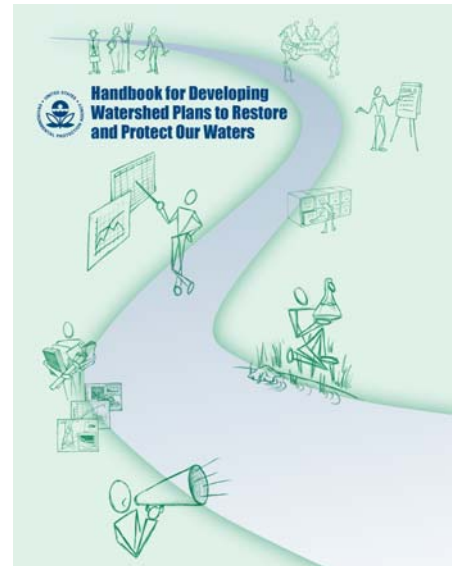


1 Introduction

The Connecticut Department of Environmental Protection (CTDEP) retained a project team led by Fuss & O'Neill, Inc. and including the Farmington River Watershed Association, the Park River Watershed Revitalization Initiative, and New England Environmental, Inc. to prepare a Watershed Management Plan for the North Branch of the Park River in Hartford County, Connecticut. The Watershed Management Plan is being developed in cooperation with the CTDEP, other governmental entities, stakeholder groups, and the general public.

The watershed planning process includes the preparation of three documents, including: (1) a baseline assessment report, (2) a detailed subwatershed field assessment report, and (3) a watershed management plan. The *Baseline Watershed Assessment Report*, which is the subject of this document, summarizes existing environmental and land use conditions in the watershed, while identifying priority areas in the watershed for subwatershed field inventories. The results of the subwatershed field inventories will be documented in a subsequent field assessment report, which will include targeted and site-specific opportunities for watershed restoration projects. Finally, the watershed management plan will identify prioritized action items to protect and improve the ecological integrity of the North Branch Park River and its watershed based on the priorities and issues identified in previous phases of the plan development, with input from the CTDEP and a project steering committee.



The management plan will be developed to satisfy EPA and CTDEP criteria for watershed-based plans.

The watershed management plan is being developed consistent with the U.S. Environmental Protection Agency (EPA) and CTDEP guidance for the development of watershed-based plans. The guidance outline nine key elements that establish the structure of the plan, including specific goals, objectives, and strategies to protect and restore water quality; methods to build and strengthen working partnerships; a dual focus on addressing existing problems and preventing new ones; a strategy for implementing the plan; and a feedback loop to evaluate progress and revise the plan as necessary. Following this approach will enable implementation projects under this plan to be considered for funding under Section 319 of the Clean Water Act.

The watershed management plan will be a comprehensive, scientifically-sound, and practical planning document for the protection and restoration of water resources in the North Branch Park River watershed. The watershed management plan will characterize the watershed conditions, identify, investigate, and address the current and emerging issues facing the watershed, and have the clear potential to affect on-the-ground change within the watershed.

1.1 Development of the Baseline Assessment Report

The following tasks were completed in developing this *Baseline Watershed Assessment Report* for the North Branch Park River watershed:

- Reviewed existing data, studies, and reports on the watershed.
- Compiled and analyzed available Geographic Information System (GIS) data.
- Consulted with the project steering committee, the watershed municipalities, the regional planning agency, and other governmental entities regarding available land use information, mapping, and land use planning regulations.
- Identified and delineated subwatersheds within the overall North Branch Park River watershed.
- Conducted a comparative subwatershed analysis to prioritize watershed field inventories and management plan recommendations.
- Performed a land use regulatory review.

This report documents current watershed conditions for the following topics:

- Study area, including a basic description of the watershed (Section 2).
- Historical and social perspective (Section 3).
- Natural resources including geology and soils, topography, hydrology, wetlands and watercourses, and fish and wildlife resources (Section 4).
- Watershed modifications including dams, water supply, wastewater, stormwater, and regulated sites (Section 5).
- Water quality including classifications and trends based on available monitoring data (Section 6).
- Land use and land cover (Section 7).
- Existing watershed practices (Section 8).
- Pollutant loading (Section 9).
- Comparative subwatershed analysis (Section 10).

