



# COBBS CREEK

**A GATEWAY  
TO MANY PLACES AND  
TO CLEANER WATER**

Darby-Cobbs Watershed Partnership,  
Fairmount Park Commission,  
Pennsylvania Environmental Council, and  
Philadelphia Water Department

February 2009

**DRAFT**

## The Darby-Cobbs Watershed Partnership

works to connect residents, businesses, and government as neighbors and stewards of the watershed. The Partnership has been active in developing this vision for the watershed and guiding and supporting subsequent planning activities within the watershed.

*The Darby-Cobbs Watershed Partnership members and other organizations that have participated in partnership efforts:*

Brother Rousseau Academy  
 Clean Air Council  
 Cobbs Creek Community Environmental Education Center  
 Cobbs Creek Golf Course  
 Cobbs Creek Recreation Center  
 Cobbs Creek West Community Association  
 Colwyn Borough  
 Darby Borough  
 Darby Creek Valley Association  
 Delaware County Anglers  
 Delaware County Concerned Citizens for Environmental Change  
 Delaware County Conservation District  
 Delaware County Environmental Network  
 Delaware County Intermediate Unit  
 Delaware County Planning Department  
 Delaware Valley Earth Force  
 Delaware Valley Regional Planning Commission  
 Delco Anglers  
 Department of Conservation and Recreation's Southeast Regional Office  
 East Lansdowne Borough  
 Fairmount Park Commission  
 Friends of Cobbs Creek - Southside  
 Friends Central Middle School  
 Greater Lansdowne Civic Association  
 Haddington-Cobbs Creek CDC  
 Haverford Township  
 Haverford Township Environmental Advisory Council  
 Lansdowne Borough  
 Lansdowne Borough Environmental Committee  
 Lansdowne Tree Advisory Board  
 Lower Merion Conservancy  
 Lower Merion Township  
 Lower Merion Township Environmental Advisory Council  
 Men of Cobbs Creek  
 Merion East Golf Course  
 Millbourne Borough  
 Montgomery County Conservation District  
 Morris Park Restoration Association  
 Narberth Borough  
 Natural Resource Conservation Service  
 Northeast Treatment Center  
 Office of Congressman Joe Sestak (PA-7)  
 Operation Weed and Seed of Upper Darby Township  
 Overbrook Farms Club  
 PA Cleanways  
 Partnership CDC  
 Pennsylvania Department of Environmental Protection  
 Pennsylvania Environmental Council  
 Pennsylvania Horticultural Society  
 Pennsylvania Resources Council  
 Philadelphia Water Department  
 Radnor Conservancy  
 Royal Gardens Association  
 Saint Joseph's University  
 Senior Environmental Corps  
 SEPTA  
 Streetz to Creeks, LLC  
 University of Pennsylvania  
 Upper Darby School District  
 Upper Darby Township  
 Upper Darby Weed and Seed  
 Ursinus College  
 Vision Quest  
 The Wagner Free Institute of Science  
 Wissahickon Friends Central School  
 Yeadon Borough

### Planning and Design:

WRT

CDM

## Cobbs Creek has the potential to be one of the major connective fibers of our region,

providing miles of needed trail links, connecting neighborhoods and amenities, and conveying and cleaning our waters before they reach the Delaware River. This vision has long been held by many who manage, live and play along “the Cobbs” and who over the past decade have collaborated to build this vision.

In 1997, funding from the William Penn Foundation allowed **Fairmount Park** to create a restoration master plan for the Cobbs and to more actively coordinate volunteer and partner activities. During the same period, the **Philadelphia Water Department** initiated the **Darby-Cobbs Watershed Partnership**, a consortium of proactive environmental stakeholders focused on achieving ecological and quality-of-life improvements in the watershed. Since then, Fairmount

Park, the Philadelphia Water Department, and their partners have worked to further connect public and private stakeholders to the watershed through planning actions, improvements, and extensive volunteer activities.

Over 20,000 volunteers are engaged in the management and improvement of the Darby-Cobbs watershed, for a total of almost 50,000 hours! Volunteerism continues to grow, as neighbors and groups come to realize the significance and potential of the creek and its lands. Public funders from the state and federal government such as DCNR and EPA continue to offer support. Knowledgeable partners such as the **Pennsylvania Environmental Council** continue to assist with watershed coordination. Now, ten years after the beginning of significant watershed planning, incipient ideas for Cobbs are being transformed by community participation into an enduring civic vision.

Much has been achieved by the watershed partners and volunteers over the past 10 years to make this vision real:

- A creek restoration and sewer relocation project near Marshall Road;
- 216 acres of restoration, including 1186 shrubs and 4017 trees planted

(21 total acres); 9.5 acres of invasive plants removal; 2.4 acres of meadow creation; and 5 acres of stormwater management including wetland creation and stream restoration;

- Development of the Cobbs Creek Community Environmental Education Center; and
- Publicly vetted planning for upcoming trails and restoration projects.

The extensive parkland surrounding Cobbs Creek is public, presenting the opportunity for significant enhancement and public use, but also significant need for maintenance and event planning. The varied terrain and quality of the creek corridor keep people from experiencing or understanding the place in its entirety. It is understood as a composite of places. Its greatest potential can be realized only when it is appreciated as an integrated whole.

**This vision statement brings together the many proposed improvements for Cobbs Creek by varied stakeholders, supporting the holistic approach Fairmount Park and the Philadelphia Water Department and their partners have long advocated.**

A map of the Cobbs Creek corridor in Philadelphia, Delaware County, and Montgomery County. The map shows the creek winding through various neighborhoods including Kingsessing, Cobbs Creek, Millbourne, East Lansdowne, Upper Darby, Haverford, Lower Merion, and Overbrook. Major roads like Market-Frankford, City Ave, and Lansdowne Ave are visible. Green shaded areas represent parks and open spaces, with Fairmount Park being a prominent feature in the upper left. A network of trails is shown as dashed lines, and bike lanes are indicated by dotted lines. Three callout boxes provide additional context: 'Fairmount Park!' points to the large green area in the top left; 'Neighborhoods!' points to the residential areas along the creek; and 'Trails!' points to the trail network in the lower right.

## Fairmount Park!

Cobbs Creek's proximity to this expansive park, and many others, makes the creek an important gateway to recreation and open space resources.

## Neighborhoods!

Not only is Cobbs Creek the threshold connecting Delaware County and Philadelphia County, it is a gateway to many communities in Montgomery, Delaware and Philadelphia counties.

## Trails!

Miles of biking and hiking trails course through the corridor, and many more miles of bike lanes are planned to lead right to Cobbs Creek.

## Recreation!

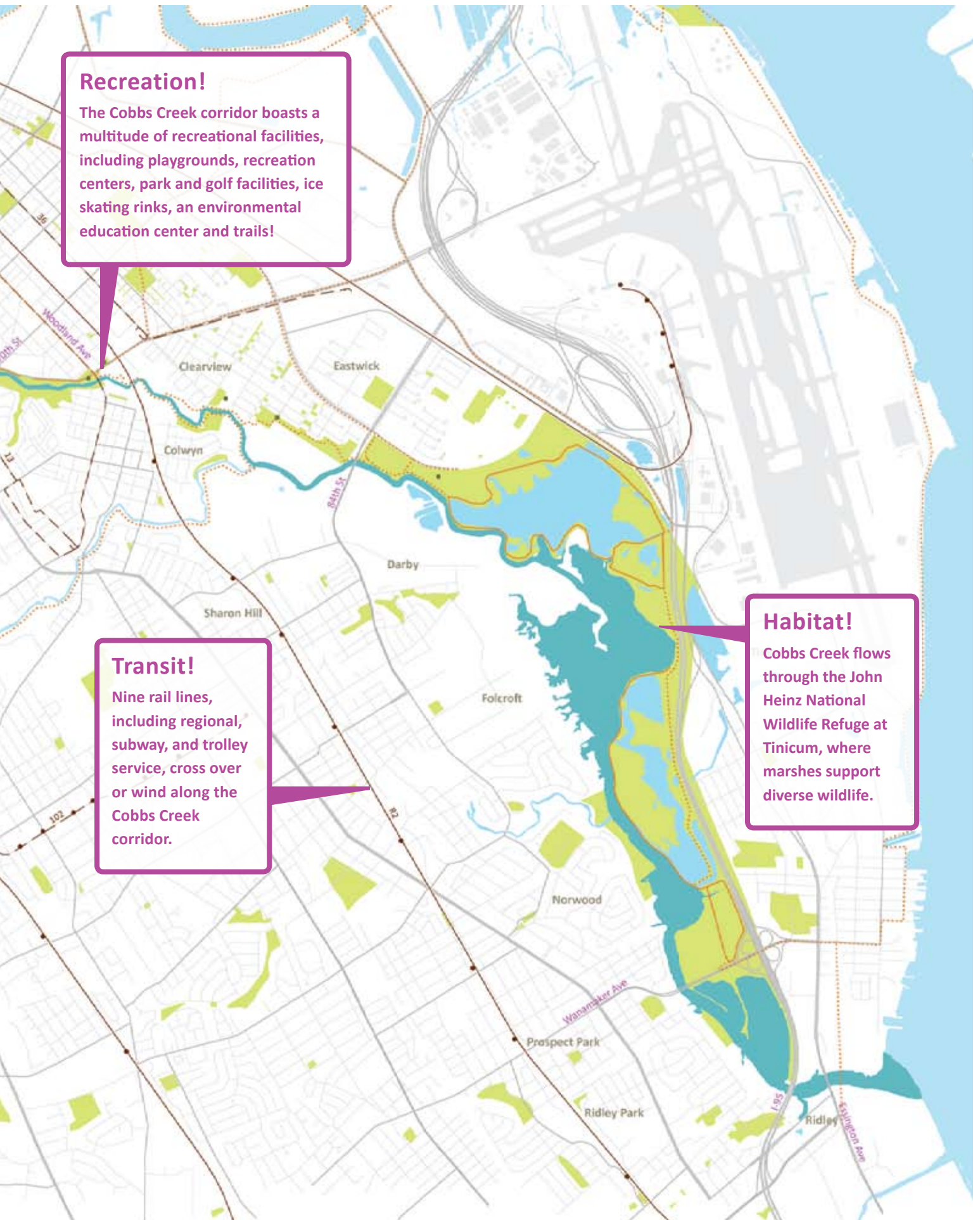
The Cobbs Creek corridor boasts a multitude of recreational facilities, including playgrounds, recreation centers, park and golf facilities, ice skating rinks, an environmental education center and trails!

