



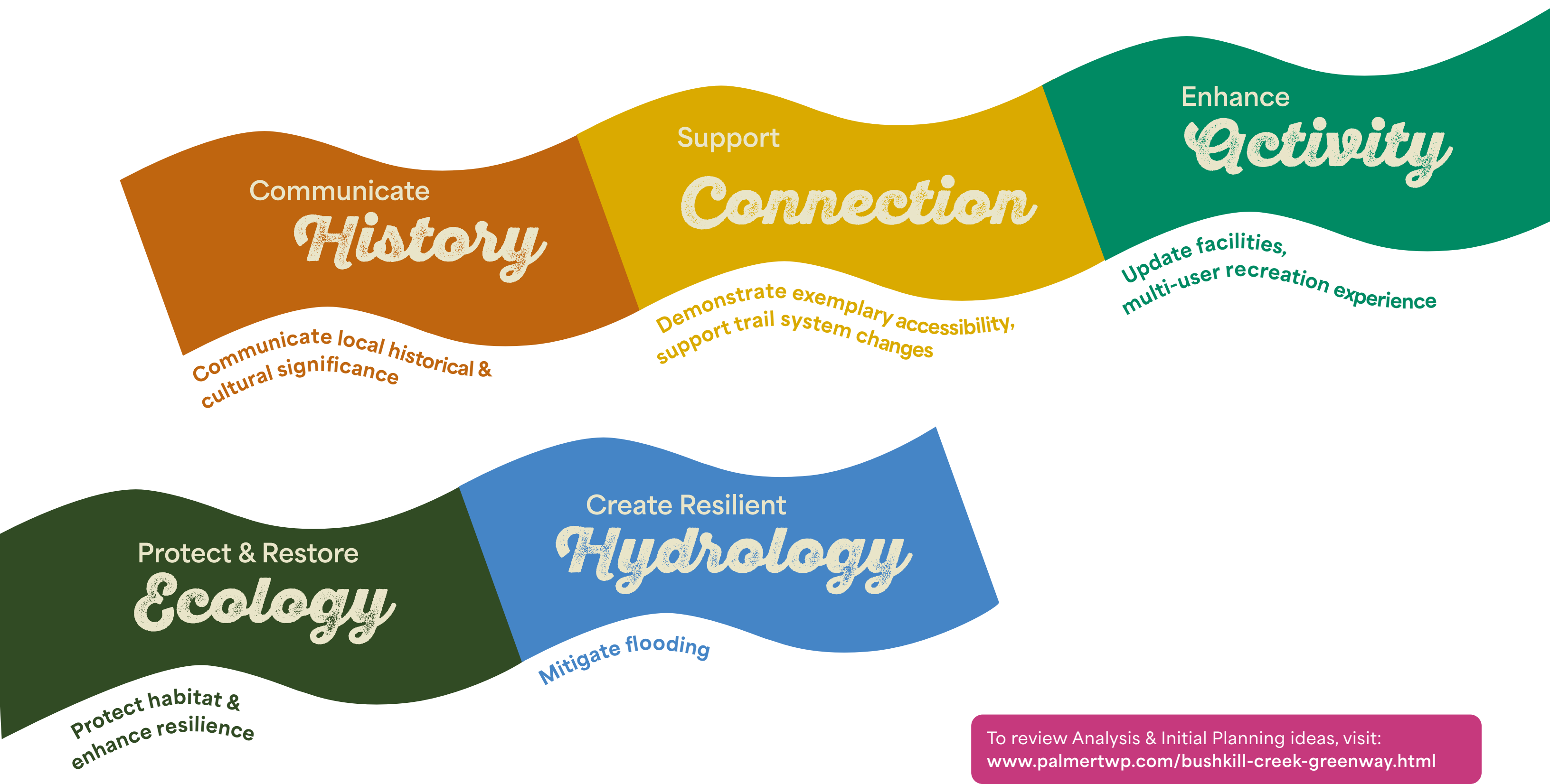
## Public Meeting #2

75% Concepts

August 19, 2025



# Project Goals

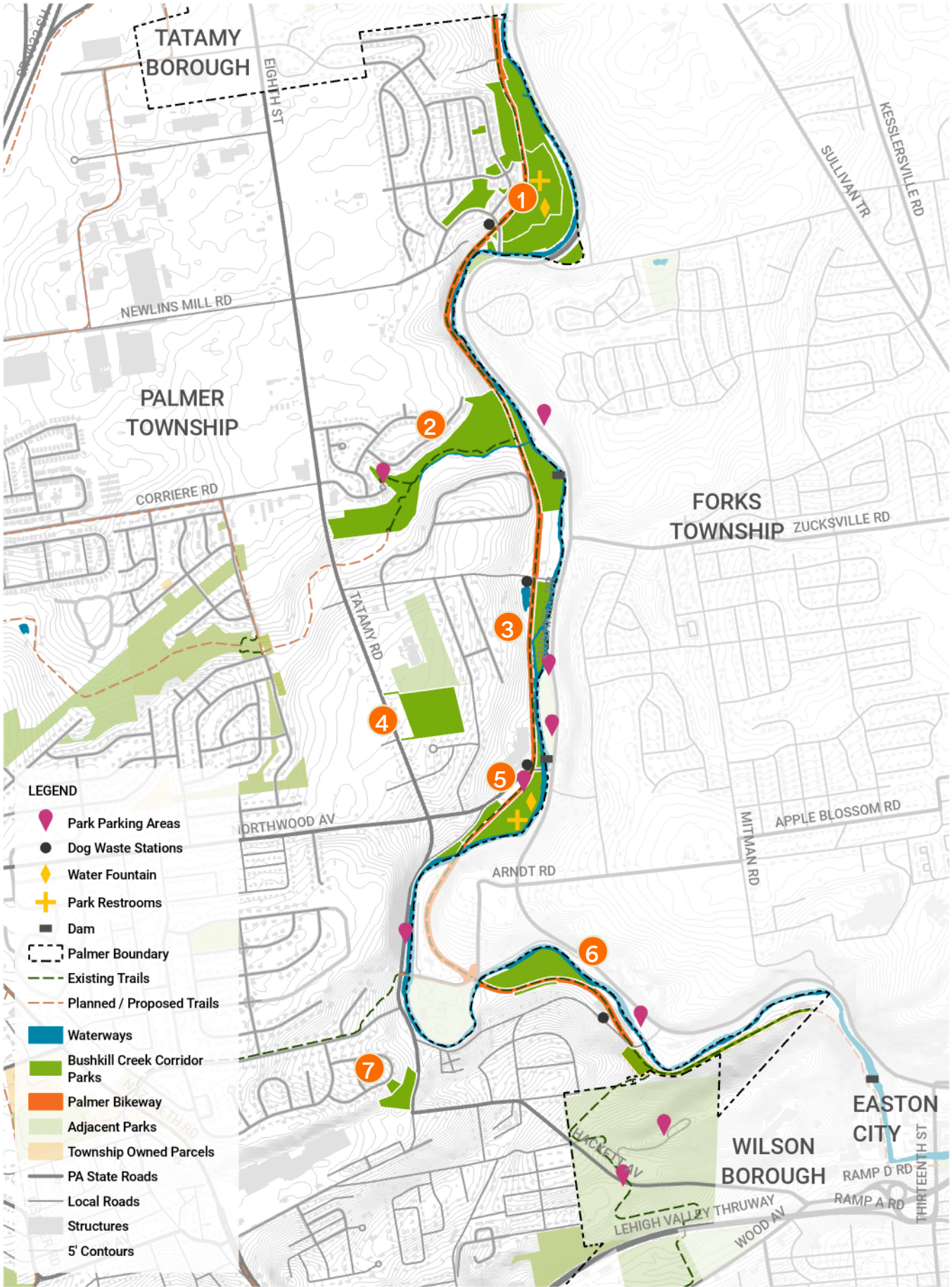


To review Analysis & Initial Planning ideas, visit:  
[www.palmertwp.com/bushkill-creek-greenway.html](http://www.palmertwp.com/bushkill-creek-greenway.html)

# Bushkill Creek Greenway

What parcels are included?

- 1 Mill Race Park & Tot Lot
- 2 Penn's Grant Open Space
- 3 Two Fool's Island (Potential Future Acquisition)
- 4 Keystone Park
- 5 Penn Pump Park & Potential Future Open Space at Northwood Ave
- 6 Binney & Smith Preserve (Binney & Smith Open Space)
- 7 Hillcrest Open Space & Tot Lot



















# Recreational Resources

## Amenities & Programming

LEGEND:

-  Hiking / Walking Trails
-  Play Areas
-  Live Music
-  Picnicking Areas
-  Baseball Fields
-  Basketball Courts
-  Disc Golf Courses
-  Football Fields
-  Soccer / Multi-use Fields
-  Tennis / Pickleball Courts
-  Volleyball Courts
-  Water Access Areas
-  Waterfowl Observation Area
-  Gray Icon: Recreational Resource Not Within Scope

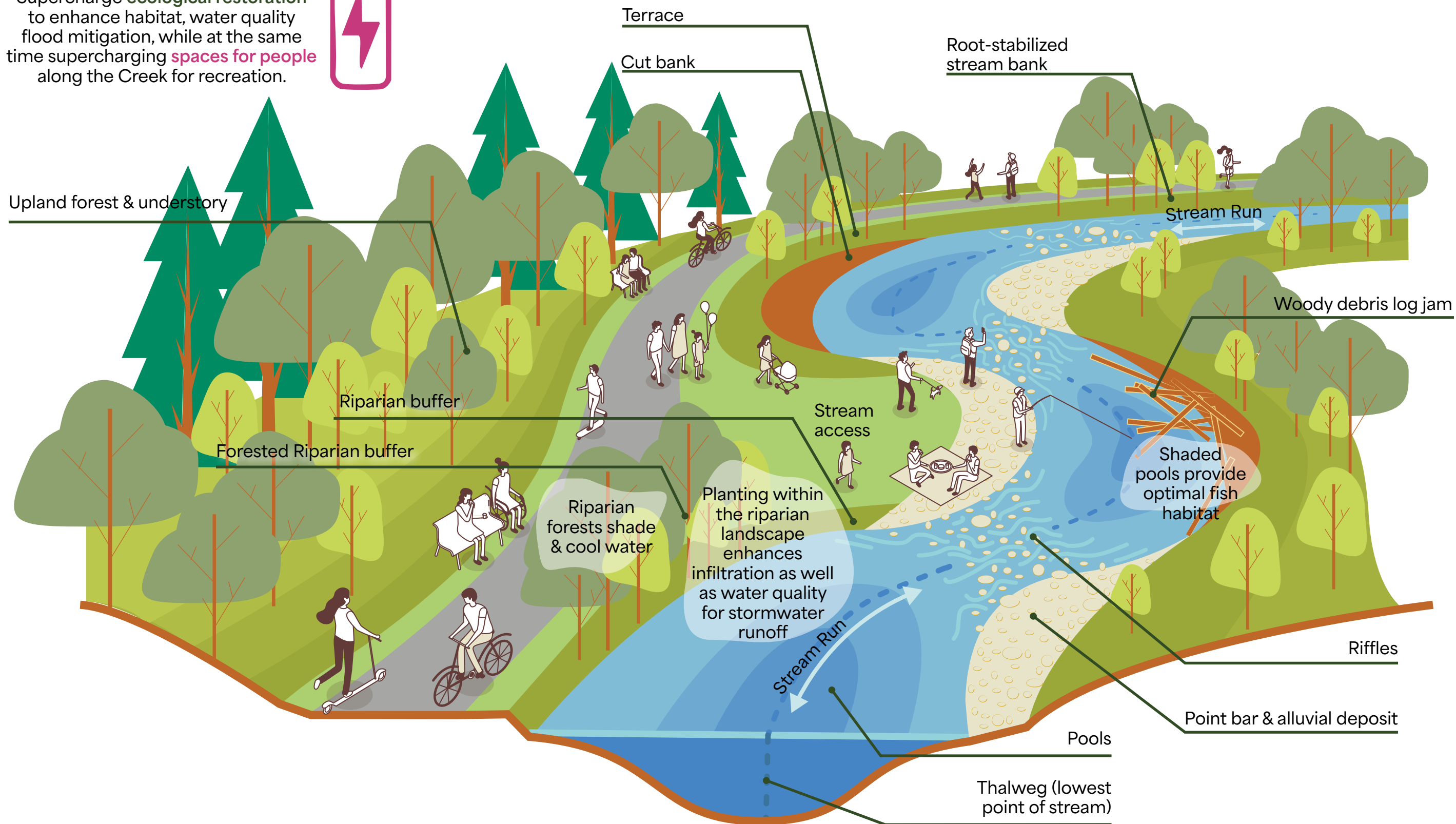




# Ecology + Activity



Supercharge **ecological restoration** to enhance habitat, water quality flood mitigation, while at the same time supercharging **spaces for people** along the Creek for recreation.

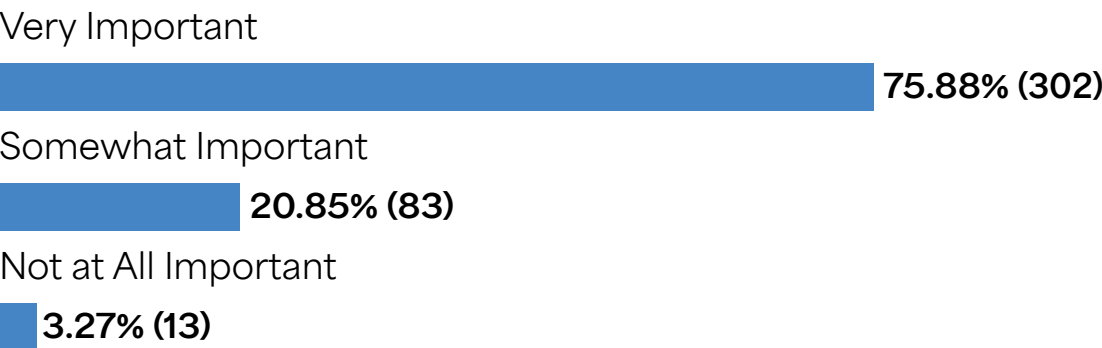


# Ecology + Activity

Q10: How important is it to you for Palmer Township to invest in **ecological restoration and conservation** of natural lands?

