



WOONASQUACKETT RIVER  
WATERSHED COUNCIL

**Woonasquackett River Watershed Council**

# **Reinventing Urban Landscapes with Green Infrastructure**



2016 Land & Water Conservation Summit

# 2016 GI Projects Woonooy Watershed - Providence



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1. Olneyville
2. Pleasant Valley Stream
3. Downtown Citizens Plaza





# 1. Olneyville - Showcase



- Riverside Park
- William D'Abate Elementary
- Affordable Housing



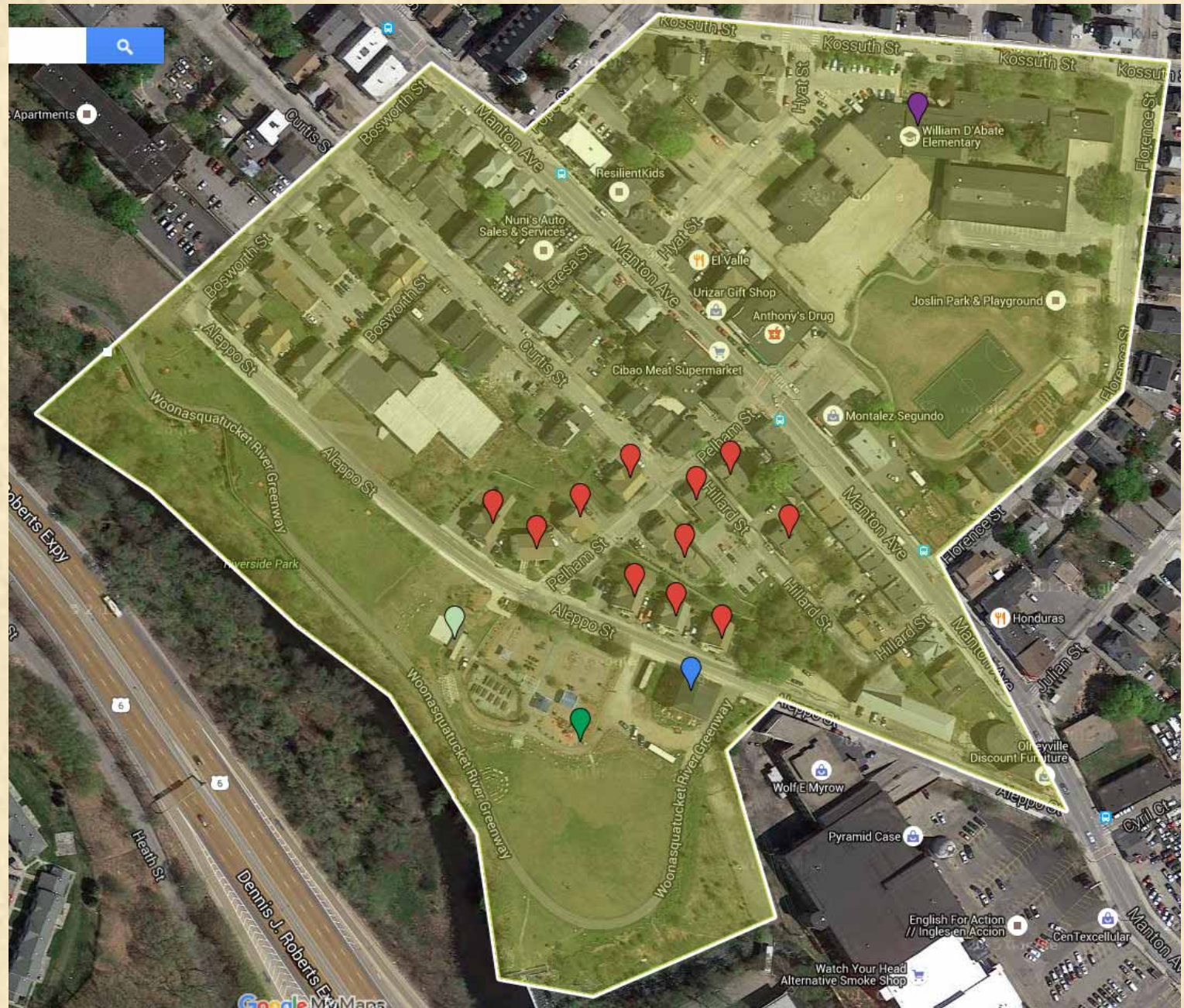


# Olneyville – Project Area



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- GI Showcase
- Retrofits
- Signage
- Guided Tours
- Self-guided Tours