## Transit!

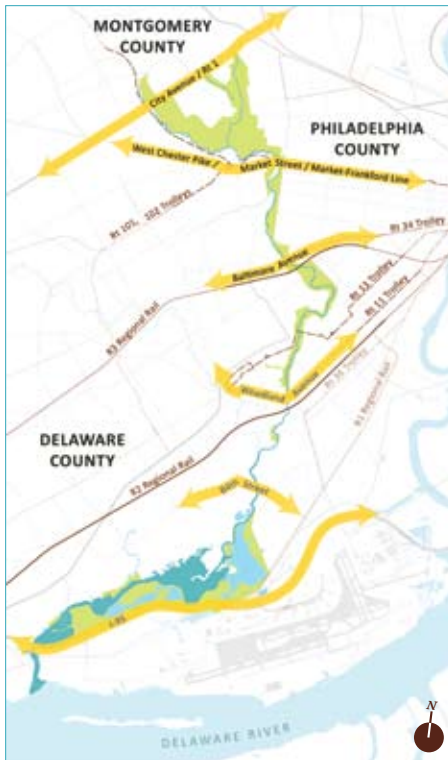
Nine rail lines, including regional, subway, and trolley service, cross over or wind along the Cobbs Creek corridor.

## Habitat!

Cobbs Creek flows through the John Heinz National Wildlife Refuge at Tinicum, where marshes support diverse wildlife.

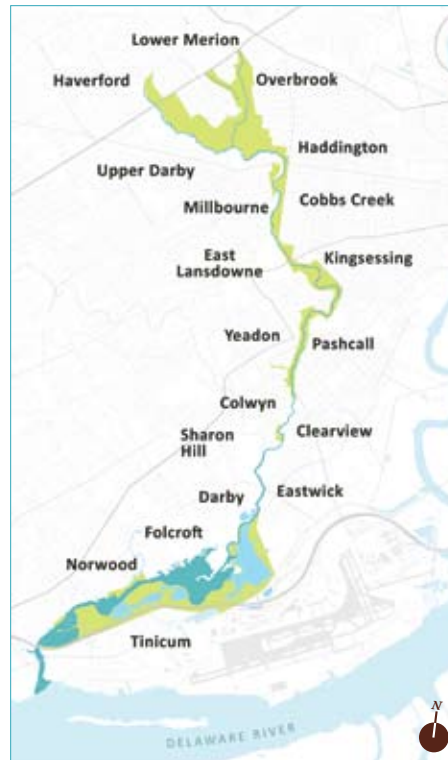


## Cobbs Creek: A Gateway to Many Places and to Cleaner Water



### A Gateway Across Regions

Cobbs Creek is the border between Philadelphia and Delaware Counties. The northern edge of Indian Creek at City Line Avenue defines the boundary between Montgomery and Philadelphia Counties. Although political borders can sometimes be abstract, Cobbs Creek plays a very real role as the gateway to communities on a regional scale.



### A Gateway to Communities

Cobbs Creek is the thread that unites diverse communities along and across its banks. Through roads, rail and the creek, these communities are stitched together.



### A Gateway to Resources

Talk about proximity to cultural and natural resources: parks, including Fairmount Park and a plethora of neighborhood parks; the historic Blue Bell Tavern; the John Heinz National Wildlife Refuge at Tincum; the Schuylkill and Delaware Rivers — among many others!



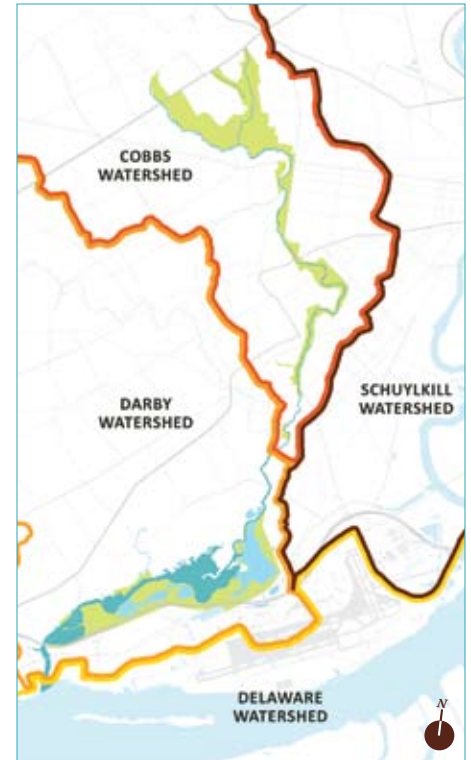
### **An Aerial Gateway**

Viewed from an airplane, Cobbs Creek is a distinctive green ribbon, a connective environment that gracefully frames the approach to Philadelphia's International Airport. It provides a lush counterpoint to the nearby industrial lands of the Schuylkill and Delaware Rivers, enhancing the entry to our region.



### **A Gateway to Recreation**

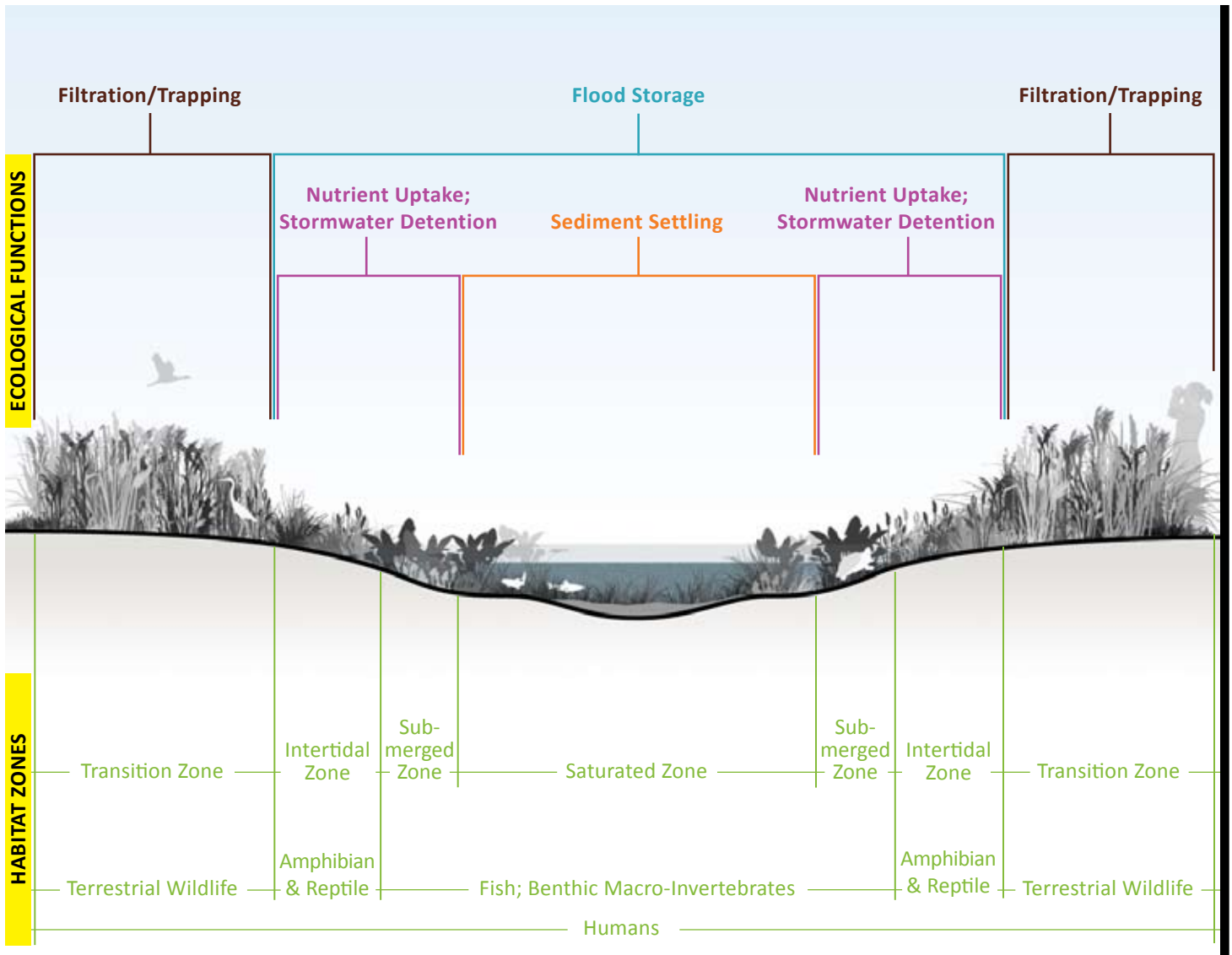
The Cobbs Creek corridor provides essential connective tissue to a network of great and varied recreational opportunities. It raises a series of resources, like golf courses, miles of trails, neighborhood parks, a stable, and acres of open water to kayak in, into a distinctive destination.



