

WISSAHICKON PARK

INFILTRATION BASINS & RIPARIAN CORRIDOR



Borough of Lansdale, PA

PROJECT TEAM

- **OWNER** — LANSDALE BOROUGH PARKS & RECREATION
- **LEAD CONSULTANT** - WALLACE ROBERTS & TODD, LLC – PHILADELPHIA, PA
- **CIVIL ENGINEER** - METZ ENGINEERS – LANSDALE, PA
- **WETLANDS CONSULTANT** — CONESTOGA-ROVERS & ASSOCIATES – EXTON, PA
- **STRUCTURAL ENGINEER** - ELTON & THOMPSON, P.C. – GLENSIDE, PA

Project Objectives

1. Create storm water Infiltration Basins:

- Improve water quality
- Provide temporary storage and infiltration of stormwater runoff
- Maintain base flow in the Wissahickon Creek watershed

2. Establish a riparian buffer zone using native plants to:

- Improve water quality of sheet runoff from neighboring parking lot
- Prevent erosion along the stream channel
- Enhance stream corridor habitat diversity.

3. Enhance Park Aesthetics & Experience: integrated stormwater features streams, basins and landscaping of the park.

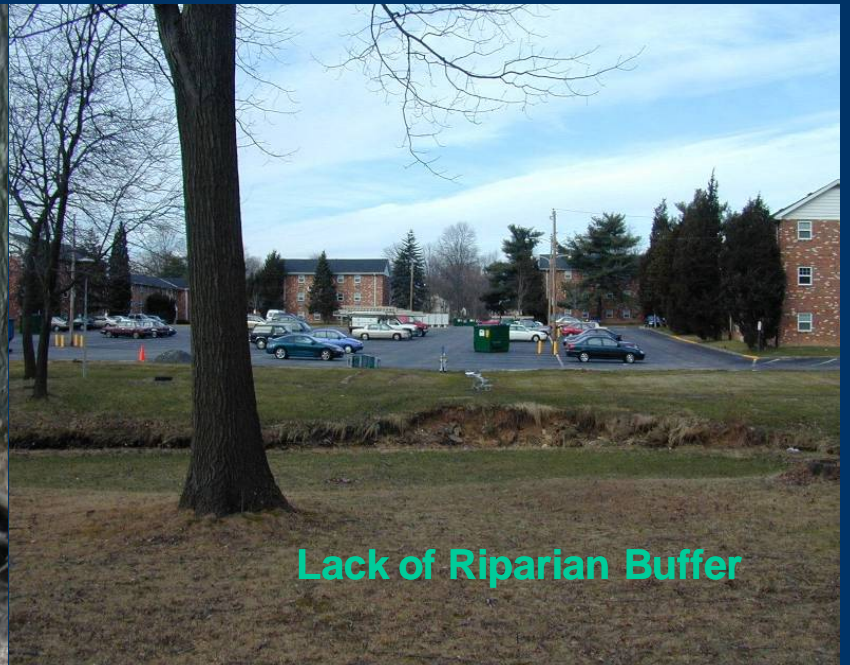
4. Provide opportunities for community environmental education