398 total responses (54 skipped)

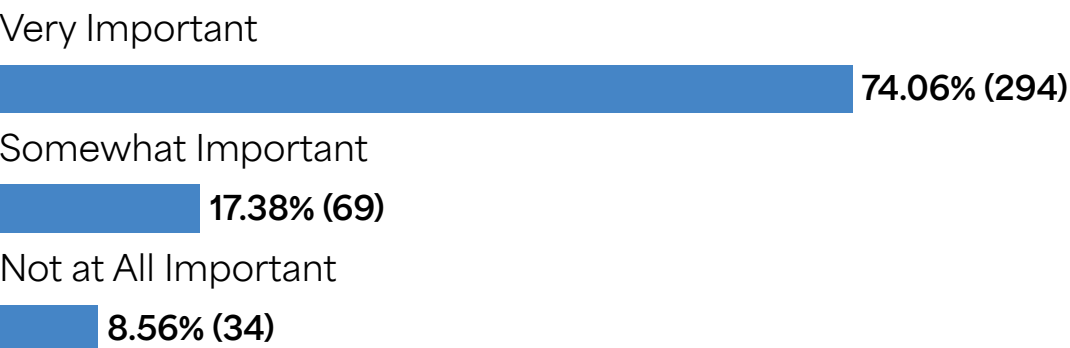
## All responses



Q11: How important is it to you for Palmer Township to plan for **potential impacts of climate change** (such as flooding, habitat loss, extreme heat, etc)?

397 total responses (55 skipped)

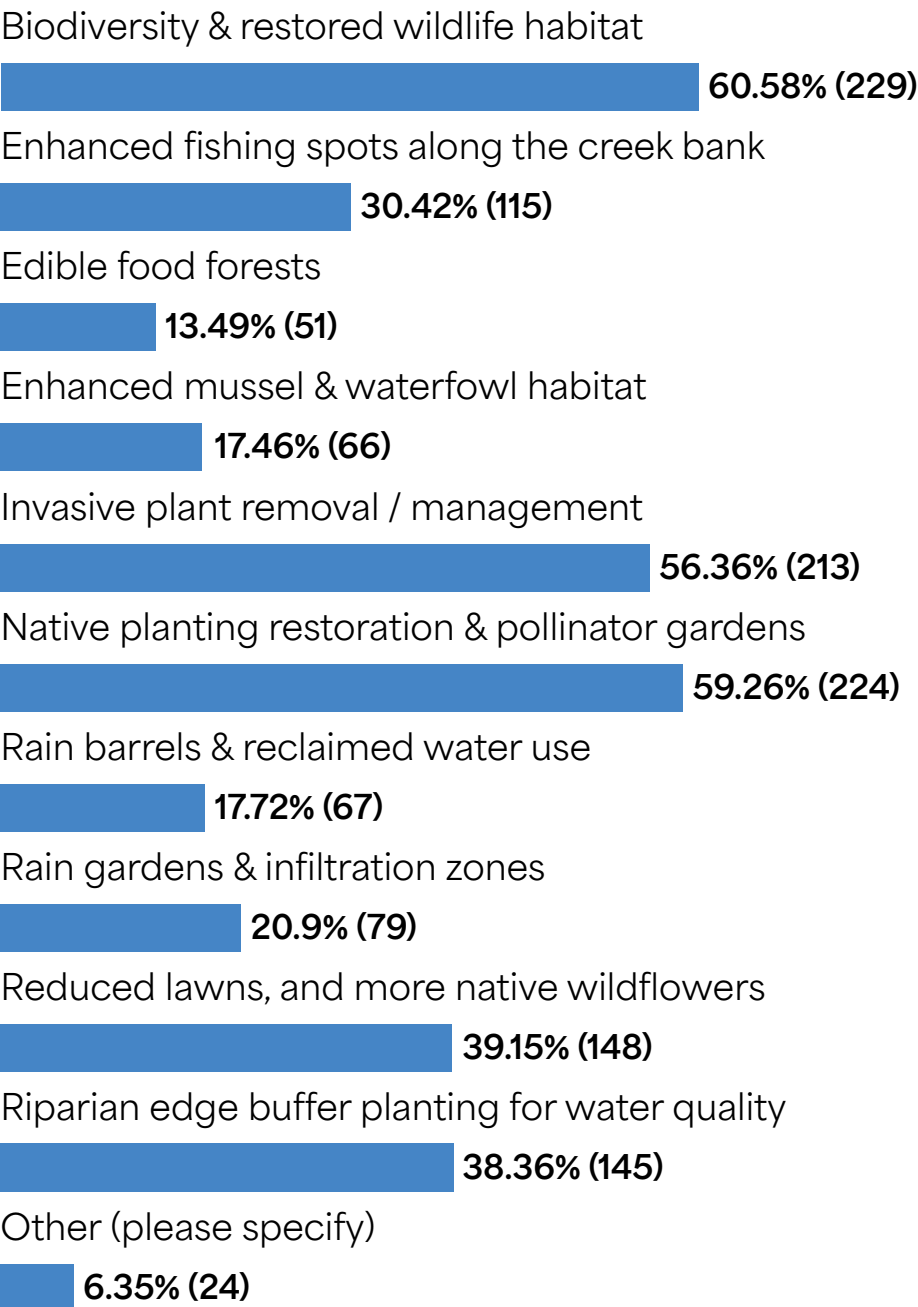
## All responses



Q9: To **enhance ecology**, what should be added or improved in the Bushkill Creek Greenway? Choose up to 3.

378 total responses (74 skipped)

## All responses





# Regional Context

## Trail networks

### REGIONAL TRAIL NETWORKS:

- 1 9/11 National Memorial Trail (1,500 miles)
- 2 D&L Trail (140 miles)
- 3 Delaware River Water Trail (200 miles)
- 4 Forks Township Recreation Trail (2 miles)
- 5 Karl Stirner Arts Trail (2.2 miles)
- 6 Lehigh River Water Trail (75 miles)
- 7 Palmer Township Trail Network (1.4 miles)
- 8 Plainfield Township Recreation Trail (6.7 miles)
- 9 South Bethlehem Greenway (2.4 miles)
- 10 Stockertown Rail Trail (1 mile)
- 11 Tatamy Trail (0.25 miles)
- 12 Two Rivers Trailway (20 miles)
- The LINK Trail Network (125 miles)

### EXISTING TRAILS INCLUDED IN THIS STUDY:

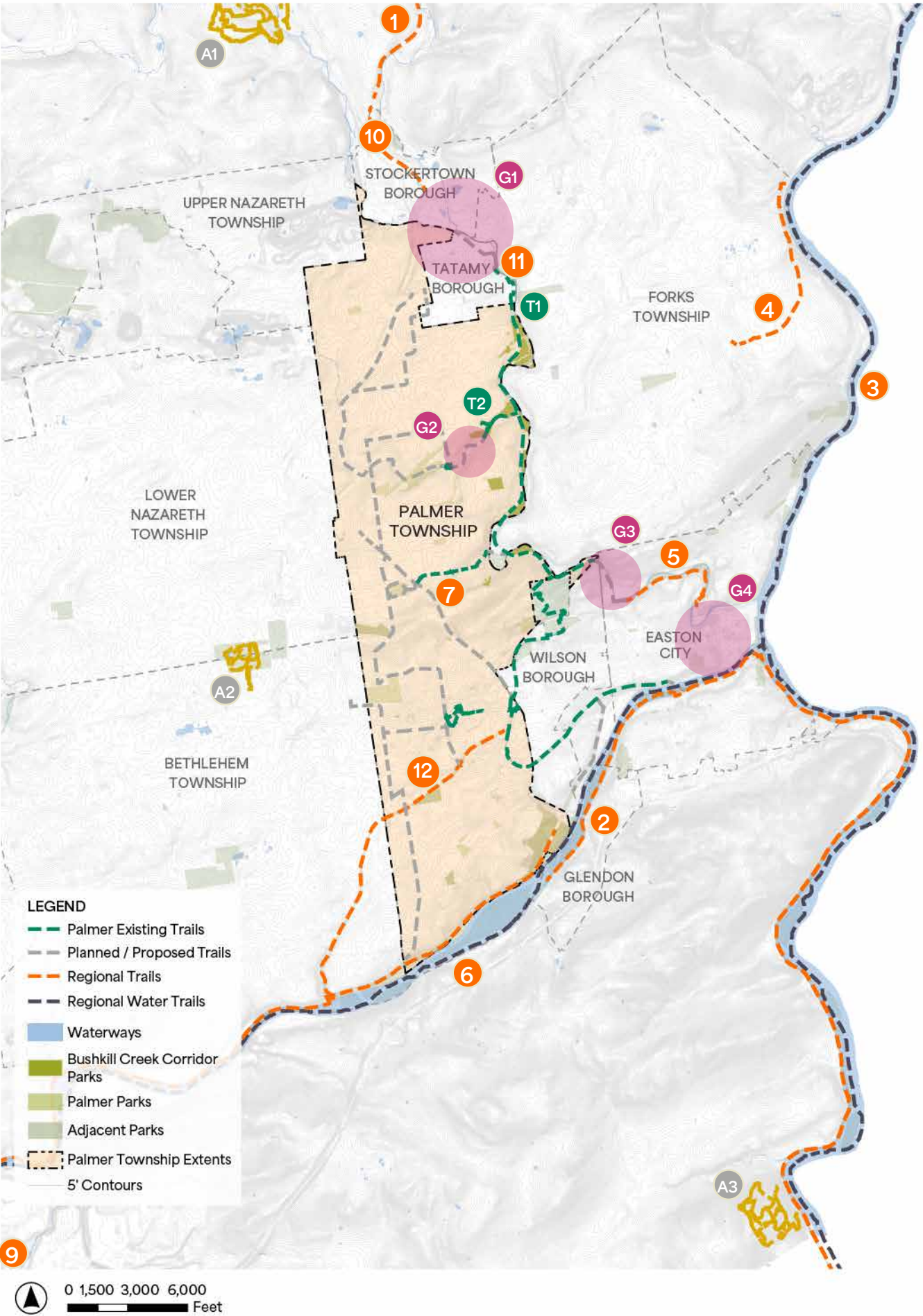
- T1 Palmer Bikeway (3.0 miles)
- T2 Schoeneck Creek Trail A.K.A. Penn's Grant Path (0.7 miles)

### ADJACENT PARK TRAILS:

- A1 Jacobsburg Environmental Education Center Trails (19.7 miles)
- A2 Louise W. Moore County Park Trails (2.7 miles)
- A3 Marlton Wildlife Sanctuary Trails (4.2 miles)

### REGIONAL TRAIL NETWORK GAPS:

- G1 Between Tatamy Trail & Stockertown Rail Trail
- G2 Between Schoeneck Creek Trail & Trail at Fox Run Open Space
- G3 Between Palmer Bikeway & KSAT at 13th Street
- G4 Between KSAT & D&L Trail through the City of Easton





# Bushkill Creek Greenway

## Trail Amenities

Survey No. 1, Select responses related to trails

*Q7: To enhance amenities & safety, which elements should be improved or added to the Bushkill Creek Greenway? Choose up to 3.*  
396 total responses (56 skipped)



Public restrooms / 57.07% (226)



Water fountains & bottle-filling stations / 52.78% (209)



Signage / 42.17% (167)



Seating / 26.01% (103)



Dog-friendly spaces / 25.25% (100)



Better safety & security measures / 21.97% (87)



Bike repair stands and pumps / 18.94% (75)



Shade / 18.94% (75)



Public art / 14.9% (59)

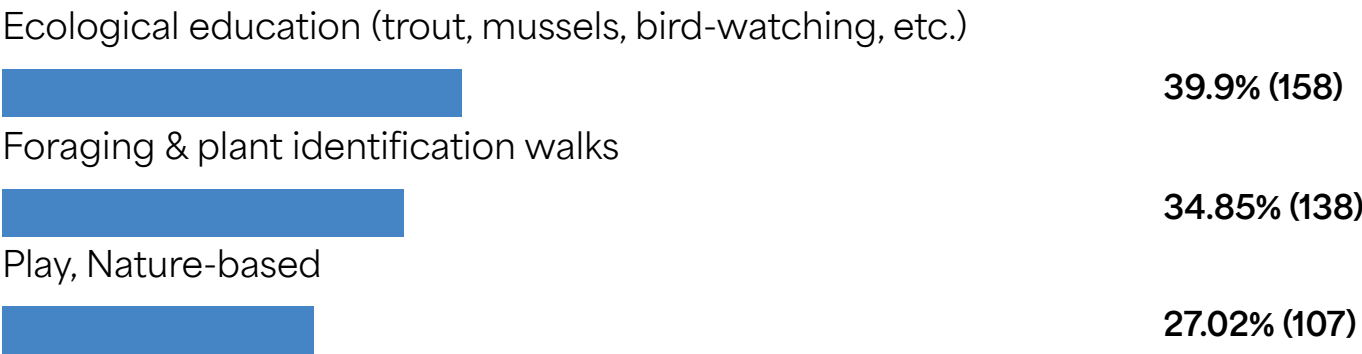


# Survey #1 Results

May 17, 2025-June 22, 2025

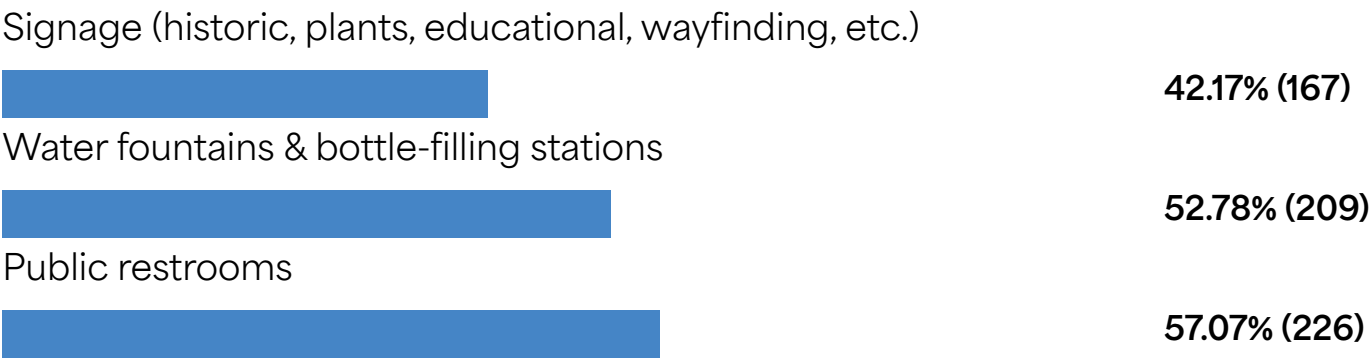
Q6: To **enhance visitation**, which offerings should be added to the Bushkill Creek Greenway? Choose up to 3.  
176 Palmer Township responses (11 skipped)

## All responses



Q7: To enhance **amenities & safety**, which elements should be improved or added to the Bushkill Creek Greenway? Choose up to 3.  
396 total responses (56 skipped)

