



Red Clay Park Demonstration Project

Borough Council Meeting

December 7, 2022



Vision Statement

The Red Clay Park Project seeks to **assess the potential of restoring the east branch of the Red Clay Creek, from Anson B. Nixon to Kennett High School, and transforming it into beautiful public space for all to enjoy.**



Project Team

Unknown Studio

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Governors Island Park and Public Spaces



Patapsco Strand



Duke University Sculpture Plaza

MCMAHON

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Chester County, PA | Chester Valley Trail

meliora

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Design Guided by Nature

Our mission for our projects is to create better relationships with our environment by developing engineering solutions that build respectfully and enhance our communities, while protecting and restoring our natural resources. Our commitment to sustainability, collaboration, and innovation spans across all disciplines and projects.



Approach



About Us



Services & Projects

Biohabitats

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Nature-based by *solutions*

Yielding a win for people and planet, nature-based solutions continue delivering benefits long after your immediate needs are met.

Red Clay Park Advisory Group

Kennett Borough staff & Kennett Trails Alliance have formed an advisory group that consists of representatives from:

ACOLA

Brandywine Red Clay Alliance

Chester County Planning Commission

KAPA

Kennett Area YMCA

Kennett Collaborative

Kennett Fire Company

Kennett Borough Shade Tree Commission

Kennett Senior Center

Longwood Gardens

Oxhaven Apartments

Stroud Water Research Center

Square Roots Collective

works



Red Clay Park Site

Red Clay Park



Red Clay Park and Kennett Greenway



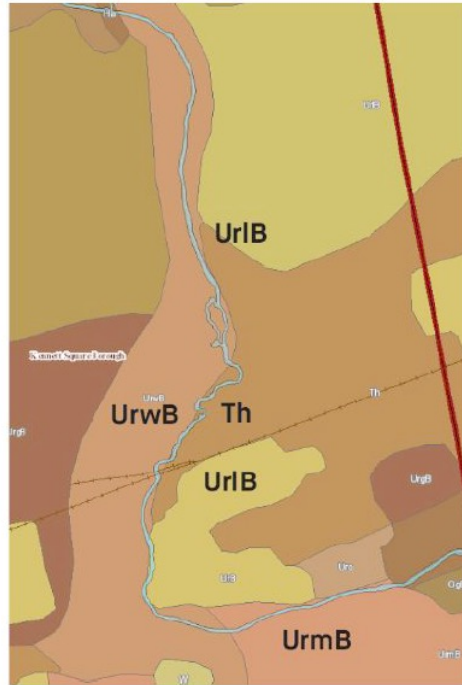
Park Circulation and Connections



FLOODING & SOILS



- 1% Annual Chance of Shallow Flooding
- 1% Annual Chance of Flooding
- Area within Floodway



- UrIB:** Urban land-Gladstone complex, 0 to 8 percent slopes
- UrwB:** Urban land-Penlaw complex; 0 to 8 percent slopes; somewhat poorly drained
- Th:** Thorndale silt loam; poorly drained
- UrmB:** Urban land-Glenelg complex, 0 to 8 percent slopes; well drained

CREEK CONDITIONS

INACCESSIBLE, ECOLOGICALLY DEGRADED & OVERLOOKED



PA Department of Environmental Protection, Impaired Streams List, 2018



- Undercut, eroded streambanks
- Invasive species and deer browse
- Infrastructure and utility damage