### **A Gateway to Cleaner Water**

Like all of our few remaining creeks, the Cobbs Creek corridor offers us the opportunity to help steady the environmental imbalances caused by urban development. Restoring the natural environment along the stream corridor can improve water quality, habitats and environmental education opportunities.

## A typical WETLAND performs these kinds of ecological functions...



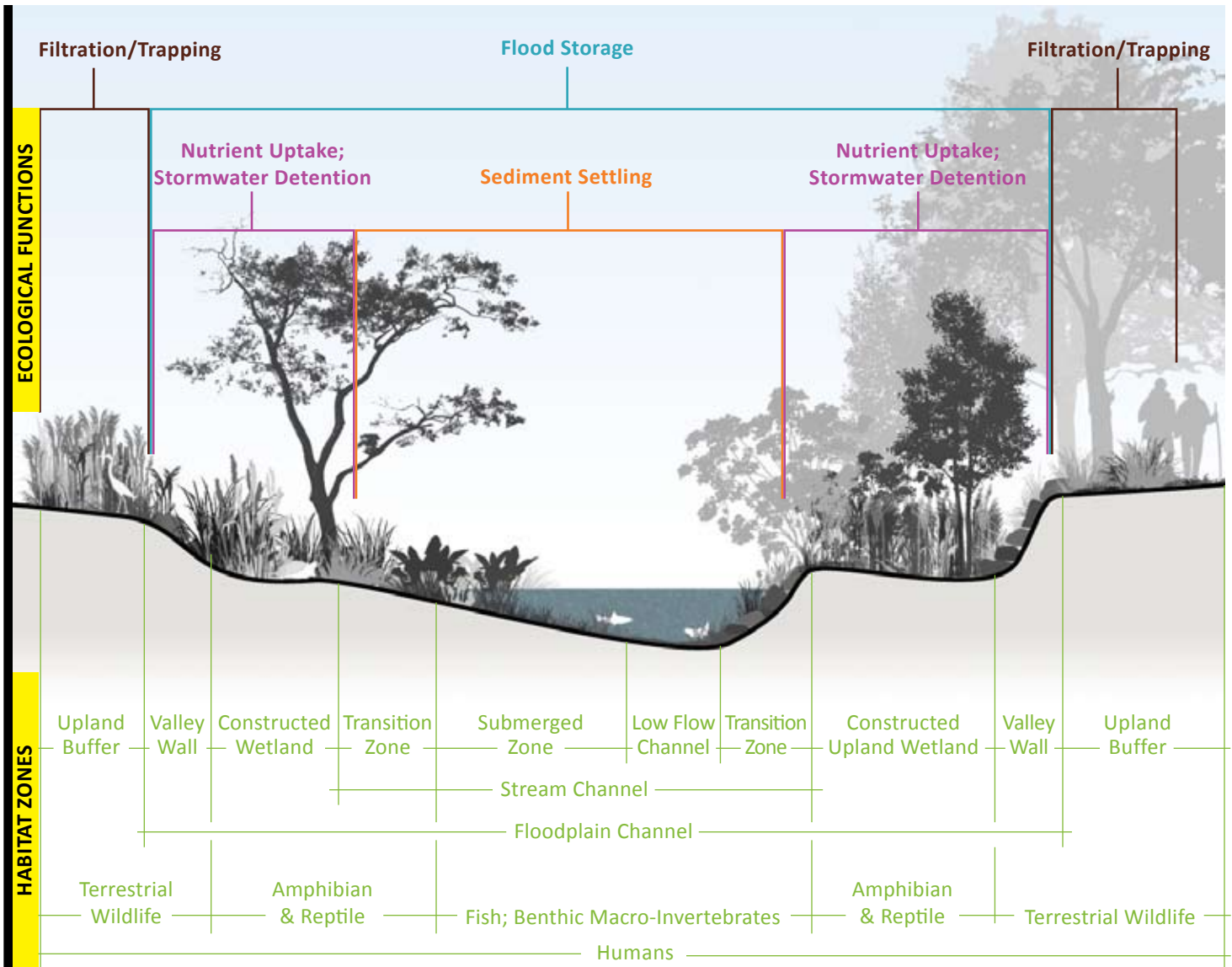
- Habitat
- Filtration/Trapping
- Flood Storage
- Sediment Settling
- Nutrient Uptake



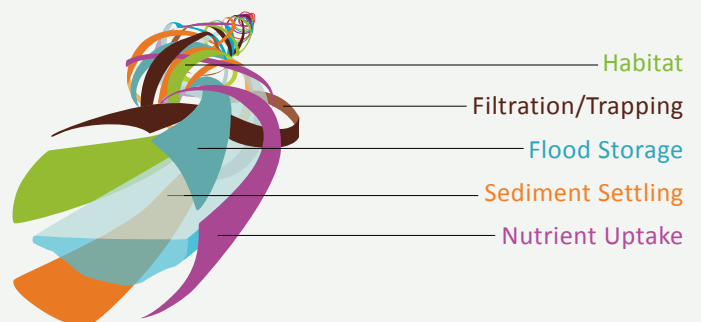
In a typical wetland, physical, chemical, and ecosystem constituents **cycle continuously** through the wetland.



...but an enhanced STREAM CORRIDOR can perform the same functions, too.

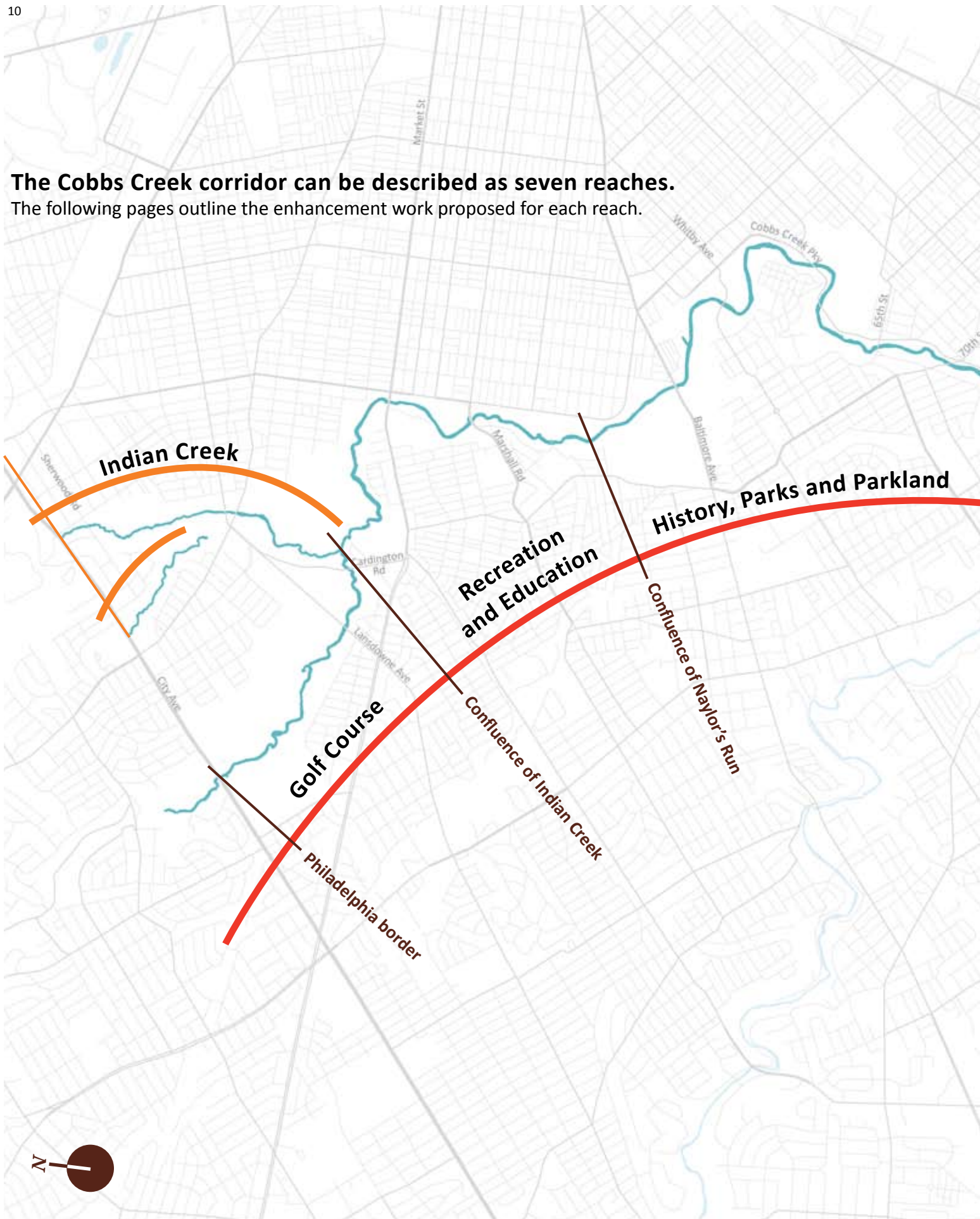


The same physical, chemical, and ecological functions can be performed in a riparian corridor, but their spatial organization differs. In a riparian corridor, wetland functions may be more **spread out**, instead of layering over one another. Instead of cycling within a wetland, the functions may be understood as **spiraling** within the entire riparian corridor, with different ecological functions predominating in different areas.



