



SHAWMONT AREA

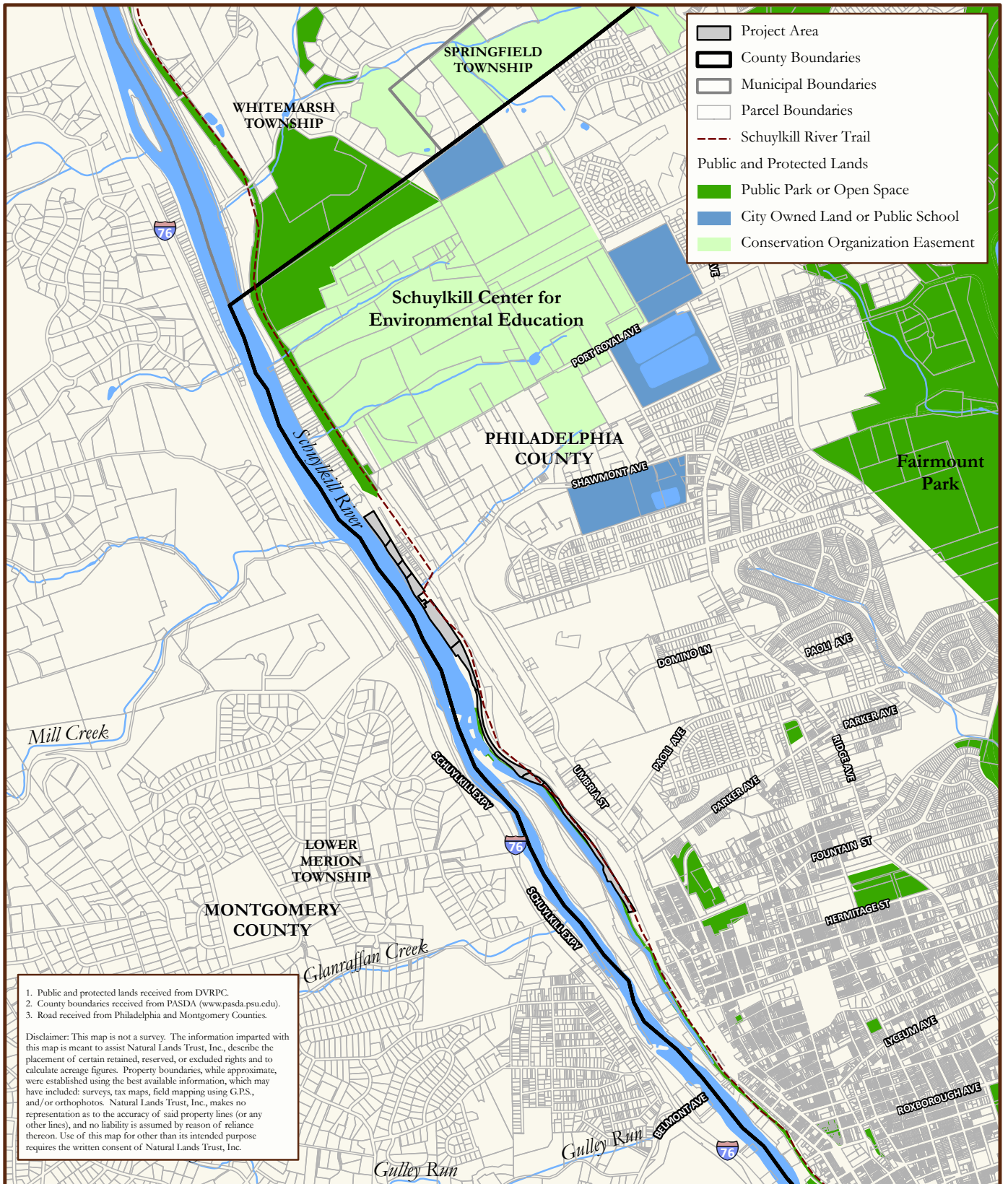
Fairmount Park Lands Along The Schuylkill River

Management Planning Report

James F. Thorne, Ph.D.
Natural Lands Trust, Inc.

FALL 2010





1. Public and protected lands received from DVRPC.
 2. County boundaries received from PASDA (www.pasda.psu.edu).
 3. Road received from Philadelphia and Montgomery Counties.