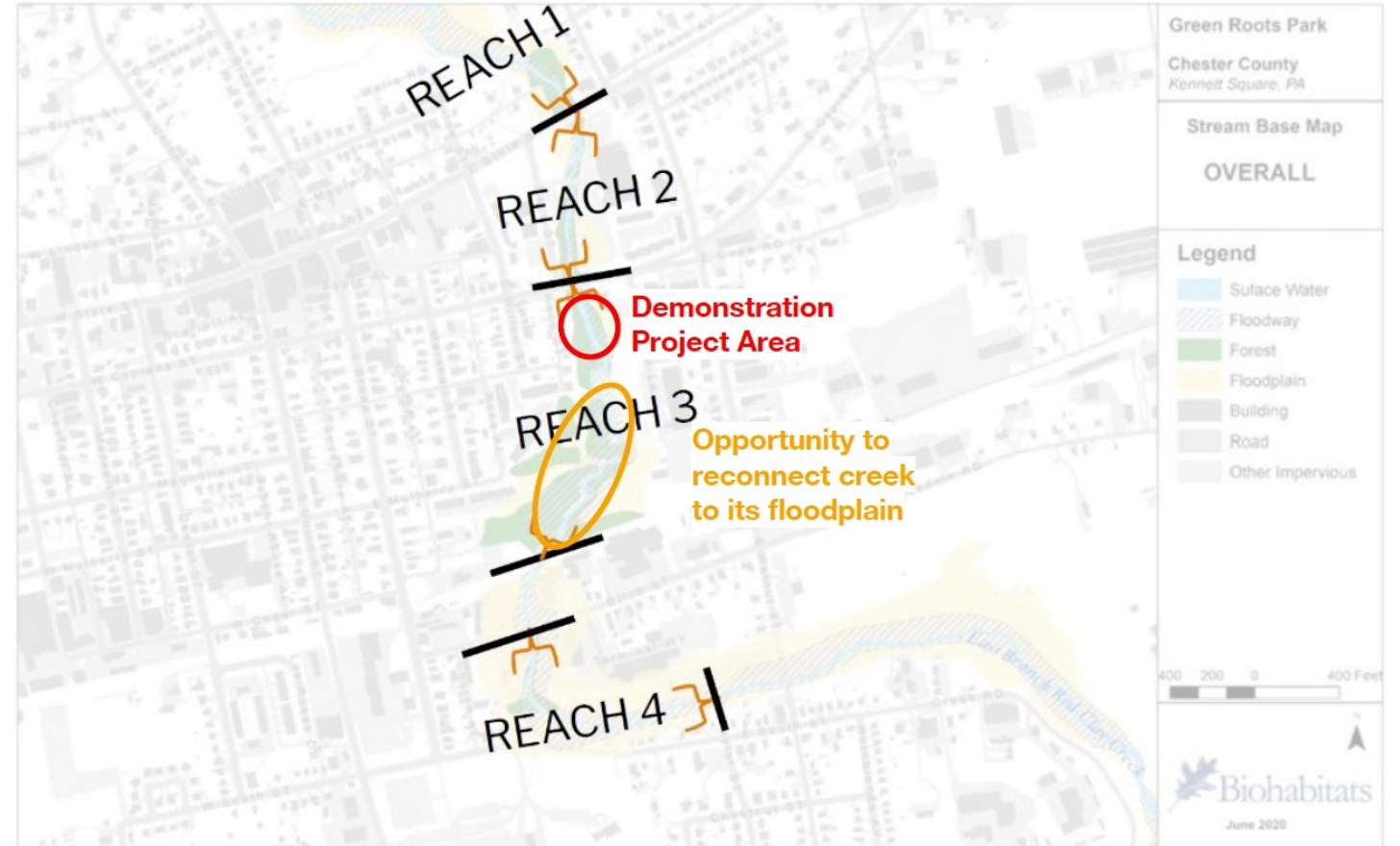
EXISTING CONDITIONS: OVERALL

Stream

- Culvert-Dominated
- Confined
- Incised
- Frequent Toe and Bank Erosion

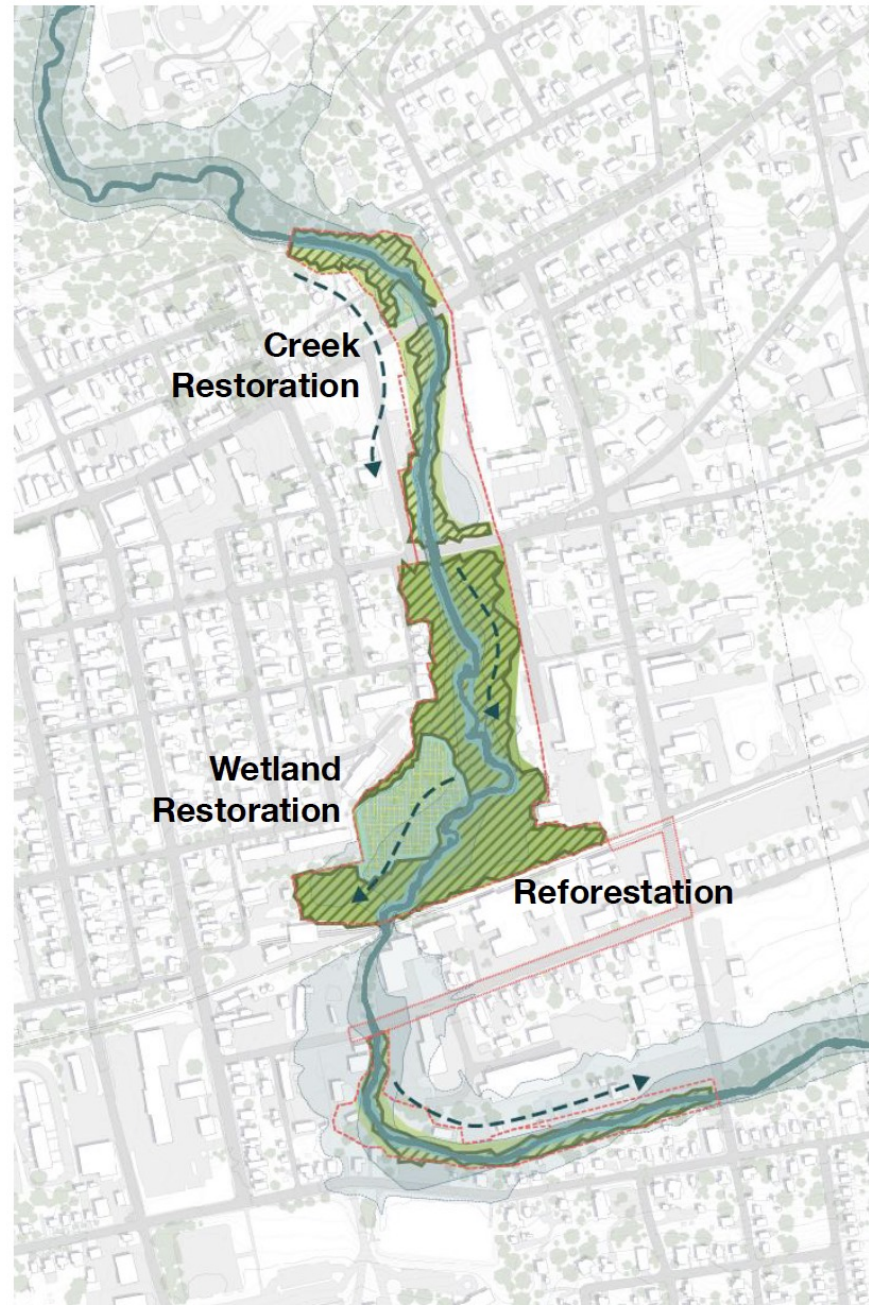
Vegetation

- Inadequate Stream Buffer
- NNI
- Edge
- Poor Diversity
- Degraded Wetlands
- Few Specimen Trees
- Ash Canopy in Decline
- Native Regeneration Limited



Document Path: W:\GIS\PROJECTS\20018.01 Green Roots Park\MXD\Existing_Conditions\Base.mxd

Red Clay Park Restoration Effort



Red Clay Park Potential Program Zones

What can we imagine? What does the community want to see in their park?

Kennett Trails Alliance has been facilitating community conversation through:

