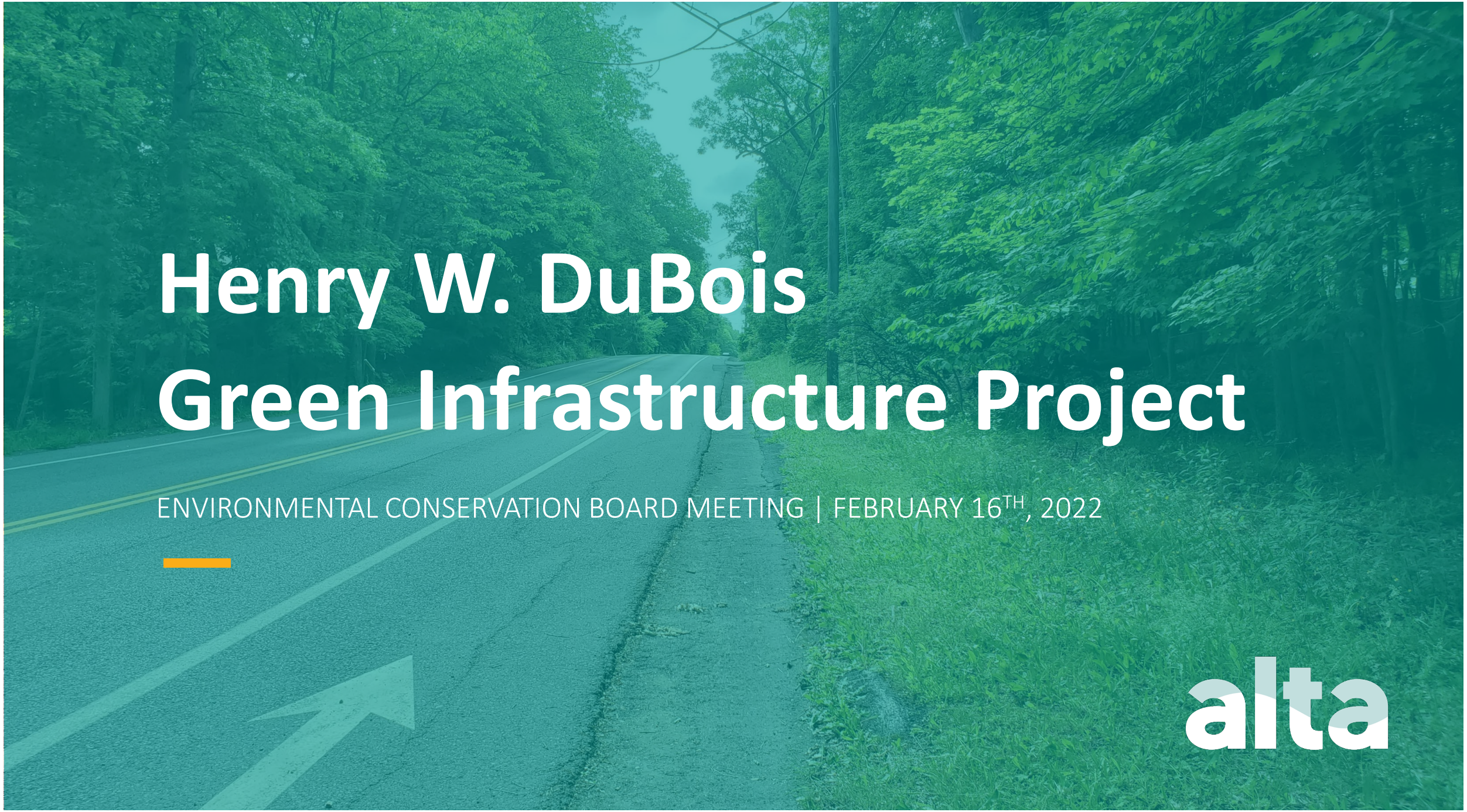


Henry W. DuBois Green Infrastructure Project

ENVIRONMENTAL CONSERVATION BOARD MEETING | FEBRUARY 16TH, 2022

alta

Project Website: https://walkbikehwd.weebly.com/
Project Email: HWD@AltaGo.com

Kristie Di Cocco, PE
Project Manager
KristieDiCocco@AltaGo.com

Bill Sprengnether, RLA
Landscape Architect/Project Technical Lead
WilliamSprengnether@AltaGo.com