# Riverside – Lots of Uses



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Bike Campers on daily ride

- **Brownfield Turned Greenfield**
- **Community Garden**
- **Bike Shop/Camp**
- **Bike Path**
- **Playgrounds**
- **Stage**
- **Cool Existing GI Features**



Walkers & Hikers



Community Garden



# Riverside Park – Green Roof



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# Green Roof System



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## VR MOD PRE-VEGETATED HYBRID MODULAR VEGETATED ROOF ASSEMBLY



*SYSTEM PROFILE*

# VR MOD

**EXTENSIVE  
PRE-VEGETATED HYBRID MODULAR SYSTEM**

*HIGH PERFORMANCE.  
MODULAR.  
PRE-VEGETATED.*

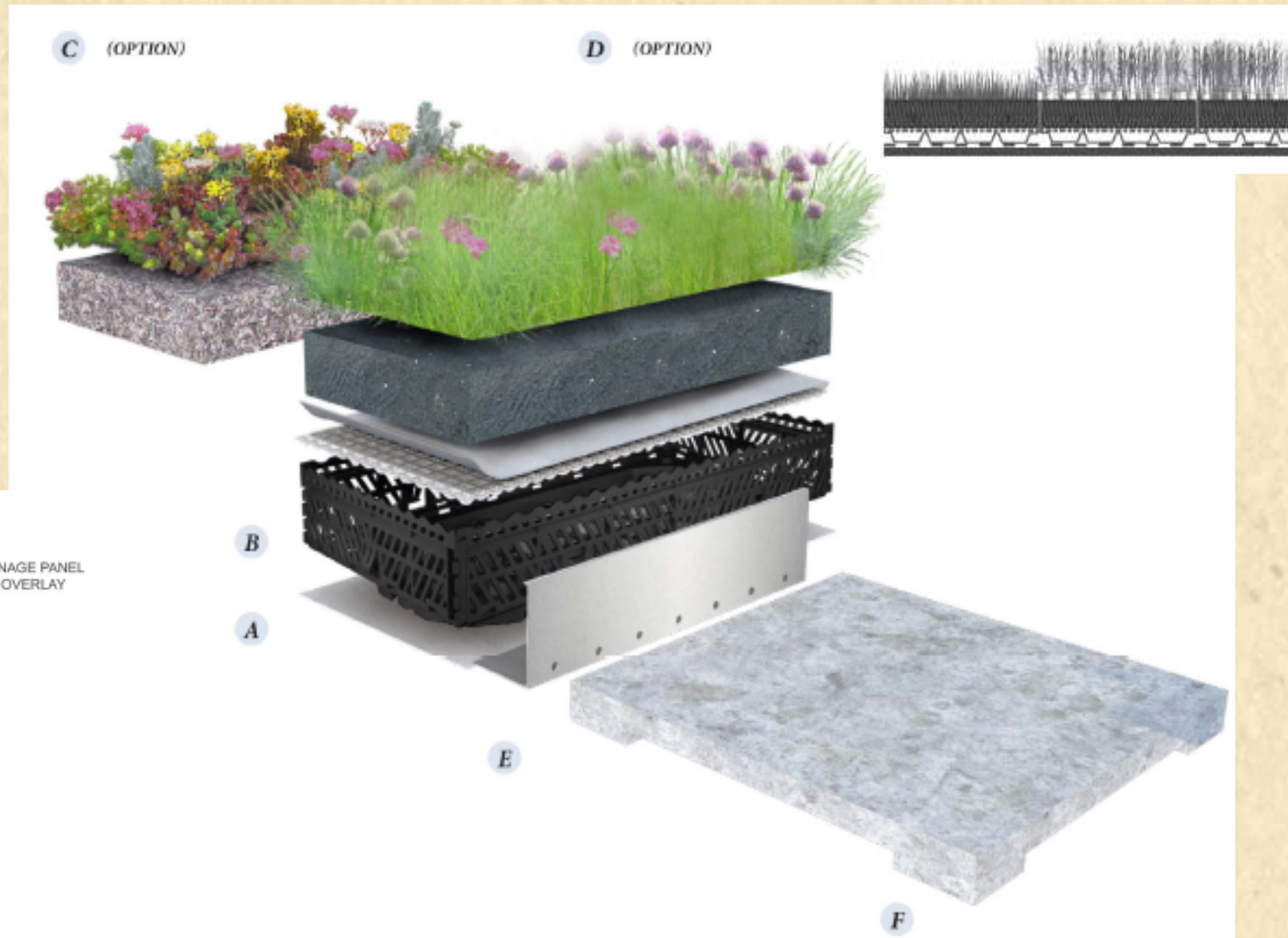
*INSTANT GREEN ROOF.*



# Green Roof System



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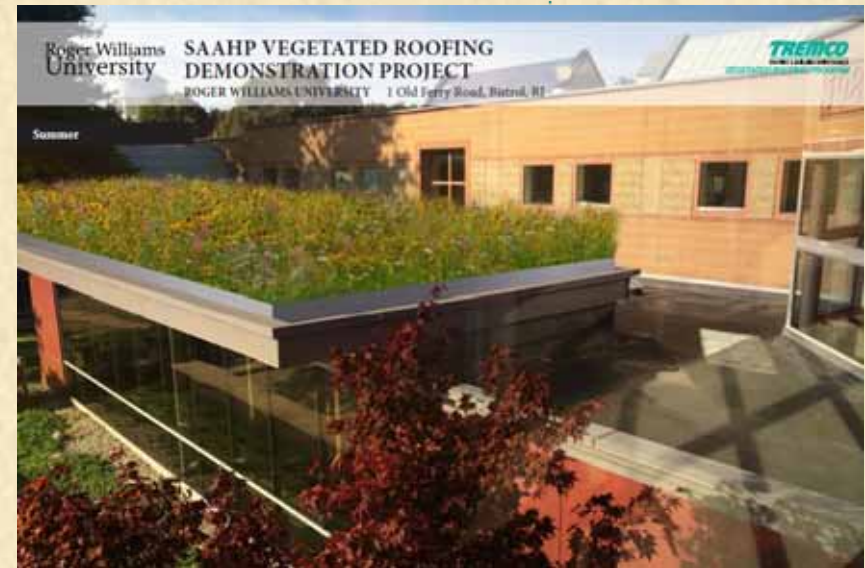
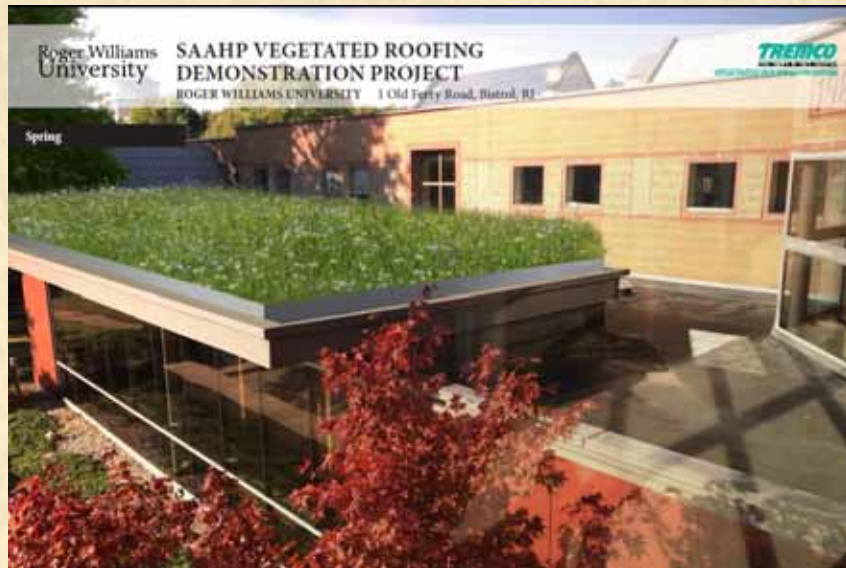
- A** ROOT BARRIER
- B** MODULE  
WITH INTEGRATED RETENTION AND DRAINAGE PANEL  
AND DRAINAGE MAT WITH FILTER FABRIC OVERLAY
- C** VR MOD SEDUM  
WITH ENGINEERED GROWING MEDIA  
  