## All responses

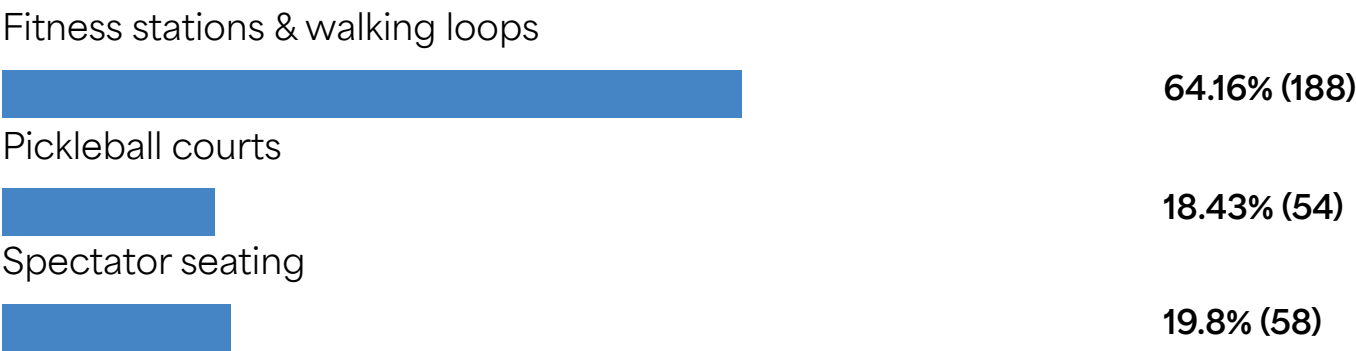


# Survey #1 Results

May 17, 2025-June 22, 2025

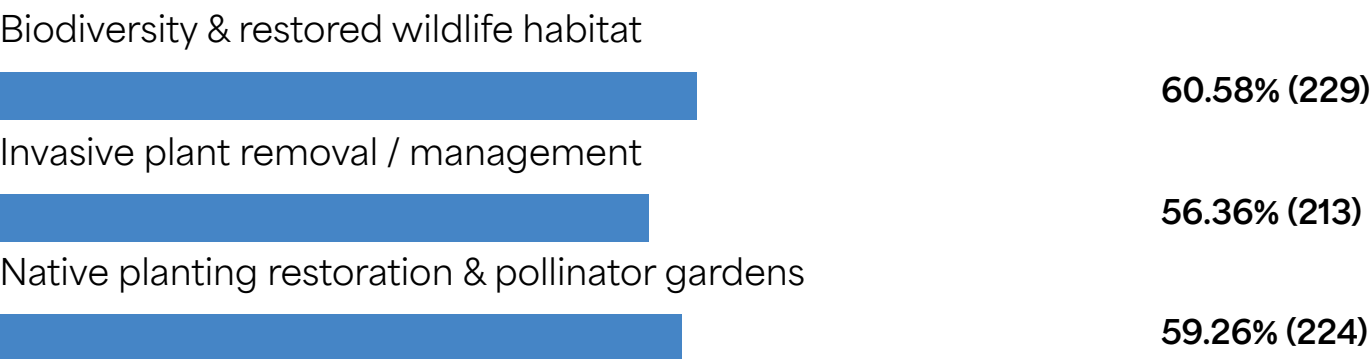
Q8: To enhance **sports & fitness**, which recreational elements should be improved or added to the Bushkill Creek Greenway? Choose up to 3.  
293 total responses (159 skipped)

## All responses



Q9: To **enhance ecology**, what should be added or improved in the Bushkill Creek Greenway? Choose up to 3.  
378 total responses (74 skipped)

## All responses





# Play Richness Analysis

Mapping existing play options



SP SW CL SL



CL SL

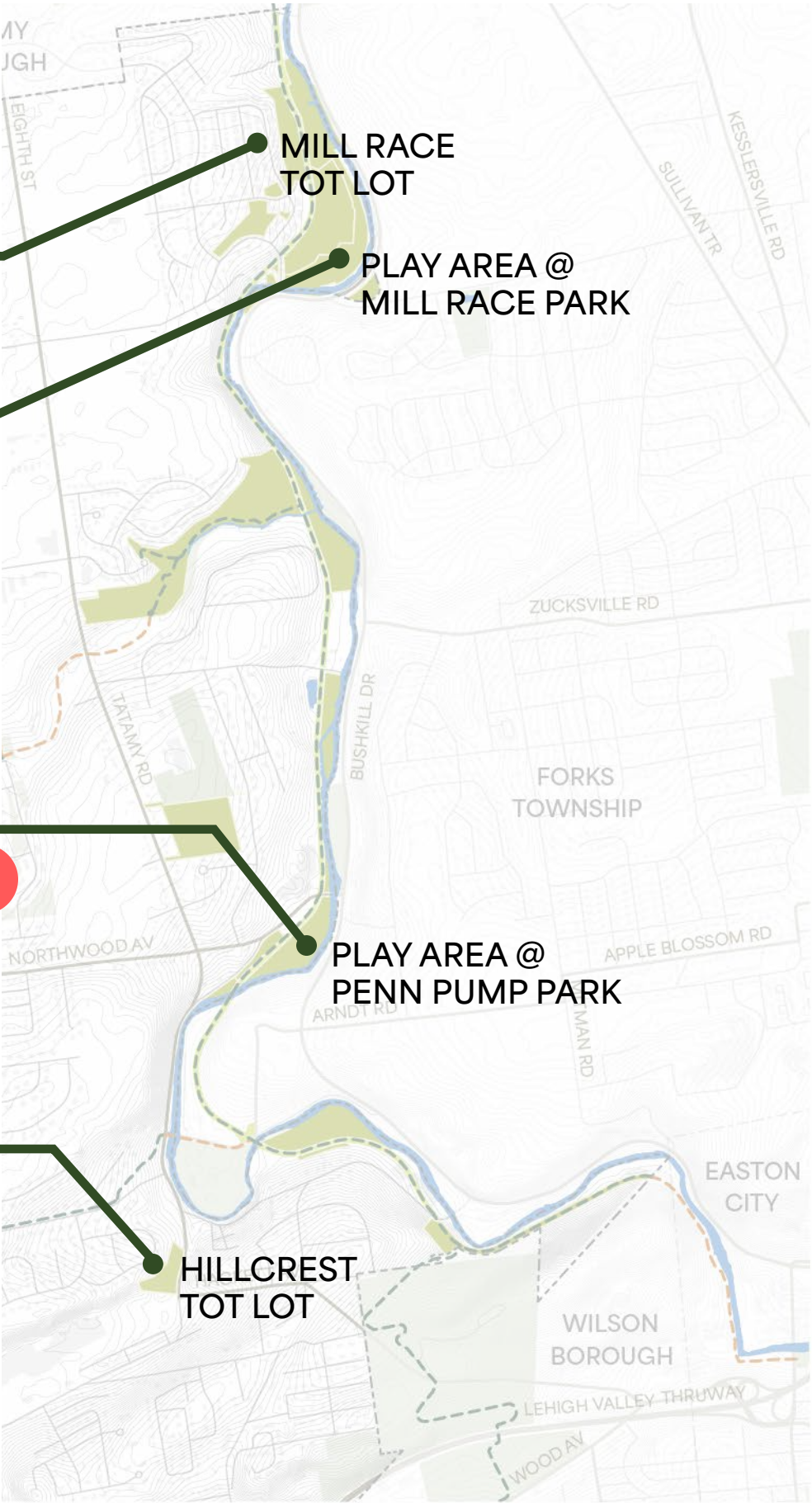


SW CL SL



CL SL

- |                              |                                 |
|------------------------------|---------------------------------|
| SP Competitive Play (Sports) | SE [Sensory / Exploration Play] |
| SW Swinging Play             | WA [Water Play]                 |
| CL Climbing / Balancing Play | RO [Spinning / Rotating Play]   |
| SL Sliding Play              | FI [Fitness / Adult Play]       |





# Play & Wellness





# Mill Race Park & Tot Lot

## Analysis



1 Soccer field after a heavy rain, 2019  
Image courtesy of Dave Dumpel

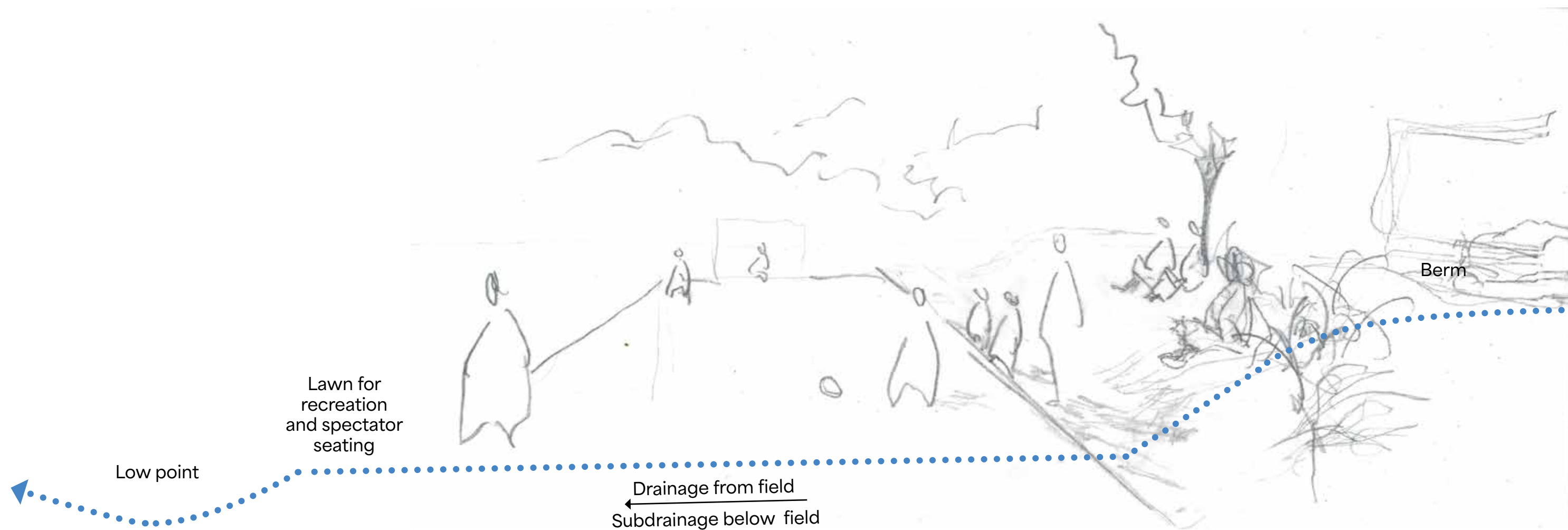


2 Soccer Field after flooding at elevation ~296, 2020  
Image courtesy of Dave Dumpel



# Stormwater Management

## Design Strategy





# Mill Race Park & Tot Lot

## Precedents

"CUT" AND WETLANDS



"FILL" & BERMS



SPORTS IMPROVEMENTS



NATURAL PLAY & SLOPES



ECOLOGICAL RESTORATION





# Mill Race Park & Tot Lot

Concept 1



- Property Line
- 100-yr Flood
- 500-yr Flood
- GPU Easement
- Sewer Easement
- Power Easement
- Existing Ecological Restoration
- Proposed Ecological Restoration
- Rain Garden
- Existing Tree
- Proposed Tree
- Proposed Path
- Proposed Trail
- Entry Signage

1" = 80'