Agenda

- Presentation (20 min)
  1. Project Introduction
  2. Existing Conditions
  3. Alternatives
  4. Schedule
  5. Next Steps
- Q & A Session

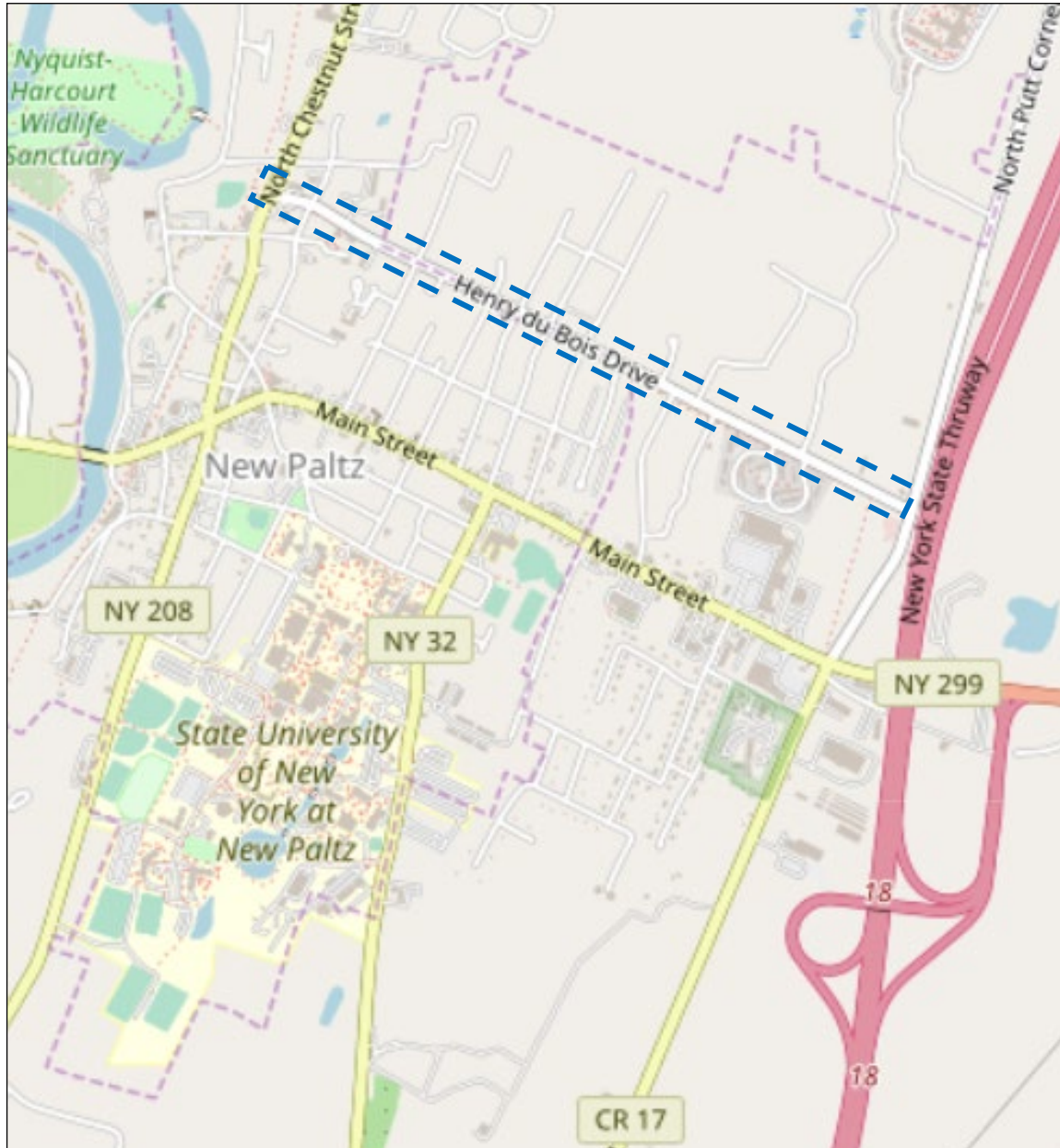
PROJECT INTRODUCTION

GOALS AND OBJECTIVES

- Treat or reduce run-off from added impervious surface for the entire length of the HWD corridor to the greatest extent possible
- Provide contextual green infrastructure practices
- Use this project as demonstration for the community to better understand green infrastructure