Aerial View of the Site





Outfall directly into Stream



Lack of Riparian Buffer



**High Stormwater
Volume leads to bank
destablization**



Stream bank erosion

OFFSITE DRAINAGE AREA MAP



Approach

- **Meet Water Quality Criteria**

90 % of the disturbed site area is controlled by a BMP

- **Natural Structural Infiltration Methods**

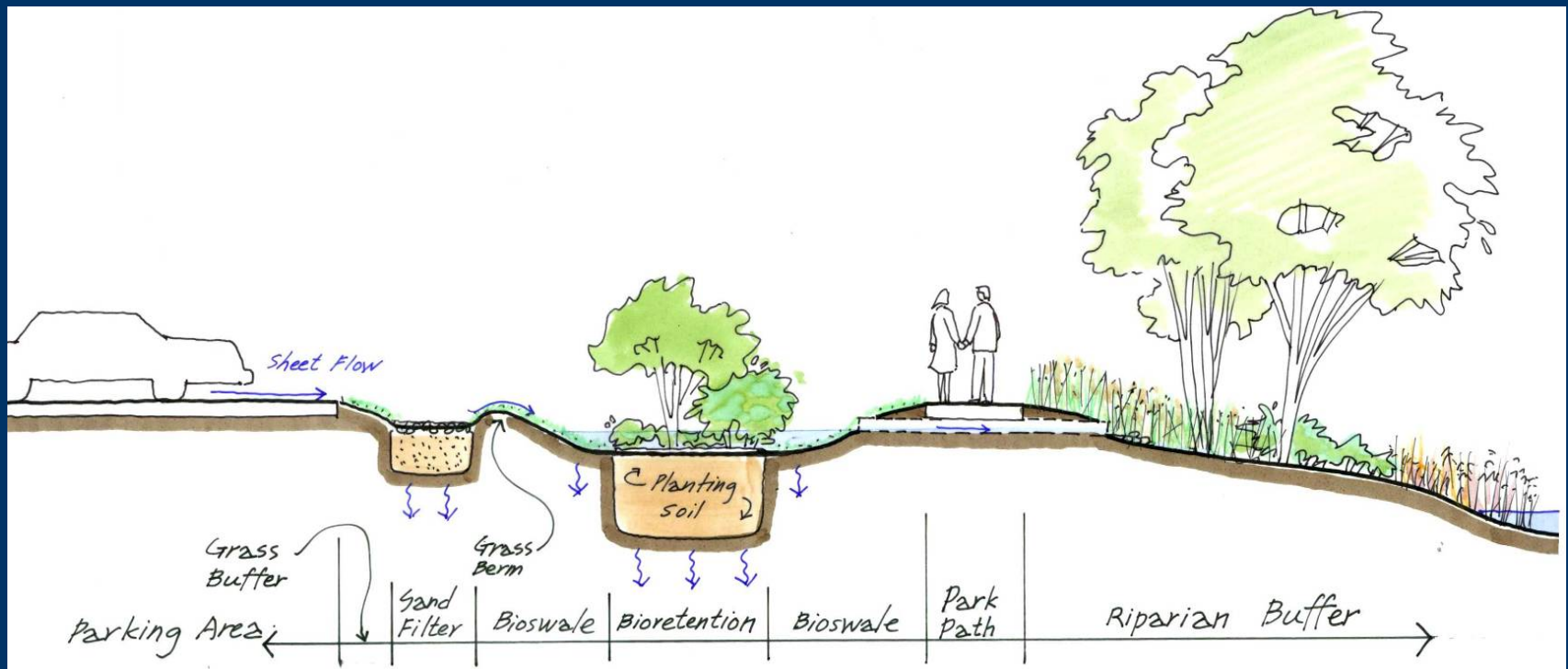
Include vegetation and soils mechanisms as part of their functioning.

- **Integrated Design**

Many BMPs: *Infiltration Basins, Settling Basins, Vegetated Swale, Soils Amendment and Restoration, etc.*



Preliminary Concept Plan – North of Stream Infiltration Basins & Riparian Corridor



Preliminary Concept Plan – South of Stream Infiltration Basins & Riparian Corridor



Riparian Corridor - 3 Zone Buffer System

Stream side zone:

