Highlights About Lancaster's Strategy for Restoring Our Local Waterways
January 2019

Highlights
Teamwork and collaboration
BMP's need to be at a faster, more intense pace and more resources are needed for that to happen
There is an eagerness for MS4 flexibility and new options that provides. But frustration that DEP's messages are inconsistent.
Lancaster's strong voice is being heard around the region and we are seeing new opportunities
This plan writing has been a reason to get in front of new and more audiences with the message of collective work for clean and clear water. Examples: Columbia WWTP site, LCATS, Ag Council, engineers, it's opening doors in the business world, and more NGO's coming together on buffer work
We got 80% of the way to our nitrogen goal and over 100% of the way for phosphorus!

Challenges
Such a large nitrogen reduction goal proportionally to other counties and no additional finances/resources offered as baseline support (more ideas have come along the way)
Lack of documentation of current practices requires a data management system rather than allowing us to focus just on getting more practices on the ground
We were told Lancaster could rise to the top of the pile for grants, resources, etc. and it has not always been the case (ME2). The expectation is an increase in financial and regulatory support/flexibility.
We have experienced inconsistent messaging from the state level especially regarding MS4, diluting the power and trust they can garner.
The time this planning process took place was not conducive to getting much of the agriculture community involved because of the harvest season.

Lancaster County's local strategy for Pennsylvania's Watershed Implementation Plan (WIP) uses a grassroots approach to reflect the local priorities of how Lancaster can achieve the nutrient and sediment reductions that will get us to clean and clear water. The enclosed plan is the result of a significant, collaborative effort from experts, community members, partner organizations, state agencies, and others. Throughout the writing process, the plan writing team kept local water quality as a priority while striving to achieve an 11 million pound nitrogen reduction and an approximately 500,000 pound phosphorus reduction by the end of 2025 in order to support the state's efforts to meet the overall goals.

The Best Management Practices and Priority Initiatives outlined in the plan were created as aspirational yet realistic. With every attempt to stretch for reductions in innovative ways, this plan achieves 80% of the nitrogen goal and over 100% of the phosphorus goal. Achieving those reductions uses current resources as well as factors in an expectation of significant new support in various forms. Partners in Lancaster County are ready, willing, and able to tackle the elements of the plan, yet the plan's success relies upon a combination of new funding, regulatory flexibility, and political will coming together at the local and state level.

**BMP's from CAST (the Bay Model) are listed in italics alongside numeric goals*

Agriculture

- Implement a suite of BMPs to address Lancaster County's nutrient imbalance
  - Find an end to winter spreading
    - Identify and promote the best, location-specific alternative practices to deal with manure, resulting in manure strategies that minimize nutrient losses and runoff while maximizing nutrient and soil structure benefits to improve crop yield and soil health
    - Acknowledge the need for 5-8 year phase-in period

All goals listed here are new practices by 2025
Livestock and poultry waste management system – 100, 000 animal units
Manure injection – 10,000 acres
Dairy precision feeding – 260 animal units
Prescribed grazing – 9,792 acres

  - Explore digesters/manure treatment technologies at a variety of scales, learning from the current success models as well as research done previously on the topic
  - Build new manure storages and implement barnyard management in priority areas

Barnyard runoff control and loafing lot management – 100 new acres

  - Establish a better recording system of manure transport in and out of the county

Manure transport out of area and treatment technology – 150,000 additional dry tons

  - Increase the number of farms managing livestock stream access by 50%

Grass buffers on fenced pasture corridor – 2500 additional acres

- Support state efforts to ensure all individuals have met baseline agriculture environmental compliance, which requires drafting 2,400 new conservation plans for farms across the county

All goals in this category are total acres in this practice every year by 2025
Nutrient Management N Placement - 224,742 acres
Nutrient Management N Rate - 259,645 acres
Nutrient Management N Timing - 224,742 acres
Nutrient Management P Placement - 279,961 acres
Nutrient Management P Rate - 314,865acres
Nutrient Management P Timing – 279,961 acres
Soil and Water Conservation Plans – 247,167 acres
Nutrient Application Management Core Nitrogen – 149, 987 acres
Nutrient Application Management Core Phosphorus – 149, 987 acres

- Increase cover crops across Lancaster County and better document existing practices

All goals in this category are new acres documented in this practice every year by 2025
Cover Crop (traditional) – 335 new acres
Cover Crop with Fall Nutrients – 100,000 new acres
Commodity Cover Crop – 2,836 new acres

- Increase no-till and/or conservation tillage
  - Navigate the balance of the need for no-till along with the increased organic production across the state
  - Work with existing leaders such as the No Till Alliance and the Ag Council

Conservation Tillage – 44,891 new acres in this practice every year by 2025
High Residue Tillage – 55,386 new acres in this practice every year by 2025

- Increase buffers and stream restoration (Ag is priority area for buffers described below)
- Plain sect outreach to engage them in the project planning and implementation

- Education and outreach focused on:
    - Flood control, public health benefits, herd health, building legacy options for families, economics, and achieving compliance, which will help mitigate the need for new regulations

Data management

- Establish a central location for conservation plans, restoration project permits, grant applications, etc.
    - Explore Practice Keeper or a similar system as a larger tool across agriculture and restoration
- Create better documentation system of currently implemented practices
- Increase in-stream water quality monitoring to establish baselines, and identify the best tools needed to achieve the goals and to measure progress/success
- Assemble water quality monitoring and planning data from multiple agencies, in both tabular and spatial formats