PROJECT EXTENTS

- 6200 LF on Henry W. Dubois Drive
  - NY Route 32 (N. Chestnut St.) to N. Putt Corners Rd. (CR 17)



RELATIONSHIP TO BIKE/PED PROJECT

- Designed with separate funding from NYSDEC
- Constructed as part of the Bike/Ped project, but with separate funding
- Reviewed and approved by NYSDEC, but included in NYSDOT's final review submission
- Administration policies and procedures handled by NYSDEC

BACKGROUND

- 2019 - Town applied for NYSDEC Climate Smart Communities (CSC) Grant for Green Infrastructure
- 2019 - DEC awards Green Infrastructure Grant to Town
- March 2021 - Work Plan and Budget approved by NYSDEC
- August 2021 - Agreement with State in place
- September 2021 - Work commenced

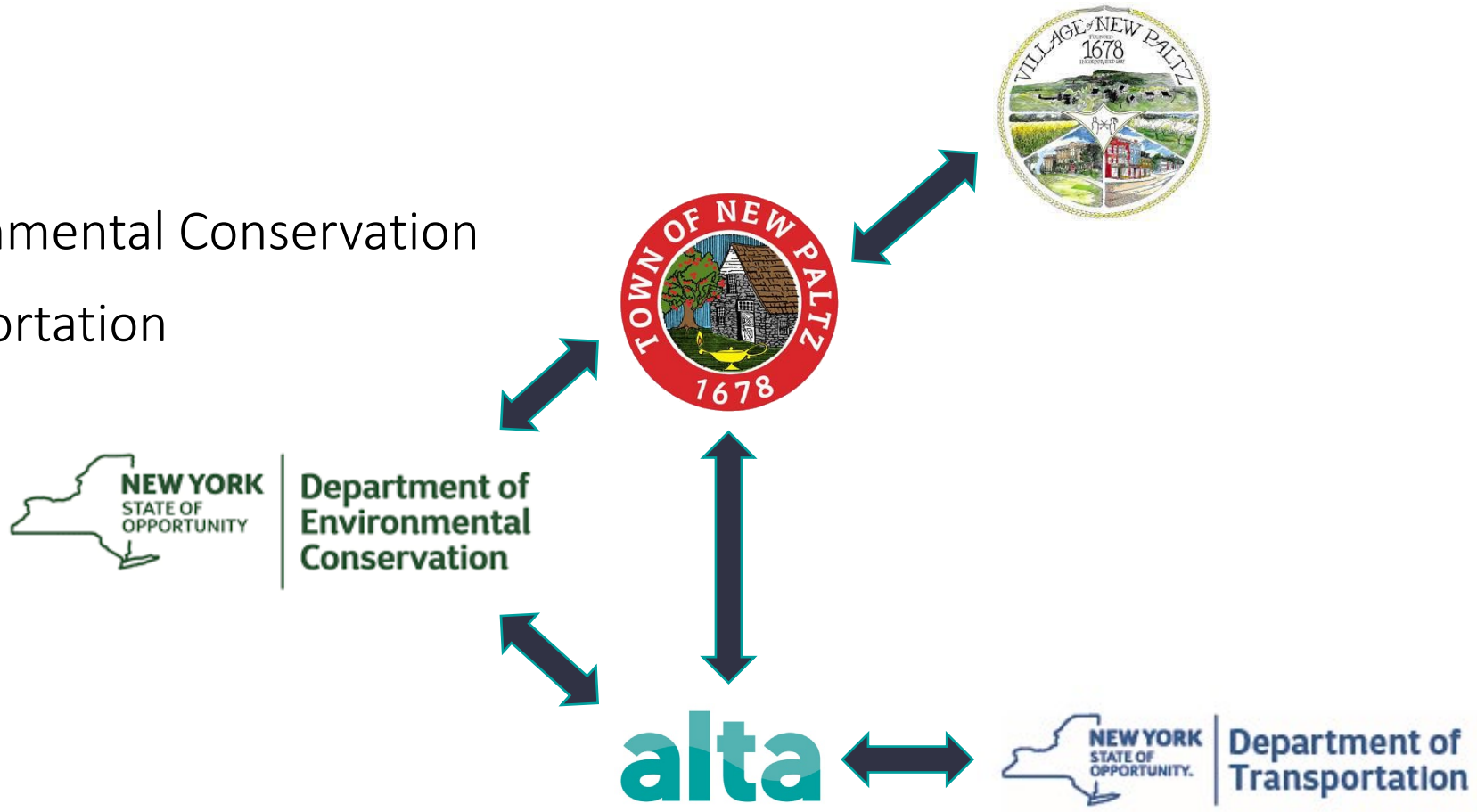
The Climate Smart Communities (CSC) Grant Program is a competitive 50/50 matching grant program for municipalities to implement projects focused on climate change adaptation and greenhouse gas (GHG) mitigation. Project types also include certain planning and assessment projects that are part of a strategy to achieve Climate Smart Communities Certification.