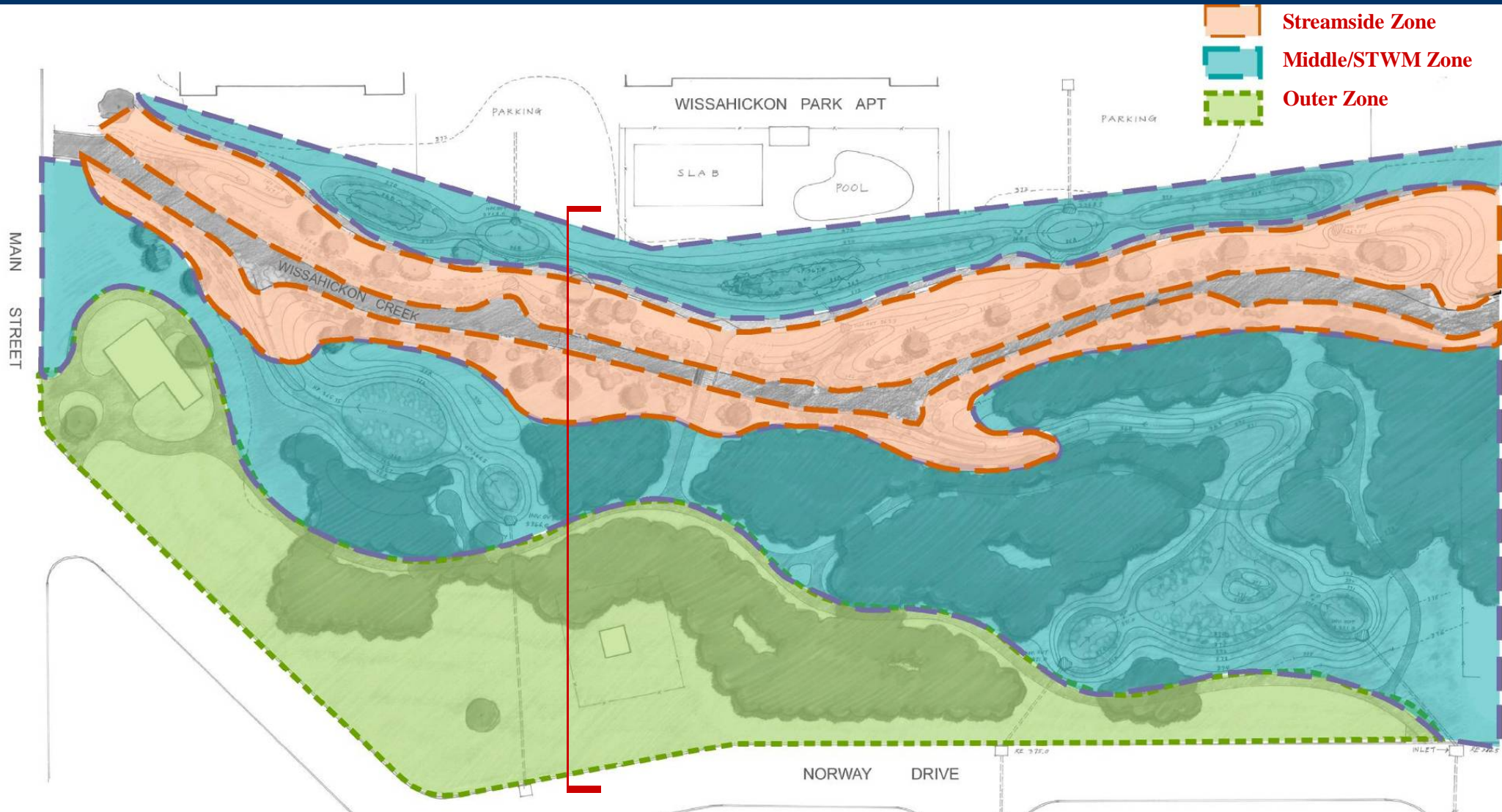
Woody shrubs and roots help stabilize the stream bank
Trees provide shade and habitat

Middle Zone/STWM Zone:

