - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available			Resources Needed			Review Checklist Comments
							Technical	Source	Financial	Source	Technical	Suggested Source	

Priority Initiative 2: Agriculture

2.1	Plain sect farmers outreach and engagement	No specific target, success will be measured by implementation rates of BMPs on plain sect farms <i>One farm-anchor project in 2022</i> <i>Game plan that includes Environmental Education (EE) Grant content details 1st qtr 2022</i>	Chester County Conservation District (CCCD)	All areas with inherent tie to prioritized catchments	On-going with inherent tie to Action 2.3 Game plan development in late 2021 to early 2022 that includes details for an Environmental Education (EE) grant application (game plan intended to detail who, what, where, etc. that forms the basis of an EE application)	Specific individual solely focused on plain sect community engagement and assistance (boots-on-the-ground) Organize teams (similar to PSU teams) to target 1 or 2 communities (reference BC efforts in Honeybrook area) "Bay Fisherman to Amish Country" endeavor (bring fisherman up from the Bay for field day) Macros training via Amish schools (Octoraro Watershed Association effort) and kits Funding for outreach individual is necessary to improve probability of finding the right individual*	CCCD		EE Grant Envirothon (being used for kits)	DEP	Individual with a blend of technical knowledge, experience, and ability to successfully engage the plain sect community	TBD (retired farmer?)	\$35,000/year (assuming part-time individual to start)	
-----	--	---	---	---	--	--	------	--	--	-----	---	-----------------------	--	--

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

Green - action has been completed or is moving forward as planned **Yellow** - action has encountered minor obstacles **Red** - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available			Resources Needed			Review Checklist Comments
							Technical	Source	Financial	Source	Technical	Suggested Source	

2.2	General ag-focused education and outreach	No specific target, success will be measured by implementation rates of BMPs across the ag sector <i>Game plan 1st qtr 2022</i>	CCCD, Chester County Water Resources Authority (CCWRA), Technical Service Providers (TSPs), Penn State Extension, NRCS, watershed groups	All areas with emphasis provided towards prioritized catchments	On-going, with inherent tie to Action 2.3 Game plan in late 2021 to early 2022	Digital and paper support materials (comparing compliance vs. stewardship) Series of publications outlining individual BMPs (build off CCCD initial efforts) One-on-one engagements with individual farmers. Funding for outreach individual is necessary to improve probability of finding the right individual*	CCCD, CCWRA, Penn State Extension, TSPs, NRCS, Ag Preserve Board		EE Grant	DEP	Individual with a blend of technical knowledge, experience, and ability to successfully engage the ag. community		See Financial Need for Action 1.1 for proposed individual	
-----	---	---	--	---	---	---	--	--	----------	-----	--	--	---	--

2.3	Catchment Targeting Initiative	Metrics inherently tied to other action items (needs will be established on a catchment-to-catchment basis)	Ag Action Team (AT), Data Management (DM) Action Team (AT), Catchment Targeting (CT) Action Team (AT), Municipal Action Team (AT), watershed groups, local municipalities, Brandywine Conservancy, CCCD, CCWRA, Environ. Advisory Committees (EACs)	Prioritized catchments (TBD)	Late 2021 launch with inherent tie to Priority Initiative (P.I.) 1- Catchment Targeting Initiative (with funding: 4 catchments in 2021, 20 in 2022)	Partner with Catchment Targeting (CT) AT during catchment prioritization efforts to identify individual catchment needs, BMP probabilities, etc. specifically for the ag sector	Practice Keeper (PK)						See P.I. 1 for overall catchment targeting financial needs	
-----	--------------------------------	---	---	------------------------------	---	---	----------------------	--	--	--	--	--	--	--

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

Green - action has been completed or is moving forward as planned **Yellow** - action has encountered minor obstacles **Red** - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available			Resources Needed			Review Checklist Comments
							Technical	Source	Financial	Source	Technical	Suggested Source	

2.4	Focused Ag BMP implementation	<p><i>Soil Conservation and WQ Plans – 26,210 total acres</i></p> <p><i>Nutrient Management Core N – 12,000 total acres</i></p> <p><i>Nutrient Management Core P – 8,000 total acres</i></p> <p><i>Barnyard Runoff Control – 20 new acres</i></p> <p><i>Prescribed Grazing – 1,350 total acres</i></p> <p><i>Manure Storage Facilities – 11,925 new AUs</i></p> <p><i>Precision Feeding – 4,000 Dairy Cow AUs</i></p>	CCCD, NRCS, TSPs	All areas with emphasis provided towards prioritized catchments	On-going with inherent tie to Action 2.3	<p>Promote broad slate of BMP types across ag industry and based on individual farm conservation needs based on initial implementation scenario</p> <p>Future scenario adjustments based on rates of implementation realized and progress under BMP reconciliation efforts</p> <p>Assume increased realized and/or capture of unreported acres through catchment targeting</p> <p>Farmer/Amish community resistance to buy-in (including farmers indicating they do not want assistance as they are unsure if they will still be in business in 2-3 years)</p> <p>Partner with Riparian Buffer (RB) AT for potential buffer bonus or buffers implementation</p> <p>Need to separate “inspections” from “verifications” and acquiring info/data from farmers</p>	Farm survey, CCCD Bay Implem. Plan, Penn State Extension, NRCS, TSPs, CCCD, Ag Preserve Board	REAP, CEG, EQIP, RCPP, Most Effective Basin Funding (MEBF), State Reimb. Program, PennVEST, PL566	Various	<p>Practice Keeper (PK) entry/ mgmt at CCCD</p> <p>Long-term verification processes</p>	<p>\$110,000/yr – 2 persons (PK mgmt- individual dedicated to PK; verifications person/field)</p> <p>Capital Costs: ~\$14.6 million</p>	TBD (various existing programs may need to be augmented with other sources)	
-----	-------------------------------	---	------------------	---	--	---	---	---	---------	---	---	---	--

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

Green - action has been completed or is moving forward as planned **Yellow** - action has encountered minor obstacles **Red** - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available			Resources Needed			Review Checklist Comments
							Technical	Source	Financial	Source	Technical	Suggested Source	

2.5	Mushroom Farms Conservation	Metrics inherently tied to other action items	CCCD, TSPs	All mushroom farms	2022-2025 (4 year cycle, via Growing Greener funding)	Continued specific individual at CCCD focused on mushroom industry (plans, assistance, and inspections) Mushroom composting as a delineated and specific BMP would provide reductions*	Mushroom farm resource conserve. on staff (via GG funding), TSPs		Growing Greener (GG) funding for current staff		Resource Conserv. Focused on mushroom industry	GG application submitted (2021)	GG app: \$200,000 (+~\$40,000 match)	DEP	
2.6	BMP Reporting Reconciliation		Ag AT, Data Mgmt AT, Catchment Targeting AT	All areas with focused actions in prioritized catchments	Aligned with Action 2.3 activities	Partner with Data Management AT for reconciliation of BMP reporting numbers (primarily through catchment targeting) Current perception/ organization of BMP targets is a mix of uncaptured/ underreported BMPs and additional BMP implementation. Reconciliation in conjunction with catchment targeting will provide a pathway to delineate (and capture) underreported BMPs and needs for additional BMPs. Transfer of BMPs from NRCS and other entities into local PK platform would streamline process*	CCCD, TSPs, NRCS, Ag. Preserv. Board, County DCIS (Dept. of Computer and Info. Services) PK				See Action 1.4 for technical needs		See Action 2.4 for financial needs		

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

Green - action has been completed or is moving forward as planned **Yellow** - action has encountered minor obstacles **Red** - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available			Resources Needed			Review Checklist Comments	
							Technical	Source	Financial	Source	Technical	Suggested Source		Financial
2.7	Horse Farms Conservation	Horse Pasture Management – 1,450 total acres	CCCD, TSPs, NRCS	All horse farms with outreach driven by prioritized catchments	Coincides with Catchment Targeting Initiative and Action 2.3 (where horse farms are encountered)	A number of pastures may meet requirements but are not captured at this time. Individual farms may present other opportunities based on conservation needs. Current definition of horse pasture management does not provide nutrient reductions*	CCCD, TSPs, NRCS, PA Horse Breeders Assoc. (PHBA)		Breeders Fund EQIP, etc.				\$521,739 (capital cost only- assuming full implement. required)	
2.8	Road run-off to farms	Game plan early 2022	CCCD, local municipalities, PennDOT, TSPs, EACs	All areas with emphasis on prioritized catchments	Game plan late 2022 that determines method to capture farms and identifies and spells out partners that need to be involved and arena(s) for coordination	Delineate between PennDOT and local roads as distinct approaches required for each type of agency Infrastructure improvements may be required to mitigate impacts from runoff	Local engineers, TSPs, PennDOT, County Planning		Metropol. Planning Org. TIP, American Rescue Plan Act (ARCA) Local Relief Fund, PennVEST	DEP				

