

# Delaware Direct Watershed River Conservation Plan

## Executive Summary

April 2011

# **EXECUTIVE SUMMARY**

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No other watershed in Pennsylvania can compare to the Delaware Direct in terms of resource complexity. Much of the watershed has been developed and re-developed multiple times throughout history, resulting in a largely impervious urban landscape. Today, the riverfront is rapidly approaching an unprecedented period of transformation that is garnering the attention of recreational enthusiasts, neighborhood associations, developers and international planners.

Before implementing these transformative planning efforts and development initiatives, Philadelphia must consider the fact that the Delaware River not only serves the City's water resource needs, but also the needs of a much larger ecosystem. The river itself begins in New York State and stretches more than 330 miles through four states and 42 counties before draining to the Atlantic Ocean at the Delaware Bay. The entire City of Philadelphia drains into the Delaware River. However, the city can be divided into seven smaller watersheds, including the Delaware Direct watershed. In order to achieve the vision of thriving neighborhoods supported by a healthy environment, it is imperative that the watershed's various resources are protected throughout all stages of development and implementation.

### **Project Description**

The Delaware Direct Watershed River Conservation Plan (RCP) is one component of multiple ongoing watershed planning efforts led by the Philadelphia Water Department (PWD) and the Delaware Direct Watershed Partnership. A river conservation plan is designed to unite stakeholders with their local streams, rivers and valuable watershed resources and to foster opportunities to improve the health of the watershed and associated watershed communities. River conservation plans identify significant natural, recreational and cultural resources; determine issues, concerns and threats to river resources and values; and recommend specific actions to conserve, enhance and restore the project area.

The Delaware Direct Watershed is the area of the City of Philadelphia that drains directly to the Delaware River and generally consists of the Delaware River Waterfront and several city blocks inland. Located within the fifth-largest metropolitan area in the United States, the watershed is a complex urban area rich in cultural, economic and natural resources. Dozens of neighborhood plans, city plans, riverfront plans, community plans, and sustainability plans are underway within this project area. Figure 1 illustrates the RCP study area in relation to some of these efforts.