Disclaimer: This map is not a survey. The information imparted with this map is meant to assist Natural Lands Trust, Inc., describe the placement of certain retained, reserved, or excluded rights and to calculate acreage figures. Property boundaries, while approximate, were established using the best available information, which may have included: surveys, tax maps, field mapping using GPS, and/or orthophotos. Natural Lands Trust, Inc., makes no representation as to the accuracy of said property lines (or any other lines), and no liability is assumed by reason of reliance thereon. Use of this map for other than its intended purpose requires the written consent of Natural Lands Trust, Inc.



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Location
 SHAWMONT AREA
 MANAGEMENT PLANNING REPORT

Philadelphia County, Pennsylvania



0 1,000 2,000 Feet

Compiled By: MTM 12/16/10

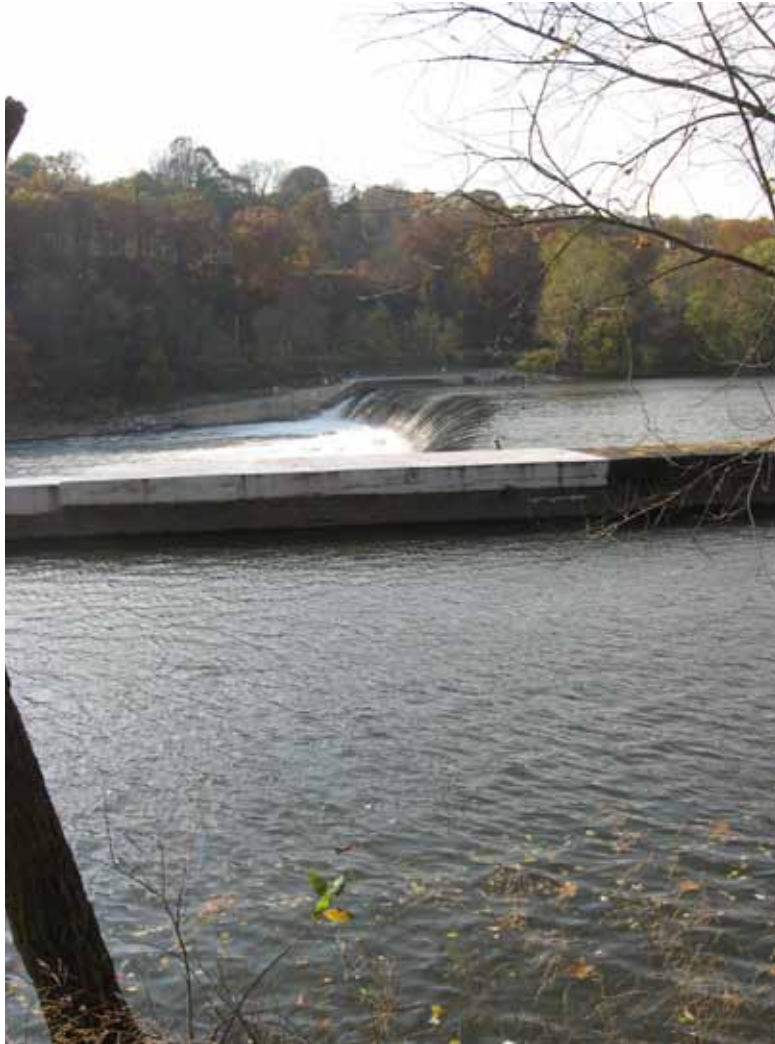
Introduction

Along the Schuylkill River near the Flat Rock Dam lies a section of natural area in the Shawmont neighborhood of Philadelphia. Typically no wider than several hundred feet, this natural area is bounded on the west by the Schuylkill River and the east by rail lines of the South East Pennsylvania Transportation Authority (SEPTA). The northern extent abuts low density housing and the southern extent the Manayunk neighborhood along the old Schuylkill Navigation Canal (See **Map 1** for location). This program area can be divided conveniently by an extension of Shawmont Avenue that comes down from Ridge Avenue to the Schuylkill River.

These northern and southern sections can easily be subdivided into management areas based on existing conditions. See **Map 2** (page 4) for the subdivision into management areas.

The purpose of this management plan is to capture the needs and desires of the Residents of Shawmont Valley Association for management of the natural area. This non-profit group, led by President David Cellini, is committed to maintaining and improving the quality of the Shawmont Area Fairmount Park Lands along the Schuylkill River.