# Mill Race Park & Tot Lot

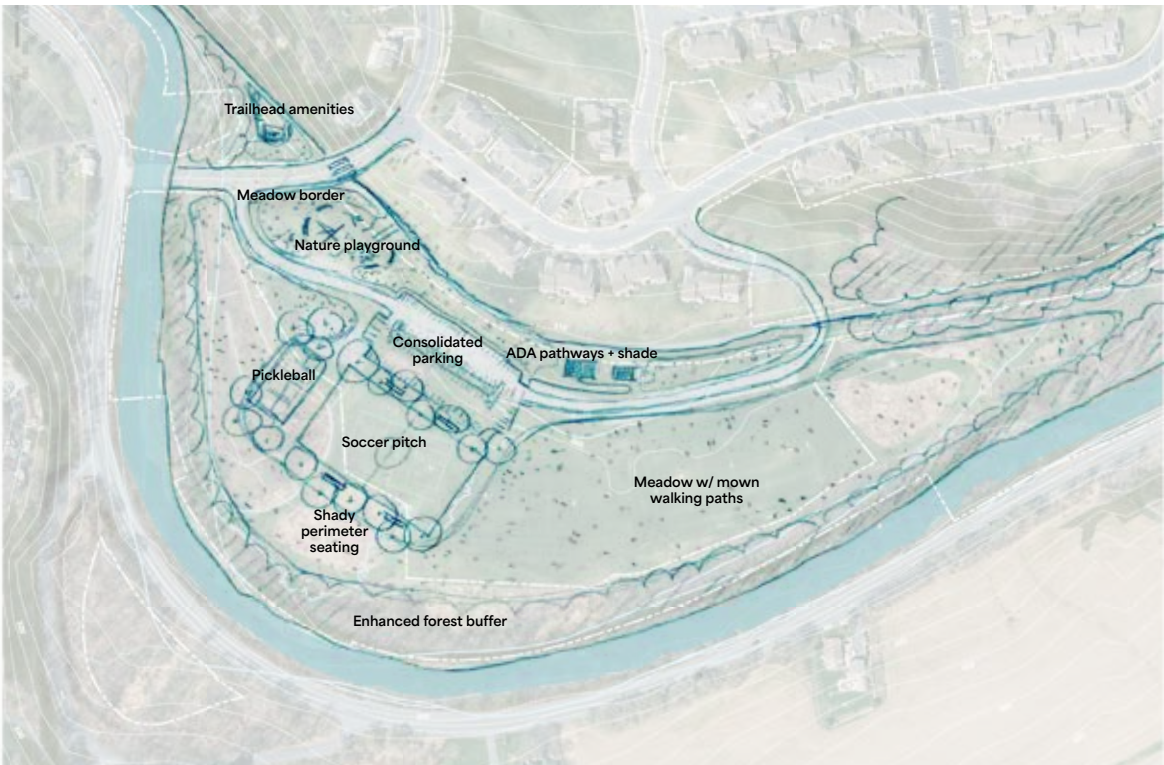
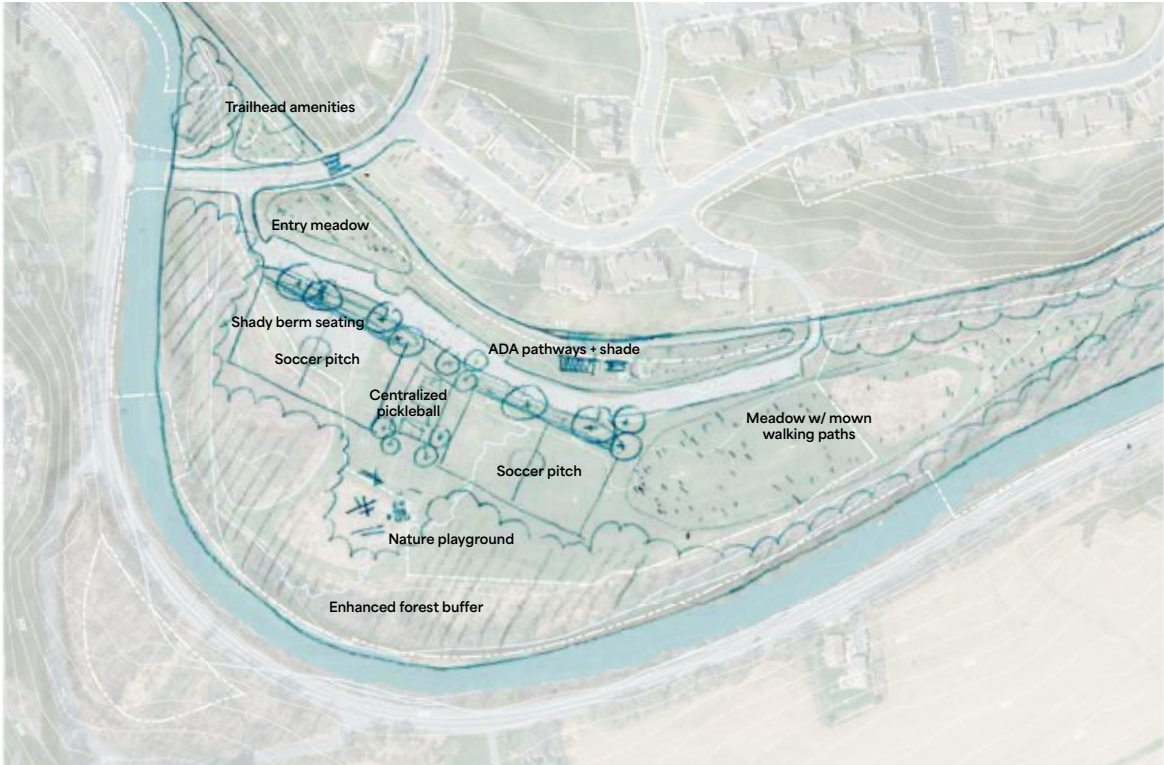
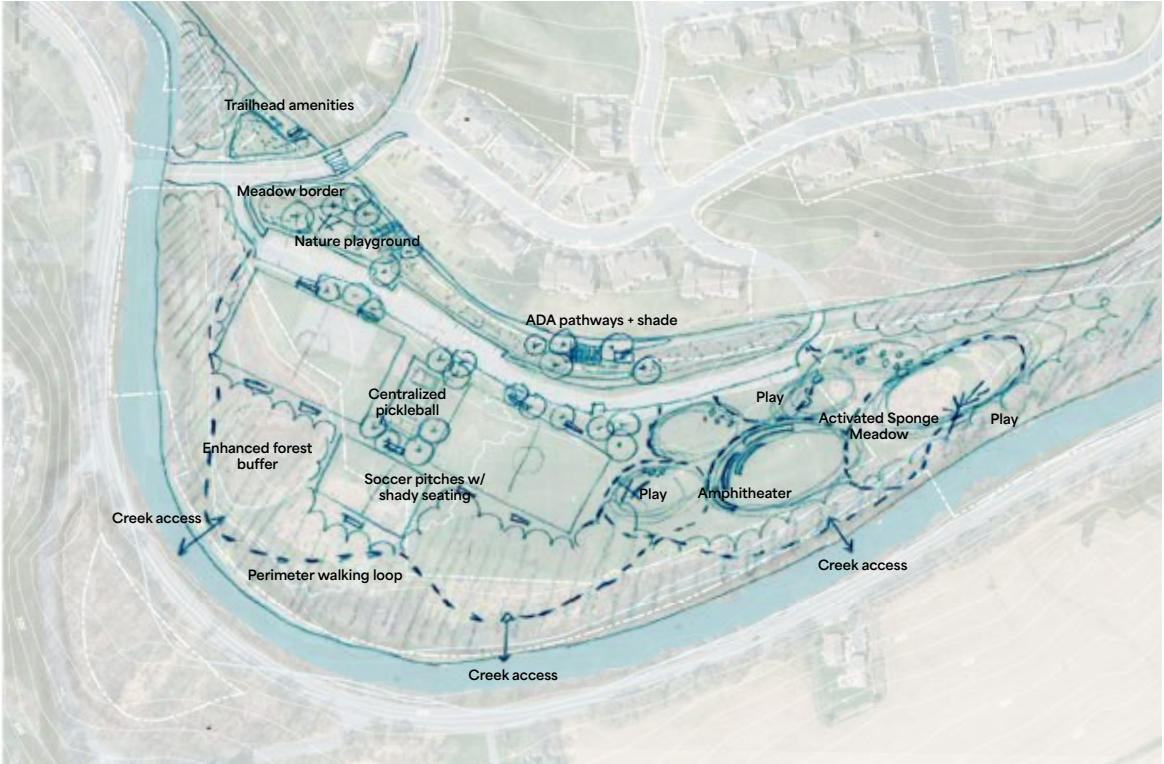
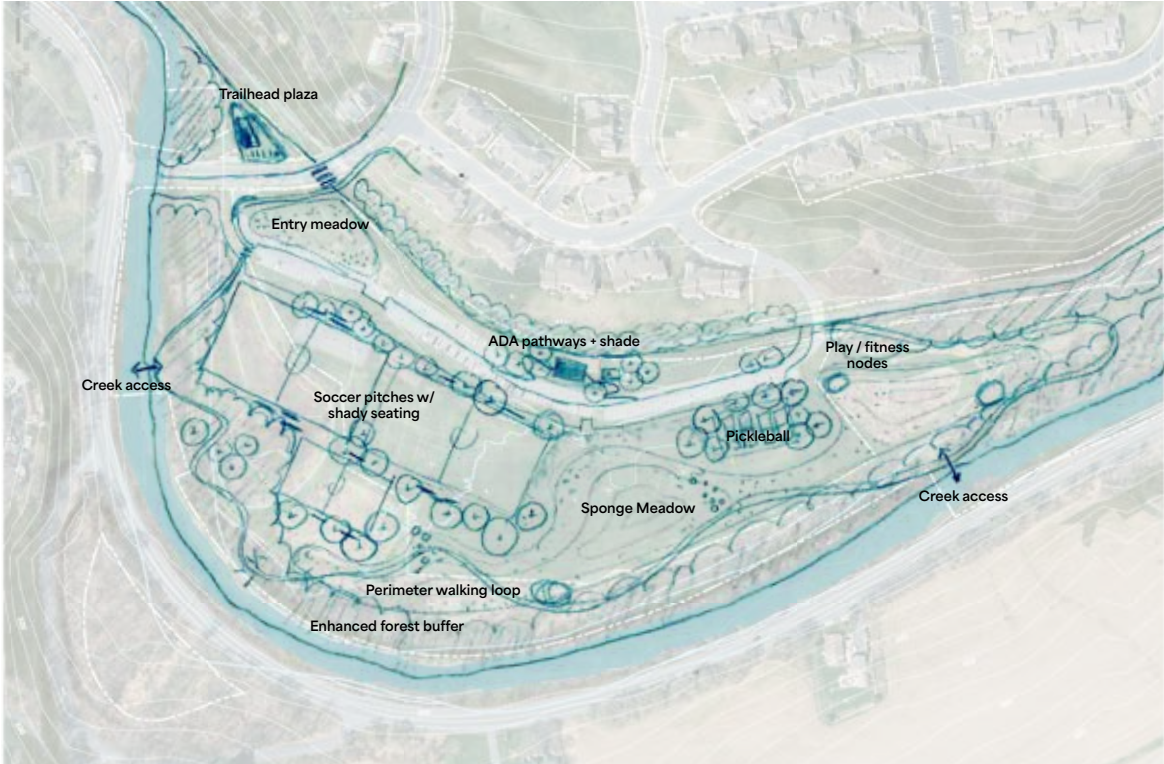
Concept 2





# Mill Race Park & Tot Lot

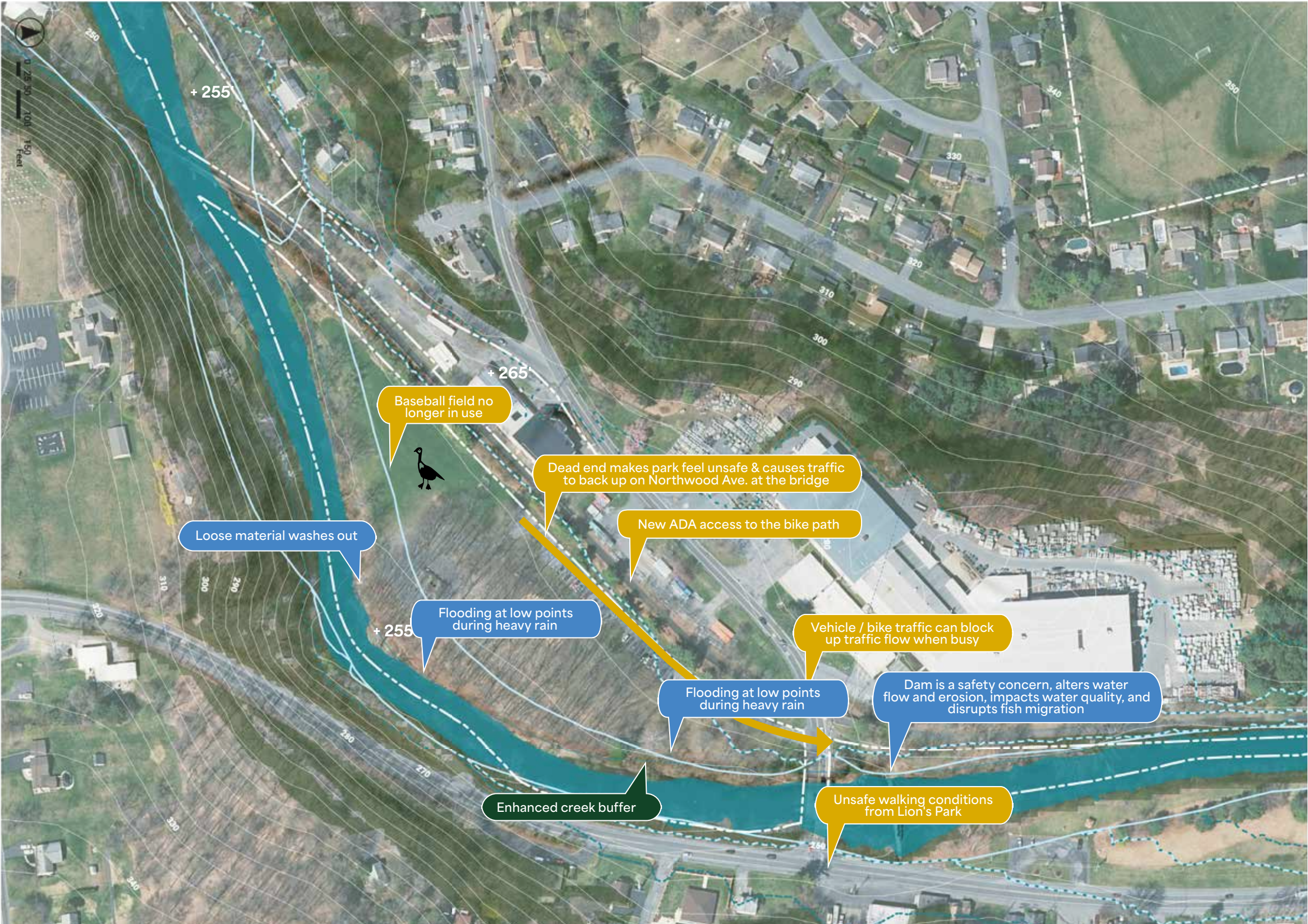
## Process Sketches





# Penn Pump Park

## Analysis





# Penn Pump Park

## Precedents

NATURAL PLAY



GATHERING PLACES



CREEK ACCESS



WETLANDS & STORMWATER



ECOLOGICAL RESTORATION





# Evolution of the Bushkill

## HISTORIC MILL & Dam locations



Walter's Mill & Dam  
Sources: Sigal Museum, NCHGS Marx Room at the Easton Public Library