1.2 Background

The North Branch Park River watershed is a moderate-sized watershed of slightly less than 30 square miles in area. The majority of the watershed (97%) is located within the original urban center of Hartford and the adjacent suburbs of West Hartford and Bloomfield, with Windsor, Avon and Simsbury comprising the remaining 3% of the watershed land area. The land uses within the watershed trend from highly urbanized at its confluence with the South Branch Park River to undeveloped in portions of its headwater regions. The lower portion of the river disappears completely within a several-mile long flood control conduit before it ultimately discharges to the Connecticut River. It is therefore unseen and often forgotten by many

residents of the City of Hartford. The North Branch Park River is more prevalent and part of the landscape in its upper reaches where considerable amounts of open space and undeveloped land protect the river. In its middle reaches, there are encroachments of urban development interspersed with undeveloped or lightly developed areas adjacent to the river. Flood control reservoirs in the central and upper reaches of the watershed provide some measure of flood protection and open space. Flooding is common along the lower portions of the river due to a combination of development within the floodplain and higher amounts of impervious cover in the urban areas of Hartford.

The Park River is formed by the confluence of its north and south branches. These rivers have helped shape the culture and character of Hartford and its suburbs. Landmarks such as Bushnell Park, Pope Park and the Mark Twain House were constructed to capitalize on their proximity to the river. Many institutions currently front the aboveground portion of the North Branch Park River in Hartford including the University of Hartford, the UConn Law School, the Village of Family & Children Services and the Watkinson School. Despite the significant development within the watershed and its impaired water quality, the North Branch Park River is still considered an asset to these institutions due to its landscape function on their campuses. Other groups have also recognized its value in terms of landscape presence and have modified the land adjacent to the river to enhance its visibility and its aesthetic appeal, an example being the recently redeveloped Goodwin Estates residences.



The Mark Twain House overlooking the North Branch Park River.

The North Branch Park River watershed encompasses a sizeable portion of Hartford's urban core and includes many of the sociological and economic challenges that face urban areas. Water quality of urban streams is typically one of many challenges facing urban areas. The North Branch Park River, however, also has the potential to serve as a tremendous asset and a focal point for urban/suburban community collaboration. It can be perceived as a natural

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feature that could help define the character of the urban/suburban nexus. Cities across the United States are beginning to rediscover their connections to rivers and waterways. The reconnection of Hartford to the Connecticut River is a prime local example of the benefits that can be

reaped from re-connecting people with the river. The North Branch Park River still retains sizeable natural areas along its banks as it flows from its headwaters into Hartford. The linear nature of rivers provides a tangible link and the potential for communities to collaborate on revitalization efforts. The potential exists for a regional vision to be developed where the

upper watershed communities can offer substantial water quality and habitat protection benefits while the urban areas can provide the urban river experience with the river forming a physical and emotional connection to the community.

The river, in addition, has the challenge of an aging sanitary sewer infrastructure that combines stormwater runoff with sanitary sewage (combined sewer overflows or CSOs and sanitary sewer overflows or SSOs), resulting in frequent water quality impairments of the river. A long-term program to address these issues is being developed by the Metropolitan District Commission (MDC) in cooperation with the CTDEP. The MDC has developed preliminary plans to address the issues of CSOs and SSOs, with the potential to significantly improve the quality of the lower portions of the North Branch Park River. This is an enormous and expensive infrastructure project and opportunities may exist to enhance the physical quality of the river as part of the proposed infrastructure improvements.

The CTDEP is seeking to clearly define these technical and political challenges facing the North Branch Park River and to develop a comprehensive management plan for the watershed that addresses the full suite of challenges it faces. The watershed management plan will identify measures that can be taken to improve the health of the river, including physical on-the-ground improvements,

infrastructure improvements including green infrastructure and sustainable design, improved land use decision-making with a shift to the concept of low impact development, river restoration, land or land rights acquisition to further protect the river and allow public access to increase the profile of the river, and public outreach and education programs.