VEGETATION OPTIONS:  
SEDUM BLENDS
- D** VR MOD MEADOW  
WITH ENGINEERED GROWING MEDIA  
  
VEGETATION OPTIONS:  
SHORTGRASS MEADOW BLENDS  
WILDFLOWER MEADOW BLENDS  
PERENNIALS
- E** EDGING RESTRAINT
- F** VEGETATION-FREE ZONE



# Green Roof System Meadow Option – 3 Seasons



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# Olneyville – Housing Retrofits



One Neighborhood Builders

- Existing Workforce
- Lots of Opportunities





# Showcase Ideas - Limited Space Rain Boxes



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Hawthorne Hostel – Portland Oregon



# Showcase Ideas - Limited Space Rain Boxes



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Riverzedge Arts – Green Design Lab  
2 Tier Rain Gardens



Maybe a good fit here.



# Showcase Ideas - Parking Lot Bioswales



Simple bioswale edge



Maybe a good fit here.



# Showcase Ideas - Rain Gardens – A Little Space



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Small Rain Garden



Maybe a good fit here.



# William D'Abate Elementary



Ballfield & Water Park Under Construction

- Neighborhood K-5
- Existing Gardens
- Connected to Community Center
- Active Outdoor Education Program



School Garden



Joslyn Rec is D'Abate Gym



# D'Abate Retrofit Opportunities



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Roof drains already lead to rain garden – make it better!



# D'Abate Retrofit Opportunities



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Could be a beautiful rain garden instead of a mud pit!



# Pleasant Valley Stream



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1. Tree Filters
2. Homeowner Surveys / Public Education
3. Dog Waste Stations
4. Retrofits



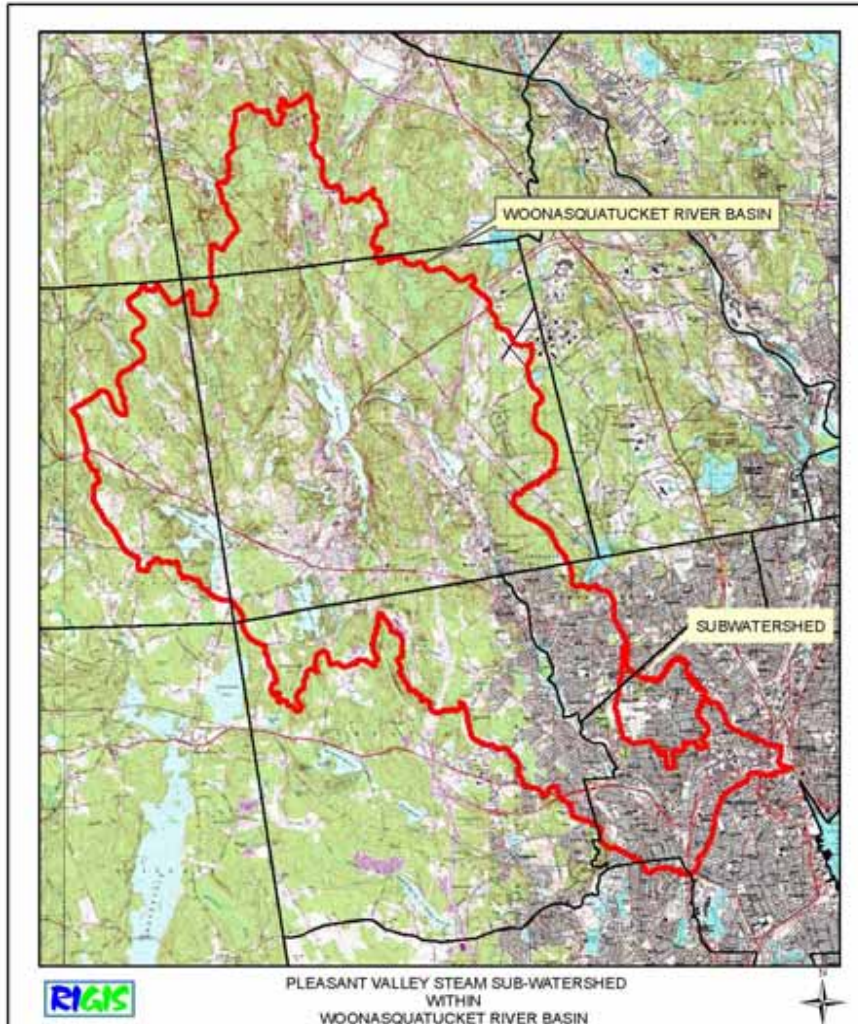
- Fairly dense residential
- Rare lovely open water feature
- Active neighbors