FUNDING

- State Funding (50%) / Local Match (50%)
  - Available funding for construction = $418,700

INVOLVED PARTIES

- Town of New Paltz
- Village of New Paltz
- NYS Dept. of Environmental Conservation
- NYS Dept. of Transportation



EXISTING CONDITIONS

PRELIMINARY ANALYSIS

- Corridor evaluated for:
  - profile grades
  - side slopes
  - direction of drainage
  - horizontal space within the road right of way
- 4 areas identified for geotechnical / soil testing
  - Testing conducted on 10/27 & 10/28
  - Report finalized Jan. 2022

PRELIMINARY ANALYSIS

- **B-1**– 150’ west of N. Putt Corners Rd. intersection (south)
- **B-2 (inf-1)**– 300’ west of Meadowbrook Circle (south)
- **B-3 (inf-2)**– 100’ west of Harrington St. (south)
- **B-4 (inf-3)**– across from Briarwood Ct. (north)

PRELIMINARY ANALYSIS

Location	Bedrock	Groundwater	Infiltration	Notes
B1	Shallow	3.5’	N/A	Water table is too high for surface sand filter. Option to create separation from groundwater by use of a membrane or concrete barrier.
B-2 (Inf-1)		4’	Standing water	Water table is likely too high for surface sand filter. Option to create separation from groundwater by use of a membrane or concrete barrier.
B-3 (Inf-2)		5’	Less than .5”/hr	The groundwater is close to the 2' from bottom limit, very slow infiltration.
B-4 (inf-3)		6’	24”/hour	Sufficient infiltration for Infiltration Trench, but water table will require reducing its depth (and capacity).

SOLUTIONS

Preliminary Evaluation

- Reviewed Slopes
- Horizontal area within ROW
- Driveways
- Infrastructure
- Ex. Trees

Table 7.1 Land Use Selection Matrix

SMP Group	SMP Design	Rural	Residential	Roads and Highways	Commercial/ High Density	Hotspots	Ultra Urban
Pond	Micropool ED	○	○	X	◗	①	●
	Wet Pond	○	○	X	◗	①	●
	Wet ED Pond	○	○	X	◗	①	●
	Multiple Pond	○	○	◗	◗	①	●
	Pocket Pond	○	◗	X	◗	●	●
Wetland	Shallow Wetland	○	○	◗	◗	①	●
	ED Wetland	○	○	◗	◗	①	●
	Pond/Wetland	○	○	●	◗	①	●
	Pocket Wetland	○	◗	X	◗	●	●
Infiltration	Infiltration Trench	◗	◗	○	○	●	◗
	Shallow I-Basin	◗	◗	◗	◗	●	◗
	Dry Well[1]	◗	○	●	◗	●	◗
Filters	Surface Sand Filter	●	◗	○	○	②	○
	Underground SF	●	●	◗	○	○	○
	Perimeter SF	●	●	◗	○	○	○
	Organic SF	●	◗	X	○	②	○
	Bioretention	◗	◗	X	○	②	○
Open Channels	Dry Swale	○	◗	X	◗	②	◗
	Wet Swale	○	●	X	●	●	●