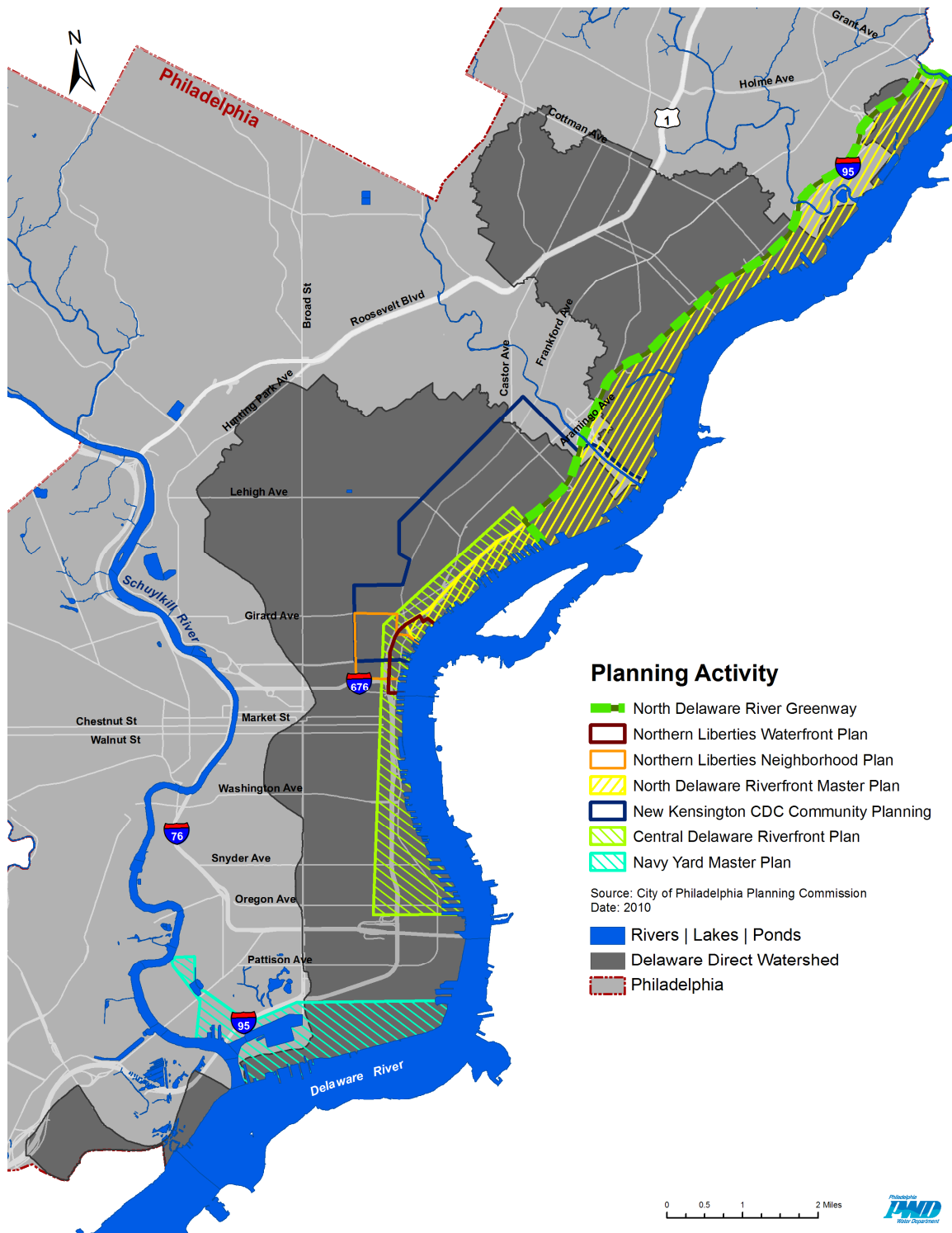


Figure 1 – Planning activity in the Delaware Direct Watershed

As many of these planning efforts contain parallel or complementary functions to the river conservation planning process, this RCP seeks to create a comprehensive planning inventory for this unique watershed with the goal of developing a holistic management plan that facilitates restoration, enhancement and sustainable improvements. In keeping

with this overarching goal, this RCP will serve as an accessible tool—a digital document—to be used in the promotion and facilitation of future planning and management initiatives within the Delaware Direct Watershed.

Stakeholder buy-in is critical to the implementation of the Delaware Direct Watershed River Conservation Plan (RCP) and to all relevant existing planning efforts in the watershed. Stakeholder input was sought out and considered in the development of the planning process of the RCP in order to ensure the plan represents of stakeholder interests.

### **Acknowledgments**

The Delaware Direct Watershed River Conservation Plan Team (RCP Team) is comprised of consultants—CH2MHill and Pennsylvania Horticultural Society (PHS)—along with Philadelphia Water Department (PWD) staff. This project was financed in part by a grant from the Community Conservation Partnerships Program, Keystone Recreation, Park and Conservation Fund, under the administration of the Pennsylvania Department of Conservation and Natural Resources, Bureau of Recreation and Conservation.

### **River Conservation Plan Goals**

The Delaware River and its surrounding watersheds have played a crucial role in the development, industrialization and modernization of Philadelphia. The mission to protect and restore the water resources of the City aligns with Philadelphians’ desire to claim the river as their own—a place where residents and visitors alike are able to benefit from its natural beauty and the various services it provides. The goals of the Delaware Direct Watershed River Conservation Plan reflect these sentiments.

The Philadelphia Water Department has been leading watershed planning and partnership development initiatives over the past 10 years. During this period, many community partners have worked closely with PWD staff to discuss their wishes for their respective watersheds and create final lists of goals that reflect the multitude of stakeholder interests in each watershed. We have found from these experiences that the partners in these watersheds believe that achieving these goals will lead the watersheds to attain water quality and water quantity improvements, in addition to healthier natural environments and better quality of life for the people who live, work and play in the watersheds. The same goals developed through other area watershed planning activities were shared with the Delaware Direct Watershed partners (initially, the Steering Committee) and approved and adopted by the partners:

#### Delaware Direct Watershed River Conservation Plan Goals

- *Riverflow and Living Resources:* Improve river habitat and integrity of aquatic life.
- *In-River Flow Conditions:* Reduce the impact of urbanized flow on living resources.
- *Water Quality and Pollutant Loads:* Improve dry and wet weather river water quality to reduce harmful effects on public health and aquatic life.
- *River Corridors:* Protect and restore river corridors, buffers, floodplains and natural habitats, including wetlands.
- *Flooding:* Identify flood-prone areas and decrease flooding.