# Pleasant Valley Stream – Project Area



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**FIGURE 2**  
PLEASANT VALLEY STREAM  
SUB-WATERSHED RESTORATION STUDY  
PROVIDENCE, RI

PARE CORPORATION  
8 BLACKSTONE VALLEY PLACE  
LINCOLN, RI 02865  
(401) 334-4100

SCALE: 1" = 9000'  
AUGUST 2008

PARE PROJECT 07154.00

**2004 Aerial Photo**  
*Pleasant Valley Parkway Subwatershed*



Map Produced by The Providence Plan  
Data Sources: FROG, WPRMC.

★ Pleasant Valley Stream  
Approximate Project Location

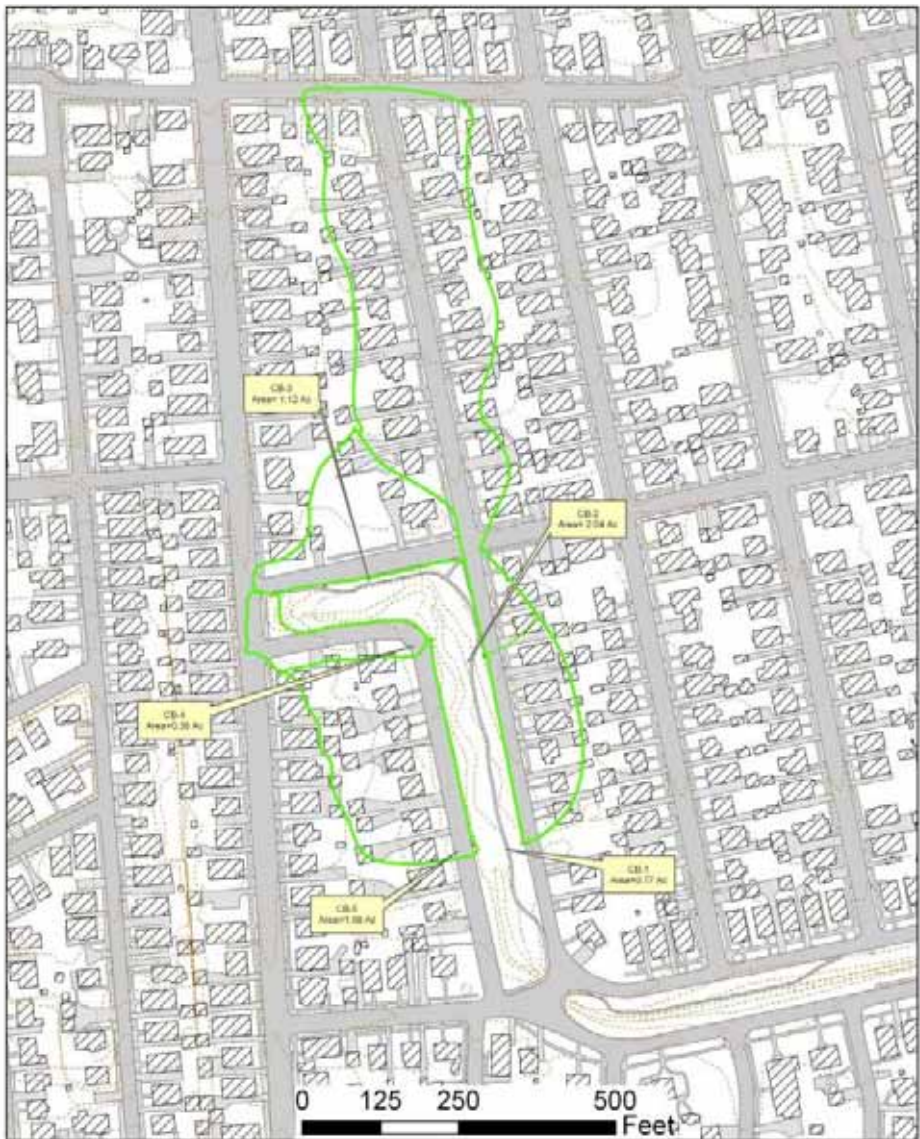
4/2010



# Pleasant Valley – Tree Filters 5 Storm Drains – 5 Tree Filters



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Tree filters essentially replace existing storm drains