**The Cobbs Creek corridor can be described as seven reaches.**

The following pages outline the enhancement work proposed for each reach.





## Indian Creek Reach



The Indian Creek reach of Cobbs Creek represents the convergence of a remarkable number of signature places and recreation opportunities. It also offers some of the most dramatic opportunities for environmental enhancements anywhere in the city. With 69th Street Terminal at its base, City Line Avenue defining its northern edge and the major streets of Haverford, Lansdowne, and

Girard Avenues converging at its center, the site enjoys a remarkable degree of access. Surrounded by Lower Merion, Overbrook and Upper Darby, this reach could be a major community magnet, drawing support and stewardship from all edges. In its current condition, this reach offers limited positive recreation and environmental education assets. The site does, however,

offer a remarkable framework for enhancements. The potential palette of environmental enhancements include stream daylighting at the intersection of the west and east branches of Indian Creek; wetland creation in large, suitable sites; wetland restoration in several locations; and stream channel redefinition and plantings.



*The Indian Creek reach offers a remarkable framework for environmental restoration.*

**Above:** *With stream daylighting, the east and west branches of Indian Creek may be brought together near this point. **Middle row:** This reach includes neighborhood parks, playgrounds, and trails. **Below:** This site in the upper reach is one of several opportunities for creation of large wetlands.*





*A vision of the restoration of the natural watercourse of Indian Creek, upstream of Lansdowne Avenue.*



*existing conditions*



Stream corridor improvements in the Indian Creek reach:

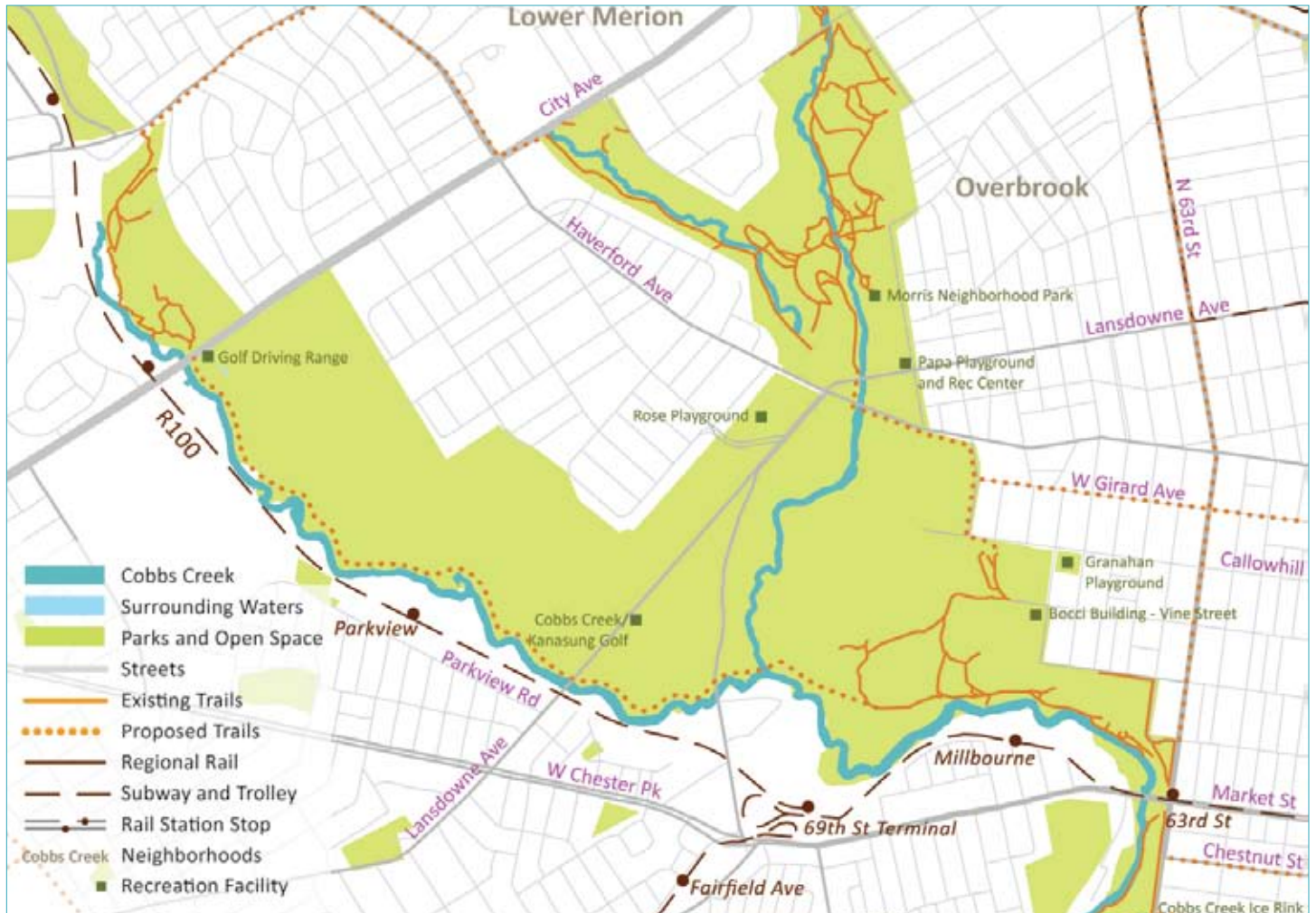
1.4 acres of wetland enhancement

0.5 acre of wetland creation

2.0 acres of stream daylighting



## Golf Course Reach



Bordered by the R100 high speed line, with 69th Street Terminal near its base and City Line Avenue near its northern edge, the Golf Course reach is extremely well-connected by transit and roads. The thriving, compact neighborhoods of Parkview and Lower Merion border it and Overbrook neighborhood is close by. Currently, a lack of trails along this reach inhibits pedestrian connectivity

between these neighborhoods and to the larger park network. Still, the reach's extensive public golfing facilities draw visitors from within and beyond the area.

In the Golf Course Reach, a pastoral setting and gently sloping banks frame Cobbs Creek. But typical golf course land management practices and application of fertilizers and other chemicals can threaten water quality

and promote the spread of invasive vegetation. With stream bank enhancements, in-channel modifications, increased buffers and removal of invasive plants, this reach of the creek could become a true asset that brings many ecological benefits. With trail development, this reach could also provide tremendous educational and recreational benefits.





**Top left:** Cloaked by invasives, the stretch near the golf driving range is a hidden jewel. **Top right:** The City Line Avenue bridge offers a glimpse into the potential and current problems. **Above:** The City Line Avenue driving range is a low-key, verdant place to spend an afternoon. **Below:** Managing stormwater from upstream and providing cleaner water will require the creation of more areas for water storage and infiltration.



*existing conditions*



Stream corridor improvements in the Golf Course reach:

- 1.23 acres** of wetland enhancement
- 5.66 acres** of wetland creation
- 2.43 acres** of streambank restoration
- 4.65 acres** of in-channel streambank restoration
- 1.30 acres** of additional tree canopy cover
- 1.71 acres** of stormwater detention basins
- 0.19 acre** of naturalized stormwater discharge
- 1.42 acres** of new floodplain storage
- 0.15 acre** of improved accessibility using trails



*A vision of Cobbs Creek, looking north toward the golf driving range.*

## Recreation and Education Reach



The Recreation and Education Reach of Cobbs Creek beautifully demonstrates that even narrow corridor segments can provide a plethora of environmental benefits and community amenities. The reach begins at the Cobbs Creek confluence with Indian Creek and ends where it meets Naylor's Run. It is framed by the Cobbs Creek and Millbourne neighborhoods and includes a large range of facilities: an ice skating rink, a pool, a recreation center,

and the jewel of the corridor, the Cobbs Creek Environmental Education Center.

The Cobbs Creek Environmental Education Center site's pastoral setting, historic bridge and buildings make it one of the most scenic places in the city. Its beautifully restored wetland and creek segment provide a model for high performing environmental enhancements. The Philadelphia Water Department has demonstrated through its work at the

Center site that riparian corridor environmental enhancements can be ecologically high functioning and sustainable. There is still more work needed to bring the rest of this reach up to the standard set by the Cobbs Creek Environmental Education Center segment. Served by the Market-Frankford line, among other public transit routes, this reach is well positioned to become an important destination for education and recreation.



The Recreation and Education Reach provides many opportunities for environmental education and for recreation. **Above:** A dam blocks fish passage in the upper portion of the reach. **Middle:** Children enjoying free playtime by exploring the Cobbs near the Cobbs Creek Environmental Education Center. **Right:** A view toward the Cobbs Creek Environmental Education Center building. **Bottom:** A successful enhancement project that provides a range of environmental and recreational benefits.