- *Quality of Life*: Enhance the community quality of life by providing improved access to the river, creating better connections to historic resources and planning appropriately in order to preserve the character of the surrounding neighborhoods.
- *Recreation*: Enhance and improve recreational opportunities and public amenities.
- *Stewardship, Communication, and Coordination*: Foster community stewardship and improve inter-governmental, state, local and stakeholder cooperation and coordination on a watershed basis.

## **The Existing Plans**

The Delaware Direct Watershed RCP Steering Committee referenced several previous and ongoing planning efforts as a foundation for the RCP process. These complementary plans represent those efforts that significantly coincide with the RCP's goals and objectives. Two of these planning efforts, the Civic Vision for the Central Delaware and the Action Plan for the Central Delaware, focus on the riverfront between Allegheny and Oregon Avenues. These plans provide a framework for growth along the riverfront, addressing the ideas of sustainable urban growth, ecological principles, transportation policies and implementation strategies. Of primary concern in these plans is the ability of future development to bring residents and their neighborhoods closer to the river while simultaneously increasing property values, supporting a sustainable growth vision and enhancing the overall quality of life (Source: *A Civic Vision for the Central Delaware*).

In addition to the Central Delaware plans, the City of Philadelphia has committed to developing an urban environment that values open space, green space, environmental and economic sustainability, and an overall high quality of urban life through its GreenPlan and Greenworks planning initiatives. Encompassing similar values on a smaller scale, the New Kensington Riverfront plan and the Northern Liberties Neighborhood and Waterfront Plans strive to develop guidelines that promote low-impact development techniques, foster a seamless transition between traditional neighborhood fabrics and the developing waterfront, and successfully reconnect residents to the river, all while preserving the neighborhoods' diverse and eclectic characters.

Also included in the RCP's list of complementary planning efforts is the North Delaware Riverfront Greenway: Master Plan and Cost Benefit Analysis; the Natural Heritage Inventory of Philadelphia County; and the State of the Delaware River Basin Report. The Natural Heritage Inventory is intended to serve as a conservation tool by identifying environmentally sensitive areas within the City. The North Delaware Riverfront Greenway Analysis, similar to several of the abovementioned plans, strives to create a "River City" through the construction of a riverfront greenway that promotes the development of sustainable, livable communities. Perhaps encompassing the widest range of development and water resource management goals is the State of the Delaware River Basin Report. The report provides a benchmark of current conditions within the basin while also setting goals for future water resource and waterway corridor management, institutional coordination and cooperation, and public education and involvement.

For the Philadelphia Water Department, this River Conservation Plan is one of the first steps in the planning process for the Delaware Direct Watershed. The Philadelphia Water Department is also developing an Integrated Watershed Management Plan (IWMP) for this area, of which the RCP is an integral resource. The RCP initiated the public outreach effort and convened the Rivers Conservation Plan Steering Committee. This committee agreed to continue to meet as the Delaware Direct Watershed Partnership to advise the development of the IWMP. The Management Plan will develop objectives and management options to help meet and monitor progress toward the goals set in the RCP process. The documentation of existing planning efforts in the RCP will be utilized in the IWMP to emphasize recommendations already called for in local planning efforts. The IWMP guides the Philadelphia Water Department's efforts to restore and protect the Delaware Direct Watershed.

The Philadelphia Water Department committed to managing Combined Sewer Overflows (CSOs) through a watershed approach in the 1997 Long Term Control Plan (LTCP). The recent update to the LTCP, entitled *Green City, Clean Waters*, determines that implementing a wide-scale, distributed green stormwater infrastructure system is the most cost-effective way to reduce combined sewer overflows while maximizing benefits to the people of Philadelphia. In addition to eliminating runoff from small storms, reducing combined sewer overflows in the Delaware River and therefore improving water quality, green stormwater infrastructure such as rain gardens, tree trenches and bump-outs can also add health, safety and aesthetic benefits to a community. The IWMP will guide the implementation of the *Green City, Clean Waters* plan within the Delaware Direct Watershed. Ultimately, the goals set during the RCP process will also be realized during the implementation period of the *Green City, Clean Waters* plan.