# How Tree Filters Look



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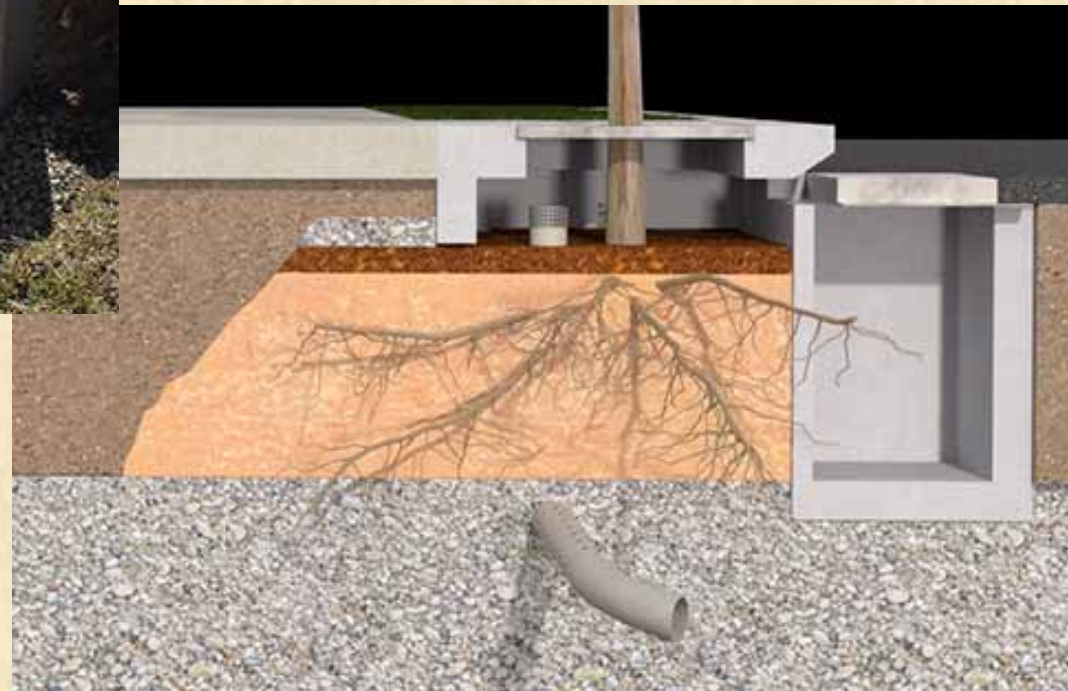




# How Tree Filters Work



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# Tree Filter Treatment

The screenshot shows the StormTree website with the following content:

- StormTree logo: Sustainable Stormwater Systems
- Phone number: 401-626-8999
- Navigation menu: Home, About, Resources, Gallery, Contact
- Call to action: REQUEST CAD DOCUMENTS OR HYDROCAD MODELS (with a gear icon) and a REQUEST CAD button
- Section: **Pollutant Removal Facts:**  
The following numbers are based on 3rd party testing of generic and proprietary tree filter systems, and EPA Fact Sheet for bioretention systems.
- Five circular progress indicators showing removal percentages:
  - TSS: > 85%
  - Nitrogen: > 48%
  - Phosphorus: > 63%
  - Total Metals: > 60%
  - Oil and Grease: > 85%
- Footer: Check out our work

The Windows taskbar at the bottom shows the time as 5:05 PM on 3/18/2016.