Surveys

Events

Pop-ups

Meetings w/ local organizations





Build Your Park | Construye Tu Parque



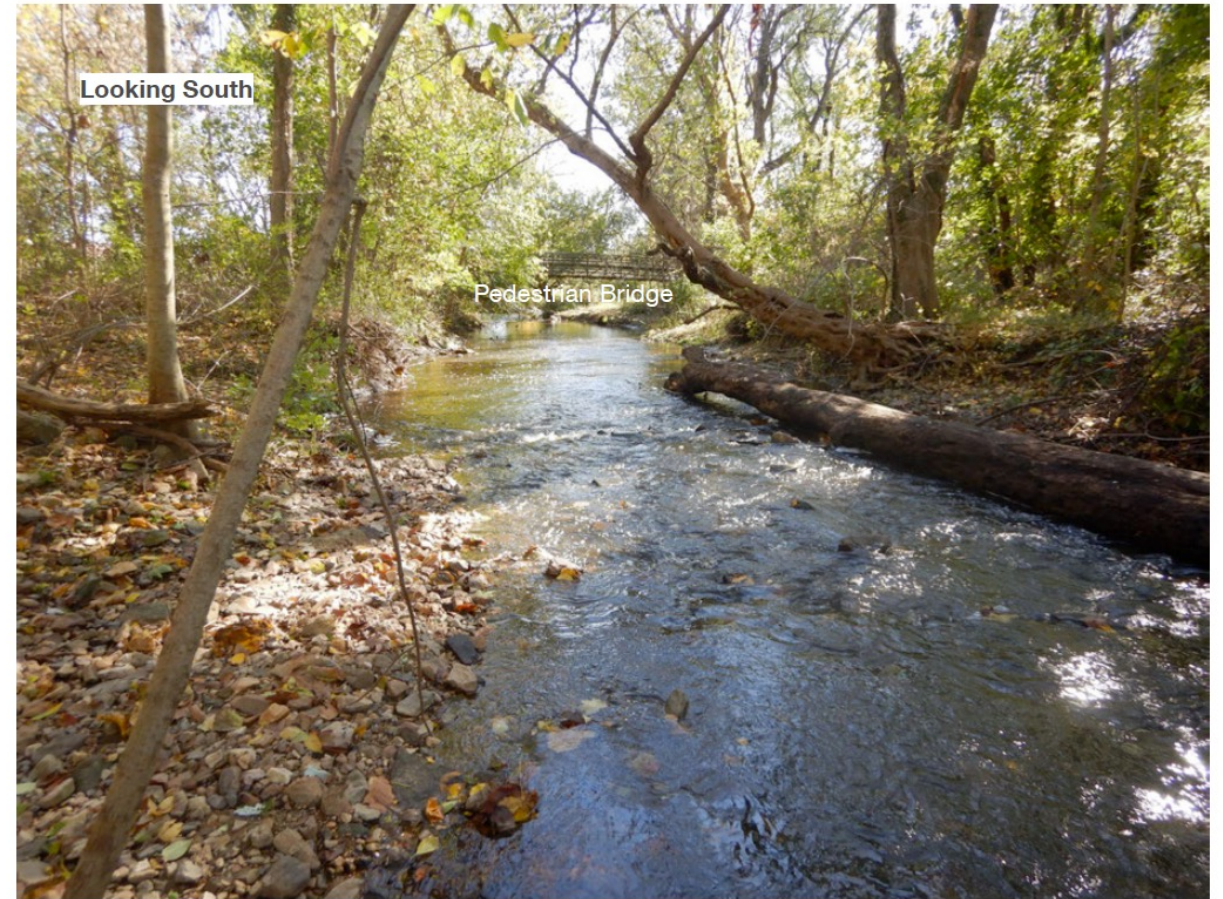
Demonstration Project Site & Strategy



Red Clay Park
Existing Conditions

0' 40' 80' N

“Stony Beach” Site Images



Ecological Restoration Goals

1. Reduce stream bank erosion and sediment export to the Christina River and Delaware Bay
2. Facilitate more frequent flooding of floodplains to attenuate flows and promote sedimentation
3. Restore historic wetlands by improving site hydrology
4. Attenuate stormwater velocity from lateral outfalls along valley wall
5. Reduce or remove fish barriers near road and railroad crossings
6. Restore native riparian and floodplain vegetation



Why Are We Starting Here?

- 1. The 33,000 square foot area is easily accessible from State and Cypress Streets and is largely Borough property.**
- 2. The existing stony beach on the project site provides a unique opportunity for residents to connect to nature in their own backyard.**
- 3. The existing gravel trail in this area can be improved to Greenway specifications.**
- 4. The expected permitting requirements are not extensive.**
- 5. The work needed in this area is self-contained, meaning the work will not impact potential future creek restoration or other work in the area.**

Demonstration Project Schematic Design



-  **New Tree - Forest Sp.**
-  **New Tree - Understory / Orchard Sp.**
-  **Shrub Planting**
-  **Perennial Swale**
-  **Add Alt Perennial Planting**
-  **Perennial Boardwalk**
-  **Boulders or Stones**