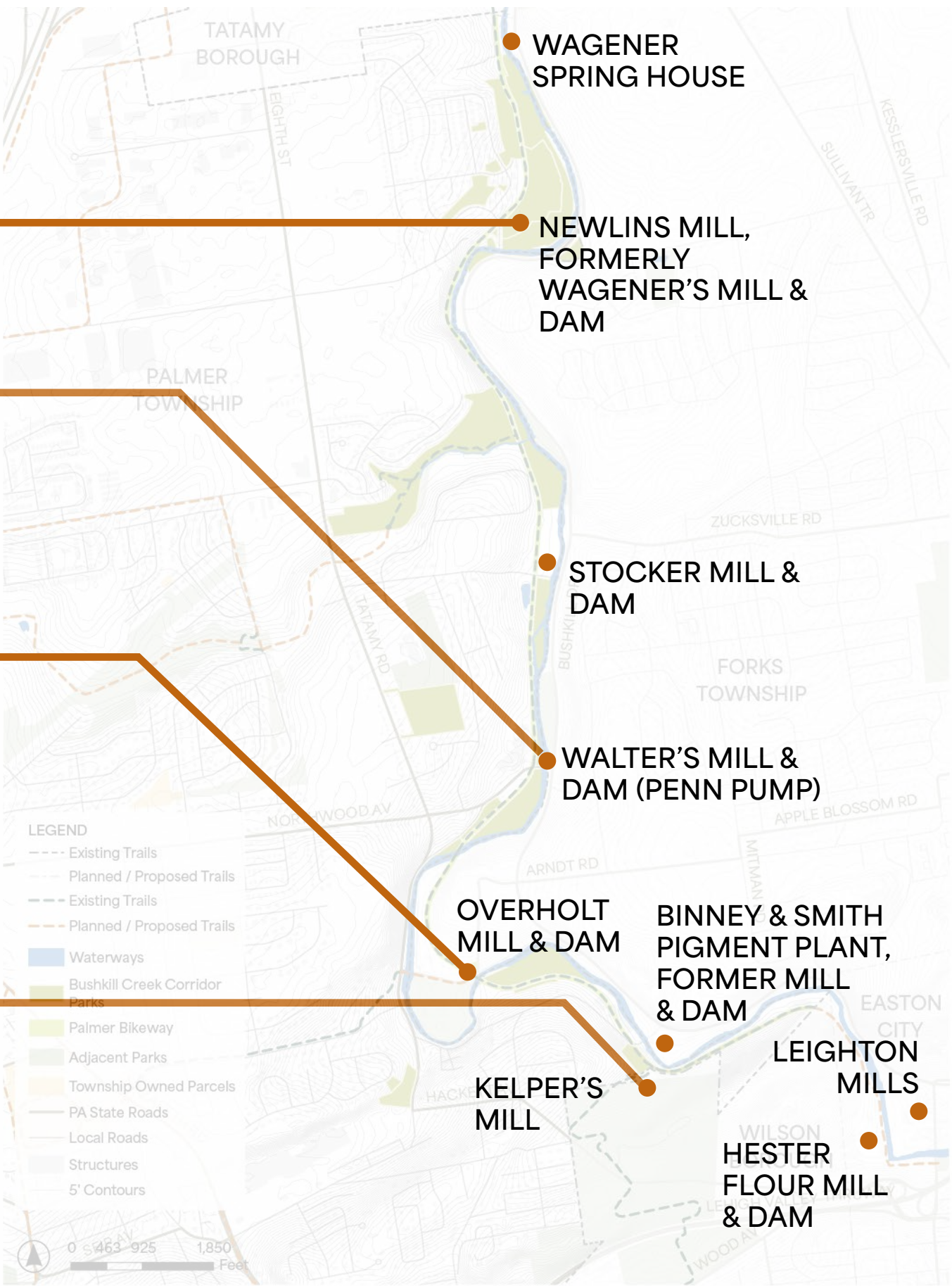
Wagener Homestead & Dam  
Source: Marx Room at the Easton Public Library



Overholt Mill, 1944  
Source: NCHGS



Kelper's Mill  
Source: Sigal Museum, NCHGS





# Penn Pump Park - Dam No. 6



Image courtesy of Rudy Miller, Lehigh Valley Live

Celebrate History: Convert dam bulkhead into fishing pier & overlook



## PROS OF DAM REMOVAL

- 1. Restoring creek banks enhances water retention capacity, thereby reducing both the frequency and severity of flooding events.
- 2. Stream restoration improves water quality by reducing sedimentation and enhancing overall ecosystem health.
- 3. Restored fish passage & aquatic habitat for fish & freshwater mussels
- 4. Removing dams eliminates a public safety hazard & increased liability for the Township
- 5. The dam is a focal point for recreation, contributing to park congestion and increased law enforcement presence.
- 6. Funds are available through DRBC mitigation funds, NFWF, PA DEP, PA DCNR, and Northampton County





# Penn Pump Park

## CONCEPT 1





# Penn Pump Park

## CONCEPT 2

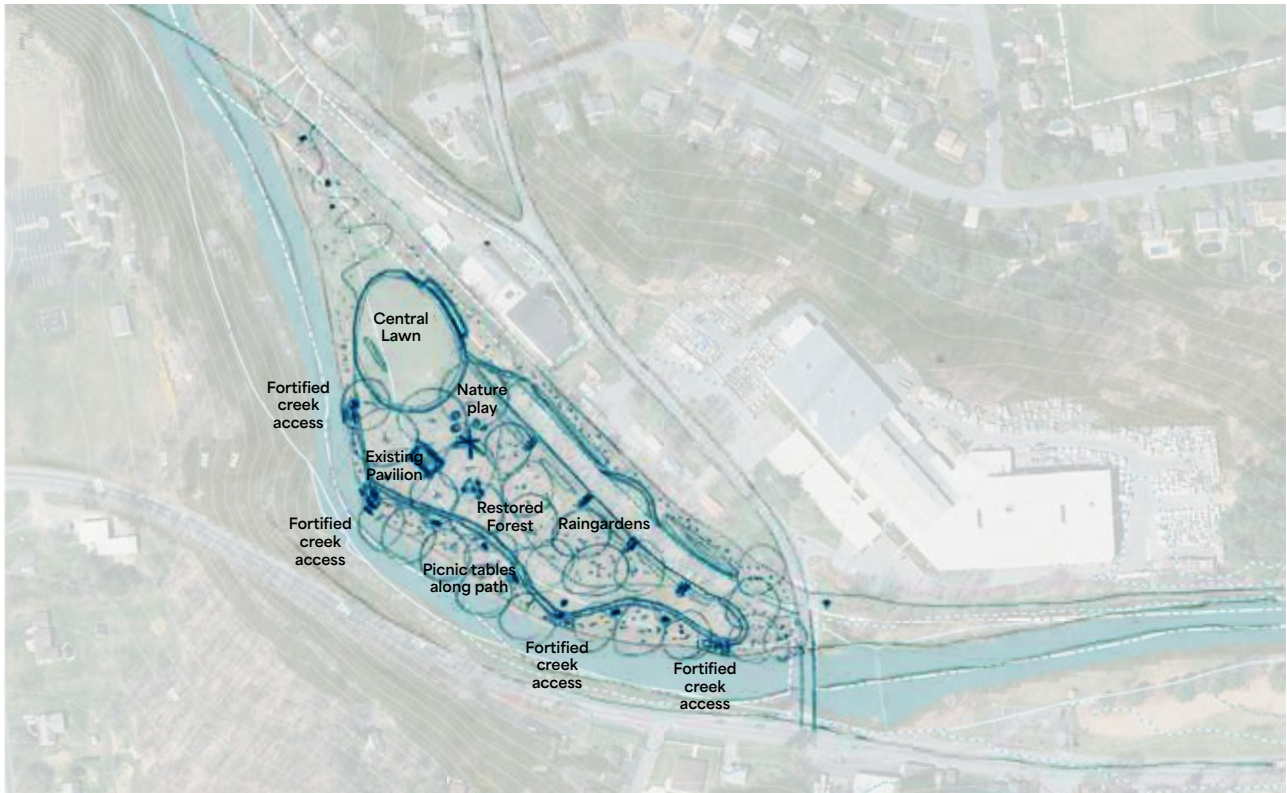
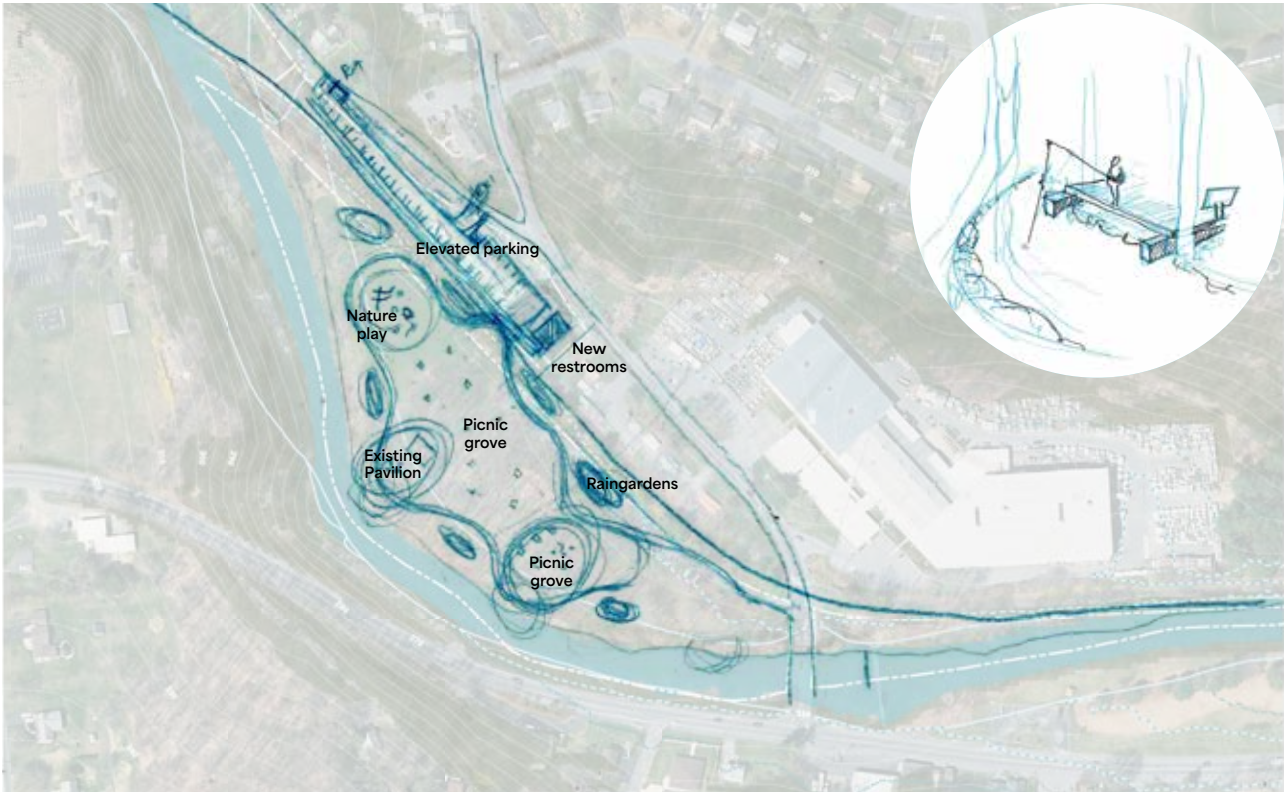
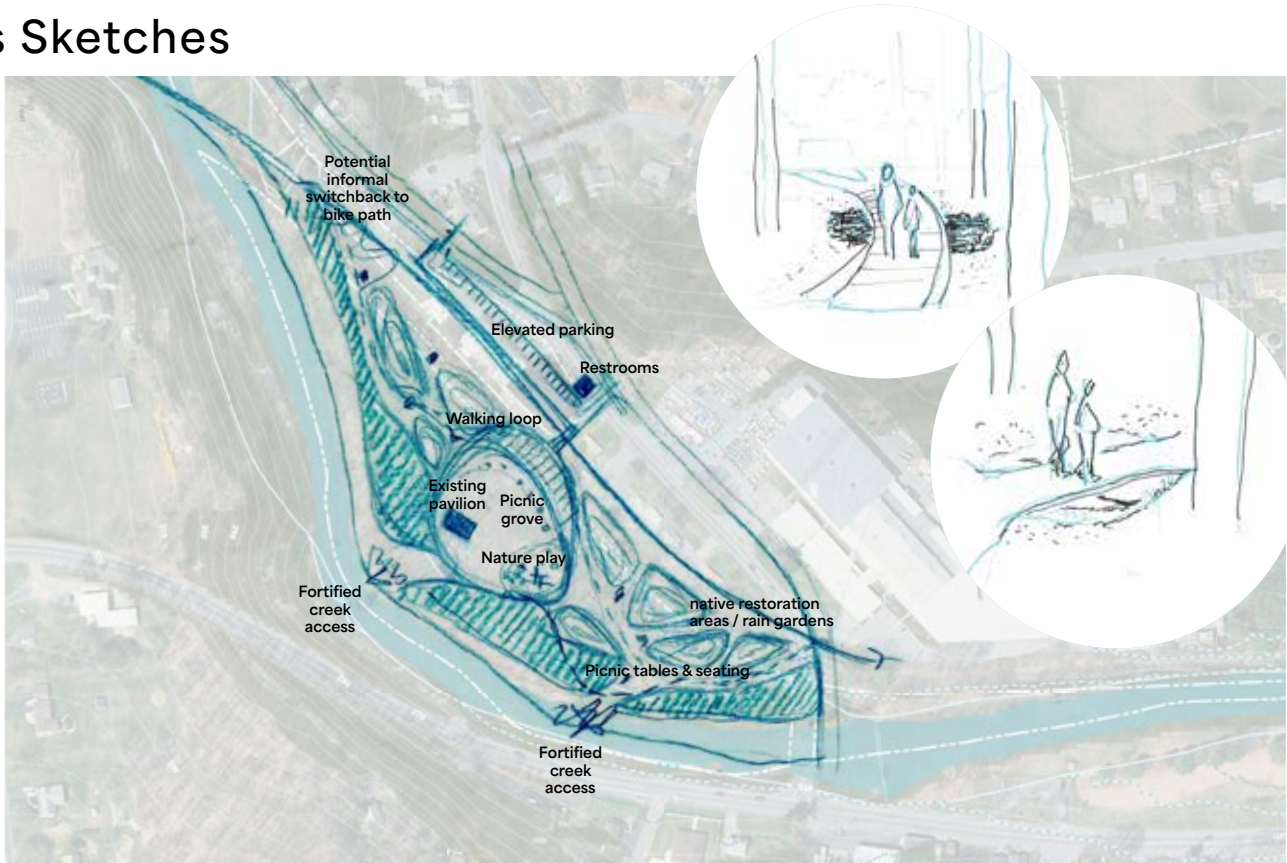
- - - Property Line
- 100-yr Flood
- 500-yr Flood
- GPU Easement
- Sanitary Sewer Easement
- Existing Ecological Restoration
- Proposed Ecological Restoration
- Rain Garden
- Existing Tree
- Proposed Tree
- Proposed Path
- Proposed Trail
- Entry Signage