## **Public Participation**

The Delaware Direct Watershed RCP Team approached the community engagement process with respect for the extraordinary and very recent efforts to involve thousands of watershed residents and stakeholders in existing City and neighborhood planning processes. The RCP Team began by reviewing the outputs and recommendations from several documents that have significance and potential impact on the Delaware Direct Watershed.

The robust processes and extensive community input into these complementary plans prompted the RCP Team to identify recurring themes and most frequently cited recommendations in order for the community engagement process to move planning toward action steps. In the review and comparison of the various planning documents, consensus on several key principles emerged and was reaffirmed in the public participation process:

- Claim the Delaware waterfront as a signature cultural landscape that defines Philadelphia and informs the surrounding neighborhoods.
- Provide residents and visitors open access to a variety of experiences and amenities along the waterfront, including the ability to “touch the river.”
- Balance public space as a cultural and social resource, with the opportunity to mitigate environmental impacts from human use and development.

- The imperative for government to lead by example on riverfront redevelopment, particularly where ownership and control issues are minimal and reinvestment can result in multiple benefits or benefits to the community as a whole.
- The desire of Philadelphians to have distinct and individual neighborhood identities while recognizing the need for safe, attractive and walkable access to neighborhood amenities such as parks, schools, restaurants, shopping, etc.
- Community input and influence on how neighborhoods are planned and developed, particularly when it comes to redevelopment projects that are likely to have significant impact on the life and/or character of a neighborhood.
- Strong agreement among City residents that multi-modal transportation options such as bus, trolley and light rail, are one of the most highly valued neighborhood amenities, providing relief from parking woes and the noise, congestion and pollution associated with cars.
- An understanding by citizens, professionals and municipal officials that outcomes are determined by both actions and policies: effective policies encourage desirable activities and, symbiotically, that citizen action can drive and direct municipal policy.

In addition to these unifying principles, the RCP planning team considered several specific projects and policies highlighted in the existing plans. Building on this information, groups of experts and stakeholders were identified and invited to participate in outreach activities. This approach allowed the RCP outreach components to minimize redundancy and capitalize on the energy of previous processes and to move planning toward action steps. Workshops, meetings and other outreach activities were organized around land-use typologies and place-based concerns so that proposed recommendations would be applicable and duplicable elsewhere in the watershed.

### **Steering Committee**

The Delaware Direct Watershed River Conservation Plan Steering Committee first convened in November 2007. Twenty-eight individuals representing 19 key watershed organizations—including government, non-profit and community groups—were invited to represent their constituents and the many recent planning and community engagement processes that have taken place throughout the city and watershed.

The Steering Committee was charged with two primary tasks:

- To provide input and guidance to the River Conservation Plan Team throughout the planning process
- To form a partnership of key stakeholders to share information, ideas, activities, program goals and accomplishments

While the first task has an identifiable endpoint, the second is more open-ended. During the Steering Committee meeting held in September 2008, the Philadelphia Water Department invited Steering Committee members to continue the partnership as the City moves forward in creating its Combined Sewer Overflow Long Term Control Plan Update (*Green City, Clean Waters*) and Integrated Watershed Management Plan and other future programs related to watershed management and planning. One of the great

successes of the RCP project was the recognition by committee members that providing a forum for exchange and collaboration was valuable. The willingness of most participants to continue meeting as a group is a testament to the value and benefits of partnerships that are able to define and support common goals.

### **Watershed Partnership**

The Delaware Direct Watershed Partnership consists of the members of the RCP Steering Committee, in addition to active participants that emerged from RCP public events and public meetings and other stakeholders that have shown an interest in the Partnership since the completion of the RCP planning process. Watershed partners share resources and expertise and coordinate information. The ultimate goal of the Philadelphia Water Department's watershed planning approach is to cultivate partnerships committed to adopting and implementing watershed management plans. As the Delaware Direct River Conservation Plan provides the foundation for the Delaware Direct Integrated Watershed Management Plan, the Partnership will serve as the lead in the implementation of the RCP, as well as the Delaware Direct Integrated Watershed Management Plan.