Preliminary Evaluation

- Reviewed Slopes
- Horizontal area within ROW
- Driveways
- Infrastructure
- Ex. Trees

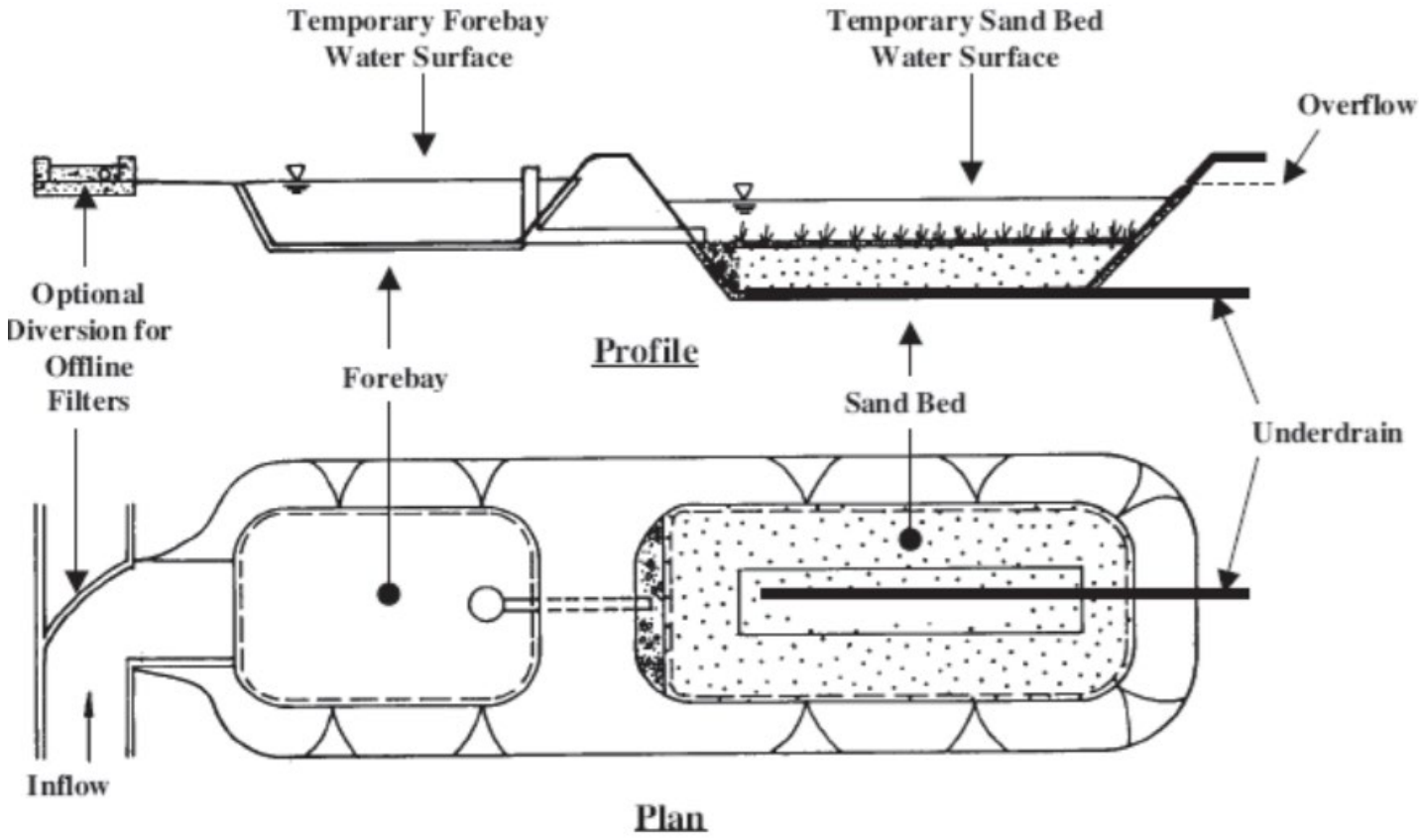
Table 7.2 Physical Feasibility Matrix

SMP Group	SMP Design	Soils	Water Table	Drainage Area (acres)	Site Slope	Head (ft)
Pond	Micropool ED	HSG A soils may require pond liner.	2 foot separation if hotspot or aquifer	10 min[1]	No more than 15%	6 to 8 ft
	Wet Pond			25 min[1]		
	Wet ED Pond					
	Multiple Pond					
	Pocket Pond	OK	below WT	5 max[2]		4 ft
Wetland	Shallow Wetland	HSG A soils may require liner	2 foot separation if hotspot or aquifer	25 min	No more than 8%	3 to 5 ft
	ED Wetland					
	Pond/Wetland					
	Pocket Wetland	OK	below WT	5 max		2 to 3 ft