# Penn Pump Park

## Process Sketches





# Penn Pump Park

Connectivity



Penn Pump Park

Sidewalk

Buffered Bike Lane

Forks Township's  
Lions Park

Sidewalk

Buffered Bike Lane



# Keystone Park

## Analysis





# Keystone Park

## Concept 1





# Keystone Park

## Concept 2





# Keystone Park

Process Sketches





# Two Fool's Island

## Analysis



Ecological Typologies

Central Appalachian Alkaline Glade and Woodland	
Trees	eastern redbud ( <i>Cercis canadensis</i> ) eastern red-cedar ( <i>Juniperus virginiana</i> ) chinquapin oak ( <i>Quercus muehlenbergii</i> ) hackberry ( <i>Celtis occidentalis</i> ) northern white cedar ( <i>Thuja occidentalis</i> ) pignut hickory ( <i>Carya Glabra</i> ) red oak ( <i>Quercus rubra</i> ) sugar maple ( <i>Acer saccharum</i> ) white oak ( <i>Quercus alba</i> )
Shrubs	downy arrow-wood ( <i>Viburnum rafinesquianum</i> ) running serviceberry ( <i>Amelanchier humilis</i> )
Herbaceous	barren strawberry ( <i>Waldsteinia fragarioides</i> ) glade flax ( <i>Linum sulcatum</i> var. <i>sulcatum</i> ) hairy beardtongue ( <i>Penstemon hirsutus</i> ) hairy pinweed ( <i>Lechea mucronata</i> ) orange-grass st. john's-wort ( <i>Hypericum gentianoides</i> ) prairie ragwort ( <i>Packera plattensis</i> ) bergamot ( <i>Monarda fistulosa</i> ssp. 1) violet bushclover ( <i>Lespedeza violacea</i> ) western hairy rockcress ( <i>Arabis hirsuta</i> ) western wallflower ( <i>Erysimum capitatum</i> ) cliff stonecrop ( <i>Sedum glaucophyllum</i> )* hidden spikemoss ( <i>Selaginella eclipses</i> )* tall larkspur ( <i>Delphinium exaltatum</i> )* three-lobed violet ( <i>Viola triloba</i> )*
North-Central Appalachian Large River Floodplain	
Trees	box elder ( <i>Acer negundo</i> ) cottonwood ( <i>Populus deltoides</i> ) silver maple ( <i>Acer saccharinum</i> ) sycamore ( <i>Platanus occidentalis</i> )
Herbaceous	basil beebalm ( <i>Monarda clinopodia</i> ) green dragon ( <i>Arisaema dracontium</i> ) canada moonseed ( <i>Menispermum canadense</i> ) nodding trillium ( <i>Trillium flexipes</i> ) smooth bur-marigold ( <i>Bidens laevis</i> ) american lotus ( <i>Nelumbo lutea</i> )* coast violet ( <i>Viola brittoniana</i> )* eastern prairie white-fringed orchid ( <i>Platanthera leucophaea</i> )* heartleaf plantain ( <i>Plantago cordata</i> )* limestone wild petunia ( <i>Ruellia strepens</i> )* long's bulrush ( <i>Scirpus longii</i> )* maryland bur-marigold ( <i>Bidens bidentoides</i> )* navel-shape cornsalad ( <i>Valerianella umbilicata</i> )* stalked bulrush ( <i>Scirpus pedicellatus</i> )* tidal spikerush ( <i>Eleocharis aestuum</i> )*
Northeastern Interior Dry-Mesic Oak Forest	
Trees	black birch ( <i>Betula lenta</i> ) black oak ( <i>Quercus velutina</i> ) hickory ( <i>Carya</i> spp.) red maple ( <i>Acer rubrum</i> ) red oak ( <i>Quercus rubra</i> ) scarlet oak ( <i>Quercus coccinea</i> ) white oak ( <i>Quercus alba</i> ) yellow birch ( <i>Betula alleghaniensis</i> )
Herbaceous	American wintergreen ( <i>Pyrola americana</i> ) basil beebalm ( <i>Monarda clinopodia</i> ) blunt-lobed woodsia ( <i>Woodsia obtusa</i> ) bottlebrush grass ( <i>Elymus hystrix</i> ) common alexanders ( <i>Zizia aurea</i> ) early buttercup ( <i>Ranunculus fascicularis</i> ) shinleaf ( <i>Pyrola elliptica</i> ) sicklepod ( <i>Arabis canadensis</i> ) climbing fern ( <i>Lygodium palmatum</i> )* goldenseal ( <i>Hydrastis canadensis</i> )* small whorled pogonia ( <i>Isotria medeoloides</i> )*