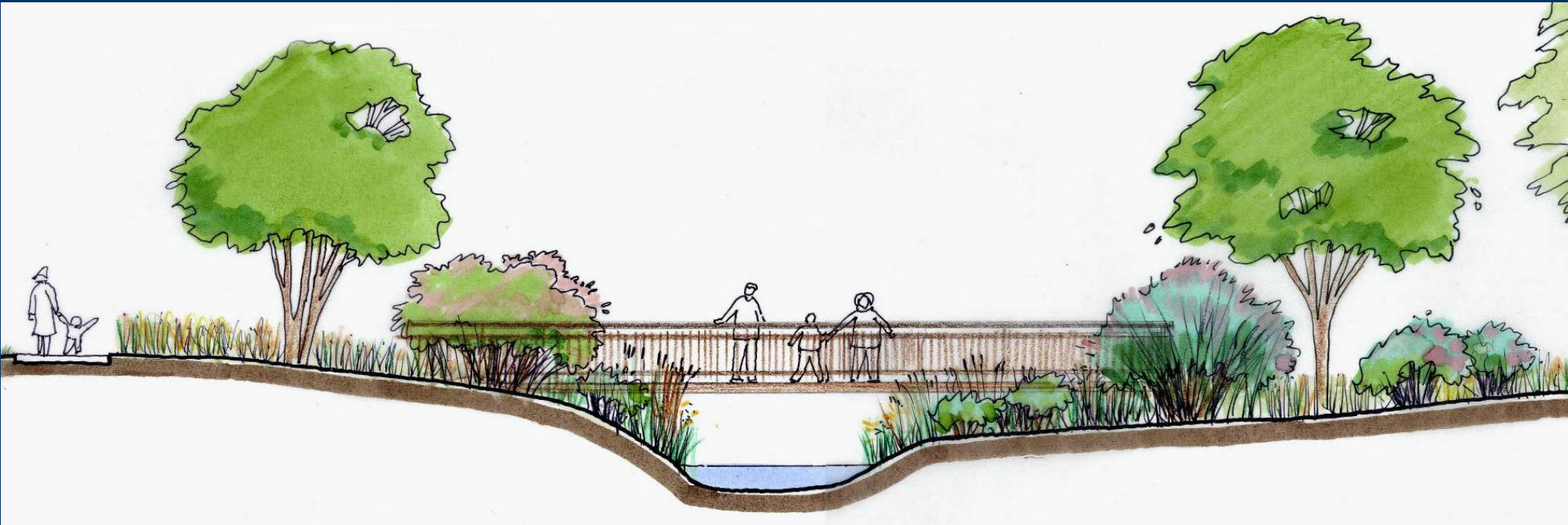
Woodland and Meadow purify surface water

Outer Zone

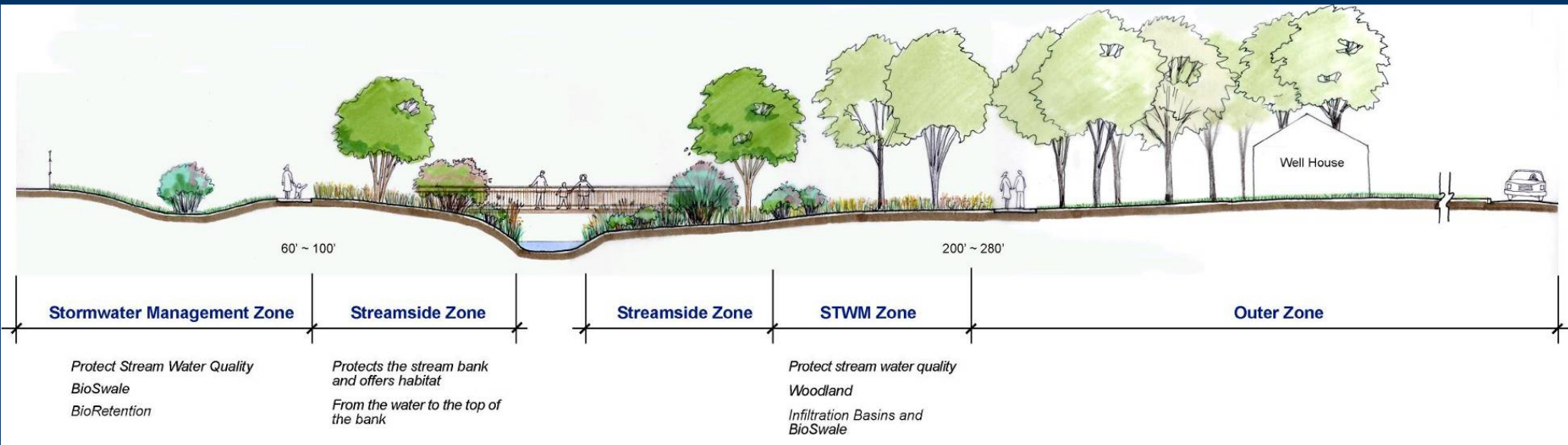
Grasses help control runoff and improve infiltration and water storage