Proposed stream corridor improvements in the Recreation and Education reach:

- 5.62 acres of wetland enhancement
- 14.41 acres of wetland creation
- 5.22 acres of streambank restoration
- 11.46 acres of in-channel streambank restoration
- 0.76 acre of additional tree canopy cover
- 2.60 acres of stormwater detention basins
- 0.84 acre of naturalized stormwater discharge
- 2.20 acres of new floodplain storage
- 2.64 acres of dam removal / new fish passages
- 0.28 acre of improved accessibility using trails

## Stream corridor improvements are already at work in Cobbs Creek!

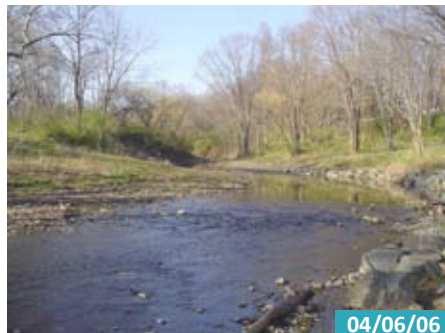


Years of streambank erosion led to exposure of a sewer pipe within Cobbs Creek near Marshall Road. This type of situation often occurs in streams receiving urban runoff and requires action to prevent damage to the pipe and to stabilize and restore the stream embankment.

In the fall of 2000, the Philadelphia Water Department (PWD) was awarded a PA Department of Conservation and Natural Resources Growing Greener Grant of \$150,000 for natural channel restoration and habitat creation in this section of creek. PWD provided additional matching funds and the Marshall Road project has become a model of stream restoration, demonstrating the ecological, recreational and aesthetic value of stream improvement projects.

Design: Biohabitats, Inc.

Construction: Buckley & Company, Inc.



**900 linear feet** of streambank restoration  
**\$51,000** for clearing and grubbing  
**170 feet** of sewer rehabilitation  
**3412 cubic yards** of excavation  
**2975 square yards** of water course and erosion protection  
**\$11,000** for invasive species management  
**4 vanes** (artificial structures used to direct flows in a stream)

**625 cubic yards** of constructed riffle  
**1060 tons** of boulder bank stabilization  
**366 trees** planted  
**277 shrubs** planted  
**492 linear feet** of live branch layering  
**4391 square yards** of native seeding and mulching  
**\$768,737.80** total cost

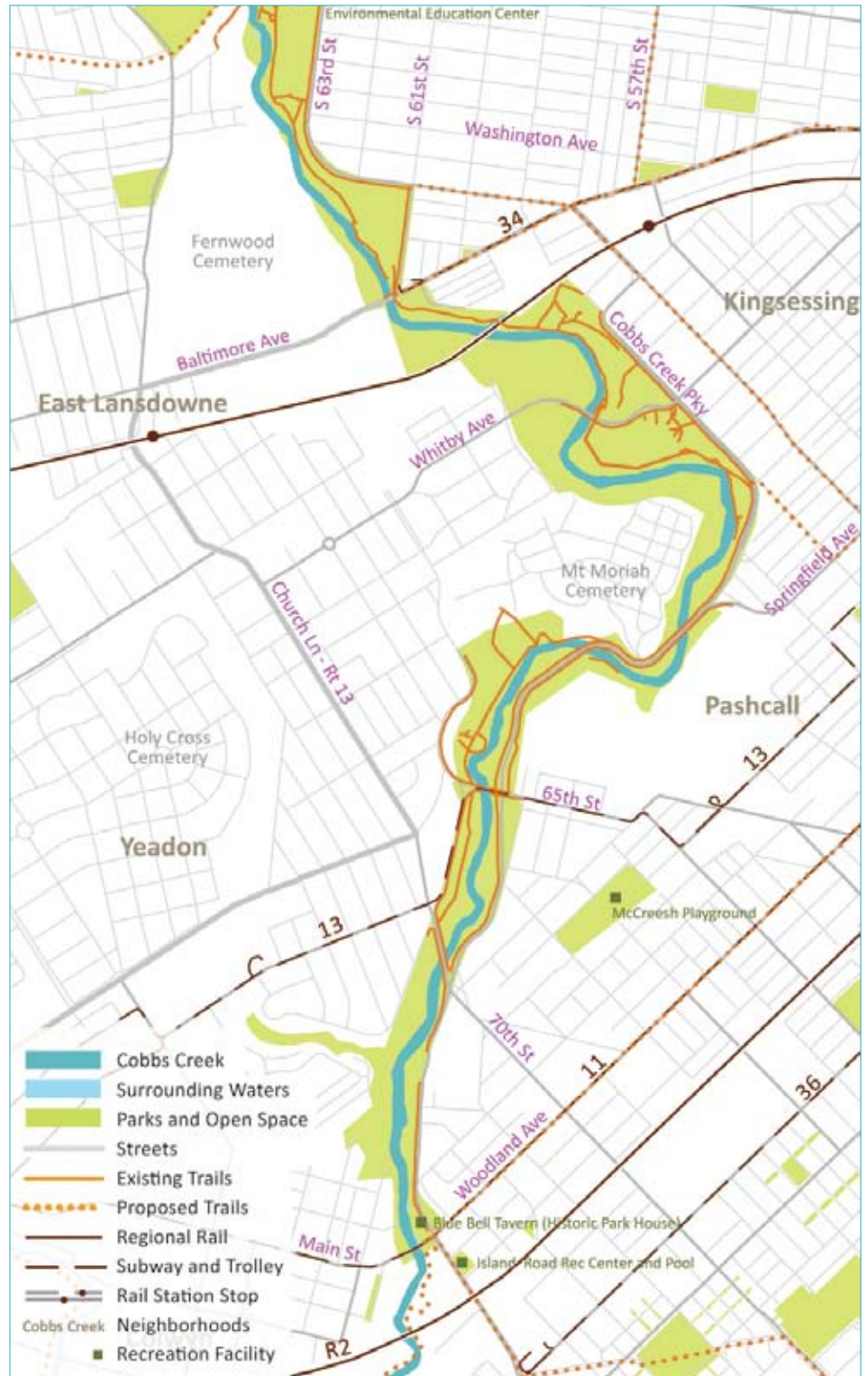


## History, Parks and Parkway Reach

The History, Parks and Parkway Reach truly imparts a feeling for the pace and setting of past periods. The gentle meanders of the verdant Cobbs Creek Parkway border the east side of the corridor; historic Woodland Avenue brings a visitor to the historic Blue Bell Tavern, the scene of a lethal Revolutionary War skirmish. Mt. Moriah Cemetery, built in the mid -19th Century within the “rural ideal” type, speaks of pastoral landscape style and ambitions of the time. These, and other, threads of the past come together in an area that faces contemporary environmental challenges and opportunities.

Significant opportunities for stream enhancements twine throughout this entire reach. Reconfigured banks can bring wetlands, stormwater storage, revitalized buffers and new trails. The dam near the Blue Bell Tavern currently prevents fish passage but with slight modification could allow for migration.

Enhancements to the creek and creek landscape would re-frame the significant assets already in place in this reach, providing a new setting for the historic jewels. This combination of improved environmental, recreational and cultural assets would well serve the city and the densely developed adjacent neighborhoods of East Lansdowne, Yeadon, Kingsessing and Pashcall.

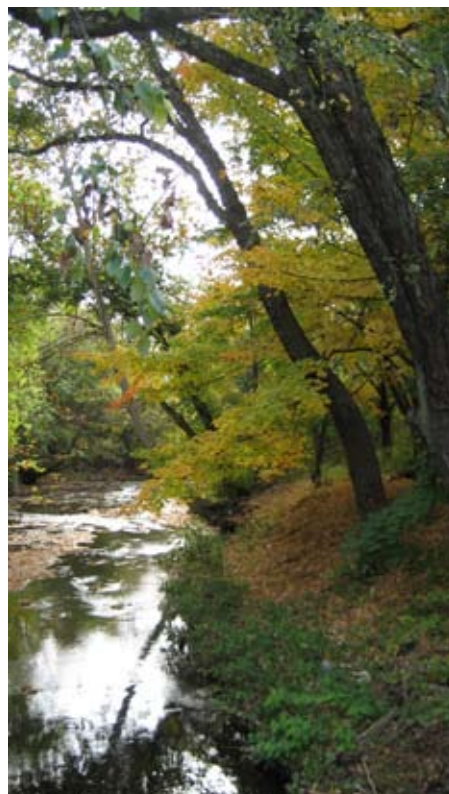






*In the History, Parks and Parkway Reach, the strands of the past interweave with contemporary environmental challenges and opportunities. **Top row, from left:** The historic Blue Bell Tavern; the beautiful Cobbs Creek Parkway; one of many quiet park areas.*

***Middle row, from left:** The C17 combined sewer outlet; Cobbs Creek near Mt. Moriah Cemetery in early autumn. **Bottom row:** The well-crafted stone Cobbs Creek Parkway Bridge crossing Cobbs Creek.*