Red Clay Park
Stony Beach




Ground View From the Stony Beach



picnic grove

eastern gateway

upper plaza

planted edges

stacked boulders

stepped boulders



Aerial View From the Stony Beach



eastern gateway

6'

perennial swale

picnic grove

upper plaza

planted edges

stepped boulders

stacked boulders



Top of the "Get Down"



ADA
compliant
bench



stacked
boulder
threshold



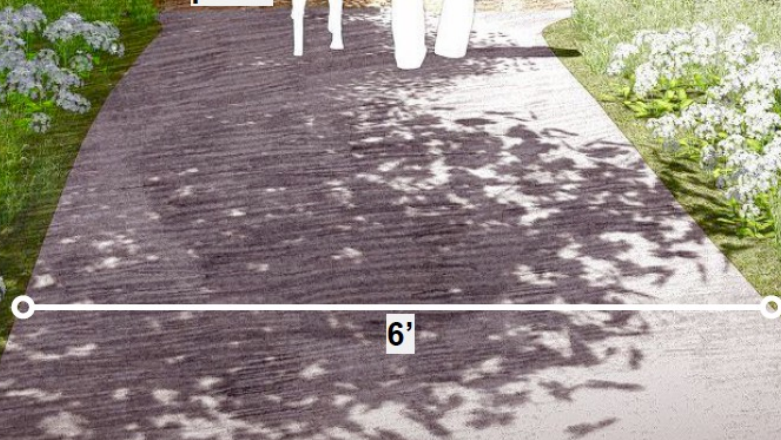
stony beach



upper
plaza



perennial
swale



6'

“Get Down” Greenway Spur



stone plaza
& get down

picnic
grove

perennial
swale
crossing

6'



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Red Clay Park
Stony Beach




Tree Palette

Riparian Canopy Trees



Platanus occidentalis
American Sycamore



Quercus bicolor
Swamp White Oak



Carya ovata
Shagbark Hickory



Acer rubrum
Red Maple

Flowering Understory & Orchard Trees



Amelanchier canadensis
Serviceberry



Cercis canadensis
Redbud



Asimina triloba
American Paw Paw



Malus spp.
Crabapple

Understory & Perennial Swales



Understory Palette

Screening Shrubs



Myrica pensylvanica
Bayberry



Prunus maritima
Beach Plum



Vaccinium corymbosum
Highbush blueberry



Fothergilla 'Mt Airy'
Witch Alder



Perennial Swale - Key Species



Asclepias incarnata
Swamp Milkweed
(Monarch food!)



Panicum spp.
Switchgrass



Carex spp.
Sedge



Lobelia cardinalis
Cardinal Flower
(Hummingbird food!)



Aster divaricatus
White Wood Aster

Re-use of Removed Trees On-Site



Nature Play!