Riparian Corridor - 3 Zone Buffer System



Detailed Section of Streamside Zone



Site Cross Section of three Riparian Buffer Zones

FINAL DESIGN

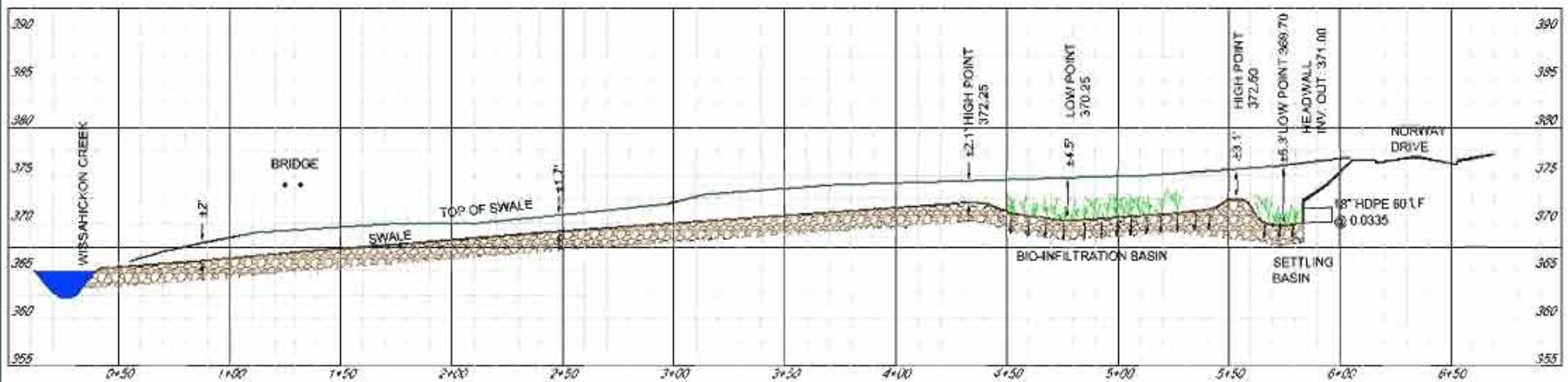


REQUIRED AGENCY PERMITS

- **JOINT PERMIT** — (WATER OBSTRUCTION & ENCROACHMENT FOR BRIDGE CROSSING)
- **DEP GENERAL PERMIT** — (PASPGP-3 FOR OUTFALL MODIFICATIONS AND BANK REHABILITATION)
- **NPDES PERMIT** — (FOR POINT SOURCE DISCHARGES AND EARTH DISTURBANCE FROM MONTGOMERY COUNTY CONSERVATION DISTRICT)



SCALE
H: 1"=20'



SCALE
H: 1"=20'
V: 1"=5'

03-06-06

SETTLING AND BIO-INFILTRATION BASIN PROFILE

SYSTEM "C"