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

Green - action has been completed or is moving forward as planned **Yellow** - action has encountered minor obstacles **Red** - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available			Resources Needed			Review Checklist Comments
							Technical	Source	Financial	Source	Technical	Suggested Source	

2.9	Farmer's only Roundtable		Ideally minimum of five (5) local farmers	Active farmers located in the Chesapeake Bay Watershed (CBWS)	2022	<p>Extension of previous focus activities providing an arena for farmers ONLY (no others) that report back thoughts, recommendations, etc.</p> <p>Provide topics/talking subjects (e.g. how to create "win-win" scenarios)</p>	Local farmers								
-----	--------------------------	--	---	---	------	--	---------------	--	--	--	--	--	--	--	--

2.10	Soil Health BMP Implementation	<p><i>Tillage Mgmt High Residue – 11,000 total acres/yr</i></p> <p><i>Tillage Mgmt Conservation – 8,000 total acres/yr</i></p> <p><i>Cover Crop Traditional – 6,000 total acres/yr</i></p> <p><i>Cover Crop with Fall Nutrients – 12,500 total acres/yr</i></p> <p><i>Commodity Cover Crops – 300 total acres/yr</i></p>	CCCD, TSPs, NRCS	All areas with emphasis provided towards prioritized catchments	Coincides with Catchment Targeting Initiative and Action 2.3	<p>Future scenario adjustments based on rates of implementation realized and progress under BMP reconciliation efforts</p> <p>Assume increase on implementation through catchment targeting</p> <p>Limited definition of cover crops and what counts as a reduction*</p> <p>Potential gap between FSA reporting and CAST reported data</p> <p>Lock down and potentially expand transect survey process</p> <p>Funding to launch incentives for</p>	CCCD, Penn State Extension, NRCS, TSPs, transect survey, Penn State AEC/ farm survey		REAP, CEG, EQIP, RCPP, MEBF, PennVEST, PL566	Various			Capital Cost: ~\$1.4 million	\$20,000 for cover crops incentive program start-up	
------	--------------------------------	--	------------------	---	--	--	--	--	--	---------	--	--	------------------------------	---	--

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

Green - action has been completed or is moving forward as planned Yellow - action has encountered minor obstacles Red - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available				Resources Needed			Review Checklist Comments
							Technical	Source	Financial	Source	Technical	Suggested Source	Financial	

						adopting cover crops would remove barriers for certain farmers*									
2.11	Expanded Nutrient Management	<i>NM N Rate – 5,000 acres</i> <i>NM N Placement – 4,000 acres</i> <i>NM N Timing – 4,000 acres</i> <i>NM P Rate – 5,000 acres</i> <i>NM P Placement – 4,000 acres</i> <i>NM P Timing – 4,000 acres</i>		All areas with emphasis provided towards prioritized catchments	Coincides with Catchment Targeting Initiative and Action 2.3	Aim to increase level of organization and understanding of developed, implemented, and back-logged Soil Conservation Plans prior to tackling expanded nutrient management planning and approaches	CCCD, Penn State Extension, NRCS, TSPs, Penn State AEC/farm survey		REAP, CEG, EQIP, RCPP, MEBF, PennVEST				Capital Cost: ~\$230,000		
2.12	Manure Transport	<i>Manure Transport out of Chester County – 1,000 DT/yr</i>	Farmers, haulers, CCCD, TSPs	All areas	On-going	Act 38 reporting	TSPs, NRCS, CCCD						Capital Cost: ~\$20,000		

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.

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

Green - action has been completed or is moving forward as planned Yellow - action has encountered minor obstacles Red - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources <u>Available</u>			Resources <u>Needed</u>			Review Checklist Comments	
							Technical	Source	Financial	Source	Technical	Suggested Source		Financial

Asterisk: Place an asterisk next to the action number(s) for action items that appear in both the County Planning and Progress Template and the Programmatic Recommendations Template.

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

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

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

Responsible Party(ies) = Who. This is/are the key partner(s) who will implement the action items through outreach, assistance or funding, and who will be responsible for delivering the identified programs or practices.

Geographic Location = Where. This field identifies the geographic range of the planned implementation. This could extend to the entire county or down to a small watershed, based on the scale of the Priority Initiative, range of the Responsible Party, or planned funding/resources. *NOTE: Resource limitations alone should not limit potential implementation as additional funding may become available in the future.*

Expected Timeline = When. Provide the expected completion date for the planned activity. This should be a reasonable expectation, based on knowledge and experience, that will aid in tracking progress toward addressing the Priority Initiative.

Resources Available: Technical & Funding = This field will note technical and financial resources secured/available to implement the program (Description). This is the total of the resources identified in the County Resources Inventory Template below allocated to the priority initiative as a whole; or, if available, to each action.

Resources Needed: Technical & Funding = This field will note technical and financial resources needed/outstanding to implement the program (Description). This is the total of the additional resources projected and identified as needed in the County Resources Inventory Template below allocated to the priority initiative as a whole; or, if possible, to each action.

Potential Implementation Challenges/Issues = This field will note challenges and issues that may delay program implementation (Description).

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

Green - action has been completed or is moving forward as planned **Yellow** - action has encountered minor obstacles **Red** - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available			Resources Needed			Review Checklist Comments
							Technical	Source	Financial	Source	Technical	Suggested Source	

Priority Initiative 3: Riparian Buffers and Streams

3.1	Buffer Opportunities and Targeting Tool(s)	See P.I. 5 (Data management) for targeting tool metrics	Riparian Buffer (RB) Action Team (AT), Data Management (DM) Action Team (AT), Catchment Targeting (CT) Action Team (AT), County Planning (CCPC), Chester County Water Resources Authority (CCWRA)	All areas with emphasis provided towards prioritized catchments	On-going with inherent tie to Priority Initiative (P.I.) 5	<p>Potentially extend Lancaster County tools (developed by Chesapeake Conservancy) into Chester County (Octoraro already included in LC tool)</p> <p>Assume BMP reconciliation can be achieved through targeting tool</p> <p>Field verification required through Catchment Targeting Initiative as efforts progress through individual catchments</p>	Chesapeake Conservancy, County, CCPC, Brandywine Conservancy, Stroud, Alliance for the Chesapeake Bay (ACB), Chesapeake Bay Foundation (CBF), Technical Service Providers (TSPs), Chester County Conservation District (CCCD), Lancaster County Conservation District (LCCD), CCWRA, County DCIS (Dept. of Computer and Info. Services)		NFWF, Growing Greener (GG)				See DM AT (P.I. 5) targeting tool action item for more information	TBD	
-----	--	---	---	---	--	---	---	--	----------------------------	--	--	--	--	-----	--

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

Green - action has been completed or is moving forward as planned **Yellow** - action has encountered minor obstacles **Red** - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available			Resources Needed			Review Checklist Comments
							Technical	Source	Financial	Source	Technical	Suggested Source	