### **Workshops**

Three workshops provided an opportunity to explore watershed issues. For each event, key experts and stakeholders were invited to consider proposals, best management practices, recommendations, actions to advance projects, and demonstration and learning models for the Delaware Direct Watershed. Each intensive workshop centered on a single thematic element that had emerged from complementary planning and community engagement work. In all, more than 100 individuals representing more than 50 organizations participated in three half-day workshops. The Pennsylvania Horticultural Society (PHS), with support from the William Penn Foundation, provided venues and hospitality for these meetings. Groups were convened at the Independence Seaport Museum to discuss one of the most challenging and contentious urban watershed issues: parking. A remarkable gathering of expertise met at PHS to create a study design for tidal wetland restoration, and concurrent groups discussed riparian restoration and park expansion planning. The final workshop event, held in a tent overlooking the Delaware River at Penn Treaty Park, challenged attendees to create priority recommendations for moving forward on a citywide green and complete streets initiative. Chapter 3 provides a detailed account of these gatherings and Appendix B of the RCP contains outputs and meeting notes.

### **Public Meeting**

One large public meeting was held as part of the RCP process. On December 4, 2008, groups and individuals across the watershed were invited to participate in a series of activities and information-sharing sessions focused on creating and sustaining Healthy Neighborhoods. Rather than a traditional lecture format, the meeting plan provided for a series of activities and one-to-one discussions. The *Graffiti Wall* was designed to



introduce precedent examples of urban greening and sustainability approaches, stimulate conversation and provide organizers with a sense of what appealed to respondents. *Green Carpet Interviews* invited attendees to step onto the Green Carpet for a video interview on issues and concerns on their block. The *Map a Neighborhood Tour* used a personalized internet-based mapping exercise to create a tour of notable places in participants' respective neighborhoods. A *Healthy Neighborhood Polling Station* presented a series of slides as an accompaniment to 16 questions. Respondents were asked to rank the importance on a scale of 1-10 of various neighborhood concerns. The open house format allowed for drop-in visitation over a several hour period. An estimated 50 participants—including representatives from various neighborhood groups and non-profit organizations—attended the four-hour event.

### **Watershed Walks**

Two opportunities to experience firsthand the realities of the highly urbanized Delaware Direct Watershed were offered as part of the RCP process. Watershed walks provide an opportunity to engage community in an exploration of real world conditions as they relate to specific issues. In the many planning processes that have involved the Delaware Direct communities and neighbors, issues related to connectivity—particularly the links from neighborhoods to the riverfront—have been a priority concern. Reflecting the importance of this issue, watershed walks focused on this priority.

## **Delaware Direct Watershed Profile**

### **Land Use**

The Delaware Direct Watershed is primarily composed of developed land, including commercial and residential buildings, transportation features, parking lots and other hardscape features. The mostly impervious watershed drains approximately 26% of the entire City of Philadelphia, or the equivalent of 35 square miles. The largest single land use is residential housing. Industrial and large-scale commercial facilities occupy much of the Delaware River waterfront. Transportation infrastructure is another major feature of land use, making up approximately 10% of the watershed's land area. Interstate 95 parallels the Delaware River through the watershed and has disconnected much of the city from this valuable water resource. Waterfront access is a major focus of planning efforts in the watershed.

### **Zoning**

Many additions and changes have been made to the zoning code since it was first adopted, with a comprehensive revision and citywide zoning remapping undertaken in the early- and mid-1960s. Today, the Philadelphia zoning code is again undergoing a transformation because of the many issues that have occurred as a result of past regulations. The present code is considered by many to be overlong, confusing and outdated. The Zoning Code Commission was approved by voters in 2007 and

established to create an updated zoning code to improve the quality of design and development citywide.