Before



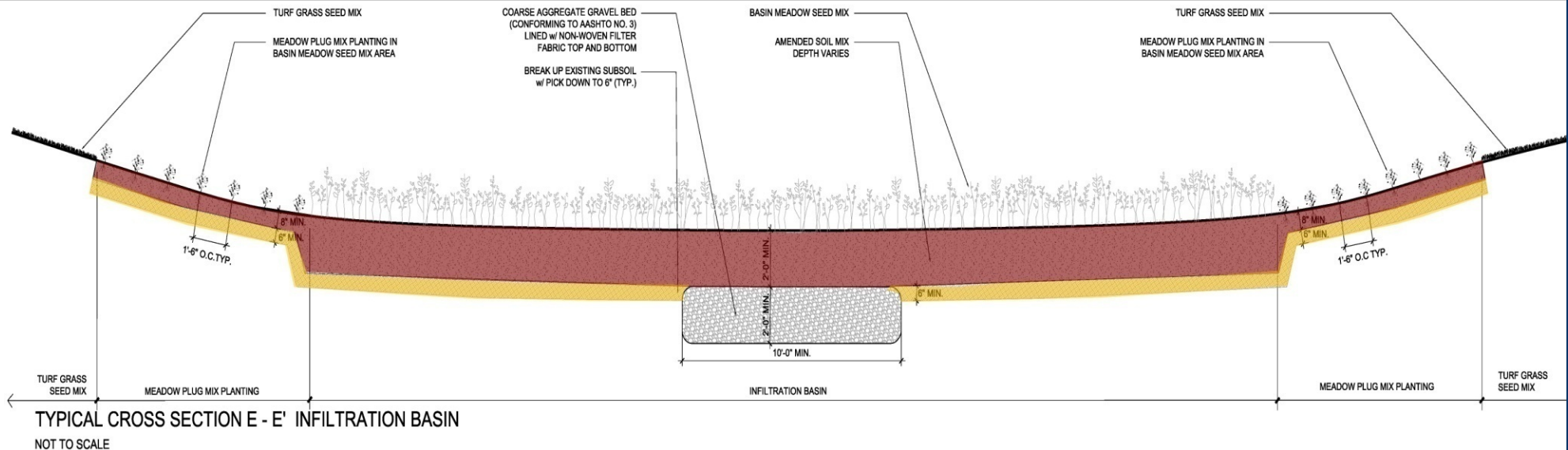
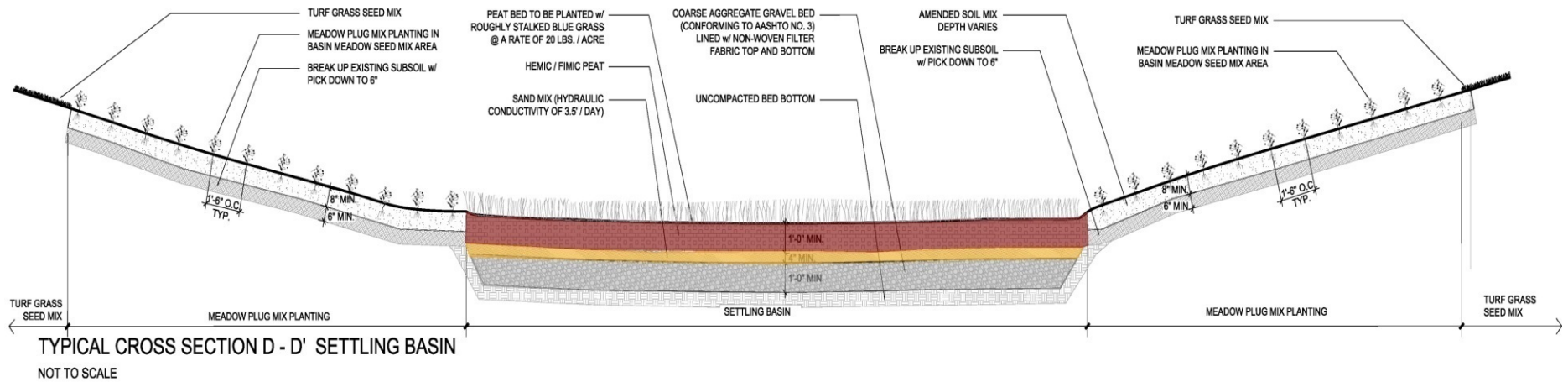
After