# Pleasant Valley Stream Homeowner Surveys



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- 100 Home Survey
- Education
- Willingness to Participate
- Site Evaluation



# Pleasant Valley Stream Retrofits



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- 5 Retrofits in Varying Lot Types
- Similar to Olneyville Showcase



# Pleasant Valley Stream Signage



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# Citizens Bank Plaza Downtown Providence



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- Woonasquacket & Moshassuck Rivers



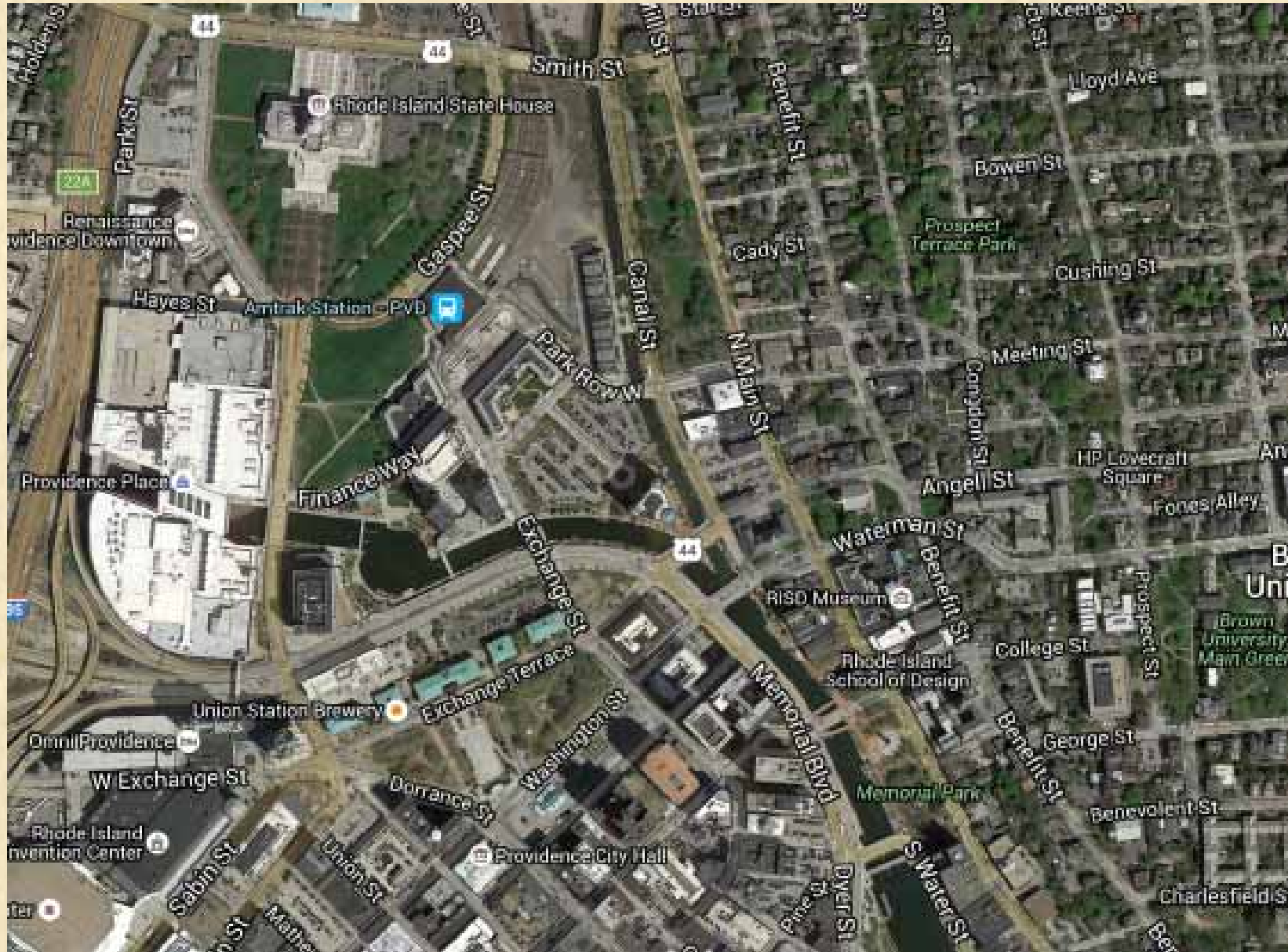
- Highly Visible Site
- Uses GI Workforce Trainees
- Great Public Ed



# Citizens Plaza – Project Site



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# Citizens Plaza – Project Site Close Up



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-  Tiered Raingarden
-  Tiered Raingarden
-  Tree Filter?
-  Trees