For convenience, the proposed Management Units have been labeled consecutively from 1-9 running from the northern to the southern end. Boundaries of the Management Units are illustrated in **Map 2**.



Flat rock dam



1. 2008 Aerial Photography received from PAMAP Program, PA DCNR (www.pasda.psu.edu).
2. County boundaries received from PASDA (www.pasda.psu.edu).
3. Road received from Philadelphia and Montgomery Counties.

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2008 Aerial Photography
SHAWMONT AREA
MANAGEMENT PLANNING REPORT

Philadelphia County, Pennsylvania



0 350 700 Feet

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The northern half of this program area is fairly remote and inaccessible, because of the adjacent rail line and the lack of any maintained trails through the natural area. This area does have gated access at its southern end near the old water works buildings. The Residents of Shawmont Valley Association has also installed a wooden bridge over Green Tree Run near the water works access gate to allow pedestrian entry to this more northerly tract.

The southern half of this program area supports a significant section of the Schuylkill River Trail, a multipurpose trail following an old railroad grade. Toward the Schuylkill River the land appears to be relatively natural floodplain forest. Away from the river, the natural vegetation is typically a thicket of young native and non-native trees tied together with a thicket of non-native, invasive vines and shrubs.



Bridge over Green Tree Run



Schuylkill Navigation Canal



Schuylkill River Trail



Mature floodplain forest

Discussion of Management Areas

At the top of this program area lies perhaps the least disturbed portion of this riparian habitat, **Management Area 1**. It is a low-lying area with very large, mature trees, mainly Silver maple, American sycamore, Red maple and very little in the way of understory trees or shrubs. The soils are water saturated and shading by the tree canopy is nearly complete. Structurally and compositionally, this area is a mature floodplain forest, making it a high priority natural area within the program area. Along the river's edge, the levee supports a rich growth of Japanese knotweed, a noxious weed characteristic of the river's edge up and down the Schuylkill River. Eradicating this weed would be difficult to impossible; however, its extent should be monitored to keep it at bay. Its invasion into the mature native floodplain forest would degrade that high value natural area.

There are two other minor features of Management Area 1 that deserve mention. At the southeast section of this approximately square management area, a high-volume spring discharges from the base of two trees. This discharge forms a stream that flows directly into the Schuylkill River. The spring should be protected. The second minor feature is a pair of flag poles adjacent to a rock outcrop next to the railroad tracks. These cultural features should be removed. Running along the edge of the railroad tracks from the flag poles is an old dirt road that connects to the adjacent private property. This dirt road could serve as an access road for maintenance and stewardship purposes if permission were granted to access this road from the adjacent private property.

An abrupt rise in topography defines the **transition from Management Area 1 to Management Area 2** just to the south. This rise is apparently not entirely natural –the hill slope is littered with refuse and concrete indicating a history of dumping. The dumping area continues onto the higher ground to the south of the transition slope. In addition to the dumped material, there is a high density of non-native, invasive vegetation that should be treated with herbicide and controlled. Trees in this area are much younger (approximately 20-40 years old) in contrast to the mature floodplain

forest in Management Area 1. After clearing the invasives, native tree species already occupying this zone and the zone immediately to the south can be planted in tubes for protection from deer browsing to better occupy the space created by invasive removal. A general list of native woody species to plant in this and other upland areas would include: Silver maple, Red maple, River birch (in sites close to the water), Hackberry, Shadbush, Blackhaw viburnum, Red chokeberry, Winterberry, Silky dogwood, and Southern Arrowwood.

Management Area 2 grades into **Management Area 3** somewhat gradually. In transition, the evidence of dumping disappears and the trees of Management Area 3 are more mature. The soils have a more natural floodplain or floodplain terrace



Dumping zone

appearance, but may have been worked agriculturally in the past. Non-native trees and shrubs should be removed in this zone. Management Area 3 also supports a healthy growth of Riverbank grape intertwined with many large Oriental bittersweet vines. Both of these vine species threaten the integrity of the canopy in this area and the vines require thinning. The Oriental bittersweet should be removed in its entirety and the Riverbank grape thinned. Stumps of both should be herbicided to

prevent re-growth. Some Riverbank grape away from the river could be retained, and should be allowed to grow freely within the first 20 feet adjacent to the river. In this area there is still a need for spot planting of native trees in places where there are existing lighted gaps or lit gaps created by vine removal. Japanese knotweed that has invaded parts of Management Area 3 should also be herbicided well before any planting takes place.

