Conowingo Watershed Implementation Plan Steering Committee meeting

November 21, 2019

Activity 1: Facilitate Development and Implementation of the Conowingo Watershed Implementation Plan (WIP) and Associated Two-Year Milestones

Handout: Guide to maps identifying focal geographies for outreach and implementation

- Definitions:
  - Land-river segment (LRS): The intersection of land and river segments, used to proportion the load from the land segments into the appropriate reaches.
    - The Land Segments are based on Counties within the study area, with some counties subdivided if loading rates were not sufficiently consistent throughout the land segment.
    - Riverine processes on nutrient and sediment load delivery to the bay are simulated through small watersheds, roughly the size of 11-digit HUCS. Watershed boundaries and size were determined by the presence of a reach of at least 100 CFS or a calibration station.
  - Scenario 2 boundary: Geobasins (major river basins segmented by geologic factors) as listed: Susquehanna, Western Shore, Eastern Shore (Upper, Middle, and Lower)

Map name	Brief Description	Map units	Datasets referenced	Methodologies used
Buffer Restoration opportunities	Total area of land suitable for buffer restoration within 100 ft. of water network.	Square Meters	• Land Cover: 1-meter land cover data classified using 2013 NAIP imagery; Chesapeake Conservancy & University of Vermont; 2016 • Water network (MD/PA): Lidar-derived water network combined with 2013 1-meter land cover data; Chesapeake Conservancy; 2018	Pixels from the high-resolution land cover dataset within 100 ft. distances of the water network were considered in the buffer analysis. Pixels classified as low vegetation, wetlands, or barren were considered buffer restoration opportunities. Area of buffer restoration opportunity was summed by LRS.
Cover crop opportunities	Total area of agricultural land	Square Meters	• Land Cover: 30-meter resolution National Land Cover Dataset (NLCD); U.S. Geological Survey, 2016	Total land area classified as cropland summed by LRS.
Wetland restoration opportunities	Lands currently in agriculture that naturally accumulate water due to topography and have historically had poorly draining soils	Square Meters	• Potentially Restorable Wetlands; U.S. EPA; 2016	Total land area identified as potential wetland restoration opportunities on agricultural land summed by LRS.
Urban BMP opportunities	Urban land outside of MS4s	Square Meters	• Urban Areas/Urban Clusters. U.S. Census Bureau. 2010 • Municipal Separate Storm Sewer System (MS4) Boundaries. Chesapeake Bay Program.	Area of urban land that falls outside of MS4 boundaries summed by LRS. These are potential locations for urban BMP implementation that is not already considered under current permitting processes.

Total nitrogen relative effectiveness	Change in dissolved oxygen (DO) that occurs in the Bay per pound of nutrient changed locally in the watershed	µg/L DO per million lbs of reduction	• Relative Effectiveness; Chesapeake Bay Program. 2019.	See Emily Trentacoste, Gary Shenk, or Jeff Sweeney.
CAST analysis on Nitrogen loads	Opportunities for additional Nitrogen reductions post-Phase III WIP implementation	Pounds of Nitrogen delivered to edge of stream/year	• CAST Phase 3 WIP analysis: jurisdictional phase 3 WIPs submitted to Chesapeake Bay Program 2019: nitrogen delivery post-Phase 3 WIP implementation. • CAST E3 analysis: E3 Definition: Everything by everyone everywhere, e.g. BMPs implemented to theoretical maximum extent. In other words, the lowest possible loads that could be delivered to local streams based on a combination of existing landscape conditions + potential to implement 100% of possible BMPs within the LRS. Created by CBP, 2017.	WIP 3 load - E3 load = Opportunities for additional reduction through CWIP. Outputs for each layer are summed by LRS.