*existing conditions*



*A vision of Cobbs Creek from Whitby Avenue Bridge.*

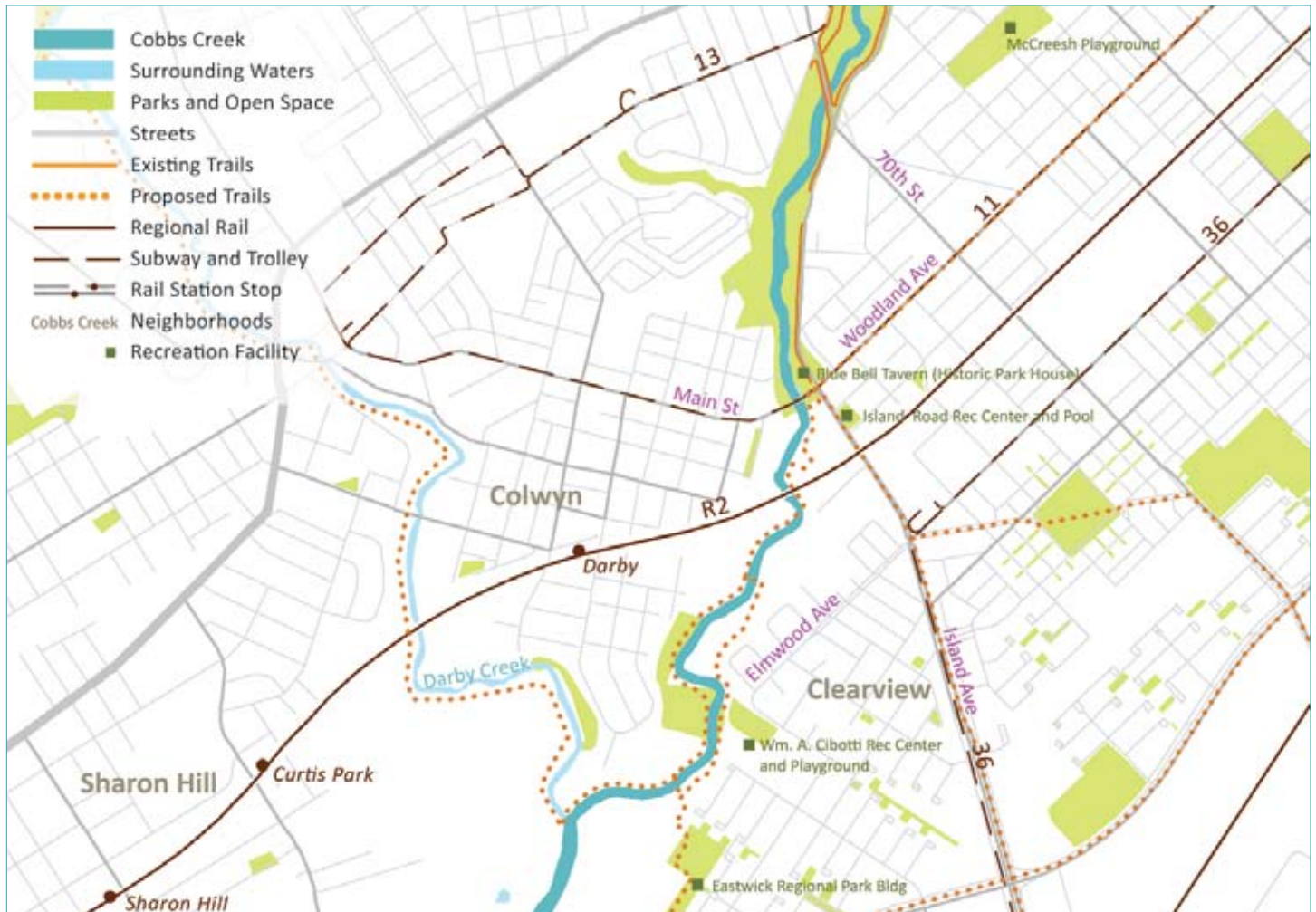


Stream corridor improvements in the History, Parks and Parkland reach:

- 2.81 acres of wetland enhancement
- 10.20 acres of wetland creation
- 4.93 acres of streambank restoration
- 22.62 acres of in-channel streambank restoration
- 1.83 acres of additional tree canopy cover
- 3.53 acres of stormwater detention basins
- 2.74 acres of naturalized stormwater discharge
- 4.98 acres of new floodplain storage
- 2.64 acres of dam removal/ new fish passages
- 1.10 acres of improved accessibility using trails



## Lower Cobbs Reach



The Lower Cobbs Reach flows through the Colwyn and Clearview neighborhoods, ending at the confluence with Darby Creek. For a short and somewhat narrow reach, it offers green respites, great views and wonderful opportunities for environmental enhancement. Walking from the top of the reach to its end, a visitor would see the historic Blue Bell Tavern, the R2 line, the pastoral views of

Saturn Park and the meeting of the the Darby and Cobbs Creeks. In its current state, one would also see stretches of bank erosion, invasive plants and limited tree buffers. A wide range of improvements such as stream bank restoration, in-channel modifications and buffer enhancements could transform the functioning of this reach and the experiences it provides.



*The Lower Cobbs Reach brings its adjacent neighborhoods in close contact with pastoral views and strolls. **Top:** The Lower Cobbs with the Woodland Dam in the background. The photo-simulation on the following page addresses waterway restoration proposals for this area. **Lower right:** The Greensward of Saturn Park, near the confluence of Darby Creek, behind an Eastwick neighborhood. **Lower left:** Bank erosion and invasive plants near where Cobbs Creek meets Darby Creek. **Middle left:** One of the quiet Eastwick neighborhood streets.*





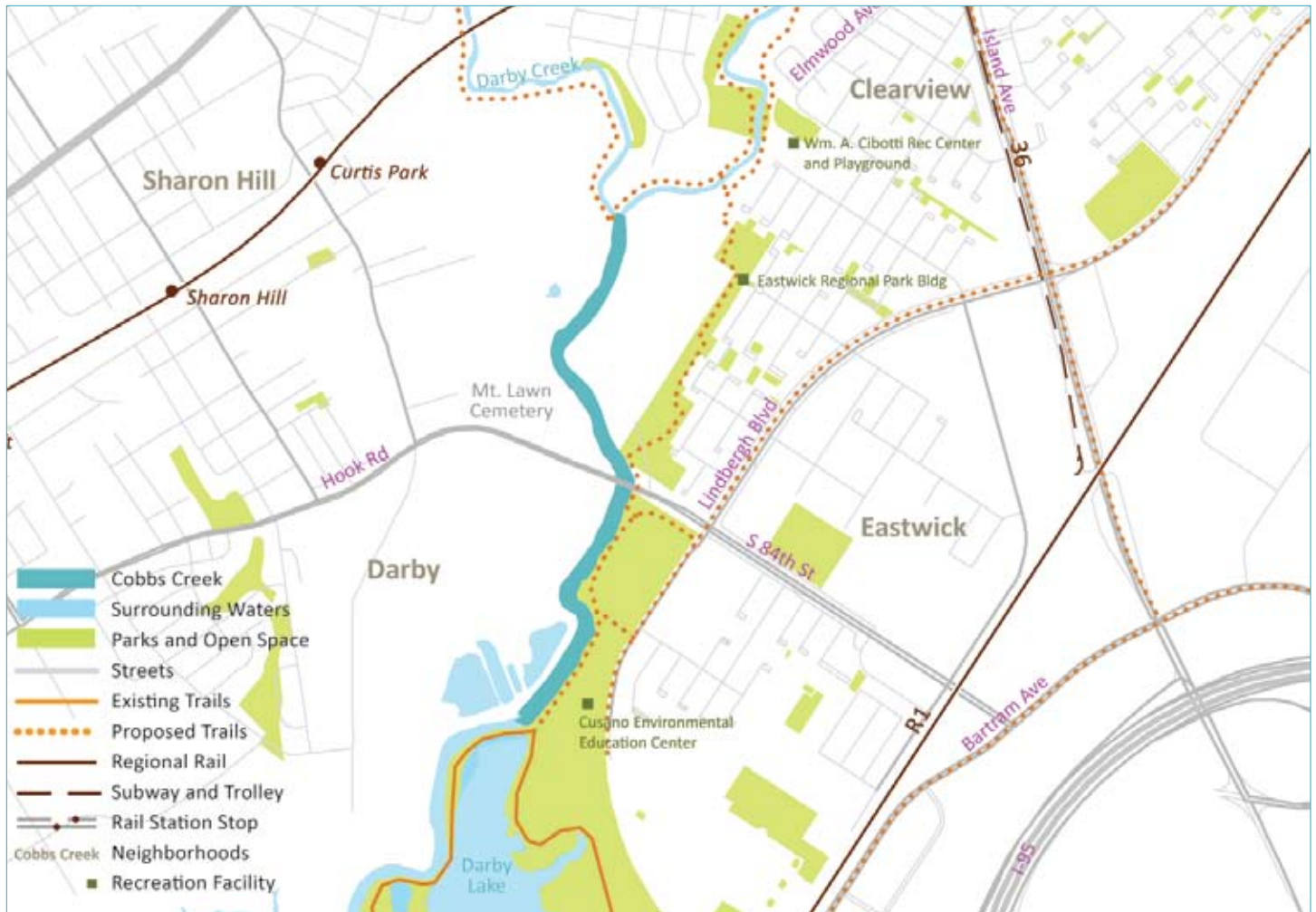
*existing conditions*



*A vision of Cobbs Creek looking toward Woodland Avenue Dam, illustrating a new fish ladder that would promote fish passage.*



## Darby Reach



The neighborhoods bordering this reach, Sharon Hill, Darby, Clearview and Eastwick, know well the contrasts of their landscape. On one side of the Darby Reach are acres of “tank farm”, or oil tanks, and light industrial uses. On other side is the entry to The John Heinz National Wildlife Refuge at Tinicum and the Cusano Environmental Education Center, and well-tended neighborhoods.

The presence of major circulation infrastructure including Interstate 95, two regional rail lines, trolley and even the airport, brings great opportunity to this area. But land use conflicts have tended to constrict those opportunities. With these conflicts and without a robust open space network to orient toward, some of the neighborhoods have developed frayed edges.

Currently, this reach is not a priority area for environmental restoration because of limited public ownership outside of the wildlife refuge. With future land use changes, though, this reach will be well positioned for improvements.