### **Socioeconomic Characteristics**

The total population of the Delaware Direct Watershed is 501,998 and represents almost one-third of the entire population of the City of Philadelphia (1,526,006, according to the U.S. Census Bureau data from 2010). Much of the Delaware Direct Watershed is a patchwork of city neighborhoods. The Delaware Direct contains a broad range of communities that differ in racial and ethnic make-up, income level and age. The watershed as a whole is racially and ethnically diverse, yet it contains a number of demographically distinct communities. Overall, the watershed has a high population density at over 14,000 persons per square mile. The neighborhoods of South Philadelphia, North Philadelphia and Northeast Philadelphia are densely populated urban neighborhoods. Other areas, such as Center City, show great contrast from block to block. Areas of industrial and commercial concentration, such as the waterfront, are largely unpopulated. Sources of employment are spread throughout the urban watershed, and several areas can be characterized as significant nodes of employment. Several of these nodes have grown around redevelopment and adaptive reuse projects.

### **Land Resources**

The Delaware Direct Watershed is located within the Mid-Atlantic Coastal Plain. This flat, sandy region was formed when Triassic-period deposits were eroded and redeposited to the southeast by water and glaciers. The physical properties of the soils in the Delaware River drainage basin are the determining factor in the sediment-transport characteristics of the river and its tributaries. The soils, in turn, are determined by the geology and weathering processes of the rock material. Approximately 95% of the Delaware Direct Watershed is comprised of soils classified as Urban Land because they have been highly modified through development. More detailed information regarding the geomorphology of this area can be found in Chapter 4, the Land Resources section of this document.

### **Cultural and Historic Resources**

The Delaware Direct Watershed is full of places to play, learn and relax, and it features a wide variety of native, colonial, industrial and modern historic sites. Community centers, neighborhood parks and community gardens are a common sight among the densely populated neighborhoods in the watershed. The watershed is bound by the Delaware River to the east, providing opportunities for boating and fishing, as well as views of the water. Waterfront redevelopment efforts are at the heart of many plans to improve life in the city and present an opportunity to further meet the cultural and recreational needs of residents and visitors.

## **Parks, Recreation and Open Space**

The Delaware Direct Watershed contains 45 parks covering two square miles, or 3.4% of the land area. There are 108 recreation centers serving the surrounding communities' recreational needs. In total, recreation facilities amount to more than 4% of the watershed's land use. Several waterfront parks exist along the Delaware River, and more are in development. Currently, Penn Treaty Park, Pulaski Park, Washington Avenue Green and Pleasant Hill Park provide a variety of waterfront experiences. Race Street Pier and the Bridesburg Ecological Restoration site are reclaiming industrial waterfront property for public recreation. More than a dozen boat launches and marinas along the riverfront provide water recreation opportunities. The National Park Service operates the Independence National Historical Park located in Center City. A collection of local and neighborhood parks make up the remaining open space within the confines of the Delaware Direct Watershed. To find a local park, please visit the Philadelphia Parks Alliance website at [www.philaparks.org](http://www.philaparks.org) and search the Park Directory.

## **Historic Resources**

Covering much of the Delaware River waterfront, the Delaware Direct Watershed is rich in historical resources. It contains the site where William Penn is said to have made his treaty with the Delaware tribe, as well as several American Indian archaeological sites. The watershed contains some of the oldest neighborhoods in the city, such as Old City, Southwark, Northern Liberties, and Kensington. It was the heart of industrial Philadelphia, the focus of the massive manufacturing effort that, in the 19th century, gave Philadelphia the nickname "Workshop of the World." It contains Independence Hall and City Hall, Christ Church and Old Swede's Church, and the site of the first United States Navy Yard. Hundreds more significant government, religious, commercial, industrial and residential buildings and public spaces exist within the watershed.