3.2	Ag Riparian Zone	Forest Buffer – 300 new acres	CCCD, TSPs, NRCS, watershed groups, Brandywine Conservancy, Stroud, ACB, CBF, Environ. Advisory Committees (EACs), Oxford Reg. Planning Comm., municipalities, MWS, CCPP, farmers	All areas with emphasis provided towards prioritized catchments (as catchments analyzed)	On-going with inherent tie to P.I. 1 (catchment targeting)	Farmer resistance or buy-in	CCCD, NRCS, TSPs, Stroud, ACB, CBF, watershed groups, Brandywine Conservancy		NFWF, GG, DCNR, CREP, Keystone, TreeVitalize, PACD, RCPP, EQIP, Most Effective Basin Funding (MEBF), Chesapeake Bay Trust (CBT)				Capital Cost: ~\$7.5 million			
		Forest Buffer with exclusion fencing – 300 new acres				Proposed implementation numbers need reconciled as general perception is proposed BMP rates are more than available or capable										Buffers with exclusion fencing are exclusive to riparian corridors (and applied to pasture land uses); Buffers (no exclusion fencing) are not exclusive to riparian corridors and applied to crop, hay, turfgrass, and similar land uses (can be applied to field borders and similar upland scenarios). Separate coding or definitions reflecting these conditions would be ideal.*
		Forest Buffer Narrow with exclusion fencing – 200 new acres														
		Grass Buffer – 200 new acres														
		Grass Buffer with exclusion fencing – 110 new acres														
Grass Buffer Narrow with exclusion fencing – 80 new acres																

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

Green - action has been completed or is moving forward as planned **Yellow** - action has encountered minor obstacles **Red** - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available			Resources Needed			Review Checklist Comments
							Technical	Source	Financial	Source	Technical	Suggested Source	

3.5	Focused Stream Corridor BMP implementation	<i>Urban Stream Restoration – 12,000 new LF</i> <i>Non-urban Stream Restoration – 22,430 new LF</i> <i>Wetland Creation – 15 new acres</i> <i>Wetland Restoration – 30 new acres</i>	Local municipalities, TSPs, watershed groups, EACs, CCCD, developers	All areas with emphasis provided towards prioritized catchments (as catchments analyzed)	On-going with inherent tie to P.I. 1	Potential regional projects for PRP reductions distributed amongst multiple municipalities	CCCD, Trout Unlimited (TU), watershed groups, Brandywine Conservancy, local engineers/consultants, Cecil Land Trust/EIP		NFWF, GG, CBT, PennVEST, MEBF, private				Capital Cost: ~\$13.9 million		
-----	--	---	--	--	--------------------------------------	--	---	--	--	--	--	--	-------------------------------	--	--

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.

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

Green - action has been completed or is moving forward as planned **Yellow** - action has encountered minor obstacles **Red** - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available			Resources Needed			Review Checklist Comments	
							Technical	Source	Financial	Technical	Suggested Source	Financial		Suggested Source

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).

This page is intentionally left blank.

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

Green - action has been completed or is moving forward as planned Yellow - action has encountered minor obstacles Red - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available			Resources Needed			Review Checklist Comments	
							Technical	Source	Financial	Source	Technical	Suggested Source		Financial
Priority Initiative 4: Municipal														
4.1	Basin Retrofits Pilot Project		Chester County Conservation District (CCCD), Chester County Water Resources Authority (CCWRA)	Where basin and landowner receptiveness coincide	Late 2021 launch	Establish retrofits program that can be mimicked across the watershed A basin called out in an MS4 PRP could serve as the pilot	Local engineers/consultants, CCWRA, Chester County Parks and Preserv. HOA Open Space GIS layer		NFWF, Growing Greener (GG) (assuming spring 2022 availability)					
4.2	Minimum Control Measure (MCM) 3 (IDD&E) Compliance Assistance	<i>Advanced IDD&E Control – 3,000 acres treated</i>	CCWRA, local municipalities, Environmental Advisory Committees (EACs)	MS4 regulated areas	Ongoing	Identify needs and assistance channels for compliant MS4 programs (specifically MCM #3 for Illicit Discharge Detection & Elimination (IDD&E) and education/outreach channels)	DEP, local engineers/consultants, EPA				IDD&E public works training, mock inspections			
4.3	MS4 Circuit Rider	<i>Circuit Rider hired/secured (one full time staff equivalent)</i>	CCWRA, Environ. Advisory Committees (EACs), local municipalities, Oxford Reg. Planning Comm.	MS4 muni.	Ongoing once funding secured (ideally launch spring 2022)	PCSM BMPs inventory and verification processes If parameters for capture of underreported BMPs are known, process can commence at a limited version through catchment targeting under P.I. 1 and Action 4.5 Assist with coordinating and outreach efforts for next MS4 permit cycle in 2023	Local engineers/consultants, County DCIS (Dept. of Computer and Info. Services) Env. Finance Center (EFC)		NFWF		Centralized database platform Qualified individual that is familiar with MS4 program and Chester County	\$75,000/yr: capture BMPs, build inventory and/or verify USGS inventory and conduct long-term verification processes	TBD	

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

Green - action has been completed or is moving forward as planned Yellow - action has encountered minor obstacles Red - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available			Resources Needed			Review Checklist Comments
							Technical	Source	Financial	Source	Technical	Suggested Source	

4.4	Existing BMPs Needs	<i>Database of implemented stormwater BMPs by 2025</i>	CCCD, CCWRA, local municipalities, EACs, County DCIS, County Planning (CCPC)	All areas	Ongoing, but follows initial circuit rider and BMP reporting reconciliation efforts	Potential HOA assistance entity Initiate with MS4 municipalities with intent to follow-up with non-MS4s (first step is BMPs dated to 2003) Result of BMP inventory generation, BMP reporting reconciliation, and initial verifications for the identification of BMPs requiring maintenance, rehabilitation, and similar.	County, CCPC, local engineers/consultants, local maintenance contractors		NFWF, GG		Inventory of individual BMP needs (maint. needed, etc.) Potential HOA assistance entity MS4 GIS files	TBD (result of inventory and reconciliation processes) See Action 4.3 for Circuit Rider information		
4.5	Catchment Targeting Initiative	See Priority Initiative 1 for targets	Ag Action Team (AT), Data Management (DM) Action Team (AT), Catchment Targeting (CT) Action Team (AT), Muni Action Team (AT), watershed groups, local municipalities, Brandywine Conservancy, CCCD, CCWRA, EACs, CCPC	Prioritized Catchments (TBD)	Mid 2021 Launch with inherent tie to P.I. 1 (catchment targeting)	Partner with Catchment Targeting AT during catchment prioritization efforts to identify individual catchment needs, BMP probabilities, etc.				Centralized database platform (see P.I. 5)	See P.I. 1 for more information			

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

Green - action has been completed or is moving forward as planned **Yellow** - action has encountered minor obstacles **Red** - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available			Resources Needed			Review Checklist Comments
							Technical	Source	Financial	Source	Technical	Suggested Source	

4.6	BMP Reporting Reconciliation		Muni AT, Data Mgmt AT, Catchment Targeting AT	All areas (Catchment targeting analyses will result in 2 data tables: 1) conservation needs/opps., and 2) existing BMPs for reconciliation	Launch late 2021 with inherent tie to Action 4.5 (limited activities until reporting platform is known or the parameters at a minimum)	Partner with Data Management AT for reconciliation of BMP reporting numbers (primarily through catchment targeting) Receive back organized data USGS has requested for Ch. 102/land development BMPs; may require Data Mgmt. AT to re-organize data and information All performance targets assume significant level of uncaptured BMPs in numbers. Knowing parameters/ attributes that need captured for ultimate reporting would be ideal.*	Practice Keeper (PK) County Dept. of Computer and Info. Services (DCIS) EFC				Centralized database platform Circuit Rider MS4 reporting platform for Ch. 102/ PCSM BMPs		See Action 4.3 for more information	
-----	------------------------------	--	---	--	--	---	---	--	--	--	---	--	-------------------------------------	--

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

Green - action has been completed or is moving forward as planned Yellow - action has encountered minor obstacles Red - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available			Resources Needed			Review Checklist Comments		
							Technical	Source	Financial	Source	Technical	Suggested Source		Financial	Suggested Source
4.7	Existing Plans Alignment	<i>Game plan by late 2021</i>	Local municipalities, EACs, CCWRA, CCPC, CCCD	All areas	Ongoing with inherent tie to Action 4.5	Ensure efforts do not conflict and/or align with other efforts (e.g. county Act 167 plan) Game plan and coordination with Catchment Targeting AT (P.I. 1) for complete list of existing plans that need to encompassed by the process	CCWRA, Brandywine Conservancy Oxford regional plans inventory completed with NFWF funding				Potentially new GIS layers for certain plans or information				
4.8	PennDOT PRP Reductions		EACs, CCWRA, CCCD, local municipalities, Environ. Finance Center (EFC)	PennDOT MS4 areas	Ongoing with inherent tie to Action 4.5	Collaborative and joint project opportunities	Local engineers/consultants, PennDOT								
4.9	Joint PRP Projects		Local municipalities, EACs, EFC, local watershed groups, Oxford Reg. Planning Comm.	MS4 regulated areas	Ongoing (differing PRP cycles amongst MS4s)	Foster collaborative arena for multi-municipal projects providing regional benefits through cost-effective BMP implementation. Currently assuming this may be more applicable during the 2023-2027 permit cycle).	Local engineers/consultants, Brandywine Conservancy MS4 PRPs EFC		NFWF, GG, CBT, PennVEST, American Rescue Plan Act (ARPA) Local Relief Fund, local municipal.						