RIPARIAN CORRIDOR



BASIN DESIGN COMPONENTS



TYP. BASIN CONSTRUCTION





SYSTEM "A"



SYSTEM "A"

SYSTEM “B”



A photograph of a grassy field with trees in the background and a concrete structure in the foreground. The field is covered in green grass and some fallen leaves. In the background, there is a line of trees with green and some autumn-colored leaves. A brick building is visible on the left side. A concrete structure, possibly a drainage ditch or culvert, is in the lower-left foreground. The text "SYSTEM 'B'" is overlaid in the bottom left, and a date and time stamp "10.09.2009 12:40" is in the bottom right.

SYSTEM "B"

10.09.2009 12:40



SYSTEM "C"

10.09.2009 12:42



SYSTEM “D”



SYSTEM “D”

BIORETENTION BASIN



PARK AMENITIES

Educational Information Sign in Boardwalk

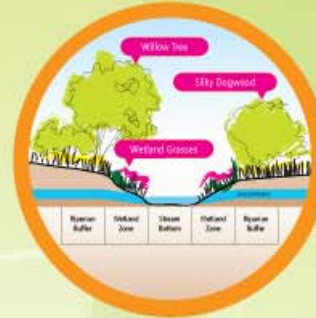
Wissahickon Park

Infiltration Basin and Riparian Corridor

You Are Here



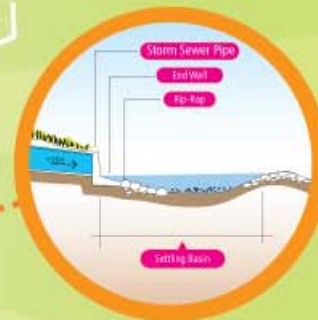
Infiltration Basin
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Riparian Corridor
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Rain Garden
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Settling Basin
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How Your Park Works

Welcome - we're glad you're here! Our park encompasses seven acres within the Wissahickon Creek Watershed and contains a host of unique features, plants, and animals.

Wissahickon Creek doesn't just make our park beautiful, it also helps control flooding and provides many neighborhoods with drinking water. During rain storms, the stormwater from nearby neighborhoods flows into the creek at five different points. The stream ends at the Queen Lake Reservoir in Philadelphia, a prime source of the city's drinking water - so it's important that we keep our stream free of trash and other pollutants.

In addition to being a great place to enjoy nature, our park also purifies water - naturally. Here's how:

Settling Basins - Larger ponds at the inflow points of the stream where very fine particles are naturally removed from the water by means of gravity.

Infiltration Swales - Landscape elements (plants and soil) that are designed to reduce runoff into the creek. They remove silt and pollutants from the water, then filter it down into the underground water table.

Stream Corridor - A unique community of plants that grow along our creek. These plants improve water quality, prevent the stream bank from eroding, provide storage for flood waters, and offer food and habitat to the fish and wildlife that make their homes in our park.

Enjoy your visit! Our park is more than just a recreation space, it's a community treasure: controlling flooding, cleaning water naturally and providing homes for a wide range of diverse plants and animals.

