3. Technical Strategy Stage 1: Define Existing Conditions

3.1 Wetlands

Wetlands are defined both in terms of natural resources and by their regulatory status. From a natural resource perspective, wetlands are ecosystems that depend on constant or recurrent shallow inundation or saturation at or near the surface. Wetlands include swamps, marshes, fens, and bogs. The characteristics and functions of a given wetland are determined by climate, hydrology, and substrate, as well as by its position and dominance in the landscape. While wetlands have a vast range of features, they share some specific structural and functional characteristics such as water, substrate, and biota as well as nutrient cycling, water balance, and production of organic compounds.

Wetlands functions are the physical, chemical, and biological processes that characterize wetland ecosystems, such as flooding, denitrification, and provision of habitat and support to wildlife. Wetlands have been shown to have the ability to significantly improve water quality (Kelly and Harwell, 1985, Nixon and Lee, 1988). This is particularly true of wetlands associated with stream corridors. Wetlands are a critical component of these riparian corridors. Wetland vegetation can keep stream channels intact by both slowing runoff and by evenly distributing its energy. Wetland vegetation can also regulate stream temperature by providing streamside shading.

Wetlands are defined and regulated by both New York State Department of Environmental Conservation (NYSDEC) and the U.S. Army Corps of Engineers (ACOE). Both agencies hold jurisdiction over the wetlands in the Cayuga Lake watershed. The ACOE, in accordance with Section 404 of the Clean Water Act, regulates the filling of "waters of the United States." This includes streams, lakes, impoundments, intermittent drainage ways, and associated wetlands. The ACOE defines wetlands as "Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

At the state level, wetlands and watercourses are regulated by the NYSDEC in accordance with the Article 24 *Freshwater Wetlands* and Title 23 of Article 71 of the Environmental Conservation Law. NYSDEC defines wetlands as: "Lands and submerged lands commonly known as swamps, sloughs, bogs, and flats which support wetland vegetation. Wetland vegetation is categorized into wetland trees, wetland shrubs, and wet meadow vegetation that... 'depend on permanent or seasonal flooding [wetland hydrology] or sufficiently water-logged soils [hydric soils] to give them a competitive advantage over other [vegetation].'

3.1.1 Watershed-Wide Characterization of Wetlands

The Cayuga Lake Watershed contains approximately 6,575 acres of New York State Department of Conservation regulated wetlands or about 1% of the total watershed area. These state designated wetlands, 12.5 acres in size by definition, often coinciding with the U.S. Fish and Wildlife National Wetlands Inventory (NWI) designated wetlands. There are many more wetlands under this threshold that are not regulated. The large wetlands (> 12.5 acres) are