Infiltration	Infiltration Trench	f_c > 0.5 inch/hr; additional pretreatment required over 2.0 in/hr (See Section 6.3.3)	3 feet, 4 feet if sole source aquifer.	5 max	No more than 15%	1 ft[6]
	Shallow I-Basin			10 max[3]		3 ft
	Dry Well			1 max[4]		1 ft
Filters	Surface SF	OK	2 feet[5]	10 max[2]	No more than 6%	5 ft
	Underground SF			2 max[2]		5 to 7ft
	Perimeter SF			2 max[2]		2 to 3 ft
	Organic SF			5 max[2]		2 to 4 ft
	Bioretention			5 max[2]		5 ft
Open Channels	Dry Swale	Made Soil	2 feet	5 max	No more than 4%	3-5 ft
	Wet Swale	OK	below WT	5 max		1 ft

Sand Filters

Components:

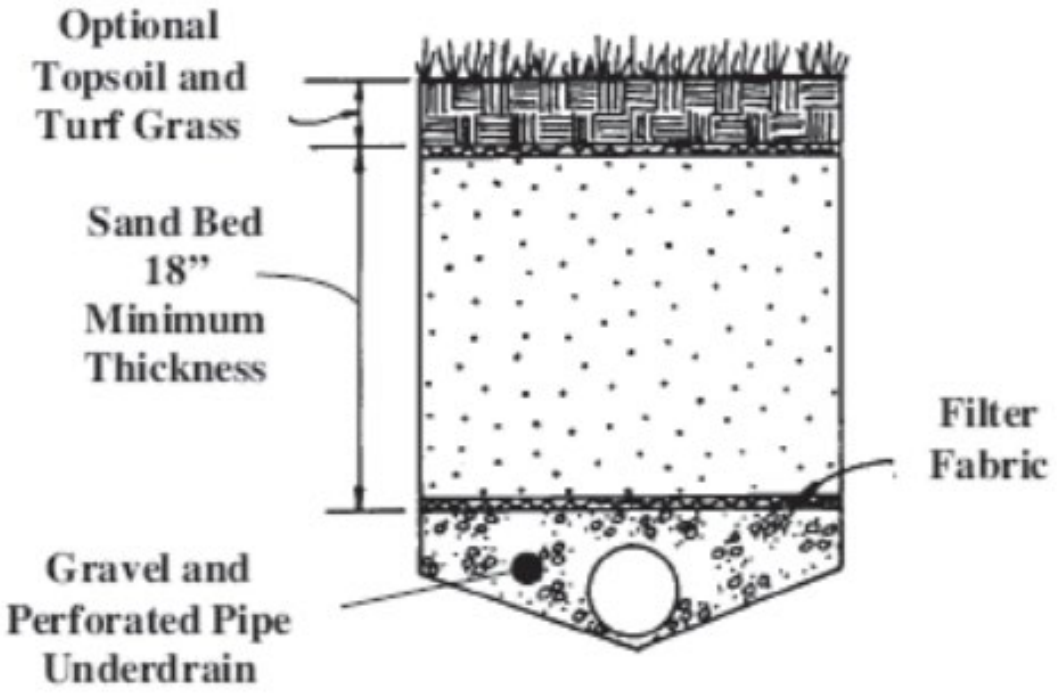
- Forebay (or sedimentation chamber)—settles coarse particles and trash
- Sand bed (or Filtration) chamber—provides water quality treatment by filtering other pollutants
- Spillway system(s)— provide discharge control