What You'll Find Here







07.22.2009 10:39



07.22.2009 10:16

Wissahickon Park

Borough of Lansdale, PA



The Montgomery County Open Space Grant Program

The Community Conservation Partnership Program

The Borough of Lansdale and Conservation

PA Department of Conservation and Natural Resources



07.22.2009 09:41

PLANTING SCHEDULE

KEY	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
TREES				
AA	AMELANCHIER ARBOREA	DOWNY SERVICEBERRY	8-10' HGT.	B & B
AmC	AMELANCHIER CANADENSIS	SHADBLow SERVICEBERRY	6-8' HGT. MULTI	B & B
AR	ACER RUBRUM	RED MAPLE	2.5 - 3" CAL.	B & B
AS	ALNUS SERRULATA	SMOOTH ALDER	2.5 - 3" CAL.	B & B
BN	BETULA NIGRA	RIVER BIRCH	12-14' MULTI	B & B
CF	CORNUS FLORIDA	FLOWERING DOGWOOD	8-10' HGT.	B & B
CFR	CORNUS FLORIDA RUBRA	PINK FLOWERING DOGWOOD	8-10' HGT.	B & B
CC	CERCIS CANDENSIS	EASTERN REDBUD	8-10' HGT.	B & B
FA	FRAXINUS AMERICANA	WHITE ASH	2.5 - 3" CAL.	B & B
LS	LIQUIDAMBAR STYRACIFLUA	SWEETGUM	2.5 - 3" CAL.	B & B
NS	NYSSA SYLVATICA	BLACK GUM	2.5 - 3" CAL.	B & B
PO	PLATANUS OCCIDENTALIS	SYCAMORE	2.5 - 3" CAL.	B & B
QB	QUERCUS BICOLOR	SWAMP WHITE OAK	2.5 - 3" CAL.	B & B
QP	QUERCUS PHELLOS	WILLOW OAK	2.5 - 3" CAL.	B & B
SaD	SALIX DISCOLOR	PUSSY WILLOW	6-8' HGT.	B & B
VP	VIBURNUM PRUNIFOLIUM	BLACKHAW	6-8' HGT.	B & B
MEDIUM SHRUBS				
CoA	CORNUS AMOMUM	SILKY DOGWOOD	30-36" HGT.	B & B
CoR	CORNUS RACEMOSA	GRAY DOGWOOD	30-36" HGT.	B & B
IV	ILEX VERTICILLATA	WINTERBERRY	30-36" HGT.	B & B
MyF	MYRICA PENNSYLVANICA	BAYBERRY	30-36" HGT.	B & B
RnG	RHUS GLABRA	SMOOTH SUMAC	30-36" HGT.	B & B
SaC	SAMBUCUS CANADENSIS	COMMON ELDERBERRY	30-36" HGT.	B & B
VID	VIBURNUM DENTATUM	ARROWWOOD	24-30" HGT.	B & B / CONT.
VIN	VIBURNUM NUDUM	POSSEUMHAW	24-30" HGT.	B & B / CONT.
VIT	VIBURNUM TRILOBUM	AMERICAN CRANBERRYBUSH	24-30" HGT.	B & B / CONT.
SMALL SHRUBS				
ArA	ARONIA ARBUTIFOLIA	RED CHOKEBERRY	15-18" HGT.	CONT.
CaA	CEANOTHUS AMERICANUS	NEW JERSEY TEA	15-18" HGT.	CONT.
CrA	CORNUS SERICEA	REDTWIG DOGWOOD	18-24" HGT.	CONT.
EuF	EUONYMUS FORTUNEI 'EMERALD GAIETY'	EMERALD EUONYMUS	15-18" HGT.	CONT.
IGC	ILEX GLABRA 'COMPACTA'	DWARF INKBERRY HOLLY	12-15" HGT.	CONT.
PIA	RHOODENDRON PERICLYMENOIDES	PINKTERRBLOOM AZALEA	12-15" HGT.	CONT.
RnA	RHUS AROMATICA	FRAGRANT SUMAC	6-9" HGT.	CONT.
RoC	ROSA PAULISTRIS	SWAMP ROSE	12-15" HGT.	CONT.
VuN	VIBURNUM TRILOBUM 'COMPACTUM'	AMERICAN CRANBERRYBUSH 'COMPACT'	12-15" HGT.	CONT.

WISSAHICKON PARK PROJECT

Funding for the project

EPA through the Partnership for the Delaware Estuary -----	\$ 87,000
State Dept of Conservation & Natural Resources -----	\$223,000
Montgomery County Open Space Grant Program -----	\$437,000
Tree Vitalize -----	\$ 13,320
Borough of Lansdale -----	\$ 16,222
Total	\$776,542

Project costs

Engineering, Design, Permitting -----	\$148,052
Implementation -----	\$628,490
Total	\$776,542