The watershed management plan will identify measures that can be taken to improve the health of the river and have the clear potential to affect on-the-ground change within the watershed.

1.3 Ongoing Watershed Conservation and Restoration Efforts

A number of organizations are involved in efforts to preserve the existing high-quality natural resources of the North Branch Park River watershed, as well as to restore or improve degraded resources in the watershed. Notable conservation and restoration-related efforts and projects within the North Branch Park River watershed are summarized below.

- The Park River Assessment Program is a project funded by the United States Environmental Protection Agency (EPA) that was initiated in October 2007. The Children's Museum, the Farmington River Watershed Association, and the Park River Watershed Revitalization Initiative are working together on this program, recruiting family teams and community youth groups to adopt a stream in the watershed and monitor the water quality and habitat along its banks.

- The Park River Watershed Revitalization Initiative (PRWRI) was formed in 2006 as a collaboration between the Farmington River Watershed Association (FRWA) and an ad hoc network of local stakeholders to provide long-term stewardship of the Park River watershed. The two watersheds have common interests; they overlap across seven town boundaries and share municipal ordinances that define land-use policies.
- The Metropolitan District Commission (MDC), which is responsible for the water and sewer systems in the greater Hartford area, is implementing a major infrastructure improvement program known as “The Clean Water Project” to address a federal consent decree and a CTDEP consent order to achieve the Federal Clean Water Act goals. The Clean Water Project includes three basic elements: (1) reduction of combined sewer overflows (CSOs) within the Hartford central sewer system, (2) elimination of sanitary sewer overflows (SSOs) in the sanitary sewers of Wethersfield, West Hartford, Windsor, Rocky Hill and Newington and (3) nitrogen reductions. Projects will range from new sewer and drainage systems to greater wastewater treatment capacity to new tunnel storage and conveyance. These projects will help to eliminate sewage overflows to area waterways during an average year, significantly improving water quality.

The Metropolitan District Commission is embarking on an ambitious program, The Clean Water Project, to address approximately one billion gallons of combined wastewater and stormwater currently released each year to area waterways.

- The EPA promulgated a nation-wide stormwater program in 1990 to regulate stormwater discharges from cities and urbanized areas. Phase I of this program regulated large cities with populations of greater than 100,000 and without combined sewer overflows. Phase II, which began implementation in 1999, applies to small municipal separate storm sewer systems in urbanized areas, which includes the communities in the North Branch Park River watershed. The Phase II stormwater regulations require that regulated communities implement six minimum control measures to reduce levels of pollutants in stormwater discharges. The communities in the North Branch Park River watershed are currently implementing stormwater management plans as required by the Phase II stormwater program.
- Several educational programs within the North Branch Park River watershed focus on the North Branch Park River as a resource for environmental education. These include Trinity College, the Watkinson School, and the Harris Agri-Science Center at Bloomfield High School.
- The 4-H education center at Auer Farm in Bloomfield, a partner of the University of Connecticut, College of Agriculture, organizes childhood education programs focusing on agriculture within the watershed.

- The Knox Parks Foundation, an organization established to ‘green’ Hartford’s neighborhoods through organizing community gardens, providing horticultural assistance, beautifying the city through horticulture, and reversing the trend of urban deforestation. This organization is now based in the watershed of the South Branch of the Park River, but works within the North Branch watershed as well.
- The North Central Conservation District, which provides conservation assistance to nonprofit organizations and municipalities, serves the communities of the North Branch Park River watershed.
- The Connecticut Coalition for Environmental Justice works to protect Connecticut’s urban environments from the disproportionate affects of environmental pollution that may be caused by socioeconomic inequality.
- The Eastern Connecticut Resource Conservation and Development Area is a volunteer natural resource advocacy group that focuses on the interdependence of urban, suburban, and rural communities. The Eastern Connecticut RC&D Area encompasses the North Branch Park River watershed. Their activities include the recent completion of the South Branch Park River Trail and support of the ongoing planning effort in the North Branch Park River watershed.
- River and watershed clean-up programs, such as the University of Hartford Annual Spring Clean-up.