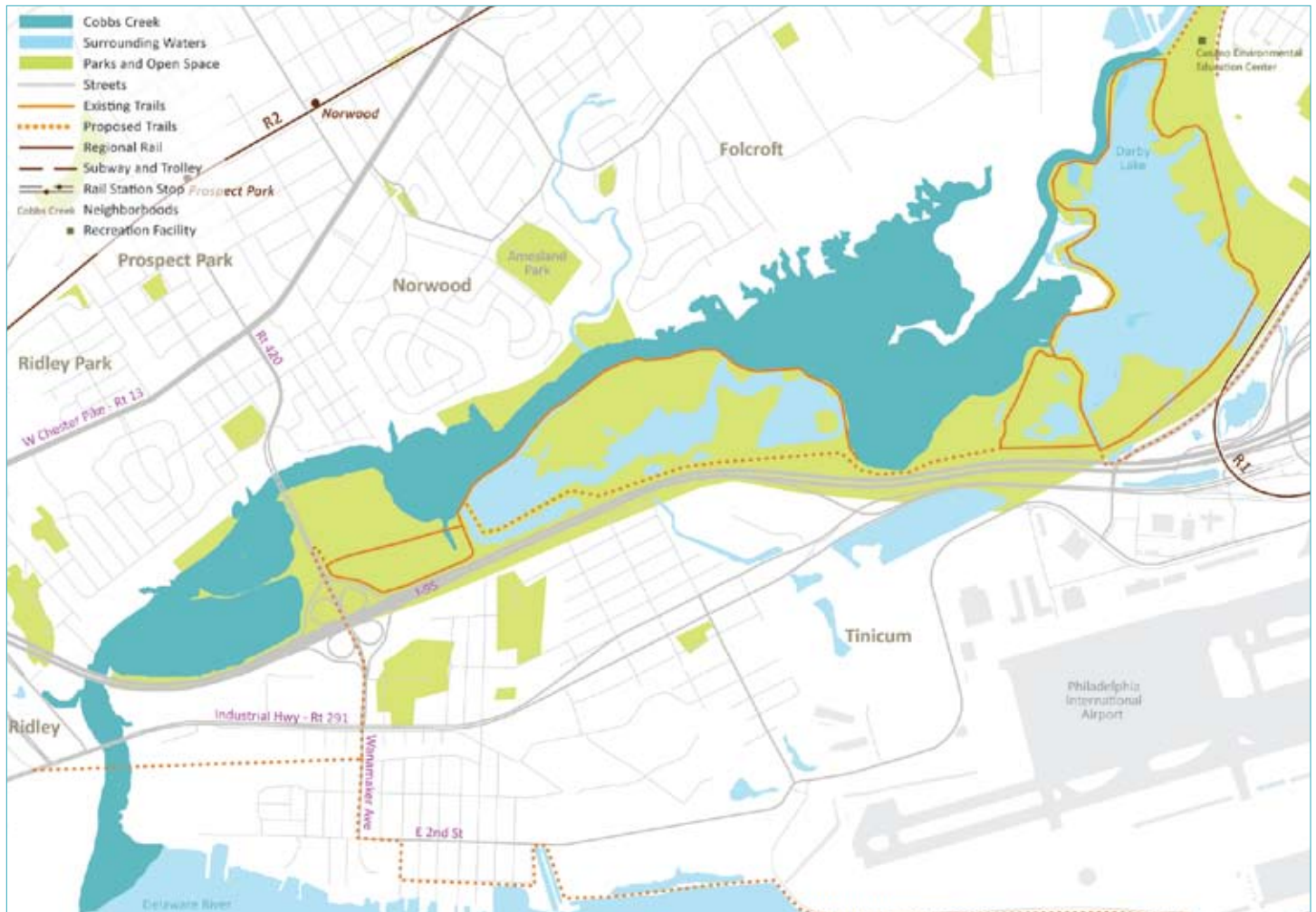




The Darby reach is defined by a diverse blend of land uses. **Below left:** The western banks of the Darby Reach are characterized by uses such as petroleum storage and warehousing, in addition to established neighborhoods within Darby (**left**). Opposite these banks is the Cusano Environmental Education Center (**below right**) whose mission is to “demonstrate within an urban setting, the importance of the natural world to the human quality of life and inspire visitors to become responsible stewards of the environment.”



## Tinicum Reach



The first time visitor to the Tinicum Reach is almost always astounded by its vast and beautiful landscape. 1,200 acres of the site represent the largest freshwater tidal wetland in Pennsylvania - and yet, they are only a fraction of the original 6,000 acres of wetland. These wetlands perform amazing work but can cleanse only a portion of the Cobbs and Draby Creek waters that flow past them.

The pollutants those creek waters bring impact the health of plants and animals within the Tinicum Reach, the Delaware and even further. Managing our stormwater within the upper reaches of the Cobbs can bring positive benefits far beyond their boundaries.

With Fairmount Park to the north and the wildlife refuge at its base, with its prominent location within a multimodal circulation network - and someday, with much needed

environmental enhancements - Cobbs Creek has the potential to become one of the region's most important riparian corridors. Its restoration could bring enormous benefits in ecological function, recreation, civic identity and quality of life.



Photo: Bill Buchanan, USFWS



Photo: Shari DeAngelo



Photo: Bill Buchanan, USFWS



Photo: Shari DeAngelo

*The quality of water flowing from the Cobbs, past the Tincum Reach, has impacts on the health of the marsh's plants and animals. Seen here are photos taken at John Heinz National Wildlife Refuge at Tincum.*

## Cobbs Creek Corridor Enhancements By Reach

Reach:

Length:

Compiled as of November 13, 2008

1 *NOTE: The Indian Creek reach is not part of the "Main Stem" study area as designated by the PWD's February 2008 report. The values shown for Indian Creek in the above table are not included in the "Summary of Enhancements" shown at far right.*

2 *Project area, in acres.*

3 *Functional value of improvement, in acres.*

### STANDARD RIPARIAN CORRIDOR RESTORATION ACTIONS

Wetland enhancement
Wetland creation
Streambank restoration
In-channel stream restoration (below streambank)
Addition of tree canopy cover
Stormwater detention basin
Stream daylighting
Naturalize stormwater discharge
Create floodplain storage
Dam removal / create fish passageway
Improve accessibility using trail system

Total Functional Value:

Environmental restoration and improvement projects in the Cobbs Creek corridor might include new and restored wetlands, in-stream and streambank restoration projects, storm-water detention basins, stream daylighting, naturalizing stormwater discharge and increasing floodplain storage, and improving fish habitat and passage.

If these varied projects are to be used as mitigation for lost tidal wetlands or open water, the environmental values they restore must be determined using a functional value analysis. The area of wetlands lost or created (usually expressed in acres) is often used as the standard measure for determining

wetland and waterway impacts, and to determine the required mitigation for wetlands and other aquatic resources. The measurement of area impacted or restored has been used in the past because functional assessment methods often have not been developed or calibrated for an area. This area-based comparison method, however, limits the types of projects that can be used to mitigate lost wetlands. Functional assessments are among the best tools available to characterize impact and compensation values, and open up a whole new range of mitigation projects to consider.

In order to assign values to the many possible

restoration projects in the Cobbs corridor, and to help permitting authorities decide on the value of restoration and improvement actions, those actions must be organized around the environmental functions that each can provide.

Wetland or stream restoration functions and the values offered through mitigation can be categorized into hydrologic and physical, biological, habitat, and social groups. Each category has one or more measurable criteria that describe the value of the mitigation project. By determining how a wetland functions and the value it provides to the environment, and how those lost wetland

Indian Creek <sup>1</sup>		Golf Course		Recreation and Education		History, Parks and Parkland		Lower Cobbs, Darby, Tinicum			
1.86 miles		1.54 miles		2.18 miles		3.52 miles					
AREA <sup>2</sup>	VALUE <sup>3</sup>	AREA <sup>2</sup>	VALUE <sup>3</sup>	AREA <sup>2</sup>	VALUE <sup>3</sup>	AREA <sup>2</sup>	VALUE <sup>3</sup>				
1.40	3.12	1.23	2.39	5.62	8.85	2.81	6.22	Functional evaluation for the Lower Cobbs, Darby and Tinicum reaches are currently under analysis.			
0.50	1.52	5.66	22.64	14.41	57.64	10.20	40.80				
0.00	0.00	2.43	3.95	5.22	8.14	4.93	8.20				
0.00	0.00	4.65	7.26	11.46	15.49	22.62	36.23				
0.00	0.00	1.30	1.02	0.76	0.56	1.83	1.38				
0.00	0.00	1.71	3.72	2.60	5.57	3.53	7.16				
2.00	5.63	0.00	0.00	0.00	0.00	0.00	0.00				
0.00	0.00	0.19	0.48	0.84	2.01	2.74	6.75				
0.00	0.00	1.42	3.12	2.20	4.71	4.98	10.31				
0.00	0.00	0.00	0.00	2.73	1.66	2.64	1.32				
0.00	0.00	0.15	0.04	0.28	0.08	1.10	0.31				
	10.27		44.62		104.71		118.68				

and open water functions can be replaced in an urban environment, compensatory mitigation requirements can be identified. Not only does this approach consider lost and restored functions and values, but it also considers the need to enhance valuable functions that may be scarce in the watershed. This functional value system was used to estimate the restoration value, or score, shown in the above table.