# Citizens Plaza Existing Site Conditions – Woony



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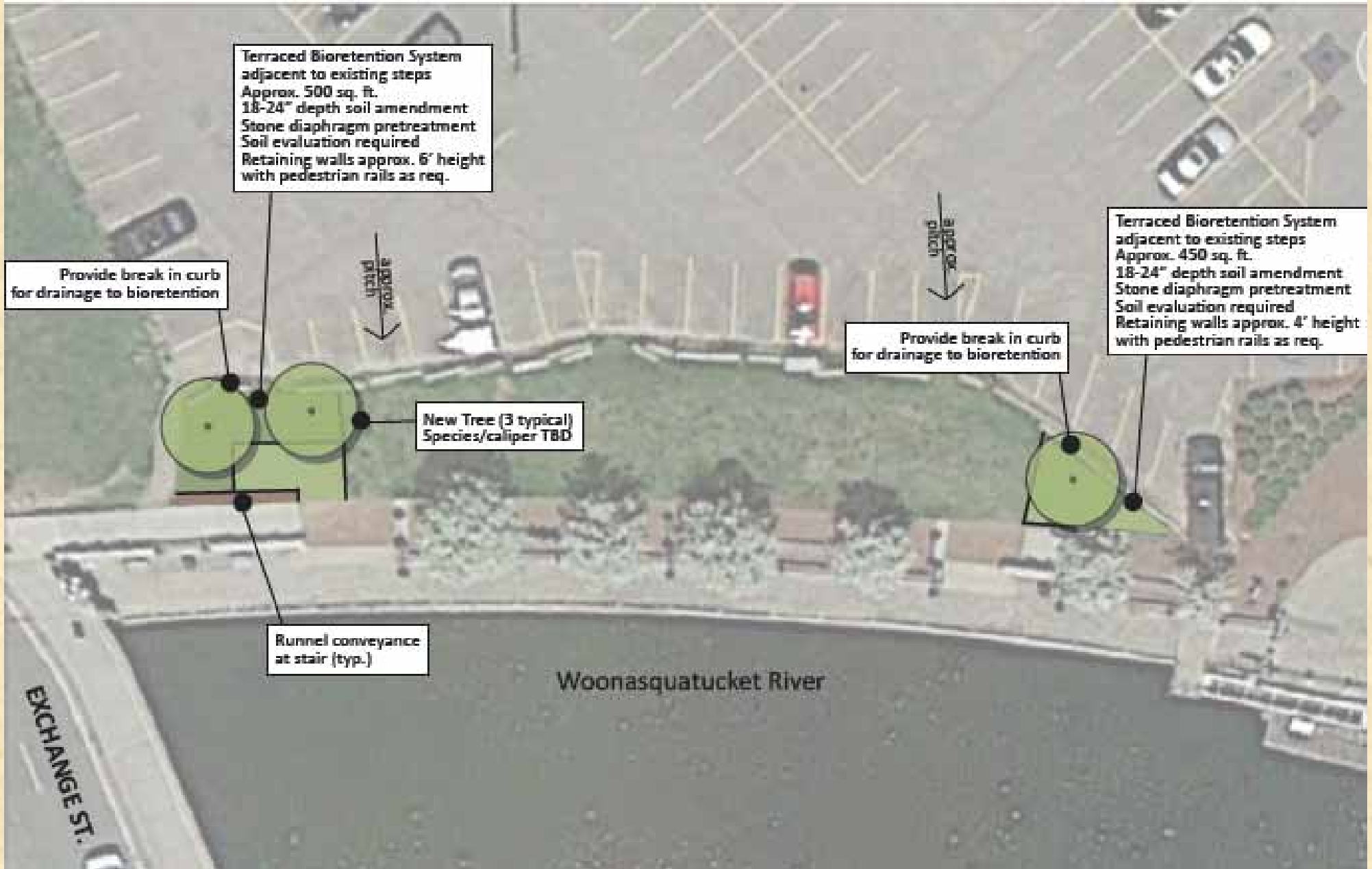




# Citizens Plaza Preliminary Design – Woony



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# Citizens Plaza Existing Conditions – Moshassuck



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# Citizens Plaza Preliminary Design – Moshassuck



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