No BMP associated with this section

Stormwater

- Update Act 167 Lancaster County Integrated Water Resources Plan
    - Have 167 plan that has pollutant parameters consistent with the Bay Model
    - Update model ordinance(s) for countywide and/or watershed goals
    - Establish greater regionalization of runoff and flood management
- Update MS4 performance criteria, oversight, and implementation
    - Clarify and publicize flexibility criteria allowing focus on watersheds rather than municipally regulated MS4-UAs to accommodate crediting for all BMPs
    - Create goal line that is definitive and does not stop at the end of a permit cycle
    - Seek creative solutions that focus on the problem, not just the MS4 areas
- Create Programmatic Consistency
    - Align permit parameters to water quality goals
    - Create greater consistency and accountability for review, inspections, and documentation of operation and maintenance of permit sites
- Acquire greater project funding
    - Seek and acquire creative funding for implementation and operation and maintenance municipal water quality projects
    - Employ market-driven solutions for project funding
    - Revise funding criteria to align with adopted policy and planning goals
    - Build water quality improvement measures into capital and maintenance projects
- Identify BMP's that may not traditionally receive credit for nutrient and sediment reductions and report them for appropriate reduction credit
    - Identify projects from hazard mitigation planning initiatives
    - Identify projects from municipal capital improvement plans
    - Identify projects from local, county, and state infrastructure improvement plans
    - Identify projects from watershed plans

Stormwater Management Composite (includes MS4 projects)
Bioretention and rain garden 50 acres area treated
Erosion and sediment controls 500 acres

Filter strip runoff 10 acres
Urban forest buffer 10 acres
Impervious surface reduction 50 acres
Wet ponds and wetlands 290 acres
Stormdrain cleanout 29,610 lbs of sediment removed
Grey infrastructure 23,772 acres
Street sweeping 63 acres
Dry ponds 312 acres
Infiltration practices 70 acres
Extended dry basins 77 acres
Vegetated open channel 384 acres
Septic Connections – 3,008 systems
Septic Pumping – 10,000 systems
Dirt & gravel road – 158,000 new linear feet
Urban Nutrient Management – 10,577 acres

**The Urban Nutrient Management goal is a state recommendation and is dependent upon a change in state legislation regarding commercially applied fertilizer.*

Buffers

- Buffer Implementation
    - Have at least one stellar buffer demonstration of at least one acre in every township
    - Create an online map of buffer implementation to show progress
    - Direct landowner outreach for implementation of 5,000-7,500 new acres
        - Projects will prioritize agricultural areas and headwaters streams
        - Projects will be combined with other types of restoration projects as often as possible (in-stream, floodplain, wetland, dam removal, etc.)

Forested Buffer and Urban Forest Buffer – 6,000 new acres
Grass buffer – 64 new acres

- Buffer Strategy
    - Create a Lancaster County Buffer Program to complement CREP
        - Develop and include a care establishment program
        - Work will be prioritized by headwater streams and priority watersheds
        - Create a coordinated outreach campaign to require having buffers on all public and semi-public lands
            - Work with local faith groups
            - Hold meetings with IU13, teacher champions, and grounds crews to get school districts on board (trees in the classroom, turf to trees, K10 campaign, etc.)
            - Focus on flood control and public health benefits
    - Examine how model ordinances can make required buffers on new developments the norm across the county (Look at Warwick and East Cocalico as examples)
        - Research and survey all municipalities with existing buffer ordinances to coordinate efforts and streamline language so others can adopt
    - Education and outreach will need to be integrated throughout these projects

Stream Restoration

- Initiate at least 50 projects that include cost effective monitoring of pre- and post-restoration water quality results that are shared with the public
    - Promote projects incorporating floodplain restoration, in-stream habitat restoration, and wetland restoration

      Wetland Restoration and Creation – 98 new acres
    - Focus on contiguous projects in priority watersheds, where nutrient and sediment loading is high, projects have been identified, municipal permitting allows for expedited implementation, source water improvements are likely, and landowners are willing

      Non-urban stream restoration – 63,866 new linear feet

      Urban Stream Restoration – 35,180 new linear feet
    - Promote projects including buffer plantings when and where appropriate
    - Integrate education and outreach throughout these projects
        - Include developers (working with existing project owners/leaders to continue educating their peers about alternative approaches such as Rock Lititz, Lime Spring, etc), municipal officials and public works staff
- Improve the dam removal notification system to better coordinate for holistic restoration

Land Use & Preservation

- Activities will be consistent with County Planning initiatives such as Places2040, Blueprints, and Greenscapes
- Promote better growth management
    - Direct growth to urban growth areas/village growth areas by promoting infill/redevelopment and advocating lower-impact development with full water and sewer service that protects groundwater
    - Promote efficient land use in rural areas by limiting large lot, suburban development and the reliance on wells and on-lot disposal systems
- Improve planning and design
    - Work with municipalities to consider water resources as a key component of all planning decisions and integrate water quality improvements into capital and maintenance projects
    - Practice regional, place-based planning and utilize ordinances for water resource protection
- Preserve, conserve and restore natural resources and open space
    - Preserve large, contiguous areas of natural lands
    - Conserve and restore natural resource and restore ecological connections
    - Increase the number and area of parks, greenways, and trails

      Land Retirement – 456 acres
- Increase the county's tree canopy in both rural and urban areas

  Urban Tree Planting – 12 acres