ASSOCIATED SPECIES; \*SPECIES OF CONCERN



# Two Fool's Island

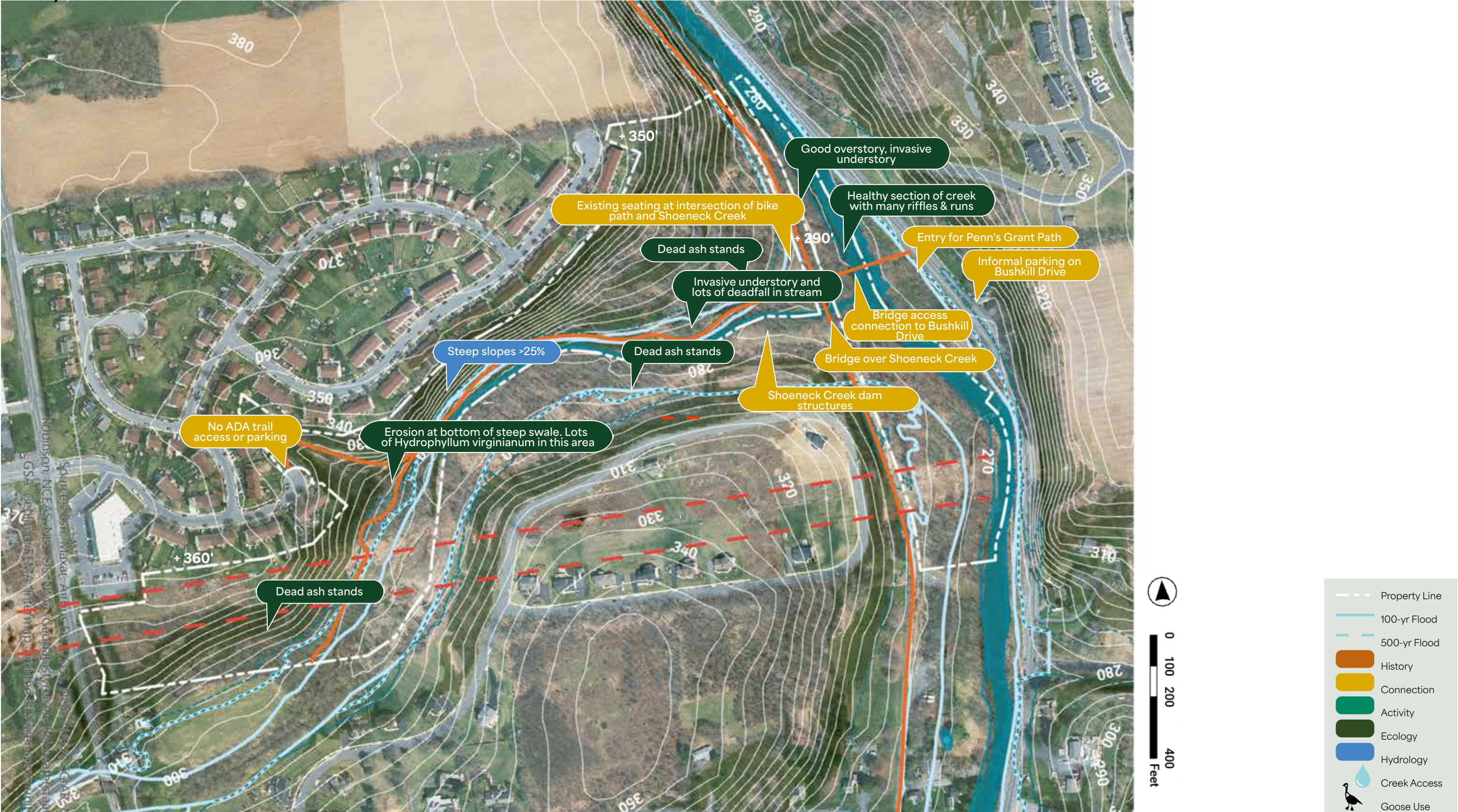
Concept





# Penn's Grant Open Space

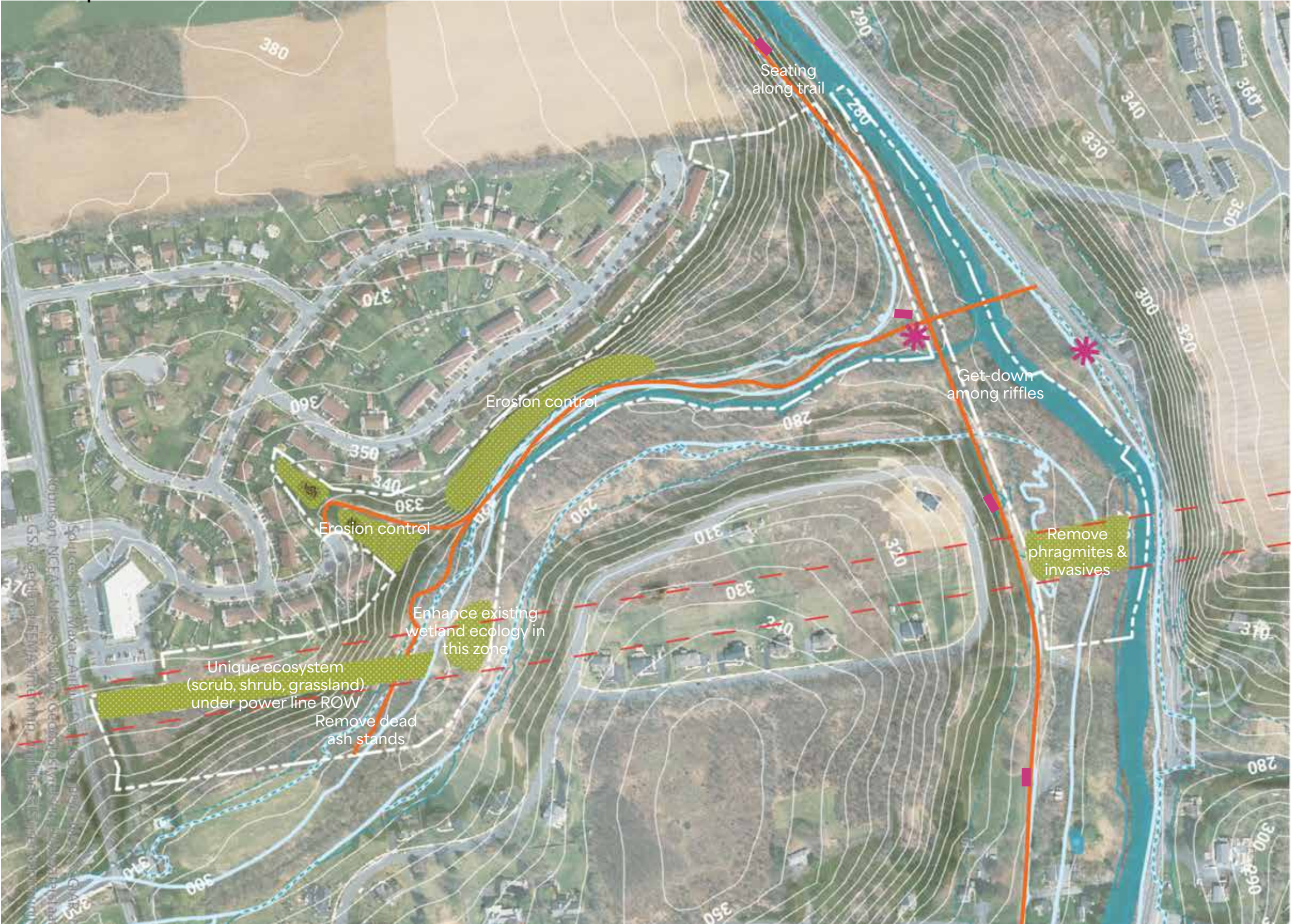
## Analysis





# Penn's Grant Open Space

Concept





# Greenway Access at Penn's Grant Open Space

Connectivity



Entry to Penn's Grant Path bridge

Parking Optional: ADA designated spot

Sidewalk

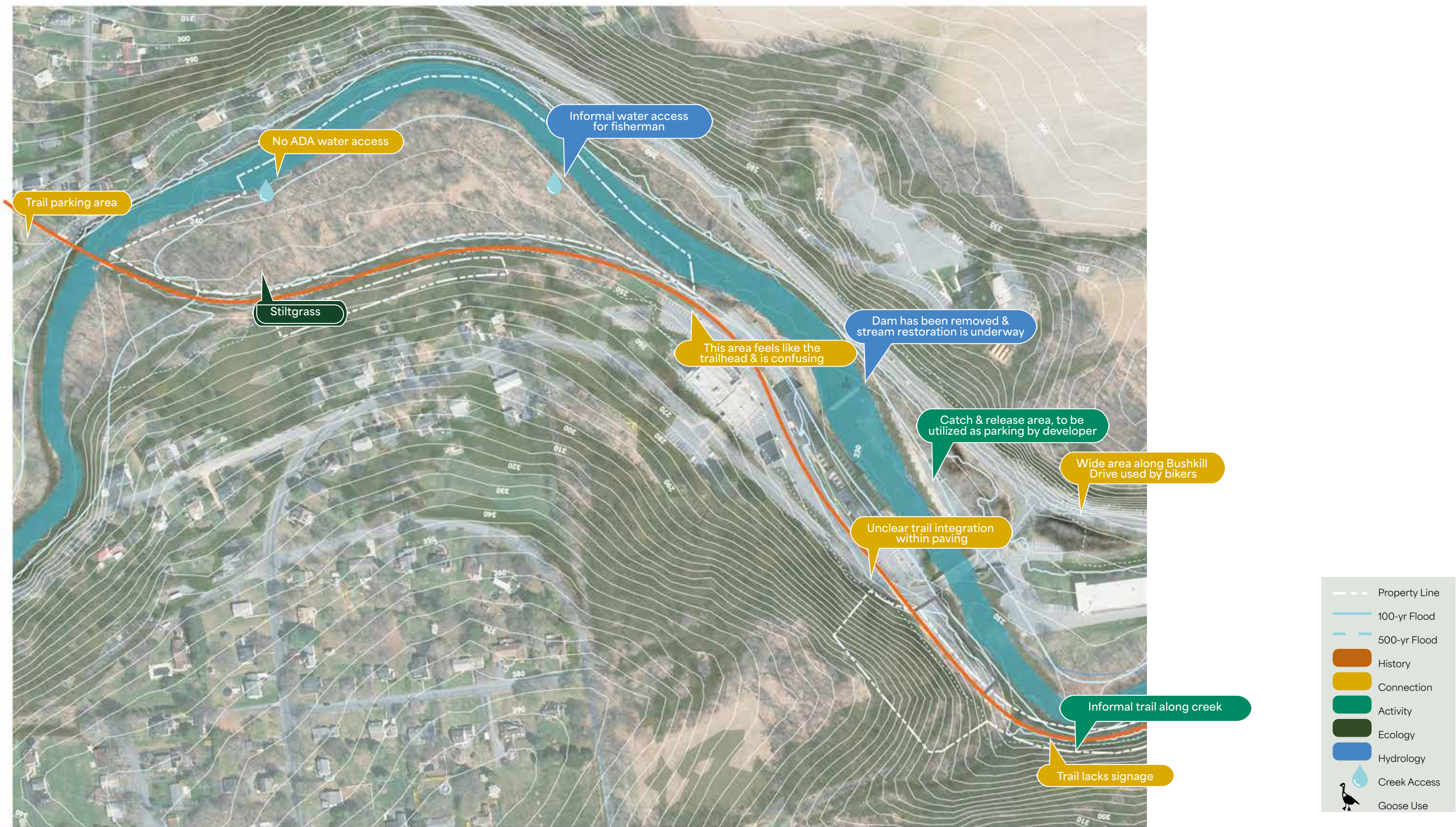
Buffered Bike Lane

Crosswalk with rapid flashing signal for crossing



# Wildlands Conservancy Binney & Smith Preserve

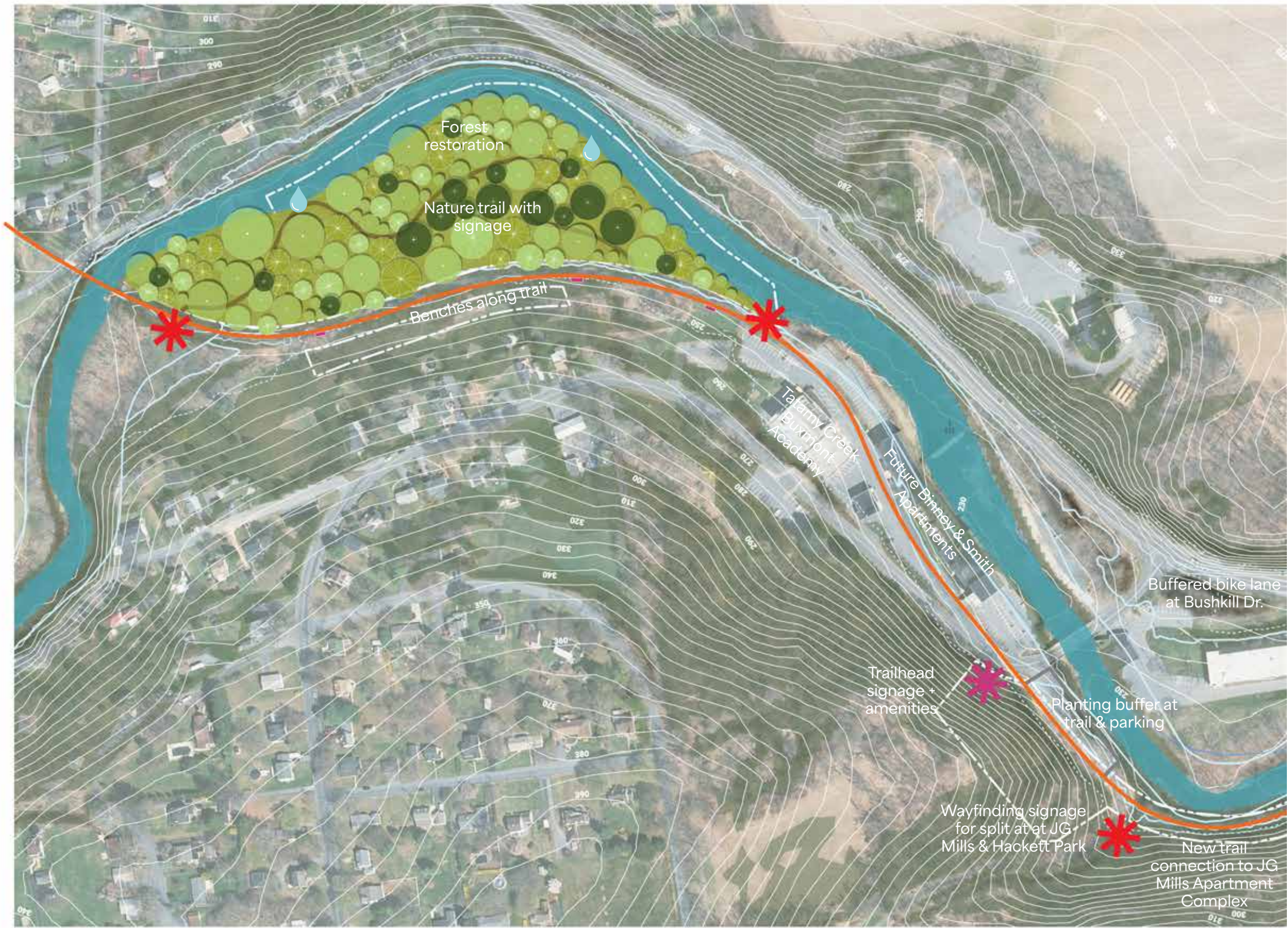
## Analysis





# Wildlands Conservancy Binney & Smith Preserve

Concept





# Hillcrest Open Space & Tot Lot

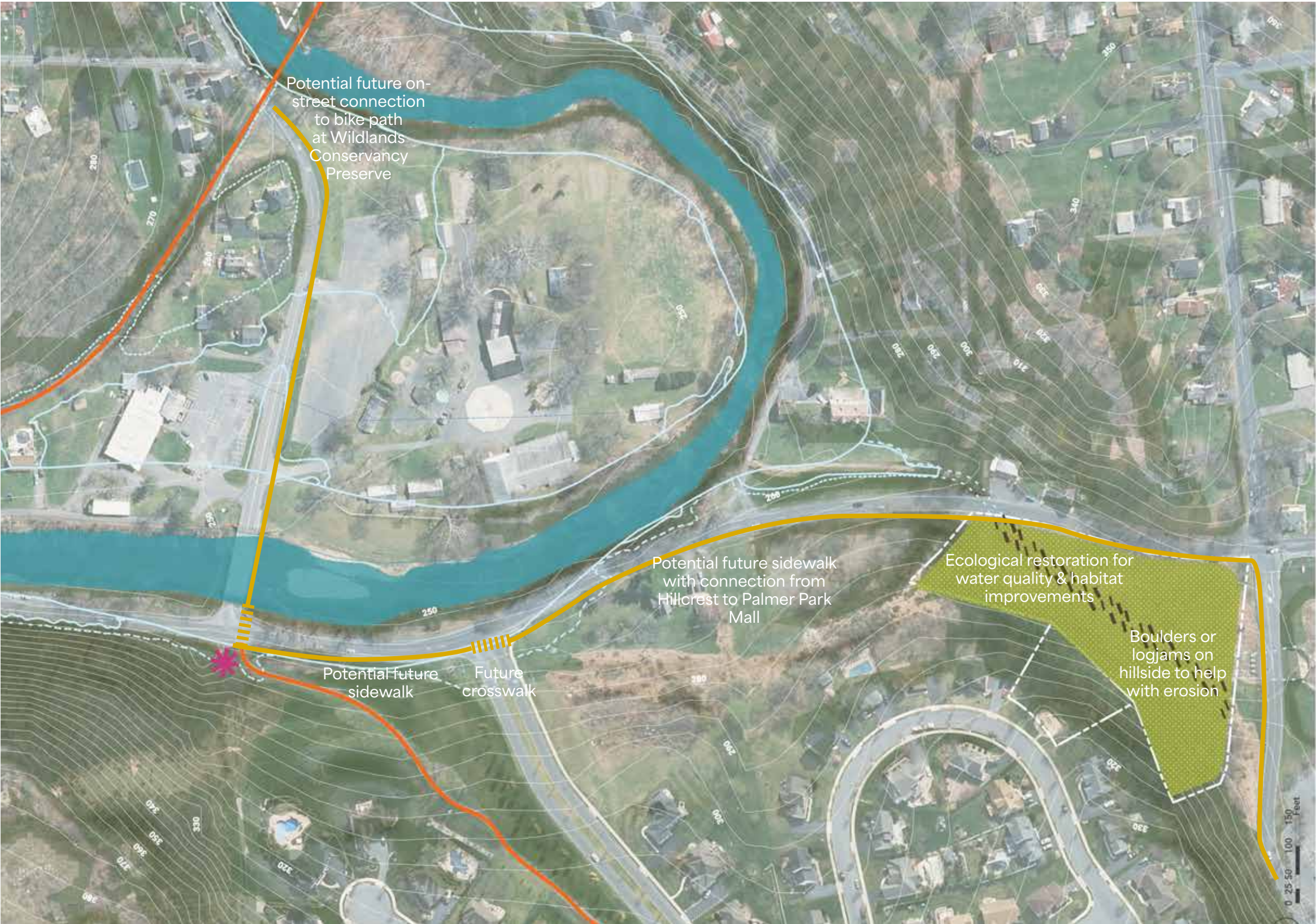
## Analysis





# Hillcrest Open Space & Tot Lot

Concept





# Signage & Wayfinding Visual Inventory

Existing assets



Palmer Township Standard Park Entry Signage



Palmer Bikeway Trail Signage



Standard Playground Rules Signage



Palmer Township Standard Park Entry Signage - Alternate



Palmer Trail Map Standard Signage



Palmer Township Standard Park Rules Signage



# Signage & Wayfinding Visual Inventory

Existing relevant branding identities

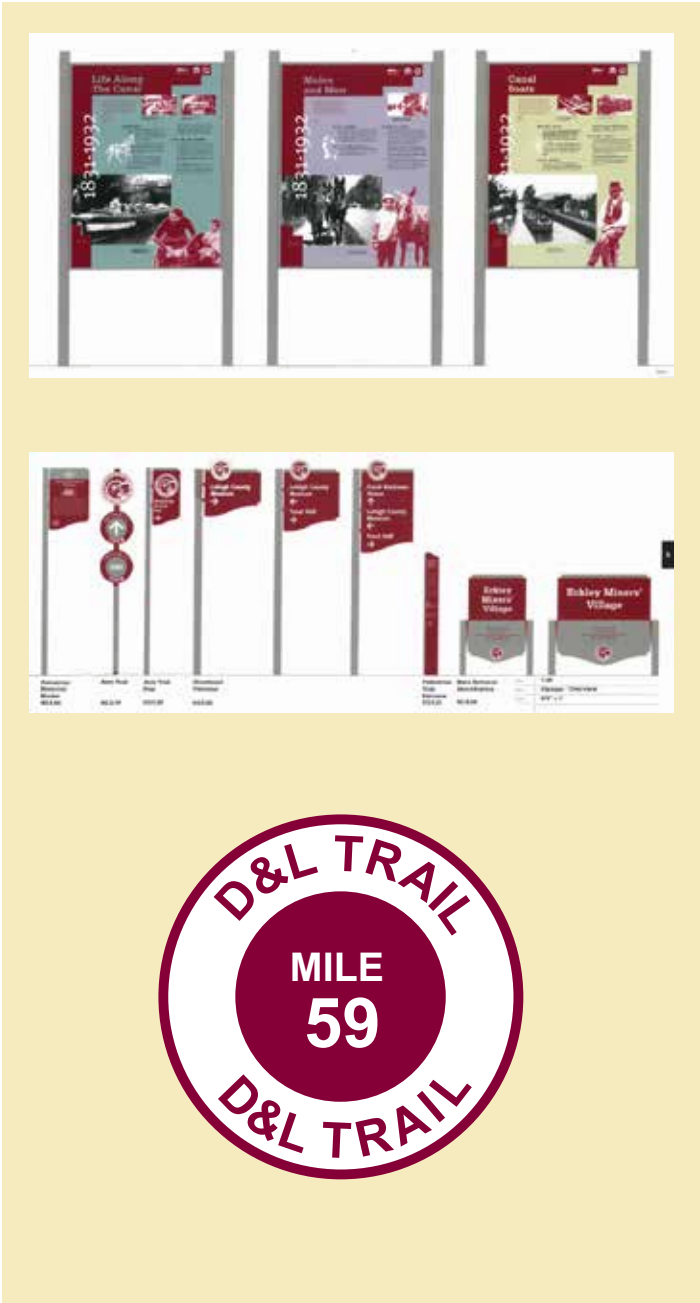
LIVABLE LANDSCAPES GRANT



TWO RIVERS TRAILWAY



DELAWARE & LEHIGH (D&L) TRAIL



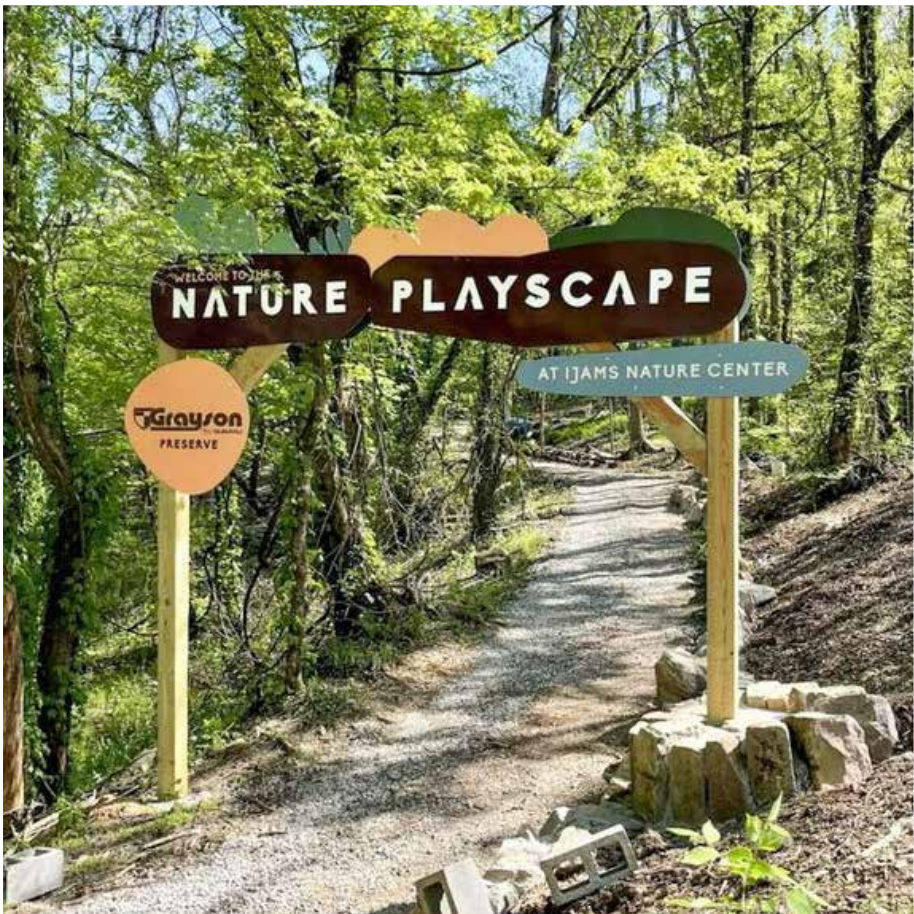
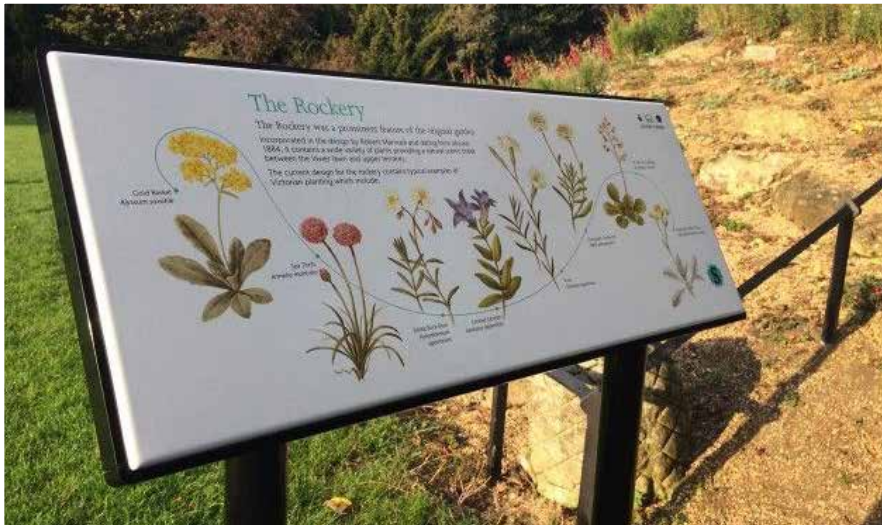
9/11 NATIONAL MEMORIAL TRAIL