Light Fixture Family A



Single Column
13.8 ft | 4.2m Pole



Double Column
13.8 ft | 4.2m Pole



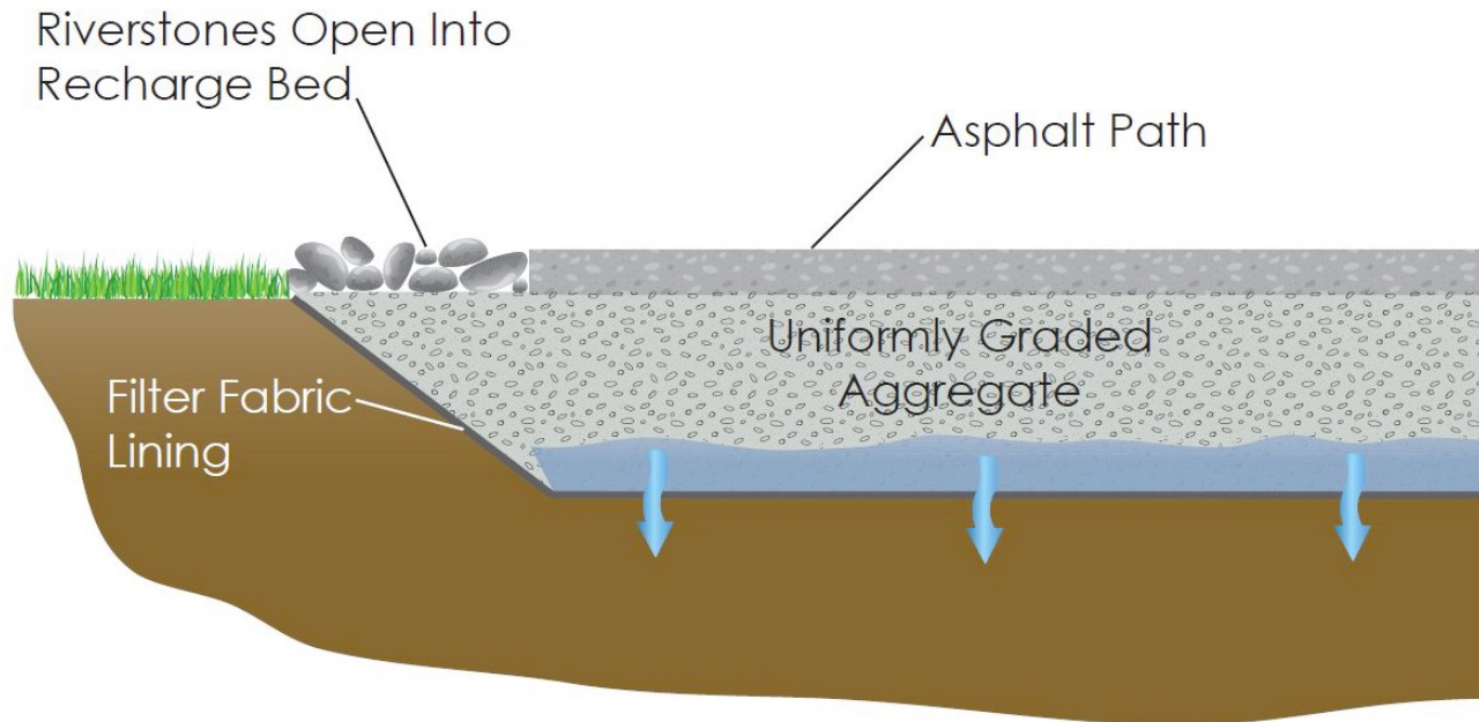
**Single Column,
Staggered**
13.8 ft | 4.2m Pole

11.2' 13.8' and 21.7' height options available; catenary and wall fixtures available

LANDSCAPE FORMS *Tumbler*

STORMWATER MANAGEMENT CONCEPT

- Manage stormwater under the trail in gravel bed
- Path graded to stormwater gravel bed inlets (riverstone, small inlets in asphalt, etc.)
- Durable, low maintenance option
- Manage existing impervious in future phase



RED CLAY PARK PHASE 1: DALMATION + CYPRESS ST.

100% SCHEMATIC DESIGN DOCUMENTS

2022.05.13



RED CLAY
PARK PHASE 1
KENNETT SQUARE, PA

square
roots
collective

LANDSCAPE ARCHITECTS / URBAN DESIGNERS

Unknown
Studio

DESIGN TEAM
Schematic Design
Civil Engineer

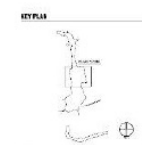
PHASE 1 DRAWING INDEX

NO.	DESCRIPTION	DATE	STATUS
GENERAL			
G-000	COVER SHEET AND INDEX		■
G-001	GENERAL NOTES AND ASSUMPTIONS		■
EXISTING CONDITIONS			
E-100	EXISTING DEMOGRAPHIC PLAN		■
TREE SPECIFICATIONS AND SCHEDULES			
T-100	LANDSCAPE DEMOLITION AND TREE PROTECTION PLAN		■
LANDSCAPE MATERIALS			
L-100	LANDSCAPE MATERIALS PLAN AND SCHEDULE		■
L-110	LANDSCAPE PAVING MATERIAL PLAN		■
LANDSCAPE GRADING			
L-200	LANDSCAPE GRADING PLAN		■
LANDSCAPE SOILS			
L-300	LANDSCAPE SOILS PLAN		■
LANDSCAPE ILLUMINATION			
L-400	LANDSCAPE ILLUMINATION PLAN AND SCHEDULE		■
LANDSCAPE LIGHTING AND WIRING			
L-500	LANDSCAPE LIGHTING AND WIRING PLAN		■
LANDSCAPE FURNISHINGS			
L-600	LANDSCAPE FURNISHINGS PLAN		■
LANDSCAPE FENCES AND BARRIERS			
L-700	LANDSCAPE FENCES		■
L-710	LANDSCAPE BARRIERS		■
LANDSCAPE UTILITIES			
L-800	UTILITY PLAN AND SCHEDULE		■
L-810	LANDSCAPE UTILITIES		■
L-820	LANDSCAPE UTILITIES		■
ENVIRONMENTAL			
E-200	ENVIRONMENTAL CONTROL PLAN		■
E-210	ENVIRONMENTAL CONTROL PLAN		■