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

Green - action has been completed or is moving forward as planned **Yellow** - action has encountered minor obstacles **Red** - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available			Resources Needed			Review Checklist Comments	
							Technical	Source	Financial	Source	Technical	Suggested Source		Financial
4.10	Stormwater BMP Implementation	<p><i>Rate Reduction SWP Standards – 3,000 new acres treated</i></p> <p><i>Treatment SWP Standards – 89 new acres treated</i></p> <p><i>Wet Ponds and Wetlands – 50 new acres treated</i></p> <p><i>Infiltration Practices – 64 new acres treated</i></p> <p><i>Bioretention – 58 new acres treated</i></p> <p><i>Bioswales – 25 new acres treated</i></p> <p><i>Vegetated Open Channels – 30 new acres treated</i></p> <p><i>Filtering Practices – 25 new acres treated</i></p> <p><i>Impervious Surface Reduction – 4 acres</i></p>	Local municipalities, developers, CCCD, CCWRA, EACs, Oxford Reg. Comm., CCPC	All areas with emphasis provided towards prioritized catchments	Ongoing (timing tied to catchment analyses funding and Actions 4.5 and 4.6)	<p>MS4 PRP projects to be reported via annual reports</p> <p>Significant uncaptured and/or underreported BMPs are assumed in this category and difficult to project. Assume significant progress achieved through BMP reporting reconciliation occurs for revisions to BMP implementation scenario in 2023 to better reflect rates.</p> <p>BMP implementation values include projects outlined in PRPs (where available)</p> <p>Landowner resistance or buy-in</p>	Local engineers/ designers, DEP, Stroud, CCWRA, Brandywine Conservancy, Penn State, EFC		County DCIS data				<p>Capital Cost: ~\$TBD (after reconciliation and BMP rates revisions)</p> <p>Current assumptions are roughly 50%-70% of BMP values are already in place and uncaptured for reporting.</p>	

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

Green - action has been completed or is moving forward as planned Yellow - action has encountered minor obstacles Red - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available			Resources Needed			Review Checklist Comments
							Technical	Source	Financial	Source	Technical	Suggested Source	
4.11	Urban Landscape	<i>Conservation Landscaping – 100 total acres</i> <i>Urban Forest Planting – 20 new acres</i> <i>MS4 Tree Canopy – 10 new acres</i> <i>Urban Nutrient Management – 2,000 acres</i>	CCCD, CCWRA, EACs, local municipalities, Brandywine Conservancy	All areas with emphasis provided towards prioritized catchments	Ongoing with inherent tie to Action 4.5	Urban nutrient management is tied to fertilizer legislation at the state level.* Landowner resistance or buy-in	ACB, CBF, DCNR, CCPC, CCWRA, Stroud, Brandywine Conservancy County DCIS		DCNR, Keystone, NFWF, GG, CBT, local municipal.			Capital Cost: ~\$45,000	
4.12	Septic Systems	<i>Conventional Septic Denitrification – 3,000 systems</i> <i>Septic System Pumping – 6,000 systems</i>	Local municipalities, CCWRA	All areas outside public sewage areas	On-going, with primary info capture and analysis in 2022 with developed game plan	Use County GIS/ Health Dept. information for septic systems tracking and convert to reportable data (capture of existing systems) Initial analysis reveals approximately 17,700 septic systems (currently assuming 50% compliant systems until further analysis in completed)	County DCIS, County Health Dept., local municipalities, CCPC			GIS support			

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.

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

Green - action has been completed or is moving forward as planned Yellow - action has encountered minor obstacles Red - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available			Resources Needed			Review Checklist Comments	
							Technical	Source	Financial	Technical	Suggested Source	Financial		Suggested Source

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).

This page is intentionally left blank.

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

Green - action has been completed or is moving forward as planned Yellow - action has encountered minor obstacles Red - action has not been taken or has encountered a serious barrier

Action #	Description	Performance Target(s)	Responsible Party(ies) and Partnerships	Geographic Location	Expected Timeline	Potential Implementation Challenges or Recommendations	Resources Available			Resources Needed			Review Checklist Comments	
							Technical	Source	Financial	Source	Technical	Suggested Source		Financial
Priority Initiative 5: Data Management														
5.1	Centralized GIS-based database/platform and targeting tool	<i>Game plan 4th qtr. 2021</i>	Chester County Conservation District (CCCD), Octoraro Watershed Association (OWA), County, Chester County Water Resources Authority (CCWRA)	All areas (catchments)	Ongoing; game plan by late 2021	Engage Chesapeake Conservancy to potentially expand Lancaster County's platform (CWMT) into Chester County (Octoraro watershed already included in platform) to provide centralized data management platform for Catchment Management Database (CMD) inventory, opportunities targeting, and BMP reconciliation	County DCIS (Dept. of Computer and Info. Services), OWA, Chesapeake Conservancy, Brandywine Conservancy, watershed groups, local engineers/consultants, CCWRA						\$25,000 - \$40,000 (depends on extent existing platform requires modifications and/or needs to expand into Chester County) \$TBD for long-term platform management	Public (DEP, county, etc.) and/or private (Campbell Foundation, etc.)
5.2	Reporting QA/QC		CCCD, NRCS, County, local municipalities, OWA, local watershed groups	All areas	Ongoing	Develop and monitor flowchart representing different BMP/data reporting processes to help ensure all new BMPs, captured BMPs, etc. are reported through the right mechanisms	Practice Keeper (PK), FieldDoc, County DCIS						Inherent ties to PK manager (Action 2.4) and Circuit Rider (Action 4.3)	
5.3	Catchment Targeting Initiative and BMP reconciliation	Tied to P.I. 1 metrics	CCCD, OWA, County, local municipalities, local watershed groups, Environ. Advisory Committees (EACs), Oxford Reg. Planning Comm., DEP,	All areas (catchments)	Ongoing; tied to platform development and Priority Initiative 1 (Catchment Targeting)	Ensure centralized platform appropriately captures and displays individual catchment needs, captured unreported BMPs, etc. and aligns with reporting processes Identify other parameters,	County DCIS, County Planning (CCPC)							

			Chester County Water Resources Authority (CCWRA)			information, data, etc. appropriate for capture and display in centralized platform									

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

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

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

Asterisk: Place an asterisk next to the action number(s) for action items that appear in both the County Planning and Progress Template and the Programmatic Recommendations Template.

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

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

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

Responsible Party(ies) = Who. This is/are the key partner(s) who will implement the action items through outreach, assistance or funding, and who will be responsible for delivering the identified programs or practices.

Geographic Location = Where. This field identifies the geographic range of the planned implementation. This could extend to the entire county or down to a small watershed, based on the scale of the Priority Initiative, range of the Responsible Party, or planned funding/resources. *NOTE: Resource limitations alone should not limit potential implementation as additional funding may become available in the future.*

Expected Timeline = When. Provide the expected completion date for the planned activity. This should be a reasonable expectation, based on knowledge and experience, that will aid in tracking progress toward addressing the Priority Initiative.

Resources Available: Technical & Funding = This field will note technical and financial resources secured/available to implement the program (Description). This is the total of the resources identified in the County Resources Inventory Template below allocated to the priority initiative as a whole; or, if available, to each action.

Resources Needed: Technical & Funding = This field will note technical and financial resources needed/outstanding to implement the program (Description). This is the total of the additional resources projected and identified as needed in the County Resources Inventory Template below allocated to the priority initiative as a whole; or, if possible, to each action.