# Signage & Wayfinding

Inspiration





# Signage & Wayfinding

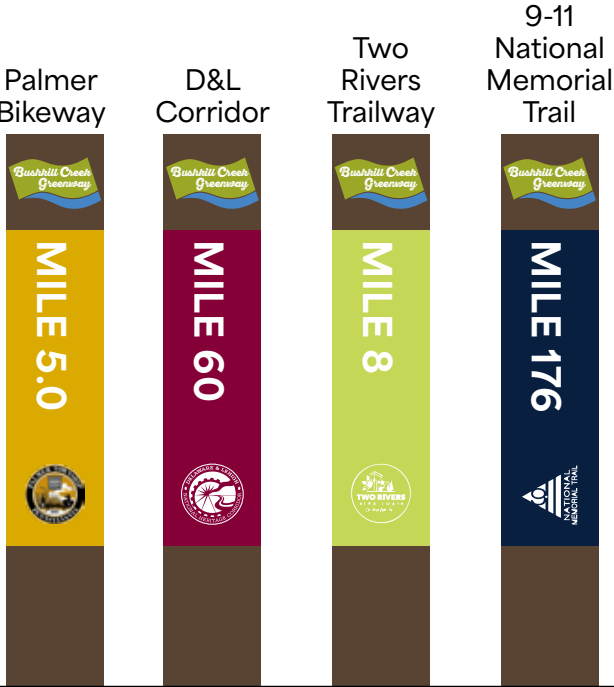
Potential Signage Suite



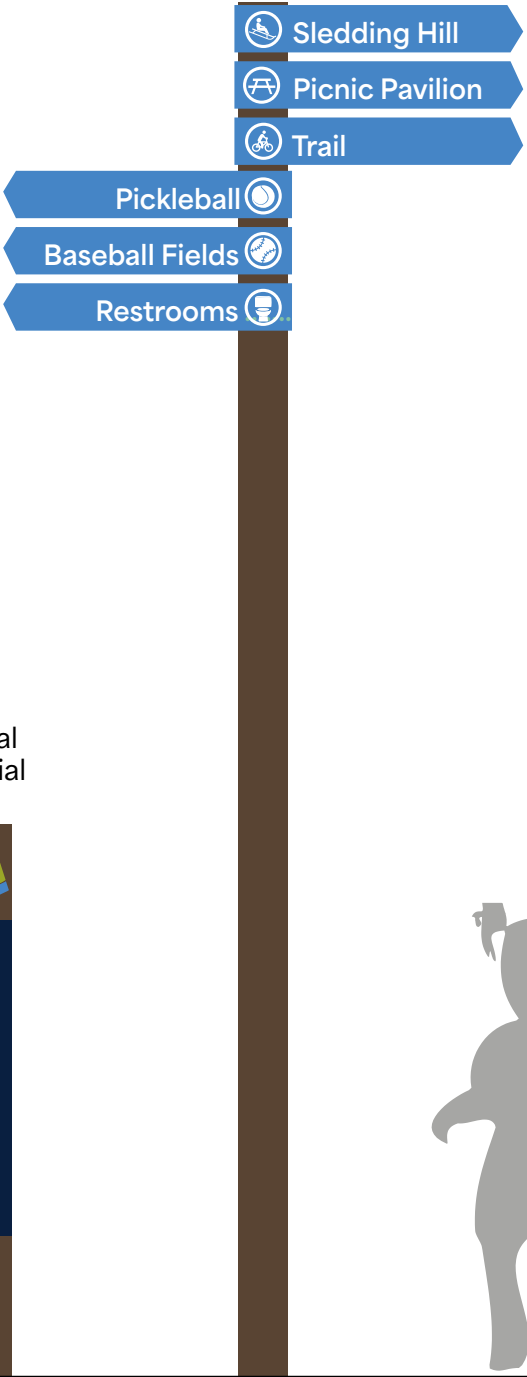
Park Identification



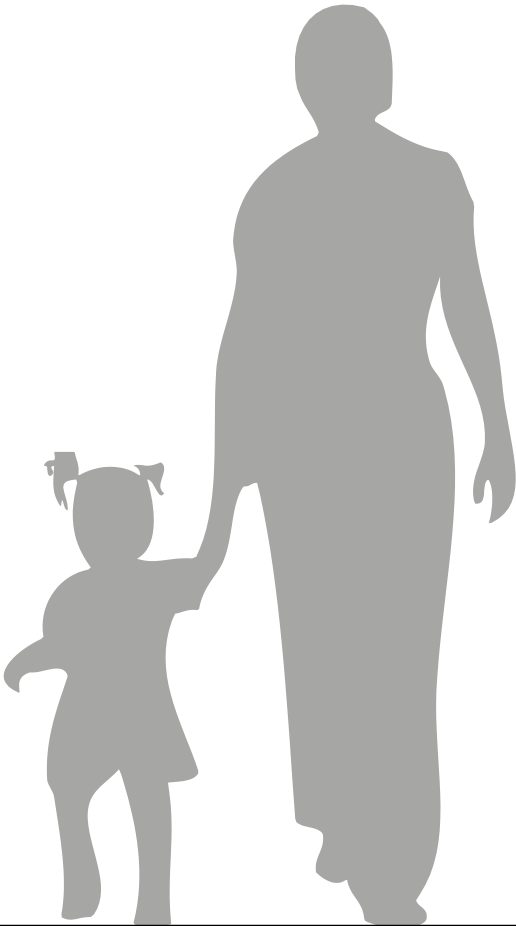
Trail or Park Rules



Mile Marker System



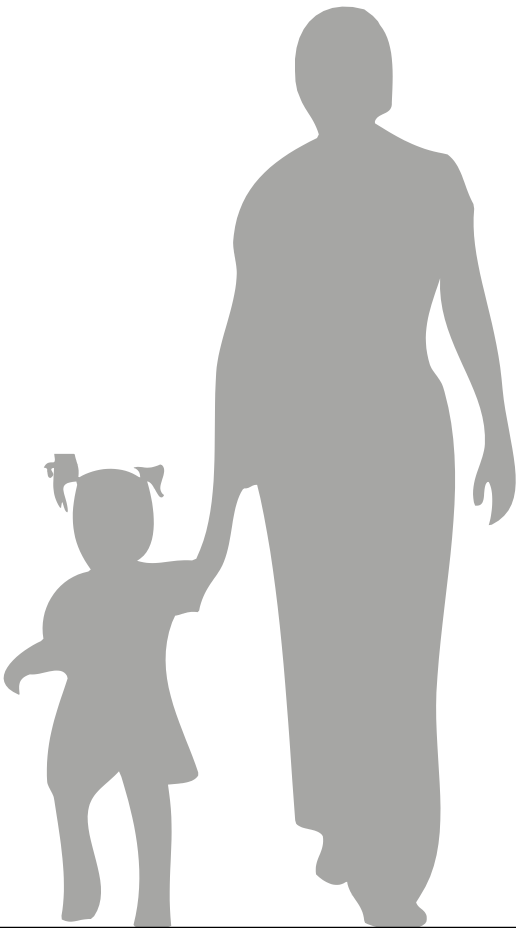
Directional Signage





# Signage & Wayfinding

Using Existing Guidelines





# Signage & Wayfinding

## Interpretive Signage: PSU Local Climate Action Program

BEE BALM BERGAMOT

Monarda fistulosa





Bee Balm Bergamot is a herbaceous perennial from the mint family common to the Bushkill Watershed.

- Bee Balm Bergamot is extremely resilient, thriving in moist, well-drained soils and full sun, primarily growing in prairies, woods, glades and fields.
- The plant can reach a height of up to four feet and propagates rapidly.
- Bee Balm flowers are known to attract several pollinators including various butterfly and hummingbird species.
- As its name implies, resin from the plant was once used as a salve for bee stings.
- Tea made from Bee Balm flowers is often used to treat colds and throat infection.
- Along the Bushkill Watershed, the plant creates biodiversity and assists in flood resilience and stormwater filtration.

THE CITY OF TREX

THE LINK

TWO RIVERS

NATIONAL MONARCH TRAIL

PALMER TOWNSHIP PENNSYLVANIA

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VIRGINIA BLUEBELLS

Mertensia virginica





-Virginia Bluebell flowers are ancient woodland perennials that grow along Bushkill and Schoenock Creek. They provide biodiversity, stormwater filtration and soil stability to the region.

- Plants develop in early spring, flowering by mid-spring.
- The flower attracts bees, butterflies, moths, skippers, hummingbirds and other pollinators.
- Virginia Bluebells have been used for medicinal purposes by indigenous peoples to treat tuberculosis and whooping cough as well as a pulmonary aid.

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GREAT BLUE HERON

Ardea herodias



The Great Blue Heron is a large wading bird, able to fly up to 16 hours at 30 mph. Their migratory patterns commonly track the Bushkill Watershed.

- Despite their large size (36"-54" length, 66"-79" wingspan), Great Blue Herons weigh only five to six pounds due to their hollow bone structure, shared by all birds.
- Great Blue Herons typically feed on fish and are able to hunt while wading in the water or diving straight from the air into deeper waters.
- The presence of Great Blue Herons along the Bushkill Watershed creates natural pest control and the birds help increase the spread of native plants.

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SHORT HEAD GARTER SNAKE

Thamnophis brachystoma



-The Short Head Garter Snake is a small species of colubrid, growing to a length of 10.0"-22.0".

- This variety of Garter Snake is native to the Bushkill and Schoenock Creek waterways.
- They are primarily found in fields and meadows but sometimes in wooded areas. They typically live under objects like rocks or wood.
- This species of garter snake feeds almost exclusively on earthworms but also on other insects and amphibians.
- New research shows that garter snake species are mildly venomous, however not in quantities harmful to humans.
- Notably, garter snakes obtain the venom's toxicity via eating other venomous prey.

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GREEN FROG

Lithobates clamitans





-Green Frogs near bodies of water, typically in ponds, ditches, lakes, swamps and streams.

- This species provides pest control, biodiversity and soil nutrition to the Bushkill Watershed.
- These amphibians have suffered habitat loss due to climate change, deforestation, diseases and chemical contaminants.
- Green Frogs can occasionally be blue due to a genetic mutation known as axanthism that prevents the frog from producing yellow pigment.

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JEWEL WEED

Impatiens capensis





Jewel Weed is a common self-seeding annual native to the Bushkill Watershed as well as most of North America. It typically grows to five feet in height.

- Jewel Weed's orange flowers attract several pollinators including bumblebees, butterflies and hummingbirds.
- The plant also has flowers that remain closed, called cleistogamous flowers. These flowers serve the purpose of self fertilizing the plant rather than exchanging pollen, however, reproduction can be achieved this way as well.
- Jewel Weed sap has long been used by indigenous peoples for its anti-itch and anti-fungal properties.
- This species can be highly competitive and is considered invasive. When managed properly, it can increase diversity in a garden or flower bed.
- Along the Bushkill and Schoenock Creek waterways, Jewel Weed provides biodiversity, soil stability and stormwater filtration.

THE CITY OF TREX

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TWO RIVERS

NATIONAL MONARCH TRAIL

PALMER TOWNSHIP PENNSYLVANIA

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JOE PYE WEED

(Eutrochium purpureum)





-Joe Pye Weed is a herbaceous perennial native to the Bushkill Watershed.

- The plant typically grows to a height between five and seven feet and blooms from July to September.
- "Joe Pye" is a reference to the cognomen, or third name, of Joseph Shauquethqueat, a late 18th century Mohican, residing in Massachusetts and New York.
- The plant's flowers attract multiple species of butterfly, including Monarchs and Swallowtails.
- Joe Pye Weed is extremely resilient and tolerant to drought conditions.
- This species offers biodiversity, soil stability and stormwater filtration to Bushkill and Schoenock Creek waterways.

THE CITY OF TREX

THE LINK

TWO RIVERS

NATIONAL MONARCH TRAIL

PALMER TOWNSHIP PENNSYLVANIA

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Walters Dam Removal Project & Bushkill Creek Restoration



Diverting flood water for irrigation was a practice first employed by the Egyptians & Mesopotamians as far back as 6,000 BCE.

- Initially, dams were used to prevent crop damage due to floods and conserve water for dry growing seasons.
- The history of modern hydroelectric dams in the United States began with the first dams in California in the 1850's during the Gold Rush. Hydroelectric dams use flowing water to turn a turbine and produce electricity. By 1920, 40% of U.S. power was generated through hydroelectricity.



Restraining water from naturally flowing can create a "bathtub effect" where biodiversity stagnates and excessive sedimentation takes place. Additionally, temperature increases in the water cause significant changes in the conditions for life present in the creek. Walters Dam was not a dam used to prevent flooding and was removed to restore the creek's natural conditions.



Removal of the Walters Dam improved the interaction between fish and other plants and wildlife along Bushkill Creek. Decreases in stream temperature as well as improvements in water quality and streamwater management have also been realized. These benefits extend to an improved experience for the community who use the creek and surrounding trail complex for outdoor activities including fishing, hiking, running and walking.

BUSHKILL STREAM CONSERVANCY

PALMER TOWNSHIP PENNSYLVANIA

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