Schematic Design Set
Completed 5/13

DATE REVISION

NO.	DATE	DESCRIPTION
1	05/13/22	ISSUE SET



COVER AND DRAWING INDEX

NO.	DATE	DESCRIPTION
1	05/13/22	ISSUE SET

G-000

PERMITTING REQUIREMENTS

Pennsylvania Department of Environmental Protection (Pre-Application Meeting took place on May 12, 2022):

- **Joint Permit**
 - The proposed Red Clay Park is located within the floodway and floodplain, therefore a permit from the PADEP will be required for regulated activities. The project's regulated activities include the trail in the floodway, new stormwater outfall and creek access in the floodway. The project team had a pre-application meeting with the PADEP and the U.S. Army Corps of Engineers (USACE) on May 12, 2022, to review the project components and permitting requirements. The PADEP determined that a joint permit application would be required for the regulated activities.

Borough of Kennett Square:

- **Stormwater Management Site Plan Review**
 - A stormwater management site plan will be prepared in accordance with Borough codes and submitted to the Borough Engineer, Pennioni, for review and approval.

Chester County Conservation District:

- **Erosion & Sediment Control Adequacy Letter**
 - The Pennsylvania Department of Environmental Protection permitting requires the submission of an E&S Control Plan adequacy review letter from the Chester County Conservation District (CCCD). Therefore, the E&S will be submitted to the CCCD for review.

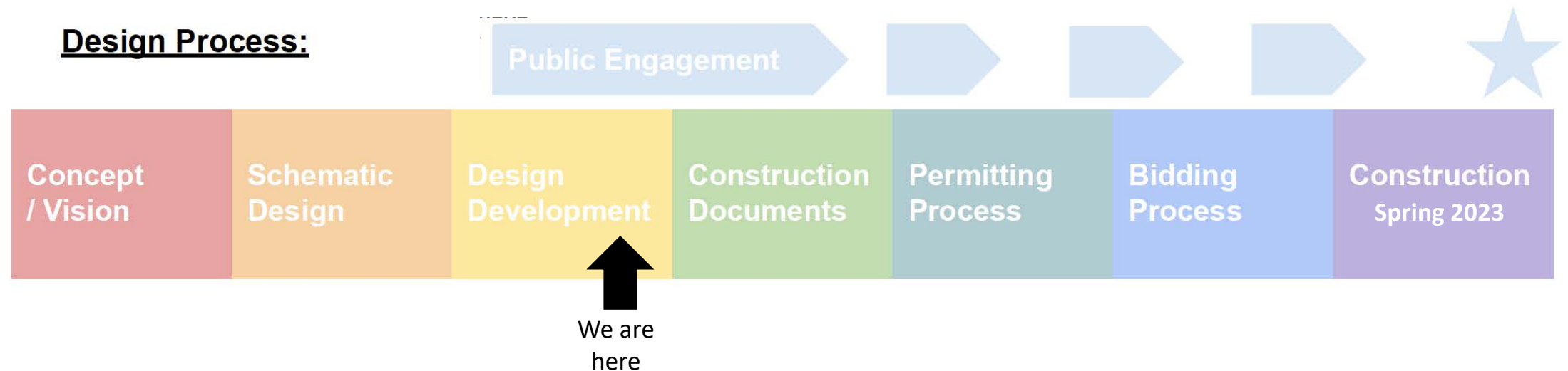
Demonstration Project Next Steps

Next steps:

Kennett Trails Alliance has retained consultants for final design development -> bidding process & construction management

Develop post-install maintenance plan (Square Roots Collective has agreed to cover 5 years)

Continue events & public engagement



Discussion