## **Water Resources**

The Delaware Direct Watershed constitutes approximately 1% of a larger drainage area known as the Delaware River Basin. It is important to keep this distinction in mind when discussing the water resources of the Delaware Direct Watershed. This relatively small urban drainage area is a piece of a much larger puzzle, and the quality of its water resources is influenced by conditions both upstream and across the river in New Jersey. As an interstate waterway, water quality of the Delaware River is managed in part by the Delaware River Basin Commission (DRBC). The DRBC has established interstate water management zones and accompanying designated uses for each segment of the river. These designated uses define ways in which the Delaware River provides value to people, such as support of aquatic life, recreation, public water supply and fish consumption. Zone 3, encompassing the Delaware Direct watershed, was listed in the most recent 2010 assessment as not meeting its designated use for aquatic life due to violations of dissolved oxygen (DO), pH, alkalinity and water temperature standards. Recommendations from the Water Resources Plan for the Delaware River Basin provide a framework for addressing new and historic water resource issues and problems in the

Delaware River Basin. The Basin Plan emphasizes an integrated approach, recognizing, for example, that water supply and water quality cannot be managed separately.

The design and operation of Philadelphia's sewer system also has an impact on water quality within the Delaware River. More than 80% of the land in the Delaware Direct Watershed drains to a combined sewer system, with just a small portion of land directly draining to the river itself, either through overland flow or separate storm sewers. Combined sewer systems are common in many older cities and collect and convey both sewage and stormwater runoff in a single pipe network. These sewers are designed to overflow into the Delaware River when the capacity of the system is overwhelmed by increased flow during major storms. This release of untreated sewage mixed with stormwater is referred to as a combined sewer overflow (CSO). There are 54 outfalls where CSOs can occur along the Philadelphia side of the Delaware River.

Philadelphia has adopted a comprehensive watershed restoration approach that promotes control of stormwater at the source through low-impact development and [green stormwater infrastructure](#) practices on the land as the primary method to reduce combined sewer overflows. Green stormwater infrastructure includes a range of soil-water-plant systems that mimic nature by intercepting stormwater, infiltrating a portion of it into the ground, evaporating a portion of it into the air, and in some cases releasing a portion of it slowly back into the sewer system. These green infrastructure investments will be coupled with strategic investments in the existing conventional infrastructure system, such as upgrades and expansions at the wastewater treatment plants.

## **Biological Resources**

The Delaware Direct Watershed is part of the Upper Estuary of the Delaware River, a tidal zone with free-flowing waters south of Trenton and north of the Delaware Bay. The Upper Estuary is characterized by intertidal wetlands fed by freshwater streams and is part of a larger ecosystem that provides habitat for both transient and resident species. The river is a stop in the Atlantic flyway for migratory birds, as well as a thoroughfare for anadromous fish (fish that move from salt water to fresh water to reproduce).

Activities to support development, such as dredging, filling and deforestation, have greatly reduced natural ecological communities. The transformation of natural lands into urban land affects floral and faunal density and diversity, providing an opportunity for invasive species to establish themselves. Additionally, commercial and residential landscaping has contributed to the introduction of plant species not native to the region.

Although Philadelphia has one of the most developed waterfronts in the state, it contains a number of species that are confined to the tidal reaches of the Delaware River. In 2009, the Philadelphia Water Department (PWD), with grant support from Pennsylvania's Department of Conservation and Natural Resources (DCNR), performed an ecological survey of the southern portion of the Delaware River's waterfront. The study's findings suggest that the river in our region is serving as a nursery area for anadromous fish. In 2010, scientists from the Academy of Natural Sciences and the Partnership for the Delaware Estuary discovered seven species of freshwater mussels in

the Delaware River between Chester, PA and Trenton, NJ. Two of these species were previously considered to be locally extinct.

## **Issues, Concerns, Constraints and Opportunities**

Through public dialogue spurred by the Civic Vision for the Central Delaware and GreenPlan Philadelphia, it was evident that watershed residents highly value their ability to access their rivers for recreational use and to simply experience the riverscape. The RCP Team engaged in numerous public participation activities to further involve the community in decisions involving their rivers and water resources. The RCP Team conducted one-of-a-kind workshops that confirmed the primary issues raised in previous planning efforts. The documentation of watershed characteristics revealed constraints that further inform the issues facing the Delaware Direct Watershed.

Overall, the watershed issues identified during the RCP process center on:

- Waterfront access
- Connections between watershed neighborhoods and the Delaware River
- Waterfront development and its effects on existing resources
- Recreation and open space
- Land-based environmental degradation
- Loss of habitat and ecological services
- Water quality
- Stakeholder coordination

Within the watershed, there are also many opportunities to mitigate the impacts of urbanization. The diversity of natural and cultural resources and the desire for community involvement with waterfront development illustrates some of the potential. The following is a partial list of the opportunities that support sustainable transformation of the Delaware Direct Watershed.