Potential Implementation Challenges/Issues = This field will note challenges and issues that may delay program implementation (Description).

Phase 3 Watershed Implementation Plan (WIP) Programmatic Recommendations Template

Action #	Description	Performance Target(s)	Expected Timeline	Potential Implementation Challenges	Potential Recommendations on Improvement	Resources Needed			
						Technical	Suggested Source	Financial	Suggested Source
Programmatic Recommendations: Chester County									
1.1	Expand cover crops (CC) definition (Action 2.10)	Added scenario for cover crops (Yes fall nutrients and yes spring harvest)	2022	Traditional CC: No fall nutrients and not harvested in the spring; Traditional CC w/fall nutrients: Yes fall nutrients but not harvested in spring; Commodity CC: No fall nutrients and is harvested in the spring; Missing classification: Yes fall nutrients and harvested in the spring.	Create a cover crops classification that allows the application of fall nutrients and is harvested in the spring.	Added definition in BMP Quick Reference Guide (or similar)			
1.2	Cover crop incentive program (Action 2.10)	Dedicated and separate funding mechanism	Prior to fall 2022		Create a dedicated fund to assist farmers with initial costs for implementing cover crops			\$20,000 for Chester County (pilot)	
1.3	Separate funding program for farmer engagements (Action 2.1 and Action 2.2)	CCD Stewards Funding Program	Prior to 2024	Most ag-related funding and efforts are compliance driven. A dedicated program to allow more thorough engagements as it relates to conservation needs and stewardship should be established to separate the two considerations. An ability to provide payment/fees to an individual (even if part-time) in lieu of pro-bono will significantly increase applicant pool	Expand funding and resources solely focused on ag-related engagements driven by stewardship and conservation needs.	Retired and/or experienced farmer that can appropriately engage with multiple other farmers		\$35,000/year (to start)	
1.4	Transfer of NRCS generated Soil Conservation Plans into local PracticeKeeper (PK) platform (Action 2.6)	Ag BMPs transferred into local PK platform	ASAP would be ideal	Significant resources will be required for capture and entry of Soil Conservation Plans (and corresponding BMPs) into PK that were generated by entities other than CCCD (e.g. NRCS)		NRCS-DEP			
1.5	Mushroom composting definition (Action 2.5)	Added (or more clear) definition for mushroom composting			Create a separate definition (or a sub-category of existing manure composting definitions) specific to mushroom composting, including how to track.				
1.6	BMP reconciliation parameters for urban/developed BMPs (Action 4.6)		Early 2022 for list of minimum parameters Prior to 2025 for reporting mechanism	Through catchment-to-catchment analyses, it is anticipated that uncaptured or underreported BMPs will be captured. This is primarily associated with Ch. 102/land development BMPs. Intent is to capture these BMPs in an inventory. Understanding the parameters, attributes, etc. that need to be part of the data and information captured up-front will provide consistent processes.	1) Establish a list of the minimum parameters and attributes that should be noted when underreported Ch. 102/land development BMPs are captured. 2) Establish a reporting mechanism(s) for captured Ch. 102/land development BMPs.	DEP			

Phase 3 Watershed Implementation Plan (WIP) Programmatic Recommendations Template

Action #	Description	Performance Target(s)	Expected Timeline	Potential Implementation Challenges	Potential Recommendations on Improvement	Resources Needed			
						Technical	Suggested Source	Financial	Suggested Source
1.7	Horse pasture nutrient reductions (Action 2.7)	Nutrient reductions tied to horse pasture management		Current definition of horse pasture does not include nitrogen reductions. A significant amount of pasture in Chester County is dedicated to horses.	Clarification to why no nutrient reductions are awarded or update the horse pasture management definition to include nitrogen reductions.				
1.8	Accelerated permitting for CAP identified projects of regional importance (Action 1.1)			Several “large-scale” projects and opportunities exist that provide benefits above and beyond significant nutrient and sediment reductions (e.g. localized flood reduction). Permit approval timeframes can be inhibiting factors between design and implementation.	Provide arena and processes for accelerating permitting requirements for priority projects.	DEP			
1.9	Buffers sub-categories (Action 3.2)	NRCS codes for buffers not exclusive to the riparian corridor		Forest and grass buffers are not exclusive to the riparian corridor (applied to crop land/hay land uses). Forest and grass buffers can be applied in areas other than the riparian corridor (e.g. field borders)	Creation or establishment of a recognized set of codes (sub-codes) or definitions for forest and grass buffer locations that can be incorporated into Soil Conservation Plans.	DEP, NRCS			
1.10	Fertilizer Legislation (Action 4.11)		Prior to 2023	Urban nutrient management reductions are highly dependent on passing state legislation.					

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

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

- Inputs** – The statewide and/or federal policies, regulations, initiatives, programs, funding and resources that will help your county meet its goal.
- Process** – What are the changes that need to occur for the county to be successful in the process? These are the action items listed under each priority recommendation.
- Outputs and outcomes** – Both short and long-term. These are the programmatic recommendations identified by each county. Performance targets identify your county’s needed change in order to meet your county goal.
- 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 Programmatic Recommendation: 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 “what, when and how” of the plan:

Description = What. This may include programs that address prevention, education, or changes to the current policy and regulation. A programmatic or policy effort will allow for the completion of cation items listed in the Planning and Progress Template.

Performance Target = How. This is an extension of the Description above. The performance target details the programmatic change that will enable you to complete the action items identified in the Planning and Progress Template. This can be a further description of the challenge to implementation from the Planning and Progress Template.

Phase 3 Watershed Implementation Plan (WIP) Programmatic Recommendations Template

Action #	Description	Performance Target(s)	Expected Timeline	Potential Implementation Challenges	Potential Recommendations on Improvement	Resources Needed			
						Technical	Suggested Source	Financial	Suggested Source

Expected Timeline = When. Provide the needed completion date for the programmatic recommendation that will assist your county in meeting its goal. This should be a reasonable expectation, based on knowledge and experience, that will aid in tracking progress toward addressing the Priority Initiative.

Potential Implementation Challenges = This field will note challenges and issues that may delay program implementation (Description). Potential challenges may relate to your county Planning and Progress Template.

Potential Recommendations on Improvement = This field will note recommendations on how to change or improve the program (Description).

Resources Needed: Technical & Funding = This field will note technical and financial resources needed/outstanding to implement the program (Description).

This page is intentionally left blank.