Management Area 4 has been highly impacted by past land use as suggested by both soil and vegetation conditions. Most of this area is quite open. Soil investigations suggest that fill was brought in to this site and the site leveled, graded and compacted. This is particularly true in proximity to a set of coal bins close to the railroad line in the middle part of this Management Area. It is quite possible that the northern half of this area was a high-traffic staging area. These poor soil conditions are extensive in Management Area 4; soil investigations typically



Bittersweet and knotweed



Coal bins in Management Area 4



Invasive plants

revealed a thin layer of organic matter on top of fill materials. Because of the incredibly high cost of soil removal and replacement, it is probably best to think of the poor soils as an opportunity and not a constraint; the site could relatively easily be maintained as a meadow because of the poor soil. Most of this site is meadow today, though it is succeeding to a forest of invasives. The invading woody plants should be herbicided, allowed to die back and then removed to open up the space for meadow development. This area is also heavily littered with trash and it is recommended that the woody debris and trash be removed. Areas without woody plants and areas of specimen trees need not receive this treatment.

At the far end of Management Area 4 Green Tree Run passes between an old house site and coal bins. This urban stream cuts a deep channel and forms a rocky delta where it discharges into the Schuylkill River. Both of these features are indicative of high-volume storm events. Where possible, measures should be taken in the Green Tree Run watershed to reduce impervious surface responsible for this high volume storm flow.

On the south side of Green Tree Run as it passes under a wooden bridge, the streamside area is armored by some old Wissahickon schist retaining walls that separate an adjacent train station house and its former garden/yard from the stream. The station and yard stand at least 50 feet above the bridge—these are massive retaining

walls. However, the walls are older now and not necessarily structurally sound. An engineering study of these walls needs to be undertaken to define the problems with wall structural integrity soon in order to develop recommendations for stabilizing these walls. Currently, the walls represent a public safety hazard. As a result, this evaluation should take place immediately. The rear of the above-mentioned yard has experienced massive erosion and undercutting, resulting in extreme hazard, which should be evaluated and addresses as soon as possible. The back end of the yard is defined by a stone wall that has been severely undercut by erosion. Visitors to this area unaware of the holes created by undercutting could fall through the holes and drop approximately 40 feet down a near-vertical eroded slope and would not stop until they hit Green Tree Run below.

Beyond the retaining walls and former train station to the south, we pass into **Management Area 5**. This area is characterized by two imposing stone buildings which last served as part of Philadelphia's Water Works infrastructure in the 1920's. These buildings, and some smaller outbuildings, have fallen into disrepair and ruin. Though imposing and impressive, the buildings should likely be razed for the sake of public safety. The stone itself may be useful as barrier construction on site or be recycled for other use off site. In any case, the stone and foundations should be removed and the site graded



Retaining wall by stream



Old stone building

to minimize hazard. It is recommended that this area be considered for an ecological restoration. The graded material in this area will be mainly subsoil, so a warm-season grassland might be an easy restoration for this site. Mown paths could make this an attractive and inviting area.



Stone children's garden (Photo by T. Landisman)

At the south end of the old waterworks complex, tucked away in young woods, there is a fanciful stone children's garden. This site is approximately 240 feet south of the more southerly waterworks building. Neighbors would like to retain this garden and it could also benefit from some inexpensive restoration. Several fast-growing trees may threaten its structural integrity; they should be removed. The area would benefit from a small amount of stonemason's work to secure the stonework in this fanciful little water garden.

From Management Area 5 south to the start of the Schuylkill River Canal along the Schuylkill River Trail, there is an immediate floodplain area that will be impacted by a project to dredge sediments in the Schuylkill River that have built up behind the Flat Rock Dam. At this point it is understood that these immediate floodplain areas and some adjacent uplands will serve as transit areas for sediment pumping equipment (in the case of the immediate floodplain) and sediment dewatering stations on higher lying areas on the side of the Schuylkill



Schuylkill Canal

River Trail away from the river. Care should be taken to flag significant biological resources (large floodplain native trees and areas of known woodland wildflower diversity) so that the sediment transport and dewatering operation minimally impacts this important natural area.