- A unified civic vision for portions of the waterfront
- Active neighborhood and community organizations
- Local and national focus on sustainability
- Update of the zoning code and the City Comprehensive Plan
- East Coast Greenway Alliance (ECGA)
- Philadelphia Complete Streets Executive Order
- Reconstruction of Interstate I-95

## **Recommendations**

The extensive planning activity and public interest in the Delaware Direct Watershed has generated a number of recommendations for managing the watershed's resources. These recommendations are the product of collaboration between stakeholders at all levels from community members, neighborhood organizations, and regional leaders.

Stakeholder recommendations range from seeking funding for feasibility studies to increasing the number of bus stops on Delaware Avenue. The Philadelphia Water Department's riverbank assessments recommend educating property owners in ways to improve the riverbank through clean-up, lawn care and stormwater management. The previous and ongoing planning efforts provided the insight and expertise of professionals from multiple disciplines as well as the thousands of participants in the respective plans' outreach components. These recommendations range from improving street crossings to managing invasive plant species and identifying opportunities for collaborative efforts. While Chapter 9 of this report is dedicated to presenting the range and depth of these recommendations, the following list attempts to summarize these recommendations by organizing them around common themes.

Common themes of recommendations include:

- Improve connections from neighborhoods to the waterfront
- Reduce Combined Sewer Overflows through green stormwater infrastructure
- Create continuous riverfront multi-use recreational trail
- Enhance/expand existing riverfront parks (Pulaski, Penn Treaty & Pleasant Hill)
- Create new riverfront parks
- Where feasible, undertake ecological restoration projects to re-establish tidal wetlands, meadows, and riparian forest
- Expand the amount of locally accessible green space within neighborhoods designed for a multitude of benefits
- Support tree planting initiatives throughout the watershed
- Encourage and adopt sustainable development practices
- Establish green and complete street practices to encourage multi-modal transportation, support pedestrian movement and improve the environment
- Ensure new development complements existing neighborhood character
- Create spaces for a range of active and passive uses under I-95
- Support collaboration among various city departments, civic organizations, nonprofits organizations and others

A summary recommendations matrix was used to present the specific recommended actions of the complementary planning projects inventoried for the RCP. The matrix also illustrates the connection between the plans' recommendations and the RCP goals.

The following complementary plans were inventoried for this component:

- An Action Plan for the Central Delaware (2008)
- Central Delaware Riverfront Master Plan
- A Civic Vision for the Central Delaware (2007)
- East Coast Greenway
- Green 2015 (2011)

- Green City, Clean Waters (2009)
- GreenPlan Philadelphia (2011)
- Greenworks Philadelphia (2009)
- Natural Heritage Inventory of Philadelphia County (2008)
- New Kensington Riverfront Plan (2008)
- North Delaware Riverfront Greenway: Master Plan and Cost Benefits Analysis (2006)
- Northern Liberties Neighborhood Plan (2005)
- Northern Liberties Waterfront Plan (2007)
- Philadelphia Pedestrian and Bicycle Plan (2010)
- Water Resources Plan for the Delaware River Basin (2004)
- State of the Delaware River Basin Report (2008)

## **Conclusion**

Access is the central theme of the Delaware Direct Watershed River Conservation Plan. While there are indeed physical barriers that have disconnected the watershed from the Delaware River, there is also a need for access to information. Watershed stakeholders need access to the inventory of ideas, resources and efforts at work in the watershed in order to engage and to lend their strength. We see this RCP not as the last step but as a place to start; a point at which anyone with an interest in improving the health, viability and sustainability of the region can engage in the planning process. This watershed is in the midst of positive transformation and we hope that you find this report useful as you contribute to the successful implementation of the recommendations put forth in this plan.

To review the Delaware Direct Watershed River Conservation Plan in its entirety, please visit:

[http://www.phillywatersheds.org/your\\_watershed/delaware/delaware\\_RCP](http://www.phillywatersheds.org/your_watershed/delaware/delaware_RCP)