APPENDIX

Organizational Chart

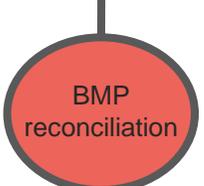
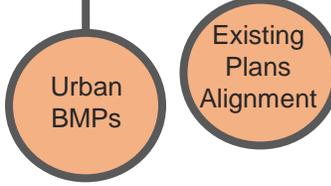
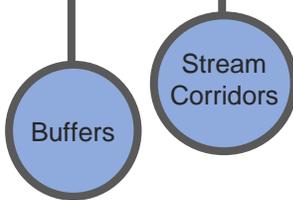
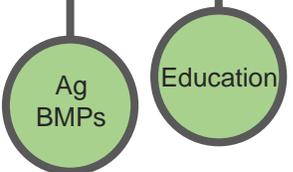
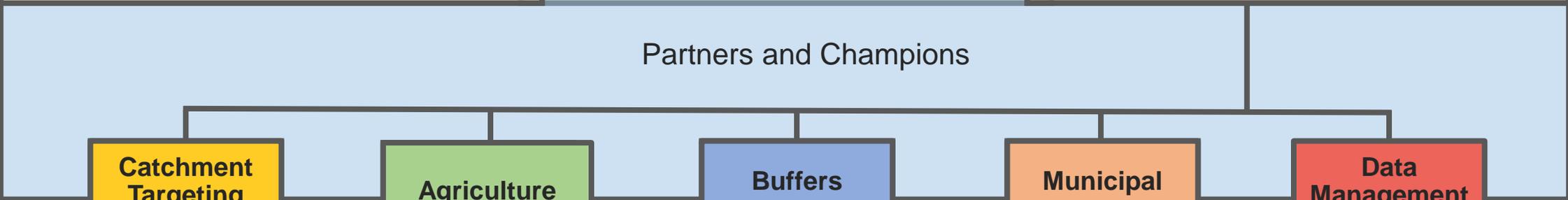
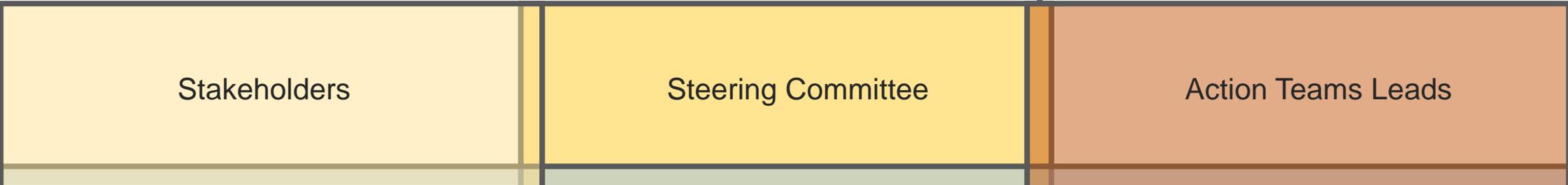
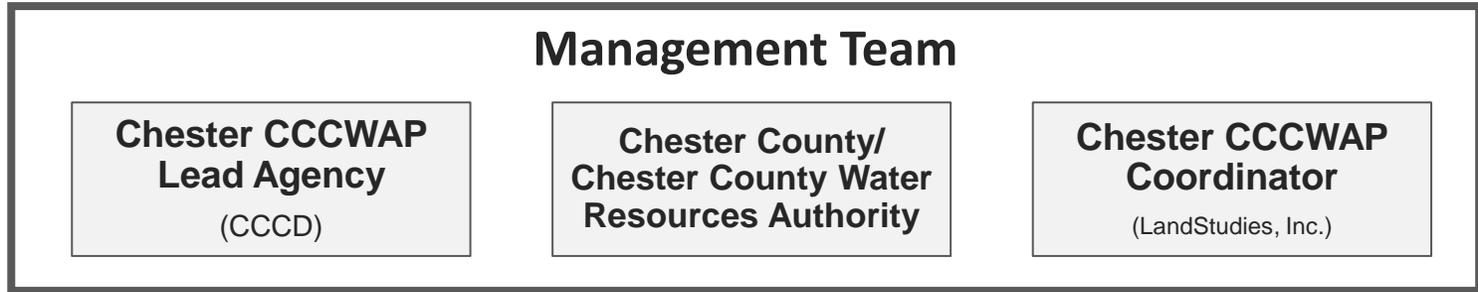
Watersheds Map

Catchment Management Database (CMD)

This page is intentionally left blank.

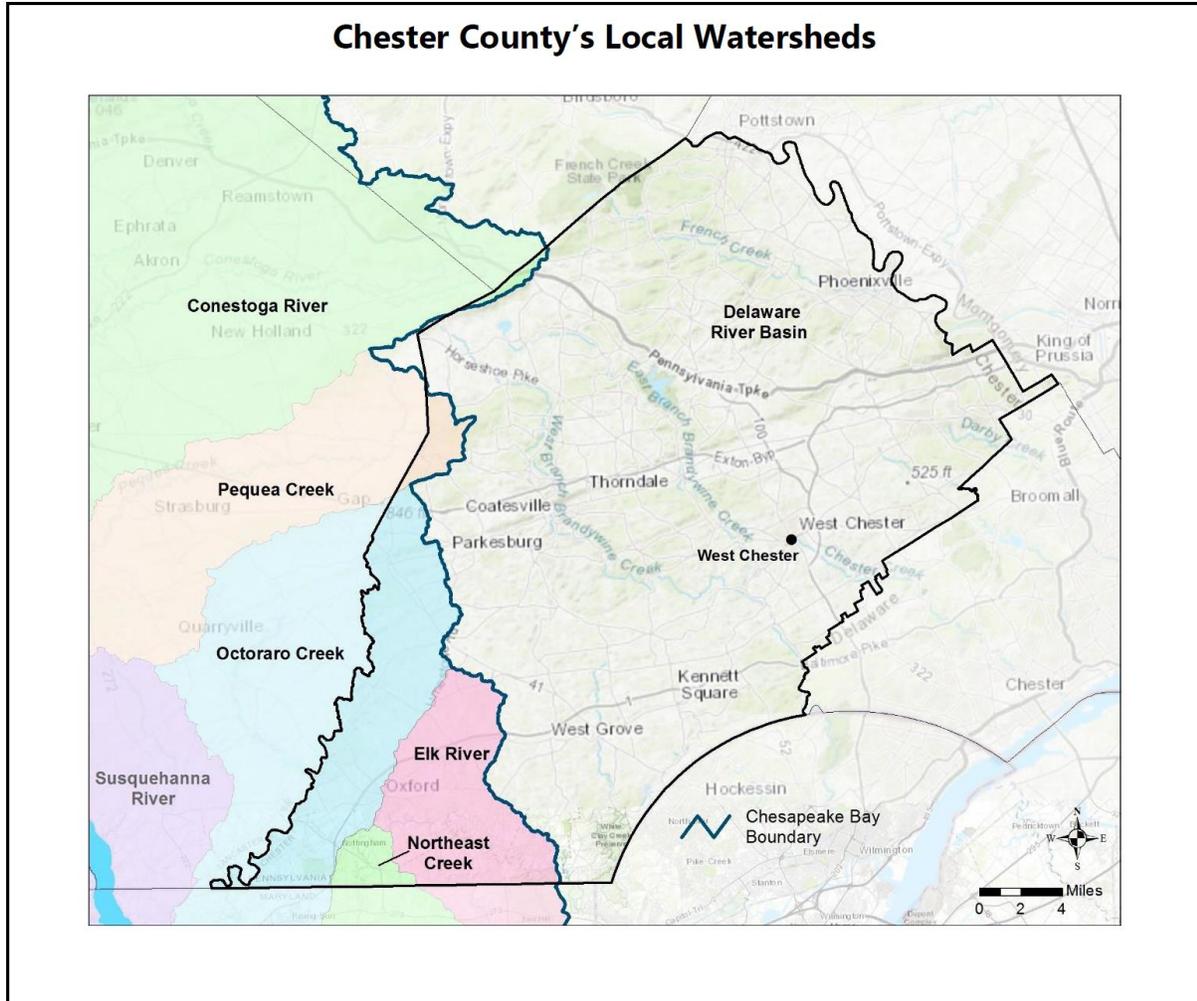
Chesco Chesapeake Communities Action Plan (C3AP)

Organizational Chart



This page is intentionally left blank.

Chester County Chesapeake Bay Watersheds Map



This page is intentionally left blank.