Beyond the Japanese Garden site, the forest supports a large number of maturing and young Black walnut trees (no Butternut) for the southward succeeding 250 feet of trail. This is **Management Area 6**. In this Management Area, the main management issue is invasive shrubs, vines and trees. Given the nature of this site and its extent, management could include removal of non-native invasive trees and shrubs. A large effort employing physical removal and herbiciding could improve ecological health in Management Area 6. It is important to note that, given local conditions, the site could be easily re-occupied by these same non-native invasive trees and shrubs. The best hope for avoiding this condition would be a heavy soil mulching treatment followed by thick plantings of native trees and shrubs. The native trees that seem to be thriving best in this area are Silver maple, Red maple and Black walnut. This Management Area extends south to the warning sign for the approach to the Flat Rock Dam. Within this Management Area the forest between the Schuylkill River and the Schuylkill River Trail supports primarily native floodplain species of trees with some invasive shrubs beneath, mixed with native young trees and shrubs. Evidence of past flooding events here suggests that frequent flooding structures vegetation composition and therefore little management is needed on the river side of the Schuylkill River Trail.

Passing beyond the warning sign for the dam, **Management Area 7** is relatively narrow and supports a mixture of native and non-native trees and shrubs. There is no high-energy floodplain zone in this Management Area. Instead, the west side of this area is actually the bed of the old Schuylkill Canal. To the east of the trail is a narrow zone of

upland trees and shrubs that would be difficult to manage because of slope conditions. Management Area 7 could be another zone for managing invasives, if volunteer labor is available and sufficient. The southern boundary of Management Area 7 is a wooden bridge over a small, unnamed stream.

Moving into **Management Area 8**, both sides of the Schuylkill River Trail here support wetlands. Management Area 8 supports riparian wetlands to the east on either side of the stream and open water wetlands to the west. The wetland to the west needs little management except for perhaps removal of Purple loosestrife. The wetlands to the east are more compromised due to wild flow fluctuations and possible sewage contamination. The sewage contamination may have been addressed and could be evaluated by testing for coliform bacteria following a significant storm event. This eastern wetland in Management Area 8 supports low plant diversity and could be enhanced with shrub and tree plantings (Arrowwood shrubs and red maple trees).

Management Area 9, the final area before Manayunk, is a long narrow stretch between steep banks and the Schuylkill Navigation Canal. It has many of the upland woody invasives issues found further north and could be treated in the same way by volunteers.



Possible sewage contamination

Appendix

Notes on Soil Properties

Unit 1. Soils in Unit 1 are a combination of seasonally saturated to permanently saturated profiles with the water table near or at the surface. The surface layer is a very rich A horizon with a gleyed subsoil, indicating very poor drainage. Exceptions are the filled areas at the east end near the railroad tracks and the levee adjacent to the river. The levee soils consist of deep, rich alluvium.

Unit 2. In this area the native floodplain terrace soils have been obscured by dumping, rendering them effectively “urban soils”. Concrete materials would make these soils relatively high pH soils and organic matter accumulation seems to be making the soils relatively productive, despite the severe disturbance.

Unit 3. The soils in Unit 3 appear to be relatively productive with a thick, organically-enriched surface horizon. In some places the boundary between the surface horizon and the lower mineral layer seems to show an even boundary, possibly suggesting some form of cultivation such as gardening or farming.

Unit 4. The soils in Management Unit 4 are extremely variable, likely due to intense use historically. The soils have little organic matter and the thin organic layer present caps deep layers of inert materials, either rock fill or coal fines. The

rock fill suggests a past industrial type of use and the coal fines are a result of the coal bin staging area activity in the past.

Units 5-9. Although no detailed soil investigations were carried out in Management Units 5-9, some general observations on these soils are still in order. In Management Unit 5, the entire area is profoundly influenced by the large stone water works buildings and the past construction activity related to building. These areas have soils consisting entirely of fill, though some of the soils have improved over time because of the regrowth of vegetation and the chemical influence of concrete (liming). Soils in Unit 6 are relatively rich, especially on the river side of the Schuylkill River Trail. The Black walnut in this Management Unit is likely related to these rich soils, since Black walnut has fairly demanding nutrient requirements. Unfortunately, rich soils plus site disturbance often equals high invasive plant pressure, which is the case in more human-disturbed areas of Management Unit 6. Soils in Management Unit 7 are thin and rocky for the most part, with plentiful rock at the surface. Invasive plant pressure here is much lower. The soils of Management Unit 8 are thin and mucky with the water table at or near the surface, restricting plant growth to plants especially adapted to these conditions. Management Unit 9 supports similar soils to Management Unit 7.