The goal of this riparian corridor restoration plan for Cobbs Creek is to illustrate the extensive benefit to the City’s environment, its neighborhoods, its fish and wildlife, parks and recreation areas, and the health of our

residents that would result from restoration of Cobbs Creek. Impacts to the Cobbs waterway, its water quality, and its wildlife are attendant to a long history of urbanization. This preliminary analysis illustrates the tremendous improvement in the quality of the City’s natural environment and quality of life that can be achieved through a comprehensive restoration of the Cobbs Creek waterway.

### Summary of Enhancements

<b>TOTAL CREEK LENGTH IN STUDY AREA*</b>
<b>7.24 MILES</b>
<b>TOTAL PROJECT AREA IN STUDY AREA*</b>
<b>122.24 ACRES</b>
<b>TOTAL FUNCTIONAL VALUE IN STUDY AREA*</b>
<b>268.01 ACRES</b>

\*THE CURRENT STUDY AREA INCLUDES THE GOLF COURSE, RECREATION AND EDUCATION, AND HISTORY, PARKS AND PARKLAND REACHES.

## Related Documents, Related Programs, and Additional Resources

### Related Documents

- An **Act 167 Stormwater Management Plan** was completed for the Darby-Cobbs Watershed in 2004 under the leadership of the Delaware County Planning Department's Environmental Planning section. "The Pennsylvania General Assembly enacted Act 167 of 1978, the Pennsylvania Storm Water Management Act. This Act, which is the 'sister' legislation to Act 166, the Floodplain Management Act, recognizes the interrelationship between land development, accelerated runoff, and floodplain management. While Act 166 requires municipalities to regulate development in the floodplain, Act 167 requires municipalities to implement a stormwater management ordinance limiting stormwater runoff from new development." <http://www.co.delaware.pa.us/planning/environmental/act167.html>
- **The 58th Street Connector Greenway** is an initiative that is already underway to create a 1.2-mile recreational trail and green corridor. It will link Bartram's Garden and the Schuylkill River with southwest Philadelphia and Delaware County communities, multiple regional trail networks, and existing recreational facilities along 58th Street and Lindbergh Boulevard. Upon completion, it will be possible to bike, jog, blade, or walk from Center City to Delaware County, or loop around Southwest Philadelphia.  
Pennsylvania Environmental Council  
(and Philadelphia Streets Department)  
[www.pecpa.org](http://www.pecpa.org)
- **The Cobbs Creek Connector Trail Feasibility Study** proposes a trail segment in Southwest Philadelphia that would follow the riparian border of the Darby and Cobbs Creeks for about 1.25 miles, connecting existing bicycle and pedestrian trails within the John Heinz National Wildlife Refuge to Cobbs Creek Park at 70th Street, where an existing bike trail continues north. A trail connection along Cobbs Creek would provide access to open space within the stream corridor, while connecting neighborhoods, historic sites, regional trail systems, and schools, businesses and employment centers. The study was submitted to the Clean Air Council in March of 2007.  
Campbell Thomas & Co. Architects  
[www.campbellthomas.com](http://www.campbellthomas.com)
- The **Cobbs Creek Integrated Watershed Management Plan** was created in 2004 by the Philadelphia Water Department and the Darby-Cobbs Watershed Partnership to present "a logical and affordable pathway to restore and protect the beneficial and designated uses of the waters of the Cobbs Creek basin.... The plan recommends appropriate remedial measures, provides a financial commitment to initiate the implementation of the plan, and seeks to provide the impetus for stakeholders of the Darby basin to follow suit." The plan aims to meet regulatory requirements that municipalities are facing, like Stormwater Phase II permitting, Act 167 Stormwater Management Planning, and Combined Sewer Overflow Permitting. The report is available on the Philadelphia Water Department's Office of Watersheds website via a link at the bottom of their home page, under the header "Watershed Planning". <http://www.phillyriverinfo.org/Watersheds/Darby-Cobbs.aspx>
- The **Darby Creek Watershed Conservation Plan** was completed in 2005 by the Darby Creek Valley Association. The summary includes their top ten recommendations to conserve the Darby Creek Watershed, and is available at:  
[www.dcnr.state.pa.us/brc/rivers/riversconservation/registry/DarbyCreek.pdf](http://www.dcnr.state.pa.us/brc/rivers/riversconservation/registry/DarbyCreek.pdf).  
Visit the DCVA website to learn about how this nonprofit organization is dedicated to the protection and enhancement of the Darby Creek watershed.  
[www.dcva.org](http://www.dcva.org)
- **The East Coast Greenway - Pennsylvania Alignment Alternatives Study** "investigates six alternative alignments for the Pennsylvania portion of the East Coast Greenway (ECG) from Bartram's Gardens on the west bank of the Schuylkill River in West Philadelphia to the mouth of Darby Creek in Delaware County."  
Pennsylvania Environmental Council (PEC)  
[www.pecpa.org/eastcoastgreenway](http://www.pecpa.org/eastcoastgreenway), and  
[www.greenway.org](http://www.greenway.org)
- The **Fairmount Park Natural Lands Restoration Master Plan** was created from 1998-2001 by Fairmount Park and several local organizations to develop environmental restoration goals, assess park conditions, identify restoration sites, and recommend restoration activities within the Fairmount Park System. The three-volume Master Plans contain recommended restoration activities for 452 high-priority sites in the seven watershed and estuary parks, including Cobbs Creek Park.  
Fairmount Park Commission  
[www.fairmountpark.org/Environment.asp](http://www.fairmountpark.org/Environment.asp)

- The **Urban Streams in the Darby-Cobbs Watershed** pamphlet offers a brief yet comprehensive overview of the challenges the Cobbs creek watershed faces, and general recommendations for remedying the health of the watershed, including stormwater management, and restoring and reconnecting with the watershed's floodplain.  
U.S. Army Corps of Engineers  
Philadelphia District  
[www.nap.usace.army.mil/Projects/rsm/watershed.html](http://www.nap.usace.army.mil/Projects/rsm/watershed.html)
  - The Department of Environmental Protection has created a **Watershed Restoration Action Strategy** (WRAS) for the Darby, Crum, Ridley, Chester and Cobbs Creeks Watersheds, known as Subbasin 03G. The Action Strategy identifies major sources of impairment in Cobbs Creek as habitat alterations, siltation, urban runoff, and municipal point sources. It identifies the highest restoration needs as the restoration of riparian buffers, streambank stabilization, and stormwater runoff controls.  
[www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/WSNoteBks/WRAS-03G.htm](http://www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/WSNoteBks/WRAS-03G.htm)
- ### Related Programs
- Visit the website of the **Center for Watershed Protection** to learn more about watersheds and their importance to water resources. A multitude of documents and resources regarding watersheds, riparian corridors, stream repair, stormwater management and watershed forestry are available for viewing and download here.  
[www.cwp.org](http://www.cwp.org)
  - The mission of **Cobbs Creek Community Environmental Education Center** is to preserve the quality of life for residents in the Cobbs Creek area by educating and informing people about issues affecting their environment.  
<http://cobbscreekcenter.org>
  - Visit the website of **Delaware County Planning Department's Environmental Planning section**. They encourage sustainable development practices that "preserve the County's critical natural resources and unique environmental character." They develop plans and offer technical support and assistance to municipalities pursuing environmental protection efforts and recommend improvements.  
[www.co.delaware.pa.us/planning/environmental/watershedmanagement.html](http://www.co.delaware.pa.us/planning/environmental/watershedmanagement.html)
  - The **Delaware County Conservation District** evaluates problems, implements programs, and advocates for effective solutions dealing with natural resource protection and conservation.  
<http://www.delcocd.org>
  - The **Delaware Valley Regional Planning Commission (DVRPC)** is dedicated to uniting the region's elected officials, planning professionals and the public with a common vision of improving transportation, promoting smart growth, protecting the environment and enhancing the economy. DVRPC most recently awarded \$83,000 to the Pennsylvania Environmental Council (PEC) for final design elements for 58th Street Connector Greenway, connecting Schuylkill River with Cobbs Creek. Details on this project are shown at left, under "Related Documents".
  - Visit the **Keystone Stream Team** website to read their guidelines on Natural Stream Channel Design (NSCD), and find links to other stream- and watershed-related information. The Keystone Stream Team is a diverse assemblage of members, including watershed groups, technical consultants, and state and federal agencies, and is funded by the Pennsylvania Department of Environmental Protection.  
<http://www.keystonestreamteam.org>
  - The **Watershed Information Center (WIC)**, a web-based library of Philadelphia watershed-related information by the Office of Watersheds, provides information on Philadelphia's seven watersheds and strives to be the "central location for the collection and dissemination of Southeastern Pennsylvania watershed-related information." The site also offers information on its various programs, like ecosystem monitoring and watershed planning, and links to information on combined sewer overflows.  
[www.phillyriverinfo.org/](http://www.phillyriverinfo.org/)
- ### Additional Resources
- Visit **Fairmount Park Commission's Cobbs Creek Park** web page for a brief history on the park, links to area attraction information and for an interactive map.  
[www.fairmountpark.org/CobbsCreekPark.asp](http://www.fairmountpark.org/CobbsCreekPark.asp)
  - **Real-time water quality data** is available from USGS Gauging Stations within the Darby-Cobbs watershed.  
<http://pa.water.usgs.gov/pwd/>
  - For **general background information** on Cobbs Creek, visit its Wikipedia entry.

*Cobbs Creek: A Gateway to Many Places and to Cleaner Water*

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