CHESTER COUNTY CATCHMENT MANAGEMENT DATABASE

HUC-10	HUC-12	CATCHMENT GROUPING ID	CATCHMENT GROUP NAME	STREAMS	PRIMARY LAND USE	IMPAIRED STREAMS	GEO. CLASS.	HGMR CLASS.	URBANIZED AREA	INCREMENTAL LOADING SCORING				MASS LOADING SCORING			WQ DATA	WQ DATA ADJ FACTOR	QUALITATIVE NOTES	QUAL ADJ FACTOR	TOTAL CATCHMENT SCORE
										SEDIMENT	TOTAL NITROGEN	TOTAL PHOSPHORUS	INC LDG SUB-SCORE	SEDIMENT	TOTAL NITROGEN	TOTAL PHOSPHORUS					
Conestoga River	Upper Conestoga 20503061103	061103-1	Conestoga River	East Branch Conestoga River	residential	Yes	Quartzite, Limestone	PCR	Small area	2.50	1.50	3.50	2.50	5.00	5.00	5.00	5.00				
		061103-2	East Branch Conestoga River	UNT Upper Conestoga River	forest	Yes	Quartzite, Diabase	ML/PCR	Yes	4.00	3.00	4.00	3.67	5.00	5.00	5.00	5.00				
Pequea Creek	Headwaters Pequea Creek 20503061201	061201-1	UNT Pequea Headwaters Upper	none	forest	Yes	Mafic gneiss and felsic gneiss	PCR	No	3.00	3.00	4.00	3.33	5.00	5.00	5.00	5.00				
		061201-2	UNT Pequea Headwaters Middle	UNT Pequea Creek	residential	Yes	Phyllite, Quartzite, Mafic gneiss, Graphitic gneiss, Felsic gneiss	PCR	Yes	3.00	3.00	4.00	3.33	5.00	5.00	5.00	5.00				
		061201-3	UNT Pequea Headwaters Lower	UNT Pequea Creek	agriculture, residential	Yes	Phyllite, Quartzite	PCR	Yes	4.00	4.00	5.00	4.33	5.00	5.00	5.00	5.00				
		061201-4	Indian Spring Run	Indian Spring Run and UNTs	residential, forest, agriculture	No	Phyllite, Quartzite, Argillaceous dolomite, Shale	PCR, PCA	Yes	5.00	4.00	5.00	4.67	5.00	5.00	5.00	5.00				
		061201-5	UNT Indian Spring Run	UNT Indian Run	forest, residential	Yes	Quartzite, Dolomite, Argillaceous dolomite, Shale, Siliceous dolomite	PCR, PCA	Yes - small	4.00	3.00	4.00	3.67	5.00	5.00	5.00	5.00				
		061201-6	UNT Pequea Creek	none	forest	Yes	Quartzite	PCR	No	5.00	4.00	5.00	4.67	5.00	5.00	5.00	5.00				
East Branch Octoraro Creek	Pine Creek 20503061401	061401-1	Pine Creek	Pine Creek	Agriculture	Yes	Felsic gneiss	PCR	Yes	4.00	3.00	4.00	3.67	5.00	5.00	5.00	5.00				
		061401-2	East Branch Octoraro Upper	East Branch Octoraro Creek	Agriculture/Residential	Yes	Quartzite, Limestone	PCA	Yes	3.00	3.00	4.00	3.33	5.00	5.00	5.00	5.00				
	Muddy Run - East Branch Octoraro Creek 20503061403	061403-1	Knight Run	Knight Run and UNTs	Agriculture	Yes	Chlorite-sericite-schist, Albite-chlorite schist	PCR	No	4.22	3.56	4.22	4.00	5.00	4.88	5.00	4.96				
		061403-2	Muddy Run Upper	Muddy Run, UNTs to Muddy Run, Rattlesnake Run and UNT Rattlesnake Run	Agriculture	Yes	Chlorite-sericite-schist, Oligoclase-mica schist	PCR	No	4.14	3.43	4.57	4.05	5.00	5.00	5.00	5.00				
		061403-3	Muddy Run Lower	Muddy Run and UNTs to Muddy Run	Agriculture	Yes	Chlorite-sericite-schist	PCR	No	4.20	4.10	4.70	4.33	5.00	4.70	4.90	4.87				
		061403-4	East Branch Octoraro Creek Knight to Muddy Run	East Branch Octoraro Creek and UNTs	Agriculture/Forest	Yes	Chlorite-sericite-schist	PCR	No	3.75	3.75	4.75	4.08	4.00	3.00	4.00	3.67				
		061403-5	East Branch Octoraro Muddy Run to Lake	East Branch Octoraro Creek and UNT	Agriculture/Forest	Yes	Chlorite-sericite-schist	PCR	No	5.00	4.50	5.00	4.83	3.00	3.00	3.00	3.00				
		061403-6	Octoraro Lake	East Branch Octoraro Creek	Agriculture/Forest	No	Chlorite-sericite-schist	PCR	No	5.00	5.00	5.00	5.00	3.00	3.00	3.00	3.00				
		061403-7	Leech Run Upper	Leech Run and UNTs	Agriculture/Residential	Yes	Chlorite-sericite-schist, Oligoclase-mica schist	PCR	Yes - small	4.50	3.17	4.67	4.11	5.00	5.00	5.00	5.00				
		061403-8	Leech Run Lower	Leech Run and UNTs	Agriculture/Forest	Yes	Chlorite-sericite-schist	PCR	No	4.00	4.00	4.00	4.00	5.00	5.00	5.00	5.00				
		061403-9	Octoraro Reservoir	Octoraro Reservoir	Agriculture/Forest	No	Chlorite-sericite-schist	PCR	No	5.00	5.00	5.00	5.00	4.00	3.00	3.00	3.33				
	East Branch Octoraro Creek		061402-1	UNT Officers Run	UNT Officer's Run	Agriculture	Yes	Mafic gneiss, Felsic gneiss, Quartzite	PCR	No	4.00	3.00	4.00	3.67	5.00	5.00	5.00	5.00			
061402-2			Officers Run Headwaters	Officer's Run and UNTs	Agriculture	Yes	Mafic gneiss	PCR	No	3.00	2.00	4.00	3.00	5.00	5.00	5.00	5.00				

Valley Creek - East Branch Octoraro Creek 020503061403	061402-3	Officers Run	Officer's Run and UNTs	Agriculture	Yes	Felsic gneiss, Quartzite, Limestone	PCR, PCA	Yes	3.00	2.00	4.00	3.00	5.00	5.00	5.00	5.00					
	061402-4	Valley Creek Upper	Valley Creek, UNT Valley Creek, Glen Run	Urban Mixed Use/ Agriculture	Yes	Limestone, Albite-chlorite schist, Quartzite	PCR, PCA	Yes	4.00	3.00	4.00	3.67	5.00	5.00	5.00	5.00					
	061402-5	Valley Creek Lower	Valley Creek and UNT	Agriculture	Yes	Limestone, Albite-chlorite schist	PCR, PCA	Yes	5.00	4.00	4.00	4.33	5.00	5.00	5.00	5.00					
	061402-6	UNT East Branch Octoraro Creek	UNT East Branch Octoraro Creek	Agriculture	Yes	Albite-chlorite schist	PCR	No	4.00	3.00	4.00	3.67	5.00	5.00	5.00	5.00					
	061402-7	East Branch Octoraro Creek Upper Middle	East Branch Octoraro Creek	Agriculture/ Forest	Yes	Albite-chlorite schist	PCT	No	4.50	4.50	4.50	4.50	4.00	4.00	4.00	4.00					
	061402-8	East Branch Octoraro Creek Lower Middle	East Branch Octoraro Creek	Agriculture/ Forest	Yes	Albite-chlorite schist	PCR	Np	5.00	5.00	5.00	5.00	4.00	4.00	4.00	4.00					
	061402-9	Steelville UNT East Branch Octoraro Creek	UNT East Branch Octoraro Creek	Agriculture	Yes	Albite-chlorite schist, Quartzite	PCR	No	5.00	4.00	5.00	4.67	5.00	5.00	5.00	5.00					
	061402-10	Wolf's Hollow UNT East Branch Octoraro Creek	UNT East Branch Octoraro Creek	Agriculture/ Residential	Yes	Albite-chlorite schist, Quartzite	PCR	No	5.00	4.67	5.00	4.89	5.00	5.00	5.00	5.00					
	061402-11	East Branch Octoraro Creek Lower	East Branch Octoraro Creek	Agriculture	Yes	Quartzite	PCR	No	4.00	4.00	4.50	4.17	4.00	4.00	4.00	4.00					