Sand Filters

Design considerations:

- Typically requires 2 to 6 feet of head
- Maximum contributing drainage area of 10 acres
- In karst areas use polyliner or impermeable membrane to seal bottom of earthen surface sand filter or use watertight structure

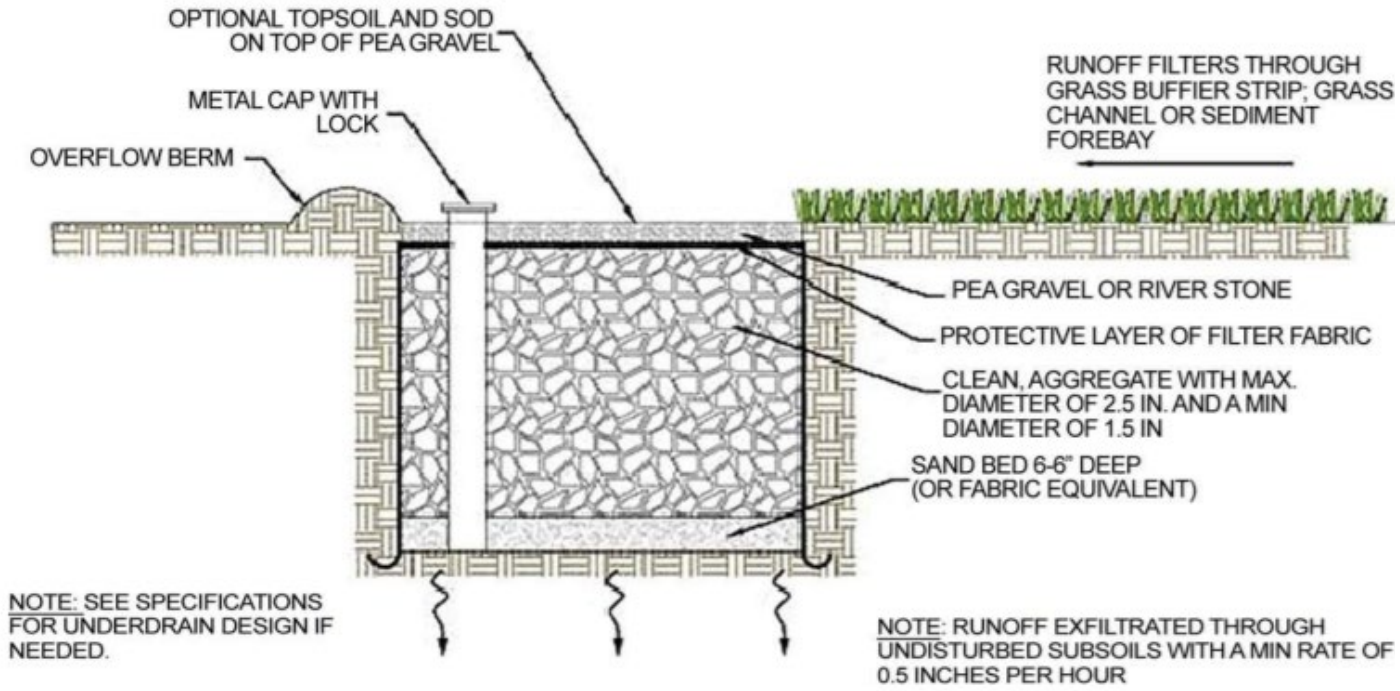


Typical Sand Bed Section

Infiltration Trenches

Components:

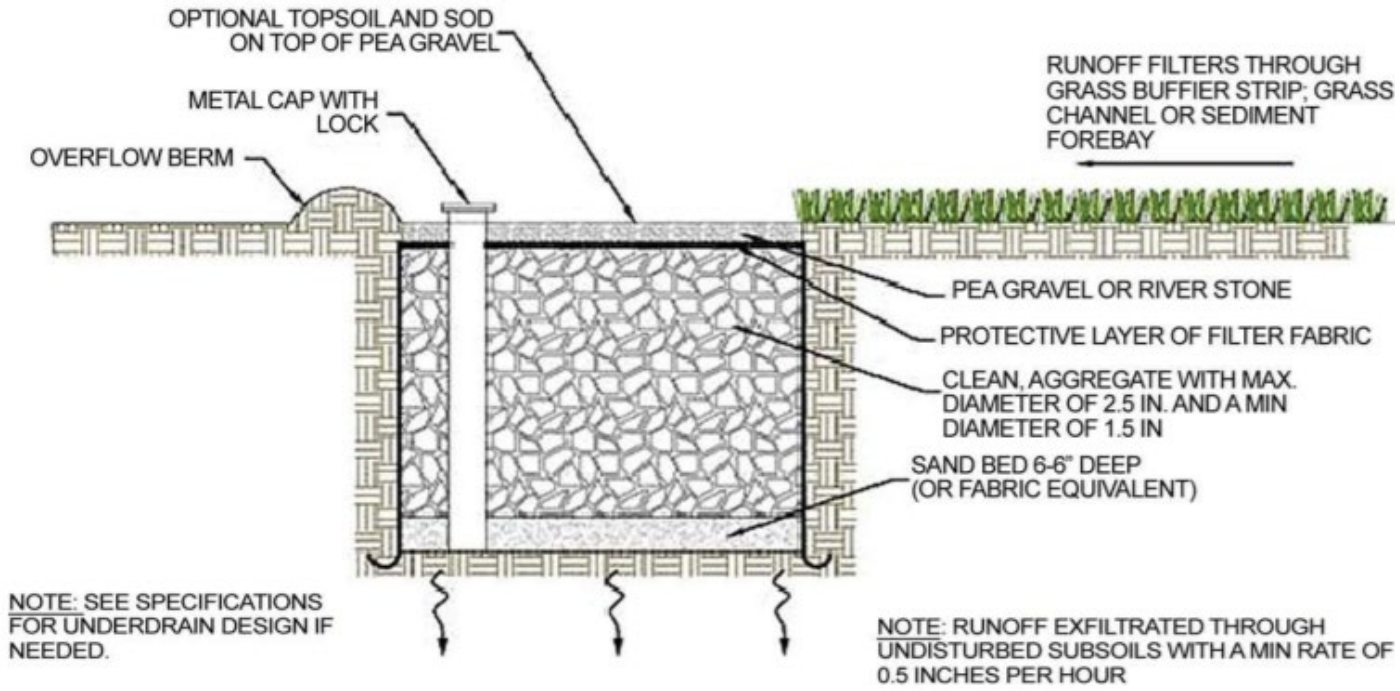
- Soil infiltration rate of 0.5 in/hr or greater required
- Excavated trench (3 to 8 foot depth) filled with stone media (1.5” to 2.5 inch diameter); pea gravel and sand filter layers
- A sediment forebay and grass channel, or equivalent upstream pretreatment, must be provided
- Observation well to monitor percolation



Infiltration Trenches

Design considerations:

- Site Slope – No more than 6% slope (for pre-construction facility footprint)
- Minimum Depth to Water Table – 2 feet recommended between the bottom of the infiltration trench and the elevation of the seasonally high water table



Tree Plantings

Design considerations:

- Gain stormwater area credit for slopes less than 6%
- Best return on investment is planting in clumps
- Reduce amount of area contributing to the run-off by 100sf of impervious area per new trees

NEXT STEPS

Project Schedule

- Winter – Summer 2022 – Design
- Fall 2022 – Bidding/Project Letting
- Winter 2022/2023 – Tree Clearing
- Spring/Summer 2023 – Construction

Schedule| Key Date

- March 2, 2022 – Public Comments due
  - Send an email to HWD@altago.com
  - Leave a comment on the project website: https://walkbikehwd.weebly.com/


Q & A

Project Website: https://walkbikehwd.weebly.com/
Project Email: HWD@AltaGo.com

Kristie Di Cocco, PE
Project Manager
KristieDiCocco@AltaGo.com

Bill Sprengnether, RLA
Landscape Architect/Project Technical Lead
WilliamSprengnether@AltaGo.com

Thank you!