CODORUS CREEK NONPOINT SOURCE POLLUTION CONTROL WATERSHED IMPLEMENTATION PLAN, YORK COUNTY, PENNSYLVANIA

PADEP 319 Watershed Improvement Program

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Executive Summary

The Codorus Creek watershed is located in southern York County, south-central Pennsylvania, and encompasses 278 square miles of drainage area. Watershed assessments of the South Branch (68 square miles), East Branch Codorus (44.5 square miles), and West Branch (165.5 square miles) were sponsored by the Izaak Walton League of America's York Chapter and were completed in 1999 and 2000, respectively. Through a Growing Greener grant received from the Pennsylvania Department of Environmental Protection, and other partnership funding sources, the Codorus Creek Watershed Association (CCWA) completed a watershed assessment and stream restoration plan for the remainder of the watershed (West Branch and main stem Codorus Creek) which covers 165.5 square miles.

The Codorus Creek watershed has a wide diversity of land uses including agricultural, forest, residential, commercial, and industrial. The water quality of the Codorus drainages varies from those supporting wild trout populations, to those heavily influenced by watershed modifications. Field observations indicate good water quality, supporting a diversity of benthic macro-invertebrate and fish populations. The streams in the watershed however are far from reaching their full potential as a biological and recreational resource due to severe bank erosion, high sediment loads, and thermal warming.

A regional hydraulic curve was developed to determine stream types (Rosgen, 1994), and will serve as a design tool for future restoration. This regional curve was a continuation of efforts which started in the South and East Branch Codorus Creek watersheds which are within the Uplands Section of the Piedmont Physiographic Province. All streams and tributaries were assessed, classified as to stream type (Rosgen, 1994), and mapped using Geographic Information System (GIS). Bank erosion rates were monitored at nine locations in the watershed.

Results of the watershed assessment revealed that there is significant stream impairment, primarily stream bank erosion and channel migration. Over 447 miles of stream were assessed in the watershed. Approximately 65 miles (23%), 228 miles (51%) and 154 miles (26%) of streams assessed were found to be either severely impaired, moderately impaired, or slightly impaired/not impaired, respectively. A Watershed Assessment Map was prepared using ArcGIS to graphically show the locations, magnitude and extent of impaired streams and other important watershed features.

Stream restoration work is currently planned and underway in the East, South and West Branches. It is estimated that it will take up to 20-years to completely implement the restoration of severely and moderately impaired streams in the watershed. The estimated cost of full restoration efforts is expected to be approximately $12,281,166 today. An additional $13,897,500 will be needed to fully implement Best Management Practices on the upland 115,092 acres of agricultural working lands, 65% of total the land used.

The Codorus Watershed Implementation Plan was funded by the Pennsylvania Department of Environmental Protection through a 319 NPS Management Program grant.

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Introduction

The Codorus Creek Watershed Association (CCWA) was formed in 1998 as a non-profit organization to promote the New Codorus Legacy: "To restore, enhance, sustain, and protect the Codorus Creek Watershed and its environs for future generations and as a living resource for biodiversity." Since its inception the CCWA has been very active in the stream cleanups, education workshops, monitoring, and general promotion of the Codorus as a valuable York County resource.

With the completion of the assessment of the West Branch of the Codorus in 2003, the entire watershed has been assessed. The assessment of the South and East Branches of the Codorus (40% of the entire watershed) were completed between 1999 and 2001. These assessments were sponsored by the York Chapter of the Izaak Walton League of America to identify impaired reaches of stream and prioritize stream restoration efforts. Realizing that the key to long term restoration is to develop a restoration plan, the CCWA was successful in securing funding to complete the assessment of the remaining streams and in the Codorus Creek watershed. The assessment methodology used was consistent with the South and East Branch assessments. The assessment of the West Branch and main stem of the Codorus Creek was completed with funding provided by the Pennsylvania Department of Environmental Protection Growing Greener Program, Glatfelter, and the U.S. Army Corps of Engineers. The CCWA contracted with Aquatic Resource Restoration Company (ARRC) of Seven Valleys, Pennsylvania, to perform the actual watershed assessment and to develop a restoration plan. Under this grant, the physical condition of all streams and contributing tributaries were assessed. The primary goal of these assessments was to identify all stream reaches, map impaired stream reaches, prioritize restoration efforts, and develop watershed restoration plans.

The Codorus Creek Nonpoint Source Pollution Control Watershed implementation Plan, York County, Pennsylvania (hereinafter the “WIP” and “Plan”), will serve as a management tool for local governing agencies and entities, nonprofit organizations, watershed groups, and other stakeholders for future stream restoration efforts in the watershed. Numerous governments, non-profit and private interests have established partnerships with the common goal of improving aquatic habitat, designated uses, and water quality of the Codorus Creek and its many streams and tributaries.