HUC-10	HUC-12	CATCHMENT GROUPING ID	CATCHMENT GROUP NAME	STREAMS	PRIMARY LAND USE	IMPAIRED STREAMS	GEO. CLASS.	HGMR CLASS.	URBANIZED AREA	INCREMENTAL LOADING SCORING				MASS LOADING SCORING			WQ DATA	WQ DATA ADJ FACTOR	QUALITATIVE NOTES	QUAL ADJ FACTOR	TOTAL CATCHMENT SCORE	
										SEDIMENT	TOTAL NITROGEN	TOTAL PHOSPHORUS	INC LDG SUB-SCORE	SEDIMENT	TOTAL NITROGEN	TOTAL PHOSPHORUS						MASS LDG SUB-SCORE
Octoraro Creek	Tweed Creek-Octoraro Creek 020503061503	061502-1	Tweed Creek Upper	Tweed Creek and UNTs	Agriculture with residential	Yes	Chlorite-sericite schist and Oligoclase-mica schist	PCR	Yes	2.00	1.00	3.00	2.00	5.00	5.00	5.00	5.00					
		061502-2	UNT Tweed Creek	UNT Tweed Creek	Agriculture with residential	Yes	Chlorite-sericite schist	PCR	No	4.00	4.00	5.00	4.33	5.00	5.00	5.00	5.00					
		061502-3	Tweed Creek Lower	Tweed Creek	Agriculture	Yes	Chlorite-sericite schist	PCR	No	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00					
		061502-4	Octoraro Creek Upper	Octoraro Creek and UNT	Agriculture	Yes	Chlorite-sericite schist and Oligoclase-mica schist	PCR	No	3.00	3.00	4.00	3.33	3.00	2.00	3.00	2.67					
		061502-5	Blackburn Run Upper	Blackburn Run and UNT	Residential with agriculture	Yes	Chlorite-sericite schist and Oligoclase-mica schist	PCR	Yes - small area	4.00	3.00	4.00	3.67	5.00	5.00	5.00	5.00					
		061502-6	UNT Blackburn Run	UNT Blackburn Run	Agriculture	Yes	Chlorite-sericite schist and Oligoclase-mica schist	PCR	No	5.00	4.00	5.00	4.67	5.00	5.00	5.00	5.00					
		061502-7	Blackburn Run Lower	Blackburn Run	Forest	Yes	Chlorite-sericite schist	PCR	No	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00					
		061502-8	Octoraro Creek Middle	Octoraro Creek and UNTs	Agriculture and forest	Yes	Chlorite-sericite schist and Oligoclase-mica schist	PCR	Yes	4.67	4.33	5.00	4.67	3.00	2.00	3.00	2.67					
		061502-9	Black Run Headwaters	Black Run and UNTs	Forest	No	Serpentine, Chlorite-sericite schist	PCR	Yes - small	4.00	4.00	5.00	4.33	5.00	5.00	5.00	5.00					
		061502-10	Black Run Middle	Black Run	Agriculture	Yes	Chlorite-sericite schist and Oligoclase-mica schist	PCR	Yes	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00					
		061502-11	Black Run Lower	Black Run	Forest	Yes	Chlorite-sericite schist and Oligoclase-mica schist	PCR	Yes - very small	4.00	4.00	5.00	4.33	5.00	5.00	5.00	5.00					
		061502-12	Octoraro Creek Lower	Octoraro Creek, UNT Octoraro Creek, and Hog Run	Forest	Yes	Serpentine, Mafic gneiss	PCR	Yes - very small	3.33	4.50	5.00	4.28	3.00	2.00	3.00	2.67					
Octoraro Creek	Basin Run - Octoraro Creek 020503061713	061503-1	Stone Run	UNT Stone Run	Agriculture/ Forest	Yes	Serpentine, Mafic gneiss	PCR	Yes	4.00	4.00	4.00	4.00	5.00	5.00	5.00	5.00					
		061503-2	UNT Stone Run	None	Agriculture	Yes	Serpentine	PCR	Yes	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00					

HUC-10	HUC-12	CATCHMENT GROUPING ID	CATCHMENT GROUP NAME	STREAMS	PRIMARY LAND USE	IMPAIRED STREAMS	GEO. CLASS.	HGMR CLASS.	URBANIZED AREA	INCREMENTAL LOADING SCORING				MASS LOADING SCORING			WQ DATA	WQ DATA ADJ FACTOR	QUALITATIVE NOTES	QUAL ADJ FACTOR	TOTAL CATCHMENT SCORE	
										SEDIMENT	TOTAL NITROGEN	TOTAL PHOSPHORUS	INC LDG SUB-SCORE	SEDIMENT	TOTAL NITROGEN	TOTAL PHOSPHORUS						MASS LDG SUB-SCORE
HUC-10	North East Creek 020600020102	020104-1	North East Creek Upper	North East Creek and UNTs	Agriculture	Yes	Oligoclase-mica schist	PCR	Yes - small area	4.50	3.50	4.50	4.17	5.00	5.00	5.00	5.00					
		020104-2	North East Creek Lower	North East Creek and UNTs	Agriculture	Yes	Serpentine, Mafic gneiss	PCR	Yes - small area	4.83	4.50	5.00	4.78	5.00	5.00	5.00	5.00					

HUC-10	HUC-12	CATCHMENT GROUPING ID	CATCHMENT GROUP NAME	STREAMS	PRIMARY LAND USE	IMPAIRED STREAMS	GEO. CLASS.	HGMR CLASS.	URBANIZED AREA	INCREMENTAL LOADING SCORING				MASS LOADING SCORING				WQ DATA	WQ DATA ADJ FACTOR	QUALITATIVE NOTES	QUAL ADJ FACTOR	TOTAL CATCHMENT SCORE
										SEDIMENT	TOTAL NITROGEN	TOTAL PHOSPHORUS	INC LDG SUB-SCORE	SEDIMENT	TOTAL NITROGEN	TOTAL PHOSPHORUS	MASS LDG SUB-SCORE					
North East Rive		020104-3	UNT to North East Creek	UNT to North East Creek	Agriculture/Forest	Yes	Serpentinite, Mafic gneiss	PCR	No	4.33	4.00	5.00	4.44	5.00	5.00	5.00	5.00					
	Little North East Creek 020600020102	020101-1	Little North East Creek	Little North East Creek	Agriculture	Yes	Mafic gneiss	PCR	No	2.00	2.00	4.00	2.67	5.00	5.00	5.00	5.00					
Elk River	Little Elk Creek 020600020203	020102-1	Little Elk Creek Upper	Little Elk Creek and UNTs	Residential and Agriculture	Yes	Oligoclase-mica schist	PCR	Yes	3.67	3.00	4.00	3.56	5.00	5.00	5.00	5.00					
		020102-2	Jordan Run	Jordan Run and UNTs	Agriculture	Yes	Oligoclase-mica schist, Serpentinite	PCR	No	4.75	4.25	4.75	4.58	5.00	5.00	5.00	5.00					
		020102-3	Barren Brook	UNTs Little Elk Creek	Forest, Agriculture	No	Serpentinite, Mafic gneiss	PCR	No	4.00	4.00	4.00	4.00	5.00	5.00	5.00	5.00					
		020102-4	Little Elk Creek Lower	Little Elk Creek and UNTs	Agriculture, Residential	Yes	Oligoclase-mica schist	PCR	Yes	3.50	3.50	4.50	3.83	5.00	5.00	5.00	5.00					
	Big Elk Creek 020600020205	020203-1	West Branch Big Elk Creek		Agriculture, Residential	Yes	Oligoclase-mica schist	PCR	Yes	4.14	3.57	3.71	3.81	5.00	5.00	5.00	5.00					
		020203-2	Big Elk Creek	Big Elk Creek and UNTs	Agriculture, Forest, Residential	Yes	Oligoclase-mica schist	PCR	Yes	2.00	2.00	3.00	2.33	4.00	4.00	4.00	4.00					
		020203-3	Hodgson Run-Way Run	Hodgson Run and UNTs to Ways Run and UNT to Ways Run	Agriculture, Residential	Yes	Oligoclase-mica schist	PCR	Yes	4.00	4.00	4.33	4.11	5.00	5.00	5.00	5.00					
		020203-4	Big Elk Creek Lower	Big Elk Creek and UNTs	Agriculture, Forest, Residential	Yes	Oligoclase-mica schist	PCR	Yes	4.40	4.00	4.80	4.40	3.83	4.50	4.50	4.28					
	East Branch Big Elk Creek 020600020203	020201-1	UNT to East Branch Upper	East Branch Big Elk Creek and UNTs	Agriculture, Residential	Yes	Oligoclase-mica schist	PCR	Yes - small	4.00	2.67	4.00	3.56	5.00	5.00	5.00	5.00					
		020201-2	UNT to East Branch Middle	East Branch Big Elk Creek and UNTs	Agriculture, Residential	Yes	Oligoclase-mica schist	PCR	Yes	4.29	3.86	4.43	4.19	5.00	5.00	5.00	5.00					
		020201-3	UNT to East Branch Big Elk Creek	East Branch Big Elk Creek and UNTs	Agriculture, Residential	Yes	Oligoclase-mica schist	PCR	Yes	4.00	3.33	4.33	3.89	5.00	4.67	4.67	4.78					